

2000

ARMED FORCES INSTITUTE OF PATHOLOGY
ANNUAL REPORT

Armed Forces Institute of Pathology, Washington, DC

2000 ANNUAL REPORT

Armed Forces Institute of Pathology
Washington, D.C. 20306-6000

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Riggs Bank Building, Pennsylvania Ave. and
15th St., NW, 1862–1863

180 Pennsylvania Ave., NW, 1863

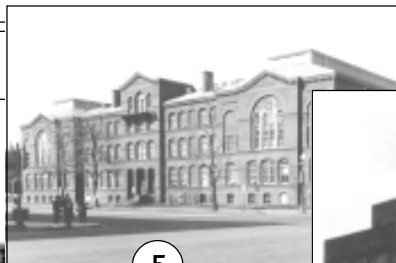
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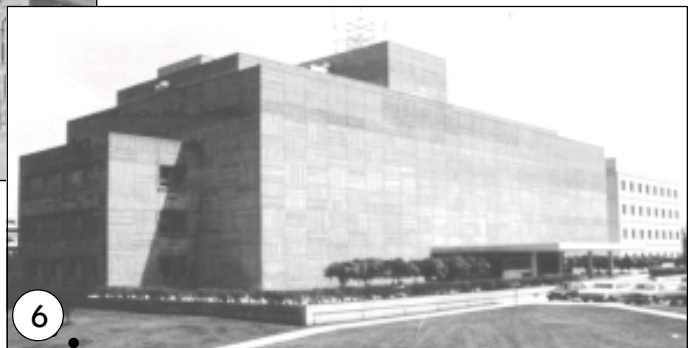
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511 10th St., NW,
1866–1887



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Home of the AFIP on the grounds of Walter Reed
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MISSION

The Armed Forces Institute of Pathology supports the United States Department of Defense and serves the American people by providing medical expertise in diagnostic consultation, education, and research to enhance the health and well-being of the people we serve.

VISION

The Armed Forces Institute of Pathology will continue to support the United States Department of Defense and serve the American people by providing world-class medical expertise to enhance the health and military readiness of servicemembers. The AFIP will contribute to the continuing improvement of medicine by developing scientific insight and understandings that improve the lives of the patients and people we serve.

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Photo credits: José Rodriguez and Vincent Neaz

GOALS

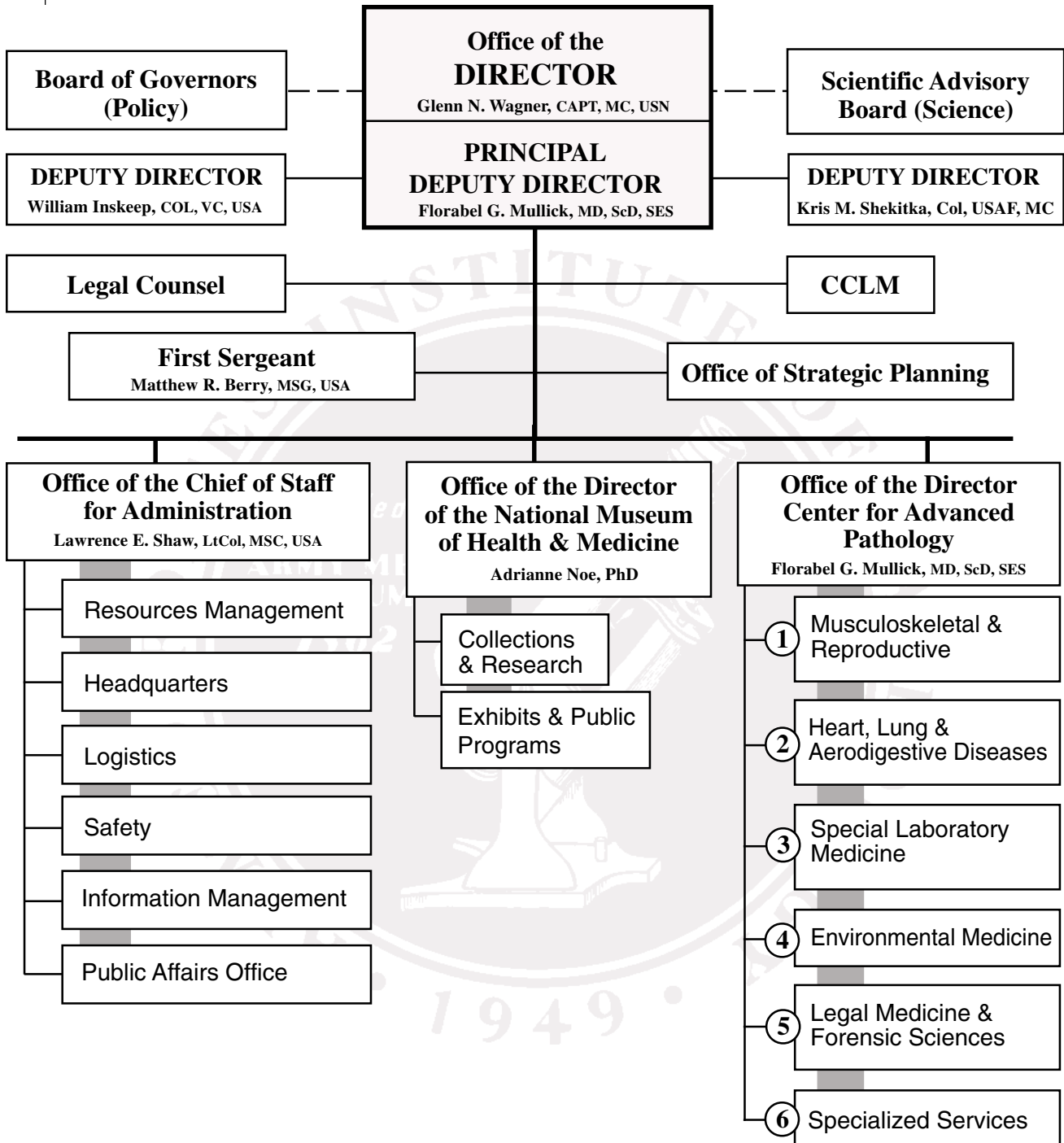
1. **PERFORMANCE**—An Institute that clearly pursues, establishes and preserves world class performance based on access, quality and cost.
2. **RECRUITMENT & RETENTION**—An atmosphere of personal and professional growth that recruits, develops and retains innovative, creative people and renowned leaders.
3. **OPERATIONS**—An efficient work environment in a central location that fosters trust and collaboration, mission focus.
4. **READINESS**—A tri-service, interactive Institute recognized nationally for its distinguished contributions to the medical services and mission readiness of the Armed Forces through scientific discoveries, consultations, education and training, investigations, and research and development.
5. **COLLABORATIONS**—An Institute that actively promotes formal collaborative projects, programs and processes that benefit the Armed Forces and the nation with government, academia, industry and worldwide partnerships with a combined commitment to stewardship.





Organization Chart

Armed Forces Institute of Pathology



Executive Committee



Florabel G. Mullick
MD, ScD, SES
Principal Deputy Director

William Inskip
Colonel, VC, US Army
Deputy Director

Glenn N. Wagner
Captain, MC, US Navy
Deputy Director

Kris M. Shekitka
Colonel, US Air Force, MC
Deputy Director

Adrianne Noe, PhD
Director
National Museum of
Health and Medicine

Mathew Berry
SCPO, US Navy
First Sergeant

Lawrence E. Shaw
Lt Colonel, MS, US Army
Chief of Staff for
Administration



Board of Governors

The **Board of Governors** of the AFIP consists of the Assistant Secretary of Defense (Health Affairs), who serves as the Chairperson of the Board; the Assistant Secretary for Health, Department of Health and Human Services; the Surgeons General of the Army, Navy, and Air Force; the Chief Medical Director for the Department of Veterans Affairs; and a former Director of the Armed Forces Institute of Pathology. The Board of Governors meets quarterly, and, based on the recommendations of the Scientific Advisory Board and Institutional reports, establishes guidelines and broad administrative and professional policies in consonance with the medico-military objectives of the Institute.

RADM J. Jarrett Clinton (Acting)
Assistant Secretary of Defense for Health Affairs
Department of Defense

LTG James B. Peake, MC, USA
The Surgeon General
United States Army

VADM Richard A. Nelson, MC, USN
The Surgeon General
United States Navy

LtGen P. K. Carlton, USAF, MC
The Surgeon General
United States Air Force

David Satcher, MD, PhD
Assistant Secretary for Health and
Surgeon General
Department of Health and Human Services

Thomas Garthwaite, MD
Under Secretary for Health
Department of Veterans Affairs

Robert F. Karnei, MD
Wythe County Community Hospital
Wytheville, VA

Scientific Advisory Board

THE CHARTER FOR THE AFIP SCIENTIFIC ADVISORY BOARD states that the basic term of office of civilian members shall be two years and that no civilian member may serve more than two terms in succession; it further states that terms shall be staggered to provide a rotating membership. The Board meets at the call of the Director, AFIP, to advise him on scientific and technical matters. Board members are selected from outstanding specialists in their respective fields of medicine. The Board met 08 May.

Vernon W. Armbrustmacher, MD

City Medical Examiner II
Neuropathology
The City of New York
Office of the Chief Medical Examiner
New York, NY

Peter M. Banks, MD

Department of Pathology
Carolinas Medical Center
Charlotte, NC

Cecilia M. Fenoglio-Preiser, MD

MacKenzie Professor and Director
Department of Pathology
College of MedicineN.
University of Cincinnati
Cincinnati, OH

William A. Gardner, Jr, MD

Louise L. Locke Professor and Chair
Department of Pathology
University of South Alabama
College of Medicine
Mobile, AL

Julian A. Garvin, MD

Professor and Chair, Pathology
Wake Forest/Bowman Gray School of Medicine
Winston Salem, NC

Jeffrey A. Kant, MD, PhD

Department of Pathology
University of Pittsburgh Medical Center
Pittsburgh, PA

Raymond J. Melrose, DDS

Los Angeles, CA

William W. Olmsted, MD

Education Editor and Editor, RadioGraphics
Radiological Society of North America
Washington, DC

James R. Patrick, MD

Lucas County Coroner's Office
Toledo, OH

John E. Pless, MD

Professor of Pathology
Indiana University School of Medicine
Indianapolis, IN

Fred G. Silva, MD

University of Maryland
Greenbaum Cancer Center
Baltimore, MD

Swan Thung, MD

Department of Pathology
Mount Sinai Medical Center
New York, NY

Ronald D. Tyler, DVM, PhD

VP, Medicine Safety Evaluation for U.S.
Glaxo Wellcome
Research Triangle Park, NC

David H. Walker, MD

Professor and Chairman
Department of Pathology
University of Texas Medical Branch
Galveston, TX

James G. Zimmerly, MD, JD, MPH, LLD

Medical Director
AEGON Special Markets Group, Inc.
Baltimore, MD

Members of the SAB from the Federal Service

MG Harold Timboe

Commander, North Atlantic Regional Medical Command
Commander, WRAMC
Washington, DC

COL Renata Greenspan, MC, USA

Chief, Department of Pathology and Area Laboratory Services
WRAMC
Washington, DC

Col Paul B. Christianson

Vice Commander, Air Force Medical Operations Agency
Office of the Surgeon General
Bolling Air Force Base
Washington, DC

CAPT Richard G. Hibbs, MC, USN

Commanding Officer
Naval Medical Research Center
Silver Spring, MD

CAPT Michael Nowacki

Specialty Leader for the Surgeon General for Laboratory Medicine
Naval Medical Center
San Diego, CA

LTC Jane Meyer

Director, Scientific Activities
Office of the Assistant Secretary of Defense (Health Affairs)
The Pentagon
Washington, DC

Theodore F. Beals, MD

National Director, Anatomic Pathology
Veterans Administration Medical Center
Ann Arbor, MI

Robert M. Friedman, MD

Professor and Chairman
Department of Pathology
Uniformed Services University of the Health Sciences
Bethesda, MD

Frederick W. Miller, MD, PhD

Laboratory Molecular Immunology
Center for Biologics Evaluation & Research
Food & Drug Administration
Bethesda, MD

Kenneth Olden, MD

Director, OD/NIEHS/NIH (B2-01)
Research Triangle Park, NC

Stephen Ostroff, MD

National Center for Infectious Diseases
Centers for Disease Control & Prevention
Atlanta, GA

Alan S. Rabson, MD

Director, Division of Cancer Biology & Diagnosis
National Cancer Institute
National Institutes of Health
Bethesda, MD



Glenn N. Wagner, CAPT, MC, USN
The Director
Date of Appointment — 4 June 1999

Penny L. Rodriguez
Executive Administrator
Date of Appointment — November 1999

Tyrone Green, HMCS, USN
First Sergeant
Date of Appointment — May 1999

Gricelde Eralte-Perez, SGT, USA
Administrative Assistant

OFFICE OF THE DIRECTOR

MISSION

The mission of the Armed Forces Institute of Pathology (AFIP) (dictated in Public Law (94-361, 1976) is to provide pathology expertise in consultation, education, and research in medicine, dentistry, and veterinary medicine to the Armed Services and the American public, in partnership with the American Registry of Pathology (ARP). AFIP is the pathology reference center for the Departments of Defense and Veterans Affairs, and provides a wide range of products and services in partnership with the American Registry of Pathology. ARP, whose first registry was established in 1921, represents professional organizations sponsoring registries of pathology and allied health sciences at the AFIP. It is incorporated into the structure of the Institute's professional departments and elements.

The AFIP's strength stems from a foundational triad of world-class professional expertise, the national tissue repository and archive of over 3 million accessioned cases, and multiple collaborations in government, industry, and academia. This unique public/private partnership provides unprecedented health care delivery to a global constituency based on maximum access, quality, and cost containment. In 2000, the AFIP provided over 108,000 consultations, including 55,000 cases for second opinion, 45,000 Air Force PAP smears, and 8,000 cases received for risk management and utilization review. The Institute also provided over 75,000 hours of education and training, including 30,000 hours of continuing medical education. The AFIP's research and development efforts continued to grow, with over 300 approved protocols, a growing number of which were externally funded. Programs included research in basic science, environmental pathology and toxicology, geographic and infectious disease pathology, oncology, molecular diagnostics, and forensic science. All approved protocols have military relevance and civilian applications.

The AFIP is the largest Field Operating Agency (FOA) of the Army's Office of the Surgeon General. It is administered through a Directorate composed of the Director, Principal Deputy Director, and 2 service Deputy Directors appointed by the AFIP Board of Governors, chaired by the Assistant Secretary of Defense for Health Affairs and representing the entire federal healthcare system. The Directorship rotates every 4 years between the Army, Navy, and Air Force. The service Deputy Directors represent the other 2 services as troop or element commanders, with duties as assigned. Florabel Mullick, MD, SES IV, Director of the Center for Advanced Pathology, is Principal Deputy Director. Kris M. Shekitka, Col, USAF, MC, is Deputy Director, Air Force. William Inskeep, COL, VC, USA, is Deputy Director, Army. Adrienne Noe, PhD, Director of the National Museum of Health and Medicine, is Associate Director of the AFIP, and Lawrence E. Shaw, LTC, MS, USA is Chief of Staff for Administration.

The Directorate (including Associate Directors, Chief of Staff for Administration, and the Executive Director of the ARP, Dr. Donald West King) constitutes the AFIP's Executive Steering Committee, supported by the Office of Legal Counsel, Office of Strategic Planning, and PAO and First Sergeant. The Office of the Director oversees the administration of the AFIP and its compliance with the authority and guidance of the Board of Governors and the Institute's executive agent, the US Army.

AFIP organizational elements that respond directly to the Office of the Director include the National Museum of Health and Medicine, Office of Clinical Laboratory Affairs, Office of Strategic Planning, Office of Legal Counsel, and the Joint Committee on Aviation Pathology (secretariat). Captain Wagner chairs the DoD Automated Central Tumor Registry Oversight Committee, the Joint Committee on Aviation Pathology (JCAP), and the Joint Laboratory Working Group.

CONSULTATION, EDUCATION, AND RESEARCH

Captain Wagner is credentialed and privileged in forensic pathology as a member of the Office of the Armed Forces Medical Examiner and Deputy Medical Examiner. He continues to provide requested consultations in forensic medicine, especially in pediatric pathology, aerospace pathology, and trauma biomechanics. He lectures widely on forensic issues and participates in the development of funded research protocols. Captain Wagner is an adjunct (clinical) professor of pathology at the Uniformed Services University of the Health Sciences, providing lectures on forensic medicine to the Departments of Military Medicine, Preventive Medicine, and Pathology. He continues to lecture at AFIP courses, particularly basic forensic sciences and anatomic review seminars.

PUBLICATIONS

The Director published 2 book chapters in 2000:

1. Rayman RR, ed. *Primer on Aerospace Pathology*. Aerospace Medical Association; 2000.
2. Wagner GN. Osteopathy. In: Weintraub R, ed. *Alternative Medicine in Neurologic Disease*. St. Louis, Mo: Harcourt Health Sciences; 2000.

GOALS

The Institute hopes to expand its strategic and business plan initiatives, with close oversight by its executive agency, OTSG. During 2000, the AFIP examined a number of business models as sources for alternate funding opportunities, and pursued greater efficiencies and effectiveness. Today's health care delivery system is measured by access, quality, and cost. The AFIP is unique within the DoD in having global access to world populations, including DoD beneficiaries. The AFIP is well positioned to provide unique services and meet its mandates in public law as a pathology reference center. Services at the AFIP continue to represent the gold standard in quality. Ongoing business initiatives are designed to capture accurate costs of doing business for strategic institutional positioning. The Institute's focus on business and health care delivery systems continues to be a direct result of mandates placed by DoD Program Decision Memoranda.

The AFIP provides a unique, relevant, and vital interface for the Department of Defense and the American public. Pathology is uniquely qualified as a specialty to bridge the basic sciences and clinical medicine. The depth of staff expertise, a huge tissue repository reflecting the health of the population, and numerous collaborations combine to form the special core competencies of the "People's Institute."



Stephen W. Bross, LTC, JA, USA
Legal Counsel
Date of Appointment — 3 July 1998

OFFICE OF LEGAL COUNSEL

MISSION

The Office of Legal Counsel is responsible for providing legal advice and assistance to the Director and staff of the AFIP.

STAFF

Stephen W. Bross, LTC, JA, USA, Legal Counsel
Penny L. Rodriguez, Legal Assistant

ACCOMPLISHMENTS

In 2000, the Office of Legal Counsel provided the Director and staff of the AFIP with a broad range of legal services, including the following:

- The Legal Counsel, in ongoing coordination and consultation with the Executive Committee and the ARP and its counsel, performed the primary staff work related to the development and execution, in September 2000, of a complete revision of the AFIP-ARP Memorandum of Understanding (MOU) pertaining to cooperative enterprises. This effort required research and analysis on such issues as the legislative intent of the AFIP-ARP statute, the scope of permissible joint activity pursuant to the legislation, the permissible extent of joint responsibilities shared by public and private entities, nonprofit cost accounting, patents, property accountability, research grants, publications and copyright, Distinguished Scientist salary limitations and liability considerations, and cafeteria operations. The document provides far greater structure than that which existed in the previous 1990 version of the MOU, and should fully satisfy the concerns of DoD Inspectors General, the Board of Governors, the service Surgeons General, and other interested Army and DoD staff.
- The inquiry by the DoD Inspector General (IG) into the relationship between AFIP and ARP moved into the report-and-response phase, during which the Legal Counsel represented the Institute in mediation on those IG findings on which AFIP and the IG differed. The AFIP was able to resolve most of the disputed findings in its favor. The Legal Counsel continued to work IG issues related to internal gift processing procedures and the treatment of operating losses for the ARP cafeteria under government contracting rules. The various IG inquiries about Distinguished Scientists led indirectly to a closer examination of the scope of tort liability and Federal Tort Claims Act coverage for such personnel.
- The Office of the Armed Forces Medical Examiner received substantial support on a variety of matters, including liaison to counsel representing the estates of victims of the Alaska Air disaster, who needed DNA profiles from our Economy Act victim identification work to debunk the fraudulent claims of foreign interlopers alleging the existence of illegitimate children of some of the victims; assistance in updating and substantially revising an agreement for toxicology services between the Division of Forensic Toxicology and the District of Columbia Medical Examiner; continued advice on the newly enacted Section 1471 of Title 10, US Code, which clarifies and expands the Medical Examiner's forensic investigation authority; and recurring liaison between the Medical Examiner and service judge advocates seeking expert forensic pathology advice and

consultation for both the prosecution and defense, with the added complication of trying to support the defense without constraining Medical Examiner operations through the application of client privilege and confidentiality.

- The office coordinated numerous requests to interview and depose Institute staff in connection with private litigation, or to obtain patient information relevant to litigation, and represented Institute and DoD interests at such interviews and depositions while also advising staff members providing testimony. The office continued to assist the Army Litigation Division, the DoD Office of General Counsel, and the Department of Justice in the discovery phase of federal litigation against several tobacco companies and related entities. The office also became involved as liaison to the Army Litigation Division and the Army Claims Service with regard to a medical malpractice tort claim that originated at Seymour-Johnson Air Force Base and that has come to involve the Navy and Army as well.
- The AFIP required advisory and management support from the Legal Counsel in the investigation and disposition of 2 alleged acts of scientific misconduct. The Legal Counsel also provided military justice advice and support in the management and processing of an officer desertion case.
- As the Institute's designated agency ethics official and ethics counselor, the Legal Counsel provided ethics training, prepared written and oral opinions and advisory letters for the Institute leadership and individual staff members, and also managed the financial disclosure reporting required of certain staff members under the Joint Ethics Regulation.
- The Legal Counsel continued to provide advice on several copyright, licensing, and nondisclosure issues. In connection with this work, the Legal Counsel began to study the applicability of federal cooperative research and development authorities to various Institute activities that are not clearly cooperative enterprises within the scope of our AFIP-ARP statutory authority.
- As the Legal Counsel developed experience with the legal structure of AFIP and ARP, certain areas were identified for rigorous assessment of the degree to which AFIP's statutory authority compels and justifies deviation from the dictates of normal government rules. These include testimony of personnel regarding official information in private litigation and the rules for reimbursement of AFIP for such testimony; official participation of employees in private organizations, primarily professional medical societies, in management positions; the applicability of cooperative research and development authorities as noted above; and the educational interaction of the Institute with foreign medical professionals, within the foreign-visitor clearance procedures of the Department of State and the Army Surgeon General.
- The Legal Counsel provided routine legal advice and guidance on the day-to-day work of the Institute in such typical areas as memoranda of agreement with other agencies for provision or exchange of technical and/or educational services, as well as agreements with nonfederal and foreign entities pertaining to research, education, and training; requests by outside parties for access to patient records and tissues; civilian and military personnel administration, discipline, and investigations; offers by outside sources to pay travel expenses of employees; proposed revisions to Institute regulations; military administrative law matters; contract administration and procurement law matters; fiscal law matters, including the structure of reimbursable operations; and issues specific to the operation of the National Museum of Health and Medicine, including the development of a broadcast sponsorship agreement with a local television station. The Legal Counsel also provided some limited legal assistance to members of the Institute as time permitted.
- The legal assistant is a notary public and is available to the Institute staff for all official business requiring notarization. Notary services are also provided to military personnel and their dependents for any legal matters requiring notarization.

Mathew Berry
First Sergeant, AFIP
Date of Appointment — July 2000 to June 2001

OFFICE OF THE FIRST SERGEANT

MISSION

The Office of the Command First Sergeant is the focal point for all matters concerning the enlisted forces and the AFIP. The office advises the Director and Deputy Directors on the health, esprit de corps, discipline, mentoring, well-being, career development, recognition, and assignment of enlisted personnel from all three services. The office acts as liaison between the Director, the enlisted force, and key staff members, ensuring the Director's policies are known and understood by all personnel. The Command First Sergeant establishes rapport with other Commanders, First Sergeants, and community leader, and represents the command as needed. Air Force and Navy senior enlisted representatives work closely with the Command First Sergeant to assist service members with service-specific issues, and to act as Command First Sergeant in his absence.

STAFF

Daneen E. Harris, MSG, USA, Senior Army Enlisted Member of AFIP
Tyrone L. Green, HMCS, USN, Senior Navy Enlisted Member of AFIP
Joy P. Williams, Msgt, Senior Air Force Enlisted Member of AFIP
Ramone Hollins, SGT, USA, Assistant to the First Sergeant, Duty Driver, Training NCO,
Color Guard NCO

ACCOMPLISHMENTS

1. Served on multiple standing committees at the installation, PX and Commissary Council and at the Institute, Executive, Safety, Picnic and Personnel Development Committees.
2. Executed the Inclement Weather plan for snow removal operations in an exceptional manner. Served as the Project Officer for the spring and fall area beautification programs.
3. Ensured the Facility was maintained in a high state cleanliness and external appearance. Spearheaded the enhancement in appearance for the main and rear areas of the Institute.
4. The office supported the WRAMC Christmas formal and Ash Lecture with tri-service personnel from Army, Navy, and Air Force respectively.
5. The office worked with the Institute's Combined Federal Campaign Coordinator to have a record setting fundraiser, collecting in excess of 43,000.00 dollars in donations.
6. Enlisted staff developed a new awards program to enhance recognition and excellence. JEC and TOP 4 held fund-raising events, morale building, trips, and several gatherings to promote esprit de corps, and provided savings bonds to recipients of the Service Member of the Quarter and Service Member of the Year Awards.
7. Worked diligently to ensure each respective service professional military education requirements were maintained.
8. Networking with MEDCOM CSM, NARMC CSM, WRAMC SGM, Brigade CSM, Andrews AFB Command Chief Master Sergeant, and NNMCM Command Master Chief has increased our ability to provide support to our soldiers, sailors, and airmen.



Daniel R. Brown, Col, USAF, BSC
Director
Date of Appointment — 1 May 2000

CENTER FOR CLINICAL LABORATORY MEDICINE

MISSION

The Center for Clinical Laboratory Medicine (CCLM) provides DoD program management of the Clinical Laboratory Improvement Program (CLIP), the military's equivalent of the Clinical Laboratory Improvement Amendments (CLIA) of 1988. The center develops, issues, and updates the Tri-Service CLIP regulations, which establish the minimum quality assurance standards for medical laboratory operations and testing sites within DoD. The office identifies, registers, and certifies all appropriate testing sites within DoD and provides central contracting and regulatory oversight of laboratory proficiency testing (PT) performance and accreditation issues, intervening directly to correct identified PT deficiencies. The center provides regulatory reports and consultative services on clinical laboratory issues to each service's Surgeon General and the Deputy Assistant Secretary of Defense for Health Affairs (Professional Affairs and Quality Assurance) (DASD HA) (PA&QA).

STAFF

Daniel R. Brown, Col, USAF, BSC, Director
R. Gregory Craigmiles, CAPT, MSC, USN, Associate Director
Forrest W. Kneisel, LTC, MSC, USA, Associate Director
Judy Kendrick, SMSgt, USAF, Superintendent
Dennis A. Lahl, HMC, USN, LCPO
Reinaldo Rodriguez, SSG, USA, NCOIC

EDUCATION

Presentations and Seminars: The department presented 14 workshops or seminars encompassing 400 man-hours of departmental time, with approximately 1,000 attendees.

ACCOMPLISHMENTS

- 2000 registration statistics
 - Army: 463 certificates (1,151 sites)
 - Navy: 505 certificates (879 sites)
 - Air Force: 439 certificates (1,015 sites)
- In 2000, the center saved over \$1 million in registration and inspection fees. Since the program's inception in 1993, we have avoided in excess of \$6 million in fees to the Health Care Financing Administration.
- Proficiency Testing (PT): All registered DoD laboratories performing moderate- and/or high-complexity procedures were enrolled in centralized service-specific contracts during 2000. CCLM reviewed over 8,200 PT surveys. There were approximately 100 testing events out of 24,000 where labs performed unsatisfactorily, and CCLM required review of corrective actions taken.
- Accreditation: DoD laboratory facilities are accredited by the College of American Pathologists (CAP), the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), or the Commission on Office Laboratory Accreditation (COLA). Each facility is

inspected every 2 years, and results of inspections are forwarded to CCLM for review.

- Laboratory Joint Working Group (LJWG): The center cochairs and facilitates this committee consisting of service laboratory medicine and pathology consultants, health affairs representatives, and an appointed laboratory representative from each TRICARE region. The LJWG facilitated DoD-wide laboratory consolidation and other initiatives to reduce reference laboratory, reagent, and utilization costs. Over \$26 million in savings was reported. Center personnel are members of subcommittees on enrollment-based capitation, cytology consolidation, cost-accounting software, DoD benchmarking for laboratories, CHCS interconnectivity, and reference lab consolidation.
- Laboratory Composite Health Care System (CHCS) Interconnectivity: The center participated in an ongoing working group to establish requirements and initiate the contracting process for achieving laboratory CHCS interconnectivity between DoD facilities, DoD and VA facilities, and DoD and civilian reference laboratories. The project was funded at \$2.5 million by OASD (HA) and is projected for alpha testing by 2001.
- The center participated in the laboratory design project to develop suitable standardized laboratories for installation in small, medium, and large hospitals.
- The center aided the development of a DoD Blood Program strategic plan to consolidate 50% of the blood program infrastructure.
- The center participated in a joint panel sponsored by the Joint Readiness Clinical Advisory Board, to review and update laboratory equipment and supplies used in the deployable medical platforms.
- The center expediently notified all DoD laboratories and service logistics centers of reagent manufacturing and equipment problems during 2000.

PRESENTATIONS

1. February 2, 2000: Washington, DC, Laboratory Joint Working Group Meeting, "Global laboratory information transfer," T Robillard, R Craigmiles.
2. February 2, 2000: Washington, DC, Laboratory Joint Working Group, "DoD/VA Sharing," "Enrollment -based capitation impact on laboratory," "DoD cytology consolidation," and "Strategic planning," S Wilson.
3. February 2, 2000: Washington, DC, Laboratory Joint Working Group, "Clinical Laboratory Improvement Advisory Committee," F Kneisel.
4. March 4, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting, "Consultant's brief for biomedical laboratory officers," R Brown, C Watkins.
5. March 4, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting "Downsizing: a model to help you cope," "The ins and outs of workload recording," and "Current AF laboratory management issues," S Wilson, Y Byrd.
6. March 4, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting "CLIP Program Updates," F Kneisel.
7. March 5, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting, "Specialty Leader's Brief for the Medical Technology Community," R Gregory Craigmiles.
8. March 5, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting "Considerations of CAP and CLIP in establishing a laboratory QC Program," F Kneisel.
9. April-August 2000: Washington, DC, Defense Science Board Summer Study on Bioterrorism, D Brown.
10. June 2000: Sheppard AFB, Tex Biomedical Officer Management Orientation Course, "The ins and outs of workload recording," "Clinical laboratory management indicators," "Laboratory Joint Working Group," "Laboratory standard cost methodology," "Downsizing: a model to help you cope," and "Management topics," D Brown, S Wilson.
11. August 15, 2000: Fort Carson, Col, Laboratory Joint Working Group Meeting, "Global laboratory information transfer," T Robillard, RG Craigmiles.
12. August 16, 2000: Fort Carson, Colo, Laboratory Joint Working Group, "Regional issues," "Strategic planning," S Wilson.
13. November 2000: Sheppard AFB, Tex, Biomedical Officer Management Orientation Course, "The ins and outs of workload recording," "Clinical laboratory management

indicators," "Laboratory Joint Working Group," "Laboratory standard cost methodology," "Downsizing: a model to help you cope," and "Management topics," D Brown, S Wilson.

PUBLICATIONS

1. Craigmiles R. President's message. *Society Scope*. Spring 2000. Society of Armed Forces Medical Laboratory Scientists Newsletter.
2. Brown R. Consultant's corner. *Society Scope*. Fall 2000. Society of Armed Forces Medical Laboratory Scientists Newsletter.
3. Craigmiles R. President's message. *Society Scope*. Fall 2000. Society of Armed Forces Medical Laboratory Scientists Newsletter.
4. Brown D, Wilson S, eds. *The Sum of All Fear: A Compendium of Laboratory Management Topics and Issues*. 2000. Self-published.



Steven A. Wilson, Lt Col, USAF, BSC
Chief

OFFICE OF LABORATORY MANAGEMENT

MISSION

Provides management consultation and training for the AFIP, 82 Air Force clinical laboratories, 18 histopathology centers, and 11 cytopathology centers. Supports activities of the Joint Service Laboratory Working Group. Develops policy guidance for the Air Force and Department of Defense for medical laboratory operations, including compliance and accreditation issues for the College of American Pathologists, the Joint Commission on Accreditation of Healthcare Organizations, the American Association of Blood Banks, the Food and Drug Administration, Health and Human Services, and the DoD Clinical Laboratory Improvement Program. Provides impact analyses for the OASD(HA) and the Director, AFIP. Reviews Air Force quality improvement data, including proficiency testing, accreditation, and regulatory inspection results, and provides recommendations to AF/SG personnel. Reviews equipment requests submitted from all Air Force laboratories and provides professional guidance and recommendations to laboratory officers and AFMLO personnel. Assists both the Air Force pathology consultant and associate chief, Biomedical Sciences Corps, in preparing staff packages for higher headquarters. Advises the AF/SG on manpower issues for clinical laboratory, cytology, and histopathology personnel. Provides assistance to the DoD and Air Force histopathology technician training program at AFIP. Develops, coordinates, and prepares laboratory biometrics policy and reports for Air Force clinical and anatomic pathology laboratories. Reviews productivity, utilization, and cost-effectiveness data for Air Force laboratories and makes recommendations for improvement and benchmarking. Reviews medical malpractice claims involving laboratory services. Provides professional and management guidance to 219 Air Force laboratory officers and 1,600 enlisted members.

STAFF

Steven A. Wilson, Lt Col, USAF, BSC, Chief, Office of Laboratory Management
Bailey H. Mapp, Maj, USAF, BSC, Fellow, Office of Laboratory Management
Yvonne E. Byrd, SSgt, USAF, NCOIC, Office of Laboratory Management

EDUCATION

Presentations and Seminars: The department presented 5 workshops or seminars encompassing 180 man-hours of departmental time, with approximately 300 attendees.

ACCOMPLISHMENTS

- **Laboratory Joint Working Group (LJWG):** The Office of Laboratory Management (OLM) acts as facilitator and recorder for this committee consisting of service laboratory medicine and pathology consultants, Health Affairs representatives, and an appointed laboratory representative from each TRICARE region. The LJWG facilitated DoD-wide laboratory consolidation and other initiatives to reduce reference laboratory, reagent, and utilization costs. Over \$31 million in savings was reported through FY00. OLM personnel are members of subcommittees on enrollment-based capitation, cytology consolidation, cost-accounting software, DoD benchmarking for laboratories, CHCS interconnectivity, and reference lab consolidation.
- **Benchmarking:** Submitted a request to TRICARE Management Activity CEIS proponent committee to incorporate DoD laboratory benchmarking within the Corporate Executive

Information System (CEIS). This will provide a means for both executive and laboratory management to assess productivity, utilization, and cost-effectiveness.

- Laboratory Composite Health Care System (CHCS) Interconnectivity: Participated in an ongoing working group to establish requirements and initiate the contracting process for achieving laboratory CHCS interconnectivity between DoD facilities, DoD and VA facilities, and DoD and civilian reference laboratories. The project was funded at \$2.5 million by OASD (HA) and is projected to deploy by 2001.
- Assisted in the establishment of the enrollment-based capitation stand-alone laboratory-pricing model, which will provide a funding mechanism for DoD-wide laboratory referral testing.
- Aided the development of a DoD Blood Program strategic plan to consolidate 50% of the blood program infrastructure.
- Participated in a working group to identify laboratory requirements for the Government Computerized Patient Record.
- Current Procedural Terminology (CPT): Provided updates to CPT coding for laboratories within DoD to include determining code ownership, assigning complexity values, and establishing print names. CPT is used for determining third-party reimbursement, reporting laboratory output/workload, and in enrollment-based capitation.
- Cytology Services: Rejuvenated progress on the cytology consolidation initiative through the Health Affairs-chartered Laboratory Joint Working Group (LJWG). Networking with each of the services to reassess and built a roadmap of progress. From planning group meetings, extracted critical issues and staffed a package approved by the Surgeons General. This effort drove formation of an implementation group with a clear charter in complete work on the remaining issues.
- Clinical Laboratory Management Indicators (CLMI): Initiated enhancements to the Air Force program that provides organizational comparison and benchmarking activities. Developed online data input via the AFIP intranet, significantly reducing data-processing time. Provided quarterly summary reports to all Air Force laboratories for use in local management.
- Major Mapp served as editor of the Society of Armed Forces Medical Laboratory Scientists newsletter, *Society Scope*. Published 4 issues that were distributed to over 600 society members.
- Reviewed medical malpractice claims for the AF/SG involving clinical laboratories.
- Secretariat for monthly video teleconferences for AF MAJCOM laboratory consultants; a forum to facilitate communication and strategic planning for the Air Force laboratory community.

PRESENTATIONS

1. February 2000: Washington, DC, Laboratory Joint Working Group, "DoD/VA sharing," "Enrollment-based capitation impact on laboratory," "DoD cytology consolidation," and "Strategic planning," S Wilson.
2. March 1-6, 2000: Los Angeles, Calif, Society of Armed Forces Medical Laboratory Scientists Meeting, "Downsizing: a model to help you cope," "The ins and outs of workload recording," and "Current AF laboratory management issues," S Wilson, Y Byrd.
3. June 2000: Sheppard AFB, Tex, Biomedical Officer Management Orientation Course, "The ins and outs of workload recording," "Clinical laboratory management indicators," "Laboratory Joint Working Group," "Laboratory standard cost methodology," "Downsizing: a model to help you cope," and "Management topics," S Wilson.
4. August 15-16, 2000: Laboratory Joint Working Group, "Regional issues," "Strategic planning," S Wilson.
5. November 2000: Sheppard AFB, Tex, Biomedical Officer Management Orientation Course, "The ins and outs of workload recording," "Clinical laboratory management indicators," "Laboratory Joint Working Group," "Laboratory standard cost methodology," "Downsizing: a model to help you cope," and "Management topics," S Wilson.

PUBLICATION

Brown D, Wilson S, eds. *The Sum of All Fears: A Compendium of Laboratory Management Topics and Issues*. 2000.



Francesca C. Music, CDR, MSC, USN
Director
Date of Appointment — 4 June 1999
Deputy Director — June 1997 to 3 June 1999

OFFICE OF STRATEGIC PLANNING

MISSION

The Office of Strategic Planning enhances the AFIP by giving direct support to the Director, Principal Deputy Director, and the Executive Committee through advice and planning, organizational assessment, and reengineering. The staff provides strategic direction to develop a modern infrastructure supporting world-class science. Specific programs include:

- Strategic Planning and Management
- Master Planning for a New AFIP Facility
- Management and Leadership Development
- Performance Improvement
- Reengineering
- Executive Initiatives

ORGANIZATION

The Office of Strategic Planning (OSP) staff is divided into executive strategic planners and administrative staff.

STAFF

Executive Strategic Planners:

Francesca C. Music, CDR, MSC, USN
Paul E. Bluteau, MA
Harry C. Coffey, MA, MA, HCA, FAAMA

Administrative:

Carol E. Ward, MSG, USA, NCOIC
Cheryl D. Colbert, Administrative Analyst

IMPACT:

1. OSP continued the strategic planning effort utilizing the original 7 teams of Consultation, Education, Recruitment and Retention, Genetics, Marketing, National Museum of Health and Medicine, and Facilities. OSP prepared a review of the annual strategic planning reports for the Director, and assisted in the conversion of the Facilities Committee/Master Planning-New Facility, Building 54 Renovation, and AFIP Facility Immediate Needs Subcommittees into the single Facilities and Equipment Planning Committee. In addition, the strategic planning teams were revised utilizing the new AFIP goals. AFIP's mission and vision were updated, and the foundation of 5 Institute-wide goals was established. Five goals were developed, each with an assigned champion: (1) Performance (Dr. Mullick), (2) Recruitment and Retention (Col Shekitka), (3) Operations (Col Jackson), (4) Readiness (CAPT Wagner), and (5) Collaborations (Dr. Noe). OSP continued to facilitate the Executive Committee to refine AFIP's mission and vision and establish a 5-year plan to achieve the Institute's goals through specific milestones. Soon thereafter, departmental strategic planning began, and OSP hosted separate sessions for each CAP and Administrative Services department. In 2000, the departments completed their initial planning, identified performance improvement issues for the Institute, and began

working toward departmental goals with their own staff. OSP also provided NMHM and their contracted strategic planning firm with information related to the Museum and the Institute.

2. Master planning efforts continued, in 2000, towards insertion of funds into DoD's Program Objective Memorandum for military construction of a new AFIP facility, with parallel efforts aimed at the continued renovation of Building 54. OSP supported WRAMC master planning activities with WRAMC-Department of Public Works, Army Corps of Engineers, Health Facilities Planning Agency, and contracted architectural/engineering firms to include Main Section Master Plan, Urban Design Framework, and Section 106 Report, and served as liaison to HFFA and the Department of the Army in support of obtaining funds for a new building. OSP responded through the Department of the Army, Office of Congressional Legislative Liaison to many congressional and senatorial inquiries about the need for a new facility, as well as additional leased space for current programs in the Gillette Building in Rockville, Md. OSP presented numerous briefings to ASA(M&RA), OTSG, and the Board of Governors concerning the need for a new facility.

3. OSP coordinated Institute actions throughout the year in response to executive level initiatives and command programs, and authored reports that were received by the Office of the Surgeon General (OTSG), Assistant Secretary of the Army (Manpower and Reserve Affairs) (ASA (M&RA)), Department of Defense (Health Affairs) (DoD(HA)), the Board of Governors, and several DoD-level agencies. OSP also prepared and gave briefings to OTSG, DoD(HA), and ASA(M&RA) regarding the Institute's consultation and Pathology Information Management (PIMS) systems, as well as the progress made in updating the AFIP/ARP Memorandum of Understanding, contract, and administrative procedures. OSP often supported performance improvement activities within AFIP, serving as consultant or active participant (internal consultation computer system (PIMS)), and business practice review in various areas of the Institute.

4. In parallel with the above programs, OSP continued AFIP Reengineering-Performance Improvement efforts in consultation and education. Working closely with OTSG, several reports were prepared describing internal savings realized through Institute efforts and acquisition of external funds through consultation, education, and research. Historical and demographic data related to consultation cases and educational courses were collected and analyzed, which assessed current status and supported future decisions related to consultation and educational programs.

5. OSP staff served as advisors to the Director, Principal Deputy Director, and the Executive Committee. In that capacity, the office prepared and gave multiple presentations to the Board of Governors, the Scientific Advisory Board, American Registry of Pathology Board Members, OTSG, ASA(M&RA), HFFA, and several DoD-level agencies related to OSP and AFIP functions and programs.

EDUCATION

Courses: CDR Music presented 5 immunohematology lectures at the TriService Blood Bank Fellowship Program, WRAMC, Washington, DC.

RESEARCH

Protocol: Combined Effects of Weapons of Mass Destruction (Nuclear, Biological, and Chemical Warfare Agents and Conventional High-Energy Explosives) on Human Red Blood Cells and Human Skin (Keratinocytes): An Electron Paramagnetic Resonance (EPR)/Spin Label Study, FC Music (Principal Investigator), AJ Carmichael, L Steel-Goodwin, CM Arroyo, and JA Centeno.

Patent Application: Spin Labeled Compounds as Magnetic Resonance Contrast Agents, Submitted June 1998, pending Department of the Army approval.

OTHER ACCOMPLISHMENTS

Collaborators:

Military

1. Headquarters, US Air Force Surgeon General's Office, Bolling Air Force Base
2. Armed Forces Radiobiology Research Institute, Bethesda, Md
3. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, Md

Committees:

Offices/Committee Memberships in National or International Societies:

FC Music:

1. American Association of Blood Banks, National Administrative Section
2. American Association of Blood Banks, Scientific Section Committee
3. US Navy Medical Service Corps Strategic Team 2.1
4. Member, American Association of Blood Banks
5. Member, Society of Armed Forces Medical Laboratory Scientists
6. Member, American College of Healthcare Executives
7. Member, American Society of Clinical Pathologists
8. Chair, Navy Professional Development Board

HC Coffey:

1. Member, American Hospital Association
2. Member, American Academy of Medical Administration

CE Ward:

Member, Race for the Cure

Faculty Appointments:

Clinical Instructor, Uniformed Services University of the Health Sciences, Bethesda, Md, FC Music.

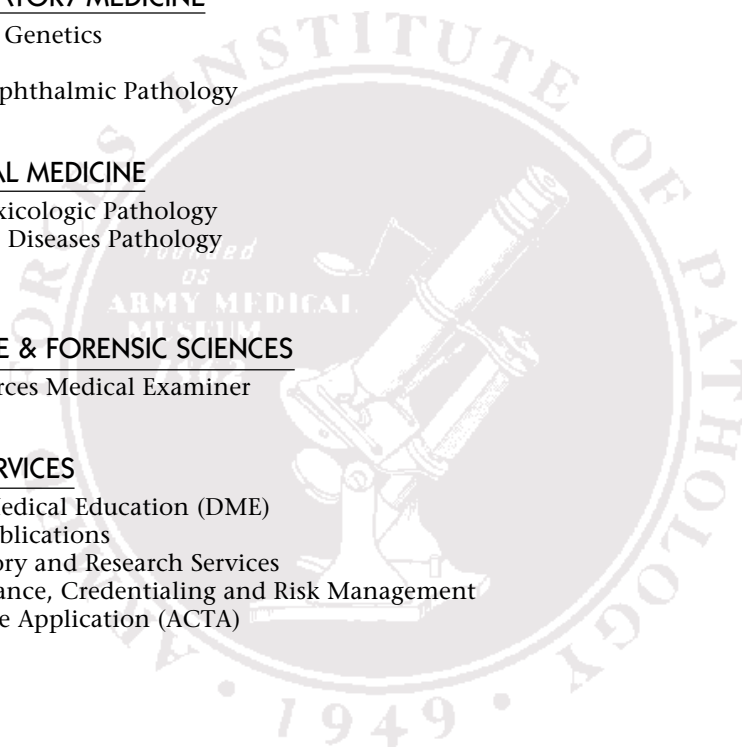
CENTER FOR ADVANCED PATHOLOGY



Florabel G. Mullick, MD, SES, ScD, Director, CAP

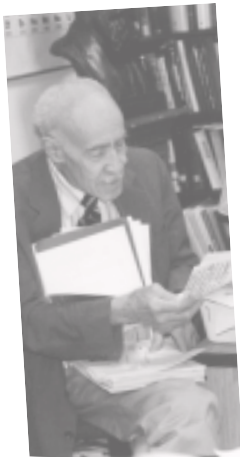
CAP OPERATIONS

- 1** GROUP 1 — MUSCULOSKELETAL & REPRODUCTIVE DISEASES
 - Dermatopathology
 - Genitourinary Pathology
 - Gynecologic and Breast Pathology
 - Orthopedic Pathology
 - Soft Tissue Pathology
- 2** GROUP 2 — HEART, LUNG & AERODIGESTIVE DISEASES
 - Cardiovascular Pathology
 - Endocrine and Otorhinolaryngic/Head-Neck Pathology
 - Hepatic and Gastrointestinal Pathology
 - Oral and Maxillofacial Pathology
 - Pulmonary and Mediastinal Pathology
- 3** GROUP 3 — SPECIAL LABORATORY MEDICINE
 - Cellular Pathology and Genetics
 - Hematopathology
 - Neuropathology and Ophthalmic Pathology
 - Scientific Laboratories
- 4** GROUP 4 — ENVIRONMENTAL MEDICINE
 - Environmental and Toxicologic Pathology
 - Infectious and Parasitic Diseases Pathology
 - Radiologic Pathology
 - Veterinary Pathology
- 5** GROUP 5 — LEGAL MEDICINE & FORENSIC SCIENCES
 - Office of the Armed Forces Medical Examiner
 - Legal Medicine
- 6** GROUP 6 — SPECIALIZED SERVICES
 - Center for Advanced Medical Education (DME)
 - Center for Scientific Publications
 - Epidemiology, Repository and Research Services
 - Office of Quality Assurance, Credentialing and Risk Management
 - Center for Telemedicine Application (ACTA)



CENTER FOR ADVANCED PATHOLOGY EXECUTIVE SUMMARY

The Center for Advanced Pathology (CAP) comprises 25 departments organized into 6 groups, administered by the Director, CAP and 12 staff. CAP provides secondary consultation to pathologists in the Armed Forces, the nation and around the world. The finished consult is added to the world's largest and most valuable repositories, leading to priceless education and research opportunities. The Center for Advanced Pathology's most important resource is our 216 professional, 117 administrative and 269 technical staff members. Our staff's world-class reputation among their peers is evidenced by the numerous honors, lectureships, and special awards bestowed on them, and the offices in national and international societies with which they have been entrusted. In 2000 these included the following:



Honors (6):

1. Finalist, Frank Brown Berry Prize for Federal Medicine - WM Meyers
2. "A" Designator Award for Professional Achievement in a Medical Specialty - M-M Tomaszewski
3. Elected Honorary Member, American Urological Association - FK Mostofi
4. Cum Laude Citation for Education Exhibit, Radiological Society of North America, November/December 2000: Idiopathic Interstitial Pneumonia Classification - WD Travis
5. Elected to Alpha Omega Alpha Medical Honor Society, Medical College of Virginia Chapter - JK Taubenberger
6. Selected Speaker, National Academy of Sciences, 12th Annual Frontiers of Science Meeting - JK Taubenberger

Named Lectures (4):

1. Jack Diner Memorial Lecture - ML Rosado de Christenson
2. JS Manchester Memorial Lecture - ML Rosado de Christenson
3. Edward R. Stitt Award Lecture - RL Becker
4. Dr. Devaraju Krishnamurthy Memorial Oration - SG Sabnis

Special Awards (17 awards to 16 individuals):

1. John Hill Brinton Award - K Wong
2. WRAMC Medallion for Outstanding Performance - K Wong
3. Defense Meritorious Service Medal - AL Morrison
4. Certificate of Appreciation, Provincial Government of Marinduque, The Philippines - JA Centeno
5. Certificate of Merit Award, American Roentgen Ray Society - MR Robbin, SE Smith, MD Murphey, JJ Choi, WD Matthews, PC Young
6. Examiner, Ultrasound Category, American Board of Radiology Oral Examination - PJ Woodward
7. Army Commendation Medal - B Blankenship
8. Army Commendation Medal - D Stoffregen
9. Army Commendation Medal - G Saturday
10. Army Commendation Medal - K Ryan
11. NATO Medal - D Stoffregen
12. NATO Medal - K Ryan
13. Kosovo Campaign Medal - D Stoffregen
14. Joint Services Achievement Medal - M Cooper
15. Meritorious Service Medal - M Cooper
16. Armed Forces Services Medal - K Ryan
17. Army Achievement Medal - J Novak





Faculty Appointments and Editorial Boards:

CAP members held 96 faculty appointments at university medical schools and accepted 22 visiting professorships. Twenty-four CAP members served on the editorial boards of professional journals, and members reviewed 493 manuscripts for professional journals in 2000.

Society Memberships and Offices: CAP members held 127 memberships or offices in national or international societies, including the following:

President/Vice President (6)

1. President, International Society of Urological Pathology - FK Mostofi
2. President-elect, Society of Thoracic Radiology - JR Galvin
3. President, Society of Forensic Toxicologists - ML Smith
4. Senior Vice President, C.L. Davis Foundation for the Advancement of Veterinary Pathology - BH Williams
5. Vice President, Pulmonary Pathology Society - WD Travis
6. Past President, American Academy of Oral and Maxillofacial Pathology – GL Ellis

Secretary/Treasurer (3)

1. Secretary-Treasurer, International Council of Societies of Pathology - FK Mostofi
2. Secretary, International Academy of Pathology – FG Mullick
3. Secretary, History of Pathology Society - AM Nelson

Chair/Director (24)

1. Head, WHO Collaborating Center for Histological Classification of Tumors - LH Sobin
2. Head, WHO Collaborating Center for Histological Classification of Tumors of the Urinary Tract and Male Genital System - FK Mostofi
3. Director, Chest Radiology Track, American Roentgen Ray Society - ML Rosado de Christenson
4. Chair, Committee on Peer Review, American Society of Dermatopathology - GP Lupton
5. Chair, Long-Range Planning Committee, American Academy of Oral and Maxillofacial Pathology - GL Ellis
6. Chair, NCCLS Subcommittees on Immunocytochemical Methods and PCR-Based Assays in Molecular Hematology - TJ O'Leary
7. Chair, National Image Interpretability and Reliability Standard Development Committee Application of NIIRS in Forensic Autopsy Pathology, National Association of Medical Examiners Proponent - WR Oliver
8. Chair, Task Force for National Science Foundation's Science and Technology Alliance, Ana G. Mendez University System – FG Mullick
9. Chair, National Science Foundation's Model Institutions for Excellence Advisory Board, Ana G. Mendez University System – FG Mullick
10. Chair, Scientific Program Committee of Binford-Dammin Society of Infectious Disease Pathologists - MK Klassen-Fischer
11. Chair, Continuous Professional Improvement - Chest, American College of Radiology - ML Rosado de Christenson
12. Chair, Nominating Committee, American Association for Women Radiologists - ML Rosado de Christenson
13. Chair, Presidential Advisory Board, Ana G. Mendez University System – FG Mullick
14. Director, Research and Education Foundation, American Association for Women Radiologists - ML Rosado de Christenson
15. Chair, Ad Hoc Committee on the AFIP, Association of Program Directors in Radiology - ML Rosado de Christenson
16. Chair, TNM/Prognostic Factors Project of the International Union Against Cancer - LH Sobin
17. Chair, American College of Laboratory Animal Medicine Training Program Recognition Committee - RA Cockman-Thomas
18. Chair, Research Subcommittee, Joint Committee for Clinical Hyperbaric Medicine, Air Force Surgeon General – FG Mullick



19. Chair, Pathology Panel, International Association for the Study of Lung Cancer – WD Travis
20. Chair, WHO Panel for Histologic Classification of Lung Tumors – WD Travis
21. Cochair, Multidisciplinary Panel for Classification of Idiopathic Interstitial Pneumonias – WD Travis
22. Cochair, Public Relations Committee, American Association for Women Radiologists - ML Rosado de Christenson
23. Cochair, 7th International Symposium on Metal Ions in Biology and Medicine - JA Centeno
24. Cochair, Environmental Mutagen Society Education and Student Members Committee - AE Director-Myska

Members of CAP attended 100 series of **continuing education** and fulfilled external commitments on 162 **official trips**. To fulfill their missions despite limited space, personnel, and budgets, CAP members entered into projects with various **collaborators**, including military/federal (118), civilian (151), and international (61).



THE CONSULT IS OUR MAIN THING.

For many departments in CAP, the **consult** is a set of glass slides with a section of stained tissue to be examined, pathologic changes identified, disease diagnosed, with subsequent correspondence with the contributor or an internal consult added to the case. That happened 85,261 times in 2000 for 81,347 patients. For 56% of our second opinion consults, our initial diagnosis or modification initiated or changed patient treatment. For 46% we confirmed the contributor's diagnosis. For other departments the consult is much different.

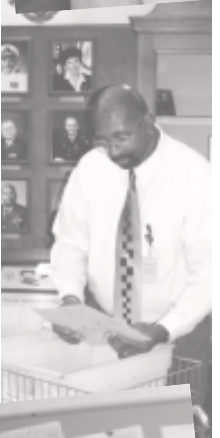
Staff of the **Office of the Armed Forces Medical Examiner** deployed to 8 airplane crash sites and the USS Cole terrorist attack to assess circumstances in the deaths of 41 air fatalities. Their consults searched for medical causes contributing to death, such as preexisting medical conditions, the influence of drugs, the victims' identification and location in the aircraft, and the efficacy of safety aids. To staff of the division of DoD DNA Registry, the consult is using relatives' mitochondrial DNA to identify the remains of service persons killed in past wars and to proactively collect DNA from active duty personnel as reference for an untoward event in the future. To the staff of the Division of Forensic Toxicology, the consult is an examination of body fluids to search for medications or illegal drugs.

To the staff of the **Department of Legal Medicine**, the consult is the medical records of a patient whose treatment or outcome was adjudicated. To the staff of Radiologic Pathology, x-rays, NMRs, and CAT scans are added to the glass slides for examination. To the staff of Accessions and Repository and secretarial staff throughout the Institute, the consult is a physical package to be assembled, digitized, tracked, completed and filed or returned. But the physical consult is only a part of our main thing.

Our efforts in **education** are aimed at alerting our contributors, clinicians, and even ourselves to recognize emerging diseases, gain new insights into known diseases, and give hands-on or telepathologic experience in diagnosing difficult diseases. These efforts, over 700,000 contact hours including distance learning, help the contributor know which case to send for a second opinion; help AFIP staff to know what information to include in the consult; and help identify special and rare cases for placement in the repository, guaranteeing retrieval will be meaningful for future consultation, education, and research.

Our efforts in **research** are aimed at examining new technologies such as magnetic resonance microscopy or discovering new methods to deliver the best possible consult. We search for new and emerging diseases and means for their diagnosis. We developed 37 new immunostains, 15 new DNA/RNA tests, 3 new enzyme assays, and 7 new toxicological assays in 2000. Descriptions of new diseases or diagnostic criteria are listed in the Impact section.

The total efforts of CAP are balanced between contributions to **military readiness** and to national and international medicine. Our consults to military treatment facilities (MTFs) support the health of military personnel. MTFs received 18,801 of our 59,854 second opinions in 2000. All 25,407 primary cytology examinations, which included a large portion of active duty women, supported Air Force MTFs. Our frequent deployments to military bases and posts were to examine causes and effects of military accidents in order to make the job safer. Our work with early detection of biologic weapon explosion will ensure a chance for life-saving treatment. Our work in international medicine will not only help those living in



areas of emerging infectious diseases, but will help when our service personnel are exposed in future deployments. Finally, our work toward faster, cheaper, and more accurate consults will serve pathologists, health care providers, and their patients around the world.

Impact of Efforts in Military Readiness:

The **Department of Orthopedic Pathology** performed biomechanical evaluation of chest body armor, measuring deformation due to projectile impact on chest body armor, and testing concepts for design and its role in the survivability of Soldiers and Marines. The project is a collaboration between the AFIP, the Uniformed Services University of the Health Sciences, the US Army Soldiers' Systems Command and the National Naval Medical Center.

The Microbiology Division of the **Department of Infectious and Parasitic Diseases Pathology** participated in the Joint Field Trials at Dugway Proving Grounds to demonstrate the efficacy of identifying bacteria isolated from liquid samples. Results were excellent, confirming use of PCR units in detecting biowarfare agent release. The division received \$1,570,100 from/for *Brucella* Vaccine Project; CPG-Induced Resistance to *Brucella*; CBMS Project; PCR Database Project; Biological Aerosol Warning System; Air Force Force Protection Battle Lab; DNA Primers/Probes Development; DARPA; and a Multicenter Study.

The **Office of the Armed Forces Medical Examiner's** autopsy examinations and written consultations were invaluable in promoting aviation safety and the administration of justice. Specific noteworthy missions of high national interest included the V22 Osprey crash and the investigation of the USS Cole terrorist attack.

The Armed Forces Repository of Specimen Samples for the Identification of Remains in the **OAFME** is the largest DNA repository in the world today. In 2000, AFRSSIR received DNA reference specimens from 1,014 separate collection sites. On 23 February the repository accessioned its 3,000,000th specimen. The active forces have collected specimens from about 87% of their current populations.

The Forensic Toxicology Division of the **OAFME** completed 4,613 cases, with 5.9 calendar days average turnaround time. These cases included 1,442 aircraft incidents, 41 air fatalities, 1,722 criminal/investigative cases, 241 quality controls, 105 surveys, and 1,062 postmortems. The military sources of the cases included 1,666 from Army, 964 from Air Force, 697 from Navy and 87 from the Marines.

The **Department of Oral and Maxillofacial Pathology** deployed four times in support of the Office of the Armed Forces Medical Examiner and the Departments of State and Defense. Deployments included two to Dover AFB for the Marana, Arizona Osprey mishap with 19 casualties, and for the USS Cole mishap with 19 casualties; one to Grenada, West Indies for the exhumation of 6 remains; and one to New River, NC for an Osprey mishap with 4 casualties.

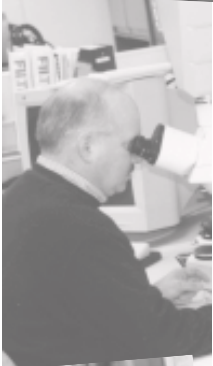
The **Department of Veterinary Pathology's** most significant program is the DoD Veterinary Pathology Residency, which trains and prepares all veterinary pathologists for ACVP Board Certification, specialists necessary for DoD biomedical research laboratories and clinical investigation. The department also evaluates military working dogs deployed during Operation Desert Shield/Storm as the only biological sentinel system within the theater, as an indicator of human disease.

The **Department of Environmental and Toxicologic Pathology** is the custodian of the only DoD Tissue Registries on Agent Orange, Former Prisoners of War, Persian Gulf War syndrome, and Chronic Arsenic Exposure, and is the only DoD facility where a methodology and registry for the study of adverse drug reactions and medical errors is available, with a collection of over 18,000 cases.

The **Department of Legal Medicine** plays a lead role in medical liability and quality assurance issues for the Department of Defense (DoD). The department operates the DoD Patient Safety Center, completing a medical error reporting pilot test of Region I hospitals, to include "close calls", "adverse events" and more serious "sentinel events" which occurred in military hospitals. To successfully accomplish the mission of Quality Assurance, the department accessions and reviews every DoD malpractice claim worldwide. Based on our prior analysis of costs savings achieved through close consultation, we estimate our department saves DoD well in excess of \$100 million per year by advising defense of spurious malpractice claims.

Because formal and informal training received at the AFIP is disseminated to the military medical community, the fellowship programs of the **Departments of Dermatopathology, Neuropathology, Hematologic Pathology, Pulmonary Pathology, and OAFME** have a significant impact on all branches of the military. The departments believe the high quality of





teaching translates into the best possible care for active duty and retired military members and their dependents.

The **Department of Cellular Pathology's** Air Force Cytocenter caseload of 25,407 contributes directly to military readiness in that a large proportion of these smears are from active duty women. The department's research sheds light on the world's most deadly pandemic, reducing threat from influenza as a bioterrorism agent. The department provides clinical genetics consultation to military treatment facilities in the national capital area and to DoD globally via telegenetics.

The **Department of Cardiovascular Pathology** conducts 2 research projects that have a direct impact on military readiness: 1) a study of sudden death in military recruits, and 2) a collaboration with Oregon Medical Laser Center to develop elastic grafts for the treatment of combat casualties.

Impact in Patient Care:

The **Department of Dermatopathology** changed 314 patients' diagnoses from a benign lesion to cancer or from cancer to a benign lesion, greatly changing treatment outcome and leading to a potential saving of millions of dollars in medical malpractice suits.

The **Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology** changed 247 patients' diagnoses from a benign lesion to cancer or from cancer to a benign lesion, greatly changing treatment outcome and leading to a potential saving of millions of dollars in medical malpractice suits and avoidable surgery costs.

The **Department of Cellular Pathology and Genetics' Molecular Diagnostics Laboratory** received 1,084 cases in consultation in 2000 (a 65% increase from the number of cases received in 1999). All 1,084 cases required molecular testing. These cases were received from 19 CAP departments and from direct consults from other institutions, and on average, 2.5 different tests were requested per case. This resulted in 2,759 separate molecular pathology assays completed in 2000.

In the neonate or pediatric patient, recurrent disease, inherited malformations, early death, sudden death, or litigation pose major problems for the family, physician, and medical treatment facility. The **Department of Cellular Pathology and Genetics' Division of Prenatal, Perinatal, and Placental Pathology** provides expertise in neonatal and pediatric pathology to DoD, local, and outside pathologists. This consultation is done prior to starting an autopsy or after the report is finalized. We add easy availability of clinical geneticists from the department, saving additional visits to physicians by the parents, and providing continuity in the evaluation of future pregnancies or living family members. Pediatric autopsy costs are quoted at approximately \$1,000 each. We reviewed 193 autopsies from federal sources, including 93 Army, 59 Navy, 35 Air Force, and 6 USPHS cases. The division performed 127 autopsies including 42 civilian, 19 Army, 16 Navy, 7 Air Force, 1 Public Health Service, and 42 autopsies received from other departments within the AFIP.

The **Department of Scientific Laboratories** produced 547,320 slides, used 167,241 regular and special stains and 70,540 immunostains for 30,772 of the 59,854 second opinion cases requiring further preparations before final examination. The **Department of Hematopathology** performed 21,323 immunostains for 2,607 additional second opinion cases. The **Department of Genitourinary Pathology** performed 4,065 direct immunohistochemical tests on 415 cases for 20 other AFIP departments or divisions, 29 tests on 7 cases for WRAMC, and 74 tests on one research project for NIH.

The **Department of Telemedicine's** electronic consultation program continues to be the largest of its kind, as well as the most efficient in terms of case turnaround time. In 2000 337 cases had an average turnaround time of 3.4 hours, down from 3.72 hours in 1999. The telemedicine program provides pathology consultation in near- or real-time, impacting at point of care and making significant contributions to patient care. The primary contributors to the department operate in small, independent laboratories with 1 or 2 pathologists, often without recourse to other consultative services.

The **Department of Pulmonary and Mediastinal Pathology** is world-renowned for its expertise in diagnosis of lung, pleural and mediastinal tumors, as well as non-neoplastic pulmonary disease. During 2000, 38 percent of 2,123 specimens were from Army, Navy, Air Force and Veterans Affairs medical facilities. Many military personnel, particularly in naval shipyards, have incurred asbestos exposure and are at risk for developing mesothelioma. Diagnoses of malignant mesothelioma are some of the most difficult cases we handle.

The **Department of Neuropathology and Ophthalmic Pathology** has made significant

contributions to the pathological features of childhood ataxia with diffuse central nervous system hypomyelination syndrome, cerebral amyloid angiopathy associated with brain infarcts in non-demented individuals, and in the 2000 WHO classification of central nervous system tumors. A close relationship has been established with the Department of Pathology and the Neurosurgery Service, WRAMC, for the interpretation of intraoperative consultations and tumor board cases.

The **Department of Environmental and Toxicologic Pathology** provides diagnostic services, toxicological and biochemical support to all branches of the military services on issues concerning environmental medicine, health, and impact of environmental agents on human and animal diseases. Special capabilities include: analysis and speciation of toxic metal species in tissues; microanalytical capabilities including scanning electron microscopy, energy dispersive x-ray microanalysis, infrared microscopy, and laser Raman microanalysis of tissues; determination of Agent Orange in tissues; and biochemical capabilities to determine environmental exposures (chromosome 7 inversion), enzyme biochemistry, metabolites and genetic mutations (adenylate deaminase gene (AMPD1) deficiency); and biochemical capabilities to determine Lactate Ammonia-Exercise-Ratio test to measure work and fatigue.

The **Department of Gynecologic and Breast Pathology** provided diagnostic consultation on 5,000 problematic cases, 40% representing military, VA, or public health cases. The department often serves as the final arbiter for difficult civilian cases that have been reviewed by several other recognized consultants. Our pathologists have saved many patients from improper management and many doctors and institutions from potential lawsuits. Rare cases that defy proper diagnosis by good pathologists are sent to us. We determine whether the lesions are benign or malignant and how best to manage them based on our past experience with similar lesions.

The Division of Nephropathology of the **Department of Genitourinary Pathology** has, in recent years, absorbed essentially all military and VA renal biopsies, and our caseload has risen from 90 to 233. All electron microscopies on renal biopsies have been eliminated in all military and most VA hospitals.

The **Department of Epidemiology, Repository, and Research Services** provides administrative support to the Center for Advanced Pathology by maintaining the AFIP Repository, consisting of over 2.7 million case files and associated paraffin blocks, microscopic glass slides, and formalin-fixed tissue specimens. The department receives and accession case materials, provides case pick-up and delivery service throughout the Institute, and responds to outside requests for release of medical information and pathologic materials.

Impact of Educational Outreach to Pathologists and Other Professionals:

Members of CAP delivered 1,649 presentations in 2000. Of the over 704,000 contact hours delivered in 2000, 580,600 man hours include formal presentations, seminars, courses, and distance learning, whereas 123,500 training hours represent contact with visiting students, residents, fellows and physicians coming to the AFIP 1 or more days.

Through the **Department of Medical Education**, AFIP and ARP offered 76 programs and 1 virtual conference to 11,754 pathologists, clinicians, legal medicine professionals, veterinary pathologists, radiologists, dentists, forensic anthropologists, military and civilian residents, and professionals in related disciplines.

By publishing *Legal Medicine*, the **Department of Legal Medicine** enabled 3,925 participants to receive 5 hours of Continuing Medical Education while studying legal complications in the practice of medicine. The department sends copies of *Legal Medicine* to all medical corps officers of the 3 military services. Many physicians in the Department of Veterans Affairs as well as other federal physicians receive complimentary copies of this valuable risk management educational product. Nearly half of the total credit hours were granted to military and other federal physicians. A *Journal of Nursing Risk Management* was also produced. This Internet-based publication is free to military nursing professionals.

The **Department of Radiologic Pathology** gave 506 presentations in 2000. The department's 5 Radiologic Pathology Courses last 6 weeks and were attended by 953 radiology residents. The course remains subscribed nearly 2 years in advance and is attended by the vast majority of diagnostic radiology residents in the United States. The department also conducted six international short courses in Spain, Austria, Portugal, Germany, Brazil, France, Canada, and Mexico. These courses were sponsored by the radiological societies of the host countries in association with the AFIP and the ARP.

Through the Histopathology Quality Assessment Program, the **Department of Quality Assurance** mailed 4 cases quarterly to all military and VA medical centers/hospitals. In 2000,





664 military and VA pathologists were awarded in excess of 7,794 hours of continuing medical education credit for participation in the program. On a bi-weekly basis, 4 cytopathology proficiency testing cases are mailed to 40 participating VA medical centers (all participating VA medical centers receive one mailing per quarter).

The worldwide distribution of publications produced by the **Center for Scientific Publications** has great impact on the Institute's reputation as a major international source of authoritative information, standardized classifications, and nomenclature. The outstanding quality of our illustrations, the hallmark of AFIP publications, has drawn continued praise in scientific journal reviews. During 2000 the center published 3 new AFIP Atlases of Tumor Pathology (third series) - Upper Aerodigestive Tract and Ear; Gallbladder, Extrahepatic Bile Ducts, and Ampulla of Vater; and Prostate Gland, Seminal Vesicles, Male Urethra, and Penis. The center published 2 new AFIP books - *Atlas of Gastrointestinal Endoscopy and Endoscopic Biopsies*, and *Pathology of Tropical Diseases: Vol. 1, Helminthiases*. The center published 2 CD-ROM versions of AFIP tumor atlases - Pituitary and Ovary. And the center published 2 new issues of the WHO Classification of Tumors series - Pathology and Genetics of Tumors: Nervous System, Digestive System.

The **Department of Dermatopathology** participated in 5 courses, 1 non-AFIP, 1 departmental, and 3 from other AFIP departments. In 2000, the department provided training for 44 military and civilian physicians, fellows, and residents in dermatology, pathology, and dermatopathology. Trainees spent an average of 38.5 days for a total of 1,693 trainee-days. Residents (797 federal, 352 civilian, 297 international) accounted for 1,146 trainee-days and were from Walter Reed Army Medical Center, National Naval Medical Center, local university medical centers, and other military teaching hospitals and civilian institutions across the country. The department's Dermatopathology Fellowship Training Program is accredited by the Residency Review Committee for Dermatology and Pathology under the Accreditation Council for Graduate Medical Education (ACGME). The program is accredited for 1 year of training for 2 fellows as a joint effort of the AFIP Department of Dermatopathology and the Department of Pathology and Dermatology Services, WRAMC and NNMC.

The **Department of Neuropathology and Ophthalmic Pathology** conducts the only military program in neuropathology fully accredited by the Accreditation Council for Graduate Medical Education, for training pathologists, neurosurgeons, and neurologists in the field of neuropathology. Our trainees have consistently received high marks in exams leading to board certification, and many have achieved international recognition for their research in neuropathology.

The **Department of Soft Tissue Pathology** presented at the IAP Conference in Nagoya, Japan (co-chair of the GIST symposium), the Kyushu International Symposium on Soft Tissue in Fukuoka, Japan, and the Conference on Soft Tissue Pathology in Krakow, Poland. Members of the department presented in AFIP courses locally and internationally, including those held in Valencia, Spain and Buenos Aires, Argentina, in collaboration with local organizers.

The **Department of Hepatic and Gastrointestinal Pathology** educated clinicians and pathologists through its weekly Thursday Clinicopathologic Conference in the metropolitan Washington area, its Annual Hepatic Pathology Course (now in its 21st year), and through several annual postgraduate courses of the American Association for the Study of Liver Diseases (AASLD).

The Division of Gastrointestinal Pathology in the **Department of Hepatic and Gastrointestinal Pathology** published the highly acclaimed and landmark *Atlas of Gastrointestinal Endoscopy and Endoscopic Biopsies*, jointly with the Mayo Clinic. The atlas facilitates clinicopathologic correlative diagnoses and enhances communication between gastroenterologists and pathologists. The atlas is unique in providing side by side endoscopic and histologic images.

The **Department of Oral and Maxillofacial Pathology** shares our unique slide repository resource through "hands-on" continuing medical education courses with microscopy workshops. The department uses the largest oral and maxillofacial pathology collection in the world to build educational resources. The Registry of Oral Pathology was established in 1935 and has continuously collected cases since.

The **Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology** completed study sets for ENT (790 slides) and for Endocrine Pathology (460 slides) in 2000.

The **Department of Infectious and Parasitic Diseases Pathology** published the first volume of the long-awaited update to *Pathology of Tropical and Extraordinary Diseases*. This new book, *Pathology of Infectious Diseases, Volume 1: Helminthiases*, provides the most comprehensive



description and illustration of the morphology and life cycles of helminths, and the history, clinical features, histopathology, diagnosis, and treatment of helminthic infections.

The AIDS Division, **Department of Infectious and Parasitic Diseases Pathology**, has developed the world's largest repository (>6,000 cases) of the pathology of HIV infection and AIDS. This new database has been the basis for a multidisciplinary course on diagnosis of indicator conditions of HIV infection and AIDS (August 2000) and for chapters in authoritative texts on the histopathology of the spectrum of disease in HIV infection and AIDS.

In the DoD Veterinary Pathology Residency Program, the **Department of Veterinary Pathology** trains and prepares all military veterinary pathologists for ACVP Board Certification, certified pathologists necessary to fill DoD biomedical research laboratories and clinical investigation directorates. The Registry of Toxicologic Pathology for Animals publishes the Standardized System of Nomenclature for Diagnostic Criteria and 3 Guides were published in 2000. These Guides are critical to the standardization of diagnostic terminology for veterinary toxicologic pathologists in drug safety studies. The department conducted a 30-week histopathology slide mail-out conference with 135 participating institutes in 16 countries. This conference is in its 49th year and no similar conference exists for the profession of veterinary pathology.

In the last 3 years the **Department of Genitourinary Pathology** has published 3 books for the World Health Organization and another on prostate cancer is in press. The books provide criteria for diagnosis of tumors. In a typical year, senior staff members lecture at 15 to 20 national or international meetings. The department also provides an annual course on genitourinary pathology, which is attended by all military residents in urology prior to taking their boards, and a weekend course on interpretation of prostate and bladder biopsies. An Internet-based course on urologic pathology is available on the Web.

Impact of Research to Improve Patient Care:

The **Department of Infectious and Parasitic Diseases Pathology's** Wayne M. Meyers was selected as one of 10 finalists for the 2000 Frank Brown Berry Prize in Federal Medicine. Since joining the AFIP in 1975, his collaborative research accomplishments include establishing the armadillo as an importance model for research in leprosy, the discovery of naturally acquired leprosy in non-human primates, and the discovery of *Mycobacterium ulcerans* toxin, its importance as a virulence factor and its immunosuppressive properties.

The **Department of Cardiovascular Pathology** performs detailed pathologic analyses on human stents, a technique used in 500,000 vascular interventions per year, and has the largest collection of autopsy stent specimens, including nearly 300 stented arterial segments. We are exploring the mechanisms of restenosis and stent failure and have proposed that arterial injury and inflammation are important mediators of restenosis. Our preclinical stent research program has investigated multiple novel stent designs and drug coatings designed to enhance biocompatibility and reduce in-stent neointimal growth. We have successfully performed immunohistochemistry on plastic-embedded stent sections to further enhance our understanding of the restenosis process.

The **Department of Genitourinary Pathology** provides pathology support for diagnosis, treatment and research for the Center for Prostate Disease Research (designed as a tri-service prostate specimen repository) mandated by Congress as authorized in Public Law 102-172. The AFIP is being considered as the center for the Uniformed Services Comprehensive Database and Tissue Repository for the Study of Epidemiology Detection, Natural History, and New Management Strategies for Prostate Cancer, with our department serving as a data and tissue repository. Prostatic biopsies, transurethral tissue, and total prostatectomy specimens will be sent to the AFIP. The repository will collect fresh and frozen tissue, blood samples, and formalin-fixed tissue from total prostatectomies, needle biopsies, and TUR specimens.

A study on the role of stromal elements in breast carcinomas, documented by the **Department of Gynecologic and Breast Pathology's** molecular studies, has opened new avenues of research and was published as a priority article in *Cancer Research*, the leading cancer research journal in the world. The markers we have developed for recognition of precursor lesions of breast cancer and some subtypes of ovarian tumors have simplified the diagnostic task of many pathologists and ultimately provide improved patient care. Our vast experience with markers and precursors of invasive breast carcinoma has led to a new classification scheme that will revolutionize the understanding of breast cancers and eradicate some serious problems associated with current approaches.

In 2000 the **Department of Soft Tissue Pathology** established that esophageal mesenchymal tumors include a 25% subset of KIT-positive gastrointestinal stromal tumors (GISTs), not



previously reported in this location. The department's study on 200 GISTs revealed that the exon 9, codon 502-503 insertion-duplication mutation of c-kit is a rare, small intestinal GIST-specific mutation with high lethality. We reported or refined several new soft tissue tumor entities, including pigmented neurofibroma and lipofibromatosis, a childhood soft tissue tumor, and the true nerve sheath myxoma that should be differentiated from cellular neurothekeoma. A nearly complete keratin profile of synovial sarcoma was established with the finding that this tumor has a highly complex pattern of different keratins, including variable expression of keratins 4, 6, 7, 8, 10, 13, 14, 16, 17, 18, 19, and 20.

The **Department of Cellular Pathology** is utilizing serial analysis of gene expression (SAGE) to determine the mRNA expression profile of tissues and tumors. To date, we have carried out SAGE studies characterizing several thousand transcripts in 2 gastrointestinal stromal tumors (GIST), 2 GIST cell lines, and several hematopoietic cell lines and assorted cell populations. We have also carried out a substantial number of comparative genomic hybridization (CGH) and spectral karyotyping (SKY) experiments on uveal melanomas, in an effort to identify regions associated with malignant behavior. We have developed tissue microarrays of gastrointestinal stromal tumors to characterize gene expression profiles in a high-throughput manner. The department installed 2 magnetic resonance microscopy systems that enable nondestructive imaging of tissues and small animals with a resolution of a few microns. We hope to demonstrate the utility of this technology in bridging the gap between radiologic imaging and light microscopy.

The **Department of Environmental and Toxicologic Pathology**, the U.S. Geological Survey, and Chinese scientists are identifying the "Etiology of Chronic Arsenosis in Southwest China." The department, the IAG and the FDA Division of Mechanics and Material Sciences are testing medical devices. The department, the USEPA, and the University of Kentucky are searching for the reproductive effects of arsenic poisoning.

The **Department of Infectious and Parasitic Diseases Pathology** continued the first human clinical trial employing ex vivo-generated dendritic cells for reinfusion to establish immunity to HIV-1. This includes an agreement with corporate partner Aventis-Pasteur, and a successful pre-IND meeting with the FDA, as well as the full support of the Division of Retrovirology, WRAIR. The department continued observations on the role of dendritic cells in dengue virus infection and provided scientific support for the Department of Vaccine Research, Division of Retrovirology, WRAIR with regard to the targeting of dendritic cells.

The Microbiology Division of the **Department of Infectious and Parasitic Diseases Pathology** extended studies of the pathogenesis of Buruli ulcer, especially in West Africa. Our studies have confirmed insects in swamp sediment as intermediate mechanical vectors for *Mycobacterium ulcerans*.

The Molecular Pathobiology Division of the **Department of Infectious and Parasitic Diseases Pathology's** Mycoplasma Research Program was the first to recognize that 2 unusual mycoplasmas, *Mycoplasma fermentans* and *Mycoplasma penetrans*, are associated with AIDS. The division was the first to discover and characterize the previously unknown mycoplasma *M. penetrans*, the first to demonstrate that chronic infection with mycoplasma could lead to malignant transformation of mammalian cells. The division developed a model system demonstrating a new molecular mechanism leading to cancer, and identified a mycoplasma membrane component that has anti-apoptotic effects and can induce immortalization of mammalian cells. Our laboratory pioneered the study of mycoplasma effects on the alteration of gene expression in infected mammalian cells.

The **Office of the Armed Forces Medical Examiner's** forensic anthropologist was instrumental in confirming the identification of the skeletal remains of those of Maryland murder victim Michelle Lee Dorr. The remains, buried for 13 years, were fully encrusted with plant roots. Soil samples collected from the site are incorporated into research data on human decomposition rates, as well as survival rates of human tissue exposed to the environment over time.

The Forensic Toxicology division of the **Office of the Armed Forces Medical Examiner** developed 7 new methods for toxicological analysis:

1. Detection of crack cocaine in postmortem specimens
2. Detection of smoked cocaine, pyrolytic methylecgonidine, and 6 metabolites in urine
3. Liquid chromatography-electrospray ionization mass spectrometry for the detection of lysergide and a major metabolite, 2-oxo-3-hydroxy-LSD in urine and blood
4. Gamma-hydroxybutyrate detection in blood, brain, and hair

5. Ketamine detection in urine by GC/MS
6. LC-MS screen for ketamine and metabolites
7. Benzodiazepines detection by LC/MS and GC/MS

The **Department of Veterinary Pathology** is evaluating military working dogs deployed during Operation Desert Shield/Storm, the only biological sentinel system within the theater, as an indicator of human disease. The department provided Laboratory Animal Medicine support for the research activities of the AFIP, State Department's Cooperative Threat Reduction Program (Nonproliferation/Science Cooperation Program) and DoD's Office of the Secretary of Defense, Strategy and Threat Reduction in the former Soviet Union. Laboratory Animal Medicine Division supports 1 of only 2 DoD facilities with a CT arm scanner and the only DoD facility with animal cardiac catheter capability.

The **Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology** produced 13 clinicopathologic studies in 2000: Kaposi sarcoma of major salivary gland origin (6 cases); malignant lymphoma of the thyroid gland (108 cases); primary chondrosarcoma of the head and neck in pediatric patients (14 cases); neuroglial heterotopias and encephaloceles of the middle ear and mastoid region (15 cases); tonsillar granulomas (22 cases); tonsillar lymphangiomatous polyps (26 cases); splenic angiosarcoma (28 cases); amyloidosis of the larynx (11 cases); extracranial sinonasal tract meningiomas (30 cases); primary thyroid teratomas (30 cases); lymphocyte-rich classical Hodgkin's disease (16 cases); primary chondrosarcoma of the head and neck in children (14 cases); and metastatic renal cell carcinoma to the pancreas (21 cases).

Impact of Local and National Collaborations:

The Armed Forces DNA Identification Laboratory of **OAFME** provided DNA testing services for the National Transportation Safety Board for 2 major projects in 2000. First, assisting the National Transportation Safety Board in the identification of 217 individuals killed in the Egypt Air disaster (still an active case). Second, assisting the NTSB in the identification of 88 individuals killed in the Alaska Airlines disaster (still an active case). We anticipate completion in 2001. These cases will represent the largest human remains identification cases performed in a single forensic DNA laboratory in history, illustrating once again the capabilities of AFDIL and the value of this organization.

The **Department of Hematopathology** has its own state-of-the-art immunohistochemistry laboratory which provides support for all intradepartmental (and many interdepartmental) cases. Using this laboratory, we supported numerous research projects within and outside the department, and introduced 6 new antibodies for use in paraffin sections: CD61, NFk B, Ik B, CD138, C-kit (C-19), CD7.

The **Department of Cardiovascular Pathology** received \$1,246,542 from the following private companies to support research in stents and other cardiovascular interventions: Isostent, Inc., Belmont, Calif; WL Gore and Assoc., Palo Alto, Calif; SciMed Life Systems, Inc., Maple Grove, Ill; Advanced Cardiovascular Systems – Guidant Corporation, Santa Clara, Calif; TransVascular, Inc., Menlo Park, Calif; Pharmasonics, Inc., Sunnyvale, Calif; Sorin Biomedica, Saluggia, Italy; Prolifix, Sunnyvale, Calif; AngioTrax, Sunnyvale, Calif; Intravascular DataScope, Clearwater, Fla; Vascular Innovation, Menlo Park, Calif; AVE, Santa Rosa, Calif; MicroTherapeutics, Irvine, Calif; Boston Scientific, Watertown, Mass; Micrus Corp, Mountain View, Calif; Coalescent Surgical Inc., Sunnyvale, Calif; B. Braun Corp, Germany; and Novartis, Switzerland.

Impact of International Collaborations and Efforts:

International outreach in 2000 included helping to organize the 13th International Congress of the International Academy of Pathology, and the 14th World Congress of Academic and Environmental Pathology meetings in Nagoya, Japan; the International Society of Urology, meeting in Singapore; and the 6th International Symposium on Metal Ions in Biology and Medicine in San Juan, Puerto Rico.

The **Center for Scientific Publications** promotes the development of standardized diagnostic nomenclatures and classifications of the World Health Organization (WHO) and the International Union Against Cancer (UICC), coordinates the revision of the WHO's International Histological Classification of Tumors and the UICC's TNM Classification, and oversees publication of the revised editions.

The Microbiology Division of the **Department of Infectious and Parasitic Diseases Pathology** collaborates with the following groups in its fight against leprosy and Buruli ulcer: Institute of Tropical Medicine, Antwerp, Belgium; Benin Ministry of Health, Cotonou, Benin; World Health Organization, Geneva, Switzerland; Ghanaian Ministry of Health, Accra, Ghana; Ivory



Coast Ministry of Health, Abidjan, Ivory Coast; and Togo Ministry of Health, Lomé, Togo. Members of the Division of Hepatic Pathology of the **Department of Hepatic and Gastrointestinal Pathology** are internationally recognized authorities on the pathology of liver diseases. In 2000 they were called upon by the International Academy of Pathology to present in Nice, France; Nagoya, Japan; Australia; New Zealand; and Cairo, Egypt. The department chair has participated in the last 2 annual meetings of the Arab Division of the IAP and the recent meeting of the Austrian Division of the IAP.

The Division of Molecular Pathology of the **Department of Cellular Pathology** again in 2000 earned extensive media coverage of research on the 1918 influenza virus: scientific and medical press – 9; newspapers – 18; international newspapers – 4; wire services – 1; magazines – 2; books – 2; television – 4; radio – 2; and Internet sites – 76.

Impacts of Specific Programs:

Deployments

CAP deployed its personnel and resources 350 times in support of military/federal installations and civilian institutions across the United States and abroad. Following is a brief summary of those deployments:

Military/Federal

1. Deployments for forensic dental identifications in support of the Departments of Defense (3) and State (1).
2. Deployments to military medical centers (173) as acting or consulting pathologists including WRAMC, Madigan AMC, US Naval Medical Center, and others in the USA and abroad.
3. Deployments to on-site military exercises (42), including performing 578 human autopsies and 1 deployment for 18 military working dog autopsies.
4. Deployments as representatives to boards, conferences, and field studies (39).
5. Deployments to military bases and installations as expert witnesses (41).

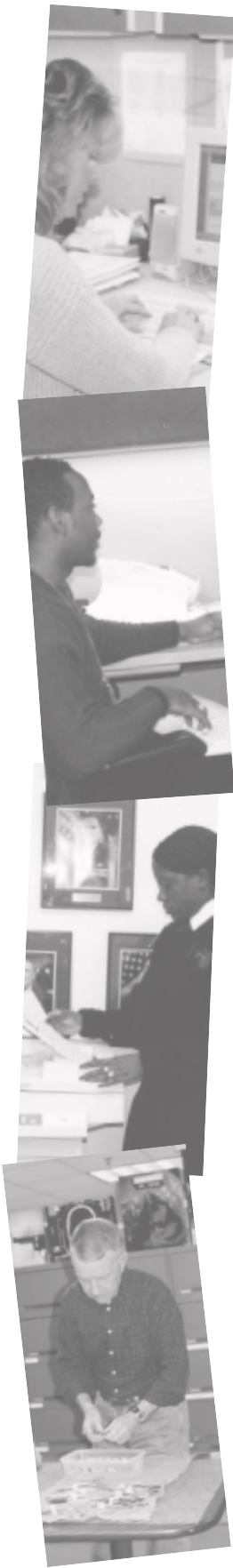
Civilian

Members of CAP were deployed as representatives to civilian universities, to meetings, conferences, etc. (23), international deployments (6) for presentations or field work, and as expert witnesses (28).

Members of CAP served on the **editorial boards** of 54 different publications: *American Journal of Dermatopathology*; *American Journal of Forensic Medicine and Pathology*; *American Journal of Surgical Pathology*; *Annals of Diagnostic Pathology*; *Annals of Internal Medicine*; *Applied Immunohistochemistry*; *Applied Immunohistochemistry and Molecular Morphology*; *Applied Spectroscopy Reviews*; *Archives of Medical Research, Mexico*; *Atlas of Non-neoplastic Diseases*; *Atlas of Tumor Pathology, 4th Series*; *Biological Trace Element Research*; *Cancer*; *Cardiovascular Pathology*; *Cardiovascular Radiation Medicine*; *Cell Vision*; *Chest Learning File*; *Circulation*; *Clinical Cancer Research*; *Current Opinion in Pulmonary Medicine*; *Ear, Nose, Throat Journal*; *Electronic Journal of Pathology and Histology*; *European Archives of Otorhinolaryngology*; *Federal Practitioner*; *FOCUS*; *Gamuts in Radiology*; *Gastroenterology*; *Hepatology*; *History of Pathology Society Newsletter*; *Human Pathology*; *International Histological Classification of Tumors*; *Investigative Ophthalmology and Visual Sciences*; *Journal of Biomedicine and Biotechnology*; *Journal of Forensic Sciences*; *Journal of Oral Pathology and Medicine*; *Journal of the American College of Cardiology*; *Journal of Urologic Pathology*; *Liver*; *Lung Cancer*; *Modern Pathology*; *Oral Surgery, Oral Medicine, Oral Pathology*; *Oral Radiology and Endodontics*; *Pathology Case Review*; *Pathology Research and Practice*; *Patologia: Revista Latinoamericana*; *RadioGraphics*; *Radiological Society of North America*; *Radiology*; *Revista Mexicana de Radiología*; *Spectrochimica Acta Part A: Molecular Spectroscopy*; *Spectroscopy*; *Toxicologic Pathology*; *Transplantation India*; *Vibrational Spectroscopy*; *Virchows Archiv*; and *WHO Classification of Tumors: Pathology and Genetics of Tumors*.

Members of CAP had 616 **publications** in 2000 as journal articles (286), books (13), book chapters (95), abstracts (186), and other publications (37) including syllabi, bulletins, CD ROMs, newsletters, etc. Topics included (excluding books and book chapters):

1. Morphological descriptions of tissue sections or radiographs of tumors, inflammatory conditions, or infections (92)
2. Molecular biologic examinations of diseases or disease agents and genetics (66)
3. Correlations of clinical and histopathologic features of patients with the same disease (52)





4. Descriptions of physiologic processes to describe disease or disease agents (49)
5. Compilations of research results or reviews aimed at educating professionals (45)
6. Use of new or cutting-edge technology (41)
7. Use of immunohistochemical processes to describe disease or disease agents (31)
8. Use of epidemiology to uncover disease processes or disease agents (24)
9. Better identification of treatment for disease or disease agent (24)
10. Description of risk or risk factors for disease or injury (20)
11. Classification of pathological entities (17)
12. Correlations of radiologic and pathologic features of patients with the same disease entity (15)
13. Help with diagnosis (7)

Quality Assurance

Members of CAP sent 31 teams to assess outside agencies, managed 36 QA programs, and performed 1,336 QA tests. Activities included:

1. The **Department of Legal Medicine's** most important area of involvement during 2000 was its new involvement in the Patient Safety Reporting program of the DoD. The National Defense Authorization Act of 2001 mandated that the AFIP would establish a Patient Safety Center and a Patient Safety database for the trending of medical errors within DoD medical treatment facilities. The department was a very active participant on the Patient Safety Working Group, which was chaired by OASD (HA) with membership from the TriCare Management Activity, the 3 military services, and the Uniformed Services University of the Health Sciences in addition to the AFIP. A DoD instruction was drafted during this time and a pilot test was initiated in October 2000. Initial pilot test training occurred October 2000 and the pilot test lasted 6 months. The second area of impact for the Department of Legal Medicine was its involvement with the MedTeams program. This team-training program has been developed in military and civilian health care facilities under the auspices of the Dynamics Research Corporation. The department has become the Contracting Officer Representative for this program and will oversee this program in future years. It is expected that the impact of this program will be significant in reducing medical error.
2. **Armed Forces DNA Identification Laboratory's** Quality Assurance Committee proposed and adopted a change to the monthly quality control process. Existing protocols require random selection of 100 accessioned DNA samples for redundant, blind, and independent testing by AFDIL and a contracted laboratory. The new procedure will increase sample testing to 200 specimens per month and eliminate the use of an independent laboratory. This change allows the repository to expand its test base without compromising the process, while reducing the operating expense of outside laboratory services.
3. The **OAFME's** Division of Forensic Toxicology participated in 6 proficiency tests (AL-1, SO, UDC, UT, T, NHTSA: Blood Alcohol); performed in-house proficiency testing for psilocin and gamma-hydroxybutyrate; and ran the DoD drug testing open and blind proficiency program worldwide, producing a total of 22,460 QC specimens for FY00 (4,906 military open proficiency specimens, 14,976 military blind proficiency specimens, 1,518 civilian proficiency samples, and 1,060 special certification validation specimens).

The **Center for Advanced Pathology** of the AFIP focuses on military service members of the past, present, and future. Through diagnostic consultation, we assist in the selection of appropriate medical treatment for military and civilian personnel and their families. Our observations and discoveries in laboratory medicine have helped to define and expand the frontiers of scientific understanding of injury and disease, and to improve the health care provided to service members now and in years to come.

GROUP 1—Musculoskeletal & Reproductive Diseases





Florabel G. Mullick, MD, ScD, SES
Director

CENTER FOR ADVANCED PATHOLOGY OFFICE OF THE DIRECTOR

MISSION AND ORGANIZATION

The Office of the Director oversees and coordinates the general activities of the Center for Advanced Pathology (CAP) and provides policy and scientific direction to the 25 separate and distinct departments of which it is comprised: Armed Forces Medical Examiner; Department of Cardiovascular Pathology; Department of Cellular Pathology and Genetics; Department of Dermatopathology; Department of Environmental and Toxicologic Pathology; Department of Genitourinary Pathology; Department of Gynecologic and Breast Pathology; Department of Hematopathology; Department of Hepatic and Gastrointestinal Pathology; Department of Infectious and Parasitic Disease Pathology; Department of Legal Medicine; Department of Neuropathology and Ophthalmic Pathology; Department of Oral and Maxillofacial Pathology; Department of Orthopedic Pathology; Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology; Department of Pulmonary and Mediastinal Pathology; Department of Radiologic Pathology; Department of Scientific Laboratories; Department of Soft Tissue Pathology; Department of Veterinary Pathology; Department of Telemedicine; Department of Medical Education; Department of Epidemiology, Repository and Research Services; Department of Credentialing, Quality Assurance and Risk Management; and the Center for Scientific Publications.

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SUMMARY AND OVERVIEW

In 2000, we accelerated our reengineering and restructuring plan, originally adopted in 1999 to improve quality, increase revenues, and insure better business practices. We are implementing a strategy to capitalize on our strengths and to focus on even higher growth opportunities in our traditional work environment and markets. This strategy requires us to make a significant change in the direction and focus of our Institute.

Too often we have chased lofty, short-term objectives at the expense of healthy, long-term goals. Recognizing the realities of our business practices, we are setting more realistic targets and providing financial discipline to every phase of our operations and at every level of our Institute.

There is no greater priority than to plan for our future. Our strategic plan is critical to the Institute's success. We are determined to execute a revitalized growth strategy. The success of this strategy is subject to many risks; however, I believe we have the will and the human resources to accomplish our goals.

It's all about people and possibility. People are doing more with less, amplifying human

capability while simplifying technological complexity. It's also about something I have been extolling for years— Managing with Respect. This means (1) communicating effectively and openly, (2) giving and seeking feedback, (3) valuing unique contributions, (4) promoting teamwork, and (5) setting the example.

In the following sections devoted to individual departmental accomplishments, you will clearly witness the results of our renewed focus and the commitment of our dedicated people. Their contributions and skills have been central to the record-setting achievements of 2000, and continue to provide us with a hopeful view of the future.

DEPLOYMENTS

1. January 10-16, 2000, San Juan, PR. Participant at Presidential Advisory Committee Meeting.
2. February 24-March 12, 2000, Hawaii (CILHI). Visit to Central Identification Laboratory.
3. March 9-12, 2000, San Juan, PR. Participant at the US Advisory Board Meeting.
4. March 24-27, 2000, New Orleans, La. Participant in Executive Meeting for the International Academy of Pathology (IAP).
5. May 7-10, 2000, San Juan, PR. Participant at the 6th International Symposium on Metal Ions in Biology and Medicine.
6. May 25-27, 2000, San Juan, PR. Participant at the Presidential Advisory Committee on Model Institutions of Excellence.
7. June 2-11, 2000, Valencia, Spain. Participant/Codirector at OECI/AFIP Joint Meeting.
8. June 13-14, 2000, San Juan, PR, Participant at the US Advisory Board Meeting.
9. August 23-29, 2000, San Juan, PR. Participant in the Assessment, Evaluation and Recommendations Task Force and 3rd AGM Symposium.
10. August 31, 2000, Aberdeen Proving Ground, Md. Visit to the Office of the Commanding General (USACHPPM).
11. September 21-23, 2000, Buenos Aires, Argentina. Served as Course Director for AFIP Team and participated in a joint pathology meeting between the AFIP and IAP South American Region.
12. September 9-11, 2000, San Juan, PR. Participant in the Technology Assessment Team at the Ana G. Mendez University System.
13. October 11-24, 2000, Japan. Participant at the 23rd International Congress of the IAP.
14. November 10-14, 2000, San Juan, PR. Participant at the Presidential Advisory Committee on Model Institutions of Excellence.
15. November 29-December 1, 2000, San Juan, PR. Participant in the Presidential Advisory Board Meeting for Science and Technology.
16. December 4-8, 2000, Guadalajara, Mexico. Director and member of the Faculty for the Spanish Course.
17. December 20-22, 2000, San Juan, PR. Visit to the Medical School Telepathology Collaboration Project.

DEPARTMENTAL INSPECTIONS AND VISITS

- January 19, 2000 - Dermatopathology
- February 9, 2000 – Genitourinary Pathology
- February 16, 2000 - Orthopedic Pathology
- March 8, 2000 - Endocrine Pathology
- March 15, 2000 - Ophthalmic Pathology
- March 22, 2000 - Cardiovascular Pathology
- March 29, 2000 - Oral Pathology
- April 5, 2000 - Pulmonary and Mediastinal Pathology
- April 12, 2000 - Cellular Pathology
- April 19, 2000 - Genetics
- April 26, 2000 - Hepatic and Gastrointestinal Pathology
- May 2, 2000 - Neuropathology
- May 17, 2000 - Hematopathology

May 24, 2000 - Scientific Laboratories
May 30, 2000 - Hematopathology (revisit)
May 31, 2000 - GYN Pathology
June 14, 2000 - Environmental Pathology
June 21, 2000 - Infectious and Parasitic Diseases Pathology
June 28, 2000 - Radiologic Pathology
July 12, 2000 - Veterinary Pathology
July 19, 2000 - Medical Examiner
July 26, 2000 - Legal Medicine
August 2, 2000 - Medical Education
August 9, 2000 - Epidemiology and Repository
August 16, 2000 - Scientific Publications
August 23, 2000 - Telemedicine Activity
August 30, 2000 - Soft Tissue Pathology

COMMITTEES

Offices/Committee Memberships in National and International Societies:

1. Member, CME Committee, Pan American Medical Association
2. Chair, Research Subcommittee, Joint Committee for Clinical Hyperbaric Medicine, Air Force Surgeon General
3. Department of Defense Representative to the National Advisory Environmental Health Sciences Council, National Institute of Environmental Health Sciences, Chapel Hill, NC
4. AFIP Representative to Armed Forces Epidemiology Board, Department of Defense (Health Affairs), Washington, DC
5. Member, Committee on Toxicology's Subcommittee on Permissible Exposure Levels (PELs) for Military Jet Fuels, National Research Council, Washington, DC
6. Member, Mars Sample Hazard Protocol Oversight and Review Committee, NASA
7. Member, External Advisory Committee, Center for Environmental Health, Jackson State University
8. Member, International Geological Correlation Program in Medical Geology, International Union of Geological Sciences and UNESCO
9. Chair, Presidential Advisory Board, Ana G. Mendez University System
10. Chair, National Science Foundation's Model Institutions for Excellence Advisory Board, Ana G. Mendez University System
11. Chair, Task Force for National Science Foundation's Science and Technology Alliance, Ana G. Mendez University System
12. Member, Scientific Advisory Board, FindCancerExperts.com, the patient Web resource for accurate cancer diagnosis
13. Member, Foundation for Advanced Education in the Sciences, Inc
14. Member, Society for Pediatric Pathology
15. Member, Prince George's County Medical Society
16. Member, United States and Canadian Academy of Pathology
17. Member, American Academy of Federal Service Physicians
18. Member, American Association for the Study of Liver Diseases
19. Member, Hans Popper Society
20. Member, Sociedad de Gastroenterologia, Puerto Rico
21. Member, Academy of Medicine of Washington
22. Member, Senior Executives Association
23. Secretary, International Academy of Pathology
24. Member, Association of Directors of Surgical Pathology
25. Member, American Medical Association

26. Trustee, History of Pathology Society
27. Member, Nominating Committee, History of Pathology Society
28. Member, Society of Toxicologic Pathologists
29. Member, Sociedad Latino Americana de Patologia
30. Member, Asociacion Mexicana de Patologos, A.G., Mexico
31. Member, Washington Society of Pathologists

AFIP Committees:

1. Hispanic Employment Manager
2. Member, Library Committee
3. Member, Search Committee
4. Member, Ash Library Committee
5. Member, Executive Committee
6. Member, Education Committee
7. Chair, Executive Committee of the Medical Staff
8. Chair, Tissue Utilization Committee
9. Chair, Pathology Information Management Systems (PIMS) Committee
10. Cochair, Editorial Board
11. HIV Coordinator for the United States Army's Retrovirus Group
12. Director, AIDS Program

Editorial Boards: The CAP Director serves as editorial reviewer for the following journals:

1. *Annals of Internal Medicine*
2. *Gastroenterology*
3. *Hepatology*
4. *Modern Pathology*
5. *Electronic Journal of Pathology and Histology*
6. *Annals of Diagnostic Pathology*
7. *Toxicologic Pathology*
8. *Patologia: Revista Latinoamericana*

PUBLICATIONS

Journal Articles

Specht CS, Lewin-Smith MR, Kalasinsky VF, Peterson MR, Mullick FG. The surgical pathology and cytopathology of US Persian Gulf War military veterans: identification of diseases endemic to the theater of operations. *Arch Pathol Lab Med.* 2000;124:1299-1301.

Abstracts

1. Centeno JA, Mullick FG. The International Tissue and Tumor Registry for Chronic Arsenosis: a source for environmental pathology studies. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*, Nagoya, Japan; 2000: 86-90.
2. Centeno JA, Mullick FG. Environmental pathology and health effects of arsenic poisoning: an introduction and overview. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*, Nagoya, Japan; 2000:135-140.

Monograph

Centeno JA, Martinez L, Ladich ER, Page NP, Mullick FG, Ishak KG, Zheng BS, Gibb H, Thompson C, Longfellow D. *Arsenic-Induced Lesions: A Histopathology Review*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.

Book Chapters

1. Ladich ER, Mullick FG, Centeno JA. Environmental pathology of metal exposures - skin. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:3-5.
2. Ladich ER, Martinez LE, Torres N, Ellis GL, Valenzuela AE, Mullick FG, Centeno JA. Measurements of dental implant corrosion products and histologic correlation in peri-

implant tissues. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:345-347.

3. Page NP, Centeno JA, Mullick FG, Martinez LE, Ladich ER, et al. The International Tissue and Tumor Registry for Chronic Arsenosis in Humans. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:759-761.



Joseph P. Jensen, BS, MPA
Administrator
Date of Appointment — 15 July 1993

CENTER FOR ADVANCED PATHOLOGY- OPERATIONS

MISSION

The Center for Advanced Pathology-Operations provides effective, efficient, and innovative operations support to the Director, CAP, and all departments within CAP.

ORGANIZATION

The center is organized into 8 sections:

1. Office of the Administrator
2. Financial and Logistics Support
3. International and Departmental Training Officer
4. Software Development
5. Medical Transcription Center
6. Group Administrators
7. Credentialing
8. Quality Assurance and Risk Management

STAFF

Candy Moroz, Financial and Logistics Support
SSgt Dave Vargas, Logistics Support
(A) Anthony Hawkins, Inventory Supervisor
(A) Kim Herring, Data Entry Technician
Leslie Middleton, International and Departmental Training, Group I & II Administrator
Michael Feeser, Software Development
Renee Upshur-Tyree, Administrator, Transcription Center
Wendy Baker, Group I & II Administrator
Michele Block, Group III, IV & VI Administrator
Sheila Norrington, Group III & IV Administrator
Mark Sacks, Group V Administrator/Credentialing
Frank Roberts, Quality Assurance and Risk Management

ACTIVITIES

1. The integration of the Department of Medical Education (formerly, the Center for Advanced Medical Education), the Center for Scientific Publications, the Department of Epidemiology, Repository and Research Services, and Quality Assurance and Risk Management functions under the management control of the Director, Center of Advanced Pathology, continues. This reorganization has streamlined management functions and better supports the mission of CAP.
2. The administrative support staff in the Center for Advanced Pathology has continued to refine and improve upon the support to the departments of the Center, including providing primary secretarial support to departments either directly through the group

administrators or indirectly by contract with individuals, as required. Over the past year, the financial reports provided by CAP/OPS were the only financial management tools provided to the departmental chairs due to a computer-linkage problem by AFIP/ Resources Management and the Department of the Army Finance Center in San Antonio, Tex. The group administrators were also able to guide the departmental chairs through administrative actions to improve secretarial staff through training (intramural or extramural) and enforced personnel actions, as required. Through the direct efforts of the group administrators at all levels, the Center has been able to manage some modernization of equipment with our first baseline no-growth budget provided to the AFIP.

3. The renovation of the South Wing of the AFIP continues (approximately 55,000 sq ft of administrative/laboratory space). Because of contractor difficulties, we do not anticipate reoccupying this space for at least another 2 years. This program has taken on new life with the assignment of an architect as the chief of Logistics and his close working relationship with Health Facilities Planning Agency. This relationship has begun in earnest, with funding and activity for this project that has not existed since our vacating of the area in October 1996.
4. The initiation of the Pathology Information Management System (PIMS) with Michele Block as the primary interface between the departments and the Information Management Division has been deployed and is being used by all departments. This program is designed to improve and reduce administrative handling of the consultation cases at all levels, and is maturing into all that was anticipated. Its continued development and refinement will allow the program to achieve its goals.

DEPARTMENTAL AND INTERNATIONAL TRAINING OFFICE

MISSION

The Departmental and International Training Office coordinates and monitors the AFIP's study and training activities and ensures activities of the ARP are integrated according to all regulatory, legal, and service constraints.

SCOPE

The office is responsible for the coordination of all training and visits to the AFIP, and for ensuring that all Department of Defense guidelines and regulations are adhered to. It works closely with the Department of Medical Education and coordinates all international foreign training requests through appropriate channels. Additionally, the office serves as the liaison between the AFIP and the Office of the Army Surgeon General (OTSG) and/or the United States Department of State, as appropriate. The office is responsible for ensuring all training initiatives comply with governing regulations and maintain compliance with approved international agreements or applicable affiliation agreements.

In addition to services available through the Department of Medical Education, the AFIP also offers trainees and visitors an opportunity to participate in hands-on training and study programs. The AFIP offers many educational opportunities to those interested in training rotations, fellowships, etc. The AFIP's unique ability to offer observer training allows individuals to train and/or visit in one of the AFIP's specialized departments and participate in varied staff conferences. We offer one-on-one instruction with staff pathologists and the opportunity to participate in AFIP activities, providing an optimal training environment. For additional information, please visit the AFIP Web site at <http://www.afip.org>.

ACCOMPLISHMENTS

The office is continuing an ongoing initiative to redesign the training database. The coordinator has made significant strides towards this end, enabling the system to capture an assortment of information on all trainees and visitors, such as military affiliation, status, program category, fee assignment/payment, demographic information, man-workdays, etc.

The office processed approximately 230 international approvals for Department of Medical

Education and Radiology courses, coordinated approximately 300 requests for interdepartmental training, and earned the Institute over \$103,749 in training-fee reimbursables.

The recent merger of the United States Information Agency into the US Department of State required the office to implement changes in training policy and processing procedures. OTSG has also reorganized and implemented several new procedural changes, necessitating that the Institute review processing/coordination procedures to ensure that the AFIP is in compliance with the newly reformed guidelines. To that end, the office successfully implemented an international agreement requiring OTSG concurrence. The coordinator has also expanded the AFIP's relationship with the Security Assistance Training Field Activity (SATFA) by linking the AFIP's Web page to the SATFA Security Assistance Network Web page in an effort to increase the Institute's international educational base. Additionally, to more efficiently disseminate training-related information to Institute personnel, the office has implemented and published an Information Sheet, and has established a Training Office Bulletin Board.

The coordinator also serves as the Science and Engineering Apprentice Program laboratory coordinator. This program, sponsored by George Washington University, places academically talented high school students with an interest and ability in science and mathematics in DoD laboratories for 8 continuous weeks during the summer (June 19 – August 11, 2000), working with scientists and engineers who act as mentors. The AFIP has participated in this program for many years and last year hosted 18 students.



GROUP 1

MUSCULOSKELETAL & REPRODUCTIVE DISEASES

DERMATOPATHOLOGY

GENITOURINARY PATHOLOGY

GYNECOLOGIC & BREAST PATHOLOGY

ORTHOPEDIC PATHOLOGY

SOFT TISSUE PATHOLOGY



George P. Lupton, MD
 Chair
 Date of Appointment - 1 July 1988

DEPARTMENT OF DERMATOPATHOLOGY

MISSION

The Department of Dermatopathology provides consultation services and conducts research and educational projects in the field of dermatopathology.

STAFF

Medical:

- George P. Lupton, MD, Chair
- Maria-Magdalena Tomaszewski, COL, MC, USA, Assistant Chair
- Luke S. Chung, COL, MC, USA
- John C. Moad, LTC, MC, USA
- Walter L. Rush, MD
- Sylvana M. Tuur-Saunders, MD
- (A) Petra Milda, MD
- (A) Kim Ruska, MAJ, MC, USAF

Administrative:

- Clara Desane
- Margaret King
- Viola Penn

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	3,155
Army	1,301
Navy	811
Air Force	1,043
Federal	1,666
VA	1,633
USPHS	31
OFA	2
Civilian	2,608
Interdepartmental	1,199
 Total	 8,628

The staff reviewed and reported 7,429 accessioned federal and civilian consultations, including SERS and SERA cases submitted by the Department of Veterans Affairs (VA) and VA compensation claims cases. The department also rendered opinions on 1,199 intramural consultations and reviewed cases from the Department of Legal Medicine.

The total 8,628 cases required the following types of procedures and analyses:

- H&E stains: 12,519

- Special staining: 1,802
- Immunohistochemical staining: 13,347
- Electron microscopy: 3
- Direct immunofluorescence: 16 tests for 10 cases
- HPV in situ hybridization: 182 slides for 55 cases
- Molecular biology study: 634 tests for 209 cases
- Contributor slides: 20,822
- Total recuts studied: 34,383

Our department made no change in the contributor diagnosis in 4,251 cases, a minor change in diagnosis in 885 cases, and a major change in diagnosis in 238 cases. We received 1,991 cases with no contributor diagnosis.

Impact:

Many of the accessioned federal and civilian consultations were difficult cases, such as melanocytic lesions, which could present high-risk medicolegal problems. We changed 238 diagnoses from benign lesion to cancer or from cancer to benign lesion, greatly changing treatment outcomes and potentially saving millions of dollars in medical malpractice suits.

Quality Assurance:

During 2000, our staff participated in quality assurance and risk management (QA/RM) activities at regularly scheduled departmental conferences, and pursued a comprehensive departmental quality assurance plan with monthly reporting of QA/RM issues.

EDUCATION

Presentations and Seminars: Members of our department made 27 presentations at professional conferences, symposia, and annual meetings, representing a total of 2,850 man-hours. A complete list of titles, dates, and locations is listed at the end of this report. Department staff presented teaching and diagnostic slide conferences three times weekly for staff pathologists, dermatopathology fellows, residents, and visiting physicians. We also participated in teaching activities at the AFIP, such as professional staff conferences and the Quarterly AFIP/VA and Military Histopathology Quality Assessment Program.

Courses: Members of the department participated in 5 courses: 1 non-AFIP, 1 departmental, and 3 nondepartmental.

Trainees: In 2000, the department provided training for 44 military and civilian physicians, fellows, and residents in dermatology, pathology, and dermatopathology. Trainees spent an average of 38.5 days in our department, for a total of 1,693 trainee-days.

Residents: A total of 1,146 trainee-days were provided to residents (797 federal, 352 civilian, and 297 international) assigned to our department on a rotation basis from teaching facilities including Walter Reed Army Medical Center, National Naval Medical Center, Washington Hospital Center, Howard University Medical Center, Georgetown University Medical Center, George Washington University Medical Center, and other military teaching hospitals and civilian institutions across the country. Four dermatopathology fellows (3 military and 1 civilian), 8 dermatology residents (4 military and 4 civilian), 17 pathology residents (5 military and 12 civilian), and 13 visiting dermatologists/pathologists (2/11) participated in our program.

Fellows: Our department's Dermatopathology Fellowship Training Program is accredited by the Residency Review Committee for Dermatology and Pathology under the Accreditation Council for Graduate Medical Education (ACGME). The program is accredited for 1 year of training for 2 fellows as a joint effort of the AFIP Department of Dermatopathology and the Department of Pathology and Dermatology Services, WRAMC and NNMC. To qualify for a training appointment, dermatopathology fellows must be board-certified or board eligible in dermatology and/or pathology. After successful completion of 1 year of training, fellows are eligible to apply to take the Examination for Certification of Special Qualification in Dermatopathology, an annual exam administered jointly by the American Board of Dermatology (ABD) and the American Board of Pathology (ABP).

During the academic year 1999-2000, 3 physicians (1 Army dermatologist, 1 Navy dermatologist, and 1 civilian pathologist (a Callender-Binford Fellow sponsored by the American

Registry of Pathology) were trained as dermatopathology fellows. One other physician (Army pathologist) began his fellowship program in July 2000.

Educational Aids: Fourteen dermatopathology teaching sets (10 sets of glass slides and 4 sets of 35-mm slides) are available through interlibrary loan. The sets are used extensively by fellows, residents, and medical students, and by residents throughout the country preparing for certification examinations in dermatology and dermatopathology.

RESEARCH

Publications: In 2000, department staff published 6 journal articles and 2 abstracts. Complete bibliographical information is listed at the end of this report.

Projects: Three ongoing projects were reviewed and are in progress:

1. Nodular Hyperplasia in Congenital Nevi
2. Spindle Cell and Epithelioid Cell Nevi with Atypia and Metastasis (Malignant Spitz Nevus): A Follow-up and Immunohistochemical Study
3. Malignant melanoma: Tumor microarray.

OTHER ACCOMPLISHMENTS

Collaborators: One abstract was published jointly with the Department of Hematopathology, AFIP.

Honors: The “A” designator award for professional achievement in medical specialty:

- GP Lupton (1987)
- M-M Tomaszewski (2000)

Committees:

Editorial Boards:

American Journal of Dermatopathology — GP Lupton

Offices and Committee Memberships in National and International Societies:

Chair, Committee on Peer Review, American Society of Dermatopathology — GP Lupton

Faculty Appointments:

1. Uniformed Services University of the Health Sciences, Bethesda, Md — GP Lupton
2. George Washington University School of Medicine, Washington, DC — GP Lupton

Continuing Education:

Department staff attended 7 training courses in 2000, provided at the following venues:

1. American Academy of Dermatology
2. American Society of Dermatopathology
3. International Society of Dermatopathology
4. AFIP Anatomic Pathology Review Course
5. United States and Canadian Academy of Pathology
6. 15th Combined Skin Pathology Course
7. Dermatopathology workshop (AFIP/ARP)

Official Trips: Members of the department took 2 official trips in 2000, funded by AFIP/ARP.

PRESENTATIONS

1. February 2000: Washington, DC, Department of Pathology, Howard University Hospital, “Inflammatory lesions of the skin,” SM Tuur-Saunders.
2. March 2000: Baltimore, Md, Department of Pathology, University of Maryland, “Infectious diseases of the skin,” SM Tuur-Saunders.
3. March 2000: Atlanta, Ga, Emory University School of Medicine, Emory Dermatology Day, The Robert and Patricia Fine Lecture, “Pitfalls in the histopathologic diagnosis of pigmented lesions,” GP Lupton.
4. April 2000: Silver Spring, Md, AFIP Course, 10th Anatomic Pathology Review and Update, “Melanocytic lesions of the skin,” GP Lupton.
5. April 2000: Silver Spring, Md, AFIP Anatomic Pathology Review Course, “Cutaneous

- adnexal neoplasms," SM Tuur-Saunders.
6. April 2000: Silver Spring, Md, AFIP Course, 10th Anatomic Pathology Review and Update, "Inflammatory dermatoses, a diagnostic approach," WL Rush.
 7. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Recent developments in cutaneous vascular neoplasms," SM Tuur-Saunders.
 8. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Potentially problematic melanocytic lesions (I)," GP Lupton.
 9. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Potentially problematic melanocytic lesions (II)," GP Lupton.
 10. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Cutaneous lymphoma," M-M Tomaszewski.
 11. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Atypical nevus vs malignant melanoma," JC Moad.
 12. May 2000: Arlington, Va, AFIP/ARP Course, The Dermatopathology Workshop, "Inflammatory dermatoses, a diagnostic approach," WL Rush.
 13. May 2000: Landstuhl Army Medical Center, Germany, Dermatopathology Workshop, "Inflammatory skin diseases," M-M Tomaszewski.
 14. May 2000: Landstuhl Army Medical Center, Germany, Dermatopathology Workshop, "Melanocytic lesions," M-M Tomaszewski.
 15. May 2000: Landstuhl Army Medical Center, Germany, Dermatopathology Workshop, "Cutaneous lymphomas," M-M Tomaszewski.
 16. May 2000: Landstuhl Army Medical Center, Germany, Dermatopathology Workshop, "Fibrohistiocytic tumors of the skin," M-M Tomaszewski.
 17. September 2000: Rockville, Md, AFIP Telepathology Course, "Cutaneous lesions," SM Tuur-Saunders.
 18. September 2000: Buenos Aires, Argentina, Joint Pathology Meeting AFIP-International Academy of Pathology (South America Division), "Pitfalls in the histopathologic diagnosis of pigmented lesions," GP Lupton.
 19. September 2000: Buenos Aires, Argentina, Joint Pathology Meeting AFIP-International Academy of Pathology (South America Division), "Problematic melanocytic lesions of the skin," GP Lupton.
 20. September 2000: Buenos Aires, Argentina, Joint Pathology Meeting AFIP-International Academy of Pathology (South America Division), "Malignant eccrine neoplasms," GP Lupton.
 21. October 2000: Baltimore, Md, 37th Annual Meeting of the American Society of Dermatopathology, "ASDP self-assessment course," SM Tuur-Saunders.
 22. October 2000: Baltimore, Md, 37th Annual Meeting of the American Society of Dermatopathology, "CD30 (Ki-1) positive cells in patch/plaque stage mycosis fungoides: report of three cases," M-M Tomaszewski.
 23. October 2000: Baltimore, Md, 37th Annual Meeting of the American Society of Dermatopathology, "Consultations in dermatopathology (I), malignant melanoma: yes or no?" GP Lupton.
 24. October 2000: Baltimore, Md, 37th Annual Meeting of the American Society of Dermatopathology, "Consultations in dermatopathology (II), malignant melanoma: yes or no?" GP Lupton.
 25. October 2000: Baltimore, Md, 37th Annual Meeting of the American Society of Dermatopathology, "Pediatric melanocytic lesions," JC Moad.
 26. December 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Panniculitis," M-M Tomaszewski.
 27. December 2000: Philadelphia, Pa, Duhring Lecture Series, Department of Dermatology, University of Pennsylvania Medical Center, "Malignant eccrine neoplasms," GP Lupton.
 28. December 2000: Washington, DC, George Washington University School of Medicine, Department of Pathology, "Tumors of the fibrous tissue involving the skin," M-M Tomaszewski.

PUBLICATIONS

Journal Articles:

1. Duke WH, Sherrod TT, Lupton GP. Aggressive digital papillary adenocarcinoma (aggressive digital papillary adenoma and adenocarcinoma revisited). *Am J Surg Pathol.* 2000;24:775-784.
2. Liotta EA, Turiansky GW, Berberian BJ, Sulica VI, Tomaszewski M-M. Unusual presentation of secondary syphilis in 2 HIV-1 positive patients. *Cutis.* 2000;66:383-386, 389.
3. Tomaszewski M-M, Abbondanzo SL, Lupton GP. Extranodal marginal zone B-cell lymphoma of the skin: a morphologic and immunophenotypic study of 11 cases. *Am J Dermatopathol.* 2000;22:205-211.
4. Abbondanzo SL, Rush WL, Bijwaard KE, Koss MN. Nodular lymphoid hyperplasia of the lung: a clinicopathologic study of 14 cases. *Am J Surg Pathol.* 2000;24:587-597.
5. Rush WL, Andriko JA, Galateau-Salle F, Brambilla E, Brambilla C, Ziany-bey I, Rosado-de-Christenson ML, Travis WD. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol.* 2000;13:747-754.
6. Rush WL, Andriko JAW, Taubenberger JK, Nelson AM, Abbondanzo SL, Travis W, Koss MN. Primary anaplastic large cell lymphoma: a clinicopathologic study of five cases. *Mod Pathol.* 2000;13:1285-1292.

Abstracts:

1. Aquilera NSI, Tomaszewski M-M, Moad JC, Bauer FA, Taubenberger JK, Abbondanzo LS. Cutaneous follicle center lymphoma (FCL): a study of 24 cases. *Mod Pathol.* 2000;13:59A. Abstract 333.
2. Tomaszewski M-M, Chung LS, Lupton GP. CD30(Ki-1) positive cells in patch/plaque stage mycosis fungoides: report of three cases. *J Cutan Pathol.* 2000;27:575.



F. K. Mostofi, MD
Chair
Date of Appointment—1 July 1948

DEPARTMENT OF GENITOURINARY PATHOLOGY

MISSION

The Department of Genitourinary Pathology carries out consultation, research, and clinico-pathological studies of the kidney, bladder, prostate, testes, and penis. The department strives to maintain and expand its research and educational programs for excellence in consultation for military and federal agencies and civilian pathologists, and to provide pathology support for military and VA urology research as requested.

ORGANIZATION

The department is organized into 3 divisions.

1. Division of Nephropathology — Sharda G. Sabnis, MD, Chief
2. Division of Genitourinary Pathology — Charles J. Davis Jr, MD
3. Division of Genitourinary Research — Isabell A. Sesterhenn, MD

STAFF

Medical:

- F. K. Mostofi, MD, Chair
- Charles J. Davis Jr, MD, Deputy Chair, ARP
- Isabell A. Sesterhenn, MD, Senior Pathologist
- Robert W. Brinsko, LCDR, MC, USNR, Staff Pathologist
- (D) David Burch, LCDR, MC, USNR, Staff Pathologist
- (D) Chi Kim, HO, COL, MC, USA, Staff Pathologist
- Raj Shekar, COL, MC, USN, Staff Pathologist
- Wei Zhang, MD, Fellow
- (A) Michael O'Donoghue, LCDR, MC, USNR

Technical:

- Frank A. Avallone, Research Biologist
- Denise Young, Histopathology Technologist, ARP
- (A) Rex C. Hartzoge, Histopathology Technologist

Administrative:

- (D) Virginia P. Coussa, Secretary to the Chair
- Annette D. Allen, Secretary, VA
- Harriet M. Murphy, Secretary, ARP
- (D) Viola Penn, Secretary, ARP
- (A) Renee Upshur-Tyree

DIAGNOSTIC CONSULTATION

<i>Cases</i> _____	<i>Completed</i>
Military	1,568
Army	610
Navy	164
Air Force	794
Federal	1,365
VA	1,347
USPHS	5
OFA	13
Civilian	2,241
Interdepartmental	515
Total	5,689

3,166 cases for consultation, 98 for education, and 135 for research required the following types of procedures and analyses:

- H&E stains: 24,476 slides (Scientific Laboratories)
- H&E stains: 8,149 slides (Genitourinary Lab)
- Special stains: 574 slides
- Immunohistochemical staining: 5,188 tests for 1,164 cases
- Electron microscopy: 3 cases
- Frozen tissue sections for DNA and RNA extraction: 6,665 slides for 135 cases
- HPV in situ hybridization: 189 slides for 44 cases
- Chromosome studies: 53 cases
- Molecular biology examination: 17 tests for 6 cases
- Total recuts studied: 46,501
- Contributor slides studied: 26,875

Our departmental laboratory performed 4,065 direct immunohistochemical tests on 415 cases for 20 other AFIP departments or divisions, 29 tests on 7 cases for WRAMC, and 74 tests on one research project for NIH. The laboratory performed HPV in situ hybridization for 7 AFIP departments, resulting in 541 slides for 154 cases, and 6 cases for WRAMC, resulting in 18 slides. These 748 slides for HPV tests necessitated 253 control slides, resulting in 1,001 HPV slides. The laboratory also performed frozen tissue sections for 5 other AFIP departments or divisions. This included 511 cases with 6,681 slides for frozen section for FITC, 549 H&E sections, and 843 photographs of FITC slides. Thirty-one skin biopsies from NNMC in Bethesda required 414 FITC slides and 31 H&E stained slides.

Our department made no change in the contributor diagnosis in 2,507 cases, a minor change in diagnosis in 2,369 cases, and a major change in diagnosis in 37 cases. We received 400 cases with no contributor diagnosis; 19 cases were recorded without coding.

Most of our surgical consultations were on prostate specimens, increasingly from patients under 60 years of age. The number of bladder tumor consultations has increased.

33 telepathology cases were immediately examined and reported:

- 22 national and international contributors
- 3 from VA laboratories
- 8 civilian

Impact:

The department provided consultations on over 5,800 cases. Nearly 55% of these were military, VA, and Public Health cases.

- In the last 3 years, the staff has published 3 books for the World Health Organization

and another on prostate cancer is in press. The books provide criteria for diagnosis of tumors. We have a research project with Harvard Medical School and have been asked by the University of Maryland to participate in a research project. In a typical year, senior staff members lecture at 15 to 20 national or international meetings. We also provide an annual course on genitourinary pathology, which is attended by all military residents in urology prior to taking their boards, and a weekend course on interpretation of prostate and bladder biopsies. The chair is on the faculty of Johns Hopkins, Maryland, and Georgetown universities and is on the Dean's Council of Harvard Medical School. An Internet-based course on urologic pathology is available on the Web.

- We provide the pathology support for diagnosis, treatment, and research for the Center for Prostate Disease Research (designed as a triservice prostate specimen repository), which was mandated by Congress as authorized in Public Law 102-172. In this capacity our department is frequently requested to provide personal consultations to members of Congress and high-ranking military officers.
- The Division of Nephropathology has, in recent years, absorbed essentially all military and VA renal biopsies, and our caseload has risen from 90 to 233. All electron microscopies on renal biopsies have been eliminated in all military and most VA hospitals.

Deployment:

August 2000, Langley AFB, D Burch

Quality Assurance:

1. The department participated in 2 proficiency tests in immunohistochemistry and 2 tests in situ hybridization.
2. FA Avallone and RW Brinsko were members of the AFIP CAP inspection team at the following hospitals:

July 2000 - Northwest Hospital, Randallstown, Md

September 2000 - Suburban Hospital, Bethesda, Md

November 2000 - VA Medical Center, Washington, DC

EDUCATION

Presentations and Seminars: Department staff participated in 53 seminars, workshops, and lectures, and continued their affiliations with WRAMC, National Naval Medical Center, and USUHS by lecturing to pathologists, residents, and fellows. Dates and titles are listed at the end of this report.

Courses: Department staff participated in 3 courses in 2000, for a total of 81,370 man-hours.

Trainees:

Urology residents from WRAMC, the National Naval Medical Center, Portsmouth Naval Medical Center, San Diego Naval Medical Center, and Washington Hospital Center spent 1 month in the department and additional time, as required, if they were involved in a joint research project. In 2000, we had 15 fellows/residents in training, for a total of 295 days.

EDUCATIONAL AIDS:

1. Development of a second module of the Internet-based Genitourinary Pathology Course began in 2000 and will be completed in 2001.
2. A set of 350 slides was made available to the New York Society of Pathology (funding agency: NY Society of Pathology).
3. 500 slides were distributed at the Renal Pathology Course at the International Academy of Pathology in Nagoya, Japan (funding agency: IAP, Japan).
4. 225 slides were sent to VA Hospitals for the VA Quality Assurance Program.

RESEARCH

Publications: In 2000, department staff published 14 journal articles and 21 abstracts.

Complete references are listed at the end of this report.

Projects: The department continues to provide pathology support for research projects of the Urology Service at the Walter Reed Army Medical Center, Center for Prostate Disease Research, USUHS, Andrews Air Force Base, and National Naval Medical Center, Bethesda, Md. These projects involve prostatic carcinoma, testicular tumors, and bladder cancers. The AFIP is

being considered as the center for the Uniformed Services Comprehensive Database and Tissue Repository for the Study of Epidemiology Detection, Natural History, and New Management Strategies for Prostate Cancer, with our department serving as a data and tissue repository. Prostatic biopsies, transurethral tissue, and total prostatectomy specimens will be sent to the AFIP. The repository will collect fresh and frozen tissue, blood samples, and formalin-fixed tissue from total prostatectomies, needle biopsies, and TUR specimens.

Research Funds Received: \$125,000.00 for a collaborative project with the Center for Prostate Disease Research.

Projects:

1. Studies of Various Renal Tumors in Adults (Wilms' Tumor, Certain Epithelial Tumors, Multilocular Cystic Nephroma), and a Group of Renal Hamartomas (Angiomyolipoma, Capsuloma, Adenoleiomyofibroma)
2. Review of Testicular Tumors in Infants and Children
3. Studies of Carcinoma In Situ of the Bladder

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Urology Service, Naval Medical Center, San Diego, Walter Reed Army Medical Center, and Andrews Air Force Base, Prostatic Carcinoma
2. Urology Service, National Naval Medical Center, Bladder Cancer

Military/Civilian:

1. WRAMC, Biomedical Engineering Laboratories, Riverside Research Institute, New York, Pathologic-Radiologic Correlation on Three-Dimensional Ultrasonic Visualization of Prostate Cancer
2. WRAMC, Synergetic Medical Technology Systems Corp, Williamsburg, Va, Ultrasound-Based System for Examination and Diagnosis of Prostate Cancer: A Phase I Clinical Study

Civilian:

1. Center for Cancer Research, MIT, Boston, Brigham and Women's Hospital, Harvard Medical School, and Glyko Inc, Novato, California, Asparagine-Linked Glycosylation Patterns in Prostate Cancer Metastases
2. Beth Israel Deaconess Medical Center, Boston (Urology, Pathology, and Oncology Departments), Clinical Trial with Combination Therapy in Locally Advanced Prostatic Carcinoma
3. Cleveland Clinic, Ohio (Urology and Pathology Departments), p53 and Bcl2 in Familial Prostate Cancer

Interdepartmental:

1. Department of Cellular Pathology, Flow-Cytometric Analysis of 120 Prostatic Carcinomas
2. Molecular Pathology Division of Department of Cellular Pathology, Department of Gynecologic and Breast Pathology, Interphase Cytogenetics and p53 Gene Mutations in Node-Positive and Node-Negative Breast Cancers

Honors:

Honorary Member, American Urological Association, FK Mostofi

Committees:

Editorial Boards: FK Mostofi served on the editorial boards of 2 journals and as editorial consultant to several others.

Manuscripts Reviewed: Department staff reviewed 14 articles for the following professional journals:

1. *Journal of Urology*
2. *Urology*
3. *The Prostate*
4. *The American Journal of Pathology*

Offices/Committee Memberships in National and International Societies:**FK Mostofi**

1. Head, WHO Collaborating Center for Histological Classification of Tumors of the Urinary Tract and Male Genital System
2. Secretary-Treasurer, International Council of Societies of Pathology
3. President, International Society of Urological Pathology
4. Trustee, American Foundation for Urologic Diseases
5. Member, Executive Committee, American Cancer Society Committee on Prostate Cancer
6. Member, Congressionally Mandated Committee for Research on Diseases of the Prostate
7. Member, Uniformed Services Urology Group

Faculty Appointments:**FK Mostofi**

1. Uniformed Services University of the Health Sciences, Adjunct Professor of Pathology
2. Johns Hopkins University School of Medicine, Associate Professor of Pathology
3. Georgetown University School of Medicine, Clinical Professor of Pathology
4. University of Maryland, Baltimore, Clinical Professor of Pathology
5. Chinese Peoples Liberation Army General Hospital & Military Post Graduate Medical School, Beijing, China, Honorary Professor

IA Sesterhenn:

Uniformed Services University of the Health Sciences, Assistant Professor of Pathology

CJ Davis:

Uniformed Services University of the Health Sciences, Professor of Pathology

Official Trips (funding agencies in parenthesis):

1. June 2000, Consensus Conference on Premalignant Lesions in the Genito-Urinary Tract, Stockholm, Sweden, FK Mostofi, IA Sesterhenn (WHO Collaborating Center for Urologic Tumors)
2. August 2000, 5th Asian Congress on Urology, Beijing, China, FK Mostofi, IA Sesterhenn (Chinese Society of Urology)
3. October 2000, Tokyo, Japan, Course in Interpretation of Prostate Biopsies, FK Mostofi, CJ Davis, IA Sesterhenn (Pathology and Urology Societies of Tokyo)
4. October-November 2000, International Society of Urology, Singapore, FK Mostofi, IA Sesterhenn
5. November 2000, Savannah, Ga, Diagnostic Surgical Pathology Conference, CJ Davis

PRESENTATIONS

1. January 2000: Bethesda, Md, Annual Urological Pathology Course, Multiple lectures, FK Mostofi, CJ Davis, IA Sesterhenn, RW Brinsko, R Shekar.
2. March 2000: Bethesda, Md, National Naval Medical Center, "Tumors of the testis," FK Mostofi.
3. March 2000: Bethesda, Md, National Naval Medical Center, "Tumors of the prostate," IA Sesterhenn.
4. March 2000: Bethesda, Md, National Naval Medical Center, "Tumors of the kidney," CJ Davis.
5. March 2000: Washington, DC, Walter Reed Army Medical Center, "Tumors of the testis," FK Mostofi.
6. March 2000: Washington, DC, Walter Reed Army Medical Center, "Tumors of the prostate," IA Sesterhenn.
7. March 2000: Washington, DC, Walter Reed Army Medical Center, "Tumors of the kidney," CJ Davis.
8. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "Paraganglioma of the bladder: clinical-pathological study of 77 cases," K Crismond, CJ Davis, FK Mostofi.
9. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "Grading of prostatic carcinoma: comparison of Gleason and WHO systems," FK Mostofi, M Harada,

- DK Corle, D Erwin, CJ Davis, IA Sesterhenn.
10. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "Selected topics in renal neoplasia," CJ Davis.
 11. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "Laser capture microdissection-mutation analysis of p53 immunostained focal regions of prostate tumors," L Griewe, RC Dean, W Zhang, S Srivastava, FK Mostofi, IA Sesterhenn, DG McLeod, N Shanmugam.
 12. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "Expression profile of tumor suppressor gene MASPIN in prostate. IA Sesterhenn, Z Zou, W Zhang, S Srivastava, J Moul, FK Mostofi.
 13. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "Benign prostatic glands in the surgical margin of radical retropubic prostatectomies: redefining PSA nadir," B Djavan, IA Sesterhenn, S Hruby, M Susani, A Haitel, M Etemad, FK Mostofi, DG McLeod, M Marberger.
 14. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "Grading of prostatic carcinoma: comparison of Gleason and WHO systems," FK Mostofi, DK Corle, D Erwin, CJ Davis, IA Sesterhenn.
 15. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "HPRAJ, a novel prostate-specific gene with homology to olfactory receptor gene family is overexpressed in prostate cancer," N Shanmugam, L Xu, M Augustus, J Moul, S Srivastava, K Florence, D Soppet, IA Sesterhenn, DG McLeod, GB Stackhouse, K Carter.
 16. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "Paragangliomas of the urinary bladder: Is histologic diagnosis of malignancy possible?" K Crismond, CJ Davis, M Haluska, JC Herring.
 17. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "3-D simulated prostate cancer distribution using 280 whole-mounted, step-sectioned radical prostatectomy specimens," JW Moul, J Zeng, W Zhang, IA Sesterhenn, SK Mun, JJ Bauer.
 18. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "Pathological study in prostatectomies of patients age 50 and under," IA Sesterhenn, W Zhang, FK Mostofi, CJ Davis, DG McLeod, JW Moul, JP Sands, P Friedrichs.
 19. April 2000: Atlanta, Ga, 95th AUA Annual Meeting, "Location of prostatic carcinoma in black and white patients," JW Moul, W Zhang, IA Sesterhenn, RA Frommelt, FK Mostofi, CJ Davis, DG McLeod.
 20. April 2000: Silver Spring, Md, Nephropathology Course, "Cystic diseases of the kidney," CJ Davis.
 21. April 2000: Silver Spring, Md, 10th Annual Anatomic Pathology Course, "Multiple topics in GU pathology," CJ Davis.
 22. May 2000: Bethesda, Md, Annual Urological Pathology Course (Repeat), Multiple lectures, FK Mostofi, CJ Davis, IA Sesterhenn, RW Brinsko, R Shekar.
 23. August 2000: Beijing, China, 5th Asian Congress on Urology, "Clinical-pathological conference of GU tumors," FK Mostofi, IA Sesterhenn, F Schroeder.
 24. August 2000: Beijing, China, 5th Asian Congress on Urology, "World Health Organization histological classification of bladder tumors," FK Mostofi, IA Sesterhenn.
 25. September 2000: Rockville, Md, Telepathology 2000, "Imaging genitourinary lesions," CJ Davis.
 26. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Companion Meeting, "Testicular, bladder and prostate tumors," FK Mostofi.
 27. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Free Paper, "Spectral karyotyping derived markers as tools for prostate tumor profiling and improved clinicopathological evaluation," IA Sesterhenn.
 28. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, "Laser capture microdissection-mutation analysis of p53 immunostained focal regions of prostate tumors," IA Sesterhenn.

29. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Slide Seminar, "Pathology of renal tumors," CJ Davis, IA Sesterhenn.
30. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, "Proliferative activity in prostatic intraepithelial neoplasia of patients treated with androgen blockade," IA Sesterhenn.
31. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, "Proliferative activity in prostatectomy specimens following androgen blockade," IA Sesterhenn.
32. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Short Course, "Prognostic factors in prostate cancer diagnosis," IA Sesterhenn.
33. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Poster Presentation, "Expression of tumor suppressor gene MASPIN in prostatectomies," IA Sesterhenn.
34. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Poster Presentation, "Location of prostatic carcinoma in black and white patients," IA Sesterhenn.
35. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, WHO Blue Book Presentation, "Prostate tumors," FK Mostofi, IA Sesterhenn.
36. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, WHO Blue Book Presentation, "Bladder tumors," FK Mostofi, CJ Davis.
37. October 2000: Tokyo, Japan, Kyorin University School of Medicine, "Interpretation of prostate biopsies," CJ Davis.
38. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Urologic Clinicopathology Conference, FK Mostofi, IA Sesterhenn.
39. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Podium Sessions, "Significance of benign prostatic glands in the surgical margin of radical retropubic prostatectomies," B Djavan, IA Sesterhenn, S Hruby, C Seitz, FK Mostofi, D McLeod, M Marberger.
40. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Podium Sessions, "Correlation of pre-biopsy PSA levels with tumor volume and surgical margin status in stage T1c patients," FK Mostofi, J Moul, W Zhang, IA Sesterhenn, WF McCarthy, JW Moul, R Greenspan.
41. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Podium Sessions, "Paraganglioma of the bladder: clinical-pathological study of 77 cases," FK Mostofi, K Crismond, CJ Davis.
42. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Proliferative activity in prostatic intraepithelial neoplasia of patients treated with androgen blockade," FK Mostofi, IA Sesterhenn, DG McLeod, W Zhang, J Moul.
43. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Proliferative activity in prostatectomy specimens following androgen blockade," FK Mostofi, IA Sesterhenn, RC Dean, W Zhang.
44. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Expression of tumor suppressor gene MASPIN in prostatectomies," FK Mostofi, IA Sesterhenn, J Moul, S Srivastava, W Zhang, D Young, ZQ Zou.
45. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Spectral karyotyping derived markers as tools for prostate tumor profiling and improved clinicopathological evaluation," FK Mostofi, M Augustus, W Zhang, T Lawrence, F Avallone, D Young, T Reid, J Moul, IA Sesterhenn.
46. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie,

- SIU 2000, Moderated Poster Sessions, "Laser capture microdissection-mutation analysis of p53 immunostained focal regions of prostate tumors," FK Mostofi, GI Griewe, RC Dean, DG McLeod, IA Sesterhenn, W Zhang, S Srivastava, N Shanmugam.
47. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "WHO and Gleason grading of prostatic carcinoma: comparison of Gleason and WHO systems," FK Mostofi, M Harada, D Carle, D Erwin, CJ Davis, IA Sesterhenn.
 48. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Location of prostatic carcinoma in black and white patients," FK Mostofi, W Zhang, IA Sesterhenn, DG McLeod, R Frommelt, CJ Davis.
 49. October-November 2000: Singapore, 25th Congress of the Societe Internationale d'Urologie, SIU 2000, Moderated Poster Sessions, "Pathological findings in prostatectomies of patients age 50 and under," FK Mostofi, CJ Davis, D McLeod, IA Sesterhenn, W Zhang, J Moul, J Sands, P Friedrichs.
 50. November 2000: Savannah, Ga, Diagnostic Surgical Pathology, "Prostate pathology – kidney pathology," CJ Davis.
 51. November 2000: New York, NY, Slide Seminars on Bladder Tumors, IA Sesterhenn.
 52. November 2000: Bethesda, Md, USUHS Research Day 2000, "PCGEM1, a novel prostate-specific gene overexpressed in prostate cancer," J Livezey, V Srikantan, Z Zou, G Petrovics, L Xu, M Augustus, L Davis, T Connell, IA Sesterhenn, K Yoshino, G Buzard, FK Mostofi, D McLeod, J Moul, S Srivastava.
 53. November 2000: Bethesda, Md, USUHS Research Day 2000, "Quantitative evaluation of the expression profile of androgen regulated genes (ARGs) in prostate cancer cells," L Xu, R LaBiche, T Segawa, N Shanmugam, IA Sesterhenn, D McLeod, J Moul, S Srivastana.

PUBLICATIONS

Journal Articles:

1. Bauer JJ, Zeng J, Zhang W, McLeod DG, Sesterhenn IA, Connelly RR, Mun SK, Moul JW. 3-D computer visualization and interactive prostate biopsy simulation leads to an improved systematic technique for the detection of prostate cancer: clinical correlation. *Stud Health Technol Inform.* 2000;70:20-25.
2. Bauer JJ, Zeng J, Zhang W, McLeod DG, Sesterhenn IA, Connelly RR, Mun SK, Moul JW. Lateral biopsies added to the traditional sextant prostate biopsy pattern increases the detection rate of prostate cancer. *Prostate Cancer and Prostatic Diseases.* 2000;3:43-46.
3. Bostwick DG, Montironi R, Sesterhenn IA. Diagnosis of prostatic intraepithelial neoplasia: Prostate Working Group/consensus report. *Scand J Urol Nephrol Suppl.* 2000;205:3-10.
4. Epstein JI, Amin MB, Reuter VR, Mostofi FK. Revised classification of urothelial neoplasms [author's reply]. *Am J Surg Pathol.* 2000;24:161-162.
5. Fetsch JF, Brinsko RW, Davis CJ, Mostofi FK, Sesterhenn IA. A distinctive myointimal proliferation ("myointimoma") involving the corpus spongiosum of the glans penis: a clinicopathologic and immunohistochemical analysis of 10 cases. *Am J Surg Pathol.* 2000;24:1524-1530.
6. Heidenreich B, Heidenreich A, Sesterhenn A, Srivastava S, Moul JW, Sesterhenn IA. Aneuploidy of chromosome 9 and the tumor suppressor genes p16(INK4) and p15(INK4B) detected by in situ hybridization in locally advanced prostate cancer. *Eur Urol.* 2000;38:475-482.
7. Hsing AW, Deng J, Sesterhenn IA, Mostofi FK, Stanczyk FZ, Benichou J, Xie T, Gao YT. Body size and prostate cancer: a population-based case-control study in China. *Cancer Epidemiol Biomarkers Prev.* 2000;9:1335-1341.
8. Hsing AW, Gao YT, Wu G, Wang X, Deng J, Chen YL, Sesterhenn IA, Mostofi FK, Benichou J, Chang C. Polymorphic CAG and GGN repeat lengths in the androgen receptor gene and prostate cancer risk: a population-based case-control study in China. *Cancer Res.* 2000;60:5111-5116.
9. Srikantan V, Zou Z, Petrovics G, Xu L, Augustus M, Davis L, Livezey JR, Connell T, Sesterhenn IA, Yoshino K, Buzard GS, Mostofi FK, McLeod DG, Moul JW, Srivastava S. PCGEM1, a prostate-specific gene, is overexpressed in prostate cancer. *Proc Natl Acad Sci U*

- S A. 2000;97:12216-12221.
10. Xu LL, Shanmugam N, Segawa T, Sesterhenn IA, McLeod DG, Moul JW, Srivastava S. A novel androgen-regulated gene, PMEPA1, located on chromosome 20q13 exhibits high level expression in prostate. *Genomics*. 2000;66:257-263.
 11. Xu LL, Srikantan V, Sesterhenn IA, Augustus M, Dean R, Moul JW, Carter KC, Srivastava S. Expression profile of an androgen regulated prostate specific homeobox gene NKX3.1 in primary prostate cancer. *J Urol*. 2000;163:972-979.
 12. Xu LL, Stackhouse BG, Florence K, Zhang W, Shanmugam N, Sesterhenn IA, Zou Z, Srikantan V, Augustus M, Roschke V, Carter K, McLeod DG, Moul JW, Soppett D, Srivastava S. PSGR, a novel prostate-specific gene with homology to a G protein-coupled receptor, is overexpressed in prostate cancer. *Cancer Res*. 2000;60:6568-6572.
 13. Zeng J, Bauer JJ, Yao X, Zhang W, McLeod DG, Sesterhenn IA, Connelly RR, Moul JW, Mun SK. Investigating 3D tumor distribution for optimized diagnosis of prostate cancer. *Stud Health Technol Inform*. 2000;70:392-398.
 14. Zhang W, Sesterhenn IA, Connelly RR, Mostofi FK, Moul JW. Inflammatory infiltrate (prostatitis) in whole mounted radical prostatectomy specimens from black and white patients is not an etiology for racial difference in prostate specific antigen. *J Urol*. 2000;163:131-136.

Abstracts

1. Augustus M, Lawrence T, Sesterhenn I, Zhang W, Mostofi F, Rhim J, Ried T, Moul J, Srivastava S. Novel chromosome alterations in prostate cancer: biomarkers for disease progression defined by spectral karyotyping. 3rd World Congress on Urological Research, Paris, France. Abstract 32. Also, 23rd IAP, Nagoya, Japan. *Pathol Int*. 2000;50(suppl):A107. Abstract FP28-22.
2. Augustus M, Zhang W, Lawrence T, Young D, Avallone F, Ried T, Mostofi FK, Moul JW, Sesterhenn I, Srivastava S. Spectral karyotyping (SKY) derived markers as novel tools for prostate tumor profiling and improved clinicopathological evaluation. American Association for Cancer Research 91st Annual Meeting, San Francisco, Calif. Abstract 247.
3. Crismond K, Davis CJ Jr, Mostofi K. Paraganglioma of the bladder: clinical-pathological study of 77 cases. *Mod Pathol*. 2000;13:97A. Abstract 557.
4. Djavan B, Sesterhenn I, Stephan H, Martin S, Andrea H, Mehrdad E, Mostofi, FK, McLeod D, Marberger, M. Benign prostatic glands in the surgical margin of radical retropubic prostatectomies: redefining PSA NADIR. *J Urol*. 2000;163:142. Abstract 624.
5. Griewe GL, Dean RC, Zhang W, Srivastava S, Mostofi FK, Sesterhenn IA, McLeod DG, Shanmugam N. Laser capture microdissection-mutation analysis of p53 immunostained focal regions of prostate tumors. 23rd IAP, Nagoya, Japan. *Pathol Int*. 2000;50(suppl):A107. Abstract FP28-23.
6. Griewe GL, Dean RC, Zhang W, Srivastava S, Mostofi FK, Sesterhenn IA, McLeod DG, Shanmugam N. Laser capture microdissection-mutation analysis of p53 immunostained focal regions of prostate tumors. *Mod Pathol*. 2000;13:100A. Abstract 579.
7. Mostofi FK, Corle DK, Erwin D, Davis CJ, Sesterhenn IA, Harada M. Grading of prostatic carcinoma: comparison of Gleason and WHO systems. *J Urol*. 2000;163. Abstract 830.
8. Mostofi FK, Harada M, Corle DK, Erwin D, Davis CJ Jr, Sesterhenn IA. Grading of prostatic carcinoma: comparison of Gleason and WHO systems. *Mod Pathol*. 2000;13:119A. Abstract 684.
9. Moul JW, Zeng J, Zhang W, Sesterhenn IA, Mun SK, Bauer JJ. 3-D simulated prostate cancer distribution using 280 whole-mounted step-sectioned radical prostatectomy specimens. *J Urol*. 2000;163. Abstract 1211.
10. Moul JW, Zhang W, Sesterhenn IA, Frommelt RA, Mostofi FK, Davis CJ, McLeod DG. Location of prostatic carcinoma in black and white patients. 95th Annual Meeting of AUA. *J Urol*. 2000;163. Abstract 1436.
11. Moul JW, Zhang W, Sesterhenn IA, Frommelt RA, Mostofi FK, Davis CJ, McLeod DG. Location of prostate carcinoma in black and white patients. 23rd IAP, Nagoya, Japan. *Pathol Int*. 2000;50(suppl):A113. Abstract P17-20.
12. Petrovics G, Srikantan V, Zou Z, Davis L, Livezey J, Augustus M, Sesterhenn I, Mostofi F, McLeod G, Moul J, Srivastava S. PCGEM1, a novel prostate tissue-specific gene: analysis of expression and function. Keystone Symposium: Advances In Human Breast and Prostate

- Cancer, Lake Tahoe, Nev. Abstract 216.
13. Sesterhenn IA, McLeod D, Zhang W, Dean R, Mostofi FK. Proliferative activity in prostatectomy specimens following androgen blockade. 23rd IAP Congress, Nagoya, Japan. *Pathol Int.* 2000;50(suppl):A106. Abstract FP13-6.
 14. Sesterhenn IA, McLeod D, Stackhouse GB, Carter K. HPRAJ: a novel prostate specific gene with homology to olfactory receptor gene family is overexpressed in prostatic cancer. 95th Annual Meeting of AUA. *J Urol.* 2000;163. Abstract 162. Also, CPDR Presentation, USUHS Research Day 2000.
 15. Sesterhenn IA, Zhang W, Mostofi FK, Davis CJ, McLeod DG, Moul JW, Sands JP, Friedrichs P. Pathological study in prostatectomies of patients age 50 and under. 95th Annual Meeting of AUA. *J Urol.* 2000;163. Abstract 1273.
 16. Sesterhenn IA, Zhang W, Mostofi FK, McLeod D, Moul J. Proliferative activity in prostatic intraepithelial neoplasia of patients treated with androgen blockade. 23rd IAP Congress, Nagoya Japan. *Pathol Int.* 2000;50(suppl):A106. Abstract FP13-5.
 17. Sesterhenn IA, Zou Z, Zhang W, Srivastava S, Moul J, Mostofi FK. Expression profile of tumor suppressor gene MASPIN in prostate. 23rd IAP Congress, Nagoya Japan. *Pathol Int.* 2000;50(suppl):A113. Abstract P17-19.
 18. Sesterhenn IA, Zou Z, Zhang W, Srivastava S, Moul J, Mostofi FK. Expression profile of tumor suppressor gene MASPIN in prostate. *Mod Pathol.* 2000;13:109A. Abstract 629.
 19. Srikantan V, Zou Z, Davis L, Livezey J, Augustus M, Sesterhenn I, Yoshino K, Buzard G, Mostofi F, Moul J, Srivastava S. PCGEM1, a novel prostate tissue-specific gene: analysis of expression and function. AACR 91st Annual Meeting, San Francisco, Calif. Abstract 4343.
 20. Srikantan V, Zou Z, Davis L, Livezey J, Sesterhenn I, Petrovics G, Mostofi FK, McLeod D, Moul J, Srivastava S. Structure, expression and biologic functions of a novel specific gene: PCGEM1. 3rd World Congress on Urological Research, Paris, France. Abstract 201.
 21. Mostofi FK, Sesterhenn IA. *World Health Organization Histological Classification of Bladder Tumours.* 2nd ed. 5th Asian Congress on Urology, Beijing, China. Abstract SL3-01.



Sharda G. Sabnis, MD
 Chief
 Date of Appointment - 1 January 1994

DIVISION OF NEPHROPATHOLOGY

MISSION

The Division of Nephropathology provides expertise in consultation, education, and research for the military, federal, and civilian sectors at the national and international levels.

STAFF

Medical:

Sharda G. Sabnis, MD, Chief; Registrar, Registry of Nephropathology, ARP
 William B. Ross, CAPT, MC, USN Part-time
 Tatiana T. Antonovych, MD, Visiting Scientist
 Ashwini R. Chavan, MD, Callender-Binford Fellow

Administrative:

Paulette Crampton, Secretary

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	135
Army	84
Navy	40
Air Force	11
Federal	84
VA	43
USPHS	0
OFA	41
Civilian	336
Interdepartmental	43
<u>Total</u>	<u>598</u>

The 598 total cases required the following types of procedures and analyses:

- H&E stains: 801 slides
- Special stains: 3,268 slides
- FITC studies on frozen sections: 5,642
- Immunohistochemical staining: 74 slides
- Electron microscopy: 540 for 486 cases
- Direct immunofluorescence: 361 cases
- Molecular biology examination: 2 tests for 1 case
- Total recuts studied: 13,083
- Contributor slides studied: 14,854

Division staff made no change in the contributor diagnosis in 203 cases and a minor change in diagnosis in 35 cases. We received 313 cases with no contributor diagnosis; 4 cases were recorded without coding.

Case turnaround time was reduced to an average of 6.7 days from an average 8.5 days in 1999. Turnaround included completion of light, immunofluorescence, and electron microscopy and rendering of a final report.

Impact:

A member of our staff is the primary pathologist on most of the cases submitted, as electron and immunofluorescence microscopy is required to arrive at a definitive diagnosis. In addition to light and immunofluorescence microscopy, electron microscopy is performed by pathologists and fellows to ensure quality diagnosis. In general, the cases received by the division pose diagnostic problems for the contributing pathologists and nephrologists, because different renal diseases present with similar clinical symptoms and may have similar morphologic changes by light microscopy. The cases are routinely studied using light, electron, and immunofluorescence microscopy; immunoperoxidase technique is used when necessary. Over the years, cases submitted to the division have been included in various research projects and clinicopathologic studies, and have been used as teaching materials.

EDUCATION

Presentations and Seminars: Division staff gave 11 presentations at conferences and symposia during 2000. Complete titles and dates are listed at the end of this report.

The division holds a monthly renal biopsy conference for staff and fellows of the Division of Nephrology, WRAMC (150 man-hours), monthly biopsy conferences at Georgetown University Hospital (160 man-hours), George Washington University Medical Center (240 man-hours), and Washington Hospital Center (156 man-hours), and participates in the Federal Medical Monthly Nephrology Seminar held by USUHS (250 man-hours). The division chief was instrumental in initiating a monthly biopsy conference on "Renal Transplant Pathology-Grand Rounds" at the National Institutes of Health (240 man-hours), and presented lectures on various topics for pathology and nephrology residents and fellows at the following institutions: Department of Pathology and Nephrology, WRAMC (30 man-hours), Division of Nephrology, Georgetown University (15 man-hours), Department of Pathology, George Washington University (15 man-hours), Department of Pathology, National Naval Medical Center (15 man-hours), Howard University (20 man-hours), and the National Institutes of Health (15 man-hours). Dr. Sabnis and Dr. Chavan participated in AFIP staff conferences (January and November 2000, 100 man-hours) and the ARP Senior Residents Program (40 man-hours).

Courses: The division held a 3-day course in 2000 titled "A Microscope Workshop Update on Renal Biopsies in Medical Renal Diseases" (720 man-hours).

Trainees: Daily 3-hour microscopic pathology conferences provided training for 15 fellows (2,400 man-hours), both civilian and military, including national and international pathologists and nephrologists. In addition, Dr. Sabnis initiated a postdoctorate fellowship in 1998 and appointed a second fellow for a 2-year term to include the year 2000 (July 1999-June 2001).

RESEARCH

Publications: Division staff published 3 journal articles, 2 abstracts, and one book chapter in 2000. Complete bibliographic information is listed at the end of this report. In addition, in 2000 Dr. Sabnis initiated revision of the AFIP publication entitled "Atlas of Kidney Biopsies," in collaboration with Drs. T.T. Antonovych and F.K. Mostofi.

Projects: The division maintained 2 research projects in 2000, one of which was completed:

1. Presence of CD30 (Ki-1) Antibodies in Membranous Glomerulopathy: A Useful Marker? (Completed).
2. Membranous Lupus Nephritis (Active).

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. WRAMC—Effect of Perfenidone on Early PAN-Induced FSGS in the Rat
2. WRAMC—Pattern of Protein Size- and Charge-Selectivity in Clinical Kidney Disease

3. WRAMC—Is HSP47 Expression Upregulated in PAN-Induced FSGS in the Rat, and Does Perfenidone Affect this Upregulation (UBXG)?
4. WRAMC—The Effect of Nalapril and Mycophenolate Mofetil in PAN-induced FSGS in the Rat

Civilian:

1. NIDDK (NIH)/TKT (Cambridge, Mass)—Phase II Double Blind Placebo-Controlled Safety and Efficiency Trial of Galactosidase, a Replacement Therapy in Patients with Fabry's Disease
2. University of Iran, Teheran—A Retrospective Study of Membranoproliferative Glomerulonephritis in Iran
3. University of Miami—Study to Determine Whether a High-Protein Diet is Nephrotoxic in Uninephrectomized Baboons

International:

1. Ukraine—Effect of Ionizing Radiation on Various Organ Systems Following the Accident at Chernobyl Nuclear Power Plant

Honors:

Dr. Sabnis was invited to give the Dr. Devaraju Krishnamurthy Memorial Oration on "Pathology of Renal Transplants" at the 5th International CME and Update in Surgical Pathology, Hyderabad, India.

Committees:**Editorial Boards:**

1. *Transplantation India*—SG Sabnis
2. *Archives of Medical Research (Mexico City)*—SG Sabnis

Offices/Committee Memberships in National or International Societies:

1. Founding Member, International Society of Geriatric Nephrology and Urology, SG Sabnis
2. Founding Member, Association of Indian Pathologists in North America (AIPNA), SG Sabnis

Faculty Appointments:**SG Sabnis:**

1. George Washington University, Clinical Associate Professor of Pathology
2. Georgetown University, Adjunct Assistant Clinical Professor of Pathology, Department of Pathology
3. USUHS, Clinical Assistant Professor of Pathology
4. National Naval Medical Center, Consultant, Department of Pathology
5. WRAMC, Adjunct Staff Member, Department of Pathology

PRESENTATIONS

1. February 2000: Hyderabad, India, Dr. Devaraju Krishnamurthy Memorial Oration, 5th International CME and Update in Surgical Pathology, "Pathology of kidney transplants," SG Sabnis.
2. February 2000: Hyderabad, India, Dr. Devaraju Krishnamurthy Memorial Oration, 5th International CME and Update in Surgical Pathology, "Slide seminar," SG Sabnis.
3. February 2000: Belgaum, Karnataka, India, Jawaharlal Nehru Medical College, "Slide seminar," SG Sabnis.
4. February 2000: Belgaum, Karnataka, India, Jawaharlal Nehru Medical College, "Evaluation of kidney biopsy," SG Sabnis.
5. February 2000: Belgaum, Karnataka, India, Jawaharlal Nehru Medical College, "Pathology of kidney transplants," SG Sabnis.
6. March 2000: Bethesda, Md, USUHS, "Mesangiocapillary glomerulonephritis," SG Sabnis.
7. March 2000: New Orleans, La, US and Canadian Academy of Pathology, "A study of membranoproliferative glomerulonephritis in Iran," Poster Presentation, AR Chavan, SG Sabnis.
8. April 2000: Washington, DC, Howard University, "Kidney biopsy overview," SG Sabnis.

9. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Pathology of metals exposure in the kidney," SG Sabnis.
10. October 2000: Bethesda, Md, Department of Pathology, NCI, "Review, kidney biopsy," SG Sabnis.
11. November 2000: Washington, DC, AFIP Staff Conference, "Case presentation," AR Chavan.

PUBLICATIONS

Journal Articles:

1. Sabnis SG. Pathology of renal transplants. *Proceedings of the 5th International CME and Update in Surgical Pathology*. 2000;146-153.
2. Michaels S, Sabnis SG, Oliver J, Guccioni JG. Renal sarcoidosis with superimposed postinfectious glomerulonephritis presenting as acute renal failure. *Am J Kidney Dis*. 2000;36:1-6.
3. Gropman A, Levin S, Yao L, Lin T, Suchy S, Sabnis S, Hadley D, Nussbaum R. Unusual renal features of Lowe syndrome in a mildly affected boy. *Am J Med Genet*. 2000;95:461-466.

Abstracts:

1. Sabnis S, Chavan A, Antonovych T, Broumand B. A study of membranoproliferative glomerulonephritis in Iran. *Lab Invest*. 2000;80:178A.
2. Padilla LR, Raymond JR, Montali RJ, Sabnis SG. Glomerulonephritis and cardiovascular disease in the pygmy marmoset (*Callithrix pygmaea*). *Proceedings of the AAZV/IAAM Annual Meeting*. 2000;173.

Book Chapter:

Sabnis SG. Pathology of metals exposure in the kidney. In: Centeno JA, Collery PH, Vernet G, Finkleman RB, Gibbs H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:9-14.



Fattaneh A. Tavassoli, MD
 Chair
 Date of Appointment—20 December 1994

DEPARTMENT OF GYNECOLOGIC AND BREAST PATHOLOGY

MISSION

The Department of Gynecologic and Breast Pathology provides expeditious, high-quality consultation to military and civilian health professionals. Our entire staff is also engaged in research, education, and telepathology activities.

STAFF

Medical:

- Fattaneh A. Tavassoli, MD, Chair
- Kris M. Shekitka, Col, USAF, MC, Deputy Director (AF)
- (D) David P. Schammel, Maj, USAF, MC, Staff Pathologist
- Michael D. Stamatakos, Lt Col, USAF, MC, Staff Pathologist
- Thomas Mezzetti, LCDR, USN, MC, Staff Pathologist
- (D) Tingliang Shen, MD, Fellow
- (A) Jeffrey S. Saenger, MAJ, USA, MC, Staff Pathologist
- (A) Brian L. Strauss, Maj, USAF, MC, Staff Pathologist
- (A) Lisa H. Tai, MD, Staff Pathologist
- (A) Tim Zheng, MD, Fellow

Scientific:

- Gary Bratthauer, MS
- Yan-Gao Man, MD

Administrative:

- Brenda Winchenbach, Secretary
- Angeline Edmonds, Editorial Assistant

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	1,814
Army	870
Navy	397
Air Force	547
Federal	232
VA	214
USPHS	16
OFA	2
Civilian	2,835
Interdepartmental	319
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Total	5,200

A total of 2,904 cases for consultation, 346 for education, and 28 for research required the following procedures and analyses:

- H&E stains: 10,328 slides
- Special stains: 748 slides
- Immunohistochemical staining: 9,417 slides
- Electron microscopy: 9 cases
- Direct immunofluorescence: 62 tests for 27 cases
- HPV in situ hybridization: 228 slides for 69 cases
- Molecular biology examination: 13 tests for 4 cases
- Total recuts studied: 20,493
- Contributor slides studied: 44,343

Our department made no change in the contributor diagnosis in 2,318 cases, a minor change in diagnosis in 1,880 cases, and a major change in diagnosis in 67 cases. We received 620 cases with no contributor diagnosis; 2 cases were recorded without coding.

The majority of our cases are surgical pathology specimens; less than 1% are autopsy material. Many of our cases are submitted with 20 or more slides. Cases with 50 to 100 slides are becoming more common due to sampling requirements for breast biopsies, axillary lymph nodes, and large tumors. Evaluation of a borderline smooth muscle tumor may require up to 4 hours of initial slide assessment.

Impact:

The department is a world leader for consultation, research, and education in breast and gynecologic disease. The global reputation and leadership of our staff pay tribute to the high quality of the US military around the world.

In 2000, the department provided diagnostic consultation on 5,000 problematic cases, with about 40% representing military, VA, or public health cases. The department often serves as the final arbiter for difficult civilian cases that have been reviewed by several other recognized consultants. Our pathologists have saved many patients from improper management and many doctors and institutions from potential lawsuits. Rare cases that defy proper diagnosis by good pathologists are sent to us because of our expertise. We diagnose these rare lesions, providing information on whether they are benign or malignant and how best to manage them based on our past experience with similar lesions.

The quality of our department's research and publications parallels and exceeds that of the best research and academic centers anywhere in the world, and supports Congress' mandate to DoD to conduct breast research. Our research on the role of stromal elements in breast carcinomas, as documented by our molecular studies, has opened new avenues of research and was published as a priority article by *Cancer Research*, the leading research journal in the world. The markers we have developed for recognizing precursor lesions of breast cancer and some subtypes of ovarian tumors have simplified diagnosis for many pathologists and have ensured improved patient care. Our vast experience with markers and precursors of invasive breast carcinoma has led to a new classification scheme that will revolutionize understanding of this cancer and eradicate some serious problems associated with current approaches.

Our educational endeavors include teaching residents, fellows, and visiting pathologists on a daily basis at the multiheaded microscope, and supervising medical students and research collaborators in our laboratory. Members of our staff are in high demand for lectures nationally and around the world. Our pathologists are invited lecturers not only at pathology conferences, but also at clinical and multidisciplinary conferences where surgeons, oncologists, radiologists, and radiotherapists enthusiastically seek their opinions and counsel. Several courses given by members of our department attract top pathologists and clinicians. These courses not only update participants on the latest issues, but also serve as a forum for furthering interdisciplinary communication.

EDUCATION

Presentations and Seminars: Department staff gave 47 presentations in 2000, for a total of 6,448 man-hours. Dates and titles are listed at the end of this report.

Courses: Department staff participated in 1 non-AFIP course and 4 AFIP courses, 1 of which was conducted by our department.

Trainees: The department provided training for 20 trainees in 2000, including 1 Callender-

Binford Fellow, for a total of 515 trainee-days.

Educational Aids: The department maintains 3 copies of glass slide study sets, consisting of over 425 slides of exemplary cases in gynecologic and breast pathology, with explanations. All of these slides are less than 4 years old and are available for study by all visitors to the department. The department also maintains 10 copies of a notebook of 20 important references that are recommended reading for each visitor to the department.

RESEARCH

Publications: Members of the department published 14 refereed journal articles and 1 abstract in 2000. A complete list of references appears at the end of this report.

Projects: The department maintained the following research projects in 2000:

1. Rhabdomyosarcoma and Rhabdoid Tumors of the Uterus
2. Gynecologic Pathology Associated with Tamoxifen
3. Myxoid Smooth Muscle Tumors of the Uterus
4. New Approaches for Early Detection of Breast Tumors
5. Loss of Heterozygosity in Bilateral Breast Carcinoma
6. Molecular Diagnostics and Genetics of Breast Cancer
7. Mesotheliomas Involving the Ovaries
8. Endometrial Polyps with Bizarre Stromal Cells
9. Features of Apocrine Lesions Revealed by Models
10. Male Breast Cancer

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

Zhengping Zhuang, Laboratory of Pathology, National Cancer Institute, National Institutes of Health, Bethesda, Md, Molecular Research

Civilian:

1. Jorge Albores-Saavedra, University of Texas Southwestern Medical School, Molecular Abnormalities Associated with Secretory Carcinomas of the Breast
2. Carol Bodian, Columbia University Hospital, Statistical Analysis
3. William Laskin, Department of Pathology, Northwestern University, Mesenchymal Tumors of the Vulva and Vagina
4. Anirban Maitra, University of Texas Southwestern Medical School, Molecular Abnormalities Associated with Secretory Carcinomas of the Breast
5. Francisco F. Nogales, Hepatocytic Differentiation in Retiform Sertoli-Leydig Cell Tumors: Distinguishing a Heterologous Element from Leydig Cells

International:

1. Gaïton MacGrogan, Institut Bergonie, Bordeaux, France, Atypical Papillomas of the Breast
2. A. Gocht, H-C Bosmuller, R. Bassler, Germany, Breast Tumors with Myofibroblastic Differentiation: Clinicopathologic Observations in Myofibroblastoma and Myofibrosarcoma

Interdepartmental:

John Fetsch, Department of Soft Tissue Pathology, Mesenchymal Tumors of the Vulva and Vagina

Committees:

Offices/Committee Memberships in National or International Societies:

FA Tavassoli

1. European Breast Cancer Consortium
2. National Cancer Institute/National Institutes of Health Workshop on Rodent Mammary Cancer Models
3. Consensus Meeting on Rodent Mammary Cancer Model Terminology

New Missions and Missions Dropped: Due to a shortage of personnel, the department did not

submit any abstracts during the fall of 1999 for presentation at the March 2000 meeting of the US and Canadian Academy of Pathology. We were not able to perform additional research projects and still maintain our consultative and educational goals.

Official Trips (funding agency in parentheses):

1. March 2000, US and Canadian Academy of Pathology, New Orleans, La, MD Stamatakos (AFIP).
2. December 2000, Current Issues in Gynecologic Pathology, Amelia Island, Fla.

Continuing Education: Department staff attended the following training courses in 2000:

1. US and Canadian Academy of Pathology Meeting
2. Current Issues in Anatomic Pathology

PRESENTATIONS

1. February 2000: Washington, DC, AFIP Wednesday Staff Conference, "Mucinous tumor of low malignant potential arising in a teratoma," MD Stamatakos.
2. February 2000: Las Vegas, Nev, ASCP's Weekend of Pathology Workshop, "Neoplastic and non-neoplastic diseases of the breast with emphasis on mammary intraepithelial neoplasia," FA Tavassoli.
3. March 2000: Washington, DC, Howard University, "Tumors of the ovary (I)," MD Stamatakos.
4. April 2000: Silver Spring, Md, AFIP's 10th Annual Anatomic Pathology Course, "Pathology of the uterine corpus," MD Stamatakos.
5. April 2000: Silver Spring, Md, AFIP's 10th Annual Anatomic Pathology Course, "Selected topics in ovarian pathology," MD Stamatakos.
6. May 2000: Japan, 8th Annual Meeting of the Japanese Breast Cancer Society, "Keynote address— Diagnosis and treatment of noninvasive breast cancer: global standard," FA Tavassoli.
7. May 2000: Falls Church, Va, Fairfax Hospital, "Breast pathology," FA Tavassoli.
8. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Ductal intraepithelial neoplasia (IDH, AIDH, IDCA)," FA Tavassoli.
9. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Microinvasive carcinomas," FA Tavassoli.
10. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Papillary lesions of the breast," FA Tavassoli.
11. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Lobular neoplasia and invasive lobular carcinoma," FA Tavassoli.
12. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Various patterns of adenosis vs tubular carcinoma," FA Tavassoli.
13. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Low-grade carcinomas," FA Tavassoli.
14. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Metaplastic carcinomas of the breast," FA Tavassoli.
15. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Diseases of the nipple," FA Tavassoli.
16. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Myoepithelial lesions of the breast," FA Tavassoli.
17. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Ductal intraepithelial neoplasia (IDH, AIDH, IDCA)," FA Tavassoli.
18. May 2000: Chicago, Ill, ASCP's Course – Current Issues and Problems in Breast Pathology, "Phyllodes tumors," DP Schammel.
19. May 2000: Washington, DC, ARP Resident's Day, "Case review session," MD Shekitka.
20. July 2000: Deauville, France, AFIP's Diagnostic Surgical Pathology, "Breast pathology," FA Tavassoli.
21. July 2000: Deauville, France, AFIP's Diagnostic Surgical Pathology, "GYN pathology," FA Tavassoli.

22. August 2000: Pittsburgh, Pa, Annual Pittsburgh Breast Imaging Seminar, "Pathology of benign and high-risk lesions," FA Tavassoli.
23. August 2000: Pittsburgh, Pa, Annual Pittsburgh Breast Imaging Seminar, "Ductal carcinoma in situ and invasive breast cancer," FA Tavassoli.
24. September 2000: Buenos Aires, Argentina, Joint AFIP/Argentinian Division of IAP Pathology Course, "Tubular carcinoma vs adenosis," FA Tavassoli.
25. September 2000: Buenos Aires, Argentina, Joint AFIP/Argentinian Division of IAP Pathology Course, "Ductal intraepithelial neoplasia (DIN) classification system for mammary proliferations," FA Tavassoli.
26. September 2000: Buenos Aires, Argentina, Joint AFIP/Argentinian Division of IAP Pathology Course, "Mesenchymal tumors of the uterus and their immunoprofile," FA Tavassoli.
27. October 2000: San Juan, Puerto Rico, 6th Annual Puerto Rico Breast Cancer Conference, "The role of the pathologist in the choice of treatment of early breast cancer," FA Tavassoli.
28. October 2000: San Juan, Puerto Rico, 6th Annual Puerto Rico Breast Cancer Conference, "Panel discussion," FA Tavassoli.
29. October 2000: San Juan, Puerto Rico, 6th Annual Puerto Rico Breast Cancer Conference, "Lobular neoplasia," FA Tavassoli.
30. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (I)," KM Shekitka.
31. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (II)," KM Shekitka.
32. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (III)," KM Shekitka.
33. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (IV)," KM Shekitka.
34. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (V)," KM Shekitka.
35. October 2000: Ottawa, Ontario, Canadian Orthopedic Association's Basic Science Course for Orthopedic Surgery Residents, "Basic histology/histopathology (VI)," KM Shekitka.
36. November 2000: Tehran, Iran, Iranian Annual Pathology Congress, "Ductal intraepithelial neoplasia – IDH, AIDH, DCIS," FA Tavassoli.
37. November 2000: Tehran, Iran, Iranian Annual Pathology Congress, "Tubular carcinoma vs adenosis (sclerosing, microglandular, tubular)," FA Tavassoli.
38. November 2000: Tehran, Iran, Iranian Annual Pathology Congress, "Mesenchymal tumors of the uterus," FA Tavassoli.
39. November 2000: Washington, DC, Walter Reed Army Medical Center with Teleconference to Bethesda Naval Hospital, "Pathology of the uterus," MD Stamatakos.
40. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Endometrial carcinomas – serous, clear cell and uncommon variants," FA Tavassoli.
41. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Ovarian serous tumors of low malignant potential and peritoneal implants," FA Tavassoli.
42. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Primary and metastatic mucinous tumors of the ovary," FA Tavassoli.
43. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Stromal and other mesenchymal tumors of the uterus (I)," FA Tavassoli.
44. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Peritoneal lesions – panel discussion," MD Stamatakos.
45. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Myxoid and mesenchymal tumors of the vulva and vagina," MD Stamatakos.
46. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology Course, "Discussion of cases (I)," KM Shekitka.
47. December 2000: Amelia Island, Fla, AFIP's Current Issues in Gynecologic Pathology

Course, "Discussion of cases (II)," KM Shekitka.

PUBLICATIONS

Journal Articles:

1. Cardiff RD, Anver MR, Gusterson BA, Hennighausen L, Jensen RA, Merino MJ, Rehm S, Russo J, Tavassoli FA, Wakefield LM, Ward JM, Green JE. The mammary pathology of genetically engineered mice: the consensus report and recommendations from the Annapolis meeting. *Oncogene*. 2000;19:968-988.
2. Devouassoux-Shisheboran M, Schammel DP, Man YG, Tavassoli FA. Fibromatosis of the breast: age-correlated morphofunctional features of 33 cases. *Arch Pathol Lab Med*. 2000;124:276-280.
3. Devouassoux-Shisheboran M, Vortmeyer AO, Silver SA, Zhuang Z, Tavassoli FA. Teratomatous genotype detected in malignancies of a non-germ cell phenotype. *Lab Invest*. 2000;80:81-86.
4. Man Y, Moinfar F, Bratthauer GL, Tavassoli FA. Five useful approaches for generating more valid gel images of loss of heterozygosity and clonality analysis with an automated 377 DNA sequencer. *Diagn Mol Pathol*. 2000;9:84-90.
5. Moinfar F, Man YG, Arnould L, Bratthauer GL, Ratschek M, Tavassoli FA. Concurrent and independent genetic alterations in the stromal and epithelial cells of mammary carcinoma: implications for tumorigenesis. *Cancer Res*. 2000;60:2562-2566.
6. Moinfar F, Man YG, Bratthauer GL, Ratschek M, Tavassoli FA. Genetic abnormalities in mammary ductal intraepithelial neoplasia-flat type ("clinging ductal carcinoma in situ"): a simulator of normal mammary epithelium. *Cancer*. 2000;88:2072-2081.
7. Moinfar F, Mannion C, Man YG, Tavassoli FA. Mammary "comedo"-DCIS: apoptosis, oncosis, and necrosis: an electron microscopic examination of 8 cases. *Ultrastruct Pathol*. 2000;24:135-144.
8. Aguilera NS, Tavassoli FA, Chu WS, Abbondanzo SL. T-cell lymphoma presenting in the breast: a histologic, immunophenotypic and molecular genetic study of four cases. *Mod Pathol*. 2000;13:599-605.
9. Mooney EE, Vaidya KP, Tavassoli FA. Ossifying well-differentiated Sertoli-Leydig cell tumor of the ovary. *Ann Diagn Pathol*. 2000;4:34-38.
10. Neuhauser TS, Tavassoli FA, Abbondanzo SL. Follicle center lymphoma involving the female genital tract: a morphologic and molecular genetic study of three cases. *Ann Diagn Pathol*. 2000;4:293-299.
11. Silver SA, Tavassoli FA. Glomus tumor arising in a mature teratoma of the ovary: report of a case simulating a metastasis from cervical squamous carcinoma. *Arch Pathol Lab Med*. 2000;124:1373-1375.
12. Silver SA, Tavassoli FA. Pleomorphic carcinoma of the breast: clinicopathological analysis of 26 cases of an unusual high-grade phenotype of ductal carcinoma. *Histopathology*. 2000;36:505-514.
13. Tavassoli FA. Ductal intraepithelial neoplasia (IDH, AIDH AND DCIS). *Breast Cancer*. 2000;7:315-320.
14. Vang R, Taubenberger JK, Mannion CM, Bijwaard K, Malpica A, Ordonez NG, Tavassoli FA, Silver SA. Primary vulvar and vaginal extraosseous Ewing's sarcoma/peripheral neuroectodermal tumor: diagnostic confirmation with CD99 immunostaining and reverse transcriptase-polymerase chain reaction. *Int J Gynecol Pathol*. 2000;19:103-109.

Abstracts

1. Aguilera NSI, Tavassoli FA, Abbondanzo SL. T-cell lymphoma presenting in the breast: a clinicopathologic study of 4 cases. *Mod Pathol*. 2000;13:141A. Abstract 824.



Donald E. Sweet, MD
 Chair
 Date of Appointment — 5 December 1982

DEPARTMENT OF ORTHOPEDIC PATHOLOGY

MISSION

The Department of Orthopedic Pathology provides excellence in consultation, education, and research in orthopedic pathology for the Department of Defense, Veterans Affairs, other federal agencies, and civilian pathologists at the national and international level.

STAFF

Medical:

Donald E. Sweet, MD, Chair
 Tuyethoa N. Vinh, MD, Assistant Chair
 Leonard N. Howard, MAJ, MC, USA, Staff Pathologist
 Frank H. Gannon, MD, Staff Pathologist
 Marlene DeMaio, CDR, MC, USN, Orthopedic Surgeon

Administrative:

Jean C. Banks, Secretary

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	106
Army	49
Navy	25
Air Force	32
Federal	83
VA	78
USPHS	2
OFA	3
Civilian	653
Interdepartmental	31
Total	873

1,070 cases for consultation, education, and research required the following types of procedures and analyses:

- H&E stains: 11,669 slides
- Special stains: 5,855 slides
- Immunohistochemical staining: 4,903 slides
- Electron microscopy: 1 case
- Direct immunofluorescence: 31 tests for 7 cases
- Molecular biology examination: 6 tests for 3 cases

—Total recuts studied: 22,427

—Contributor slides studied: 4,882

Our department made no change in the contributor diagnosis in 569 cases, a minor change in diagnosis in 282 cases, and a major change in diagnosis in 20 cases. We received 441 cases with no contributor diagnosis; 2 cases were recorded without coding.

CONSULTATION

<i>Cases</i>	<i>Received</i>
Military	241
Federal (VAH/PHS et al)	100
Civilian	964
Interdepartmental	127+
X-ray transfers	60

The department was assigned approximately 1,314 cases for review: 929 new cases, 296 new sequences (material) on old cases, 127+ intramural consults, and 160 radiologic transfers. There is a discrepancy between the computer-based consultation numbers listed above and the transcribed physical case count below. This entailed study of approximately 7,884 x-rays (36,668 radiographic images), 3,744 of which were copied, and examination of approximately 4,256 contributor slides, 1,112 recuts, and 843 immunohistochemical stains, special stains, and studies. This resulted in rendering 1,225 final, 127 consultative, and 944 phone reports, with an average turnaround time of 11 days. These figures do not include an almost equal number of interim and follow-up reports. Of these cases, an estimated 33% were without contributor diagnoses, 33% were without diagnostic change, 25% had minor diagnostic changes, and 10% had major diagnostic changes.

Approximately 88+ gross specimens were studied and dissected, including metabolic bone cases, with the majority being specimen x-rayed. Approximately 60% of the cases represent tumor or tumorlike conditions. The department is especially interested in cases of metabolic bone disease, avascular necrosis, lipomas and related lesions of bone, cortical osteofibrous dysplasia and adamantinoma of long bone, and reactions to prosthetic implants.

Dr. DeMaio serves as a consultant orthopedic surgeon at Annapolis (2 days/week), the Pentagon (1 day/month), and Congress (1 day/month).

Impact:

The Department of Orthopedic Pathology performed biomechanical evaluation of chest body armor, measuring deformation due to projectile impact on chest body armor, and testing concepts for design and its role in the survivability of Soldiers and Marines. The project is a collaboration between the AFIP, the Uniformed Services University of the Health Sciences, the US Army Soldiers' Systems Command and the National Naval Medical Center.

EDUCATION

The Department of Orthopedic Pathology's annual commitment to education through its courses, presentations, guest lectures, and trainee program provided 1,965 man-days of training during 2000, excluding exhibits and/or posters.

Presentations and Seminars: Department staff made 67 presentations at conferences and educational venues in 2000. Complete titles and dates are listed at the end of this report. The staff also conducted a bimonthly orthopedic oncology conference for the Department of Orthopedic Surgery at WRAMC.

Courses: Department staff participated in or conducted 9 courses in 2000, for a total of 1,358 attendee-days and 143 CME hours.

Trainees: Department staff provided training in 2000 for 6 trainees, including visitor study and board preparation for military, federal, and civilian medical students, pathologists, orthopedic surgeons, and fellows, for a total of 115 trainee-days.

Educational Aids:

1. Orthopedic A, B, and C study sets with approximately 280 glass slides and 1,000 2x2s.
2. General Surgical Pathology Course/AFIP Study Set
 - Orthopedic Pathology Study Section (21 glass slides)

- Radiographic/Pathologic, 3-Part Series: Margins, Matrix, Periosteal Reactions, glass slide study set (25 glass slides).
- 3. Orthopedic Pathology Learning Center (AFIP), reestablished September 1985 and temporarily relocated in the AFIP/UPS Warehouse, Gaithersburg, Md.

Exhibits:

1. Anatomic Aspects of Aging, National Museum of Health and Medicine (permanent exhibit)
2. Gunshot Wounds: A Historic Perspective, National Museum of Health and Medicine (permanent exhibit)
3. Behind the Scenes: The Case of Private Potter Revisited. Sequestration in Acute Osteomyelitis During the Civil War, National Museum of Health and Medicine (permanent exhibit)
4. Lent C. Johnson Memorial Exhibit Window, Department of Orthopedic Pathology, AFIP (permanent exhibit)
5. Anterior Cruciate Ligament Injuries in Females, Department of Orthopedic Pathology, AFIP (poster presentation)

RESEARCH

Publications: Department staff published 9 journal articles, 2 abstracts, and 5 syllabi/CD-ROMs in 2000. Complete bibliographic information is listed at the end of this report.

Projects: Our department maintained 6 ongoing research projects in 2000:

1. Conventional and Ossifying Lipoma of Bone
2. Immunohistochemistry of Adamantinoma and COFD
3. The Structure of Articular Cartilage
4. Neuropathic Joint Disease
5. Immunohistochemistry/Clear Cell Chondrosarcoma
6. Body Armor, Head Protection, and Training Injuries

OTHER ACCOMPLISHMENTS

Manuscripts Reviewed: Department staff reviewed articles for the following professional journals in 2000:

1. American Journal of Sports Medicine
2. Cancer
3. Clinical Orthopedics and Related Research
4. *Diagnostic Surgical Pathology*

Faculty Appointments:

1. Georgetown University Medical School, Clinical Professor of Pathology, DE Sweet.
2. Uniformed Services University of the Health Sciences, Clinical Professor of Pathology, DE Sweet.
3. University of Pennsylvania, Associate Professor of Orthopedic Surgery, FH Gannon.
4. Uniformed Services University of the Health Sciences, Assistant Professor of Pathology, FH Gannon.
5. Uniformed Services University of the Health Sciences, Assistant Professor of Surgery, M DeMaio.

Continuing Education: Department staff attended meetings of the Society of Military Orthopedic Surgeons, IAP, ASCP/CAP, and the International Skeletal Society, which provided training and information on current research aspects of bone and joint disease.

Public Affairs Reports:

Metabolic bone lab gears up for future initiatives. *The AFIP LETTER*. 2000;158(3):1.

PRESENTATIONS

1. January 2000: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
2. January 2000: El Paso, Tex, Texas Tech University and William Beaumont Army Medical Center Orthopedics Symposium, "ACL injuries in females," M DeMaio.
3. February 2000: Washington, DC, AFIP, "Skeletal growth and development and mecha-

- nisms of disease," DE Sweet.
4. February 2000: Washington, DC, Georgetown University School of Medicine, Pathology Grand Rounds, "Circulatory disease of bone," DE Sweet.
 5. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Skeletal growth and development and mechanisms of disease," DE Sweet.
 6. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Circulatory disorders of bone," DE Sweet.
 7. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Infectious diseases of bone," DE Sweet.
 8. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Arthritis," TN Vinh.
 9. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Metabolic disorders of bone," FH Gannon.
 10. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Cartilage tumors of bone," DE Sweet.
 11. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Osseous tumors of bone," DE Sweet.
 12. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Fibrous and cystic tumors of bone," DE Sweet.
 13. February 2000: Miami, Fla, University of Miami Orthopedic Pathology and Basic Science Course, "Giant cell, round cell and vascular tumors of bone," DE Sweet.
 14. February 2000: Washington, DC, AFIP Staff Conference, "Comparative body armor testing: blunt-force trauma to the chest wall," M DeMaio, FH Gannon.
 15. February 2000: Houston, Tex, Baylor University Medical Center, Orthopedic Surgery Department Grand Rounds, "ACL injuries in females," M DeMaio.
 16. March 2000: Washington, DC, Georgetown University School of Medicine, "Growth and development of bone and pathogenesis of bone tumors," DE Sweet.
 17. March 2000: Washington, DC, Georgetown University School of Medicine, "Metabolic bone disease," DE Sweet.
 18. March 2000: Washington, DC, Georgetown University School of Medicine, "Circulatory, inflammatory and Paget's disease of bone," DE Sweet..
 19. March 2000: Washington, DC, Georgetown University School of Medicine, "Arthritic disorders of bone," DE Sweet.
 20. April 2000: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
 21. April 2000: Washington, DC, AFIP Interagency Conference, "Comparative body armor testing: blunt-force trauma to the chest wall," M DeMaio, FH Gannon.
 22. April 2000: Baltimore, Md, University of Maryland School of Medicine, "Pathogenesis of primary bone tumors," DE Sweet.
 23. May 2000: Washington, DC, Scientific Advisory Board/AFIP, "Body Armor Project," M DeMaio.
 24. May 2000: Bethesda, Md, AFIP General Surgical Pathology Review Course, "Pathogenesis of primary bone tumors and radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
 25. May 2000: Charlottesville, Va, University of Virginia School of Medicine, "Circulatory disorders of bone," DE Sweet.
 26. May 2000: Charlottesville, Va, University of Virginia School of Medicine, "Pathogenesis of primary bone tumors," DE Sweet.
 27. May 2000: Bethesda, Md, National Naval Medical Center, "Cartilage lesions of bone," DE Sweet.
 28. May 2000: Washington, DC, WRAMC, "Fibrous and cystic lesions of bone," DE Sweet.
 29. May 2000: New Haven, Conn, Yale University, Department of Orthopedic Surgery and Rehabilitation, "ACL injuries in females," M DeMaio.
 30. June 2000: Shreveport, La, Louisiana State University-Shreveport, Department of Orthopedic Surgery, "ACL injuries in females," M DeMaio.

31. June 2000: Shreveport, La, Louisiana State University-Shreveport, Department of Orthopedic Surgery, "Kinematics of the human knee and the instant axis of rotation," M DeMaio.
32. July 2000: Bethesda, Md, Naval School of the Health Sciences, Trauma Nursing Assessment for the Operational Environment, "Orthopedic emergencies," M DeMaio.
33. July 2000: Deauville, France, AFIP/ARP Diagnostic Surgical Pathology Course, "Pathogenesis of primary bone tumors and radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
34. July 2000: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
35. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Growth and development," DE Sweet.
36. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
37. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Circulatory disorders of bone," DE Sweet.
38. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Fibrous and cystic lesions of bone," DE Sweet.
39. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Cartilage lesions of bone," DE Sweet.
40. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Anomalies of bone," LN Howard.
41. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Infectious diseases of bone," TN Vinh.
42. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Arthritic disorders of bone," TN Vinh.
43. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Metabolic disorders of bone," FH Gannon.
44. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Periarticular and soft tissue tumors," KM Shekitka.
45. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Role and limitations of pathology," KM Shekitka.
46. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Giant cell, round cell and vascular tumors of bone," DE Sweet.
47. September 2000: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
48. September 2000: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Unknown case discussions and laboratory study sets," FH Gannon, LN Howard, TN Vinh, DE Sweet.
49. September 2000: Rockville, Md, AFIP/ARP Telepathology Course, "Orthopedic experience and expectations in telepathology," DE Sweet.
50. September 2000: Washington, DC, Armed Forces Radio and Television, The Range, "Ballistics and body armor testing," M DeMaio.
51. September 2000: Fort Walton Beach, Fla, US Army Combat Casualty Care Annual Research Symposium, "Closed-chest trauma: evaluation of the protected chest," M DeMaio.
52. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, "Growth and development," DE Sweet.
53. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, "Radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
54. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, "Circulatory disorders of bone," DE Sweet.
55. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, "Fibrous and cystic lesions of bone," DE Sweet.
56. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, "Cartilage lesions of bone," DE Sweet.
57. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial,

- “Infectious diseases of bone,” TN Vinh.
58. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, “Arthritic disorders of bone,” TN Vinh.
 59. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, “Metabolic disorders of bone,” FH Gannon.
 60. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, “Osseous tumors of bone,” DE Sweet.
 61. October 2000: Ottawa, Canada, Canadian Orthopedic Pathology Course and Tutorial, “Giant cell, round cell and vascular tumors of bone,” DE Sweet.
 62. October 2000: Washington, DC, WRAMC Neurosurgical Research Conference, “Effectiveness of chest body armor and concepts for design,” M DeMaio.
 63. November 2000: Savannah, Ga, AFIP/ARP Diagnostic Surgical Pathology Course, “Pathogenesis of primary bone tumors and radiologic/pathologic correlation of solitary bone lesions,” DE Sweet.
 64. November 2000: Philadelphia, Pa, 3rd International FOP Symposium, “The histopathology of FOP.”
 65. November 2000: Bethesda, Md, USUHS, “Fibrodysplasia ossificans progressiva: Why do some people have two skeletons?” FH Gannon.
 66. November 2000: Crystal City, Va, 71st Annual Meeting of the Shock and Vibrations Information Analysis Center, “Determining injury tolerances in the human thorax caused by nonpenetrating ballistic trauma,” M DeMaio.
 67. December 2000: Bethesda, Md, USUHS, Orthopedic Pathology Course/2000, “Small group lecture QOW,” FH Gannon.

PUBLICATIONS

Journal Articles:

1. Coons DA, Sweet DE, Pitcher JD, Youngberg R, Blaser J. Fibular mass in a 28-year-old man. *Clin Orthop*. 2000;373:311-316.
2. Gadwal SR, Fanburg-Smith JC, Gannon FH, Thompson LDR. Primary chondrosarcoma of the head and neck in pediatric patients: a clinicopathologic study of 14 cases with a review of the literature. *Cancer*. 2000;88:2181-2188.
3. Johnson LC, Vinh TN, Sweet DE. Bone tumor dynamics: an orthopedic pathology perspective. *Semin Musculoskelet Radiol*. 2000;4:1-15.
4. Junge RE, Gannon FH, Porton I, McAlister WH, Whyte MP. Management and prevention of vitamin D deficiency rickets in captive-born juvenile chimpanzees (*Pan troglodytes*). *J Zoo Wildl Med*. 2000;31:361-369.
5. Murphey MD, Choi JJ, Kransdorf MJ, Flemming DJ, Gannon FH. Imaging of osteochondroma: variants and complications with radiologic-pathologic correlation. *Radiographics*. 2000;20:1407-1434.
6. Perloff JR, Gannon FH, Bolger WE, Montone KT, Orlandi R, Kennedy DW. Bone involvement in sinusitis: an apparent pathway for the spread of disease. *Laryngoscope*. 2000;110:2095-2099.
7. Shore EM, Glaser DL, Gannon FH. Osteogenic induction in hereditary disorders of heterotopic ossification. *Clin Orthop*. 2000;374:303-316.
8. Whyte MP, Mills BG, Reinus WR, Podgornik MN, Roodman GD, Gannon FH, Eddy MC, McAlister WH. Expansile skeletal hyperphosphatasia: a new familial metabolic bone disorder. *J Bone Miner Res*. 2000;15:2330-2344.
9. Yeh GI, Mathur S, Wivel A, Li M, Gannon FH, Ulied A, Audi L, Olmstead EA, Kaplan FS, Shore EM. GNAS1 mutation and Cbfa1 misexpression in a child with severe congenital platelike osteoma cutis. *J Bone Miner Res*. 2000;15:2063-2073.

Abstracts:

1. Fanburg-Smith JC, Gannon FH, Gadwal SR, Thompson LDR. Primary chondrosarcoma of the head and neck in children: a clinicopathologic study of 14 patients. *Mod Pathol*. 2000;13:137A. Abstract 800.
2. Gannon FH, Fanburg-Smith JC, Gadwal SR, Thompson LDR. Primary osteosarcoma of the

head and neck: a clinicopathologic study of 22 cases. *Mod Pathol.* 2000;13:138A. Abstract 804.

Other Publications

1. Sweet DE. Radiologic-pathologic correlation of solitary bone lesions[syllabus]. AFIP General Surgical Pathology Review Course; May 2000; Bethesda, Md.
2. Sweet DE. Primary tumors of the cranial-facial bones and relationship to skeletal development [syllabus]. American Academy of Oral and Maxillofacial Pathology; June 2000; Kailua, Hawaii.
3. Sweet DE. Comparative pathology of primary cranial-facial bone and skeletal tumors [syllabus]. American Academy of Oral and Maxillofacial Pathology Course and Workshop; June 2000; Kailua, Hawaii.
4. Sweet DE. Growth and development, manifestations of disease, radiographic margins/periosteal reactions/matrix patterns and ancillary studies, pathogenesis of osteonecrosis, benign fibrous and cystic lesions of bone, giant cell tumor and aneurysmal bone cyst, and chondromas of bone [syllabus and CD-ROM]. Armed Forces Institute of Pathology, American Registry of Pathology; September 2000.
5. Vinh TN, Sweet DE. Infectious disease of bone and joints/pathophysiology of arthritis [syllabus and CD-ROM]. Armed Forces Institute of Pathology, American Registry of Pathology; September 2000.



Markku Miettinen, MD, PhD
 Chair
 Date of Appointment — 1 July 1996

SOFT TISSUE PATHOLOGY

MISSION

The Department of Soft Tissue Pathology provides consultations to the United States Armed Forces and federal and civilian contributors worldwide. The department is committed to furthering and distributing knowledge of soft tissue tumors through clinical, pathologic, and molecular genetic research, and through educational presentations.

STAFF

Medical:

- Markku Miettinen, MD, PhD, Chair and Registrar
- Franz M. Enzinger, MD, Chair Emeritus, Visiting Scientist
- (A) William B. Laskin, Visiting Scientist
- John F. Fetsch, MD, Assistant Chair
- Julie C. Fanburg-Smith, MD
- Madeline S. Mitchell, MD
- Mohammad Nadjem, COL, MC, USA
- (A) Sumitra L. Parekh
- (A) Carl Millward
- (A) Fabrizio Remotti

Scientific:

- Jerzy Lasota, MD, PhD, Research Pathologist
- Virginia Achstetter, Senior Laboratory Technician

Fellows:

- (D) Agnieszka Wozniak
- (A) Edina Paul
- (A) Bartosz Wasag
- (A) Mary Furlong

Administrative:

- Charmaine Howard, Secretary
- (A) Vera Pettus

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	505
Army	197
Navy	125
Air Force	183
Federal	273
VA	262
USPHS	8
OFA	3
Civilian	1,583
Interdepartmental	1,172
Total	3,553

1,049 cases for consultation, 281 for education, and 217 for research required the following types of procedures and analyses:

- H&E stains: 5,668 slides
- Special stains: 494 slides
- Immunohistochemical stains: 9,177 slides
- Electron microscopy: 2 cases
- Direct immunofluorescence: 114 tests for 39 cases
- Molecular biology examination: 132 tests for 78 cases
- Total recuts studied: 13,083
- Contributor slides studied: 14,854

Our department made no change in the contributor's diagnosis in 857 cases, a minor change in diagnosis in 1,042 cases, and a major change in diagnosis in 96 cases. We reviewed 369 cases with no contributor diagnosis; 4 cases were recorded without coding.

During 2000, we continued to upgrade our consultation service. The number of military and federal consultations increased by 18% and 14%, respectively. There was also a 6.5% increase in civilian consultations, and the number of interdepartmental consultations remained steady.

Over 30 new antibodies were tested:

- 8 KIT (CD117) antibodies were compared.
- antibody to microphthalmia transcription factor that could prove useful in the diagnosis of melanoma.
- Myf4 that is useful in the diagnosis of rhabdomyosarcoma.

The department provided specifically designed multitumor blocks for controls for the immunohistochemistry laboratory.

Impact:

1. We established that esophageal mesenchymal tumors include a 25% subset of KIT-positive gastrointestinal stromal tumors (GISTs), not previously reported in this location.
2. Our study on 200 GISTs revealed that the exon 9, codon 502-503 insertion-duplication mutation of c-kit is a rare, nearly small intestinal GIST-specific mutation with high lethality.
3. We reported or refined several new soft tissue tumor entities, including pigmented neurofibroma and lipofibromatosis, a childhood soft tissue tumor, and the true nerve sheath myxoma that should be differentiated from cellular neurothekeoma.
4. We reported expression of KIT in angiosarcoma and fetal endothelia, and lack of GIST-type KIT mutations in these tumors.
5. A nearly complete keratin profile of synovial sarcoma was established with the finding that this tumor has a highly complex pattern of different keratins, including variable expression of keratins 4, 6, 7, 8, 10, 13, 14, 16, 17, 18, 19, and 20.

EDUCATION

Presentations and Seminars: Department staff gave 38 presentations at professional meetings, symposia, and in the Institute. International meetings included the IAP Conference in Nagoya, Japan (cochair of the GIST symposium), the Kyushu International Symposium on Soft Tissue in Fukuoka, Japan, and the Conference on Soft Tissue Pathology in Krakow, Poland.

Courses: Members of the department presented in AFIP courses locally and internationally, including those held in Valencia, Spain, and Buenos Aires, Argentina, in collaboration with local organizers.

Trainees: During 2000, 11 trainees, including 2 full-time Callender-Binford fellows, attended the department for a total of 556 trainee-days. We also had 8 one-month fellows (residents rotating from various programs of military and civilian institutions) and military and civilian visitors reviewing teaching material or participating in collaborative research programs. We also had a high school student from the SEAP program.

RESEARCH

Publications: Department staff published 26 journal articles and 15 abstracts in 2000. Full references are listed at the end of this report.

Projects: Sixteen approved research projects were conducted, including analysis of specific subsets of smooth muscle and gastrointestinal stromal tumors, vascular, lipomatous, and nerve sheath tumors. These project included histologic, immunophenotypic, and molecular genetic characterization of the examined tumors, with emphasis on the data synthesis to increase understanding of the biologic nature of these tumors to benefit diagnosis, treatment, and possible tumor prevention. Numerous multitumor blocks and tumor arrays were prepared to support departmental research and interdepartmental collaboration. Results of the research on tumor phenotyping and mutation studies provided new tools that were directly applied on consultation practice.

OTHER ACCOMPLISHMENTS

Collaborators:

Civilian:

1. W. Laskin, Northwestern University, Chicago, Ill.
2. A. Folpe and S. Weiss, Emory University, Atlanta, Ga.

International:

1. S. Nordling, M. Sarlomo-Rikala, Department of Pathology, Haartman Institute, University of Helsinki, Finland.
2. K. Alitalo, T. Partanen, Department of Cellular and Molecular Biology, Haartman Institute, University of Helsinki, Finland.
3. J. Limon, Medical Academy of Gdansk, Poland.
4. A. Niezabitowski, Medical Academy of Krakow, Poland.
5. M. Michal, Karlova University of Pilsen, Czech Republic.

Interdepartmental:

1. T. O'Leary, Department of Cellular Pathology.
2. L. Sobin, Division of Gastrointestinal Pathology.
3. S. Abbondanzo, M. Nandedkar, Department of Hematologic and Lymphatic Pathology.
4. F. Gannon, Department of Orthopedic Pathology.
5. L. Thompson, Department of Otorhinolaryngic/Head-Neck Pathology.
6. D. Frost, W. Inskeep, Department of Veterinary Pathology.

Committees:

Editorial Boards:

M. Miettinen:

1. *Human Pathology*
2. *Virchows Archiv*
3. *Annals of Diagnostic Pathology*
4. *Applied Immunohistochemistry*
5. *Pathology Research and Practice*
6. *Journal of Urologic Pathology*
7. *American Journal of Surgical Pathology*

Manuscripts Reviewed: Members of the department reviewed 55 articles for journals of pathology and related specialties.

Faculty Appointments:

1. University of Helsinki, Finland, Adjunct Professor of Pathology—M Miettinen
2. Jefferson Medical College, Thomas Jefferson University, Philadelphia, Pa, Adjunct Professor of Pathology, Anatomy and Cell Biology—M Miettinen
3. Johns Hopkins University, Baltimore, Md, Lecturer—JC Fanburg-Smith

PRESENTATIONS

1. February 2000: Helsinki, Finland, University of Helsinki, "Translocations as disease markers for soft tissue tumors," M Miettinen.
2. February 2000: Helsinki, Finland, University of Helsinki, "Selected problems in soft tissue tumors: a slide seminar," M Miettinen.
3. March 2000: Washington, DC, George Washington University, "Smooth muscle, skeletal muscle and lipomatous tumors," M Nadjem.
4. March 2000: New Orleans, La, USCAP, "Molecular alterations in perineurial cell tumors," JP Lasota.
5. April 2000: Washington, DC, ARP External Resident Symposium, "Gastrointestinal stromal tumors - an example of newly discovered tumor pathogenesis," M Miettinen.
6. April 2000: Silver Spring, Md, AFIP Course on Surgical Pathology, "Immunohistochemistry of soft tissue tumors," M Miettinen.
7. April 2000: Silver Spring, Md, AFIP Course on Surgical Pathology, "Fibroblastic tumors," JF Fetsch.
8. April 2000: Silver Spring, Md, AFIP Course on Surgical Pathology, "Problematic nerve sheath and related soft tissue tumors," JC Fanburg-Smith.
9. April 2000: Silver Spring, Md, AFIP Course on Surgical Pathology, "Problems of smooth muscle, skeletal muscle and lipomatous tumors," M Nadjem.
10. April 2000: Bethesda, Md, Department of Pathology, Uniformed Services University of the Health Sciences, "Recent research in soft tissue pathology at the AFIP," JC Fanburg-Smith.
11. May 2000: Washington, DC, AFIP Resident Symposium, "Problems in soft tissue pathology," M Miettinen.
12. May 2000: Washington, DC, AFIP Resident Symposium, "Problems in soft tissue pathology," JF Fetsch.
13. May 2000: Washington, DC, AFIP Resident Symposium, "Problems in soft tissue pathology," JC Fanburg-Smith.
14. May 2000: Helsinki, Finland, University of Helsinki, Course in Molecular Biology and Pathology, "Molecular pathology of soft tissue tumors," M Miettinen.
15. May 2000: Washington, DC, AFIP Weekly Staff Conference, "KIT growth factor receptor turned into oncogene," M Miettinen.
16. May 2000: Washington, DC, AFIP Weekly Staff Conference, "Unusual vascular tumors," JC Fanburg-Smith.
17. May 2000: Washington, DC, AFIP Weekly Staff Conference, "Tumor suppressor gene loss - perineurial cell tumor as an example," JP Lasota.
18. June 2000: Bethesda, Md, NIH, Clinical Center, "Molecular pathogenesis of gastrointestinal stromal tumors," M Miettinen.
19. June 2000: Washington, DC, Walter Reed Army Medical Center, "Update on gastrointestinal stromal tumors," M Miettinen.
20. June 2000: Valencia, Spain, AFIP Course in Surgical Pathology, "Immunohistochemistry of soft tissue tumors," M Miettinen.
21. June 2000: Valencia, Spain, AFIP Course in Surgical Pathology, "Borderline soft tissue tumors," M Miettinen.
22. June 2000: Valencia, Spain, AFIP Course in Surgical Pathology, "Immunohistochemistry," M Miettinen.
23. June 2000: Washington, DC, Georgetown University, "Smooth muscle, skeletal muscle and lipomatous tumors," M Nadjem.
24. September 2000: Buenos Aires, Argentina, AFIP Course in Surgical Pathology, "Immunohistochemistry of soft tissue tumors," M Miettinen.
25. September 2000: Buenos Aires, Argentina, AFIP Course in Surgical Pathology, "Borderline soft tissue tumors," M Miettinen.
26. September 2000: Buenos Aires, Argentina, AFIP Course in Surgical Pathology, "Needle biopsies and molecular pathology of soft tissue tumors," M Miettinen.
27. September 2000: Washington, DC, AFIP Telepathology Course, "Lecture," JC Fanburg-

- Smith.
28. October 2000: Nagoya, Japan, International Academy of Pathology Symposium, "Pathology of gastrointestinal stromal tumors," M Miettinen.
 29. October 2000: Nagoya, Japan, International Academy of Pathology Slide Seminar on Soft Tissue Tumors, "Presentation of a gastrointestinal stromal tumor on the urinary bladder serosa," M Miettinen.
 30. October 2000: Fukuoka, Japan, Kiushu International Symposium on Soft Tissue Tumors, "KIT growth factor receptor: a disease marker and target of disease," M Miettinen.
 31. October 2000: Krakow, Poland, Conference on Soft Tissue Tumors, Slide Seminar, "Abdominal soft tissue tumors," M Miettinen.
 32. October 2000: San Diego, Calif, ASCP Anatomic Pathology Workshop, Course #1286, "Diagnostic problems in soft tissue pathology," JF Fetsch.
 33. October 2000: Bethesda, Md, NIH Visiting Lectureship, "Lecture," JC Fanburg-Smith.
 34. October 2000: Krakow, Poland, Conference on Soft Tissue Tumors, "Utilization of molecular pathology in the study of soft tissue tumors," JP Lasota.
 35. October 2000: Krakow, Poland, Conference on Soft Tissue Tumors, "Molecular pathology of abdominal soft tissue tumors," JP Lasota.
 36. November 2000: Savannah, Ga, AFIP Course on Surgical Pathology, "Pathology of soft tissue tumors," M Miettinen.
 37. November 2000: New York, NY, Meeting of the Society for Applied Immunohistochemistry, "Gastrointestinal stromal tumors," M Miettinen.
 38. November 2000: Washington, DC, Georgetown University Medical Center, "Vascular tumors," JC Fanburg-Smith.

PUBLICATIONS

Journal Articles:

1. El-Rifai W, Sarlomo-Rikala M, Andersson LC, Knuutila S, Miettinen M. DNA sequence copy number changes in gastrointestinal stromal tumors: tumor progression and prognostic significance. *Cancer Res.* 2000;60:3899-3903.
2. El-Rifai W, Sarlomo-Rikala M, Andersson LC, Miettinen M, Knuutila S. High-resolution deletion mapping of chromosome 14 in stromal tumors of the gastrointestinal tract suggests two distinct tumor suppressor loci. *Genes Chromosomes Cancer.* 2000;27:387-391.
3. Fanburg-Smith JC, Gyure KA, Michal M, Katz D, Thompson LD. Retroperitoneal peripheral hemangioblastoma: a case report and review of the literature. *Ann Diagn Pathol.* 2000;4:81-87.
4. Fetsch JF, Brinsko RW, Davis CJ, Mostofi FK, Sesterhenn IA. A distinctive myointimal proliferation ("myointimoma") involving the corpus spongiosum of the glans penis: a clinicopathologic and immunohistochemical analysis of 10 cases. *Am J Surg Pathol.* 2000;24:1524-1530.
5. Fetsch JF, Michal M, Miettinen M. Pigmented (melanotic) neurofibroma: a clinicopathologic and immunohistochemical analysis of 19 lesions from 17 patients. *Am J Surg Pathol.* 2000;24:331-343.
6. Fetsch JF, Miettinen M, Laskin WB, Michal M, Enzinger FM. A clinicopathologic study of 45 pediatric soft tissue tumors with an admixture of adipose tissue and fibroblastic elements, and a proposal for classification as lipofibromatosis. *Am J Surg Pathol.* 2000;24:1491-1500.
7. Gadwal SR, Fanburg-Smith JC, Gannon FH, Thompson LD. Primary chondrosarcoma of the head and neck in pediatric patients: a clinicopathologic study of 14 cases with a review of the literature. *Cancer.* 2000;88:2181-2188.
8. Gaertner EM, Steinberg DM, Huber M, Hayashi T, Tsuda N, Askin FB, Bell SW, Nguyen B, Colby TV, Nishimura SL, Miettinen M, Travis WD. Pulmonary and mediastinal glomus tumors: report of five cases including a pulmonary glomangiosarcoma: a clinicopathologic study with literature review. *Am J Surg Pathol.* 2000;24:1105-1114.
9. Kiuru-Kuhlefelt S, Sarlomo-Rikala M, Larramendy ML, Soderlund M, Hedman K, Miettinen M, Knuutila S. FGF4 and INT2 oncogenes are amplified and expressed in Kaposi's sarcoma. *Mod Pathol.* 2000;13:433-437.

10. Laskin WB, Fetsch JF, Miettinen M. The “neurothekeoma”: immunohistochemical analysis distinguishes the true nerve sheath myxoma from its mimics. *Hum Pathol.* 2000;31:1230-1241.
11. Lasota J, Carlson JA, Miettinen M. Spindle cell tumor of urinary bladder serosa with phenotypic and genotypic features of gastrointestinal stromal tumor: a clinical report with documentation of KIT expression and mutation. *Arch Pathol Lab Med.* 2000;124:894-897.
12. Lasota J, Nordling S, Miettinen M. Testicular diffuse large cell lymphoma with tubule preservation—molecular genetic evidence of transformation from previous follicular lymphoma. *Virchows Arch.* 2000;436:276-283.
13. Lasota J, Wozniak A, Sarlomo-Rikala M, Rys J, Kordek R, Nassar A, Sobin LH, Miettinen M. Mutations in exons 9 and 13 of KIT gene are rare events in gastrointestinal stromal tumors: a study of 200 cases. *Am J Pathol.* 2000;157:1091-1095.
14. Lushnikova T, Knuutila S, Miettinen M. DNA copy number changes in epithelioid sarcoma and its variants: a comparative genomic hybridization study. *Mod Pathol.* 2000;13:1092-1096.
15. Marshall-Taylor C, Fanburg-Smith JC. Fibrohistiocytic lipoma: twelve cases of a previously undescribed benign fatty tumor. *Ann Diagn Pathol.* 2000;4:354-360.
16. Marshall-Taylor C, Fanburg-Smith JC. Hemosiderotic fibrohistiocytic lipomatous lesion: ten cases of a previously undescribed fatty lesion of the foot/ankle. *Mod Pathol.* 2000;13:1192-1199.
17. Miettinen M, Fetsch JF. Distribution of keratins in normal endothelial cells and a spectrum of vascular tumors: implications in tumor diagnosis. *Hum Pathol.* 2000;31:1062-1067.
18. Miettinen M, Franssila KO. Variable expression of keratins and nearly uniform lack of thyroid transcription factor 1 in thyroid anaplastic carcinoma. *Hum Pathol.* 2000;31:1139-1145.
19. Miettinen M, Limon J, Niezabitowski A, Lasota J. Patterns of keratin polypeptides in 110 biphasic, monophasic, and poorly differentiated synovial sarcomas. *Virchows Arch.* 2000;437:275-283.
20. Miettinen M, Sarlomo-Rikala M, Lasota J. KIT expression in angiosarcomas and fetal endothelial cells: lack of mutations of exon 11 and exon 17 of C-kit. *Mod Pathol.* 2000;13:536-541.
21. Miettinen M, Sarlomo-Rikala M, Sobin LH, Lasota J. Gastrointestinal stromal tumors and leiomyosarcomas in the colon: a clinicopathologic, immunohistochemical, and molecular genetic study of 44 cases. *Am J Surg Pathol.* 2000;24:1339-1352.
22. Miettinen M, Sarlomo-Rikala M, Sobin LH, Lasota J. Esophageal stromal tumors: a clinicopathologic, immunohistochemical, and molecular genetic study of 17 cases and comparison with esophageal leiomyomas and leiomyosarcomas. *Am J Surg Pathol.* 2000;24:211-222.
23. Miettinen M, Sobin LH, Sarlomo-Rikala M. Immunohistochemical spectrum of GISTs at different sites and their differential diagnosis with a reference to CD117 (KIT). *Mod Pathol.* 2000;13:1134-1142.
24. Nandedkar MA, Abbondanzo SL, Miettinen M. Extramedullary manifestation of multiple myeloma (systemic plasmacytoma) that simulates hemangioma: a report of 2 cases. *Arch Pathol Lab Med.* 2000;124:628-631.
25. Neuhauser TS, Derringer GA, Thompson LD, Fanburg-Smith JC, Miettinen M, Saaristo A, Abbondanzo SL. Splenic angiosarcoma: a clinicopathologic and immunophenotypic study of 28 cases. *Mod Pathol.* 2000;13:978-987.
26. Partanen TA, Arola J, Saaristo A, Jussila L, Ora A, Miettinen M, Stacker SA, Achen MG, Alitalo K. VEGF-C and VEGF-D expression in neuroendocrine cells and their receptor, VEGFR-3, in fenestrated blood vessels in human tissues. *FASEB J.* 2000;14:2087-2096.

Abstracts:

1. Debiec-Rychter M, Lasota J, Sarlomo-Rikala M, Kordek R, Miettinen M. Numerical chromosomal changes in gastrointestinal stromal tumors (GISTs) by interphase FISH. *Mod Pathol.* 2000;13:78A. Abstract 448.
2. Eyzaguirre E, Damjanov I, Miettinen M, Gatalica Z. FHIT expression in testicular germ

- cell tumors. *Mod Pathol.* 2000;13:99A. Abstract 571.
3. Fanburg-Smith JC, Gannon FH, Gadwal SR, Thompson LDR. Primary chondrosarcoma of the head and neck in children: a clinicopathologic study of 14 patients. *Mod Pathol.* 2000;13:137A. Abstract 800.
 4. Fetsch JF, Laskin WB, Miettinen M. An analysis of 19 cases of a distinctive pediatric soft tissue tumor with a predilection for the hands and feet, and a proposal for classification as a lipofibromatosis. *Mod Pathol.* 2000;13:9A. Abstract 30.
 5. Folpe AL, Fanburg-Smith JC, Miettinen M, Weiss SW. Atypical and malignant glomus tumors: review of 54 cases, with a proposal for the reclassification of glomus tumors. *Mod Pathol.* 2000;13:9A. Abstract 31.
 6. Furlong MA, Mentzel T, Miettinen M, Fanburg-Smith JC. Pleomorphic rhabdomyosarcoma (PRMS): a morphologic and immunohistochemical review of 45 cases with criteria for diagnosis. *Mod Pathol.* 2000;13:9A. Abstract 34.
 7. Gannon FH, Fanburg-Smith JC, Gadwal SR, Thompson LDR. Primary osteosarcoma of the head and neck. *Mod Pathol.* 2000;13:138A. Abstract 804.
 8. Hill K, Gonzalez-Crussi F, Kovanik P, Fetsch D, Chou PM. Calcifying fibrous pseudotumor versus inflammatory pseudotumor: histologic and immunohistological comparison. *Mod Pathol.* 2000;13:204A. Abstract 1199.
 9. Laskin WB, Fetsch JF, Miettinen M. The “neurothekeoma”: immunohistochemistry distinguishes “true” nerve sheath myxoma from its mimics. *Mod Pathol.* 2000;13:64A. Abstract 360.
 10. Lasota J, Wozniak A, Debiec-Rychter M, Fetsch JF, Miettinen M. Loss of chromosome 22q and lack of NF2 mutations in perineuriomas. *Mod Pathol.* 2000;13:11A. Abstract 46.
 11. Marshall-Taylor C, Miettinen M, Fanburg-Smith JC. Hemosiderotic fibrohistiocytic lipomatous lesion: 10 cases of a previously undescribed fatty lesion of the foot/ankle. *Mod Pathol.* 2000;13:13A. Abstract 53.
 12. Michal M, Fanburg-Smith JC, Fetsch JF, Lasota J, Miettinen M. Minute synovial sarcomas of the hands and feet: an analysis of 17 cases. *Mod Pathol.* 2000;13:13A. Abstract 55.
 13. Miettinen M, Lasota J. KIT-positivity and lack of C-KIT mutations in angiosarcomas. *Mod Pathol.* 2000;13:13A. Abstract 56.
 14. Neuhauser TS, Derringer GA, Thompson LDR, Fanburg-Smith JC, Miettinen M, Abbondanzo SL. Splenic angiosarcoma: a clinicopathologic and immunophenotypic study of 28 cases. *Mod Pathol.* 2000;13:14A. Abstract 59.
 15. Neuhauser TS, Derringer GA, Thompson LDR, Fanburg-Smith JC, Aguilera NSI, Andriko JA, Abbondanzo SL. Splenic inflammatory myofibroblastic tumor (“inflammatory pseudotumor”): a clinicopathologic and immunophenotypic study of 12 cases. *Mod Pathol.* 2000;13:14A. Abstract 60.



GROUP 2

HEART, LUNG & AERODIGESTIVE DISEASES

CARDIOVASCULAR PATHOLOGY

**ENDOCRINE & OTORHINOLARYNGIC
HEAD-NECK PATHOLOGY**

**HEPATIC & GASTROINTESTINAL
PATHOLOGY**

ORAL & MAXILLOFACIAL PATHOLOGY

**PULMONARY & MEDIASTINAL
PATHOLOGY**



Renu Virmani, MD
Chair
Date of Appointment — 2 September 1984

DEPARTMENT OF CARDIOVASCULAR PATHOLOGY

MISSION

The Department of Cardiovascular Pathology supports the mission of the Armed Forces Institute of Pathology by providing consultation, education, and research on the cardiovascular system and its pathological conditions for the active military force, the Department of Veterans Affairs, and other federal and civilian agencies.

STAFF

Medical:

Renu Virmani, MD, Chair
Allen Burke, MD, Associate Chair
Andrew Farb, MD, Staff Cardiologist
Frank D. Kolodgie, PhD (Pathology), Research Scientist
Robert Kutys, MS, Pathology Assistant
(D) Lynn Beach, LCDR, USN

Scientific:

Wendy Creighton, MD, Research Scientist
You-hui Liang, MD, Research Assistant
Helwig Avallone, Histopathology Laboratory Supervisor
Heng-jing Ouyang, MD, Histopathology Technician
Xin Xu, Histopathology Technician
Russell M. Jones, Research Associate
Lila Adams, Research Assistant
Patricia S. Wilson, Research Assistant
(D) Gerti Tashko, Research Technician (Part-time)
Michael John, Research Assistant
Deena Weber, Research Assistant
Leslie Keefer, Histopathology Technician
Sweta Shroff, MS, Research Assistant
Kimberly Trent, Histopathology Technician
Rosalind Matthew, Histopathology Technician
Jinky Rivera, Histopathology Technician
(A) Abebe Atiso, Histopathology Technician
(A) Eduardo Acampado, Research Associate

Administrative:

Jacqueline Hawkins, Senior Medical Secretary
Carol Ward, MSG, USA (Ret)

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	73
Army	37
Navy	22
Air Force	14
Federal	65
VA	27
USPHS	0
OFA	38
Civilian	781
Interdepartmental	144
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Total	1,063

The department sees many complex cases requiring extensive study. In 2000, we received 459 cases as gross hearts, each requiring several hours of dissection and submission of several blocks, often requiring gross photography and special stains. In addition, 37 cases included a detailed study of the conduction system, requiring special staining of hundreds of slides each. There were 21 temporal artery biopsies, many requiring serial sectioning, and 31 heart tumors requiring extensive immunohistochemical studies. The remaining several hundred cases represented a variety of lesions, many of which included entire autopsy slides to review.

Many of the total 1,063 cases required special procedures and stains supplied by Scientific Laboratories:

- H&E stains: 5,785 slides
- Special stains: 2,240 slides
- Wet tissues cut in: 4,367 slides
- Electron microscopy: 25 cases
- Direct immunofluorescence: 13 tests for 3 cases
- Molecular biology examination: 16 tests for 8 cases
- Total recuts studied: 7,022
- Contributor slides studied: 1,843

The department made no change in the contributor diagnosis in 33 cases, a minor change in 4 cases, and a major change in 1 case. We received 774 cases with no contributor diagnosis; 107 cases were recorded without coding.

Impact:

—Options for the treatment of coronary artery atherosclerosis and vascular trauma are continually expanding. More than 500,000 vascular interventions are performed in the United States each year. Today over 80% include stenting; the other 20% involve only angioplasty. We have performed detailed pathologic analyses on human stents and have the largest collection of autopsy stent specimens, including over 300 stented coronary arterial segments. We are exploring the mechanisms of restenosis and stent failure and have proposed that arterial injury and inflammation are important mediators of restenosis. Our preclinical stent research program has investigated multiple novel stent designs and drug coatings designed to enhance biocompatibility and reduce in-stent neointimal growth. Our stent laboratory employs methods that keep the stent in situ and maintain the relationship with any covering that may be used (eg, polytetrafluoroethylene and elastin) in close apposition to the stent. This technology (Exakt[®]) involves processing the stent and artery in alcohol and embedding it in plastic. The plastic block is sawed at 300 microns and ground after being glued to a plastic slide. Although this technology allows for the sectioning of the densest materials, certain histologic techniques, such as immunohistochemistry, are currently unavailable. We have successfully performed immunohistochemistry on plastic-embedded stent sections to further enhance our understanding of the restenosis process.

—The Department of Cardiovascular Pathology performs clinical research that complements our consultative role in defining the causes and mechanisms of sudden cardiac death. Our

foremost interest involves the pathogenesis of acute coronary thrombosis, a leading cause of sudden death in Western countries. We have proposed and published a more functional classification system of coronary arterial lesions than the one suggested by the American Heart Association. We are further defining the cellular composition, risk factors, and matrix composition related to the cellular processes involved in coronary thrombosis, and are in the process of elucidating the role of apoptosis in coronary plaque instability. We are also investigating clotting factors and polymorphisms that may represent risk factors for coronary death. We are continuing to study the role of calcification in plaque instability, inflammation, and vascular remodeling, and other causes of sudden unexpected death, including small vessel disease, cardiomyopathy, myocarditis, and nonatherosclerotic coronary artery disease.

EDUCATION

Presentations and Seminars: Members of the department conducted 26 seminars abroad and 41 local and national seminars. A complete list of dates and titles appears at the end of this report.

Our department conducted weekly microscopic conferences reviewing cases and research results with staff and invited visitors. We provided clinicopathologic conferences at the Maryland Medical Examiner's Office (monthly), the Office of the Chief Medical Examiner, Washington, DC (biweekly), Howard University (monthly), Walter Reed Army Medical Center Cardiology (monthly), Georgetown University (quarterly), Veterans Affairs Hospital in Washington, DC (quarterly), and the Washington Hospital Center (monthly). Slide seminars and lectures were given at Walter Reed Pathology (2) and at the National Naval Medical Center (2).

Courses: Members of our department conducted or participated in 2 courses in 2000.

RESEARCH

Publications: Members of our department published 23 journal articles and 7 invited publications and book chapters, and presented 20 abstracts. Complete bibliographic information is listed at the end of this report.

Projects: The department maintains 21 AFIP-approved research protocols and 1 education protocol. Two research projects have a direct impact on military readiness: (1) a study of sudden death in military recruits and (2) a collaboration with Oregon Medical Laser Center to develop elastic grafts for the treatment of combat casualties.

Research Funds Received:

1. Cholesterol and Plaque Rupture, NIH/NHLBI, \$720,000 (\$180,000 yearly, 1998-2002) — R Virmani, PI.
2. Battlefield Surgical Tissue Replacement and Repair Using an Elastin Biomaterial Deployed Via Dye-Targeted Laser Fusion, Earle A. Chiles Research Institute, Oregon Medical Laser Center, Portland, Ore, March 1997 - February 2001, 5%. \$100,000/year — KW Gregory, PI.

In addition, we received \$1,246,542 from the following private companies to support research in stents and other cardiovascular interventions:

- Isostent, Inc, Belmont, Calif
- WL Gore and Assoc, Palo Alto, Calif
- SciMed Life Systems, Inc, Maple Grove, Ill
- Advanced Cardiovascular Systems — Guidant Corporation, Santa Clara, Calif
- TransVascular, Inc, Menlo Park, Calif
- Pharmasonics, Inc, Sunnyvale, Calif
- Sorin Biomedica, Saluggia, Italy
- Prolifix, Sunnyvale, Calif
- AngioTrax, Sunnyvale, Calif
- Intravascular DataScope, Clearwater, Fla
- Vascular Innovation, Menlo Park, Calif
- AVE, Santa Rosa, Calif
- MicroTherapeutics, Irvine, Calif
- Boston Scientific, Watertown, Mass
- Micrus Corp, Mountain View, Calif
- Coalescent Surgical Inc, Sunnyvale, Calif

- B. Braun Corp, Germany
- Novartis, Switzerland

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Florabel Mullick, SES, Drug-Induced Cardiac Pathology
2. Allen Taylor, MAJ, MC, USA, Endovascular Stenting, Coronary Artery Disease
3. John Tighe, MAJ, MC, USA, Cardiology/Intravascular Ultrasound
4. Timothy O'Leary, PhD, Molecular Biology
5. David Gillespie, LtCol, USA, Vascular Surgery
6. Mei Sheng, PhD, Molecular Biology

Civilian:

1. Steven Schwartz, Vascular Pathology
2. Andrew Carter, Endoluminal Stenting
3. Jung-Ling Yuan, Apoptosis
4. David Dichek, Gene Transfer
5. Arthur Zieske, Lipid Studies
6. John Smialek, Forensic Pathology
7. Thomas Wight, Proteoglycans
8. Jacob Varghese, Coronary Atherosclerosis
9. Herman Gold, Interventional Cardiology
10. William Edwards, Cardiovascular Pathology
11. Stephen Oesterle, Interventional Cardiology
12. Augusto Pichard, Interventional Cardiology
13. Jagat Narula, Nuclear Cardiology, Cardiac Physiology
14. Louis Fink, Homocysteine and Risk Factors
15. Neil Weissman, Intravascular Ultrasound
16. Robert Schwartz, Endovascular Stents
17. Victor Ferrans, Ultrastructural Cardiology
18. Steven Ramee, Endovascular Stents
19. Mun Hong, Endovascular Stenting
20. Gary Mintz, Intravascular Ultrasound
21. Richard Gallo, Cardiac Angiogenesis

International:

1. Douglas Scott, Endoluminal Stenting
2. Virginia Walley, Atherosclerosis and Stenting
3. Eloisa Arbustini, Cardiac Pathology, Genetic Diseases
4. Max Sangiorgi, Coronary Artery Disease and Interventions
5. G. Gabbiani, Smooth Muscle Cell Biology

Committees:

Editorial Boards:

1. *Human Pathology*, R Virmani
2. *Modern Pathology*, R Virmani
3. *Circulation*, R Virmani
4. *Journal of the American College of Cardiology*, R Virmani
5. *Cardiovascular Pathology*, R Virmani
6. *Pathology Case Review*, R Virmani
7. *Cardiovascular Radiation Medicine*, R Virmani
8. *Pathology*, A Burke

Manuscripts Reviewed: Members of the department reviewed 60 articles for the following professional journals:

1. *Journal of the American College of Cardiology*
2. *Human Pathology*
3. *Modern Pathology*
4. *Circulation*
5. *Cardiovascular Pathology*
6. *Pathology Case Review*
7. *Cardiovascular Radiation Medicine*
8. *Archives of Pathology and Laboratory Medicine*
9. *Mayo Clinic Proceedings*
10. *American Journal of Pathology*
11. *Cardiovascular and Interventional Radiology*
12. *American Journal of Cardiology*
13. *Journal of Respiratory Distress*
14. *New England Journal of Medicine*
15. *Lancet*
16. *Atherosclerosis, Arteriosclerosis, Thrombosis, and Vascular Biology*

Faculty Appointments:

R Virmani:

1. Georgetown University, Clinical Professor, Department of Pathology
2. University of Maryland-Baltimore, Clinical Professor, Department of Pathology
3. Uniformed Services University of the Health Sciences, Clinical Professor, Department of Pathology
4. George Washington University, Clinical Professor, Department of Pathology
5. Vanderbilt University, Nashville, Tenn, Clinical Research Professor, Department of Pathology

A Burke:

1. Georgetown University, Adjunct Professor of Pathology
2. Uniformed Services University of the Health Sciences, Clinical Associate Professor

A Farb:

1. Uniformed Services University of the Health Sciences, Clinical Assistant Professor of Pathology
2. Georgetown University Medical Center, Clinical Assistant Professor of Medicine (Cardiology) and Pathology

Continuing Education:

Staff members attended training courses at the following venues in 2000:

1. Meeting of the American College of Cardiology, Orlando, Fla
2. American Heart Association Meeting, New Orleans, La
3. US-Canadian Society of Pathology Meeting, Orlando, Fla

PRESENTATIONS

1. January 2000: Geneva, Switzerland, 6th International Local Drug Delivery Meeting, "Toxic effects of radiation therapy: site specific and systemic," R Virmani.
2. January 2000: Geneva, Switzerland, 6th International Local Drug Delivery Meeting, Chair, "Results from animal and clinical work: therapeutic and toxic effects," R Virmani.
3. January 30 – February 3, 2000: The Netherlands, First European Cardiovascular Summit (EURO-CVS), "Interpretation by the anatomical pathologist," R Virmani.
4. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Atherosclerosis lesion classification: lessons from sudden coronary death," R Virmani.
5. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Risk factors and sudden coronary death," R Virmani.

6. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Are there similarities between carotid and coronary atherosclerotic plaques?" R Virmani.
7. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Pathogenesis of atherosclerosis," R Virmani.
8. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Computational methods for quantifying plaque volume in vivo and ex vivo," R Virmani.
9. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Evaluating pleiotropic effects of statins on regression of carotid atherosclerosis," R Virmani.
10. February 2000: Houston, Tex, Pfizer Visiting Lectureship, Baylor College of Medicine, "Vascular biology and cardiology," R Virmani.
11. February 2000: Bethesda, Md, Research Initiatives in Vascular Disease Conference, "Experimental and clinical data – premature excitement," R Virmani.
12. February 2000: Washington, DC, Advances in Cardiovascular Radiation Therapy IV, "Task force group on vascular brachytherapy," R Virmani.
13. February 2000: Washington, DC, Advances in Cardiovascular Radiation Therapy IV, "Panel discussion: Why long-term results are not favorable in animal studies," R Virmani.
14. February 2000: Washington, DC, Advances in Cardiovascular Radiation Therapy IV, "Does radiation of coronary arteries lead to long-term lumen patency?" R Virmani.
15. February 2000: Washington, DC, Advances in Cardiovascular Radiation Therapy IV, "The therapeutic window between benefit and disaster: lessons from animal studies," R Virmani.
16. February 2000: San Francisco, Calif, Experts Forum in Bio-Interventional Cardiology, "Angiogenesis, restenosis, and passivation," R Virmani.
17. February 2000: Aspen, Colo, Interventional Cardiology 2000: An International Symposium, "Pathology in restenosis in vein grafts," R Virmani.
18. February 2000: Washington, DC, Cardiovascular Radiation Therapy IV, "Cross fire: vascular radiation: friend or foe?" A Farb.
19. February 2000: Washington, DC, George Washington University Medical Center, Cardiology Grand Rounds, "The pathology of in-stent restenosis," A Farb.
20. March 2000: Aspen, Colo, Interventional Cardiology 2000: An International Symposium, "Morphology of chronic total occlusions," R Virmani.
21. March 2000: Tucson, Ariz, International Society for Applied Cardiovascular Biology, "Antiproliferative strategies and the inhibition of restenosis," R Virmani.
22. March 2000: Anaheim, Calif, American College of Cardiology, "Sonotherapy vs. brachytherapy," R Virmani.
23. March 2000: Anaheim, Calif, American College of Cardiology, "Pathobiology of radiation effects," R Virmani.
24. March 2000: Anaheim, Calif, American College of Cardiology, "Pathology data from cryo dosing study," R Virmani.
25. March 2000: Anaheim, Calif, American College of Cardiology, "Pathology of angiogenesis," R Virmani.
26. March 2000: San Diego, Calif, Society of Cardiovascular Intervention Radiology, "Brachytherapy for restenosis: a cautionary view," R Virmani.
27. March 2000: Philadelphia, Pa, Cardiology Grand Rounds MCP Hahnemann University, "Restenosis and brachytherapy pathogenesis of acute coronary syndrome," R Virmani.
28. April 2000: Boston, Mass, Cardiology Grand Rounds, "Vulnerable to rupture to plaque progression and relation to risk factors," R Virmani.
29. April 2000: Ravello, Italy, Vascular Brachytherapy 2000, Ring Master/Debate Director, "Indications for VBT," R Virmani.
30. April 2000: Ravello, Italy, Vascular Brachytherapy 2000, Ring Master/Debate Director, "Dosimetry part I," R Virmani.
31. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - I," A Burke.

32. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - II," A Burke.
33. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - III," A Burke.
34. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - IV," A Burke.
35. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - V," A Burke.
36. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - VI," A Burke.
37. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - VII," A Burke.
38. April 2000: Grenada, West Indies, St. George's University School of Medicine, "Cardiovascular pathology for medical students - VIII," A Burke.
39. April 2000: Washington, DC, AFIP Staff Conference, "Human coronary stent pathology: morphologic predictors of restenosis," A Farb.
40. May 2000: Boston, Mass, Combined Pathology Grand Rounds, "Sudden coronary death, plaque morphology, and risk factors," R Virmani.
41. May 2000: Boston, Mass, Walter G.J. Putschar Lecture, "Right ventricular dysplasia hamartoma and intramyocardial coronary thickening," R Virmani.
42. May 2000: Boston, Mass, Walter G.J. Putschar Lecture, "Pathology of coronary and myocardial percutaneous interventions," R Virmani.
43. May 2000: Baltimore, Md, Plaque Stability: An Update Conference, "Role of risk factors and calcification for identification of unstable plaques," R Virmani.
44. May 2000: Boston, Mass, Seminar on Vulnerable Plaque, "Pathology of vulnerable plaque," R Virmani.
45. May 2000: San Juan, Puerto Rico, 6th International Symposium on Metal Ions in Biology and Medicine, "Environmental pathology of metal exposures: cardiovascular system," A Burke.
46. May 2000: Denver, Colo, First Conference on Arteriosclerosis, Thrombosis, and Vascular Biology, "Eruptive calcified nodules: a unique mechanism of thrombosis and sudden coronary death," F Kolodgie.
47. May 2000: Denver, Colo, First Conference on Arteriosclerosis, Thrombosis, and Vascular Biology, "Absence of tissue factor at sites of plaque erosion," F Kolodgie.
48. June 2000: Montreal, Quebec, 9th Interventional Cardiology Live Course, "A pathologist's view of balloons, shavers, springs, and rays in the coronary vasculature," R Virmani.
49. June 2000, Bern, Switzerland, Controversies in Cardiology, Workshop, "Brachytherapy for prevention of restenosis after angioplasty. Here to stay or not even ready to go?" R Virmani.
50. August 2000: Amsterdam, The Netherlands, Arterial Remodeling Symposium/22nd Congress of European Society of Cardiology, "Arterial remodeling: mechanisms and interventions," R Virmani.
51. August 2000: Amsterdam, The Netherlands, 22nd Congress of European Society of Cardiology, "The edge effect is caused by human error," R Virmani.
52. September 2000; Chicago, Ill, American College of Cardiology Cardiovascular Board Review Course, "Coronary artery disease and myocardial infarction - II," R Virmani.
53. September 2000: Maastricht, The Netherlands, Annual Meeting and Postgraduate Course of the Cardiovascular & Interventional Radiological Society of Europe, "Endothelial and myointimal reaction," R Virmani.
54. September 2000: New York, NY, Scientific Conference, "Extracellular matrix," R Virmani.
55. September 2000: Santiago de Compostela, Spain, 18th Congress of the International Academy of Legal Medicine, "Sudden death of cardiac origin," A Burke.
56. September 2000: Mobile, Ala, University of South Alabama, "Classification of atherosclerotic plaques," R Virmani.
57. September 2000: Rockville, Md, Telepathology 2000: Making Telepathology Work,

- “Imaging of cardiovascular lesions,” A Farb.
58. October 2000: Toyohashi, Japan, 6th Complex Coronary Intervention Conference, “Chronic total occlusion pathology,” R Virmani.
 59. October 2000: Toyohashi, Japan, 6th Complex Coronary Intervention Conference, “Stent pathology,” R Virmani.
 60. October 2000: Washington, DC, TCT Conference, “Local drug delivery with cell cycle inhibitors and anti-metabolites: in vitro evidence of efficacy – comparison with vascular brachytherapy,” R Virmani.
 61. October 2000: Washington, DC, TCT Conference, “A pathologist’s view of atherosclerosis (in native arteries and saphenous vein grafts) and the effects of intervention of the end organ,” R Virmani.
 62. October 2000: Washington, DC, TCT Conference, “A sobering note of caution: anticipating late adverse effects of vascular brachytherapy,” R Virmani.
 63. October 2000: Bethesda, Md, USUHS Medical School, “Myocarditis,” A Burke.
 64. October 2000: Bethesda, Md, USUHS Medical School, “Cardiomyopathy,” A Burke.
 65. October 2000: Bethesda, Md, USUHS Medical School, “Vasculitis and aneurysms,” A Burke.
 66. October 2000: Washington, DC, Transcatheter Cardiovascular Therapeutics 2000 Symposium, “Stent materials and vascular interactions I: implications for thrombosis,” A Farb.
 67. November 2000: New Orleans, La, 73rd Scientific Sessions, American Heart Association, Session Moderator, “The vulnerable plaque,” A Farb.
 68. November 2000: Washington, DC, Georgetown Medical School, “Myocarditis,” A Burke.
 69. November 2000: Washington, DC, Georgetown Medical School, “Cardiomyopathy,” A Burke.
 70. November 2000: Washington, DC, Georgetown Medical School, “Vasculitis and aneurysms,” A Burke.
 71. December 2000: Rockville, Md, NHLBI Presentation, “Healed plaque ruptures and sudden coronary death: evidence of subclinical rupture as a role in plaque progression,” A Burke.
 72. December 2000: Portland, Ore, Oregon Laser Medical Center, “Histologic evaluation of elastin patches for duodenal repair,” A Burke.

PUBLICATIONS

Journal Articles:

1. Burke A, Virmani R. Significance of multiple coronary artery thrombi: a consequence of diffuse atherosclerotic disease? *Ital Heart J.* 2000;1:832-834.
2. Burke AP, Andriko JA, Virmani R. Anaplastic large cell lymphoma (CD 30+), T-phenotype, in the heart of an HIV-positive man. *Cardiovasc Pathol.* 2000;9:49-52.
3. Burke AP, Taylor A, Farb A, Malcom GT, Virmani R. Coronary calcification: insights from sudden coronary death victims. *Z Kardiol.* 2000;89(suppl 2):49-53.
4. Carter AJ, Lee DP, Suzuki T, Bailey L, Lansky A, Jones R, Virmani R. Experimental evaluation of a short transitional edge protection balloon for intracoronary stent deployment. *Cathet Cardiovasc Intervent.* 2000;51:112-119.
5. Farb A, Kiernan JM, Wallace RB. Constrictive pericarditis. *Clin Cardiol.* 2000;23:547.
6. Farb A, Tang AL, Shroff S, Sweet W, Virmani R. Neointimal responses 3 months after 32p B-emitting stent placement. *Int J Radiat Oncol Biol Phys.* 2000;48:889-898.
7. Grebenc ML, Rosado de Christenson ML, Burke AP, Green CE, Galvin JR. Primary cardiac and pericardial neoplasms: radiologic-pathologic correlation. *Radiographics.* 2000;20:1073-1103.
8. Johnson LL, Schofield L, Mastrofrancesco P, Donahay T, Farb A, Khaw BA. Technetium-99m glucarate uptake in a swine model of limited flow plus increased demand. *J Nucl Cardiol.* 2000;7:590-598.
9. Johnson LL, Schofield LM, Verdesca SA, Sharaf BL, Jones RM, Virmani R, Khaw BA. In vivo uptake of radiolabeled antibody to proliferating smooth muscle cells in a swine model of coronary stent restenosis. *J Nucl Med.* 2000;41:1535-1540.
10. Kim WH, Hong MK, Virmani R, Kornowski R, Jones R, Leon MB. Histopathologic analysis

of in-stent neointimal regression in a porcine coronary model. *Coron Artery Dis.* 2000;11:273-277.

11. Kolodgie FD, Farb A, Virmani R. Local delivery of ceramide for restenosis: Is there a future for lipid therapy? *Circ Res.* 2000;87:264-267.
12. Kolodgie FD, Narula J, Burke AP, Haider N, Farb A, Hui-Liang Y, Smialek J, Virmani R. Localization of apoptotic macrophages at the site of plaque rupture in sudden coronary death. *Am J Pathol.* 2000;157:1259-1268.
13. Mauriello A, Sangiorgi G, Palmieri G, Virmani R, Holmes DR Jr, Schwartz RS, Pistoletti R, Ippoliti A, Spagnoli LG. Hyperfibrinogenemia is associated with specific histocytological composition and complications of atherosclerotic carotid plaques in patients affected by transient ischemic attacks. *Circulation.* 2000;101:744-750.
14. Narula J, Kolodgie FD, Virmani R. Apoptosis and cardiomyopathy. *Curr Opin Cardiol.* 2000;15:183-188.
15. Puig M, Ballester M, Matias-Guiu X, Bordes R, Carrio I, Kolodgie FD, Pons C, Garcia A, Aymat MR, Marrugat J, Brossa V, Camprecios M, Padro JM, Caralps JM, Virmani R, Prat J, Narula J. Burden of myocardial damage in cardiac allograft rejection: scintigraphic evidence of myocardial injury and histologic evidence of myocyte necrosis and apoptosis. *J Nucl Cardiol.* 2000;7:132-139.
16. Rosenfeld ME, Polinsky P, Virmani R, Kauser K, Rubanyi G, Schwartz SM. Advanced atherosclerotic lesions in the innominate artery of the ApoE knockout mouse. *Arterioscler Thromb Vasc Biol.* 2000;20:2587-2592.
17. Schneider DB, Vassalli G, Wen S, Driscoll RM, Sassani AB, DeYoung MB, Linnemann R, Virmani R, Dichek DA. Expression of Fas ligand in arteries of hypercholesterolemic rabbits accelerates atherosclerotic lesion formation. *Arterioscler Thromb Vasc Biol.* 2000;20:298-308.
18. Schwartz SM, Virmani R, Rosenfeld ME. The good smooth muscle cells in atherosclerosis. *Curr Atheroscler Rep.* 2000;2:422-429.
19. Scott DS, Arora UK, Farb A, Virmani R, Weissman NJ. Pathologic validation of a new method to quantify coronary calcific deposits in vivo using intravascular ultrasound. *Am J Cardiol.* 2000;85:37-40.
20. Taylor AJ, Burke AP, O'Malley PG, Farb A, Malcom GT, Smialek J, Virmani R. A comparison of the Framingham risk index, coronary artery calcification, and culprit plaque morphology in sudden cardiac death. *Circulation.* 2000;101:1243-1248.
21. Taylor AJ, Gorman PD, Hudak C, Tashko G, Sweet W, Farb A, Virmani R. The 90-day coronary vascular response to 90Y-B particle-emitting stents in the canine model. *Int J Radiat Oncol Biol Phys.* 2000;46:1019-1024.
22. Turchin A, Radentz SS, Burke A. Situs inversus totalis and single coronary ostium: a coincidence or a pattern? *Cardiovasc Pathol.* 2000;9:127-129.
23. Virmani R, Kolodgie FD, Burke AP, Farb A, Schwartz SM. Lessons from sudden coronary death: a comprehensive morphological classification scheme for atherosclerotic lesions. *Arterioscler Thromb Vasc Biol.* 2000;20:1262-1275.

Abstracts:

1. Burke AP, Creighton W, Virmani R. Is the PIA² polymorphism a risk factor for acute coronary thrombosis? *Mod Pathol.* 2000;13:51A. Abstract 281.
2. Burke AP, Weber D, Virmani R. Healed plaque ruptures: a morphometric study supporting a mechanism of plaque progression. *Mod Pathol.* 2000;13:51A. Abstract 282.
3. Burke AP, Weber DK, Farb A, Kolodgie FD, Virmani R. Acute coronary plaque erosion is associated with polymorphisms of fibrinogen and absence of the factor VII ARG/Gln 353 polymorphism. *Circulation.* 2000;102:18II-19.
4. Farb A, Burke P, Kolodgie FD, Liang Y-H, Kutys R, Virmani R. Platelet-rich intramyocardial thromboemboli are frequent in acute coronary thrombosis, especially plaque erosions. *Circulation.* 2000;102:18II-774.
5. Farb A, Weber DK, Jones R, Virmani R. Plaque substrate and arterial damage are predictors of restenosis after coronary stenting in humans. *J Am Coll Cardiol.* 2000;35A(2):4A.
6. Farb A, Burke AP, Virmani R. Myocardial rupture after percutaneous coronary interventions. *J Am Coll Cardiol.* 2000;35A(2):32A.

7. Shroff S, Farb A, Virmani R. Does aging affect vascular responses following balloon angioplasty or stenting? *J Am Coll Cardiol.* 2000;35A(2):49A.
8. Shroff S, Farb A, John MC, Virmani R. Persistent neointimal inhibition with adverse edge effects 12 months after deployment of high dose ³²P B-emitting stents. *Circulation.* 2000;102(suppl II):II-421.
9. John MC, Shroff S, Farb A, Virmani R. Long-term ³²P B-emitting stents induce persistent dose-dependent arterial inflammation. *Circulation.* 2000;102(suppl II):II-421.
10. Farb A, Weber DK, Kolodgie FD, Virmani R. In-stent and stent edge interactions in human coronary arteries. *Circulation.* 2000;102(suppl II):II-733.
11. Farb A, Burke AP, Kolodgie FD, Liang YH, Kutys R, Virmani R. Platelet-rich intramyocardial thromboemboli are frequent in acute coronary thrombosis, especially plaque erosions. *Circulation.* 2000;102(suppl II):II-774.
12. Burke AP, Farb A, Malcom GT, Virmani R. Sudden coronary death in African and Caucasian Americans: a comparison of morphologic findings and risk factor profiles. *Circulation.* 2000;102(suppl II):II-841.
13. Kim AY, Walinsky PL, Kolodgie FD, Peck EA, Shake JG, Bian C, Sperry JL, Virmani R, Stuart RS, Rade JJ. Decreased thrombomodulin expression results in impaired thromboresistance of autologous vein grafts. *Circulation.* 2000;102:II-103.
14. Johnson LL, Kolodgie FD, Katzman G, Donahay T, Chaves L, Khaw B. Uptake of in-111 Z2D3 in swine model of restenosis correlated with cell proliferation. *Circulation.* 2000;102:II-404.
15. Kolodgie FD, Petrov A, Fasseas P, Acio ER, Narula N, Rammohan R, Snyder G, Tait JF, Strauss HW, Virmani R, Narula J. Tc-99m annexin V imaging for the noninvasive detection of experimental atherosclerotic lesions. *Circulation.* 2000;102:II-405.
16. Petrov A, Acio ER, Narula N, Kolodgie FD, Tait JF, Strauss HW, Narula J. Sarcolemmal phosphatidyl serine expression in ischemic myocardial syndromes can be detected by ^{99m}Tc annexin imaging. *Circulation.* 2000;102:II-544.
17. Cottin Y, Kollum MK, Kolodgie FD, Chan RC, Kim HS, Vodovotz Y, Virmani R, Waxman R. Intravascular radiation accelerates atherosclerotic lesion formation of hypercholesterolemic rabbits. *Circulation.* 2000;102:II-751.
18. Post MJ, Moore P, Nassi M, Bao J, Virmani R, Kolodgie FD, Kuntz RE. Intravascular sonotherapy prevents intimal hyperplasia in a coronary stent pig model without long-term adverse effects. *Circulation.* 2000;102:II-733.
19. Jain D, Kulkarni P, Kolodgie FD, Narula N, Rammohan R, Brijeshwar S, Maini S, Snyder G, Virmani R, Acio E, Narula J. Noninvasive imaging of atherosclerotic plaques with In-111-labeled lipid seeking coproporphyrin. *J Am Coll Cardiol.* 2000;35:493A.
20. Fitzgerald PJ, Moore PM, Hayase M, Takagi A, Kolodgie FD, Corl D, Nassi M, Virmani R, Yock P. Intravascular sonotherapy impacts neointimal hyperplasia following stent implantation in swine femoral arteries. *J Am Coll Cardiol.* 2000;35:28A.

Editorials, Invited Publications, and Book Chapters:

1. Virmani R, Burke A, Farb A. Coronary artery disease in women. In: Willerson JT, Cohn JN, eds. *Cardiovascular Medicine.* 2nd ed. New York, NY: Churchill Livingstone; 2000:579-585.
2. Farb A, Kiernan JM, Wallace RB. Constrictive pericarditis. *Clin Cardiol.* 2000;23:547.
3. Farb A, Virmani R, Burke AP. Pathogenesis and pathology of valvular heart disease. In: Alpert JS, Dalen JE, Rahimtoola SH, eds. *Valvular Heart Disease.* Philadelphia, Pa: Lippincott, Williams & Wilkins; 2000:1-40.
4. Farb A, Virmani R. Arterial restenosis: focus on inflammatory cell infiltration and adhesion molecules. *Curr Opin Anti-Inflam & Immunomod Invest Drugs.* 2000;2:206-218.
5. Kolodgie FD, Farb A, Virmani R. Local delivery of ceramide for restenosis: Is there a future for lipid therapy? *Circ Res.* 2000;87:264-267.
6. Farb A, Kolodgie FD, Virmani R. A pathologist's view of stenting: bare stents and stent grafts. In: Vossoughi J, Kipshidze N, Karanian JW, eds. *Stent Graft Update.* Washington, DC: Medical and Engineering Publishers, Inc; 2000:141-165.
7. Virmani R, Kolodgie, FD, Farb A, Burke AP. Inflammation in coronary atherosclerosis-pathological aspects. In: Metha JL, ed. *Inflammation and Infectious Basis of Atherosclerosis.* Basel, Switzerland: Birkhäuser Verlag AG; 2000.



Dennis K. Heffner, MD
Chair
Date of Appointment — 1 September 1984

DEPARTMENT OF ENDOCRINE AND OTORHINOLARYNGIC/HEAD-NECK PATHOLOGY

MISSION

The Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology provides consultation, education, and research in the pathology of the upper respiratory tract, ear, and related head and neck areas, and of the pancreas, adrenal, thyroid, and parathyroid glands.

STAFF

Medical:

- Dennis K. Heffner, MD, Chair
- Clara S. Heffess, MD, Chief, Division of Endocrine Pathology
- Lester D.R. Thompson, MD, Chief, Division of Otorhinolaryngic/Head-Neck Pathology;
Assistant Director of Laboratories, AFIP
- Jacqueline A. Wieneke, MD

Administrative:

- (A) Erma Campbell, Secretary

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	561
Federal (VA/PHS)	315
Civilian	1,889
Interdepartmental	341
Total	3,106

Our department consults on a broad spectrum of pathologic conditions, consisting of a multitude of disease entities affecting the upper respiratory tract, ear, and adjacent or related anatomic areas of the head and neck, and the pancreas, adrenal, thyroid, and parathyroid glands. In 2000, the department consulted on difficult or controversial histopathologic diagnostic cases received from US military medical commands or facilities, Department of Veterans Affairs medical centers, US Public Health centers, and nongovernmental civilian hospitals in the continental United States and abroad. We had an increase in military (15%), federal (29%), and civilian (16%) cases over the previous year. The vast majority of cases were active surgical pathology cases with patient treatment decisions awaiting the consultative diagnostic evaluation.

DIVISION OF ENDOCRINE PATHOLOGY

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	342
Army	166
Navy	68
Air Force	108
Federal	126
VA	122
USPHS	3
OFA	1
Civilian	1,090
Interdepartmental	171
Total	1,729

1,351 cases for consultation, 67 for education, and 11 for research required the following types of procedures and analyses:

- H&E stains: 11,145 slides
- Special stains: 543 slides
- Immunohistochemical stains: 5,407 slides
- Direct immunofluorescence: 6 tests for 2 cases
- Total recuts studied: 17,095
- Contributor slides studied: 16,019

The division made no change in the contributor diagnosis in 633 cases, a minor change in diagnosis in 520 cases, and a major change in diagnosis in 100 cases. We received 300 cases with no contributor diagnosis; 6 cases were recorded without coding.

DIVISION OF OTORHINOLARYNGIC/HEAD-NECK PATHOLOGY

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	219
Army	100
Navy	49
Air Force	70
Federal	189
VA	185
USPHS	1
OFA	3
Civilian	799
Interdepartmental	170
Total	1,377

536 cases for consultation, 180 for education, and 219 for research required the following types of procedures and analyses:

- H&E stains: 3,002 slides
- Special stains: 75 slides
- Immunohistochemical stains: 4,209 slides
- Electron microscopy: 18 cases
- Direct immunofluorescence: 40 tests for 13 cases
- Molecular biology examination: 73 tests for 23 cases
- Total recuts studied: 7,286

— Contributor slides studied: 5,371

The division made no change in the contributor diagnosis in 464 cases, a minor change in diagnosis in 472 cases, and a major change in diagnosis in 147 cases. We received 123 cases with no contributor diagnosis; 1 case was recorded without coding.

Impact: Difficult or controversial surgical pathology diagnostic problems are received in consultation from US military medical commands or other military facilities, Department of Veterans Affairs medical centers, US Public Health centers, and nongovernmental civilian hospitals within the continental United States and abroad. The vast majority of cases are active surgical pathology cases with patient treatment decisions awaiting AFIP consultation. The department's focus is to provide the most reliably accurate diagnostic evaluations and opinions that can be found anywhere in the world. The staff's primary responsibility is to maintain and continually improve its highly subspecialized diagnostic expertise, based on sharing of current caseload problems and research study of our extensive repository of cases. The clinical importance of departmental opinion varies from case to case, but in an estimated 90% of cases the opinion has the potential to influence management of the patient, and in an estimated 40% of cases the opinion clearly alters the course of patient therapy in major or significant ways.

Over the last three decades, education has improved overall knowledge of most pathologists, so that some uncommon (but not too problematic) conditions are now confidently recognized and specimens from such conditions are seldom sent to the Institute. As a corollary of this education, some more highly problematic and subtle lesions that previously might not have been recognized as problems (and unfortunately went unknowingly misdiagnosed) are now recognized and sent to us for consultation. The result is that the average case handled by the department is now even more challenging than previously and requires an even greater depth of experience on the part of the staff.

Deployments: Dr. Thompson was deployed to the National Naval Medical Center for 2 weeks as part of his Naval Reserve duties.

EDUCATION

Presentations and Seminars: Department staff made 8 extramural presentations, totaling 1,500 man-hours of educational product. A complete list of dates and titles appears at the end of this report. In addition, the staff participated in 14 combined educational histopathology slide conferences with the Department of Oral and Maxillofacial Pathology.

Courses: The staff lectured in 2 non-AFIP courses and 4 general AFIP courses, including the 4-week Otolaryngic Basic Science Course. Twelve military and 6 civilian surgeons attended this course. Approximately one quarter of the course consisted of pathology instruction provided by our department staff, representing 720 of our total 1,500 man-hours of instruction.

Trainees: The department trained physicians, including 2 Callender-Binford fellows, for periods of 6 months each, for a total of 251 training days (2,008 man-hours). The department conducted lectures and practical histopathologic slide exercises for short-term trainees during most of the year. Most periods of study were for 4 weeks. There were 25 additional trainees (6 pathologists and 19 otolaryngology surgical residents) who participated in this type of training for periods from 9 to 127 days each (average 28, median 20), amounting to 709 man-days (5,672 man-hours).

Educational Aids: Study sets for ENT (790 slides) and for Endocrine Pathology (460 slides) were completed in 2000.

RESEARCH

Publications: Members of the department published 17 journal articles, 8 abstracts, and 1 book chapter in 2000. Complete bibliographical data are listed at the end of this report.

Projects: The department maintained 33 research projects in 2000, as listed below:

1. Olfactory Esthesioneuroblastoma: A Proposed Grading System
2. Synovial Sarcomas of the Head and Neck
3. Nodular Fasciitis of the External Ear Area
4. Immunohistochemistry of Sinonasal Teratocarcinosarcomas
5. Carcinomas of the Oral Cavity, Larynx, and Nose in Children
6. Spindle Cell (Sarcomatoid) Carcinoma of the Larynx
7. Granulomatous Inflammation of the Tonsils

8. Lymphangiomatous Polyps of the Tonsils
9. Primary Thyroid Malignant Lymphomas
10. Anaplastic Carcinomas of the Pancreas
11. K-ras Oncogene Mutations in the Diagnosis of Adenocarcinoma of the Pancreas
12. Minimally Invasive Low-Grade Follicular Carcinoma of the Thyroid Gland
13. Intraductal Papillary-Mucinous Neoplasms of the Pancreas
14. Carcinomas Metastatic to the Temporal Bone
15. Primary Thyroid Teratomas
16. Malignant Pheochromocytomas (of the Adrenal Gland)
17. Head and Neck Chondrosarcomas in Pediatric Patients
18. Head and Neck Osteosarcomas in Pediatric Patients
19. Metastatic Renal Cell Carcinoma of the Pancreas or Thyroid Gland
20. Myoepithelial Carcinomas of the Sinonasal Tract
21. Kaposi Sarcoma of the Salivary Gland
22. Clear Cell Carcinomas of the Salivary Gland
23. Myxomatous Tumors of the Head and Neck
24. Primary Nasal Meningiomas
25. Adenosquamous Carcinomas of the Pancreas
26. Malakoplakia of the Head and Neck
27. Respiratory Epithelial Carcinomas of the Head and Neck
28. Giant Cell Tumors of the Larynx
29. Primary Angiosarcomas of the Larynx
30. Sinonasal Eosinophilic Angiocentric Fibrosis
31. Adrenal Neoplasms (Comprehensive)
32. Spindle Cell Lesions of the Ear
33. Middle Ear Adenomas

OTHER ACCOMPLISHMENTS

Collaborators: Collaborations with investigators and pathologists outside our department included pathology case reviews and research projects leading to publication.

Military/Federal:

1. Kurt Kodroff, Veterans Affairs, Wilmington, Del
2. Andrew Flood, NIH - Epidemiology
3. James Oertel, Chair Emeritus, Endocrine Pathology, AFIP
4. Leigh Sawyer, Virology Branch, NIAID (NIH), Phase I/II Evaluation of Cidofovir Therapy for Recurrent Laryngeal Papillomatosis in Children

Civilian:

1. Douglas Gnepp, Rhode Island Hospital
2. Peter Buetow, Medical College of Virginia
3. Yolanda Oertel, Washington Hospital Center
4. David Klimstra, Memorial Sloan-Kettering Cancer Center, NY
5. Bruce Wenig, Einstein University, NY
6. Jeffrey Newhouse, Columbia-Presbyterian Medical Center, NY

International:

1. Juan Rosai, Italy
2. Edina Paal, Hungary

Committees:

Editorial Boards:

1. *Ear, Nose, Throat Journal* – DK Heffner
2. *European Archives of Otorhinolaryngology* — DK Heffner

3. *Annals of Diagnostic Pathology* — DK Heffner; LDR Thompson, Section Editor

Manuscripts Reviewed: Members of the department reviewed 5 articles for the following professional journals:

1. *Cancer*
2. *Human Pathology*
3. *Acta Cytologica*
4. *Archives of Medical Research*
5. *Pathology Research and Practice*

Faculty Appointments:

Georgetown University Medical Center, Adjunct Professor, Department of Otolaryngology - Head and Neck Surgery—DK Heffner

PRESENTATIONS

1. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in salivary gland pathology," LDR Thompson.
2. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in thyroid pathology," LDR Thompson.
3. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in parathyroid gland pathology," LDR Thompson.
4. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in sinonasal tract pathology," LDR Thompson.
5. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in ear and temporal bone pathology," LDR Thompson.
6. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in laryngeal pathology," LDR Thompson.
7. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Selected topics in hematopathology," LDR Thompson.
8. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Pathology of infectious diseases of the head and neck," LDR Thompson.
9. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Soft tissue tumors of the head and neck," LDR Thompson.
10. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Bone lesions of the head and neck," LDR Thompson.
11. March 2000: Bethesda, Md, Basic Sciences Review Course in Otolaryngology Head & Neck Surgery, "Review of pathology," LDR Thompson.
12. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Salivary gland pathology," LDR Thompson.
13. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Ear and temporal bone pathology," LDR Thompson.
14. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Laryngeal pathology," LDR Thompson.
15. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Sinonasal tract pathology," LDR Thompson.
16. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Oral pathology," LDR Thompson.
17. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Thyroid gland pathology," LDR Thompson.
18. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Parathyroid gland pathology," LDR Thompson.
19. April 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Unknown slide conference," LDR Thompson.
20. April 2000: Chicago, Ill, Osler Institute Pathology Review Board, "Endocrine organ pathology," LDR Thompson.
21. April 2000: Chicago, Ill, Osler Institute Pathology Review Board, "Otorhinolaryngic-head

- & neck pathology," LDR Thompson.
22. April 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Adrenal gland tumor classification," LDR Thompson.
 23. April 2000: Wilford Hall, Lackland Air Force Base, San Antonio, Tex, Grand Rounds, "Papillary thyroid carcinoma variants," LDR Thompson.
 24. April 2000: Wilford Hall, Lackland Air Force Base, San Antonio, Tex, Grand Rounds, "Parathyroid gland pathology," LDR Thompson.
 25. May 2000: Washington, DC, Annual Anatomic Pathology Review Course, "Selected topics in otolaryngic pathology," LDR Thompson.
 26. May 2000: Washington, DC, Annual Anatomic Pathology Review Course, "Endocrine pathology. What can you possibly say in 1 hour?" LDR Thompson.
 27. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Salivary gland pathology," LDR Thompson.
 28. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Ear and temporal bone pathology," LDR Thompson.
 29. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Laryngeal pathology," LDR Thompson.
 30. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Sinonasal tract pathology," LDR Thompson.
 31. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Thyroid gland pathology," LDR Thompson.
 32. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Parathyroid gland pathology," LDR Thompson.
 33. September 2000: Chicago, Ill, Osler Institute Otorhinolaryngic Surgery Board Review, "Unknown slide conference," LDR Thompson.
 34. September 2000: Tampa, Fla, Osler Institute Pathology Review Board, "Endocrine organ pathology," LDR Thompson.
 35. September 2000: Tampa, Fla, Osler Institute Pathology Review Board, "Otorhinolaryngic-head & neck pathology," LDR Thompson.
 36. September 2000: Rockville, Md, Telepathology 2000, "Endocrine organ telepathology," LDR Thompson.
 37. September 2000: Rockville, Md, Telepathology 2000, "Otorhinolaryngic-head & neck telepathology," LDR Thompson.
 38. October 2000: Nagoya, Japan, International Academy of Pathology, "Update in salivary gland pathology. Short course," LDR Thompson.
 39. October 2000: Nagoya, Japan, International Academy of Pathology, "New concepts in telepathology. Long course," LDR Thompson.
 40. December 2000: Wilford Hall, Lackland Air Force Base, San Antonio, Tex, Grand Rounds, "Challenging lesions in head and neck pathology," LDR Thompson.
 41. December 2000: Wilford Hall, Lackland Air Force Base, San Antonio, Tex, Grand Rounds, "Differential diagnosis in endocrine organ lesions," LDR Thompson.
 42. December 2000: San Antonio, Tex, Southern Texas Pathology Society, "Diagnostically challenging tumors in endocrine organs," LDR Thompson.

PUBLICATIONS

Journal Articles:

1. Briscoe D, Adair CF, Thompson LD, Tellado MV, Buckner SB, Rosenthal DL, O'Leary TJ. Telecytologic diagnosis of breast fine needle aspiration biopsies: intraobserver concordance. *Acta Cytol.* 2000;44:175-180.
2. Castle JT, Thompson LD. Kaposi sarcoma of major salivary gland origin: a clinicopathologic series of six cases. *Cancer.* 2000;88:15-23.
3. Derringer GA, Thompson LD, Frommelt RA, Bijwaard KE, Heffess CS, Abbondanzo SL. Malignant lymphoma of the thyroid gland: a clinicopathologic study of 108 cases. *Am J Surg Pathol.* 2000;24:623-639.
4. Fanburg-Smith JC, Gyure KA, Michal M, Katz D, Thompson LD. Retroperitoneal periph-

- eral hemangioblastoma: a case report and review of the literature. *Ann Diagn Pathol.* 2000;4:81-87.
5. Gadwal SR, Fanburg-Smith JC, Gannon FH, Thompson LD. Primary chondrosarcoma of the head and neck in pediatric patients: a clinicopathologic study of 14 cases with a review of the literature. *Cancer.* 2000;88:2181-2188.
 6. Gyure KA, Thompson LD, Morrison AL. A clinicopathological study of 15 patients with neuroglial heterotopias and encephaloceles of the middle ear and mastoid region. *Laryngoscope.* 2000;110:1731-1735.
 7. Kardon DE. Nasal glial heterotopia. *Arch Pathol Lab Med.* 2000;124:1849.
 8. Kardon DE, Thompson LD. A clinicopathologic series of 22 cases of tonsillar granulomas. *Laryngoscope.* 2000;110:476-481.
 9. Kardon DE, Thompson LD. Sinonasal mucosal malignant melanoma: report of an unusual case mimicking schwannoma. *Ann Diagn Pathol.* 2000;4:303-307.
 10. Kardon DE, Thompson LDR. Exophytic and papillary squamous cell carcinoma of the larynx. *Pathol Case Rev.* 2000;5:1-4.
 11. Kardon DE, Wenig BM, Heffner DK, Thompson LD. Tonsillar lymphangiomas: a clinicopathologic series of 26 cases. *Mod Pathol.* 2000;13:1128-1133.
 12. Klimstra DS, Wenig BM, Heffess CS. Solid-pseudopapillary tumor of the pancreas: a typically cystic carcinoma of low malignant potential. *Semin Diagn Pathol.* 2000;17:66-80.
 13. Neuhauser TS, Derringer GA, Thompson LD, Fanburg-Smith JC, Miettinen M, Saaristo A, Abbondanzo SL. Splenic angiosarcoma: a clinicopathologic and immunophenotypic study of 28 cases. *Mod Pathol.* 2000;13:978-987.
 14. Thompson LD, Derringer GA, Wenig BM. Amyloidosis of the larynx: a clinicopathologic study of 11 cases. *Mod Pathol.* 2000;13:528-235.
 15. Thompson LD, Gyure KA. Extracranial sinonasal tract meningiomas: a clinicopathologic study of 30 cases with a review of the literature. *Am J Surg Pathol.* 2000;24:640-650.
 16. Thompson LD, Heffess CS. Renal cell carcinoma to the pancreas in surgical pathology material: a clinicopathologic study of 21 cases with a review of the literature. *Cancer.* 2000;89:1076-1088.
 17. Thompson LD, Rosai J, Heffess CS. Primary thyroid teratomas: a clinicopathologic study of 30 cases. *Cancer.* 2000;88:1149-1158.

Abstracts:

1. Brachtel ER, Michael NL, Wenig BM, Nelson AM, Wear DJ, Mascola JR, Frankel SS. HIV-1 splice variants in paraffin embedded tonsils from infected patients, evaluated with reverse-transcriptase polymerase chain reaction (RT-PCR). *Mod Pathol.* 2000;13:167A. Abstract 979.
2. Derringer GA, Aguilera NSI, Thompson LDR, Neuhauser TS, Abbondanzo SL. Lymphocyte-rich classical Hodgkin's disease: a clinicopathologic study of 16 cases. *Mod Pathol.* 2000;13:147A. Abstract 855.
3. Fanburg-Smith JC, Gannon FH, Gadwal SR, Thompson LDR. Primary chondrosarcoma of the head and neck in children: a clinicopathologic study of 14 patients. *Mod Pathol.* 2000;13:137A. Abstract 800.
4. Gannon FH, Fanburg-Smith JC, Gadwal SR, Thompson LDR. Primary osteosarcoma of the head and neck. *Mod Pathol.* 2000;13:138A. Abstract 804.
5. Kardon DE, Thompson LDR. Tonsillar granulomas: a clinicopathologic series of 22 cases. *Mod Pathol.* 2000;13:139A. Abstract 812.
6. Kardon DE, Wenig BM, Heffner DK, Thompson LDR. Lymphangiomas (LAP) of the tonsils. *Mod Pathol.* 2000;13:139A. Abstract 811.
7. Thompson LDR, Heffess CS. Metastatic renal cell carcinoma to the pancreas: a clinicopathologic series of 21 cases. *Mod Pathol.* 2000;13:190A. Abstract 1118.
8. Thompson LDR, Heffner DK. Sinonasal tract eosinophilic angiocentric fibrosis: a report of three cases. *Mod Pathol.* 2000;13:141A. Abstract 821.

Book Chapter:

Thompson LDR. Laryngeal pathology. In: Fu YS, Wenig BM, Wenig B, Abemeyor C, eds. *Pathology of the Head and Neck: with Clinicopathologic Correlations.* New York, NY: Churchill Livingstone; 2000:369-455.



Kamal G. Ishak, MD, PhD
Chair
Date of Appointment — 10 March 1965

DEPARTMENT OF HEPATIC AND GASTROINTESTINAL PATHOLOGY

MISSION

The Department of Hepatic and Gastrointestinal Pathology provides expertise in consultation, supports the educational objectives of the Armed Forces Institute of Pathology, both intramurally and extramurally, and conducts research in diseases of the liver and gastrointestinal tract.

ORGANIZATION

The department is organized into 2 divisions and the Office of the Chair.

1. Division of Hepatic Pathology — Zachary D. Goodman, MD, PhD
2. Division of Gastrointestinal Pathology — Leslie H. Sobin, MD

STAFF

Medical:

Kamal G. Ishak, MD, PhD

Administrative:

Fanny X. Revelo, Administrative Officer

DIAGNOSTIC CONSULTATION

Members of the department consulted on 5,478 outside cases and 754 intramural cases—a combined total of 6,232 cases. See division reports for further details.

Impact: Division of Hepatic Pathology

National: Over the last several decades, the Division of Hepatic Pathology has collaborated in numerous studies with the Liver Unit at NIH, the Food and Drug Administration, the Washington VA Medical Center, and WRAMC. These studies delineated reactions to many major drugs, such as halothane, phenothiazines, valproic acid, diclofenac, isoniazid, and ketoconazole. The Hepatic Activity Index, modified by Dr. Ishak and others, is widely used for scoring the activity of chronic hepatitis in needle biopsy specimens. The division has produced landmark studies of chronic hepatitis, and has published authoritative clinicopathologic studies of large series of liver tumors in children and adults. These included classic studies of infantile hemangioendothelioma, mesenchymal hamartoma, focal nodular hyperplasia, nodular transformation, embryonal sarcoma, hepatoblastoma, hepatocellular carcinoma, and epithelioid hemangioendothelioma.

The division has educated clinicians and pathologists through its weekly Thursday Clinicopathologic Conference in the metropolitan Washington area, its Annual Hepatic Pathology Course (now in its 21st year), and through several annual postgraduate courses of the American Association for the Study of Liver Diseases (AASLD). One highly acclaimed product of the course was a full-color monograph (syllabus) published by AASLD, ARP, and AFIP. The division has produced the AFIP Fascicle (Third Series) *Tumors of the Liver* (in press) and is currently writing a nontumor fascicle on diseases of the liver.

International: Members of the division are internationally recognized authorities on the

pathology of liver diseases. In 2000, they were called upon by the International Academy of Pathology to present in Nice, France; Nagoya, Japan; Australia; New Zealand; and Cairo, Egypt. The department chair has participated in the last 2 annual meetings of the Arab Division of the IAP and the recent meeting of the Austrian Division of the IAP. He has also coauthored several sections of the IARC monograph on classification of tumors of the gastrointestinal tract and liver, and 3 chapters of the 4th edition of the authoritative textbook, *Pathology of the Liver* (Churchill Livingstone).

Impact: Division of Gastrointestinal Pathology

National: Members of the division are engaged in an increasing number of collaborative studies with other federal agencies, including the National Cancer Institute, Centers for Disease Control and Prevention, Food and Drug Administration, Naval Medical Research Institute, Mayo Clinic, and Albany VA Medical Center.

International: Through the WHO Collaborating Center for International Histological Classification of Tumors, a number of significant projects are underway concerning tumor classification and standard coding systems for tumors.

EDUCATION

Presentations and Seminars: Staff of the 2 divisions and the Office of the Chair gave a total of 88 lectures and 1 slide seminar at various symposia and meetings during 2000. A complete list of dates and titles is included at the end of each division report.

RESEARCH

Publications: Staff of the 2 divisions and the Office of the Chair published 21 journal articles, 9 abstracts, 2 syllabi, 22 book chapters, and 3 books. See division reports for full details.

Projects: Members of the department are engaged in a number of ongoing research projects, including:

1. Consultation with the WHO to revise the International Classification of Diseases for Oncology, the standard coding system for tumors and the basis for the SNOMED tumor morphology code.
2. Consultation with the International Agency for Research on Cancer to initiate a new tumor classification series relating histological types to genetic and molecular characteristics.
3. Collaboration with the International Union Against Cancer on tumor classification (TNM system) and staging, and the interaction of staging with nonanatomic prognostic factors.

OTHER ACCOMPLISHMENTS

KG Ishak

Faculty Appointments:

1. USUHS, Clinical Professor of Pathology
2. Mt. Sinai School of Medicine, New York, NY, Professorial Lecturer

PRESENTATIONS

KG Ishak

1. February 2000: Washington, DC, Department of Pathology, Walter Reed Army Medical Center, "Chronic cholestasis."
2. April 2000: New York, NY, Mt. Sinai School of Medicine, GI/Liver Research Seminar, "Drug and toxin induced liver injury."
3. April 2000: New York, NY, Pediatric Liver Program, Mt. Sinai Medical Center, "Clinicopathologic conference."
4. May 2000: San Juan, Puerto Rico, 6th International Symposium on Metal Ions in Biology and Medicine, Cochair, Short Course: Environmental Pathology of Metal Exposures, "Metal hepatotoxicity."
5. May 2000: Newcastle, England, Annual Meeting of the Liver Study Group (the Gnomes), "Diabetes and the liver."
6. May 2000: Newcastle, England, Annual Meeting of the Liver Study Group (the Gnomes), "Three cases of liver disease associated with primary or acquired immunodeficiencies."

7. July 2000: Deauville, France, Diagnostic Surgical Pathology, "Benign liver tumors."
8. July 2000: Deauville, France, Diagnostic Surgical Pathology, "Malignant liver tumors."
9. August 2000: San Juan, Puerto Rico, Metropolitan University, 3rd Ana G. Mendez Symposium on Hepatitis C, "Pathology of chronic hepatitis C."
10. September 2000: Bethesda, Md, Codirector, 21st Annual Course on Hepatopathology 2000, "Hemochromatosis, Wilson's disease and alpha-1 antitrypsin deficiency."
11. September 2000: Bethesda, Md, Codirector, 21st Annual Course on Hepatopathology 2000, "Tumors of the liver."
12. September 2000: Buenos Aires, Argentina, 1ras. Jornadas Conjuntas de Patologia, AFIP-IAP, "Chronic cholestasis."
13. September 2000: Buenos Aires, Argentina, 1ras. Jornadas Conjuntas de Patologia, AFIP-IAP, "Chronic hepatitis."
14. September 2000: Buenos Aires, Argentina, 1ras. Jornadas Conjuntas de Patologia, AFIP-IAP, "Steatohepatitis."
15. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology, Slide Seminar, "Non-neoplastic and neoplastic hepatic nodules."
16. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology, Short Course, "Histologic diagnosis and problems in liver tumors," "Malignant vascular tumors."

PUBLICATIONS

KG Ishak

Journal Articles:

1. Folpe AL, Goodman ZD, Ishak KG, Paulino AF, Taboada EM, Meehan SA, Weiss SW. Clear cell myomelanocytic tumor of the falciform ligament/ligamentum teres: a novel member of the perivascular epithelioid clear cell family of tumors with a predilection for children and young adults. *Am J Surg Pathol.* 2000;24:1239-1246.
2. Ishak KG. Pathologic features of chronic hepatitis: a review and update. *Am J Clin Pathol.* 2000;113:40-55.
3. Murakata LA, Ishak KG, Nzeako UC. Clear cell carcinoma of the liver: a comparative immunohistochemical study with renal clear cell carcinoma. *Mod Pathol.* 2000;13:874-881.
4. Saito T, Krutovskikh V, Marion MJ, Ishak KG, Bennett WP, Yamasaki H. Human heman-giosarcomas have a common polymorphism but no mutations in the connexin37 gene. *Int J Cancer.* 2000;86:67-70.

Abstracts:

1. Folpe AL, Goodman ZD, Ishak KG, Paulino A, Taboada E, Meehan SA, Weiss SW. Clear cell myomelanocytic tumor of falciform ligament/ligamentum teres in children and young adults. *Mod Pathol.* 2000;13:9A.
2. Kaplan KJ, Goodman ZD, Ishak KG. Eosinophilic granuloma of the liver: a characteristic lesion with relationship to visceral larva migrans. *Mod Pathol.* 2000;13:185A.

Book Chapters:

1. Ishak KG. Hepatotoxicity of metals. In: Centeno JA, Collery P, Vernet G, Finkelman RB, Gibb H, Etienne J-C, eds. *Metal Ions in Biology and Medicine.* Vol 6. London, England: John Libbey Eurotext; 2000:15-17.
2. Ishak KG, Anthony PP, Niederau C, Nakanuma Y. Mesenchymal tumours of the liver. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumours. Pathology and Genetics of Tumours of the Digestive System.* Lyon, France: IARC Press; 2000:191-198.
3. Nakanuma Y, Sripa B, Vatanasapt V, Leong AS-Y, Ishak KG. Intrahepatic cholangiocarcinoma. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumours: Pathology and Genetics of Tumours of the Digestive System.* Lyon, France: IARC Press; 2000:173-180.
4. Hirohashi S, Ishak KG, Kojiro M, et al. Hepatocellular carcinoma. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumours: Pathology and Genetics of Tumours of the Digestive System.* Lyon, France: IARC Press; 2000:159-172.

Other Publications:

1. Ishak KG. Environmental pathology of metal exposures—liver. In: Ishak KG, Mullick FG, eds. *Short Course: Environmental Pathology of Metal Exposure* [syllabus]. 6th International Symposium on Metal Ions in Biology and Medicine. San Juan, Puerto Rico; May 2000:43-63.
2. Martinez L, Centeno JA, Ladich ER, Page NP, Mullick FG, Ishak KG. *Arsenic-Induced Lesions* [syllabus]. Washington, DC: AFIP; 2000.



Zachary D. Goodman, MD, PhD
 Chief
 Date of Appointment — 1 January 1991

DIVISION OF HEPATIC PATHOLOGY

MISSION

The Division of Hepatic Pathology provides consultation, research, and education in pathology of the liver, biliary tract, and gallbladder.

STAFF

Medical:

- Zachary D. Goodman, MD, PhD, Chief
- Lionel Rabin, MD, Staff Pathologist
- Linda A. Murakata, CDR, MC, USNR, Staff Pathologist
- (A) Christine Hobbs MD, Callender-Binford Fellow
- (A) Hala Makhoulf, MD, PhD, Research Associate, Registry of Hepatic Pathology

Administrative:

- Fanny X. Revelo, Secretary

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	369
Army	187
Navy	52
Air Force	130
Federal	413
VA	403
USPHS	4
OFA	6
Civilian	1,136
Interdepartmental	201
Total	2,119

1,063 cases for consultation, 235 for education, and 146 for research required the following types of procedures and analyses:

- H&E stains: 2,800
- Special staining: 5,958
- Immunohistochemical staining: 2,554
- Electron microscopy: 3
- Molecular biology examination: 334 tests for 143 cases

—Total recuts studied: 12,554

—Contributor slides: 8,071

Our division made no change in the contributor diagnosis in 1,001 cases, a minor change in diagnosis in 690 cases, and a major change in diagnosis in 90 cases. We received 137 cases with no contributor diagnosis; 1 case was recorded without coding.

The number of consultations increased by 6.4% over 1999. In general, most cases pose diagnostic problems for the contributing pathologist, particularly those that deal with medical diseases of the liver, such as chronic cholestatic disorders and steatohepatitis. Neoplasms represent only about 20% of the material. Many cases are sent at the request of clinicians or patients requesting second opinions, and despite the advent of consultation charges, the number of civilian cases has increased. Cases are also submitted for their research and educational interest.

EDUCATION

Presentations and Seminars: Members of the division presented 25 lectures and seminars at 18 different events, representing approximately 2,800 man-hours of training. A complete list of dates and titles appears at the end of this report.

Departmental Conferences: Division staff conducted daily microscopic pathology conferences for the staff and rotating fellows and residents. The Thursday Clinicopathologic Conference, now in its 35th consecutive year, attracts hepatologists, gastroenterologists, and pathologists from many local, federal, and civilian institutions. The conference is attended by an average of 10 to 15 clinicians and pathologists each week.

Courses: Members of the division participated in 4 non-AFIP courses, 2 nondepartmental AFIP courses, and the 21st Annual Course in the Interpretation of Liver Biopsies, which had 120 participants, for 360 attendee-days.

Trainees: The division provided training to the following individuals in the form of departmental conferences and review of teaching material:

1. Christine Hobbs, MD, Callender-Binford Fellow — 247 trainee-days
2. 25 pathologists and fellows in gastroenterology (4 military, 21 civilian) — 719 trainee-days

Educational Aids:

1. Quarterly AFIP/VA/Military Histopathology Quality Assessment Program, 1 case prepared (with discussion) and evaluated - LA Murakata
2. World Wide Web site - LA Murakata, coordinator

RESEARCH

Publications: Division staff wrote or cowrote 7 journal articles and 7 abstracts in 2000. Complete bibliographic information appears at the end of this report.

Projects:

Completed:

1. Noninvasive and Minimally Invasive Papillary Carcinomas of the Extrahepatic Bile Ducts

In Progress:

1. Lymphomas of the Gallbladder
2. Comparison of Fresh and Paraffin-Embedded Tissue for Measurement of Hepatic Iron
3. Concentration in Subjects with Hepatic Steatosis
4. A Double-Blind Placebo Controlled, Randomized Dose Ranging Study of Recombinant Human Interleukin-10 (Tenovil) for Treatment of Hepatic Fibrosis in Patients with Chronic Hepatitis C Who Failed to Respond to Previous Combination Therapy (Interferon Alfa-2b Plus Ribavirin)
5. Morphometric Analysis of Distribution of Fibrosis in the Liver
6. The HALT-C Trial: A Randomized Controlled Trial to Evaluate the Safety and Efficacy of Long-Term Peginterferon Alfa-2a for Treatment of Chronic Hepatitis C in Patients Who Failed to Respond to Previous Interferon Therapy
7. Clonal Proliferation of Lymphocytes in Liver Diseases of Unknown Cause
8. Histopathologic Study of Inflammatory and Neoplastic Skin Lesions in Gulf War Veterans
9. Histopathologic Study of Inflammatory and Neoplastic Colon Lesions in Gulf War Veterans

OTHER ACCOMPLISHMENTS

Collaborators:**Military/Federal:**

1. National Institutes of Health, NIDDK Liver Unit and NCI Laboratory of Pathology – The HALT-C Trial
2. Brooke Army Medical Center, Division of Gastroenterology and AFIP Department of Environmental and Toxicologic Pathology — Comparison of Fresh and Paraffin-Embedded Tissue for Measurement of Hepatic Iron Concentration in Subjects with Hepatic Steatosis
3. AFIP Department of Hematopathology – Lymphomas of the Gallbladder
4. AFIP Department of Cellular Pathology — Clonal Proliferation of Lymphocytes in Liver Diseases of Unknown Cause
5. AFIP Department of Environmental and Toxicologic Pathology — Histopathologic Study of Inflammatory and Neoplastic Skin Lesions in Gulf War Veterans
6. AFIP Department of Environmental and Toxicologic Pathology — Histopathologic Study of Inflammatory and Neoplastic Colon Lesions in Gulf War Veterans

Civilian (and Civilian/Military):

1. University of Texas Southwestern, Department of Pathology — Noninvasive and Minimally Invasive Papillary Carcinomas of the Extrahepatic Bile Ducts
2. Schering-Plough Research Institute and AFIP Department of Cellular Pathology — A Double-Blind Placebo Controlled, Randomized Dose Ranging Study of Recombinant Human Interleukin-10 (Tenovil) for Treatment of Hepatic Fibrosis in Patients with Chronic Hepatitis C Who Failed to Respond to Previous Combination Therapy (Interferon Alfa-2b Plus Ribavirin)
3. University of California Irvine, Division of Gastroenterology; University of Southern California, Department of Pathology; and AFIP Department of Cellular Pathology — Morphometric Analysis of Distribution of Fibrosis in the Liver
4. Divisions of Gastroenterology/Hepatology and Departments of Pathology at New England Research Institutes, University of Washington Laboratory of Virology, University of Massachusetts, Massachusetts General Hospital, St Louis University, University of Colorado, University of California at Irvine, University of Texas Southwestern, University of Southern California, University of Michigan, Medical College of Virginia – The HALT-C Trial

Committees:**Editorial Boards:**

1. *Liver* — ZD Goodman
2. *Annals of Diagnostic Pathology* — ZD Goodman
3. Associate Editor, Center for Scientific Publications, AFIP — LA Murakata

Manuscripts Reviewed: Division staff reviewed 11 manuscripts for the following journals in 2000:

1. *Human Pathology*
2. *Cancer*
3. *Hepatology*
4. *Journal of Hepatology*
5. *Liver*
6. *Annals of Diagnostic Pathology*

Faculty Appointments:

1. USUHS, Clinical Professor — ZD Goodman
2. Georgetown University, Adjunct Associate Professor — ZD Goodman
3. Temple University, Adjunct Professor — LR Rabin

PRESENTATIONS

1. February 2000: Washington, DC, Department of Pathology, George Washington University, "Drug-induced liver disease," ZD Goodman.
2. February 2000: Washington, DC, Department of Pathology, Walter Reed Army Medical Center, "Drug-induced liver disease," ZD Goodman.
3. February 2000: Bethesda, Md, Department of Pathology, National Naval Medical Center, "Drug-induced liver disease," ZD Goodman.
4. March 2000: Bethesda, Md, Department of Pathology, Uniformed Services University of the Health Sciences, "Genetic hemochromatosis," ZD Goodman.
5. March 2000: New Orleans, La, US-Canadian Academy of Pathology, "Specialty conference on liver pathology," ZD Goodman.
6. March 2000: Washington, DC, Sophomore Pathology Course, Georgetown University School of Medicine, "Introduction to liver disease (I)," ZD Goodman.
7. March 2000: Washington, DC, Sophomore Pathology Course, Georgetown University School of Medicine, "Introduction to liver disease (II)," ZD Goodman.
8. March 2000: Washington, DC, Sophomore Pathology Course, Georgetown University School of Medicine, "Introduction to liver disease (III)," ZD Goodman.
9. March 2000: Washington, DC, Sophomore Pathology Course, Georgetown University School of Medicine, "Introduction to liver disease (IV)," ZD Goodman.
10. April 2000: Boston, Mass, Spring Anatomic Pathology Slide Seminar, American Society of Clinical Pathologists, "Diseases of the liver and pancreas," ZD Goodman.
11. April 2000: Washington, DC, AFIP Course, Anatomic Pathology Review and Update, "Inflammatory diseases of the liver," ZD Goodman.
12. April 2000: Silver Spring, Md, 10th Annual Anatomic Pathology Course, "Liver tumors," LA Murakata.
13. June 2000: Bethesda, Md: Department of Pathology, Uniformed Services University of the Health Sciences, "Topics in liver pathology," ZD Goodman.
14. July 2000: Washington, DC, National Youth Leadership Forum on Medicine, WRAMC, "Career in medicine," LA Murakata.
15. August 2000: Washington, DC, Department of Pathology, Walter Reed Army Medical Center (Telecast to Department of Pathology, National Naval Medical Center, Bethesda, Md), "Diseases of the liver," ZD Goodman.
16. September 2000: Bethesda, Md, 11th Annual Hepatic Surgical Pathology Course on Hepatopathology 2000, "Hepatic case presentations," LA Murakata.
17. September 2000: Bethesda, Md, 11th Annual Hepatic Surgical Pathology Course on Hepatopathology 2000, "Introduction to liver pathology," ZD Goodman.
18. September 2000: Bethesda, Md, 11th Annual Hepatic Surgical Pathology Course on Hepatopathology 2000, "Biopsy diagnosis of hepatitis," ZD Goodman.
19. September 2000: Bethesda, Md, 11th Annual Hepatic Surgical Pathology Course on Hepatopathology 2000, "Drug-induced liver disease," ZD Goodman.
20. September 2000: Bethesda, Md, 11th Annual Hepatic Surgical Pathology Course on Hepatopathology 2000, "Biopsy diagnosis of cholestatic liver disease," ZD Goodman.
21. September 2000: McLean, Va, Washington Hospital Center, Gastroenterology Board Review Course, "Liver histopathology," ZD Goodman.
22. October 2000: Kurume, Japan, Kurume University School of Medicine, "Liver tumors in children," ZD Goodman.
23. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology, Course Director, Histologic Diagnosis and Problems in Liver Tumors, "Liver tumors in children," ZD Goodman.
24. October 2000: Dallas, Tex, American Association for the Study of Liver Diseases, "Liver biopsy in hepatitis," ZD Goodman.
25. November 2000: Savannah, Ga, AFIP Diagnostic Surgical Pathology Course, "Benign and malignant liver tumors," LA Murakata.

PUBLICATIONS

Journal Articles:

1. Albores-Saavedra J, Murakata L, Krueger JE, Henson DE. Noninvasive and minimally invasive papillary carcinomas of the extrahepatic bile ducts. *Cancer*. 2000;89:508-515.
2. Folpe AL, Goodman ZD, Ishak KG, Paulino AF, Taboada EM, Meehan SA, Weiss SW. Clear cell myomelanocytic tumor of the falciform ligament/ligamentum teres: a novel member of the perivascular epithelioid clear cell family of tumors with a predilection for children and young adults. *Am J Surg Pathol*. 2000;24:1239-1246.
3. Mizokami M, Albrecht JK, Kato T, Orito E, Lai VC, Goodman Z, Hong Z, Lau JY. TT virus infection in patients with chronic hepatitis C virus infection—effect of primers, prevalence, and clinical significance: Hepatitis Interventional Therapy Group. *J Hepatol*. 2000;32:339-343.
4. Murakata LA, Ishak KG, Nzeako UC. Clear cell carcinoma of the liver: a comparative immunohistochemical study with renal clear cell carcinoma. *Mod Pathol*. 2000;13:874-881.
5. Poynard T, McHutchison J, Davis GL, Esteban-Mur R, Goodman Z, Bedossa P, Albrecht J for the FIBROVIRC Project Group. Impact of interferon alfa-2b and ribavirin on progression of liver fibrosis in patients with chronic hepatitis C. *Hepatology*. 2000;32:1131-1137.
6. Poynard T, McHutchison J, Goodman Z, Ling MH, Albrecht J for the ALGOVIRC Project Group. Is an “a la carte” combination interferon alfa-2b plus ribavirin regimen possible for the first line treatment in patients with chronic hepatitis C? *Hepatology*. 2000;31:211-218.
7. Slimane SB, Albrecht JK, Fang JW, Goodman Z, Mizokami M, Qian K, Lau JY. Clinical, virological and histological implications of GB virus-C/hepatitis G virus infection in patients with chronic hepatitis C virus infection: a multicentre study based on 671 patients. *J Viral Hepat*. 2000;7:51-55.

Abstracts:

1. Folpe AL, Goodman ZD, Ishak KG, Paulino A, Taboada E, Meehan SA, Weiss SW. Clear cell myomelanocytic tumor of falciform ligament/ligamentum teres in children and young adults. *Mod Pathol*. 2000;13:9A.
2. Kaplan KJ, Goodman ZD, Ishak KG. Eosinophilic granuloma of the liver: a characteristic lesion with relationship to visceral larva migrans. *Mod Pathol*. 2000;13:185A.
3. Knisely AS, Goodman Z, Cowan DF. Hyaline inclusion bodies in hepatocytes of marine mammals: physiologic fibrinogen storage or congestion globules? *Hepatology*. 2000;32:A3.
4. Kweon Y-O, Goodman ZD, Dienstag JL, Schiff ER, Brown NA, Grenner DA, Fried MW. Lamivudine decreases fibrogenesis in chronic hepatitis B: an immunohistochemical study of paired liver biopsies. *Hepatology*. 2000;32:377A.
5. Lindsay KL, Trepo C, Goodman ZD, Albrecht JK. Improvement in hepatic fibrosis is seen in HCV patients who relapse or do not respond to PEG-IFN A2B (Peg-Intron). *Hepatology*. 2000;32:360A.
6. Pianko S, McHutchison JG, Gordon SC, Heaton S, Goodman ZD, Blatt LM, Cortese CM, Brunt E, Bacon B. Hepatic iron concentration does not influence response to therapy with interferon plus ribavirin in chronic HCV infection. *Hepatology*. 2000;32:371A.
7. Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O’Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed, archival liver samples suspect for elevated iron content and hemochromatosis. *Mod Pathol*. 2000;13:189A.



Leslie H. Sobin, MD, SES
 Chief
 Date of Appointment — 1 January 1991

DIVISION OF GASTROINTESTINAL PATHOLOGY

MISSION

The Division of Gastrointestinal Pathology supports the mission of the AFIP by providing consultation, education, and research on the pathology of the gastrointestinal tract.

STAFF

Medical:

- Leslie H. Sobin, MD, FRCPath, Chief; Director, Center for Scientific Publications
- (D) Theresa S. Emory, MAJ, MC, USA, Staff Pathologist
- Nancy S. Dow, LTC, USA, Staff Pathologist
- Amir I. Kende, Maj, USAF, MC, Staff Pathologist
- (A) David M. Burch, LCDR, MC, USNR, Staff Pathologist
- (A) Christine M. Hobbs, MD, Callender-Binford Fellow
- (A) Helen E. Remotti, MAJ, MC, USA, Staff Pathologist

Administrative:

- Mayra E. Aguilera, Secretary, ARP

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	896
Army	418
Navy	148
Air Force	330
Federal	1,012
VA	997
USPHS	9
OFA	6
Civilian	1,652
Interdepartmental	553
Total	4,113

1,159 cases for consultation, 104 for education, and 2 for research required the following types of procedures and analyses:

- H&E stains: 3,138
- Special staining: 1,089
- Immunohistochemical staining: 13,520 slides
- Electron microscopy: 1

- Molecular biology examination: 26 tests for 8 cases
- Total recuts studied: 18,382
- Contributor slides: 16,658

The cases received represent a mixture of problems, primarily neoplastic and precancerous lesions and inflammatory diseases. Among the relatively uncommon lesions that are unusually prominent in the division's accessions are carcinoids, mesenchymal tumors, lymphomas, and surveillance biopsies for dysplasia in cases of ulcerative colitis and Barrett esophagus. The last of these has become particularly frequent. Staff members also participate in the review of consultation cases in the Division of Hepatic Pathology.

Impact:

The Division of Gastrointestinal Pathology in the Department of Hepatic and Gastrointestinal Pathology published the highly acclaimed and landmark *Atlas of Gastrointestinal Endoscopy and Endoscopic Biopsies*, jointly with the Mayo Clinic. The atlas facilitates clinicopathologic correlative diagnoses and enhances communication between gastroenterologists and pathologists. The atlas is unique in providing side by side endoscopic and histologic images.

EDUCATION

Presentations and Seminars: Division staff made 47 presentations at medical schools, hospitals, meetings, and seminars in 2000. Complete dates and titles are listed at the end of this report. A daily divisional conference is held to review all gastrointestinal cases accessioned within the previous 24 hours. The conference serves as the major educational forum and is part of the quality assurance program. A gastrointestinal radiology-pathology conference is held regularly. The staff also attends the daily hepatic pathology review conference and the weekly hepatic clinical-pathologic conference.

Courses: Staff members participated in 6 AFIP courses and 2 non-AFIP courses, and organized the 11th Annual Course on Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, representing approximately 2,000 man-hours of training. The Virtual Gastrointestinal Endoscopic Biopsy Course provides CME credit for 40 cases on the AFIP Web site, <http://www.afip.org/Departments/edu/webed/vgi/hgss01/frameset3.html>.

Trainees: The division provided training to 23 civilian and military gastroenterology fellows and pathologists.

Educational Aids:

1. Several thousand microscope slides, arranged by organ, demonstrating a wide variety of gastrointestinal lesions.
2. The endoscopic biopsy collection, consisting of over 500 cases. There are multiple copies for use in the annual course.
3. Ten sets of 35-mm transparencies, each accompanied by a syllabus, available for individual study. They are also sold by the ARP Bookstore, along with several WHO study sets.
4. A syllabus to accompany the division's annual course.

RESEARCH

Publications: Division staff published 10 journal articles, 2 abstracts, 3 books, and 18 book chapters. Complete bibliographic information appears at the end of this report.

Projects: There were 12 research protocols open in 2000 involving research in several areas of gastrointestinal pathology, including the following:

1. Gastrointestinal Stromal Tumors (GISTs), Clinicopathologic Studies
2. Pathophysiology of *Campylobacter jejuni* Infection in Humans
3. Anal Duct Carcinomas, Clinicopathologic Study
4. Expression of Cytokeratin-7 and -20 of Epithelial Malignancies Within the Gastrointestinal Tract
5. Diagnostic Accuracy of Various Gastrointestinal Conditions by Telepathology
6. Inflammatory Pseudotumors of the Gastrointestinal Tract and How Closely They Are Related to Inflammatory Fibroid Polyps
7. TNM Staging of Gastrointestinal Smooth Muscle/Stromal Tumors
8. Correlation Between Endoscopy and Endoscopic Biopsies
9. Pathophysiologic Basis of Intussusception Associated with the Rotavirus Vaccine

10. Follicular Lymphoma Presenting in GI Tract
11. Proliferation, Apoptosis, and Cell Adhesion Molecules in Neoplasms of the Colorectum and Appendix
12. Neurogenic Tumors of the GI Tract

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. National Cancer Institute/NIH, Surveillance, Epidemiology, End Results (SEER) Program, International Classification of Diseases for Oncology
2. Centers for Disease Control and Prevention, Intussusception and Its Possible Relation to Rotavirus Vaccine
3. Naval Medical Research Institute, Pathology of *Campylobacter jejuni* Infection
4. Food and Drug Administration, Gastrointestinal Drugs Advisory Committee, Evaluating Adverse Effects of Alosetron in Patients with Irritable Bowel Syndrome
5. Albany VA Medical Center, Diagnostic Accuracy of Gastrointestinal Lesions by Telepathology

Civilian:

Mayo Clinic, Correlation Between Endoscopy and Endoscopic Biopsies

International:

1. World Health Organization, International Histological Classification of Tumors
2. World Health Organization, International Classification of Diseases for Oncology (ICD-O)
3. International Agency for Research on Cancer, WHO Histological Classification of Tumors; Pathology and Genetics of Tumors
4. International Union Against Cancer, TNM/Prognostic Factors Classification and Cancer Staging

Committees:

Offices/Committee Memberships in National and International Organizations:

LH Sobin

1. Chair, TNM/Prognostic Factors Project of the International Union Against Cancer
2. Head, WHO Collaborating Center for International Histological Classification of Tumors
3. Member, WHO Expert Advisory Panel on Cancer
4. Consultant, American Joint Committee on Cancer

Faculty Appointments (Pathology):

1. USUHS, Bethesda, Md, Professor — LH Sobin
2. Cornell University Medical College, Adjunct Professor — LH Sobin
3. Georgetown University Medical College, Adjunct Professor — LH Sobin
4. USUHS, Bethesda, Md, Clinical Assistant Professor — TS Emory
5. WRAMC, Staff Pathologist (with signout privileges) — TS Emory
6. WRAMC, Staff Pathologist (with signout privileges) — AI Kende

Editorial Positions:

LH Sobin

1. Associate Editor, AFIP Atlas of Tumor Pathology, 3rd Series
2. Associate Editor, AFIP Atlas of Tumor Pathology, 4th Series
3. Associate Editor, AFIP/ARP Atlas of Non-neoplastic Diseases
4. Editor, International Histological Classification of Tumors
5. Series Coeditor, WHO Classification of Tumors: Pathology and Genetics of Tumors
6. Associate Editor, *Cancer*
7. Director, Center for Scientific Publications

Continuing Education: Division staff received training from the following courses in 2000:

1. Weekly Hepatic Clinical-Pathologic Conference

2. AFIP and ARP Staff Conferences
3. US-Canadian Academy of Pathology, Sessions on GI Diseases

Official Trips (funding agency in parentheses):

1. February 2000, London, England, International Association for the Study of Lung Tumors, LH Sobin (UICC)
2. February 2000, Lyon, France, Pathology and Genetics of Tumors Breast Tumor Planning Meeting, LH Sobin (WHO)
3. March 2000, New York, NY, *Cancer* Associate Editors Meeting, LH Sobin (American Cancer Society)
4. March 2000, New Orleans, La, USCAP Meeting, LH Sobin, AI Kende (ARP)
5. May 2000, Geneva, Switzerland, TNM Project Meeting, International Union Against Cancer, LH Sobin (UICC)
6. June 2000, Chicago, Ill, American Joint Committee on Cancer Annual Meeting, LH Sobin (AJCC)
7. July 2000, Deauville, France, AFIP/ARP Diagnostic Surgical Pathology Course, LH Sobin (ARP)
8. July 2000, Lyon, France, Pathology and Genetics of Digestive System Tumors, Editorial Meeting, LH Sobin (WHO)
9. September 2000, Seattle, Wash, Cancer Control Meeting, International Union Against Cancer, LH Sobin (UICC)
10. September 2000, Buenos Aires, Argentina, AFIP/ARP Diagnostic Surgical Pathology Course, LH Sobin (ARP)
11. October 2000, New York, NY, *Cancer* Associate Editors Meeting, LH Sobin (American Cancer Society)
12. October 2000, New York, NY, American Society of Gastroenterology Meeting, LH Sobin (ASG)
13. October 2000, San Diego, Calif, College of American Pathologists Meeting, LH Sobin (CAP)
14. November 2000, Savannah, Ga, AFIP/ARP Diagnostic Surgical Pathology Course, LH Sobin (ARP)
15. November 2000, Lyon, France, Pathology and Genetics of Tumors of Hematopoietic and Lymphoid Tissues Meeting, LH Sobin (WHO)

PRESENTATIONS

1. February 2000: Washington, DC, AFIP Professional Staff Conference, "Small cell carcinoma of the intestinal tract," AI Kende.
2. February 2000: Washington, DC, Department of Pathology, Walter Reed Army Medical Center, "Gastric carcinoma," AI Kende.
3. February 2000: Bethesda, Md, Department of Pathology, National Naval Medical Center, "Gastric carcinoma," AI Kende.
4. February 2000: Washington, DC, AFIP Professional Staff Conference, "Endoscopic colonic biopsy: case presentation and approach to diagnosis," NS Dow.
5. February 2000: Washington, DC, Department of Pathology, Walter Reed Army Medical Center, "Endoscopic histologic correlation; gastritis and gastropathy," TS Emory.
6. February 2000: Bethesda, Md, Department of Pathology, National Naval Medical Center, "Endoscopic histologic correlation; gastritis and gastropathy," TS Emory.
7. February 2000: Bethesda, Md, Department of Gastroenterology, Uniformed Services University of the Health Sciences, "Endoscopic histologic correlation: What's gastropathy?" TS Emory.
8. February 2000: Washington, DC, AFIP Professional Staff Conference, "Endoscopic histologic correlation: What's gastropathy?" TS Emory.
9. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (I)," LH Sobin
10. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (II)," LH Sobin.

11. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (III)," LH Sobin.
12. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (IV)," LH Sobin.
13. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (V)," LH Sobin.
14. April 2000: Washington, DC, Georgetown University Medical College, "Pathology of the gastrointestinal tract (VI)," LH Sobin.
15. April 2000: Falls Church, Va, Department of Pathology, Inova Fairfax Hospital, "Gastritis and gastropathy," AI Kende.
16. April 2000: Silver Spring, Md, AFIP Annual Anatomic Pathology Review and Update Course, "Gastric carcinoma and polyps," AI Kende.
17. April 2000: Silver Spring, Md, 10th Annual Anatomic Pathology Review Course, "Barrett esophagus and related conditions," NS Dow.
18. June 2000: Chicago, Ill, American Joint Committee on Cancer, "Activities of the UICC TNM Prognostic Factors Project," LH Sobin.
19. July 2000: Deauville, France, AFIP Diagnostic Surgical Pathology Course, "Precancerous lesions of the GI tract and their imitators," LH Sobin.
20. July 2000: Deauville, France, AFIP Diagnostic Surgical Pathology Course, "Intestinal polyps: clinical-pathologic correlations and pitfalls in diagnosis," LH Sobin.
21. August 2000: Washington, DC, Walter Reed Army Medical Center Department of Pathology, "Gastritis and gastropathy," AI Kende.
22. September 2000: Bethesda, Md, AFIP 11th Annual Gastrointestinal Surgical Pathology Course, "Gastric carcinoma," AI Kende.
23. September 2000: Rockville, Md, AFIP Telepathology 2000 Course, Making Telepathology Work, "Imaging of gastrointestinal lesions," AI Kende.
24. September 2000: Seattle, Wash, International Union Against Cancer (UICC) Cancer Control and Assessment Conference, "TNM: development, current status, and challenges," LH Sobin.
25. September 2000: Bethesda, Md, AFIP/ARP Course, Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, "Precancerous lesions of the GI tract and their imitators," LH Sobin.
26. September 2000: Bethesda, Md, AFIP/ARP Course, Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, "Intestinal polyps: clinical-pathologic correlations and pitfalls in diagnosis," LH Sobin.
27. September 2000: Bethesda, Md, AFIP/ARP Course, Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, "Gastrointestinal carcinoids and neuroendocrine tumors," LH Sobin.
28. September 2000: Buenos Aires, Argentina, AFIP/Argentine IAP Course, "Precancerous lesions of the GI tract and their imitators," LH Sobin.
29. September 2000: Buenos Aires, Argentina, AFIP/Argentine IAP Course, "Unusual and difficult intestinal polyps," LH Sobin.
30. September 2000: Buenos Aires, Argentina, AFIP/ARP Argentine IAP Course, "Gastrointestinal carcinoids and neuroendocrine tumors: pitfalls in diagnosis," LH Sobin.
31. September 2000: Bethesda, Md, AFIP/ARP 11th Annual Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract Course, "Gastrointestinal stromal tumors," HE Remotti.
32. September 2000: Bethesda, Md, AFIP/ARP 11th Annual Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract Course, "Gastric carcinomas: diagnostic pitfalls," AI Kende.
33. September 2000: Bethesda, Md, AFIP/ARP 21st Annual Hepatic Surgical Pathology Course, "Hepatic case presentations," HE Remotti.
34. September 2000, McLean, Va, Washington Hospital Center, Gastroenterology Board Review Course, "Pathology rounds," LH Sobin.
35. October 2000: New York, NY, American Society of Gastroenterology Course, "Precancerous lesions of the GI tract and their imitators," LH Sobin.

36. October 2000: San Diego, Calif, College of American Pathologists, "Gastrointestinal endoscopic-histologic correlations: gastrointestinal tumors," LH Sobin.
37. October 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology of the gastrointestinal tract (esophagus)," LH Sobin.
38. October 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology of the gastrointestinal tract (stomach)," LH Sobin.
39. October 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology of the gastrointestinal tract (small intestine)," LH Sobin.
40. October 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology of the gastrointestinal tract (large intestine)," LH Sobin.
41. October 2000: Washington, DC, AFIP Professional Staff Conference, "Sinus histiocytosis with massive lymphadenopathy of the small intestine," AI Kende.
42. October 2000: Washington, DC, AFIP Professional Staff Conference, "Case presentation: 71-year-old man with intractable bleeding following colonoscopy," NS Dow.
43. October 2000: Washington, DC, AFIP Professional Staff Conference, "Case presentation: gastric carcinoid tumors arising in atrophic gastritis," HE Remotti.
44. October 2000: Washington, DC, AFIP Professional Staff Conference, "Case presentation: juvenile polyposis," CM Hobbs.
45. November 2000: Savannah, Ga, AFIP Course, Diagnostic Surgical Pathology, "Precancerous lesions of the GI tract and their imitators," LH Sobin.
46. November 2000: Savannah, Ga, AFIP Course, Diagnostic Surgical Pathology, "Unusual and difficult intestinal polyps," LH Sobin.
47. December 2000: Washington, DC, WRAMC Gastroenterology-Pathology Conference, "Gastrointestinal infectious diseases," CM Hobbs.

PUBLICATIONS

Journal Articles:

1. Hermanek P, Hutter RV, Sobin LH, Wittekind C. Author reply. *Cancer*. 2000;89:711.
2. Lasota J, Wozniak A, Sarlomo-Rikala M, Rys J, Kordek R, Nassar A, Sobin LH, Miettinen M. Mutations in exons 9 and 13 of KIT gene are rare events in gastrointestinal stromal tumors: a study of 200 cases. *Am J Pathol*. 2000;157:1091-1095.
3. Li SQ, O'Leary TJ, Sobin LH, Erozan YS, Rosenthal DL, Przygodzki RM. Analysis of KIT mutation and protein expression in fine needle aspirates of gastrointestinal stromal/smooth muscle tumors. *Acta Cytol*. 2000;44:981-986.
4. Miettinen M, Sarlomo-Rikala M, Sobin LH, Lasota J. Gastrointestinal stromal tumors and leiomyosarcomas in the colon: a clinicopathologic, immunohistochemical, and molecular genetic study of 44 cases. *Am J Surg Pathol*. 2000;24:1339-1352.
5. Miettinen M, Sobin LH, Sarlomo-Rikala M. Immunohistochemical spectrum of GISTs at different sites and their differential diagnosis with a reference to CD117 (KIT). *Mod Pathol*. 2000;13:1134-1142.
6. Whitney AE, Emory TS, Marty AM, O'Shea PA, Newman GW, Gold BD. Increased macrophage infiltration of gastric mucosa in Helicobacter pylori-infected children. *Dig Dis Sci*. 2000;45:1337-1342.
7. Miettinen M, Sarlomo-Rikala M, Sobin LH, Lasota J. Esophageal stromal tumors: a clinicopathologic, immunohistochemical, and molecular genetic study of 17 cases and comparison with esophageal leiomyomas and leiomyosarcomas. *Am J Surg Pathol*. 2000;24:211-222.
8. Bjornsson E, Olsson R, Remotti H. Norfloxacin-induced eosinophilic necrotizing granulomatous hepatitis. *Am J Gastroenterol*. 2000;95:3662-3664.
9. Ung KA, Remotti H, Olsson R. Eosinophilic hepatic necrosis in hypereosinophilic syndrome. *J Clin Gastroenterol*. 2000;31:323-327.
10. Kleihues P, Sobin LH. World Health Organization Classification of Tumors. *Cancer*. 2000;88:2887.

Abstracts:

1. Kende AI, Sobin LH. Comparative study of cytokeratins (CK) 7 and 20 in digestive system neoplasms. *Mod Pathol*. 2000;13:83A.

- Przygodzki R, Emory T, Liu Y, Hubbs A, Sobin L, O'Leary T. KIT mutation in gastrointestinal stromal/smooth muscle tumors: dependence on anatomic site. *Mod Pathol*. 2000;13:87A.

Books:

- Solcia E, Kloppel G, Sobin LH, in collaboration with 9 pathologists from 4 countries.. *WHO International Histological Classification of Tumors: Histological Typing of Endocrine Tumors*. 2nd ed. Berlin, Germany: Springer-Verlag; 2000.
- Emory TS, Carpenter HA, Gostout CJ, Sobin LH. *Atlas of Gastrointestinal Endoscopy & Endoscopic Biopsies*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
- Fritz A, Percy C, Jack A, Shanmugaratnam K, Sobin LH, Parkin DM, Whelan S, eds. *International Classification of Diseases for Oncology ICD-O*. 3rd ed. Geneva, Switzerland: WHO; 2000.

Book Chapters:

- Solcia E, Capella C, Kloppel G, Heitz PU, Sobin LH, Rosai J. Endocrine tumors of the gastrointestinal tract. In: Solcia E, Kloppel G, Sobin LH, eds. *WHO International Histological Classification of Tumors: Histological Typing of Endocrine Tumors*. 2nd ed. Berlin, Germany: Springer-Verlag; 2000.
- Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumors of the oesophagus. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:26-27.
- Miettinen M, Blay JY, Sobin LH. Mesenchymal tumours of the oesophagus. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:28-29.
- Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the stomach. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:53-56.
- Miettinen M, Blay JY, Sobin LH. Mesenchymal tumours of the stomach. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:62-65.
- Niederer C, Sobin LH. Secondary tumours of the stomach. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:66-67.
- Wright NH, Howe JR, Rossini FP, Shepherd NA, Pennazio M, Sobin LH, Carr NJ, Talbot I. Carcinoma of the small intestine. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:71-73.
- Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the small intestine. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:77-82.
- Miettinen M, Blay JY, Sobin LH. Mesenchymal tumours of the small intestine. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:90.
- Niederer C, Sobin LH. Secondary tumours of the small and large intestines. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:91-92.
- Carr NJ, Arends MJ, Deans GT, Sobin LH. Adenocarcinoma of the appendix. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:95-98.
- Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the appendix. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:99-101.
- Carr NJ, Sobin LH, Niederer C. Miscellaneous tumours of the appendix. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:102.
- Hamilton SR, Vogelstein B, Kudo S, Riboli E, Nakamura S, Hainaut P, Rubio CA, Sobin LH, Fogt F, Winawer SJ, Goldgar DE, Jass JR. Carcinoma of the colon and rectum. In:

- Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:105-119.
15. Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the colon and rectum. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:137-139.
 16. Miettinen M, Blay JY, Kindblom LG, Sobin LH. Mesenchymal tumours of the colon and rectum. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:142-143.
 17. Capella C, Solcia E, Sobin LH, Arnold R. Endocrine tumours of the gallbladder and extrahepatic bile ducts. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:214-216.
 18. Miettinen M, Blay JY, Sobin, LH. Mesenchymal tumours of the pancreas. In: Hamilton SR, Aaltonen LA, eds. *WHO Classification of Tumors: Pathology and Genetics of Tumors of the Digestive System*. Lyon, France: IARC Press; 2000:249.



Gary R. Warnock, CAPT, DC, USN
 Chair
 Date of Appointment — 1 June 1998

DEPARTMENT OF ORAL AND MAXILLOFACIAL PATHOLOGY

MISSION

The Department of Oral and Maxillofacial Pathology provides diagnostic consultation in diseases of the oral mucosa and soft tissues, the jaws, and the major and minor salivary glands, and enhances the understanding of these diseases through research and education. The department also supports the Office of the Armed Forces Medical Examiner with expertise in forensic dentistry and provides on- and off-site training in forensic odontology for the Army, Air Force, and Navy.

ORGANIZATION

The department is organized into 2 divisions and the Office of the Chair.

Division of Surgical Pathology — Gary L. Ellis, DDS, Chief

Division of Forensic Dentistry — Douglas M. Arendt, CAPT, DC, USN, Chief

STAFF

Medical:

Gary R. Warnock, CAPT, DC, USN, Chair

Gary L. Ellis, DDS, Veterans Affairs, Assistant Chair

Douglas M. Arendt, CAPT, DC, USN, Chief of Forensic Dentistry

Esther Childers, COL, DC, USA

Donald Tyler, Capt, USAF, DC

(D) Kevin Torske, LCDR, DC, USN, Resident

Administrative:

Patricia Ashburn, Secretary

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	406
Army	193
Navy	99
Air Force	114
Federal	181
VA	171
USPHS	7
OFA	3
Civilian	190
Interdepartmental	188
Total	1,965

543 cases for consultation, 140 for education, and 4 for research required the following types of procedures and analyses:

- H&E stains: 4,104 slides
- Special stains: 630 slides
- Immunohistochemical stains: 3,733 slides
- Electron microscopy: 1 case
- Direct immunofluorescence: 34 tests for 21 cases
- HPV in-situ hybridization: 27 slides for 6 cases
- Molecular biology examination: 27 tests for 11 cases
- Total recuts studied: 8,467
- Contributor slides studied: 7,798

Our department made no change in the contributor diagnosis in 1,049 cases, a minor change in diagnosis in 541 cases, and a major change in diagnosis in 38 cases. We received 144 cases with no contributor diagnosis; 5 cases were recorded without coding.

Cases accessioned to the Department of Oral and Maxillofacial Pathology included lesions of major and minor salivary glands, jaws, oral mucosa and soft tissues, and extranodal lymphoreticular lesions involving oral hard and soft tissues, including salivary gland parenchyma. The most common lesions reviewed were those of major and minor salivary glands, which comprised approximately 40% of accessioned cases. The department seeks cases that emphasize salivary gland and odontogenic neoplasms and diseases.

CAPT Arendt, forensic odontologist, consulted on 4 criminal assault cases and 3 requests for review of World War II missing-in-action cases.

Impact:

Our department's rapid response team routinely deploys in support of Tri-Service and State Department accident and mass fatality investigations. Our staff is unique, consolidated, highly trained, and board certified in maxillofacial pathology and forensic odontology. We provide definitive, primary forensic identification on site, no matter how remote, and coordinate with proximate geographic military and/or civil professionals to insure expeditious positive identification. Our team is self-sufficient, deploying with digital radiographic capability. The forensic odontology mission also provides pattern injury and bitemark analysis for Tri-Service criminal investigations, rendering expert opinions and testimony. Our record of service includes:

- 24/7 support of the Armed Forces Medical Examiner for forensic dental identification.
- Wartime response: 350 remains identified during Desert Shield/Desert Storm.
- Peacetime readiness: 73 identifications of training/operations fatalities in 1999-2000.

Our professional staff is composed solely of active-duty military and Veterans Affairs pathologists. We provide specialty leadership and expertise to the Offices of the Surgeons General (Army, Navy, and Air Force) and Health Affairs in the form of oral and written briefs that address current issues or suggest future courses of action. Senior staff members hold executive officer positions in national pathology, forensic, and board certification organizations. Our unique capabilities include:

- Largest single repository of common, unusual, and rare tumors and diseases of oral tissues.
- Experts in the full spectrum of pathology of dental structure, soft tissue, and bone.
- A unique slide repository resource shared through hands-on continuing medical education courses with microscopy workshops.

Deployments:

In 2000, deployments supported the Office of the Armed Forces Medical Examiner and the Departments of State and Defense:

1. April 2000, Dover AFB, Marana, Ariz, Osprey mishap, 19 casualties, DM Arendt, GR Warnock
2. April 2000, Grenada, West Indies, State Department Mission, 6 remains exhumed, DM Arendt
3. October 2000, Dover AFB, USS *Cole* mishap, 19 casualties, E Childers, D Tyler
4. December 2000, New River, NC, Osprey mishap, 4 casualties, DM Arendt

Quality Assurance:

1. The Registry of Oral and Maxillofacial Pathology “Case of the Month” was distributed to 110 institutions throughout the world. The American Board of Oral and Maxillofacial Pathology has recognized the ROP-COM as an official peer-review self-assessment program for the Continuing Competency Assurance Program.
2. The department performs peer-review quality assurance for the following civilian universities and institutions, all of which periodically provide random and/or selected cases for diagnosis and review:
 - Ohio State University College of Dentistry
 - Tufts University School of Dentistry
 - Veterans Affairs
 - Cashing Medical College, Taiwan, ROC

EDUCATION

Presentations and Seminars: Members of the department made 46 presentations at conferences and seminars during 2000. Dates and titles of presentations are listed at the end of this report. In addition, the staff conducted an AFIP/CAP Wednesday Staff Conference and an AFIP interdepartmental bimonthly staff conference with ENT.

Courses: Department staff participated in 14 AFIP courses for a total of 12,142 man-hours, and 13 non-AFIP courses for a total of 1,905 man-hours of CME credit.

CME man-hours in formal courses and lectures	14,047
CME man-hours through forensic workshop kit deployments	7,008
CME man-hours provided through continuing competency programs	720
Total CME man-hours	21,775

Trainees: Five trainees rotated through the department in 2000, for a total of 280 trainee-days:

- Resident pathologists (1) — 185 trainee-days
- Visiting pathologists (2) — 25 trainee-days
- Oral surgery resident (1) — 20 trainee-days
- ARP fellow (1) — 50 trainee-days

RESEARCH

Publications: Department staff published 6 journal articles in 2000. Complete titles are listed at the end of this report.

Projects: The department maintained 5 research projects in 2000, as listed below:

1. The Association of Epstein-Barr Virus with Tumor-Associated Lymphoid Proliferation in Salivary Gland Carcinomas
2. Clear Cell Odontogenic Tumors
3. Sialoblastoma and Embryonal Carcinoma
4. CK7 and CK20 in Malignant Salivary Gland Tumors
5. Calponin as a Myoepithelial Marker in Salivary Gland Tumors

OTHER ACCOMPLISHMENTS

Consultant and Staff Positions:

1. Surgeon General, US Navy, Consultant in Oral Pathology, GR Warnock
2. Surgeon General, US Navy, Consultant in Forensic Dentistry, DM Arendt
3. Surgeon General, US Army, Consultant in Oral Pathology, Consultant in Forensic Dentistry, E Childers
4. Armed Forces Medical Examiner, Consultant in Forensic Dentistry, GR Warnock, DM Arendt
5. Government of the District of Columbia, Department of Human Services, Consultant, GR Warnock
6. Johns Hopkins Hospital, Baltimore, Md, Consultant and Staff Position, GR Warnock
7. National Naval Dental Center, Bethesda, Md, Naval Dental School, Consultant and Staff Position, GR Warnock

8. National Naval Dental Center, Bethesda, Md, Naval Dental School, Faculty, DM Arendt, GL Ellis, E Childers

Committees:

Editorial Boards:

1. *Oral Surgery, Oral Medicine, Oral Pathology. Oral Radiology and Endodontics*, GL Ellis.
2. *Annals of Diagnostic Pathology*, GL Ellis.
3. *Journal of Oral Pathology and Medicine*, GL Ellis.

Manuscripts Reviewed: Dr. Ellis reviewed 15 articles for the following professional journals:

1. *Journal of Oral Pathology and Medicine*
2. *Annals of Diagnostic Pathology*
3. *Oral Surgery, Oral Medicine, Oral Pathology. Oral Radiology and Endodontics*
4. *Journal of Clinical Pathology*

Offices and Committee Memberships in National and International Societies:

1. Chair, Long-Range Planning Committee, Past President, American Academy of Oral and Maxillofacial Pathology, GL Ellis
2. Member, Anatomic Pathology Test Construction Committee, American Board of Pathology, GL Ellis
3. Board of Governors, American Society of Forensic Odontology, DM Arendt

PRESENTATIONS

1. January 2000: Nagoya, Japan, Japanese Society for Oral Tumors, "Problems in salivary gland tumors," GL Ellis.
2. January 2000: Nagoya, Japan, Department of Pathology, Aichi-Gakuin University, "New diagnoses," GL Ellis.
3. January 2000: Tokyo, Japan, First Department of Oral Surgery, Tokyo Medical and Dental University, "Diagnosis and treatment of salivary gland tumors," GL Ellis.
4. January 2000: Washington, DC, AFIP Radiology Residents Course, "Radiographic interpretation of jaw lesions," E Childers.
5. January 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
6. February 2000: Bethesda, Md, Naval Medical Center, "Salivary gland neoplasms and diseases," GL Ellis.
7. February 2000: Bethesda, Md, Naval Medical Center, "Developing a differential diagnosis," E Childers.
8. February 2000: Washington, DC, 68th Nation's Capital Dental Meeting, "Overview of forensics," DM Arendt.
9. February 2000: Bethesda, Md, Naval Medical Center, "Bone pathology," DM Arendt.
10. February 2000: Bethesda, Md, Naval Medical Center, "Oral manifestations of systemic disease," GR Warnock.
11. February 2000: Bethesda, Md, Naval Medical Center, "Overview of forensics," DM Arendt.
12. February 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
13. March 2000: Rockville, Md, 36th Forensic ID Course, "Introduction to forensic ID," DM Arendt.
14. March 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
15. March 2000: Washington, DC, AFIP Staff Conference, "Slide seminar," DM Arendt.
16. April 2000: Williamsburg, Va, American Academy of Oral and Maxillofacial Pathology, "AFIP slide seminar," GR Warnock, GL Ellis, DM Arendt, E Childers.
17. April 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
18. April 2000: Bethesda, Md, Anthropology Course, "Lessons in forensic odontology," DM Arendt.

19. April 2000: Silver Spring, Md, Walter Reed Army Medical Center's Oral Medicine and Oral Pathology Course, "Pathologist and clinician as a team," DM Arendt.
20. April 2000: Silver Spring, Md, Walter Reed Army Medical Center's Oral Medicine and Oral Pathology Course, "Developing a differential diagnosis," E Childers.
21. April 2000: Silver Spring, Md, Walter Reed Army Medical Center's Oral Medicine and Oral Pathology Course, "Pediatric oral pathology," E Childers.
22. April 2000: Silver Spring, Md, Walter Reed Army Medical Center's Oral Medicine and Oral Pathology Course, "Oral cancer," E Childers.
23. April 2000: Washington, DC, George Washington University's Master's Program in Forensics, "Overview of forensic odontology," DM Arendt.
24. May 2000: Pittsburgh, Pa, Seminars in Pathology, "Salivary gland pathology," GL Ellis.
25. May 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
26. May 2000: Bethesda, Md, Anatomic Pathology Course, "Common salivary and odontogenic tumors," GR Warnock.
27. May 2000: Washington, DC, AFIP Radiology Residents Course, "Radiographic interpretation of jaw lesions," E Childers.
28. June 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
29. July 2000: Deauville, France, Diagnostic Surgical Pathology, "Pathology of salivary glands," GL Ellis.
30. August 2000: Washington, DC, AFIP Radiology Residents Course, "Radiographic interpretation of jaw lesions," E Childers.
31. September 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
32. September 2000: Richmond, Va, Department of Corrections, "Forensic overview, anthropology, mass disaster organization, and medical legal cases," DM Arendt.
33. September 2000: Rockville, Md, AFIP Telemedicine Course, "Lessons learned," DM Arendt.
34. October 2000: South Lake Tahoe, Calif, Western Society of Teachers of Oral Pathology, "Segmental odontomaxillary dysplasia," GL Ellis.
35. October 2000: South Lake Tahoe, Calif, Western Society of Teachers of Oral Pathology, "Osteochondroma," GR Warnock.
36. October 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
37. October 2000: Tampa, Fla, University of South Florida, "Diagnostic challenges in oral pathology," DM Arendt.
38. October 2000: Tampa, Fla, University of South Florida, "Forensic overview," DM Arendt.
39. October 2000: Washington, DC, AFIP Radiology Residents Course, "Radiographic interpretation of jaw lesions," E Childers.
40. November 2000: Savannah, Ga, Diagnostic Surgical Pathology, "Pathology of salivary glands," GL Ellis.
41. November 2000: Orlando, Fla, Oral and Maxillofacial Surgical Pathology, "Three-day slide seminars and lectures," GR Warnock, GL Ellis, DM Arendt, E Childers, K Torske, D Tyler.
42. November 2000: Washington, DC, Office of the Armed Forces Medical Examiner, "Medical legal cases, bite marks," DM Arendt.
43. November 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
44. December 2000: Washington, DC, AFIP Department of Oral and Maxillofacial Pathology, "Oral pathology/ENT pathology slide conference," D Tyler.
45. December 2000: Washington, DC, AFIP Radiology Residents Course, "Radiographic interpretation of jaw lesions," E Childers.
46. December 2000: Washington, DC, AFIP Basic Forensic Course, "Overview of forensic odontology," DM Arendt.

PUBLICATIONS

Journal Articles:

1. Castle JT, Thompson LD. Kaposi sarcoma of major salivary gland origin: a clinicopathologic series of six cases. *Cancer*. 2000;88:15-23.
2. Childers ELB. Contingency planning and forensic odontology. *US Army Med Dept J*. 2000;10-15.
3. Foss RD, Ellis GL. Myofibromas and myofibromatosis of the oral region: a clinicopathologic analysis of 79 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2000;89:57-65.
4. Hill DS, Ellis GL, Gatland DJ. A unique parotid adenocarcinoma. *J Laryngol Otol*. 2000;114:402-404.
5. Kim J, Lee EH, Yook JI, Han JY, Yoon JH, Ellis GL. Odontogenic ghost cell carcinoma: a case report with reference to the relation between apoptosis and ghost cells. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2000;90:630-635.
6. Ladich ER, Martinez LE, Torres N, Ellis GL, Valenzuela AE, Mullick FG, Centeno JA. Measurement of dental implant corrosion products and histologic correlation in peri-implant tissues. *Metal Ions Biol Med*. 2000;6:345-347.



William D. Travis, MD
 Chair
 Date of Appointment – 1 November 1993

DEPARTMENT OF PULMONARY AND MEDIASTINAL PATHOLOGY

MISSION

The Department of Pulmonary and Mediastinal Pathology provides consultation, education, and research in pulmonary and mediastinal pathology to military and civilian pathologists and medical practitioners worldwide.

STAFF

Medical:

- Teri J. Franks, MD
- Matthew Horton, MD
- William D. Travis, MD

NIH/AFIP Pulmonary Pathology Fellowship Program:

- Siobhan Nicholson, MD
- Ping He, MD

National Heart, Lung, and Blood Institute/AFIP Fellow:

- Oral & Maxillo-facial Pathology Kazuhiro Matsui, MD, Toyama Medical and Pharmaceutical University, Toyama, Japan
- Fumiyuki Kumaki, National Defense Medical College, Tokorozawa, Japan
- Takeshi Fujii, MD, Tokyo University, Tokyo Japan

Administrative:

- Tammie Winters, Administrative Officer
- Janet Leaman, Secretary
- Cassandra Scott, Administrative Clerk

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	298
Army	137
Navy	52
Air Force	109
Federal	522
VA	512
USPHS	0
OFA	10
Civilian	1,306
Interdepartmental	334
Total	2,460

2,281 cases required the following types of procedures and analyses:

- H&E stains: 4,854 slides
- Special stains: 3,099 slides
- Immunohistochemical staining: 10,654 slides
- Electron microscopy: 9 cases
- Direct immunofluorescence: 10 tests for 7 cases
- HPV in-situ hybridization: 9 slides for 3 cases
- Molecular biology examination: 59 tests for 24 cases
- Total recuts studied: 15,508
- Contributor slides studied: 14,718

Our department made no change in the contributor diagnosis in 1,713 cases, a minor change in diagnosis in 302 cases, and a major change in diagnosis in 41 cases. We received 70 cases with no contributor diagnosis.

EDUCATION

Presentations and Seminars: Department staff made 63 presentations at professional meetings and symposia in 2000. A complete list of dates and titles appears at the end of this report. In addition, Dr. Travis presents the lung pathology for the monthly, quarterly, and annual meetings of the Washington, DC Thoracic Society, the local chapter of the American Thoracic Society. He regularly presents the pathology for the case presentations for those patients with available lung pathology specimens. These specimens are often submitted to the department in advance from hospitals around the Washington, DC area.

Courses: Our department conducted or participated in 1 AFIP course and 4 non-AFIP courses in 2000.

Trainees: Our department is well recognized as an international center for training in pulmonary pathology. In 2000, visitors from Argentina (1 month), Switzerland (10 days), Australia (3 days), Japan (3 weeks), and Belgium (2 days) spent their sabbaticals in our department. We have had many applications for future fellowship positions from the US, Israel, and around the world. Our resources provide a unique opportunity for fellowship training, which is a major priority of the department. During 2000 we had 3 doctors rotate in the department from Howard University; 2 from George Washington University; 2 from the Washington VA Hospital; 1 from NIH; 1 from Washington Hospital Center; 1 from Brackenridge Hospital Center, Tex; 1 from Case Western University MC, Cleveland, Ohio; 1 from Northwestern University MC, Chicago; and 1 from Mount Sinai MC, New York, NY.

Educational Aids: Our department has one of the most extensive slide teaching collections in the world for pulmonary and mediastinal pathology cases, with over 3,500 cases accessioned into the study set. Departmental fellows, staff, and visiting physicians are able to utilize this invaluable resource for education, teaching, and publications. We also have Kodachrome study sets and CD-ROM-based teaching materials.

RESEARCH

Publications: Department staff published 29 journal articles, 19 abstracts, 2 book chapters, and 1 CD-ROM in 2000. Complete references are listed at the end of this report.

Projects: In 2000, the department maintained 13 research protocols, as listed below:

1. Localized Fibrous Tumors of the Pleura
2. Lymphangiomyomatosis
3. Neuroendocrine Tumors of the Lung
4. Loss of Heterozygosity and Hypermethylation of p16 in Malignant Mesothelioma
5. Immunohistochemical Staining for p53, PDGF, and p16 Antibodies in Malignant Mesotheliomas and Atypical Mesothelial Hyperplasia
6. Immunohistochemical Staining for p53, WT1, and Decorin in Malignant Mesotheliomas and Adenocarcinomas
7. Inflammatory Pseudotumor of the Lung: A Clinicopathologic Study of 75 Cases
8. Pulmonary Sclerosing Hemangioma
9. Atypical Carcinoid Tumors of the Lung

10. Chronic Fibrosing Pleuritis, Atypical Mesothelial Hyperplasia, and Desmoplastic Mesothelioma
11. Molecular Biology of Lung Cancer
12. Histologic Analysis and Immunohistochemical Staining Profile of Pleuropulmonary Blastoma
13. Use of Immunohistochemistry in Determination of Primary Sites for Carcinoma Presenting in the Mediastinum and Separation of Thymoma from Atypical Thymoma and Thymic Carcinoma

Grant Participation: Reviewer of Pathology Specimens and Coinvestigator for National Heart, Lung, and Blood Institute Cooperative Agreement Grant for NHLBI Lymphangiomyomatosis Registry, WD Travis

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. NIH National Heart, Lung, and Blood Institute, Lymphangiomyomatosis and Interstitial Lung Disease
2. National Cancer Institute, Molecular Biology of Lung Cancer

Civilian:

1. Mayo Clinic, Molecular Biology of Lung Cancer, Neuroendocrine Lung Tumors
2. Brompton Hospital, London, England, Neuroendocrine Lung Tumors
3. University of Grenoble, France, Neuroendocrine Lung Tumors, Molecular Biology of Lung Cancer
4. Caen, France, Molecular Biology of Lung Cancer, Malignant Mesothelioma
5. University of Maastricht, The Netherlands, Neuroendocrine Lung Tumors
6. Emory University, Atlanta, Ga, Inflammatory Pseudotumors
7. University of Southern California, Los Angeles, Interstitial Lung Disease
8. University of California, San Francisco, Interstitial Lung Disease
9. Stanford University, Calif, Lymphangiomyomatosis
10. Tufts University, Boston, Mass, Lymphangiomyomatosis

Intramural:

1. Department of Hematopathology, bcl2 in Lung Carcinomas and Neuroendocrine Lung Tumors; Anaplastic Large Cell Lymphoma and Erdheim-Chester Disease
2. Department of Cellular Pathology, Molecular Biology of Lung Cancer
3. Department of Genitourinary Pathology, Bronchial Papillomas
4. Department of Radiologic Pathology, Pulmonary Carcinoids, Erdheim-Chester Disease, Interstitial Lung Disease

Honors:

Cum Laude Citation for Education Exhibit at Radiological Society of North America, November/December 2000: Idiopathic Interstitial Pneumonia Classification, WD Travis.

Panels:

WD Travis:

1. Chair, Pathology Panel, International Association for the Study of Lung Cancer
2. Chair, WHO Panel for Histologic Classification of Lung Tumors
3. Member, US-Canadian Mesothelioma Reference Panel
4. Member, International Association for the Study of Lung Cancer/National Cancer Institute SPORE Pathology Working Group: Classification of Preinvasive Epithelial Abnormalities of Lung
5. Member, International Mesothelioma Panel
6. Cochair, American Thoracic Society/European Respiratory Society International Multidisciplinary Panel for Classification of Idiopathic Interstitial Pneumonias

Committees:

Editorial Boards:

1. *American Journal of Surgical Pathology*, WD Travis
2. *Human Pathology*, WD Travis
3. *Atlas of Tumor Pathology, AFIP Fascicle 4th Series*, WD Travis
4. *Lung Cancer*, WD Travis
5. *Clinical Cancer Research*, WD Travis

Manuscripts Reviewed:

WD Travis:

1. *Modern Pathology* (1)
2. *American Journal of Surgical Pathology* (6)
3. *Chest* (2)
4. *Clinical Cancer Research* (4)
5. *American Journal of Pathology* (3)
6. *Cancer* (1)
7. *Lung Cancer* (3)
8. *Human Pathology* (2)
9. *European Respiratory Journal* (1)
10. *Archives of Pathology and Laboratory Medicine* (1)
11. *Sarcoidosis* (1)
12. *Sexually Transmitted Diseases and Infections* (1)
13. *Tumor Biology* (1)

Offices/Committee Memberships in National or International Societies:

WD Travis:

1. Staging Committee, International Association for the Study of Lung Cancer
2. Program Committee, American Thoracic Society Assembly on Respiratory Structure and Function
3. Vice President, Pulmonary Pathology Society

Faculty Appointments:

1. USUHS, Adjunct Clinical Instructor, M Horton
2. Georgetown University School of Medicine, Adjunct Professor, Department of Pathology, WD Travis
3. USUHS, Adjunct Associate Professor, Department of Pathology, WD Travis

Clinical Staff Appointments:

1. WRAMC, Adjunct Staff, Department of Pathology, M Horton
2. NCI/NIH, Consultant, Pulmonary Pathology, Laboratory of Pathology, WD Travis
3. National Heart, Lung, and Blood Institute, NIH, Pathology and Pulmonary Branch, Consultant, Pulmonary Pathology, WD Travis

Chair or Moderator of Sessions at Academic Meetings:

WD Travis:

1. September 2000: Chair, Pathology of Early Lung Cancer, International Consensus Conference on Terminology for Radiology of Early Lung Cancer, Tokyo, Japan.
2. September 2000: Chair, International Association for the Study of Lung Cancer Pathology Panel, Tokyo, Japan.
3. September 2000: Cochair, 1999 WHO/IASLC Histologic Classification of Lung and Pleural Tumors, 9th World Conference on Lung Cancer, International Association for the Study of Lung Cancer, Tokyo, Japan.
4. October 2000: Cochair, ATS/ERS International Consensus Classification of Idiopathic Interstitial Pneumonias, International Academy of Pathology, Nagoya, Japan.
5. October 2000: Cochair, Slide Seminar on Pulmonary Epithelial and Epithelioid Tumors, International Academy of Pathology, Nagoya, Japan.

Official Trips (funding agency in parentheses):

WD Travis:

1. February 2000, Surgical Pathology of Non-neoplastic Lung Disease, American Society of Clinical Pathology, Las Vegas, Nev (American Society of Pathology)
2. March 2000, United States and Canadian Academy of Pathology, San Francisco, Calif (United States and Canadian Academy of Pathology and ARP)
3. April 2000, Michigan Pathology Society, Lansing, Mich (Michigan Pathology Society).
4. May 2000, American Thoracic Society International Meeting, Toronto, Canada (American Thoracic Society and ARP)
5. May 2000, Pathology in the 21st Century, Dallas, Tex (University of Texas Southwestern)
6. May 2000, Seminar on Lung Pathology, Associacio d'Anatomia Pathologica of Academia de Ciencies Mediques de Catalunya I Balears, Barcelona, Spain (Associacio d'Anatomia Pathologica of Academia de Ciencies Mediques de Catalunya I Balears)
7. June 2000, Lung Pathology Seminar, Mestre, Venice, Italy (Ospedale "Umberto I," Mestre, Italy)
8. August/September 2000: World Congress on Lung Health and 10th European Respiratory Society Annual Congress, Florence, Italy (European Respiratory Society and American Thoracic Society)
9. September 2000, International Association for the Study of Lung Cancer, Tokyo, Japan (International Association for the Study of Lung Cancer)
10. September 2000, 1^{ras} Jornadas Conjuntas de Patologia, Argentinian Society of Pathology, Buenos Aires, Argentina
11. October 2000, International Academy of Pathology, Nagoya, Japan (ARP and Scientific Symposiums)
12. October 2000, Biopsy Diagnosis of Lung and Prostate Lesions, Big Island, Hawaii (Scientific Symposiums)
13. October 2000, Nassau County Society of Pathologists, Garden City, NY (Nassau County Society of Pathologists)
14. December 2000, California Society of Pathologists, San Francisco, Calif (California Society of Pathologists)

PRESENTATIONS

1. January 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
2. January 2000: Washington, DC, George Washington University Medical School, "Idiopathic interstitial lung disease," WD Travis.
3. January 2000: Washington, DC, Georgetown University School of Medicine, "Interstitial lung disease," WD Travis.
4. January 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "The new WHO classification of lung tumors," WD Travis.
5. February 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
6. February 2000: Las Vegas, Nev, American Society of Clinical Pathology, "Surgical pathology of non-neoplastic lung disease," WD Travis.
7. March 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
8. March 2000: Washington, DC, Armed Forces Institute of Pathology, Professional Staff Conference, "Biphasic pulmonary neoplasms," M Horton.
9. March 2000: San Francisco, Calif, United States and Canadian Academy of Pathology, Co-director Short Course, "Perplexing pathological problems of the pleura and pneumoconioses," WD Travis.
10. March 2000: Washington, DC, Armed Forces Institute of Pathology, Staff Conference, "Small cell lung carcinoma: What can we learn from resected tumors?" SA Nicholson.
11. March 2000: New Orleans, La, United States and Canadian Academy of Pathology, "The immunophenotype of classical basal cell carcinoma is absent in its basosebaceous variant,"

SA Nicholson.

12. March 2000: New Orleans, La, United States and Canadian Academy of Pathology, "Small cell lung carcinoma (SCLC): a clinicopathologic study of 103 resected cases," SA Nicholson.
13. April 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
14. April 2000: Silver Spring, Md, Armed Forces Institute of Pathology, 10th Annual Anatomic Review Course, "Pulmonary pathology," TJ Franks.
15. April 2000: Lansing, Mich, Michigan Pathology Society, "The new WHO/IASLC classification of lung tumors," WD Travis.
16. May 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
17. May 2000: San Juan, Puerto Rico, 6th International Symposium on Metal Ions in Biology and Medicine, "Environmental pathology of metal exposures – lung," MN Koss, TJ Franks.
18. May 2000: Washington, DC, Walter Reed Army Medical Center, National Capital District Pathology Consortium, "Pathology of the thymus and mediastinum," M Horton.
19. May 2000: Toronto, Canada, American Thoracic Society Symposium: Lung Cancer in Women, "The changing epidemiology and histology of lung cancer," WD Travis.
20. May 2000: Toronto, Canada, American Thoracic Society Symposium on International Multidisciplinary Consensus Classification of Idiopathic Interstitial Pneumonias, "Idiopathic interstitial pneumonias: general approach to pathology," WD Travis.
21. May 2000: Dallas, Tex, Pathology in the 21st Century, "Preinvasive squamous and glandular lesions of the lung," WD Travis.
22. May 2000: Dallas, Tex, Pathology in the 21st Century, "Preinvasive neuroendocrine and other lung tumors," WD Travis.
23. May 2000: Barcelona, Spain, Associacio d'Anatomia Pathologica of Academia de Ciències Mèdiques de Catalunya I Balears, "WHO/IASLC classification of lung tumors," WD Travis.
24. May 2000: Barcelona, Spain, Associacio d'Anatomia Pathologica of Academia de Ciències Mèdiques de Catalunya I Balears, "Seminar on lung pathology, part 1: lung tumors," WD Travis.
25. May 2000: Barcelona, Spain, Associacio d'Anatomia Pathologica of Academia de Ciències Mèdiques de Catalunya I Balears, "Seminar on lung pathology, part 2: non-neoplastic lung disease," WD Travis.
26. June 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
27. June 2000: Venice, Italy, Mestre, "Neuroendocrine lung tumors," WD Travis.
28. June 2000: Venice, Italy, Mestre, "Granulomatous lung disorders," WD Travis.
29. June 2000: Venice, Italy, Mestre, "Slide seminar," WD Travis.
30. June 2000: Venice, Italy, Mestre, "Uncommon tumors of the lung," WD Travis.
31. June 2000: Washington, DC, Armed Forces Institute of Pathology, Callender-Binford Fellow Competition, "Resected small cell lung carcinoma: a clinicopathologic study," SA Nicholson.
32. July 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
33. August 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
34. August 2000: Washington, DC, Walter Reed Army Medical Center, National Capital District Pathology Consortium, "Unusual pulmonary neoplasms I," M Horton.
35. August 2000: Florence, Italy, World Congress on Lung Health and 10th European Respiratory Society Annual Congress, "Lymphocytes in the lung microenvironment in postgraduate symposium on Tcells and the lung," WD Travis.
36. September 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
37. September 2000: Rockville, Md, Armed Forces Institute of Pathology, Telepathology 2000: Making Telepathology Work, "Lung, pleura and mediastinum: diagnosis at a distance," TJ

- Franks.
38. September 2000: Washington, DC, Walter Reed Army Medical Center, National Capital District Pathology Consortium, "Unusual pulmonary neoplasms II," M Horton.
 39. September 2000: Florence, Italy, World Congress on Lung Health and 10th European Respiratory Society Annual Congress, "The ATS/ERS classification of idiopathic interstitial pneumonias," WD Travis.
 40. September 2000: Tokyo, Japan, 9th World Conference on Lung Cancer, International Association for the Study of Lung Cancer, "The new WHO/IASLC classification of lung and pleural tumors," WD Travis.
 41. September 2000: Buenos Aires, Argentina, 1^{ras} Jornadas Conjuntas de Patologia, "The new WHO/IASLC classification of neuroendocrine lung tumors," WD Travis.
 42. September 2000: Buenos Aires, Argentina, 1^{ras} Jornadas Conjuntas de Patologia, "The new WHO/IASLC classification of lung tumors," WD Travis.
 43. September 2000: Buenos Aires, Argentina, 1^{ras} Jornadas Conjuntas de Patologia, "Tumors of the mediastinum," WD Travis.
 44. October 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
 45. October 2000: Washington, DC, Walter Reed Army Medical Center, National Capital District Pathology Consortium, "Unusual pulmonary neoplasms III," M Horton.
 46. October 2000: Nagoya, Japan, International Academy of Pathology, "The ATS/ERS international consensus classification of idiopathic interstitial pneumonias," WD Travis.
 47. October 2000: Nagoya, Japan, International Academy of Pathology, "Mesothelioma and asbestos-related diseases," WD Travis.
 48. October 2000: Nagoya, Japan, International Academy of Pathology, "Slide seminar on pulmonary epithelial and epithelioid tumors," WD Travis.
 49. October 2000: Big Island, Hawaii, Biopsy Diagnosis of Lung and Prostate Lesions, "Newly described and reclassified lung tumors," WD Travis.
 50. October 2000: Big Island, Hawaii, Biopsy Diagnosis of Lung and Prostate Lesions, "Diagnostic use of the lung biopsy in the immunocompromised host," WD Travis.
 51. October 2000: Big Island, Hawaii, Biopsy Diagnosis of Lung and Prostate Lesions, "Update on the diagnosis of idiopathic interstitial lung disease," WD Travis.
 52. October 2000: Big Island, Hawaii, Biopsy Diagnosis of Lung and Prostate Lesions, "Pulmonary changes of systemic diseases and drug reactions," WD Travis.
 53. October 2000: Big Island, Hawaii, Biopsy Diagnosis of Lung and Prostate Lesions, "Pulmonary vasculitis and alveolar hemorrhage," WD Travis.
 54. October 2000: Garden City, NY, Nassau County Society of Pathologists, "Difficulties in diagnosis of pleural tumors," WD Travis.
 55. October 2000: Garden City, NY, Nassau County Society of Pathologists, "Unusual tumors of the lung," WD Travis.
 56. October 2000: Garden City, NY, Nassau County Society of Pathologists, "Classification of idiopathic interstitial pneumonias," WD Travis.
 57. October 2000: Garden City, NY, Nassau County Society of Pathologists, "Lung biopsy interpretation in the immunocompromised setting," WD Travis.
 58. October 2000: Garden City, NY, Nassau County Society of Pathologists, "Pulmonary vasculitis and alveolar hemorrhage," WD Travis.
 59. November 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
 60. December 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pulmonary and Critical Care Medicine, "Pulmonary medicine tumor board," M Horton.
 61. December 2000: San Francisco, Calif, California Society of Pathology, "The new WHO classification of lung and pleural tumors," WD Travis.
 62. December 2000: San Francisco, Calif, California Society of Pathology, "Microscopic slide review: lung pathology," WD Travis.
 63. December 2000: San Francisco, Calif, California Society of Pathology, "Sclerosing hemangioma of the lung," WD Travis.

PUBLICATIONS

Journal Articles:

1. Abbondanzo SL, Rush W, Bijwaard KE, Koss MN. Nodular lymphoid hyperplasia of the lung: a clinicopathologic study of 14 cases. *Am J Surg Pathol.* 2000;24:587-597.
2. Beasley MB, Thunnissen FB, Brambilla E, Hasleton P, Steele R, Hammar SP, Colby TV, Sheppard M, Shimosato Y, Koss MN, Falk R, Travis WD. Pulmonary atypical carcinoid: predictors of survival in 106 cases. *Hum Pathol.* 2000;31:1255-1265.
3. Boshnakova T, Michailova V, Koss M, Georgiev C, Todorov T, Sarbinova M. Primary pulmonary Hodgkin's disease: report of two cases. *Respir Med.* 2000;94:830-831.
4. Cambier S, Mu DZ, O'Connell D, Boylen K, Travis WD, Liu WH, Broaddus VC, Nishimura SL. A role for the integrin alphavbeta8 in the negative regulation of epithelial cell growth. *Cancer Res.* 2000;60:7084-7093.
5. Churg A, Colby TV, Cagle P, Corson J, Gibbs AR, Gilks B, Grimes M, Hammar S, Roggli V, Travis WD. The separation of benign and malignant mesothelial proliferations. *Am J Surg Pathol.* 2000;24:1183-1200.
6. Debelenko LV, Swalwell JI, Kelley MJ, Brambilla E, Manickam P, Baibakov G, Agarwal SK, Spiegel AM, Marx SJ, Chandrasekharappa SC, Collins FS, Travis WD, Emmert-Buck MR. MEN1 gene mutation analysis of high-grade neuroendocrine lung carcinoma. *Genes Chromosomes Cancer.* 2000;28:58-65.
7. Devouassoux-Shisheboran M, Hayashi T, Linnoila RI, Koss MN, Travis WD. A clinicopathologic study of 100 cases of pulmonary sclerosing hemangioma with immunohistochemical studies: TTF-1 is expressed in both round and surface cells, suggesting an origin from primitive respiratory epithelium. *Am J Surg Pathol.* 2000;24:906-916.
8. Ferrans VJ, Yu ZX, Nelson WK, Valencia JC, Tatsuguchi A, Avila NA, Riemenschneider W, Matsui K, Travis WD, Moss J. Lymphangioleiomyomatosis (LAM): a review of clinical and morphological features. *J Nippon Med Sch.* 2000;67:313-329.
9. Franks TJ, Koss MN. Pulmonary capillaritis. *Curr Opin Pulm Med.* 2000;6:430-435.
10. Frazier AA, Galvin JR, Franks TJ, Rosado-De-Christenson ML. From the archives of the AFIP. Pulmonary vasculature: hypertension and infarction. *Radiographics.* 2000;20:491-524; quiz 530-1, 532.
11. Gaertner EM, Steinberg DM, Huber M, Hayashi T, Tsuda N, Askin FB, Bell SW, Nguyen B, Colby TV, Nishimura SL, Miettinen M, Travis WD. Pulmonary and mediastinal glomus tumors: report of five cases including a pulmonary glomangiosarcoma: a clinicopathologic study with literature review. *Am J Surg Pathol.* 2000;24:1105-1114.
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13. Haruki N, Yatabe Y, Travis WD, Nomoto S, Osada H, Nakamura S, Nakao A, Fujii Y, Takahashi T. Characterization of high-grade neuroendocrine tumors of the lung in relation to menin mutations. *Jpn J Cancer Res.* 2000;91:317-323.
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15. Matsui K, Riemenschneider W, Hilbert SL, Yu ZX, Takeda K, Travis WD, Moss J, Ferrans VJ. Hyperplasia of type II pneumocytes in pulmonary lymphangioleiomyomatosis. *Arch Pathol Lab Med.* 2000;124:1642-1648.
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17. Matsui K, Takeda K, Yu ZX, Valencia J, Travis WD, Moss J, Ferrans VJ. Downregulation of estrogen and progesterone receptors in the abnormal smooth muscle cells in pulmonary lymphangioleiomyomatosis following therapy: an immunohistochemical study. *Am J Respir Crit Care Med.* 2000;161:1002-1009.
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- features in 22 cases. *Hum Pathol.* 2000;31:1242-1248.
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 20. Moran CA, Suster S. Thymic neuroendocrine carcinomas with combined features ranging from well-differentiated (carcinoid) to small cell carcinoma: a clinicopathologic and immunohistochemical study of 11 cases. *Am J Clin Pathol.* 2000;113:345-350.
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 23. Nicholson SA, McDermott MB, Swanson PE, Wick MR. CD99 and cytokeratin-20 in small cell and basaloid tumors of the skin. *Appl Immunohistochem Mol Morphol.* 2000;8:37-41.
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 26. Rush WL, Andriko JA, Galateau-Salle F, Brambilla E, Brambilla C, Ziany-bey I, Rosado-de-Christenson ML, Travis WD. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol.* 2000;13:747-754.
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Abstracts:

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2. Beasley MB, Abbondanzo S, Chu WD, Brambilla E, Hasleton PS, Travis WD. Cyclin D1 (CD1) expression in pulmonary neuroendocrine tumors. *Mod Pathol.* 2000;13:207A. Abstract 1218.
3. Beasley MB, Franks TJ, Galvin J, Gochuico B, Travis WD. Acute fibrinous and organizing pneumonia: a histologic pattern of acute lung injury. *Mod Pathol.* 2000;13:207A.
4. Beasley MB, Matsui K, Yu Z-X, Ferrans VJ, Moss J, Travis WD. Histologic predictors of survival in 101 cases of pulmonary lymphangioleiomyomatosis (LAM): prognostic significance of histology score. *Am J Respir Crit Care Med.* 2000;161:A15.
5. Chang C, Guinee D, Koss M, Perkins S. The immunohistochemical profile of neoplastic B-cells and background T-cells in pulmonary lymphomatoid granulomatosis is similar to that of T-cell rich B-cell lymphoma. *Mod Pathol.* 2000;13:145A.
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7. Flaherty K, Colby T, Travis W, Flint A, Toews G, Lynch JP, Kazerooni E, Gross B, Martinez F. Survival in patients with histologic subsets of NSIP versus UIP. *Am J Respir Crit Care Med.* 2000;161:A708.
8. Flaherty KR, Kazerooni EA, Gross B, Toews GB, Lynch JP, Flint A, Colby TV, Travis WD, Martinez FJ. Rate of change in semiquantitative high resolution computed tomography

- (HRCT) scores in patients with UIP and NSIP. *Eur Respir J*. 2000;16 (suppl) 31:191S.
9. Flaherty KR, Toews GB, Lynch JP, Flint A, Colby TV, Travis WD, Martinez FJ. *Eur Respir J*. 2000;16 (suppl) 31:573S.
 10. Gochuico BR, MacDonald SD, Wu HP, Avila NA, Beasley M, Travis WD, Chen CC. Increased 99mTC-DTPA lung clearance in individuals with biopsy-confirmed idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med*. 2000;161:A526.
 11. Kazerooni E, Flaherty K, Gross B, Toews G, Lynch JP, Flint A, Colby T, Travis WD, Martinez F. Semiquantitative HRCT in NSIP vs UIP. *Am J Respir Crit Care Med*. 2000;161:A527.
 12. Matsui K, Tatsuguchi A, Valencia J, Yu ZX, Bechtle J, Beasley MB, Moss J, Travis, WD, Ferrans VJ. Extrapulmonary lymphangioliomyomatosis (LAM): clinicopathologic features of 25 cases. *Mod Pathol*. 2000;13:213A.
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 14. Nicholson SA, Beasley MB, Brambilla E, Hasleton PS, Colby TV, Shimosato Y, Sheppard M, Falk R, Travis WD. Small cell lung carcinoma (SCLC): a clinicopathologic study of 103 resected cases. *Mod Pathol*. 2000;13:215A.
 15. Przygodzki RM, Koss MN, O'Leary TJ. Pleomorphic (giant and spindle cell) carcinoma demonstrates increased DNA mutagenic epoxide production. *Mod Pathol*. 2000;13:215A. Abstract 1269.
 16. Rush W, Andriko J, Galateau-Salle F, Brambilla E, Brambilla C, Ziany-bey I, Rosado-de Christensen M, Travis WD. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol*. 2000;13:216A. Abstract 1274.
 17. Tavier-DaSilva, Hedin CJ, Hunsberger S, Matsui K, Travis WD, Ferrans VJ, Moss J. Evidence for reversible airflow obstruction and bronchiolitis in lymphangioliomyomatosis (LAM). *Am J Respir Crit Care Med*. 2000;161:A886.
 18. Travis WD. The 1999 WHO/IASLC Histologic Classification of Lung and Pleural Tumors: papillomas, adenomas, preinvasive lesions and squamous cell carcinomas. *Lung Cancer*. 2000;29 (suppl.): 42.
 19. Travis WD, Flaherty K, Colby TV, Flint A, Toews G, Lynch JP, Kazerooni E, Gross B, Martinez F. Histologic patterns of interstitial pneumonia in patients with surgical lung biopsies of multiple lobes. *Am J Respir Crit Care Med*. 2000;161:A526.

Book Chapters:

1. Travis WD, Linder J, Mackay B. Pathology A: classification, histology, cytology and electron microscopic appearance. In: Pass HI, Mitchell J, Johnson DH, Turrisi AT, eds. *Lung Cancer, Principles and Practice*. 2nd ed. Philadelphia, Pa: JB Lippincott; 2000:453-495.
2. Franks TJ, Koss MN. Pathology of metal exposure in the lung. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:6-8.

Other Publications:

Devouassoux-Shisheboran M, Galvin JR, Travis WD. *Mediastinal Tumors, Up-To-Date* [CD-ROM]; 2000.



GROUP 3

SPECIAL LABORATORY MEDICINE

CELLULAR PATHOLOGY & GENETICS

HEMATOPATHOLOGY

**NEUROPATHOLOGY &
OPHTHALMIC PATHOLOGY**

SCIENTIFIC LABORATORIES



Timothy J. O'Leary, MD, PhD
 Chair
 Date of Appointment — 21 January 1987

DEPARTMENT OF CELLULAR PATHOLOGY AND GENETICS

MISSION

The Department of Cellular Pathology and Genetics provides research and innovative technologies that support the readiness of our armed forces and ensure top-quality, cost-effective health care for military personnel, their dependents, and the American people. By integrating interdivisional and interdepartmental research efforts, we are making a substantial contribution to the redefinition of pathology research and practice, while setting directions for research and diagnosis worldwide.

ORGANIZATION

In 2000, the Center for Medical and Molecular Genetics was incorporated into the Department of Cellular Pathology, and reorganized into the Divisions of Clinical Genetics and Pediatric Pathology. This new alignment was performed to improve effectiveness and efficiency.

The Division of Cytopathology continued to receive the bulk of its operating funding from the Office of the Air Force Surgeon General and various individual military installations. In addition, support for the sequencing facility was provided in part by the Walter Reed Army Institute of Research. Reimbursements for molecular diagnostic assays were also received from the National Naval Medical Center and Walter Reed Army Medical Center.

The department is organized into 6 divisions and the Office of the Chair.

1. Division of Biophysics - Jeffrey T. Mason, PhD
2. Division of Clinical Genetics - Barry Thompson, MD
3. Division of Cytopathology - Curtis W. Ollayos, CDR, MC, USN
4. Division of Molecular Pathology - Jeffery K. Taubenberger, MD, PhD
5. Division of Pediatric Pathology - Eric Suarez, CDR, MC, USN
6. Division of Quantitative Pathology - Robert L. Becker, Jr, Col, USAF, MC

STAFF

Administrative:

Danny Urquhart, Research Administrator
 Sharon Osenbach, Secretary
 Myra Washington, Secretary

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	26,984
Federal	35
Civilian	427
Interdepartmental	639
Total	28,085

To better serve the Institute and our contributors, we further accelerated the establishment of new technologies and services. We expanded the array of molecular diagnostic assays and put into use new equipment that has increased case throughput and decreased turnaround time. The DNA sequencing facility increased its caseload significantly and has increased its staff by one person.

Impact:

To better accomplish our mission, the department has been engaged in 5 major developmental efforts that involve all divisions:

1. **Genomics/proteomics:** The department is undertaking investigations that utilize serial analysis of gene expression (SAGE) to determine the mRNA expression profile of tissues and tumors. To date, we have carried out SAGE studies characterizing several thousand transcripts in 2 gastrointestinal stromal tumors (GIST), 2 GIST cell lines, and several hematopoietic cell lines and assorted cell populations. We have also carried out a substantial number of comparative genomic hybridization (CGH) and spectral karyotyping (SKY) experiments on uveal melanomas, in an effort to identify regions associated with malignant behavior. We have developed tissue microarrays of gastrointestinal stromal tumors to characterize gene expression profiles in a high-throughput manner.
2. **Magnetic resonance microscopy:** We have installed 2 magnetic resonance microscopy systems that enable nondestructive imaging of tissues and small animals, with a resolution of a few microns. We hope to demonstrate the utility of this technology in bridging the gap between radiologic imaging and light microscopy.
3. **Analysis and informatics:** In collaboration with researchers from other organizations, we have developed new methods for data analysis that have yielded spectacular improvements in the classification of classical karyotypes. In addition, we are implementing new tools to handle the vast quantities of data generated by our genomics/proteomics experiments.
4. **Telemedicine:** The department continues to be the world leader in telecytology. We have completed studies on Pap smears and a review of our experience in consultation. Work now focuses on development of standards for image quality, and on the development of virtual slide technology.
5. **Clinical genetics:** In cooperation with the National Naval Medical Center, we will soon be providing genetics counseling services to military personnel and their dependents in the National Capital area. Restructuring of the former Center for Medical and Molecular Genetics (CMMG) into the Division of Clinical Genetics has enabled the identification of resourcing for genetics counselors and a full-scale clinical genetics activity in the National Capital area.

EDUCATION

Presentations and Seminars: Department staff made 57 presentations at conferences and seminars in 2000. Complete titles and dates are listed in divisional reports.

Trainees:

Category	Number trained in 2000	Training days
Pathology Residents	11	207
Cytology Fellows	6	210
Postdoctoral Fellows	1	260
Graduate Students	2	325
Students	4	101

RESEARCH

Publications: Department staff published 34 journal articles, 2 book chapters, and 28 abstracts in 2000 (see divisional reports for references). This work continued to be internationally noticed and acclaimed, and department staff gave numerous press interviews regarding their work.

Research Funds Received: In 2000, the department received the following funding amounts:

VA	\$100,000
NIH	\$148,000

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Office of the Air Force Surgeon General
2. Army Medical Research and Development Command
3. Department of Veterans Affairs
4. National Institutes of Health
5. Food and Drug Administration
6. Walter Reed Army Medical Center

Committees:

Office of the Chair:

Editorial Boards:

1. *Applied Immunohistochemistry and Molecular Morphology*
2. *Pathology Research and Practice*

Offices/Committee Memberships in National or International Societies:

1. Chair, NCCLS Subcommittees on Immunocytochemical Methods and PCR-based Assays in Molecular Hematology.
2. Member, Molecular Genetic Pathology Test Committee (a conjoint committee of the American Board of Pathology and the American Board of Medical Genetics)
3. Member, Genetics Working Group, Centers for Disease Control
4. Member, Clinical Laboratory Improvement Advisory Committee, Department of Health and Human Services.
5. Member, Clinical Practice Committee, Association for Molecular Pathology

Faculty Appointment:

Clinical Associate Professor, USUHS

PUBLICATIONS

Journal Articles

1. Briscoe D, Adair CF, Thompson LD, Tellado MV, Buckner SB, Rosenthal DL, O'Leary TJ. Telecytologic diagnosis of breast fine needle aspiration biopsies: intra-observer concordance. *Acta Cytol.* 2000;44:175-180.
2. Frommelt RA, Peterson MR, O'Leary TJ. A comparison of cervical pathology between United States Air Force women who did and did not serve in the Persian Gulf War. *Ann Epidemiol.* 2000;10:285-292.
3. Frommelt R, Peterson M, O'Leary T, Ollayos C. Pap smear screening in an equal-access health care system: yield of screening and predictors of squamous intraepithelial lesions and atypical squamous cells of undetermined significance. *Ann Epidemiol.* 2000;10:466-470.
4. Conroy JM, Kolda TG, O'Leary DP, O'Leary TJ. Chromosome identification using hidden Markov models: comparison with neural networks, singular value decomposition, principal components analysis, and Fisher discriminant analysis. *Lab Invest.* 2000;80:1629-1641.
5. Li SQ, O'Leary TJ, Sobin LH, Erozan YS, Rosenthal DL, Przygodzki RM. Analysis of KIT mutation and protein expression on fine needle aspirates of gastrointestinal stromal/smooth muscle tumors. *Acta Cytol.* 2000;44: 981-986.

Abstracts

1. Przygodzki R, Emory T, Liu Y, Hubbs A, Sobin L, O'Leary T. KIT mutation in gastrointestinal stromal/smooth muscle tumors: dependence on anatomic site. *Lab Invest.* 2000;80:87A.
2. Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed, archival liver samples suspect for elevated iron content and hemochromatosis. *Lab Invest.* 2000;80:189A.
3. Przygodzki RM, Koss MN, O'Leary TJ. Pleomorphic (giant and spindle cell) carcinoma demonstrates increased DNA mutagenic epoxide production. *Lab Invest.* 2000;80:215A.

4. Alli PM, Ollayos CW, Thompson L, Kapadia I, Butler D, Williams BH, O'Leary TJ. Telecytology: intraobserver and interobserver reproducibility in the diagnosis of cervical-vaginal smears. *Acta Cytol.* 2000;44:850.
5. Li SQ, Sheng ZM, Baili Y, Erozan YS, O'Leary TJ. Detection of human telomerase reverse transcriptase mRNA in colonic brush specimens as an adjunct to cytopathologic diagnosis of colonic adenocarcinoma. *Acta Cytol.* 2000;44:855.
6. Li SQ, Sheng ZM, Erozan YS, Rosenthal DL, O'Leary TJ. Detection of human telomerase reverse transcriptase mRNA from fine needle aspiration of gastrointestinal stromal tumors. *Acta Cytol.* 2000;44:909.
7. O'Leary TJ, Cunningham RE, Sheng ZM, Mason JY. Improved recovery of amplifiable RNA from formalin-fixed cell lines. *J Mol Diagn.* 2002;229.

Book Chapter

Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed samples suspect for elevated iron content and hemochromatosis. In: Centeno JA, Collery P, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:688-690.

Other Publications

O'Leary TJ, Domer PH, Fletcher JA, Griffin CA, Kaul K, Presto KT, Segal GH, Wolman S. *Nucleic Acid Amplification Assays for Molecular Hematopathology; Proposed Guideline*. Lancaster, Pa: NCCLS Document MM5-P; 2000.



Jeffrey T. Mason, PhD
Chief
Date of Appointment — 1 January 1993

DIVISION OF BIOPHYSICS

MISSION

The Division of Biophysics develops new knowledge and techniques in basic and applied biophysics and pathology by applying biochemical, biophysical, and chemical methods to the study of biological systems. Techniques utilized include flow cytometry, infrared and Raman spectroscopy, calorimetry, fluorescence spectroscopy, x-ray diffractometry, magnetic resonance spectroscopy and imaging, and atomic force microscopy.

ORGANIZATION

The division is organized into 2 laboratories:

1. Biophysics Laboratory - Jeffrey T. Mason, PhD, Chief

2. Magnetic Resonance Laboratory - Kimberlee Potter, PhD, Director

STAFF

Robert E. Cunningham, Research Biologist
 Kimberlee Potter, PhD, ARP, Principal Investigator
 Jeffrey T. Mason, PhD, Division Chief

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	0
Federal	0
Civilian	0
Interdepartmental	21
Total	21

These 21 diagnostic cases were in situ hybridizations for JC virus.

Impact:

In 2000, the division established the AFIP Nuclear Magnetic Resonance Facility, consisting of a 7 Tesla 20-cm, horizontal-bore spectrometer for imaging large organs and small live animals and a 9.4 Tesla 8.9-cm, vertical-bore spectrometer for imaging of tissue samples. The 9.4 Tesla spectrometer can also be used for solution and solids spectroscopy. The facility will undertake to establish magnetic resonance microscopy as a tool for pathology and to serve the imaging needs of the AFIP.

EDUCATION

Courses: Division staff taught a 1-day course on flow cytometry and a 1-week course on immunohistochemistry at the Foundation for Advanced Education in the Sciences, NIH.

Trainees: Division staff supervised the master’s degree thesis research of a George Mason University graduate student.

RESEARCH

Projects: Research activities in 2000 included the following:

1. Studies Designed to Understand the Structure and Function of Biological Membranes and the Interaction of These Systems with Extrinsic Molecules, Such As Alcohols and Anesthetics.
2. Development of Techniques for the Reversal of Formalin Fixation in Tissues and the Utilization of Antigen-Retrieval Protocols for Enhancing DNA and Protein Probe Technology in Archival Formalin-fixed, Paraffin-embedded Tissues.
3. Work on Placing Nascent Nuclei onto Microscope Slides for Use in Array-based Screening Techniques for Cancer Detection and Monitoring.
4. Project to Study GIST Pathology Using the Tissue Microarray Technique Coupled with Microscopic Screening of the Arrays.
5. Continuation of a Project to Improve Antigen Retrieval in FFPE Tissues Using Microwave Enhancement.
6. Study of the Development of Chick Chondrocytes and Neocartilage Using Bioreactor Tissue Culture and Magnetic Resonance Microscopy.

Research Funds Received:

1. Nuclear Microarrays for Quantitative High-Throughput Molecular Screening of Tissue Specimens - \$14,500, ARP.
2. Formalin Fixation and Recovery of RNA Protein - \$100,000, NIH; \$18,000, ARP.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

Dr. Ira Levin, National Institute of Diabetes and Digestive and Kidney Disease, NIH, Bethesda, Md, Study of Collagen and Proteoglycan Using Infrared Microscopic Imaging Techniques.

Civilian:

1. Dr. Mike Batenjany, Biomira USA, Princeton, NJ, Study of the Interaction of Interleukin 2 with Bilayer Membranes.
2. Dr. Ching-hsien Huang, Department of Biochemistry, University of Virginia, Charlottesville, Study of the Membrane Properties of Polyunsaturated Phosphatidylethanolamines.

PRESENTATIONS

1. August 2000: Gordon Research Conference on Biomineralization, "Bone formation as studied by proton NMR microscopy."
2. December 2000: Bethesda, Md, NIH Conference on Diffusion Tensor Imaging, "Diffusion-tensor microimaging of soft tissues."



Curtis W. Ollayos, CDR, MC, USN
Chief
Date of Appointment — May 1998

DIVISION OF CYTOPATHOLOGY

MISSION

The Division of Cytopathology provides consultation, primary diagnosis, education, and research in diagnostic cytopathology.

ORGANIZATION

The division is organized into a Consultation Service and the Armed Forces Cytocenter.

STAFF

Medical:

- Curtis W. Ollayos, CDR, MC, USN – Division Chief
- Sally-Beth Buckner, SCT (ASCP), IAC - Cytotechnologist
- Izzat Ali, CT (ASCP), IAC - Cytotechnologist
- (D) Angie Stevens, CT (ASCP) - Cytotechnologist
- (D) Carol Paquette, CT (ASCP) - Cytotechnologist
- Dominador Devera, CT (ASCP) - Cytotechnologist

Administrative:

- Nawera Haque – Accessioning Clerk
- (A) Xinyan Zhao – Cytopreparatory Technician and Accessioning Clerk

DIAGNOSTIC CONSULTATION

Cases	Completed
Consultation Service	1,352
Armed Forces Cytocenter	25,407
<hr/>	
Total	26,759

Approximately 25% of the Consultation Service cases required immunohistochemical staining. The Armed Forces Cytocenter caseload of 25,407 contributes directly to military readiness, in that a large proportion of these smears are from active-duty women. The cytocenter continues to work primarily for the Departments of the Air Force and the Army.

Deployments: Dr. Ollayos worked 22 days at the National Naval Medical Center in Bethesda, Md, to support that facility for anatomic pathology signout.

Quality Assurance: The division participated in 8 proficiency testing exercises (4 GYN, 4 non-GYN) and completed the CAP inspection with no deficiencies.

EDUCATION

Presentations and Seminars: Division staff made 8 presentations in 2000. Dates and titles are listed at the end of this report.

Courses: The division presented, for the second time, a short course entitled “The Pap Smear: Serving Patients and Avoiding Liability in a Low-Cost and Litigious World.” Fifty participants attended, totaling 525 man-hours.

Trainees: The division provided training in 2000 to the following individuals:

- Patti Ali, MD
- Beth Allen, MD
- Pei Sha Yan, MD
- Alejandro Velez-Hoyos, MD
- Phyllis Veza, MD
- Geoffrey Mutuma, MD

RESEARCH

Projects:

1. Cytologic Features of Malignant Mesothelioma in Effusions, TJ O’Leary.
2. Correlation of Telemedicine Diagnoses and Microscopic Diagnoses, TJ O’Leary.
3. Telomerase Activity in Mesothelioma vs Atypical Mesothelial Proliferation, P Alli.
4. Telecytopathology Pap Smear Comparison Study, P Alli.
5. Neoangiogenesis in Sinusoidal Capillarization Determination in Fine Needle Aspirates of Liver Nodules, P Alli.
6. Esophageal Cancer Screening Project, Kenya, S-B Buckner.

OTHER ACCOMPLISHMENTS

Faculty Appointments:

Uniformed Services University of the Health Sciences, Bethesda, Md, Assistant Clinical Professor of Pathology, CW Ollayos.

Honors: CW Ollayos was promoted to the rank of Commander in 2000.

Continuing Education: Division staff participated in 50 man-hours of proficiency testing exercises in 2000.

PRESENTATIONS

1. February 2000: Great Lakes, Ill, Navy Recruit Symposium, “Relative risk for pre-cancerous cervical lesions among active-duty women,” CW Ollayos.
2. April 2000: Silver Spring, Md, AFIP Anatomic Pathology and Review Course, “The Bethesda System,” S-B Buckner.
3. May 2000: Bethesda, Md, Uniformed Services University of the Health Sciences Research

Day, "Relative risk for pre-cancerous cervical lesions among military health systems beneficiaries," CW Ollayos.

4. September 2000: Buenos Aires, Argentina, International Academy of Pathology, "Update on ASCUS and AGUS," CW Ollayos.
5. September 2000: Buenos Aires, Argentina, International Academy of Pathology, "The cytopathology of serous fluids," CW Ollayos.
6. September 2000: Buenos Aires, Argentina, International Academy of Pathology, "The cytopathology of lung FNA," CW Ollayos.
7. September 2000: Buenos Aires, Argentina, International Academy of Pathology, "The cytopathology of thyroid FNA," CW Ollayos.
8. October 2000: Washington, DC, Metropolitan Washington Association of Cytologists Monthly Meeting, "ASCUS and AGUS," CW Ollayos.



Jeffery K. Taubenberger, MD, PhD
Chief
Date of Appointment — 1 January 1994

DIVISION OF MOLECULAR PATHOLOGY

MISSION

The Division of Molecular Pathology provides consultation, research, and education in molecular biology and molecular pathology. We develop new techniques for consultative diagnostic molecular pathology and molecular medicine, and explore new areas of molecular biology to determine which may be useful for current or future development at the Institute. We collaborate with other CAP departments by performing research using molecular techniques.

ORGANIZATION

The division is organized into the following laboratories:

- Molecular Diagnostics Laboratory – Jack H. Lichy, MD, PhD, Director
- DNA Core Sequencing Laboratory – Alan Hubbs, PhD, Director
- Research Laboratory – Jeffery K. Taubenberger, MD, PhD, Chief

STAFF

Medical:

- Jeffery K. Taubenberger, MD, PhD, Staff Pathologist and Division Chief
- Jack H. Lichy, MD, PhD, Staff Pathologist and Director, Molecular Diagnostics Laboratory
- Sherman McCall, LTC, MC, USA, Staff Pathologist
- Ronald Przygodzki, MD, ARP, Staff Pathologist

Scientific:

- Karen Bijwaard, Medical Technologist
- Valentina Buj, American Red Cross Volunteer

- (A) Jessica Dement, ARP, Medical Technologist
 Carlos A. Hubbard, PhD, ARP, MD/PhD Student
 Thomas G. Fanning, PhD, Principal Investigator
 Amy E. Krafft, PhD, MT (ASCP), Medical Technologist
 Thomas Janczewski, ARP, Research Biologist
- (A) Qi Liang, PhD, ARP, Research Biologist
- (A) Ying Liu, MD, ARP, DNA Sequencing Technologist
 Andrew N. Loudon, ARP, Graduate Student
 Mourad Majidi, PhD, ARP, Research Biologist
- (A) Jean Przybocki, ARP, Medical Technologist
 Ann H. Reid, Research Biologist
 Zong-Mei Sheng, MD, PhD, ARP, Research Biologist
 Mark M. Tsai, Research Biologist
 Feng Qi Zhao, PhD, ARP, Research Biologist

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	194
Federal	1
Civilian	71
Interdepartmental	818
Total	1084

The Molecular Diagnostics Laboratory received 1,084 cases in consultation in 2000 (a 65% increase over the number of cases received in 1999). All 1,084 cases required molecular testing. These cases were received from 19 CAP departments and from direct consults from other institutions, and, on average, 2.5 different tests were requested per case. This resulted in 2,759 separate molecular pathology assays completed in 2000.

The following tests were offered for clinical or research diagnosis on submitted fixed tissue:

1. Hematopathology
 - Immunoglobulin heavy chain rearrangement
 - T-cell receptor beta gene rearrangement
 - T-cell receptor gamma gene rearrangement
 - t(14;18) translocation, major and minor breakpoints
 - t(9;22) translocation, ALL and CML types
 - t(11;14) translocation
 - t(2;5) translocation, and quantitative PRAD1 overexpression.
 2. Solid tumors: t(11;22), t(X;18), t(1;13), and t(2;13) translocations.
 3. Infectious diseases: *Coxiella burnetti*, Epstein-Barr virus, herpes simplex virus 1 and 2, human herpesvirus 8, human papillomavirus, animal papillomaviruses, enterovirus, hepatitis C virus, influenza virus, morbilliviruses (human measles virus, canine distemper virus, dolphin morbillivirus, porpoise morbillivirus), *Pneumocystis carinii*, *Toxoplasma gondii*, varicella-zoster virus, enterovirus.
 4. Genetic tests: hemochromatosis, factor V (Leiden), prothrombin mutation assays.
- Dr. Lichy and Dr. Taubenberger participated in signout of surgical pathology cases.

Quality Assurance:

1. The laboratory received 29 samples in CAP sample-exchange programs in molecular oncology, infectious disease, and genetics; 34 samples in the Association for Molecular Pathology sample-exchange program; and 15 cases in a t(14;18) sample exchange with the Johns Hopkins Medical Center Molecular Diagnostics Laboratory, for a total of 78 QA samples in 2000.
2. The following CAP inspections were performed by division personnel in 2000:
 - Henry Ford Hospital, Detroit, Mich, June 2000 (JH Lichy)
 - Interim inspection for AFDIL, September 2000 (K Bijwaard)
 - Interim inspection for Biochemistry, November 2000 (S McCall)
 - Washington VA Medical Center, December 2000 (JH Lichy)

EDUCATION

Presentations and Seminars: Division staff gave 51 seminars and presentations in 2000, for a total of 4,043 training man-hours. This total includes the Molecular Pathology Division Journal Club, which met 27 times in 2000, for a total of 540 training man-hours.

Courses: Division staff participated in 1 non-AFIP course and 1 AFIP course in 2000.

Trainees: Division staff trained 13 individuals, for a total of 818 training days. Trainees by category are listed below:

<i>Trainee category</i>	<i>No. trained in 2000</i>	<i>Training days</i>
Pathology residents	6	132
Postdoctoral fellows	1	260
Graduate students	2	325
Students	4	101
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Total:	13	818

RESEARCH

Publications: Division staff published 17 refereed journal articles, 1 book chapter, and 18 abstracts. Complete references are listed at the end of this report.

Projects: Division staff were principal investigators on 12 AFIP research protocols, open as of December 31, 2000.

1. Analysis of Early 20th Century Avian Viruses. PI: TG Fanning.
2. Analysis of Squamous Cell and Adenocarcinomatous Epithelium within Pleomorphic Carcinoma of the Lung. PI: R Przygodzki.
3. Development and Validation of a Clinical Assay for t(11;22)(q24;q12) in Ewing Sarcomas and Peripheral Primitive Neuroectodermal Tumors. PI: K Bijwaard.
4. Diagnosis of Measles Virus Infection in Archival Tissues by RT-PCR. PI: JK Taubenberger.
5. Diagnosis of t(9;22) Translocation in CML and ALL in Archival Tissues by RT-PCR. PI: JK Taubenberger.
6. Diagnosis of Variola Infection in Archival Tissues by PCR. PI: JK Taubenberger.
7. Glandular Neoplasia of Lung: A Clinicopathologic Study of 100 Cases. PI: R Przygodzki.
8. Human ST5 Gene in Signal Transduction and Carcinogenesis. PI: JH Lichy.
9. Identification of Influenza Strains by Molecular Genetic Techniques. PI: JK Taubenberger.
10. Identification of the Source of the 1918 Influenza A Strain by RT-PCR. PI: JK Taubenberger.
11. Role of the Novel Antigen Lip-6 in Hematopoiesis. PI: JK Taubenberger.
12. Tumor Susceptibility Markers and Their Consequent Mutational Alterations in Hepatic Vascular Neoplasia. PI: R Przygodzki.

Research Funds Received:

1. The Human ST5 Gene in Signal Transduction and Cancer — NIH, JH Lichy.
2. Genetic Characterization of the 1918 'Spanish' Influenza Virus — Department of Veterans Affairs, JK Taubenberger.
3. Monitoring the Response to Cancer Vaccines — \$16,000, ARP, JH Lichy.
4. Minority Graduate Assistant Program — NIH, JH Lichy.

OTHER ACCOMPLISHMENTS

DNA Core Sequencing Laboratory: In 2000, Dr. Alan Hubbs, Dr. Ying Liu, and Ryan Satcher generated DNA sequences from 12,709 samples. A breakdown of these cases by submitting AFIP department is given below:

<i>Department</i>	<i>No. of Samples</i>
Facility Optimization	483
Department of Cellular Pathology, Molecular Pathology Division	1,407
Department of Cellular Pathology, Molecular Pathology Division, Genomics Initiative	6,764
Department of Environmental and Toxicologic Pathology, Biochemistry Division	23
Department of Soft Tissue Pathology	2,406

Department of Infectious and Parasitic Diseases Pathology	159
Department of Cardiovascular Pathology	559
WRAIR Department of Cellular Injury	882
Other (student or guest)	26
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Total	12,709

This represents more than 50% growth over 1999 and reflects increased sample submission from outside departments and from within the Department of Cellular Pathology. Based on the current level of interest, we expect continued growth from within the department and the Institute and from other DoD participants. We anticipate sequencing between 18,000 and 28,000 samples in the year 2001. Last year, we estimated that between 10,000 and 15,000 samples would be submitted in the year 2000, and this target was correct.

Carlos A. Hubbard, a combined MD/PhD student from the Medical College of Virginia, Virginia Commonwealth University, Richmond, received his PhD in April 2000, for dissertation work performed in Dr. Taubenberger's laboratory in the Molecular Pathology Division. He returned to the Medical College of Virginia to complete his clinical clerkship year, and will complete his MD in May 2001.

Collaborators:

Military/Federal:

1. Kevin Holmes, PhD, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Md.
2. David Gillespie, MD, Walter Reed Army Medical Center.
3. Curtis C. Harris, MD, Laboratory of Human Carcinogenesis, National Cancer Institute, National Institutes of Health, Bethesda, Md.
4. Neil Caporaso, MD, Genetic Epidemiology Branch, National Cancer Institute, Rockville, Md.
5. Constance T. Noguchi, PhD, Laboratory of Chemical Biology, National Institutes of Health, Bethesda, Md.
6. Steve Rick, PhD, NCI, Frederick, Md.
7. Tony Beugelsdijk, PhD, Los Alamos National Laboratory, Los Alamos, NM.
8. James Dean, PhD, Smithsonian Institution, Museum of Natural History, Washington, DC.
9. J. Silvio Gutkind, PhD, National Institutes of Health, Bethesda, Md.
10. G. Cockerham, MD, Andrews AFB, Department of Ophthalmology.
11. Michael L. Perdue, PhD, US Department of Agriculture, Athens, Ga.
12. Nancy J. Cox, PhD, Centers for Disease Control and Prevention, Atlanta, Ga.
13. Joseph Esposito, PhD, Centers for Disease Control and Prevention, Atlanta, Ga.
14. Sherif Zaki, MD, Centers for Disease Control and Prevention, Atlanta, Ga.
15. Peter Jahrling, PhD, United States Army Medical Research Institute for Infectious Diseases, Ft. Detrick, Md.

Civilian:

1. Peter Palese, PhD, Department of Microbiology, Mt. Sinai School of Medicine, New York, NY.
2. Adolfo Garcia-Sastre, PhD, Department of Microbiology, Mt. Sinai School of Medicine, New York, NY.
3. David Izon, PhD, University of Pennsylvania, Philadelphia.
4. Paul McGovern, MD, University of Pennsylvania, Philadelphia.
5. Susan Ropp, PhD, South Dakota State University, Brookings.
6. Sydney D. Finkelstein, MD, Department of Pathology, University of Pittsburgh Medical Center, Pittsburgh, Pa.
7. Kenneth W. Kinzler, MD, Johns Hopkins Oncology Center, Molecular Genetics Laboratory, Baltimore, Md.
8. Cheng-Wang Daniel Wu, MD, Department of Pathology, New York University, New York, NY

9. Don B. Singer, MD, Department of Pathology, Women's and Infant's Hospital, Brown University, Providence, RI.
10. Alfredo Esparza, MD, Department of Pathology, Rhode Island Hospital, Providence.
11. Philip T. Cagle, MD, Department of Pathology, Baylor College of Medicine, Houston, Tex.
12. Constance Washington, MD, University of Texas, Dallas.
13. Fleurette Abreo, MD, Louisiana State University Medical Center, Shreveport.
14. Xio Shu, PhD, University of South Carolina Medical School.
15. Scott Layne, MD, University of California at Los Angeles.
16. Michael N. Koss, MD, Department of Pathology, University of Southern California, Los Angeles.
17. Margaret L. Gulley, MD, Department of Pathology, University of Texas, Andre
18. Murphy Veterans Hospital, San Antonio.

International:

1. Stephan Krus, MD, PhD, Department of Pathology, Warsaw Medical Academy, Warsaw, Poland.
2. Roman Pykalo, MD, PhD, Department of Pathology, Warsaw Medical Academy, Warsaw, Poland.
3. Tomayoshi Hayashi, MD, PhD, Department of Pathology, Nagasaki University Hospital, Nagasaki, Japan.
4. Gilda Alves, PhD, National Cancer Institute, Rio de Janeiro, Brazil.
5. Ian Brown, PhD, Weybridge Veterinary Laboratories Agency, Weybridge, Addlestone, United Kingdom.
6. George Brownlee, PhD, Oxford University, United Kingdom.
7. John Oxford, PhD, London Hospital, London, United Kingdom.
8. Y. Monczak, Depts. of Biochemistry, Hematology, and Pathology, SMBD Jewish General Hospital, Montreal, Quebec.

In addition, the division has active research collaborations with 11 other AFIP departments:

1. Department of Cardiovascular Pathology: Research on Role of Infectious Agents in Atherosclerotic Plaques and Cardiomyopathies.
2. Department of Dermatopathology: Molecular Genetic Characterization of Skin-associated Lymphomas.
3. Department of Environmental and Toxicologic Pathology, Division of Biochemistry: Identification of Heterozygous Sites in the AMPD1 Gene of Patients with Unexplained Loss of Normal Muscle Function.
4. Department of Hematopathology: Molecular Genetic Changes in Lymphomas.
5. Department of Hepatic and Gastrointestinal Pathology, Division of Hepatic Pathology: RAS in Vascular Liver Tumors, HCV Detection, Detection of Infectious Agents in Hepatocellular Carcinoma.
6. Department of Neuropathology: Molecular Characterization of Encephalitis Lethargica and Postencephalitic Parkinsonism.
7. Department of Ophthalmic Pathology: Molecular Genetic Characterization of Eye-associated Lymphomas and Identification of Viruses in Corneal Transplants.
8. Department of Otolaryngic and Endocrine Pathology: Molecular Changes in Pancreatic Tumors and Thyroid Lymphomas.
9. Department of Pulmonary and Mediastinal Pathology: Molecular Genetic Changes in Lung Tumors.
10. Department of Soft Tissue Pathology: *KIT* Mutations in Gastrointestinal Tumors.
11. Department of Veterinary Pathology: Molecular Characterization of Marine Mammal Morbilliviruses.

Honors:

JK Taubenberger:

1. Elected to the Alpha Omega Alpha Medical Honor Society, Medical College of Virginia chapter, April 2000.

2. Selected by the National Academy of Sciences to speak at the 12th Annual Frontiers of Science Meeting, Irvine, Calif, November 2000.

Committees:

Manuscripts Reviewed:

1. *American Journal of Pathology* (3)
2. *Cancer Research* (1)
3. *Cancer* (1)
4. *Genomics* (1)
5. *Journal of Virology* (2)
6. *New England Journal of Medicine*
7. *Oncogene* (1)
8. *Proceedings of the National Academy of Sciences* (1)
9. *Virology* (2)

Offices/Committee Memberships in National or International Societies:

1. Training and Education Committee, Association of Molecular Pathology, JH Lichy.
2. Gene Rearrangement Sample Exchange Organizational Committee, Association for Molecular Pathology, K Bijwaard.

Professional Services:

1. Consulting Pathologist, Laboratory of Pathology, National Cancer Institute, NIH, JK Taubenberger.
2. Special Volunteer, Laboratory of Immunopathology, NIAID, NIH, JK Taubenberger.
3. Member, NIH Special Study Section for Review of Applications for Minority Pre-doctoral Fellowship Program, JH Lichy.

Faculty Appointments:

1. Howard University Medical School, Washington, DC, Departments of Pathology and Genetics, Adjunct Faculty Appointments; Graduate Advisor (1 PhD student), JHLichy.
2. Howard University Medical School, Washington, DC, Departments of Pathology and Genetics, Adjunct Faculty Appointment, JK Taubenberger.
3. Virginia Commonwealth University, Medical College of Virginia, Richmond, Department of Anatomy, Adjunct Faculty Appointment; Graduate Advisor (1 MD/PhD student), JK Taubenberger.

Official Trips (funding agency in parenthesis):

1. January 2000: La Jolla, Calif, Scripps Research Institute, invited seminar, JK Taubenberger (Scripps Research Institute).
2. March 2000: New Orleans, La, 89th Annual USCAP Meeting, RM Przygodzki (AFIP).
3. March 2000: New Orleans, La, 89th Annual USCAP Meeting, Binford-Damin Society lecture, JK Taubenberger (AFIP).
4. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, RM Przygodzki (AFIP).
5. May 2000, Cold Spring Harbor, NY, 13th Annual Cold Spring Harbor Conference on Genome Sequencing and Biology, Q Liang (AFIP).
6. September 2000: Crete, Greece, Options for the Control of Influenza IV, JK Taubenberger (meeting organizer and ARP).
7. November 2000: Irvine, Calif, National Academy of Sciences Frontiers of Science 2000 Meeting, JK Taubenberger (National Academy of Sciences).
8. November 2000: Denver, Colo, 6th Annual Association for Molecular Pathology Meeting, K Bijwaard (AFIP).
9. November 2000: Denver, Colo, 6th Annual Association for Molecular Pathology Meeting, J Dement (AFIP).

Continuing Education: Division staff attended the following training courses during 2000:

1. AFIP Clinical Staff Conferences.
2. AFIP Molecular Pathology Seminar Series.

3. 6th Annual Association for Molecular Pathology Annual Meeting, St. Louis, Mo.
4. 89th Annual USCAP Meeting, San Francisco, Calif.

Public Affairs Reports:

Research on the 1918 influenza epidemic continued to generate national and international press coverage. Research on variola virus and the discovery of a novel morbillivirus in pilot whales also resulted in press coverage. Media highlights are listed below:

Scientific and Medical Press:

1. *Nature*: "Tracking the killer flu of 1918," January 14, 2000, Vol. 403, No. 6766, p. 137.
2. *Discover Magazine*: "Flu: the story of the great influenza pandemic of 1918 and the search for the virus that caused it," by Rebecca Reisner, January 2000, Vol. 21, No. 1.
3. *Scientific American*: "Flu: the story of the great influenza pandemic of 1918," February 2000.
4. *JAMA*, Editorial: "Expanding the treatment options for influenza," by Richard P. Wenzel, MD, MSc, February 23, 2000, Vol. 283, No. 8.
5. *Harvard University Biological and Biomedical Sciences Bulletin*: "A tale of two treks," by Robin Lucas, May 2000, Vol. III, No. 10.
6. *BioWorld Today*: "Exhumed lung biopsies from 1918 flu pandemic to tip viral lethality hand," by David N. Leff, 25 May 2000.
7. *New Scientist*: "No mercy," by Diane Martindale, October 14, 2000, Vol. 168, No. 2260, p. 29.
8. *JAMA*: "Decoding the virus," by Jennifer A. Galvin, October 4, 2000, Vol. 284, No. 13.
9. *The Sciences Magazine* (New York Academy of Science): "Learning from the enemy: the smallpox virus still has many stories to tell," by Wendy Orent, November 2000.

Newspapers:

1. *Washington Times*: "The great pandemic...same time, next century?" by Elizabeth Whelan, January 3, 2000.
2. *Chicago Sun-Times*: "The 1918 influenza," by Beryl Lieff Benderly, January 9, 2000.
3. *Princeton Packet*: "Flu pandemic of 1918 revisited," January 9, 2000.
4. *Cincinnati Enquirer*: "A chilling mystery: Why the flu killed millions of people in 1918 remains unknown," January 18, 2000.
5. *The Seattle Times*: "Flu: tracking down a killer," by David Williams, January 20, 2000.
6. *Greensboro News & Record*: "The flu that killed millions," January 23, 2000.
7. *Lexington Herald Leader*: "Deadly 1918 flu season makes a 'gripping' story," January 30, 2000.
8. *Boston Herald*: "The nightmare of 1918," by Stephanie Schorow, January 31, 2000.
9. *The Daily (The University of Washington Student Newspaper)*: "Has the flu got you?" February 3, 2000.
10. *Times Union* (Albany, NY): "Flu: a gripping true tale," February 6, 2000.
11. *Evening Post*: "Flu: the influenza of 1918," March 17, 2000.
12. *AUSA News*: "The 1918 'Spanish' influenza virus proved deadly to US troops," March 2000.
13. *Washington Post*: "New study links deadly 1918 flu to virus in birds," by David Brown, May 23, 2000, A19.
14. *Stripe*: "AFIP researchers continue work on deadly flu," by Ann Ham, May 26, 2000.
15. *Booklist*: "The devil's flu: the world's deadliest influenza epidemic and the scientific hunt for the virus that caused it," September 1, 2000, Vol. 97, No. 1, p. 46.
16. *Publishers Weekly*: "1918 influenza," September 11, 2000, Vol. 247, No. 37, p. 75.
17. *The Florida Times-Union*: "Flu pandemic worries health officials. Stage set for bad outbreak, they say," September 17, 2000.
18. *Bangor Daily News*: "1918 flu epidemic provides lesson," October 26, 2000.

International Newspapers:

1. *International Herald Tribune*: "Flu of 1918 further tied to birds," May 25, 2000, p. 8.
2. *The Times of London*: "Killer flu virus," June 19, 2000.
3. *The Daily Telegraph (London)*: "1918 influenza," January 20, 2000.

4. *The Daily Telegraph (London)*: “New findings shed light on the origin of the 1918 influenza virus,” by Roger Highfield, May 23, 2000.
5. *Reuters Wire Service*: “More clues from 1918 Spanish flu outbreak,” May 26, 2000.

Magazines:

1. *New York Review of Books*, February 10, 2000, “The flu of flus,” by William H. McNeill.
2. *Der Spiegel* (Germany), “Das Jahrhundert der Medizin” [Hundred Years of Medicine] series, “Die Rückkehr der Killer” [The reappearance of a killer], by Günther Stockinger, April 17, 2000.

Books:

1. *Devil’s Flu : The World’s Deadliest Influenza Epidemic and the Scientific Hunt for the Virus That Caused It*, by Pete Davies, October 2000, Henry Holt, ISBN: 0805066225.
2. *Influenza 1918: The Worst Epidemic in American History*, by Lynette Iezzoni, David McCullough (Foreword), November 2000, TV Books Inc, ISBN: 1575001837.

Television:

1. A&E TV, January 2000, “Hunt for the killer flu.”
2. *Der Spiegel* TV (Germany), “Rückkehr der Seuchen” [Return of the Plague], January 28, 2000.
3. C-SPAN, Washington Journal “Book Notes,” with Brian Lamb, February 27, 2000.
4. C-SPAN, Washington Journal, live interview with Brian Lamb, February 28, 2000.

Radio:

1. Dublin Radio (Ireland), live radio interview, “Killer flu,” January 17, 2000.
2. National Public Radio, “Talk of the National – Science Friday with Ira Flatow,” January 28, 2000, interview with JK Taubenberger: “Infectious diseases in animals.” (Discussed morbillivirus research in dolphins and whales and influenza virus research.)

Internet sites:

1. California Healthline: “The Flu Bug: Then and Now,” January 17, 2000, <http://www.chcf.org/features/index.cfm?itemID=1186>
2. Yahoo! Chat: “The Killer Flu,” Yahoo! Chat Event. January 28, 2000, <http://p6.chat.yahoo.com/chat/events/info/2000/01/28/012800kolata.html>
3. Genome New Network “The Spanish flu suspect: genes point to birds,” by Birgit Hofmann, June 2, 2000 http://www.celera.com/celerascience/news/articles/06_00/spanish_flu.cfm
4. National Geographic News: “Tracking Down the Spanish Flu of 1918,” National Geographic on-line,) October, 2000, http://www.ngnews.com/news/2000/10/10122000/spanishflu_3125.asp
5. Infectious Disease Society of America, Newsbriefs: “1918 influenza virus,” November, 2000, http://www.idsociety.org/NNii/Newsbriefs/newsbriefs_11-6.htm
6. Dr.Koop.com: “Exploring the Medical Mysteries of Influenza,” By Dr. Elizabeth M. Whelan, November 2000, <http://www.drkoop.com/news/focus/november/influenza.html>

PRESENTATIONS

1. January 2000: La Jolla, Calif, Scripps Research Institute, “Genetic characterization of the 1918 ‘Spanish’ influenza virus,” JK Taubenberger.
2. February 2000: Washington, DC, AFIP Staff Conference, “Testing of hereditary hemochromatosis by various analytical methods,” Q Liang.
3. February 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, “Genetic characterization of the 1918 ‘Spanish’ influenza virus,” JK Taubenberger.
4. February 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, “The emerging threat of biological weapons and bioterrorism: an international scientific and diplomatic challenge,” “Molecular biologic techniques in detection of biological agents,” AE Krafft.
5. March 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, “Improved criteria for differentiating true allelic differences from artifacts, using fluorescent automated DNA sequencing methods,” RM Przygodzki.

6. March 2000: New Orleans, La, 89th Annual USCAP Meeting, Binford-Damin Society Lecture, "Pathology and genetics of the 1918 influenza virus," JK Taubenberger.
7. March 2000: New Orleans, La, 89th Annual USCAP Meeting, "Hemochromatosis (HFE) gene analysis of formalin-fixed, archival liver samples suspect for elevated iron content and hemochromatosis," RM Przygodzki.
8. March 2000: New Orleans, La, 89th Annual USCAP Meeting, "KIT mutation in gastrointestinal stromal/smooth muscle tumors: dependence on anatomic site," RM Przygodzki.
9. March 2000: New Orleans, La, 89th Annual USCAP Meeting, "Pleomorphic (giant and spindle cell) carcinoma demonstrates increased DNA mutagenic epoxide production," RM Przygodzki.
10. April 2000: Richmond, Va, Medical College of Virginia, Department of Anatomy: PhD Dissertation Defense, "The role of LIP-6 in hematopoiesis," CA Hubbard.
11. April 2000: College Park, Md, University of Maryland, Laboratory of Physical Sciences, "New technologies for clinical diagnosis," JH Lichy.
12. April 2000: Richmond, Va, Medical College of Virginia, Grand Rounds, Department of Medicine, "Genetic characterization of the 1918 influenza virus," JK Taubenberger.
13. April 2000: Washington, DC, Howard University Hospital, "Mechanisms and disorders of cell signaling," JH Lichy.
14. May 2000: Washington, DC, AFIP Clinical Staff Conference, "Quantitative real-time PCR assay for cyclin D1," JH Lichy.
15. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Hemochromatosis (HFE) gene analysis of formalin-fixed liver samples suspect for elevated iron content and hemochromatosis," RM Przygodzki.
16. September 2000: Washington, DC, AFIP Molecular Pathology Seminar Series, "Global gene expression analysis," JK Taubenberger.
17. September 2000: Washington, DC, AFIP Molecular Pathology Seminar Series, "Molecular methods for the diagnosis of disease," JH Lichy.
18. September 2000: Washington, DC, AFIP Molecular Pathology Seminar Series, "DNA sequencing to support pathological diagnosis: a primer and review," AE Hubbs.
19. September 2000: Crete, Greece, Options for the Control of Influenza IV, "Genetic characterization of the 1918 influenza virus: complete gene sequences of hemagglutinin and neuraminidase," JK Taubenberger.
20. October 2000: Washington, DC, Vaccines 2000, Plenary Lecture "Characterization of the 1918 influenza virus," JK Taubenberger.
21. October 2000: Washington, DC, AFIP Molecular Pathology Seminar Series, "Fluorescence resonance energy transfer: theory and applications," AE Krafft.
22. November 2000: Washington, DC, AFIP Molecular Pathology Seminar Series, "A molecular approach to surgical pathology," RM Przygodzki.
23. November 2000: Denver, Colo, Association for Molecular Pathology Annual Meeting, "Detection of SYT-SSX fusion transcripts in archival synovial sarcomas by real-time reverse transcriptase-polymerase chain reaction," KE Bijwaard.
24. November 2000: Irvine, Calif, National Academy of Sciences Frontiers of Science 2000, Plenary Lecture, "Characterization of the 1918 'Spanish' influenza virus," JK Taubenberger.

PUBLICATIONS

Journal Articles

1. Abbondanzo SL, Rush W, Bijwaard KE, Koss MN. Nodular lymphoid hyperplasia of the lung: a clinicopathologic study of 14 cases. *Am J Surg Pathol*. 2000;24:587-597.
2. Cockerham GC, Hidayat AA, Bijwaard KE, Sheng ZM. Re-evaluation of "reactive lymphoid hyperplasia" of the uvea: an immunohistochemical and molecular analysis of ten cases. *Ophthalmology*. 2000;107:151-158.
3. Cockerham GC, Bijwaard KE, Sheng ZM, Hidayat AA, Font RL, McClean IW. Primary graft failure: a clinicopathologic and molecular analysis. *Ophthalmology*. 2000;107:2083-2090.
4. Derringer GA, Thompson LDR, Frommelt A, Bijwaard KE, Heffess CS, Abbondanzo SL. Malignant lymphoma of the thyroid gland: a clinicopathologic study of 108 cases. *Am J*

- Surg Pathol.* 2000;24:623-639.
5. Fanning TG, Reid AH, Taubenberger JK. Influenza A neuraminidase: regions of the protein potentially involved in virus-host interactions. *Virology.* 2000;276:417-423.
 6. Li SQ, O'Leary TJ, Sobin LH, Erozan YS, Rosenthal DL, Przygodzki RM. Analysis of KIT mutation and protein expression in fine needle aspirates of gastrointestinal stromal/smooth muscle tumors. *Acta Cytol.* 2000;44:981-986.
 7. Liang Q, Davis PA, Simpson JT, Thompson BH, Devaney JM, Girard J. Detection of hemochromatosis through the analysis of single-nucleotide extension products by automated capillary electrophoresis. *J Biomol Techn.* 2000;11:67-73.
 8. Lichy JH, Dalbague F, Zavar M, Washington C, Tsai MM, Sheng Z-M, Taubenberger JK. Genetic heterogeneity in ductal carcinoma of the breast. *Lab Invest.* 2000;80:291-301.
 9. Lipscomb TP, Scott DP, Garber RL, Krafft AE, Tsai MM, Lichy JH, Taubenberger JK, Gulland FMD, Schulman FY. Common metastatic carcinoma of California sea lions (*Zalophus californianus*): evidence of genital origin and association with novel gammaherpesvirus. *Vet Pathol.* 2000;37:609-617.
 10. Majidi M, Gutkind JS, Lichy JH. Deletion of the COOH terminus converts the ST5 p70 protein from an inhibitor of RAS signaling to an activator with transforming activity in NIH-3T3 cells. *J Biol Chem.* 2000;275:6560-6565.
 11. Reid AH, Fanning TG, Janczewski TA, Taubenberger JK. Characterization of the 1918 'Spanish' influenza virus neuraminidase gene. *Proc Natl Acad Sci U S A.* 2000;97:6785-6790.
 12. Rush WL, Andriko JA, Taubenberger JK, Nelson AM, Abbondanzo SL, Travis WD, Koss MN. Primary anaplastic large cell lymphoma of the lung: a clinicopathologic study of five patients. *Mod Pathol.* 2000;13:1285-1292.
 13. Taubenberger JK. Sequencing influenza A virus from the 1918 pandemic. *Influenza.* 2000;12:4-5.
 14. Taubenberger JK, Reid AH, Fanning TG. The 1918 influenza virus: a killer comes into view. *Virology.* 2000;274:241-245.
 15. Taubenberger JK, Tsai MM, Atkin TJ, Fanning TG, Krafft AE, Moeller RB, Kodsí SE, Mense MG, Lipsomb TP. Molecular genetic evidence of a novel morbillivirus in a long-finned pilot whale (*Globicephalus melas*). *Emerg Infect Dis.* 2000;6:42-45.
 16. Vang R, Taubenberger JK, Mannion CM, Bijwaard K, Malpica A, Ordonez NG, Tavassoli FA, Silver SA. Primary vulvar and vaginal extraosseous Ewing's sarcoma/peripheral neuroectodermal tumor: diagnostic confirmation with CD99 immunostaining and reverse transcriptase-polymerase chain reaction. *Int J Gynecol Pathol.* 2000;19:103-109.
 17. Washington C, Dalbague F, Abreo F, Taubenberger JK, Lichy JH. Loss of heterozygosity in fibrocystic change of the breast: genetic relationship between benign proliferative lesions and associated carcinomas. *Am J Pathol.* 2000;157:323-329.

Book Chapters

Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed samples suspect for elevated iron content and hemochromatosis. In: Centeno JA, Collery P, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000:688-690.

Abstracts

1. Basler CF, Dybing JK, Janczewski TA, Zheng H, Salvatore M, Reid AH, Perdue ML, García-Sastre A, Palese P, Taubenberger JK. Characterization of transfectant influenza viruses bearing the NS gene of the 1918 influenza virus. Options for the Control of Influenza IV; September 2000; Crete, Greece.
2. Bijwaard KE, Fetsch JF, Przybocki JM, Dement JL, Taubenberger JK, Lichy JH. Detection of SYT-SSX fusion transcripts in archival synovial sarcomas by real-time reverse transcriptase-polymerase chain reaction. *J Mol Diagn.* 2000;2:234.
3. Bijwaard KE, Taubenberger JK, Krafft AE, Lichy JH. A quantitative assay for cyclin D1 expression by real-time multiplex reverse transcriptase-polymerase chain reaction. USUHS Research Day, Uniformed Services University of the Health Sciences; March 2000; Bethesda, Md.
4. Fishbein WN, Davis JI, Hubbs AE, Mena H. Acquired myoadenylate deaminase deficiency

- (mADD). *FASEB J.* 2000;14:A713.
5. Hubbs AE, Przygodzki RM, Liu Y, Ernst S, Davis J, Fishbein W, O'Leary TJ. Improved criteria for differentiating true allelic differences from artifacts, using fluorescent automated DNA sequencing methods. USUHS Research Day, Uniformed Services University of the Health Sciences; March 2000; Bethesda, Md.
 6. Li SQ, Sheng Z-M, Erozan YS, O'Leary TJ. Using colonic brush to diagnose colonic adenocarcinoma and detect human telomerase reverse transcriptase messenger RNA. American Society of Cytopathology Meeting; November 2000; Philadelphia, Pa.
 7. Li SQ, Sheng Z-M, Erozan YS, Rosenthal DL, O'Leary TJ. Detection of human telomerase reverse transcriptase messenger RNA from fine needle aspiration of gastrointestinal stroma tumors. American Society of Cytopathology Meeting, November 2000; Philadelphia, Pa.
 8. Liang Q, Chu W, Thompson BH, Simpson JT. Effects of fixation on DNA fragmentation and sequence alterations. 50th Annual Meeting of the American Society of Human Genetics; October 3-7, 2000; Philadelphia, Pa.
 9. Liang Q, Davis PA, Thompson BH, Simpson JT. Applying denaturing HPLC to multiplexing detection of two SNPs in hereditary hemochromatosis. 13th Annual Cold Spring Harbor Conference on Genome Sequencing and Biology; May 10-14, 2000; Cold Spring Harbor, NY.
 10. Lichy JH, Krafft AE, Bijwaard KE, Przybocki JP, Taubenberger JK. The AFIP molecular diagnostics laboratory. USUHS Research Day, Uniformed Services University of the Health Sciences; March 2000; Bethesda, Md.
 11. Przygodzki RM, Emory T, Liu Y, Hubbs AE, Sobin L, O'Leary TJ. *KIT* mutation in gastrointestinal stromal/smooth muscle tumors: dependence on anatomic site. 89th Annual USCAP Meeting; March 2000; New Orleans, La. *Lab Invest.* 2000;80:87A.
 12. Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (*HFE*) gene analysis of formalin-fixed liver samples suspect for elevated iron content and hemochromatosis. 6th International Symposium on Metal Ions in Biology and Medicine; May 2000; San Juan, PR.
 13. Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (*HFE*) gene analysis of formalin-fixed, archival liver samples suspect for elevated iron content and hemochromatosis. 89th Annual USCAP Meeting, March 2000; New Orleans, La. *Lab Invest.* 2000;80:189A.
 14. Przygodzki RM, Koss MN, O'Leary TJ. Pleomorphic (giant and spindle cell) carcinoma demonstrates increased DNA mutagenic epoxide production. 89th Annual USCAP Meeting, New Orleans, La, March 2000. *Lab Invest* 2000;80:215A.
 15. Schulman FY, Krafft AE, Janczewski T. Feline cutaneous fibropapillomas (sarcoïd): clinicopathologic findings and association with papillomavirus infection. *Vet Pathol.* 2000;37:532.
 16. Simpson J, Liang Q, Thompson B, Nelson J, Girard J. Application of MOLDI-TOF/MS for the multiplex detection of hereditary hemochromatosis. 48th ASMS Conference on Mass Spectrometry and Applied Topics; June 11-15, 2000; Long Beach, Calif.
 17. Taubenberger JK, Reid AH, Janczewski TA, Fanning TG. Characterization of the 1918 influenza virus hemagglutinin and neuraminidase genes. Options for the Control of Influenza IV, September 2000; Crete, Greece.
 18. Taubenberger JK. Characterization of the 1918 "Spanish" influenza virus. *Vaccines 2000*, Washington, DC, October 2000.



Robert L. Becker, Jr, Col, USAF, MC
Chief
Date of Appointment — 1 April 1988

DIVISION OF QUANTITATIVE PATHOLOGY

MISSION

The Division of Quantitative Pathology conducts research and educational programs in flow cytometry, image analysis, morphometry, and artificial intelligence as applied to pathology. We develop applications of these techniques for consultation, as appropriate.

STAFF

Medical:

Robert L. Becker, Jr, Col, USAF, MC
William R. Oliver, MD

Scientific:

Alison Director-Myska, PhD
Annette Geissel, HT, ASCP
Michelle Webb

DIAGNOSTIC CONSULTATION

Cases	Completed
Flow/Image	76
Forensic	30

The Flow Cytometry Consultation Service reported on 76 cases from paraffin-embedded material for DNA ploidy determination. This is a decrease from 1999, related in part to closure of the service during November and December to move the division to a new site. Most consultations were on specimens from molar pregnancies, where ploidy pattern helps to distinguish a partial mole from a complete mole or hydropic abortus. The Forensic Image Analysis Service consulted on 30 cases for image enhancement and analysis in support of the OAFME.

EDUCATION

Presentations and Seminars: Division staff made 12 presentations at meetings and conferences in 2000. Complete dates and titles are listed at the end of this report.

Trainees:

1. Two Hematopathology fellows each received 10 days of cytogenetics training based on comparative genomic hybridization techniques. One PhD scientist received 40 days of training in CGH and spectral karyotyping.
2. In conjunction with approved research projects, 1 graduate student/scientist received a

year of research training in development and application of comparative genomic hybridization and spectral karyotyping.

3. In conjunction with a funded project to develop a repository of patterned injury data, 1 forensic pathologist received 2 months of half-time training in picture archival and communications systems (digital image acquisition, image quality evaluation, image archiving and display).

RESEARCH

Publications: The division published 1 journal article and 2 abstracts in 2000. Complete references are given at the end of this report.

Projects: The division was the lead activity on 2 research protocols open during 2000, and primary collaborator with other departments on 5 others:

1. Prognosis and Management of Prostatic Cancer: Impact of Information from Flow Cytometry and Image Analysis.
2. Transformation of Follicular Lymphoma: A Cytogenetic Study (Department of Hematopathology as prime).
3. Comparative Genomic Hybridization (CGH) of Uveal Melanoma (Department Ophthalmic Pathology as prime).
4. Comparative Genomic Hybridization (CGH) of Pediatric Gastrointestinal Stromal Tumors.
5. Evaluation of Liver Histology (Department of Hepatic and Gastrointestinal Pathology as prime).
6. Morphometric Analysis of Distribution of Fibrosis (Department of Hepatic and Gastrointestinal Pathology as prime).
7. Evaluation of Body Armor Deformation Due to Projectile Impact (Department of Orthopedic Pathology as prime).

Research Funds Received: The division received, through the Hepatic Pathology Registry, industry support exceeding \$50,000 for a research associate to perform hepatic collagen measurements to test drug efficacy against hepatitis C progression.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. FBI, Digital Image Visualization Consultation.
2. Uniformed Services University of the Health Sciences, Finite Element Analysis of Shaken Baby Syndrome.
3. Laboratory of Biochemical Genetics, Division of Intramural Research Programs, National Institute of Mental Health, Gene Therapy of Mitochondrial DNA Mutations: Mutant ATPase6 Conferring NARP (Neuropathy, Ataxia, Retinitis Pigmentosa) Can Be Displaced by an Oligomycin-resistant Variant of the Chinese Hamster ATPase6 Gene Inserted into the Nuclear Genome.

Civilian:

1. District of Columbia Medical Examiner, the Maryland State Medical Examiner, and Boeing Corporation, Development of Far Infrared (Hyperspectral) Imaging Instruments and Methods for Evaluating Patterned Injuries.
2. Eight State/Regional Medical Examiner Offices, Production of an Atlas of Patterned Injury.
3. Institute for Forensic Imagery and Purdue University, Establishing Standards in Forensic Digital Photography.
4. University of North Carolina at Chapel Hill, Center of Excellence for Computer Vision and 3D Scene Analysis.

Interdepartmental:

1. Department of Ophthalmic Pathology, Comparative Genomic Hybridization and Spectral Karyotyping of Uveal Melanoma Cell Lines and Paraffin-embedded Tumors.
2. Department of Hematopathology, Genomic Screening (Comparative Genomic Hybridization) of Follicular Center Cell Lymphomas to Characterize Changes Associated with

Progression.

3. Department of Orthopedic Pathology, 3-dimensional Modeling of Body Armor and Skeletal Deformation Incident to Projectile Impact.
4. Human Developmental Anatomy Center, Acquisition of Whole-section Mosaicked Images for Construction of Visible Embryo Data Sets.
5. Division of Hepatic Pathology, Department of Hepatic and Gastrointestinal Pathology, Measurement of Collagen (Fibrosis and Scarring) in Liver, Evaluating Tissue from Patients in a Trial of Tenovir Treatment for Hepatitis C.
6. Division of Prenatal, Perinatal and Placental Pathology, Investigation of Haploidy in Molar Conceptus Tissue.
7. AFIP Scientific Computing Group, Enhance LAN Security and Assess Effects from Attempted Intrusions.
8. Division of Molecular Pathology, Histotechnology Support for Conduct of Various Research Projects.

Honors: Col Becker was awarded the Edward R. Stitt lectureship for 2000, by the Association of Military Surgeons of the United States.

Committees:

Offices/Committee Memberships in National or International Societies:

1. Scientific Working Group for National Standards in Forensic Imaging, FBI Proponent, WR Oliver.
2. Chair, National Image Interpretability and Reliability Standard Development Committee Application of NIIRS in Forensic Autopsy Pathology, National Association of Medical Examiners Proponent, WR Oliver.
3. Core Committee on Bioterrorism, National Association of Medical Examiners Proponent, WR Oliver.
4. Reviewer, Association for Computing Machinery/SIGGRAPH Workshop, 2000 Meeting, WR Oliver.
5. Contract Reviewer, National Library of Medicine Visual Human Segmentation Project, WR Oliver.
6. Cochair/Student Liaison, Environmental Mutagen Society Education and Student Members Committee, AE Director-Myska.
7. Environmental Mutagen Society Nominating Committee, AE Director-Myska.
8. Environmental Mutagen Society Membership Committee, AE Director-Myska.

Editorial Boards:

1. *Cell Vision*, RL Becker
2. *Electronic Journal of Pathology and Histology*, RL Becker

Manuscripts Reviewed:

American Journal of Forensic Medicine and Pathology, WR Oliver

Official Trips (funding agency in parentheses):

1. February 2000, Reno, Nev, American Academy of Forensic Sciences, WR Oliver (AFIP).
2. April 2000, New Orleans, La, 31st Annual Meeting of the Environmental Mutagen Society, AE Director-Myska (AFIP).
3. April 2000, Quantico, Va, Advanced Practicum in Forensic Pathology, WR Oliver (FBI).
4. June 2000, Phoenix, Ariz, Annual Meeting of the Society of Toxicologic Pathologists, RL Becker (Registry of Toxicologic Pathology of Animals).
5. June 2000, Quantico, Va, Scientific Working Group for National Standards in Forensic Imaging, WR Oliver (FBI).
6. October 2000, Washington, DC, Applied Imagery and Pattern Recognition, WR Oliver (conference organizers).
7. October 2000, Indianapolis, Ind, National Association of Medical Examiners, WR Oliver (AFIP).
8. October 2000, Nagoya, Japan, International Academy of Pathology, RL. Becker (ARP).

9. November 2000, Las Vegas, Nev, Annual Meeting of the Association of Military Surgeons of the United States, RL Becker (AMSUS).
10. December 2000, Quantico, Va, Scientific Working Group for National Standards in Forensic Imaging, WR Oliver (FBI).

Administrative: Col Becker served as primary AFIP coordinator for a \$1.2 million project to renovate new space at the AFIP Rockville Annex for various CAP activities, with project completion and move-in accomplished in Nov/Dec.

PRESENTATIONS

1. February 2000: Reno, Nev, American Academy of Forensic Sciences, "Engineering applications in forensic pathology," WR Oliver.
2. April 2000: New Orleans, La, Environmental Mutagen Society, "Characterization of structural and numerical chromosome aberrations in uveal melanoma cell lines using spectral karyotyping," AE Director-Myska.
3. April 2000: New Orleans, La, Environmental Mutagen Society, "A characterization of the gene dosage aberrations of uveal melanoma using comparative genomic hybridization," AE Director-Myska.
4. April 2000: Washington, DC, Armed Forces Institute of Pathology, "The molecular cytogenetics of uveal melanoma," AE Director-Myska.
5. April 2000: Quantico, Va, Advanced Practicum in Forensic Pathology, "Applications of digital imaging in forensic pathology," WR Oliver.
6. June 2000: Phoenix, Ariz, Society of Toxicologic Pathologists, "Advanced digital imaging in telepathology," RL Becker.
7. June 2000: Quantico, Va, Scientific Working Group for National Standards in Forensic Imaging, "Image quality metrics in forensic image processing," WR Oliver.
8. September 2000: Washington, DC, Armed Forces Institute of Pathology, "FISHing for answers: DNA hybridization techniques in research and clinical genetics," AE Director-Myska.
9. October 2000: Nagoya, Japan, International Academy of Pathology, "Ancillary and emerging technologies in digital imaging," RL Becker.
10. November 2000: Las Vegas, Nev, Association of Military Surgeons of the United States, Edward R. Stitt Award Lecture, "Pathology – fitting into the picture of health," RL Becker.
11. November 2000: Bethesda, Md, Foundation for Advanced Education in the Sciences, "FISHing for answers: DNA hybridization techniques in research and clinical genetics," AE Director-Myska.
12. December 2000: Quantico, Va, Scientific Working Group for National Standards in Forensic Imaging, "Image processing in forensic pathology," WR Oliver.

PUBLICATIONS

Journal Articles

Malkoff D, Oliver WR. Hyperspectral imaging applied to forensic medicine. *Proceedings of the SPIE*. 2000;3920:108-116.

Abstracts

1. Director-Myska AE, White JS, Niederkorn JY, McLean IW. Characterization of structural and numerical chromosome aberrations in uveal melanoma cell lines using spectral karyotyping. *Environ Mol Mutagen*. 2000;35(suppl 31):20.
2. White JS, McLean IW, Nath J, Becker RL, Director-Myska AE. A characterization of the chromosomal aberrations of uveal melanoma. *Environ Mol Mutagen*. 2000;35(suppl 31):66.



Eric S. Suarez, CDR, MC, USN
 Chief
 Date of Appointment — 1 December 2000

DIVISION OF PRENATAL, PERINATAL AND PLACENTAL PATHOLOGY

MISSION

The Division of Prenatal, Perinatal, and Placental Pathology provides extramural and intramural consultation on pediatric, placental, and gestational pathology; engages in research activities concerning pediatric pathology and gestational disorders; and provides the medical community with educational opportunities for the study of pediatric, placental, or gestational pathology.

STAFF

Medical:

Eric S. Suarez, CDR, MC, USN, Chief
 Glenn E. Dickey, Col, USAF, MC

Administrative:

(A) Sharon J. Osenbach, Secretary (DAC)
 Sheila Norrington, Floor Manager
 Michelle Block, Floor Manager

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	188
Army	93
Navy	59
Air Force	36
Federal	6
VA	0
USPHS	6
OFA	0
Civilian	234
Interdepartmental	113
Total	541

223 cases for consultation and 26 for education required the following types of procedures and analyses:

- H&E stains: 928 slides
- Special stains: 108 slides
- Immunohistochemical staining: 1,155 slides
- Electron microscopy: 1 case
- Direct immunofluorescence: 4 tests for 1 case
- Molecular biology examination: 2 tests for 1 case

- Wet tissues cut: 465
- Total recuts studied: 2,083
- Contributor slides studied: 3,716

Our division made no change in the contributor diagnosis in 173 cases, a minor change in diagnosis in 213 cases, and a major change in diagnosis in 4 cases. We received 32 cases with no contributor diagnosis; 8 cases were recorded without coding.

Impact:

Many of the specimens submitted to the division in 2000 were accompanied by wet tissue or were full autopsies. The 127 autopsies were from multiple sources, including 42 civilian, 19 Army, 16 Navy, 7 Air Force, 1 Public Health Service, and 42 from other departments within the AFIP. During 2000, our staff examined wet tissues from 41 cases, including extensive dissections of many specimens from cases showing complex congenital cardiac or central nervous system malformations, and performed 17 full autopsies. Gross photographic, x-ray, and electron-microscopic evaluations were done as needed. It is difficult to determine the actual proportions of autopsy and surgical cases due to a large degree of overlap in the material received and accessioned. Forty-five autopsy cases had surgical material, such as placenta, that was not included separately in the tabulation of cases. Conversely, some full autopsy cases of fetal death were examined as surgicals. Of the outside consultations, 193 were from federal sources, including 93 Army, 59 Navy, 35 Air Force, and 6 USPHS cases. Most of the surgical cases of gestational trophoblastic disease were reviewed in cooperation with other divisions within the Department of Cellular Pathology, which provided flow cytometry for these specimens. Our division provided consultation to the Office of the Armed Forces Medical Examiner for the evaluation of multiple cases of infant death. In cooperation with the Department of Genitourinary Pathology, we evaluated cases of fetal death by interphase cytogenetics in order to determine the presence of chromosomal trisomies; this project was terminated, as the company that supplied the probes closed. Cases with multiple malformations were also evaluated with the help of experts from the Center for Medical and Molecular Genetics. Many of our consultation cases were discussed by telephone, and guidance was provided for the consulting pathologists. The faculty participated on multiple committees in support of the AFIP mission.

Consultation with contributing pathologists is an active educational process. If this is done by telephone, it increases the diagnostic yield, as the contributor can benefit from our opinion prior to beginning the autopsy procedure. As a consulting center, we provide expert opinions to multiple DoD hospitals and centers that would otherwise have to arrange similar services with private providers. We provide experts in pediatric pathology, perinatal medicine and clinical genetics who enhance the quality of genetic services in the Department of Defense. Our efforts are likely to increase with the implementation of specialty Web sites.

Our research efforts encompass 2 broad areas—clinicopathologic correlations and application of new technologies, aimed at the welfare and protection of the active-duty forces and their dependents.

Quality Assurance: Our division provided quality assurance by reviewing cases from multiple hospitals and centers from the Department of Defense and the Brazilian Society of Pathology, and by providing 1 case as part of the VA/QA program of quality assurance to military hospitals.

EDUCATION

Presentations and Seminars: Division staff made 11 presentations at conferences and seminars in 2000. Complete dates and titles are listed at the end of this report.

Consultation: Daily case review of interesting or difficult cases was established for quality control, to expedite the turnaround time of consultations and to discuss particular disease entities and recent developments in the field of pediatric pathology, as cases were received and examined. All consultation cases and most intramural consultations were peer reviewed. The department participated in the scheduled Metropolitan Pediatric Pathology Club meetings. At those meetings, following a journal review, interesting cases were shared and consulted on. Interesting cases were submitted as part of the 2000 AFIP/VA/Military Histopathology Quality Assessment Program. The cases were prepared on a quarterly basis and included pathology specimens from different systems. A combined conference with members of the Department of Radiologic Pathology was held quarterly; many cases submitted through the Radiologic Pathology Course were signed out or peer reviewed at that time. Many of these cases are very unusual or unique, and can be used as a combined resource by members of both specialties. Some of these cases were prepared and filed as part of the Pediatric Pathology Education Center.

Uncommon or difficult cases were frequently shared with, or sent to, other departments in consultation.

Courses and Trainees: Visitors came for variable periods of time; 5 residents from civilian institutions were sponsored for 2-week to 1-month rotations. Staff members lectured at courses sponsored by the AFIP. Drs. Dickey and Suarez collaborated as assistant clinical professors with the Uniformed Services University of the Health Sciences (USUHS), through instruction in the pathology labs and in clinicopathologic correlation sessions. Division staff also collaborated in the review of interesting pediatric pathology cases as part of the ARP Senior Resident Seminar.

Educational Aids: The division has various educational collections and resources. Slide collections from general pediatric pathology, placental pathology, infectious diseases of the placenta, pediatric soft tissue tumors, and liver and bone pathology are available. Videocassette collections from multiple aspects of pediatric pathology are also part of our educational effort. To help us in the differential diagnosis of cases with multiple congenital anomalies, we utilize the Ossum-Possum software computer program. With the help of Dr. Dickey, the National Museum of Medicine acquired the Perinatal Collaborative Study placenta collection.

RESEARCH

Publications: Division staff published 1 article and 1 abstract in 2000, as listed at the end of this report.

Projects: The division maintained 6 research projects in 2000:

1. Interphase Cytogenetic Analysis of Paraffin-Embedded Trisomic Placentas by Nonisotopic DNA In Situ Hybridization (ISH).
2. Cytogenetic Analysis of Paraffin-Embedded Placentas in Turner Syndrome (Monosomy X) by Nonisotopic DNA In Situ Hybridization (ISH).
3. Cutaneous Ciliated Cysts: A Reappraisal.
4. Laryngeal or Tracheal Atresia with Pulmonary Hyperplasia: Total Sequestration of the Lungs.
5. Histologic Placental Abnormalities in Trisomy 13, 18, and 21.
6. Infantile Lobar Emphysema: Clinicopathologic Correlations.

Research Funds Received:

Cytogenetic Analysis of Paraffin-Embedded Placentas in Turner Syndrome (Monosomy X) by Nonisotopic DNA In Situ Hybridization (ISH), ARP, \$6,400.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

J. Thomas Stocker, COL, MC, USA, Uniformed Services University of the Health Sciences, Bethesda, Md, Pulmonary Hyperplasia.

Civilian:

1. Cirilo Sotelo-Avila, MD, Cardinal-Glennon Children's Hospital, St. Louis, Mo, Cutaneous Ciliated Cyst Study
2. Edwina J. Popek, DO, Texas Children's Hospital, Houston, Tex, Placental Trisomy Histology Study

Interdepartmental:

Isabell A. Sesterhenn, Department of Genitourinary Pathology, Placental Trisomy Probe Study

Committees:

Chair, Articles of Incorporation and Bylaws Committee, Society for Pediatric Pathology, GE Dickey.

Faculty Appointments:

1. Uniformed Services University of the Health Sciences, Clinical Assistant Professor, Department of Pathology, ES Suarez.
2. Uniformed Services University of the Health Sciences, Clinical Assistant Professor, Department of Pathology, GE Dickey.
3. Howard University Hospital, Clinical Assistant Professor, Department of Pathology, ES Suarez.

4. Howard University Hospital, Clinical Assistant Professor, Department of Pathology, GE Dickey.

Professional Services:

1. Affiliate Staff Pathologist, Shady Grove Adventist Hospital, Rockville, Md, GE Dickey.
2. Affiliate Staff Pathologist, Washington Adventist Hospital, Takoma Park, Md, GE Dickey.
3. Board Member, NAMI/Maryland, ES Suarez.
4. Affiliate Staff Pathologist, Malcolm Grow USAF Medical Center, GE Dickey.

New Mission:

Consideration of Others Program, Action Officer, ES Suarez.

Official Trips:

1. March 2000, Society for Pediatric Pathology Spring Meeting, New Orleans, La, GE Dickey.
2. September 2000, Society for Pediatric Pathology Interim Meeting, Vancouver, British Columbia, GE Dickey.

Continuing Education: Division staff attended training courses in 2000, at the following venues:

1. Society for Pediatric Pathology Spring Meeting
2. USUHS Faculty Senate Research Day
3. 10th Annual Anatomic Pathology Course
4. Albert Einstein College of Medicine, Multimedia Reviews in Pathology
5. Society for Pediatric Pathology Interim Meeting
6. AFIP Professional Staff Conferences
7. Controversies and Advances in Surgical Pathology

PRESENTATIONS

1. February 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology of pediatric infectious disease," GE Dickey.
2. April 2000: Washington, DC, Anatomic Pathology Review and Update, AFIP 10th Annual Course, "Placenta and gestational trophoblastic disease," GE Dickey.
3. April 2000: Washington, DC, Anatomic Pathology Review and Update, AFIP 10th Annual Course, "Common pediatric tumors," ES Suarez.
4. April 2000: Bethesda, Md, National Naval Medical Center, Department of Pathology, Placental Pathology, "Slide seminar," GE Dickey.
5. May 2000: Washington, DC, National Senior Resident Symposium, "AFIP pediatric pathology slide seminar," GE Dickey.
6. May 2000: Washington, DC, National Senior Resident Symposium, "AFIP pediatric pathology slide seminar II," ES Suarez.
7. September 2000: Rockville, Md, Telepathology 2000, "Making telepathology work: imaging of placental, perinatal and pediatric lesions."
8. November 2000: Washington, DC, The George Washington University Medical Center, Department of Pathology, "Pediatric pathology," GE Dickey.
9. December 2000: Guadalajara, Mexico, Controversies and Advances in Anatomic Pathology, "Case presentations: mesenchymal dysplasia of placental villi," ES Suarez.
10. December 2000: Guadalajara, Mexico, Controversies and Advances in Anatomic Pathology, "Case presentations: melanotic neuroectodermal tumor of infancy," ES Suarez.
11. December 2000: Guadalajara, Mexico, Controversies and Advances in Anatomic Pathology, "Case presentations: developmental lesions of the lung," ES Suarez.

PUBLICATIONS

Journal Article:

Lonergan GJ, Rice RR, Suarez ES. Autosomal recessive polycystic kidney disease: radiologic-pathologic correlation [review]. *Radiographics*. 2000;20:837-855.

Abstract:

Conran RM, Dickey GE. Association of cystic renal disease with osteogenesis imperfecta. International Association of Pathology 2000 Annual Meeting; Nagoya, Japan; October 18, 2000.



Barry H. Thompson, M.D.
Chief
Date of Appointment — 1 January 1997

DIVISION OF CLINICAL GENETICS

MISSION

To provide clinical services, educational activities, and research in clinical genetics.

ORGANIZATION

The Division of Clinical Genetics has no operating subunits. The division was formed as part of the incorporation of the Center for Medical and Molecular Genetics into the Department of Cellular Pathology and Genetics.

STAFF

Medical:

Barry H. Thompson, MD, Division Chief
Charles J. Macri, CAPT, MC, USN, Associate Division Chief
Allan T. Bombard, Col, USAFR, MC, Individual Mobilization Augmentee

Scientific:

(D) John T. Simpson, PhD, Manager, Operational Genetics (DNA) Research Laboratory, ARP
(D) Francene Basalyga, MS Research Associate, ARP
(D) Pallittia A. Davis, BS, Research Associate, ARP

Administrative:

(D) Anthony D. Hawkins, MS, MT (ASCP)SBB, Administrator, (ARP)
(D) Grealon T. Gainey, HMC(SW), USN, Superintendent
(A) Sharon Osenbach, Secretary

ADMINISTRATIVE AND SCIENTIFIC ACCOMPLISHMENTS

The Center for Medical and Molecular Genetics (CMMG) was reorganized and merged with the Department of Cellular Pathology, to form the Department of Cellular Pathology and Genetics. As part of this reorganization, the laboratory activities of CMMG were eliminated, and the remainder of CMMG became the Division of Clinical Genetics. One member of the laboratory staff was reassigned to the Division of Molecular Pathology, which was given the responsibility of providing genetics laboratory services; the remainder of the laboratory staff departed the Institute, as did most members of the administrative staff.

With this reorganization came the opportunity for redeployment of resources. Freed financial resources will be used to hire genetic counselors, and these counselors will be placed at the National Naval Medical Center in a pilot program to expand genetics services. Laboratory resources will be used to expand the selection of genetics test offerings.

Faculty Appointments:

1. USUHS, Associate Professor, Obstetrics and Gynecology – CJ Macri
2. USUHS, Associate Professor, Pediatrics and Genetics – BH Thompson

PUBLICATION

Journal Article

Ries A, Kopelman JN, Macri C. Laboratory testing for preeclampsia: result trends and screening recommendations. *Mil Med.* 2000;165:546-548.



Susan L. Abbondanzo, MD
 Chair
 Date of Appointment — 1 May 1994

DEPARTMENT OF HEMATOPATHOLOGY

MISSION

The Department of Hematopathology renders expert consultation on cases involving the pathology of the hematopoietic system. Cases are submitted by the Departments of Defense and Veterans Affairs, and by civilian hospitals worldwide. Staff members participate in various local and national educational and research endeavors involving topics related to hematopathology.

STAFF

Medical:

- Susan L. Abbondanzo, MD, Chair
- Nadine S. Aguilera, MD, Assistant Chair
- Meenakshi A. Nandedkar, CDR, MC, USNR, Staff Pathologist
- (D) JoAnn W. Andriko, LTC, MC, USA, Staff Pathologist
- (D)* Gregory A. Derringer, MD, Staff Pathologist
- Stephen I. Fischer, Maj, USAF, MC, Staff Pathologist
- (A) Brad Davis, MAJ, MC, USA, Staff Pathologist
- (A) Jian Chen, MD, Callender-Binford Fellow
- (D) Rudy Yanuck, MD, Callender-Binford Fellow

Scientific:

- Wei-Sing Chu, MD, Supervisor, Immunology Laboratory
- Min Qi Wei, Technologist, Immunology Laboratory
- (D) Gail D. Hamilton, SSgt, USAF, Technologist, Immunology Laboratory

Administrative:

- Michele L. Kelly, Administrator/Secretary

**In Memorium:*

Gregory Derringer, 37, died tragically on August 20, 2000. His untimely departure has left a void in the department that is difficult to describe. Dr. Derringer was a well-respected staff hematopathologist who was active in lecturing, teaching, mentoring of fellows, and research. Dr. Derringer will be missed for many years to come.

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	42
Army	103
Navy	24
Air Force	115
Federal	526
VA	525
USPHS	0
OFA	1
Civilian	812
Interdepartmental	1,118
Total	2,698

1,598 cases for consultation, 184 for education, and 100 for research required the following types of procedures and analyses:

- H&E stains: 7,916 slides
- Special stains: 1,236 slides
- Immunohistochemical staining: 21,359 slides for 2,607 cases
- Electron microscopy: 1 case
- Direct immunofluorescence: 40 tests for 18 cases
- Molecular biology examination: 303 tests for 95 cases
- Total recuts studied: 34,275
- Contributor slides studied: 9,073

Our department made no change in the contributor diagnosis in 1,272 cases, a minor change in diagnosis in 275 cases, and a major change in diagnosis in 7 cases. We received 28 cases with no contributor diagnosis; no cases were recorded without coding.

The department's extensive interdepartmental service provided consultation on 1,580 intramural cases in 2000, with an average turnaround time of 5.18 days. The department also examined approximately 1,118 consultations for other AFIP departments. In 2000, 90% to 95% of cases accessioned to the department required additional workup such as hematoxylin-eosin recuts, special histochemical stains, and, primarily, immunohistochemical marker studies. Molecular diagnostic assays were also used in approximately 10% of cases. The department has its own state-of-the-art immunohistochemistry laboratory, which provides support for all intradepartmental (and many interdepartmental) cases. Using this laboratory, we supported numerous research projects within and outside the department, and introduced 6 new antibodies for use in paraffin sections: CD61, NFκ B, Ik B, CD138, C-kit (C-19), and CD7.

In 2000, the Hematopathology Immunohistochemical Laboratory processed a total of 21,323 slides for 2,607 cases. The Molecular Diagnostic Division of the Department of Cellular Pathology, with whom the Department of Hematopathology has a close working relationship, collaborated in the development and investigation of new assays, including a semiquantitative assay for C-myc and bcl-2.

Impact:

1. We are the only ACGME-accredited hematopathology training program in the 3 branches of the military (Army, Navy, and Air Force).
2. We published the most up-to-date series of lymphoplasmacytoid lymphomas.
3. We published one of the largest series of thyroid lymphomas.

Quality Assurance:

Our laboratory is CAP-accredited. Throughout the year, the department participated in the quarterly CAP proficiency examination for immunohistochemistry laboratories. We also participate in at least 25% quality assurance of all consultation cases, with monthly reports to the Office of Quality Assurance.

EDUCATION

Presentations and Seminars: Members of the department gave 41 presentations, for a total of 2,266 man-hours. Dates and titles are listed at the end of this report. The department also conducts a 30- to 60-minute slide conference with visitors and staff for active cases 4 to 5 times per week. We conduct a quarterly clinicopathologic conference with the Department of Radiologic Pathology at the AFIP.

Trainees: The department had 1 Callender-Binford fellow in 2000 (251 training days), with responsibilities involving service work (under the constant supervision of a credentialed staff pathologist), research, and lecturing. We had visiting residents and scientists for 6 months (6 visitors, 125 trainee-days). We also take part in the Washington, DC Science and Engineering Apprentice Program, in which a high school student apprentices in the laboratory and department for 6 weeks (39 trainee-days).

The department has been accredited by the Accreditation Council for Graduate Medical Education for a hematopathology fellowship program. Education for 2 hematopathology fellows-in-training has been approved. The program utilizes the clinical laboratories and staff at Walter Reed Army Hospital and the National Naval Medical Center in a combined institutional fellowship headed at the AFIP. It is the only accredited military graduate medical

education program in hematopathology.

Educational Aids: The department maintains slide study sets (under protocol), Kodachrome sets, and a Web site maintained by a staff member. All study sets and tools were updated in 2000.

RESEARCH

Publications: The department published 13 journal articles and 9 abstracts in 2000. Complete bibliographic information appears at the end of this report.

Projects: The department had 12 active research protocols as of December 31, 2000, and several ongoing research projects, including the following:

1. Ultrasound Technology in Tissue Fixation
2. Atypical Follicular Hyperplasia in Children
3. CD117 Expression in Extramedullary Myeloid Tumors
4. Splenic Nonlymphomatous Neoplasms
5. Lymphoplasmacytoid Lymphoma/Immunocytoma
6. Follicular Dendritic Patterns in Nodular Lymphoma
7. Ultrasound Fixation and Its Affect on Molecular Genetic Studies
8. Eosinophilic Lymphadenitis
9. Immunohistochemistry Multiwell Staining System
10. Follicular Lymphoma of the Skin

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Elaine S. Jaffe, MD, National Institutes of Health, Histiocytic Neoplasms
2. Frederick W. Miller, MD, PhD, Food and Drug Administration, Immunophenotypic Analysis of Silicone Breast Implants

Civilian:

1. Steven H. Swerdlow, MD, University of Pittsburgh, Immunocytoma, Interfollicular Small Lymphocytic Lymphoma and Lymphoplasmacytoid Lymphoma/Immunocytoma
2. Frank Bauer, MD, St. Francis Hospital, Hartford, Conn, Cutaneous Follicle Center Lymphoma

International:

J. Geradts, MD, Oxford University, UK, Tumor Suppressor Genes in Malignancy

Interdepartmental:

1. Dr. M-M Tomaszewski, Department of Dermatopathology, Cutaneous Follicle Center Lymphoma
2. Dr. J. Moad, Department of Dermatopathology, Cutaneous Follicle Center Lymphoma
3. Dr. T. O'Leary, Department of Cellular Pathology, Transformation of Low-Grade Lymphoma
4. Dr. J. Lichy, Department of Cellular Pathology, Semiquantitative Method for Detecting Tumor Markers

Committees:

Manuscripts Reviewed:

SL Abbondanzo

1. *Mayo Clinic Proceedings*
2. *Cancer*
3. *Archives of Pathology and Laboratory Medicine*
4. *American Journal of Clinical Pathology*

Faculty Appointments:

1. Georgetown University Medical Center, Department of Pathology, Adjunct Clinical Assistant Professor, SL Abbondanzo

2. Walter Reed Army Medical Center, Staff Pathologist, JW Andriko
3. Uniformed Services University of the Health Sciences, Adjunct Associate Professor, NS Aguilera
4. Frederick Memorial Hospital, Frederick, Md, Part-time Staff Pathologist, JW Andriko
5. Maryland General Hospital, Baltimore, Md, Part-time Staff Pathologist, JW Andriko
6. Civista Medical Center, La Plata, Md, Part-time Staff Pathologist, JW Andriko
7. St. Mary's Hospital, Leonardtown, Md, Part-time Staff Pathologist, JW Andriko
8. Uniformed Services University of the Health Sciences, Adjunct Associate Professor, MA Nandedkar
9. Howard University Hospital, Department of Dermatology, Clinical Assistant Professor, MA Nandedkar
10. Walter Reed Army Medical Center, Staff Pathologist, MA Nandedkar

New Mission:

With the accreditation of our fellowship program, we have added a collaborative education mission with NNMC and WRAMC.

Official Trips (funding agency in parentheses):

1. November 2000, 3rd European Course of Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using Computer Monitor: A Practical Approach, Genoa, Italy, MA Nandedkar (European Society)
2. November 2000, AFIP Diagnostic Surgical Pathology, Savannah, Ga, SL Abbondanzo(AFIP)
3. September 2000, First Joint Meeting in Pathology AFIP/IAP, Buenos Aires, Argentina, SL Abbondanzo (IAP).
4. June 2000, OECI/AFIP Joint Meeting, Valencia, Spain, SL Abbondanzo (AFIP)
5. March 2000, US and Canadian Academy of Pathology, SL Abbondanzo, NS Aguilera, GA Derringer, SI Fisher (AFIP)
6. September 2000, Wilford Hall Residents Program, San Antonio, Tex, NS Aguilera (US Air Force)

Continuing Education:

Department staff attended the following training courses during 2000 (funding agency in parentheses):

1. Annual US and Canadian Academy of Pathology (AFIP)
2. AFIP Weekly Professional Staff Conference
3. AFIP Annual Anatomic Pathology Review and Update Course (AFIP)

Public Affairs Reports:

AFIP Letter 158, October 2000, "AFIP mourns loss of Gregory A. Derringer, MD."

PRESENTATIONS

1. February 2000: Washington, DC, WRAMC, "Lymphomas and leukemias involving skin," MA Nandedkar.
2. April 2000: Silver Spring, Md, Armed Forces Institute of Pathology Anatomic Review Course, "High-grade lymphoma," SI Fisher.
3. April 2000: Silver Spring, Md, Armed Forces Institute of Pathology Anatomic Review Course, "Hodgkin's disease," MA Nandedkar.
4. April 2000: Silver Spring, Md, Armed Forces Institute of Pathology Anatomic Review Course, "Small B-cell lymphoma," MA Nandedkar.
5. April 2000: Silver Spring, Md, Armed Forces Institute of Pathology Anatomic Review Course, "Reactive lymphadenopathies," GA Derringer.
6. April 2000: Washington, DC, Armed Forces Institute of Pathology, Medical Students Symposium, "Benign reactive lymphadenopathy," SL Abbondanzo.
7. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Benign reactive lymphadenopathy," SL Abbondanzo.
8. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and

- Extranodal Sites: A Glass Slide Workshop, "Small B-cell lymphomas," SL Abbondanzo.
9. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Extranodal lymphomas," SL Abbondanzo.
 10. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Architecture and histology of the normal lymph node," NS Aguilera.
 11. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "T-cell lymphomas," NS Aguilera.
 12. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Immunohistochemistry as an adjunct to hematopathology," GA Derringer.
 13. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Hodgkin's disease," MA Nandedkar.
 14. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "HIV-related lymphadenopathy," MA Nandedkar.
 15. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Histocytic disorders," JW Andriko.
 16. May 2000: Bethesda, Md, Armed Forces Institute of Pathology, Lymph Nodes and Extranodal Sites: A Glass Slide Workshop, "Discussion of unknown cases," SL Abbondanzo, NS Aguilera.
 17. June 2000: Valencia, Spain, OEIC/AFIP Joint Meeting, "Hematopathology I," SL Abbondanzo.
 18. June 2000: Valencia, Spain, OEIC/AFIP Joint Meeting, "Hematopathology II," SL Abbondanzo.
 19. August 2000: Washington, DC, Veterans Affairs Hospital, "Hodgkin's disease" MA Nandedkar.
 20. August 2000: Arlington, Va, Armed Forces Institute of Pathology, HIV Infection and AIDS Meeting, "Hematologic manifestations of AIDS," MA Nandedkar.
 21. August 2000: Arlington, Va, Armed Forces Institute of Pathology, HIV Infection and AIDS Meeting, "Lymphoid hyperplasia," MA Nandedkar.
 22. August 2000: Arlington, Va, Armed Forces Institute of Pathology, HIV Infection and AIDS Meeting, "Lymphomas in HIV infections," MA Nandedkar.
 23. September 2000: Buenos Aires, Argentina, First Joint Meeting in Pathology AFIP/IAP, "Classification of lymphomas with an emphasis on extranodal sites," SL Abbondanzo.
 24. September 2000: Buenos Aires, Argentina, First Joint Meeting in Pathology AFIP/IAP, "Immunohistochemistry in the diagnosis of hematomolymphoid lesions," SL Abbondanzo.
 25. September 2000: Bethesda, Md, Armed Forces Institute of Pathology, 11th Annual Review of Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the GI Tract, "Lymphomas and lymphoid hyperplasia of the gastrointestinal tract," SL Abbondanzo.
 26. September 2000: San Antonio, Tex, Wilford Hall Residents Program, "T and NK-lymphomas," NS Aguilera.
 27. September 2000: San Antonio, Tex, Wilford Hall Residents Program, "B-cell lymphomas," NS Aguilera.
 28. September 2000: San Antonio, Tex, Wilford Hall Residents Program, "Normal lymph node," NS Aguilera.
 29. September 2000: Washington, DC, Veterans Affairs Hospital, "Reactive lymphadenopathies," MA Nandedkar.
 30. October 2000: San Juan, Puerto Rico, Veterans Affairs Hospital, "Telepathology, the current issues," MA Nandedkar.
 31. October 2000: San Juan, Puerto Rico, Veterans Affairs Hospital, "Many facets of HIV disease," MA Nandedkar.
 32. November 2000: Savannah, Ga, Armed Forces Institute of Pathology, Diagnostic Surgical Pathology, "Hematopathology I," SL Abbondanzo.
 33. November 2000: Savannah, Ga, Armed Forces Institute of Pathology, Diagnostic Surgical

- Pathology, "Hematopathology II," SL Abbondanzo.
34. November 2000: Washington, DC, Walter Reed Army Medical Center, Clinical Laboratory Officers Course, "Hematopoiesis," BJ Davis.
 35. November 2000: Genoa, Italy, 3rd European Course on Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using a Computer Monitor, a Practical Approach, "Low grade B-cell lymphoma," MA Nandedkar.
 36. November 2000: Genoa, Italy, 3rd European Course on Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using a Computer Monitor, a Practical Approach, "Reactive lymphadenopathies," MA Nandedkar.
 37. November 2000: Genoa, Italy, 3rd European Course on Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using a Computer Monitor, a Practical Approach, "AIDS-related lymph node and bone marrow diseases," MA Nandedkar.
 38. November 2000: Genoa, Italy, 3rd European Course on Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using a Computer Monitor, a Practical Approach, "Hodgkin's disease" MA Nandedkar.
 39. November 2000: Genoa, Italy, 3rd European Course on Telepathology: The Histologic and Cytologic Diagnosis of Lymphoma by Using a Computer Monitor, a Practical Approach, "AFIP experience of telepathology," MA Nandedkar.
 40. December 2000: Washington, DC, Walter Reed Army Medical Center, Clinical Laboratory Officers Course, "Hemoglobinopathies," BJ Davis.
 41. December 2000: Washington, DC, Walter Reed Army Medical Center, National Capital Consortium Pathology Residents Lecture, "Acute myelogenous leukemia," BJ Davis.

PUBLICATIONS

Journal Articles:

1. Abbondanzo SL, Rush W, Bijwaard KE, Koss MN. Nodular lymphoid hyperplasia of the lung: a clinicopathologic study of 14 cases. *Am J Surg Pathol.* 2000;24:587-597.
2. Aguilera NS, Tavassoli FA, Chu WS, Abbondanzo SL. T-cell lymphoma presenting in the breast: a histologic, immunophenotypic and molecular genetic study of four cases. *Mod Pathol.* 2000;13:599-605.
3. Bahler DW, Aguilera NS, Chen CC, Abbondanzo SL, Swerdlow SH. Histological and immunoglobulin VH gene analysis of interfollicular small lymphocytic lymphoma provides evidence for two types. *Am J Pathol.* 2000;157:1063-1070.
4. Burke AP, Andriko JA, Virmani R. Anaplastic large cell lymphoma (CD 30+), T-phenotype, in the heart of an HIV-positive man. *Cardiovasc Pathol.* 2000;9:49-52.
5. Conde-Sterling DA, Aguilera NS, Nandedkar MA, Abbondanzo SL. Immunoperoxidase detection of CD10 in precursor T-lymphoblastic lymphoma/leukemia: a clinicopathologic study of 24 cases. *Arch Pathol Lab Med.* 2000;124:704-708.
6. Derringer GA, Thompson LD, Frommelt RA, Bijwaard KE, Heffess CS, Abbondanzo SL. Malignant lymphoma of the thyroid gland: a clinicopathologic study of 108 cases. *Am J Surg Pathol.* 2000;24:623-639.
7. Nandedkar MA, Abbondanzo SL, Miettinen M. Extramedullary manifestation of multiple myeloma (systemic plasmacytoma) that simulates hemangioma. *Arch Pathol Lab Med.* 2000;124:628-631.
8. Neuhauser TS, Derringer GA, Thompson LD, Fanburg-Smith JC, Miettinen M, Saaristo A, Abbondanzo SL. Splenic angiosarcoma: a clinicopathologic and immunophenotypic study of 28 cases. *Mod Pathol.* 2000;13:978-987.
9. Neuhauser TS, Tavassoli FA, Abbondanzo SL. Follicle center lymphoma involving the female genital tract: a morphologic and molecular genetic study of three cases. *Ann Diagn Pathol.* 2000;4:293-299.
10. Rush WL, Andriko JA, Galateau-Salle F, Brambilla E, Brambilla C, Ziany-bey I, Rosado-de-Christenson ML, Travis WD. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol.* 2000;13:747-754.
11. Rush WL, Andriko JA, Taubenberger JK, Nelson AM, Abbondanzo SL, Travis WD, Koss MN. Primary anaplastic large cell lymphoma of the lung: a clinicopathologic study of five patients. *Mod Pathol.* 2000;13:1285-1292.

12. Thompson LD, Derringer GA, Wenig BM. Amyloidosis of the larynx: a clinicopathologic study of 11 cases. *Mod Pathol.* 2000;13:528-535.
13. Tomaszewski M-M, Abbondanzo SL, Lupton GP. Extranodal marginal zone B-cell lymphoma of the skin: a morphologic and immunophenotypic study of 11 cases. *Am J Dermatopathol.* 2000;22:205-211.

Abstracts:

1. Abbondanzo SL, Rush W, Bijwaard KE, Koss MN. Nodular lymphoid hyperplasia of the lung: a clinicopathologic study of 14 cases. *Mod Pathol.* 2000;13:206A. Abstract 1212.
2. Aguilera NSI, Tavassoli FA, Abbondanzo SL. T-cell lymphoma presenting in the breast: a clinicopathologic study of 4 cases. *Mod Pathol.* 2000;13:141A. Abstract 824.
3. Aguilera NSI, Tomaszewski M-M, Moad JC, Bauer FA, Taubenberger JK, Abbondanzo LS. Cutaneous follicle center lymphoma (FCL): a study of 24 cases. *Mod Pathol.* 2000;13:59A. Abstract 333.
4. Beasley MB, Abbondanzo S, Chu WS, Brambilla E, Hasleton PS, Travis WD. Cyclin D1 (CD1) expression in pulmonary neuroendocrine (NE) tumors. *Mod Pathol.* 2000;13:207A. Abstract 1218.
5. Derringer GA, Aguilera NSI, Thompson LDR, Neuhauser TS, Abbondanzo SL. Lymphocyte-rich classical Hodgkin's disease: a clinicopathologic study of 16 cases. *Mod Pathol.* 2000;13:147A. Abstract 855.
6. Gaertner EM, Tsokos M, Derringer GA, Neuhauser TS, Arcerio CA, Andriko JW. Interdigitating dendritic cell sarcoma: a report of 4 cases. *Mod Pathol.* 2000;13:149A. Abstract 872.
7. Neuhauser TS, Derringer GA, Thompson LDR, Fanburg-Smith JC, Miettinen M, Abbondanzo SL. Splenic angiosarcoma: a clinicopathologic and immunophenotypic study of 28 cases. *Mod Pathol.* 2000;13:14A. Abstract 59.
8. Neuhauser TS, Derringer GA, Thompson LDR, Fanburg-Smith JC, Aguilera NSI, Andriko JA, Abbondanzo SL. Splenic inflammatory myofibroblastic tumor ("inflammatory pseudotumor"): a clinicopathologic and immunophenotypic study of 12 cases. *Mod Pathol.* 2000;13:14A. Abstract 60.
9. Rush W, Andriko J, Galateau-Salle F, Brambilla E, Brambilla C, Ziany-bey I, Rosado-de-Christenson M, Travis W. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol.* 2000;13:216A. Abstract 1274.



Hernando Mena, COL, MC, USA
Chair
Date of Appointment — 6 March 1995

DEPARTMENT OF NEUROPATHOLOGY AND OPHTHALMIC PATHOLOGY

MISSION

The Department of Neuropathology and Ophthalmic Pathology supports the mission of the Armed Forces Institute of Pathology by providing diagnostic consultation and conducting research and educational programs related to diseases of the nervous, neuromuscular, and visual systems.

ORGANIZATION

The department is organized into 3 divisions.

1. Division of Neuropathology — James M. Henry, MD
2. Division of Neuromuscular Pathology — Kondi Wong, LtCol, USAF, MC
3. Division of Ophthalmic Pathology — Ian W. McLean, MD

STAFF

Divisions of Neuropathology and Neuromuscular Pathology

Medical:

- Hernando Mena, COL, MC, USA, Chair
- (D) Alan L. Morrison, CDR, MC, USN, Assistant Chair
- James M. Henry, MD, Chief, Division of Neuropathology, ARP
- Kondi Wong, LtCol, USAF, MC, Chief, Division of Neuromuscular Pathology
- Glenn D. Sandberg, LTC, MC, USA, Assistant Chair
- (D) Maria Rita Santi, MD, Second-Year Resident, ARP
- Guerard P. Grice, CDR, MC, USNR, Second-Year Resident
- Brock J.K. Kaya, MD, Second-Year Resident
- (A) John-Paul Bouffard, Maj, USAF, MC, First-Year Resident

Scientific:

- Ives Valenzuela, Neuromyologist
- Tong Hui Mixon, Histotechnologist
- Muhammed Waheed, Histology Technician

Administrative:

- Daleta Johnson, Secretary

DIAGNOSTIC CONSULTATION

Division of Neuropathology	
Cases	Completed
Military	149
Army	77
Navy	46
Air Force	26
Federal	196
VA	188
USPHS	0
OFA	8
Civilian	809
Interdepartmental	163
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Total	1,317

Division of Neuromuscular Pathology	
Cases	Completed
Military	106
Army	55
Navy	34
Air Force	17
Federal	99
VA	69
USPHS	0
OFA	30
Civilian	406
Interdepartmental	13
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Total	624

2,004 cases for consultation, education, and research required the following types of procedures and analyses:

- H&E stains: 10,221 slides
- Special stains: 15,012 slides
- Immunohistochemical staining: 7,586 slides
- Direct immunofluorescence: 674 tests for 75 cases
- Molecular biology examination: 5 tests for 2 cases
- Total recuts studied: 32,819
- Contributor slides studied: 7,432
- Electron microscopy blocks: 4,732
- Frozen sections: 480
- Frozen section slides: 5,760
- Neuromuscular cases: 541
- Toluidine blue slides for electron microscopy: 1,012
- Special stain slides: 2,000

The Divisions of Neuropathology and Neuromuscular Pathology made no change in the contributor diagnosis in 624 cases, a minor change in diagnosis in 188 cases, and a major change in diagnosis in 8 cases. We received 284 cases with no contributor diagnosis; 49 cases were recorded without coding.

Cases submitted to Neuropathology and Neuromuscular Pathology include surgical specimens, whole brains obtained at autopsy, skeletal muscle biopsy specimens from cases of medical disorders of skeletal muscle, peripheral nerve biopsy specimens, and skin biopsy specimens from suspected cases of storage disease. All cases accompanied by radiologic studies are reviewed in conference with the neuroradiology staff of the Department of Radiologic Pathology. Whole brains are serially sectioned and studied according to standardized protocols for specific disorders. Skeletal muscle biopsy specimens are routinely examined using histochemical stains, enzyme histochemical methods, and in selected cases with immunohistochemistry and electron microscopy. Peripheral nerve and skin biopsy material are evaluated with light and electron microscopy. The department also provides neuropathology review on selected cases from the Office of the Armed Forces Medical Examiner and consultation for Veterans Affairs claims.

Impact:

Department staff have made significant contributions to the study of pathological features of childhood ataxia with diffuse central nervous system hypomyelination syndrome, cerebral amyloid angiopathy associated with brain infarcts in nondemented individuals, and in the 2000 WHO classification of central nervous system tumors.

The staff's diagnostic expertise is constantly in demand for a variety of lectures at military and civilian hospitals, including Walter Reed Army Medical Center (WRAMC), National Naval Medical Center (NNMC), and Uniformed Services University of the Health Sciences (USUHS).

A close relationship has been established with the Department of Pathology and the Neurosurgery Service, WRAMC, for the interpretation of intraoperative consultations and tumor board cases.

Ours is the only military program fully accredited by the Accreditation Council for Graduate Medical Education in the military services for training of medical officers, including neurosurgeons and neurologists, in the field of neuropathology. Our trainees have consistently received high marks in exams leading to board certification, and many have achieved international recognition for their research in neuropathology. Military and civilian physicians in training in neurology, neurosurgery, and pathology from medical centers nationwide and abroad regularly attend the semiannual, intensive, 3-month didactic course designed to support preparation for specialty board certification.

Deployments:

1. March 15, 2000, Washington, DC. Walter Reed Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
2. April 9-10, 2000, Tacoma, Wash. Madigan Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
3. April 18, 2000, Washington, DC. Walter Reed Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
4. June 14-15, 2000, Tacoma, Wash. Madigan Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
5. June 20, 2000, Washington, DC. Walter Reed Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
6. July 27, 2000, Washington, DC. Walter Reed Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
7. August 21-23, Tacoma, Wash. Madigan Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
8. August 26, Washington, DC. Walter Reed Army Medical Center, Consultant, Department of Pathology. GD Sandberg.
9. November 19-20, 2000, Tacoma, Wash. Madigan Army Medical Center, Consultant, Department of Pathology. GD Sandberg.

EDUCATION

Presentations and Seminars: Department staff participate in the following clinicopathologic conferences as part of our ongoing educational mission:

1. Department of Neuropathology, AFIP: Daily Signout Conference.
2. Department of Pathology, Walter Reed Army Medical Center: Weekly Intraoperative Diagnosis of Neurosurgical Specimens.

3. Department of Neuropathology, AFIP: Weekly Neuropathology/Neuroradiology Conference.
4. Department of Neuropathology, AFIP: Bimonthly Review of Muscle Biopsies with the Staff of the Connective Tissue Disease Section, NIH.
5. Walter Reed Army Medical Center: Monthly Neurosurgery Tumor Board.
6. Department of Pathology, Walter Reed Army Medical Center: Bimonthly Brain Cutting Session.
7. Department of Neuropathology, AFIP: Monthly Journal Club.

Department staff participated in the following seminars in 2000:

1. October 10-11, 2000: Philadelphia, Pa, Meet the Professor Workshops, Histologic Diagnosis of Muscle Disorders, American College of Rheumatology, Scientific Sessions.
2. October 14, 2000: Maebashi, Japan, Gunma University School of Medicine, Gunma Seminar on Brain Tumor Pathology.
3. October 16, 2000: Nagoya, Japan, Slide Seminar on Brain Tumors, 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology.
4. October 18, 2000: Nagoya, Japan, WHO Blue Book Presentation on CNS Tumors, 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology.

Courses: Members of the staff participated as faculty members in 5 AFIP-sponsored general pathology courses and 2 non-AFIP courses.

1. February 21-25, 2000: Bethesda, Md, 38th Annual Neuropathology Review (143 attendees, 715 trainee days, 5,720 hours).
2. January-March 2000: AFIP Intramural Neuropathology Course (13 attendees, 793 trainee days, 6,343 hours).
3. July-September 2000: AFIP Intramural Neuropathology Course (8 attendees, 456 trainee days, 3,648 hours).
4. April 24-29, 2000: Silver Spring, Md, 10th AFIP Annual Anatomic Pathology Review Course.
5. September 7-8, 2000: Concepcion, Chile, University of Concepcion, Curso de Neuropatologia Clinica.
6. September 27-29, 2000: Rockville, Md, Telepathology 2000 – Making Telepathology Work.
7. December 6-9, 2000: Guadalajara, Mexico, Actualizacion y Diagnostico en Patologia Quirurgica Conferencias y Taller.

Trainees: The department is fully approved for residency training in neuropathology by the Residency Review Committee for Pathology of the Accreditation Council for Graduate Medical Education. In 2000, the department had 3 full-time residents, for a total of 588 trainee days. Fourteen neurology and pathology residents rotated in the department from 9 to 57 days, for a total of 309 trainee days.

Educational Aids:

1. Departmental Library: Includes current editions of standard textbooks of neuropathology, surgical pathology, general pathology, neurology, neurosurgery, neuroradiology, neuroanatomy, cell biology, and others.
2. Syllabus of General Neuropathology: Consists of non-neoplastic lesions of the nervous system mounted on glass slides.
3. Syllabus of Neoplastic Lesions of the Central Nervous System: Consists of sections of tumors mounted on glass slides.
4. Histology: A Photographic Atlas: Includes a videodisc with over 7,000 color photographs of cells, organs, and tissues, including the nervous system.
5. Radiologic Atlas of Brain Tumors: Collection of 1,040 cases of brain tumors displayed on videodisc.

RESEARCH

Publications: Members of the staff contributed to the publication of 11 refereed journal articles, 7 abstracts, 3 book chapters, and 6 syllabi. Titles and dates of publication are listed at the end of this report.

Projects: The department had 23 officially approved research protocols open in 2000:

1. The Specificity of Florid Plaques in the Diagnosis of New Variant of Creutzfeldt-Jakob Disease
2. Neuronal Tumors of the CNS
3. Neuropathology of Diabetic Neuropathy in the Autonomic Nervous System of Streptozotocin-Treated Rats
4. Ischemic Lesions of the Brain that Mimic Brain Tumors
5. Pilocytic Astrocytoma of the Infundibulum
6. Gangliogliomas of the Central Nervous System
7. Immunohistochemical Characterization of Oligodendrogliomas and Related Lesions
8. Parkinson's Disease: A Clinicopathologic and Molecular Correlation of Postencephalitic and Japanese B Variants
9. Neuroglial Heterotopias and Encephaloceles of the Central Nervous System
10. Proliferation Markers of Potential Diagnostic and Prognostic Value in Astrocytomas WHO Grades II and III
11. Morphologic Clues to the Pathogenesis of Neuronopathic Gaucher Disease
12. Diffuse Axonal Injury in Pediatric Head Trauma
13. Gliomas in Children
14. SV40 Virus in Human Ependymomas
15. Genotypes of JC Virus in Progressive Multifocal Leukoencephalopathy
16. The Use of Immunohistochemistry to Differentiate Choroid Plexus Papillomas from Metastatic Carcinomas
17. Extracranial Nervous System Meningiomas
18. Genetic Mutations in Malignant Hyperthermia Muscle Biopsies
19. Comparative Three-Dimensional Reconstruction and Quantitative Analysis of Alzheimer's Disease
20. *Balamuthia* Amoeba and *Acanthamoeba* Meningoencephalitis
21. Malignant Astrocytic Tumors of the Spinal Cord
22. Primary Cerebellar Tumors: A Comparative Study
23. Pleomorphic Xanthoastrocytoma.

Research Funds Received: American Registry of Pathology, Research Grant: Neuronal and Glial Differentiation in Brain Tumors, \$16,000.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Sheila M. Muldoon, MD, Yoshitatsu Sei, MD, PhD, USUHS, Bethesda, Md, Genetic Mutations in Malignant Hyperthermia Muscle Biopsies.
2. Regina Armstrong, PhD, USUHS, Bethesda, Md, Dysembryoplastic Neuroepithelial Tumor: An Immunohistochemical Study.
3. Cinda J. Helke, MD, USUHS, Bethesda, Md, Diabetic Autonomic Neuropathy in the Streptozotocin-Treated Rat.
4. Regina A. Armstrong, PhD, USUHS, Bethesda, Md, Immunohistochemical Characterization of Oligodendrogliomas and Related Lesions.
5. Raphael Schiffmann, MD, NIH, Bethesda, Md, Regina A. Armstrong, PhD, USUHS, Bethesda, Md, Pathogenesis of Neuronopathic Gaucher Disease.
6. Sylvester C. Chima, MD, Gerald L. Stoner, MD, NIH, Bethesda, Md, Genotypes of JC Virus in Progressive Multifocal Leukoencephalopathy.

Civilian:

1. Laura Wakefield, Cornell University, New York, NY, Pathogenesis of Neuronopathic Gaucher Disease.
2. Aaron I. Vinik, MD, Thomas Hohman, PhD, Eastern Virginia School of Medicine, Norfolk,

- Va, Diabetic Autonomic Neuropathy in the Streptozotocin-Treated Rat.
3. Richard Praysen, MD, Cleveland Clinic, Cleveland, Ohio, Dysembryoplastic Neuroepithelial Tumor: An Immunohistochemical Study.
 4. Paul E. McKeever, MD, University of Michigan Medical School, Ann Arbor, Mich, Proliferation Markers of Potential Diagnostic and Prognostic Value in Astrocytomas WHO Grades II and III.
 5. Peter C. Burger, MD, Johns Hopkins Medical Institutions, Baltimore, Md, Gliomas in Children.
 6. Rudolph Castellani, MD, University of Maryland Medical System, Baltimore, Md, The Specificity of Florid Plaques in the Diagnosis of New Variant of Creutzfeldt-Jakob Disease.
 7. Konstance K. Knox, MD, Daniel Harrington, MD, Donald R. Carrigan, MD, University of Wisconsin, Greenfield, Wis, Human Herpesvirus Six in Patients with Multiple Sclerosis.
 8. Juan C. Troncoso, MD, John E. Smialek, MD, Office of the Chief Medical Examiner of the State of Maryland, Baltimore, Md; Walter Stewart, Johns Hopkins University, Baltimore, Md, The Preclinical Lesions of Alzheimer's Disease in a Forensic Autopsy Series.
 9. Juan C. Troncoso, MD, John E. Smialek, MD, Office of the Chief Medical Examiner of the State of Maryland, Baltimore, Md, Intraneuronal AB-Amyloid Precedes Development of Amyloid Plaques in Down's Syndrome.
 10. Hillary Koprowski, MD, Thomas Jefferson University Hospital, Philadelphia, Pa, Nitrotyrosine in Cases of Encephalitis without Inflammatory Changes.
 11. Govinda S. Visvesvara, PhD, Centers for Disease Control and Prevention, Atlanta, Ga, *Balamuthia* Amoeba and *Acanthamoeba* Meningoencephalitis.
 12. Robert V. Jones, MD, George Washington University Medical Center, Washington, DC, Intracranial Extracerebral Neuronal Heterotopias.
 13. Robert V. Jones, MD, George Washington University Medical Center, Washington, DC, Extracranial Sinonasal Tract Meningiomas.
 14. Judy Stone, MD, Cumberland Memorial Hospital, Cumberland, Md, Mycobacterial Pseudotumor of the Brain.

Interdepartmental:

1. George Lupton, MD, John Moad, LTC, MC, USA, Department of Dermatopathology, AFIP, Extracranial Nervous System Meningiomas.
2. Lester Thompson, MD, Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology, AFIP, Neuroglial Heterotopias and Encephaloceles of the Middle Ear.
3. Lester Thompson, MD, Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology, AFIP, Intracranial Extracerebral Neuronal Heterotopias.
4. Lester Thompson, MD, Department of Endocrine and Otorhinolaryngic/Head-Neck Pathology, AFIP, Extracranial Sinonasal Tract Meningiomas.
5. Peter McEvoy, COL, MC, USA, Department of Infectious and Parasitic Diseases Pathology, AFIP.
6. Kelly Koeller, CDR, MC, USN, Department of Radiologic Pathology, AFIP, Mycobacterial Pseudotumor of the Brain.

Honors:

1. AFIP John Hill Brinton Award for 2000, K Wong.
2. Walter Reed Army Medical Center Medallion for Outstanding Performance, K Wong.
3. Defense Meritorious Service Medal, AL Morrison.

Promotions:

K Wong, promoted from Major to Lieutenant Colonel, Air Force, May 12, 2000.

Committees:**Editorial Boards:**

Annals of Diagnostic Pathology — H Mena

Manuscripts Reviewed: Members of the staff reviewed 9 articles for the following professional journals:

1. *Journal of Neuropathology and Experimental Neurology* (1)
2. *Annals of Diagnostic Pathology* (7)

3. *Acta Neuropathologica* (1)

Offices and Committee Memberships in National and International Societies:

Member, Consensus Conference on Brain Tumor Definition, Central Brain Tumor Registry of the United States, Chicago, Ill – H Mena.

Faculty Appointments:

1. University of Maryland Medical System, Baltimore, Md, Clinical Assistant Professor, Department of Pathology, H Mena.
2. Walter Reed Army Medical Center, Washington, DC, Consultant in Neuropathology — H Mena.
3. National Naval Medical Center, Bethesda, Md, Consultant in Neuropathology, JM Henry.
4. University of Louisville School of Medicine, Louisville, Ky, Clinical Professor of Pathology and Neurological Surgery, JM Henry.
5. Uniformed Services University of the Health Sciences, Department of Pathology, Bethesda, Md, Adjunct Assistant Professor, AL Morrison.
6. National Naval Medical Center, Bethesda, Md, Consultant in Neuropathology, AL Morrison.
7. Walter Reed Army Medical Center, Washington, DC, Consultant in Neuropathology, AL Morrison.
8. Uniformed Services University of the Health Sciences, Bethesda, Md, Clinical Assistant Professor, Neurosciences Group, K Wong.
9. Uniformed Services University of the Health Sciences, Bethesda, Md, Clinical Assistant Professor, Department of Pathology, K Wong.

Official Trips (funding agency in parentheses):

1. April, June, August, November 2000, Neuropathology Consultant, Department of Pathology, Madigan Army Medical Center, Tacoma, Wash, GD Sandberg (US Army).
2. June 2000, American Association of Neuropathologists Annual Meeting, Atlanta, Ga, H Mena, AL Morrison, JM Henry, K Wong, MR Santi, GP Grice, B Kaya (AFIP/ARP).
3. July 2000, United Leukodystrophy Foundation International, Chicago, Ill, K Wong (United Leukodystrophy Foundation).
4. September 2000, University of California, Berkeley, University of California San Francisco Medical School, San Francisco, Calif, K Wong (AFIP).
5. September 2000, International Congress of Neuropathology, Birmingham, England, K Wong (ARP).
6. September 2000, University of Concepcion Neuropathology Course, Concepcion, Chile, H Mena (University of Concepcion).
7. October 2000, American College of Rheumatology, Workshop, Histologic Diagnosis of Muscle Disorders, K Wong, B Kaya (American College of Rheumatology).
8. October 2000, Gunma Seminar on Brain Tumor Pathology, Gunma University School of Medicine, Maebasi, Japan, and 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Nagoya, Japan, H Mena (Gunma University).
9. November 2000, Consensus Conference on Brain Tumor Definition, Chicago, Ill, H Mena (Brain Tumor Registry of the United States).
10. December 2000, AFIP-Sponsored Pathology Course, Guadalajara, Mexico, H Mena (ARP).

Continuing Education: Members of the department attended the following courses for training during 2000 (funding agency in parentheses):

1. 38th Annual Neuropathology Review, AFIP Course, Bethesda, Md (ARP).
2. Ophthalmic Pathology for Ophthalmologists, AFIP Course, Silver Spring, Md (ARP).
3. The Hippocampus in Health and Disease, American Association of Neuropathologists Special Course, Atlanta, Ga (AFIP/ARP).

PRESENTATIONS

1. January 2000: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, “Bacterial infections of the CNS,” H Mena.

2. February 2000: Bethesda, Md, AFIP 38th Annual Neuropathology Review, "Embryonal, neuronal and mixed neuronal-glial neoplasms of the CNS," H Mena.
3. February 2000: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Neurodegenerative diseases," H Mena.
4. February 2000: Bethesda, Md, AFIP 38th Annual Neuropathology Review, "Pediatric neuropathology," JM Henry.
5. February 2000: Bethesda, Md, AFIP 38th Annual Neuropathology Review, "Introduction to neuropathology," AL Morrison.
6. February 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
7. February 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
8. February 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Neurology, "Central nervous system trauma," GD Sandberg.
9. March 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
10. March 2000: Winterhaven, Fla, Winterhaven Neurology and Neurosurgery Association, "What's new in gliomas?" JM Henry.
11. March 2000: Winterhaven, Fla, Winterhaven Neurology and Neurosurgery Association, "Multiple sclerosis," JM Henry.
12. April 2000: Silver Spring, Md, AFIP 10th Annual Anatomic Pathology Review Course, "Neurodegenerative diseases," AL Morrison.
13. April 2000: Washington, DC, American Registry of Pathology, Medical Students Symposium, "Neurons and Nobel Prizes," JM Henry.
14. April 2000: Silver Spring, Md, AFIP 10th Annual Anatomic Pathology Review Course, "What's new in gliomas?" JM Henry.
15. April 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
16. May 2000: Washington, DC, AFIP Professional Staff Conference, "Childhood ataxia with central nervous system hypomyelination syndrome," K Wong.
17. May 2000: Bethesda, Md, American Registry of Pathology, External Residents Symposium, "Neurons and Nobel Prizes," JM Henry.
18. May 2000: Washington, DC, Georgetown University, 2nd-Year Medical Student Class, "Neurodegenerative diseases," AL Morrison.
19. June 2000: Atlanta, Ga, Platform Presentation, American Association of Neuropathologists 76th Annual Meeting, "Malignant astrocytic tumors of the spinal cord: a study of 34 cases," MR Santi.
20. June 2000: Atlanta, Ga, Platform Presentation, American Association of Neuropathologists 76th Annual Meeting, "Neuropathological findings in early myoclonic epileptic encephalopathy (EMEE): report of eight cases and review of the literature," GP Grice.
21. June 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
22. June 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
23. June 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Neurology, "Malformations of the CNS," GD Sandberg.
24. June 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
25. June 2000: San Diego, Calif, Gaucher Registry Investigator's Meeting, "The neurologic complications of Gaucher disease," K Wong.
26. June 2000, Atlanta, Ga, American Association of Neuropathologists 76th Annual Meeting, "A dementia with Lewy bodies and Parkinson's disease in a type I Gaucher disease patient," K Wong.
27. July 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathol-

- ogy, "Techniques of gross brain examination," GD Sandberg.
28. July 2000: Dekalb, Ill, United Leukodystrophy Foundation International, "New disorders of myelin," K Wong.
 29. August 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
 30. August 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
 31. August 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Neurology, "Skeletal muscle pathology," GD Sandberg.
 32. August 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
 33. September 2000: Washington, DC, Walter Reed Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
 34. September 2000: Rockville, Md, AFIP Telepathology Course, "Telepathology in neuropathology," GD Sandberg.
 35. September 2000: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Vascular diseases of the CNS," H Mena.
 36. September 2000: Concepcion, Chile, University of Concepcion, Clinical Neuropathology Course, "Vascular diseases of the CNS," H Mena.
 37. September 2000: Concepcion, Chile, University of Concepcion, Clinical Neuropathology Course, "Neuropathology of dementias," H Mena.
 38. September 2000: Concepcion, Chile, University of Concepcion, Clinical Neuropathology Course, "Astrocytomas," H Mena.
 39. September 2000: Concepcion, Chile, University of Concepcion, Clinical Neuropathology Course, "Pathological aspects of selected myopathies, neuropathies and demyelinating diseases," H Mena.
 40. September 2000: Concepcion, Chile, University of Concepcion, Clinical Neuropathology Course, "Seminar on clinical, radiological and pathological correlation of selected lesions of the CNS," H Mena.
 41. September 2000: Berkeley, Calif, UC Berkeley, UC San Francisco, Combined Medical Program, Principles of Human Pathology, "Neurodegenerative, demyelinating and prion diseases," K Wong.
 42. September 2000: Birmingham, England, International Congress of Neuropathology, "Two novel dysmyelinating disorders with abnormal myelin protein fractions," K Wong.
 43. October 2000: Philadelphia, Pa, American College of Rheumatology, Scientific Sessions, Workshop, "Histologic diagnosis of muscle disorders," K Wong.
 44. October 2000: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Pituitary tumors," H Mena.
 45. October 2000: Maebasi, Japan, Gunma University School of Medicine, Gunma Seminar on Brain Tumor Pathology, "Central neurocytoma," H Mena.
 46. October 2000: Nagoya, Japan, 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Slide Seminar on Brain Tumors, "Hemangiopericytoma of the CNS," H Mena.
 47. October 2000: Nagoya, Japan, 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Symposium on the WHO Classification of Tumors of the Nervous System, "Pineal tumors and embryonal tumors of the CNS," H Mena.
 48. November 2000: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Nonglial tumors of the CNS," H Mena.
 49. November 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
 50. November 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
 51. November 2000: Tacoma, Wash, Madigan Army Medical Center, Department of Neurology, "Central nervous system trauma," GD Sandberg.

52. November 2000: Philadelphia, Pa, American College of Rheumatology, Scientific Sessions, Workshop, "Histologic diagnosis of muscle disorders 2," K Wong, B Kaya.
53. December 2000: Guadalajara, Mexico, AFIP Course in Spanish, Controversies and Advances in Surgical Pathology, "Vascular diseases of the CNS," H Mena.
54. December 2000: Guadalajara, Mexico, AFIP Course in Spanish, Controversies and Advances in Surgical Pathology, "Embryonal, neuronal, and mixed neuronal-glia tumors of the CNS," H Mena.

PUBLICATIONS

Journal Articles:

1. Cadavid D, Mena H, Koeller K, Frommelt RA. Cerebral beta amyloid angiopathy is a risk factor for cerebral ischemic infarction: a case control study in human brain biopsies. *J Neuropathol Exp Neurol.* 2000;59:768-773.
2. Duniho S, Schulman FY, Morrison A, Mena H, Koestner A. A subependymal giant cell astrocytoma in a cat. *Vet Pathol.* 2000;37:275-278.
3. Fanburg-Smith JC, Gyure KA, Michal M, Katz D, Thompson LD. Retroperitoneal peripheral hemangioblastoma: a case report and review of the literature. *Ann Diagn Pathol.* 2000;4:81-87.
4. Gyure KA, Morrison AL. Cytokeratin 7 and 20 expression in choroid plexus tumors: utility in differentiating these neoplasms from metastatic carcinomas. *Mod Pathol.* 2000;13:638-643.
5. Gyure KA, Sandberg GD, Prayson RA, Morrison AL, Armstrong RC, Wong K. Dysembryoplastic neuroepithelial tumor: an immunohistochemical study with myelin oligodendrocyte glycoprotein. *Arch Pathol Lab Med.* 2000;124:123-126.
6. Gyure KA, Thompson LD, Morrison AL. A clinicopathological study of 15 patients with neuroglial heterotopias and encephaloceles of the middle ear and mastoid region. *Laryngoscope.* 2000;110:1731-1735.
7. Knox KK, Brewer JH, Henry JM, Harrington DJ, Carrigan DR. Human herpesvirus 6 and multiple sclerosis: systemic active infections in patients with early disease. *Clin Infect Dis.* 2000;31:894-903.
8. Peoc'h M, Duprez D, Grice G, Fabre-Bocquentin B, Gressin R, Pasquier B. Silicone lymphadenopathy mimicking a lymphoma in a patient with a metatarsophalangeal joint prosthesis. *J Clin Pathol.* 2000;53:549-551.
9. Peoc'h MY, Gyure KA, Morrison AL. Postmortem diagnosis of cerebral malaria. *Am J Forensic Med Pathol.* 2000;21:366-369.
10. Thompson LD, Gyure KA. Extracranial sinonasal tract meningiomas: a clinicopathologic study of 30 cases with a review of the literature. *Am J Surg Pathol.* 2000;24:640-650.
11. Wong K, Armstrong RC, Gyure KA, Morrison AL, Rodriguez D, Matalon R, Johnson AB, Wollmann R, Gilbert E, Le TQ, Bradley CA, Crutchfield K, Schiffmann R. Foamy cells with oligodendroglial phenotype in childhood ataxia with diffuse central nervous system hypomyelination syndrome. *Acta Neuropathol (Berl).* 2000;100:635-646.

Abstracts:

1. Cadavid D, Mena H, Koeller K, Frommelt RA. Non-Alzheimer cerebral-amyloid angiopathy is a risk factor for cerebral infarction: a case-control study in human brain biopsies. *J Neuropathol Exp Neurol.* 2000;59:460. Abstract 163.
2. Golden JA, Santi M. Periventricular heterotopia may result from radial glial fiber disruption. *J Neuropathol Exp Neurol.* 2000;59:456. Abstract 147.
3. Grice GP, Rorke LB. Neuropathological findings in early myoclonic epileptic encephalopathy (EMEE): report of eight cases and review of the literature. *J Neuropathol Exp Neurol.* 2000;59:434. Abstract 60.
4. Gyure KA, Morrison AL. Expression of neuronal/neuroendocrine markers in choroid plexus tumors. *J Neuropathol Exp Neurol.* 2000;59:420. Abstract 5.
5. Santi MR, Mena H, Frommelt RA. Malignant astrocytic tumors of the spinal cord: a study of 34 cases. *J Neuropathol Exp Neurol.* 2000;59:444. Abstract 102.
6. Wong K, Topaloglu H, Tresser N, Schiffmann R. Dementia with Lewy bodies and Parkinson's disease in a type 1 Gaucher disease patient. *J Neuropathol Exp Neurol.*

2000;59:454. Abstract 141.

7. Wong K, Weibel TD, Weis MD, Kaneski C, Mixon TH, Abu-Asab M, Tsokos M, Quarles RH, Schiffmann R. Two novel dysmyelinating disorders with abnormal myelin protein fractions. *Brain Pathol.* 2000;10:644. Abstract C28-04.

Book Chapters:

1. Mena H, Nakazato Y, Jouvét A, Scheithauer BW. Pineal parenchymal tumors. In: Kleihues P, Cavenee WK, eds. *World Health Organization Classification of Tumors: Pathology and Genetics of Tumors of the Nervous System.* Lyon, France: International Agency for Research on Cancer; 2000.
2. Mena H, Cadavid D. Neuropathology. In: Andrade R, Gonzalez JM, Restrepo R, Velez A, eds. *Basic Sciences in Medicine: Pathology.* Medellín, Colombia: Corporación para Investigaciones Biológicas; 2000.
3. Garcia JH, Gutierrez JA, Mena H. Pathology of ischemic injury of the CNS. In: Cruz-Sanchez FF, ed. *Neuropathology, Diagnosis and Clinic.* Madrid, Spain: Edimsa; 2000.

Other Publications:

Patent Applications:

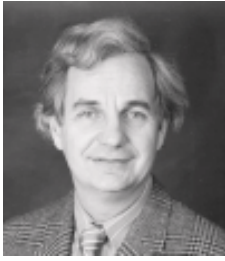
December 2000: Wei-Sing Chu, Kondi Wong, High-Speed Ultrasound Biological Reactions and Tissue Fixation, US patent application, published, one of five divisions (inventions) allowed (patented), two patents issued to date, Wei-Sing Chu, Kondi Wong.

Grant Submissions:

September 2000: R21 NIH grant (biotechnology): Ultrasound Mediated Tissue Fixation and Processing, Wei-Sing Chu, Kondi Wong.

Syllabus and Handouts:

1. Syllabus for 38th Annual Neuropathology Review.
2. Handouts for lectures in 3 AFIP-sponsored courses.
3. Handout for “Gunma Seminar on Brain Tumor Pathology,” Gunma University School of Medicine, Maebasi, Japan.
4. Handout for “Slide Seminar on Brain Tumors,” 13th International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, Nagoya, Japan.



Ian W. McLean, MD
 Chief
 Date of Appointment — 21 November 1986

DIVISION OF OPHTHALMIC PATHOLOGY

MISSION

The Division of Ophthalmic Pathology serves the mission of the AFIP in 3 ways:

1. We provide consultation service to pathologists of the Armed Forces, Veterans Affairs, and US Public Health Service, and to civilians. We make complete gross and microscopic examinations on enucleated eyeballs for contributors from hospitals where facilities and trained personnel are not available for this specialized work. We provide diagnoses to medical centers on microslides of interesting, unusual, and/or difficult cases.
2. We conduct research based on the wealth of accumulated case material in the Registry of Ophthalmic Pathology. We often conduct research with outside scientists or in collaboration with other AFIP departments and divisions involving special histochemical, immunological, and electron-microscopic techniques and specialized equipment. We prepare reports and scientific papers for publication and/or oral presentation, and prepare books, monographs, fascicles, and atlases when requested.
3. We administer graduate training in ophthalmic pathology to residents and fellows and organize and conduct courses in ophthalmic pathology. Without this support the ophthalmology residency program at Walter Reed Army Medical Center and National Naval Medical Center would not be accredited.

STAFF

Medical:

Ian W. McLean, MD, Chair
 Ahmed A. Hidayat, MD, Staff Pathologist

Visiting Scientist:

Lorenz E. Zimmerman, MD, Professor Emeritus of Pathology and Ophthalmology, Georgetown University

Administrative:

Alonzo L. Ray, Jr, Secretary

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	106
Army	49
Navy	25
Air Force	32
Federal	83
VA	78
USPHS	2
OFA	3
Civilian	653
Interdepartmental	31
Total	863

863 cases for consultation, education, and research required the following types of procedures and analyses:

- H&E stains: 10,064 slides
- Special stains: 3,004 slides
- Immunohistochemical staining: 383 slides
- Electron microscopy: 8 cases
- Direct immunofluorescence: 120 tests for 2 research projects
- Molecular biology examination: 8 tests for 2 cases
- Total recuts studied: 13,068
- Contributor slides studied: 1,507

Our division made no change in the contributor diagnosis in 404 cases, a minor change in diagnosis in 88 cases, and a major change in diagnosis in 14 cases. We received 313 cases with no contributor diagnosis; 3 cases were recorded without coding.

The scientific laboratory handled 756 cases by processing wet tissue, preparing histologic slides, and using special stains. Immunohistochemistry was required in 84 cases and electron microscopy in 13 cases. In most of the 334 cases received without a diagnosis, the scientific laboratory processed wet tissue. Whole-eye specimens received as wet tissue were carefully grossed to identify the pathology.

The division provided consultation services to military and Veterans Affairs hospitals amounting to first-echelon support for most of these contributors. Very few governmental hospitals have either technical or professional personnel trained to prepare whole eyes for histopathologic study or to evaluate alterations in sectioned eyes. The division therefore, served as the central laboratory for routine diagnostic work in ophthalmic pathology and provided consultation services as well. Similarly, there are many civilian communities throughout the world where no facilities are available for this work. The division rendered consultation services to civilian contributors through the auspices of the Registry of Ophthalmic Pathology, sponsored by the American Academy of Ophthalmology. Much of the routine work has been diverted to ophthalmic pathology laboratories at universities and other institutions. These laboratories now provide top-notch service and forward only the particularly difficult or unusually interesting cases to the AFIP. The result is that the Ophthalmic Pathology Division is receiving fewer but more difficult cases.

EDUCATION

Presentations and Seminars: Division staff made 14 presentations at professional meetings and conferences in 2000. Dates and titles are listed at the end of this report.

Trainees: Our facilities and personnel are in great demand for training in various phases of ophthalmic pathology and research. During 2000, 17 physicians began or completed full-time training for 3 to 18 months; 1 full-time fellow was in training for a year; 12 residents from local hospitals were assigned for 3 to 4 months; and 4 medical students spent their elective months in the division.

Courses: Members of the division presented the annual course "Ophthalmic Pathology for Ophthalmologists" at the Elias PG Theros Radiologic Pathologic Education Center, Washington, DC. Every Thursday, except during July and August, Dr. Zimmerman and the department staff present a clinicopathologic conference to residents in ophthalmology at NNMCC, WRAMC, and local civilian programs.

RESEARCH

Publications: Members of the division published 7 journal articles and 4 abstracts in 2000. Complete information is listed at the end of this report.

Projects: In 2000, the staff engaged in studies including the following:

1. An investigation of hematogenous metastasis of uveal melanoma with the aid of computer-generated mathematical models and genetic analysis.
2. Development of the new tool of comparative genomic hybridization to investigate the genetics of metastasis in uveal melanoma.
3. A study of prognostic factors for ophthalmic malignancies, immunohistochemistry of ophthalmic tumors, and inflammatory diseases of the eye.

We will continue to generate pilot data, with the goal of obtaining outside grant support for our research activities.

OTHER ACCOMPLISHMENTS

Editorial Boards:

1. *Annals of Diagnostic Pathology* — IW McLean
2. *Investigative Ophthalmology and Visual Sciences*-- IW McLean (Guest Editor)

Manuscripts Reviewed: Members of the division reviewed 67 articles for professional journals in 2000.

PRESENTATIONS

1. February 2000: Washington, DC, AFIP Staff Conference, "Myxomas of the ocular adnexa," AA Hidayat.
2. February 2000: Washington, DC, AFIP Staff Conference, "National Death Index and uveal melanoma," IW McLean.
3. April 2000: Washington, DC, Verhoeff-Society Meeting, "Acanthamoeba chorioretinitis following keratitis," IW McLean.
4. April 2000: Washington, DC, Verhoeff-Society Meeting, "Cutaneous lymphadenoma of lateral canthus," AA Hidayat.
5. May 2000: Fort Lauderdale, Fla, Association for Research in Vision and Ophthalmology Meeting, "Vascularization of liver metastases of human uveal melanoma," TR Kramer, IW McLean, S Dithmar, N Sharara, HE Grossniklaus.
6. May 2000: Fort Lauderdale, Fla, Association for Research in Vision and Ophthalmology Meeting, "Uveal melanoma: mean of the largest nucleoli measured on silver stained sections," A Moshari, McLean.
7. May 2000: Fort Lauderdale, Fla, Association for Research in Vision and Ophthalmology Meeting, "Coexpression of vimentin and cytokeratin in the liver metastasis of uveal melanoma," A Morilla-Grasa, CP Correla, F Pereira, IW McLean, MN Burnier.
8. May 2000: Fort Lauderdale, Fla, Association for Research in Vision and Ophthalmology Meeting, "Muller's muscle fibrosis in congenital ptosis," AA Hidayat, G Prasad, GC Cockerham, KP Cockerham.
9. July 2000: Washington, DC, George Washington University, "Uveal malignant melanoma," IW McLean.
10. August 2000: Washington, DC, AFIP Ophthalmic Pathology Course, "Retina in systemic diseases," IW McLean.
11. August 2000: Washington, DC, AFIP Ophthalmic Pathology Course, "Retinoblastoma," IW McLean.
12. August 2000: Washington, DC, AFIP Ophthalmic Pathology Course, "Uveal malignant melanoma," IW McLean.
13. August 2000: Washington, DC, AFIP Ophthalmic Pathology Course, "Intraocular lymphoma," AA Hidayat.
14. September 2000: Philadelphia, Pa, Eastern Ophthalmic Pathology Society Meeting, "Sebaceous carcinoma of the eyelid with secondary lipid phagocytosis," AA Hidayat.

PUBLICATIONS

Journal Articles

1. Cable MM, Lyon DB, Rupani M, Matta CS, Hidayat AA. Case reports and small case series: primary basal cell carcinoma of the conjunctiva with intraocular invasion. *Arch Ophthalmol.* 2000;118:1296-1298.
2. Cockerham GC, Bijwaard K, Sheng ZM, Hidayat AA, Font RL, McLean IW. Primary graft failure: a clinicopathologic and molecular analysis. *Ophthalmology.* 2000;107:2083-2090.
3. Cockerham GC, Hidayat AA, Bijwaard KE, Sheng ZM. Re-evaluation of "reactive lymphoid hyperplasia of the uvea": an immunohistochemical and molecular analysis of 10 cases. *Ophthalmology.* 2000;107:151-158.
4. Cockerham KP, Hidayat AA, Cockerham GC, Depper MH, Sorensen S, Cytryn AS, Gavaris PT. Melkersson-Rosenthal syndrome: new clinicopathologic findings in 4 cases. *Arch Ophthalmol.* 2000;118:227-232.
5. Loeffler KU, McLean IW. Bilateral necrotizing scleritis and blindness in the myelodysplastic syndrome presumably due to relapsing polycondritis. *Acta Ophthalmol*

Scand. 2000;78:228-231.

6. Mansour AM, Hidayat AA, Gorevic PD. Isolated amyloidosis of anterior uvea and trabecular meshwork. *Clin Exp Ophthalmol.* 2000;28:393-394.
7. Rao NA, Hidayat AA. A comparative clinicopathologic study of endogenous mycotic endophthalmitis: variations in clinical and histopathologic changes in candidiasis compared to aspergillosis. *Trans Am Ophthalmol Soc.* 2000;98:183-194.

Abstracts

1. Kramer TR, McLean IW, Dithmar S, Sharara N, Grossniklaus HE. Vascularization of liver metastases of human uveal melanoma. *Invest Ophthalmol Vis Sci.* 2000;41:S381.
2. Moshari A, McLean IW. Uveal melanoma: mean of the largest nucleoli measured on silver stained sections. *Invest Ophthalmol Vis Sci.* 2000;41:S382.
3. Morilla-Grasa A, Correlá CP, Pereira F, McLean IW, Burnier MN. Coexpression of vimentin and cytokeratin in the liver metastasis of uveal melanoma. *Invest Ophthalmol Vis Sci.* 2000;41:S383.
4. Hidayat AA, Prasad G, Cockerham GC, Cockerham KP. Muller's muscle fibrosis in congenital ptosis. *Invest Ophthalmol Vis Sci.* 2000;14:S124.



William B. Ross, CAPT, MC, USN
Chair
Date of Appointment — March 1995

Wendy Clark, MSG, USA
Superintendent
Date of Appointment — November 1998

DEPARTMENT OF SCIENTIFIC LABORATORIES

MISSION

The Department of Scientific Laboratories provides technical, consultative, and scientific services to the departments of the Armed Forces Institute of Pathology, ultimately supporting the Institute's mission of consultation, education, and research. Services include basic and advanced histology techniques, scanning and transmission electron microscopy, and immunohistochemical tissue analyses. The department provides basic and advanced training in histology techniques to military and civilian personnel through the Tri-Service School of Histotechnology and the Annual Histopathology Techniques Seminar. All efforts are designed to ensure the highest medical and investigative science.

ORGANIZATION

The department consists of an administrative section and 4 components:

1. Histopathology Laboratories
2. Tri-Service School of Histotechnology
3. Electron Microscopy (SEM, TEM) Laboratories
4. Immunohistochemistry Laboratory

STAFF

Professional/Scientific:

William B. Ross, CAPT, MC, USN, Chair
Lester Thompson, LCDR, MC, USN, Associate Chair

Administrative/Technical:

Arnicia E. Downing, Chief, Scientific Labs
Efrain Perez-Rosario, Chief, Electron Microscopy Laboratory
Debbie L. Robertson, Program Support Assistant



Arnica E. Downing
Laboratory Chief
Date of Appointment — 23 September 1991

HISTOPATHOLOGY LABORATORIES

MISSION

The Histopathology Laboratories provide histotechnical support and expertise to the pathology departments at the AFIP, and training in histotechniques to visiting professionals and technologists. To insure that the laboratories are capable of fully meeting their mission, the staff from the College of American Pathologists are invited to inspect every aspect of the operation of the laboratories.

STAFF

- (D) Melba Ashby, DAC, Histopathology Technician
- Rossana Bailey, DAC, Histopathology Technician
- (A) Timothy Barron, HM2, Histopathology Technician
- Betty Beal, VAMC, Histopathology Technician
- Mildred Benton, ARP, Histopathology Technician
- (A) Freda Blake, VA-6, Histopathology Technician
- Romeo Boodhoo, HM3, Histopathology Technician
- Todd Brown, SGT, USA, Histopathology Technician
- (D) Jaspole Bryant, TSgt, USAF, Histopathology Technician
- Jacqueline Burton, SSgt, USAF, Laboratory Technician
- (D) Bernie Cabiles, SSgt, USAF, Histopathology Technician
- Robert Calvo, HM2, Histopathology Technician
- (D) Bonita Carson, SPC, USA, Histopathology Technician
- Mel Castro, DAC, Histopathology Technician
- (D) Joelle Chin, SPC, USA, Laboratory Technician
- (D) Paul Colasito, ARP, Histopathology Technician
- Karma DaCosta, HM1, USN, Histopathology Technician
- Mary Dyson, ARP, Histopathology Technician
- (A) Monte Grace, HM2, Histopathology Technician
- Zahaitu Harvey, ARP, Histopathology Technician
- (D) James Hughes, ARP, Histopathology Technician
- (A) Francine Hincherrick, DAC, Histopathology Technician
- Shirley V. Horton, ARP, Histopathology Technician
- Brian Johnson, SSgt, USAF, Histopathology Technician
- Ingrid Jones, DAC, Histopathology Technician
- Clementine Kelson, DAC, Histopathology Technician
- (A) Joseph Kemer, SPC, USA, Histopathology Technician
- Wanda King, ARP, Histopathology Technician
- Langston Lim, SSgt, USAF, Histopathology Technician
- Charles Lattany, SSgt, Superintendent
- Debra A. McElroy, DAC, Branch Chief
- Warren McNeil, DAC, Histopathology Technician
- Marco Mendoza, HM3, Histopathology Technician
- Myra Miller, DAC, Histopathology Technician
- Barbara Norfleet, DAC, Histopathology Technician
- (A) Verna Pinkett, ARP, Histopathology Technician

Michael Proctor, DAC, Histopathology Technician
 Juanita Rogers, ARP, Histopathology Technician
 Joseph Rosamont, VA-11, Histopathology Technician
 Christian Sepulveda, TSgt, USAF, Histopathology Technician
 Blair Slaughter, ARP, Histopathology Technician
 Ellen Slaughter, DAC, Histopathology Technician
 Blondell Smith, DAC, Histopathology Technician
 Paul Smith, ARP, Histopathology Technician
 (A) Stacey Tamer, ARP, Histopathology Technician
 Michael Vick, HM2, USN, Histopathology Technician
 Jack B. Wenger, DAC, Branch Chief
 Joy Williams, MSgt, USAF, Histopathology Technician
 Julia Wilson, DAC, Program Director
 Robert Wilson, DAC, Histopathology Technician

DIAGNOSTIC CONSULTATION

The Histology Laboratories consist of a combined Specialty Laboratory (veterinary, ophthalmic, orthopedic, neuropathology), a Special Stains Laboratory, and 2 combined general histology laboratories (Consultative, and Research and Education). The laboratories are organized to allow a STAT Laboratory to handle consultative cases and a Research and Education Laboratory to provide services for research and education projects. This organization has significantly reduced turnaround time and distributed the workload more equitably throughout the laboratories.

In 2000, 30,772 cases were completed, requiring the following procedures and special stains:

- Blocks cut: 63,310
- H&E stains: 126,834
- Special stains: 40,407
- Frozen sections H&E: 564
- Plastic section stained: 1,349
- Whole mounts stained: 98
- Whole mount slides : 2,000
- Unstained slides: 281,986
- **Total Slides Prepared: 547,320**
- Specimens decal: 1,346
- Specimens x-ray: 597

Quality Assurance:

Laboratory personnel served on 3 CAP Inspection Teams in 2000:

1. Delegate to the National Society of Histotechnology
2. Maryland University Hospital
3. Francis Scott Key Hospital

EDUCATION

Presentations and Courses: Laboratory staff presented 60 didactic hours to participants in the Tri-Service School of Histotechnology course. In addition, several staff members lectured at state and regional professional meetings and made presentations at Weekly Professional Staff Conferences in 2000.

Training:

1. Visiting pathologists and technologists received over 2,400 hours of on-site training in a variety of laboratory techniques, including eye histotechnology, special staining methods for infectious organisms, and Warthin-Starry procedures for melanin and bacteria.
2. Orientation and advanced training were provided to 5 civilians and 40 incoming military personnel.

Educational Aids: Our laboratories prepared thousands of microslides for AFIP pathologists, consisting mainly of teaching and study sets to be used at professional meetings.

RESEARCH

Publications: Articles on modifications to histopathology laboratory procedures were submit-

ted for publication in all editions of the *AFIP LETTER*.

Projects: Our laboratories provided technical support for all approved research projects. Cost estimates are now prepared based on the CAP's workload unit costs, which include technician time, materials, and equipment. This year, several manufacturers were invited to demonstrate technical equipment that has significantly advanced histology microslide production, including robotic stainers and coverslippers, improved warming tables, and cryostats. These items were evaluated by department staff and were available for inspection and trial by AFIP departments.

OTHER ACCOMPLISHMENTS

Tasks: Members of the division performed the following assignments in 2000:

1. Ash Lecture Ushers
2. Histopathology Occupational Survey

Volunteer Activities:

1. Combined Federal Campaign Key Person
2. AFIP Clothing/Food Drives
3. Share Program
4. 3.3-Mile Fun Run/Walk
5. Retirement Ceremony – WRAMC's Compound General
6. Physical Fitness Instructor



Charles Lattany, III, SSgt, USAF
Course Superintendent
Date of Appointment — September 1996



Julia Wilson, HT (ASCP)
Program Director
Date of Appointment — March 1997

TRI-SERVICE SCHOOL OF HISTOTECHNOLOGY

MISSION

The Tri-Service School of Histopathology provides formal training to military and civilian students in the technical operations of anatomic pathology, as applied to histopathology laboratory and postmortem procedures.

EDUCATION

The school convenes annually and consists of 180 training days. It includes instruction in the theory and application of histotechnology and practical training in processing, cutting, and staining of tissue specimens and assisting in postmortem examinations. The course is admin-

istered by the Department of Scientific Laboratories and is coordinated through the School of Health Care Science at Sheppard AFB in Texas and the Naval School of Health Sciences at the National Naval Medical Center, Bethesda, Md. The school is also affiliated with the Department of Anatomic Pathology at WRAMC and Malcom Grow Medical Center, Andrews AFB.

The Tri-Service School of Histotechnology was accredited in 1997 by the National Accrediting Agency of Clinical Laboratories Sciences (NAACLS), a nonprofit organization which independently accredits histotechnology instructional programs. NAACLS is sponsored by the American Society of Clinical Pathologists (ASCP) and the American Society for Clinical Laboratory Sciences (ASCLS). Participants include the National Society of Histotechnology (NSH) and the Association of Genetic Technology (AGT).

Graduates of the Tri-Service School of Histotechnology are awarded certificates and AFSC 4T032 (Air Force) and NEC 8503 (Navy) classification codes. The Army currently has no histotechnician career field classification. Graduates may apply to take the certification exam as histologic technicians through the American Society of Clinical Pathologists, HT (ASCP).

Number of Students Trained in 2000:

Army	0
Navy	6
Air Force	0
Civilian	1



Efrain Perez-Rosario
 Chief
 Date of Appointment — August 1991

ELECTRON MICROSCOPY LABORATORY

MISSION

The Electron Microscopy Laboratory provides technical and scientific services to the departments of the Armed Forces Institute of Pathology, supporting the professional staff in consultation, research, and education using advanced technology in transmission electron microscopy (TEM), scanning electron microscopy (SEM), and scanning transmission microscopy (STEM). In August 2000, the Neuromuscular Laboratory departed the Department of Scientific Laboratories. They provided scientific and technical services to the Division of Neuromuscular Pathology, using histochemistry STEM for histotechnical analysis of such specimens.

STAFF

- Francine Hincerick, Research Biologist
- Joseph Rosamont, Histologist
- (D) Ives Valenzuela, Research Neuromyologist – DNA
- (D) Dong Hui Mixon, ARP, Neuromuscle Technician

DIAGNOSTIC CONSULTATION

The Electron Microscopy Laboratories have 2 high-resolution (ZEISS-10A) electron microscopes and a scanning transmission electron microscope with an x-ray analyzer. We also have a new scanning electron microscope (ZEISS DSM 960A) with energy dispersive x-ray analyzer.

The Neuromuscular Laboratory provided histochemical analysis of samples, including frozen sections and electron microscopy and muscle typing.

ELECTRON MICROSCOPY LABORATORY

Transmission Electron Microscopy

Cases Received	704
Cases Completed	704
Total Blocks Cut	2,693
Total Grids Cut	2,693
Total Pre and Post Slides Cut	2,693
Total Film Developed	6,466 negatives
Total Prints Made	21,746

NEUROMUSCULAR LABORATORY

Cases Received	541
Cases Completed	541
Total Blocks Cut	1446
Total Slides Cut	5760
Frozen Specimens/Glut/Form	498/462/940
Nerve Slides Stained	4,800

EDUCATION

Laboratory staff trained 8 fellows in electron microscopy techniques, for a total of 240 trainee-days.



Lester Thompson, LCDR, MC, USN
Division Chief
Date of Appointment — March 1998

IMMUNOPATHOLOGY LABORATORY

MISSION

The Immunopathology Laboratory provides state-of-the-art immunohistochemical staining in support of diagnostic and prognostic markers in case consultation and Institute research. Our secondary mission is to develop advanced tissue diagnostic techniques.

STAFF

Administrative/Technical:

Gayle Andre, DAC, Branch Chief

- (A) Barbara Norfleet, DAC, Lead Technician
- Wanda King, ARP, Histopathology Technician
- Stacey Tamer, ARP, Histopathology Technician
- (D) David Low, USAF, Histopathology Technician
- (A) Juanita Rogers, ARP, Histopathology Technician
- Todd Brown, SSgt, Histopathology Technician
- (D) Blondell Smith, DAC, Histopathology Technician

CASES COMPLETED

Consultation Cases	7,211
Education Cases	98
Research Cases	281
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Total	7590

Consultation Slides	50,024
Education Slides	534
Research Slides	2718
Control Slides	17,464
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Total	70,540

The laboratory developed alternate methods to increase turnaround time and utilize the automated immunostainers. We also developed the following new immunohistochemical assays:

1. Melan A
2. Tyrosinase
3. CD10
4. Calretinin
5. CK5/6

EDUCATION

Division staff provided instruction in testing methodologies to outside laboratories and numerous interpretive consultations to the AFIP pathologists.



GROUP 4

ENVIRONMENTAL MEDICINE

**ENVIRONMENTAL & TOXICOLOGIC
PATHOLOGY**

**INFECTIOUS & PARASITIC DISEASES
PATHOLOGY**

RADIOLOGIC PATHOLOGY

VETERINARY PATHOLOGY



Florabel G. Mullick, MD, ScD, SES
Acting Chair
Date of Appointment — 27 June 1996

DEPARTMENT OF ENVIRONMENTAL AND TOXICOLOGIC PATHOLOGY

MISSION

The Department of Environmental and Toxicologic Pathology conducts consultation, education, and research in environmental, drug-induced, and radiation pathology, and in the development, implementation, and application of toxicological techniques (biochemical, physical, and chemical) for analyzing tissue and determining the causes of injury to human and animal tissue.

ORGANIZATION

The department is organized into 4 divisions—a Biophysical Toxicology Branch, a branch for the coordination of educational and research activities, a branch dedicated to consultation and research on mutagen and radiation pathology, and the Office of the Chair:

1. Division of Biochemical Pathology — William N. Fishbein, MD, PhD, Chief
2. Division of Chemical Pathology — Frank B. Johnson, MD, Chief
3. Division of Environmental Pathology — Florabel G. Mullick, MD, Acting Chief
Biophysical Toxicology Branch — José A. Centeno, PhD, Chief
Mutagen Pathology Branch — David B. Busch, MD, PhD, Chief
4. Division of Environmental Toxicology — Victor F. Kalasinsky, PhD, Chief

STAFF

Office of the Chair

Medical:

Florabel G. Mullick, MD, Acting Chair
Elena R. Ladich, MD, Nelson S. Irey Environmental Fellow, ARP

Scientific:

José A. Centeno, PhD, Chief, Education and Research Programs Branch
Norbert Page, PhD, Administrator (INTOX) and Consultant in Toxicology, ARP

Administrative:

Kim Knight, Administrative Assistant, ARP
Mae S. Leonard, Secretary

DATABASES AND SPECIAL COLLECTIONS

In 2000, the department continued to develop the International Database Center for Toxic Lesions (INTOX) in humans and animals, composed of the following databases:

- Tissue Reactions to Drugs
- Breast Explants and Bioimplantable Materials
- International Tissue and Tumor Repository on Chronic Arseniasis
- Kuwait/Persian Gulf
- Former Prisoners of War

- Radiation
- Agent Orange

The department is conducting a program on the archiving, consultation, and biophysical studies of silicone breast explants and bioimplantable materials. A database is being developed that initially was supported by the American Registry of Pathology. It now receives cases from international contributors and the FDA. It is currently composed of over 250 cases containing tissue and explant materials associated with biomedical devices

The Bioimplantable Materials Database has an extensive collection of published literature, CDs, and a list of patents for materials used in the manufacture of silicone breast implants and other biomedical devices. Several regulatory agencies and teaching institutions have made use of the morphologic, biophysical toxicology, and literature information available in the registry, including the FDA, the Office on Women's Health of the Department of Health and Human Services, the NCI, the International Agency for Research on Cancer, the Center for Occupational and Environmental Medicine, Children Afflicted by Toxic Substances organization, the Schneider Children's Hospital in New York, and the Mount Sinai Medical Center in Ohio.

The International Tissue and Tumor Repository for Chronic Arseniasis Database serves as a centralized facility for collecting, archiving, and studying tissue specimens from populations exposed to arsenic. The AFIP and 4 other federal agencies (US Environmental Protection Agency, National Institute of Environmental Health Sciences, National Cancer Institute, and the US Geological Survey) signed an interagency agreement for \$150,000 per year for 3 years to develop this repository and research program on the health effects of arsenic. In 2000, the repository received over 1600 placental samples and clinical samples to conduct arsenic speciation analysis through an USEPA contract awarded to the Biophysical Toxicology Branch.

DIAGNOSTIC CONSULTATION

The department received a total of 5,792 new consultation cases in 2000 and consulted on 157 intramural cases. See division reports for details.

The department provided consultative assistance to the Philippines Government, Island of Marinduque, by serving as a member of a US-Joint Agency Environmental Team to study environmental and health problems as a result of mining.

Quality Assurance:

The department subscribes to several proficiency test programs of the College of American Pathologists:

- Biophysical Toxicology Branch: 3 proficiency tests
- Division of Environmental Toxicology: 1 proficiency test

As part of the Quality Assurance Program, the Division of Environmental Pathology reviewed 446 autopsy, surgical, and cytology cases in 2000 (MR Lewin-Smith and CS Specht). In addition, the Division of Environmental Toxicology reviewed 23 cases as part of the Quality Assurance Program.

EDUCATION

Presentations and Seminars: Department personnel made 38 presentations at professional meetings and invited seminars. See division reports for complete lists of titles and dates.

Courses: The department organized one continuing medical education course ("Metals, Health and the Environment"), which was presented at the following locations:

- University of Puerto Rico at Mayaguez – November 2000
- University of Canterbury, Christchurch, New Zealand – December 2000

Department staff served as chair and organizer of an international conference (6th International Symposium on Metal Ions in Biology and Medicine, May 7-10, 2000, San Juan, PR, JA Centeno) and as coorganizer and session chair of a national conference (1st Workshop on Aluminum in Vaccines, San Juan, PR, May 11-12, 2000, JA Centeno).

RESEARCH

Publications: Department personnel published 7 journal articles, 1 book chapter, 6 extended research abstracts, 2 monographs, and 20 abstracts in 2000. See division reports for complete references.



William N. Fishbein, MD, PhD
Chief
Date of Appointment — September 1965

DIVISION OF BIOCHEMICAL PATHOLOGY

MISSION

The Division of Biochemical Pathology provides consultation, education, and research in biochemical and molecular pathology and environmental toxicology, with particular emphasis on genetic influences and interactions.

STAFF

Medical:

William N. Fishbein, MD, PhD

Scientific:

John I. Davis, Chemist — retired April 2000

John W. Foellmer, Microbiologist

Natasha Merezhinskaya, PhD, Research Biologist

DIAGNOSTIC CONSULTATION

Cases _____ **Completed**

Civilian 1

Specialized Consultative Capabilities: Consults involve differential diagnosis of suspected metabolic or inherited disease. The division provides a number of specific assays that are rarely available elsewhere, including:

1. Lactate/Ammonia Dynamometer Exercise Test to evaluate muscle strength and fatigability, and several potential contributory enzyme defects when performance is subnormal. Subjects: inductees with inadequate training performance, muscle pain, etc.
2. Muscle Carnitine Palmityl (and Acetyl) Transferase Assays to rule out/in deficiency of this enzyme, a rare but important cause of poor performance or attacks of rhabdomyolysis. Subjects: as above.
3. Enzymatic trienzyme assays in frozen muscle biopsies of adenylate deaminase and kinase, and creatine kinase for the definitive diagnosis of myoadenylate deaminase (mADD) deficiency. Subjects: suspected cases; poor athletic performance, etc.
4. Enzymatic stain for (mADD). This procedure was developed in our laboratory and is now performed in the AFIP muscle lab and around the world to screen for mADD. Subjects: routine screening for patients undergoing frozen muscle biopsy for diagnosis.
5. PCR assay of fresh or frozen blood for the major paired mutation in the AMPD1 gene. This permits the diagnosis of mADD or its carrier state without recourse to muscle biopsy. Subjects: as in 3 above.
6. Localization of the 3 major lactate transporters (MCT1,2,4) in frozen muscle biopsies. Still in the research phase, employing fluorescence microscopy, this procedure will eventually be adapted to light microscopy for wider use if it proves to be a worthwhile addition to the diagnosis/exclusion of minimal denervation or other early-stage muscle disease.
7. Chromosome 7 Inversion Frequency assay to assess genomic instability in environmentally exposed and/or genetically susceptible cohorts (or individuals). Subjects: Gulf War veterans; autoimmune disease; arsenic or heavy-metal exposure, etc.

Deployments:

1. April 2000, FASEB Annual Meeting, San Diego, Calif. WN Fishbein.
2. July 2000, 18th International Congress of Biochemistry and Molecular Biology, Birmingham, UK, WN Fishbein.

EDUCATION

Presentations and Seminars: Division staff made 3 presentations at meetings and conferences in 2000. Dates and titles are listed at the end of this report.

Trainees: The division provides informal training to junior fellows, visiting scientists, student trainees, and staff members undertaking or analyzing experimental research involving molecular biology, spectrophotometry, high-performance liquid chromatography, enzyme stains and assays, electrophoresis, and ultracentrifugation.

RESEARCH

Publications: Division staff published 1 journal article and 2 abstracts in 2000. Full references are given at the end of this report.

Projects: The division pursued 4 major research projects in 2000:

1. Mutations in the Human MonoCarboxylate Transporter
2. Assessment of Genomic Instability via Chromosome 7
3. Presence and Localization of the Lactate Transporter
4. Presence and Quantitation of Lactate/Pyruvate Transporters in Human Tissues

OTHER ACCOMPLISHMENTS

Committees:

Editorial Boards:

Associate Editor, *Journal of Biomedicine and Biotechnology*, WN Fishbein.

Manuscripts Reviewed: Division staff reviewed 4 articles for the following professional journals:

1. *Muscle and Nerve* (1)
2. *Analytical Biochemistry* (1)
3. *Annals of Neurology* (1)
4. *Surgeon General of the Army* (1)

Offices/Committee Memberships in National or International Societies:

Member, NASA Workshops I-VI for Mars Sample Return Handling Protocols, WN Fishbein.

PRESENTATIONS

1. April 2000: San Diego, Calif, FASEB Annual Meeting, "Acquired myoadenylate deaminase deficiency (mADD)," WN Fishbein.
2. July 2000: Birmingham, UK, 18th International Congress on Biochemistry and Molecular Biology, "Myoadenylate deaminase deficiency: a catalogue of etiologies," WN Fishbein.
3. May 2000: Washington, DC, AFIP Staff Conference, "Lactate transporters in health and disease," WN Fishbein.

PUBLICATIONS

Journal Article:

Merezhinskaya N, Fishbein WN, Davis JI, Foellmer JW. Mutations in MCT1 cDNA in patients with symptomatic deficiency in lactate transport. *Muscle Nerve*. 2000;23:90-97.

Abstracts:

1. Fishbein WN, Davis JI, Hubbs AE, Mena H. Acquired myoadenylate deaminase deficiency (mADD). *FASEB J*. 2000;14:A713.
2. Fishbein WN, Davis JL, Merezhinskaya N, Foellmer JW, Hubbs AE, Mena H. Myoadenylate deaminase deficiency: a catalogue of etiologies. 18th International Congress on Biochemistry and Molecular Biology, Birmingham, UK; 2000:288. Abstract 1035.



Frank B. Johnson, MD
 Chief
 Date of Appointment — 26 February 1990

DIVISION OF CHEMICAL PATHOLOGY

MISSION

The Division of Chemical Pathology provides consultation, education, and research in the diagnosis and interpretation of disease through the application of physical and chemical procedures to tissues and tissue products. The division conducts research and provides education in related subjects, particularly concerning environmental toxicology.

STAFF

Medical:

Frank B. Johnson, MD

Scientific:

Hazel Marie Jenkins, ASCP, Histochemical Technologist

Administrative:

Rosalie McQuade, Secretary

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	690
Army	373
Navy	1
Air Force.....	316
Federal	49
VA	47
OFA	2
Civilian	35
Interdepartmental.....	49
Total	823

The above cases required the following types of procedures and analyses:

- Special staining: 90 slides
- FT-IR calculi cases (military): 662
- FT-IR calculi cases (VA): 41
- FT-IR calculi cases/vet consults: 3
- FT-IR noncalculi cases: 24
- SEM/EDXA (internal consults): 78
- SEM (external, directly to lab): 13
- Wet chemistries: 1,412
- Calculi file slides: 706

- Radio frequency-excited plasma reaction: 37
- Total recuts studied: 1,123
- Contributor slides studied: 70

In addition, the division conducted scanning electron microscopy studies on 13 cases from each division, 4 from Hepatic Pathology, 2 from the Division of Ophthalmic Pathology, and 1 each from the Departments of Cardiovascular Pathology, Orthopedic Pathology, and Telepathology.

EDUCATION

Presentations and Seminars: The division chief presented 2 lectures at the AFIP Tri-Service School of Histopathology. He also provided informal educational experience to members of the staff by discussing cases brought directly to him in consultation.

Trainees: Members of the division provided training in laboratory methods for 2 DoD summer interns.

RESEARCH

Publications: The division chief was a coauthor of 1 research abstract in 2000. Complete bibliographic information is listed at the end of this report.

Projects:

1. Development and Refinement of Methods for Identification and Characterization of Foreign Materials in Tissues
2. Studies on the Purity of Reagents Used in Histology Laboratories

PUBLICATION

Abstract:

Kalasinsky VF, Jenkins HM, Johnson FB. Application of vibrational microspectroscopy to pathology specimens. In: *Abstracts of the 51st Pittsburgh Conference*; March 12-17, 2000; New Orleans, La.



Florabel G. Mullick, MD, ScD, SES
 Acting Chief
 Date of Appointment — 27 June 1996

DIVISION OF ENVIRONMENTAL PATHOLOGY

MISSION

The Division of Environmental Pathology conducts consultation, education, and research in environmental pathology, drug-induced pathology, radiation pathology, and biophysical toxicology. It studies ways to develop, implement, and apply toxicological (biochemical, physical, and chemical) techniques for analyzing human and animal tissue and determining causes of injury.

STAFF

Medical:

- Florabel G. Mullick, MD, Acting Chief
- David B. Busch, MD, PhD, Chief, Mutagen Branch
- Charles S. Specht, MD, Staff Pathologist, ARP
- Michael R. Lewin-Smith, MD, Staff Pathologist, ARP
- Elena R. Ladich, MD, Nelson S. Irey Environmental Pathology Fellow

Scientific:

- José A. Centeno, PhD, Chief, Biophysical Toxicology Branch
- Norbert Page, PhD, Administrator, INTOX Database, ARP

Administrative:

- Mae S. Leonard, Secretary

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	78
Army	58
Navy	7
Air Force	13
Federal	4,590
VA	4,590
Civilian	89
Interdepartmental	73
Total	4,830

The above cases required the following procedures and analyses:

- H&E stains: 28 slides
- Special stains: 20 slides
- Immunohistochemical staining: 35 slides
- Direct immunofluorescence: 5 tests for 2 cases
- HPV in situ hybridization: 12 slides for 4 cases
- Total recuts studied: 63

- Contributor slides studied: 12,455
- Laser Raman microscopy examination: 4 cases
- Fourier transform infrared microscopy examination: 4 cases
- Trace element and toxic metal analyses: 132 cases

Deployments:

JA Centeno:

1. February 8, 2000, Washington, DC, Office of Women's Health, Department of Health and Human Services.
2. May 7-10, 2000, San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine.
3. May 11-12, 2000, San Juan, PR, National Workshop on Aluminum in Vaccines.
4. May 13-20, 2000, Marinduque Island, The Philippines, AFIP/USGS US Reconnaissance Field Evaluation Team to Study Mining-Related Environmental and Human Health Issues.
5. September 4-6, 2000, Uppsala, Sweden, Geological Survey of Sweden.
6. October 18, 2000, Nagoya, Japan, 23rd International Congress of the International Academy of Pathology.
7. October 23-24, 2000, Beijing, China, First Military Medical University, Department of Medicine, Trace Element Research Lab, Laboratory for Trace Elements Research.
8. October 25-26, 2000, Taipei, Taiwan, National Taiwan University, Department of Internal Medicine.
9. November 15-17, 2000, University of Puerto Rico-Mayaguez, AFIP Course.
10. December 4-6, 2000, University of Canterbury, Christchurch, New Zealand, AFIP Course.

MR Lewin-Smith:

1. January 2000, Bethesda, Md, Uniformed Services University of the Health Sciences.
2. February 2000, Bethesda, Md, National Naval Medical Center, Metropolitan Washington Association of Cytology.
3. May 2000, Washington, DC, Georgetown University Medical Center, Department of Pathology.
4. October 2000, San Diego, Calif, Annual Meeting of the American Society of Clinical Pathologists/College of American Pathologists.

CS Specht:

1. October 2000, New York, NY, 65th Annual Meeting of the American College of Gastroenterology.

Quality Assurance:

1. Division staff reviewed 446 autopsy, surgical, and cytology cases in 2000.
2. The Biophysical Toxicology Branch participated in 3 CAP proficiency test programs.
3. The Biophysical Toxicology Branch conducted toxic metals quality assurance analyses of water in support of the quality assurance program for the AFIP DLAM facilities and the AFIP Safety Office.
4. The Biophysical Toxicology Branch participated as inspectors for the Internal CAP Inspection Team for the AFIP Office of Quality Assurance.

EDUCATION

Presentations and Seminars: Members of the division presented 7 invited lectures and 13 scientific presentations, representing over 1,050 man-hours. Dates and titles are listed at the end of this report.

Courses: Biophysical Toxicology Branch personnel organized and gave a total of 18 lectures at 3 continuing medical education courses. These activities had a total of 190 attendees for approximately 715 man-hours.

International Conferences: Biophysical Toxicology Branch personnel organized a 4-day international conference that was attended by over 550 participants. The conference was chaired by JA Centeno. In addition, personnel from the Biophysical Toxicology Branch served as coorganizer and session chair of a national conference with a total of 200 participants.

Trainees: During 2000, the Division of Environmental Pathology provided training to:

1. One ARP Nelson S. Irey Environmental Pathology Fellow (365 days).
2. One college student (summer).

Educational Aids: Division staff produced a CD-ROM (HTML) version of an ARP 35mm slide study set on “Histopathology of Cancer Chemotherapy Drugs and Chemical Warfare Agents” (ARP Bookstore cat# CDS26).

RESEARCH

Publications: Division staff authored or coauthored 4 journal articles, 1 book chapter, 6 manuscripts as extended abstracts, 2 monographs, and 10 abstracts. Complete references are listed at the end of this report.

Projects: The division maintained the following AFIP-approved research projects in 2000:

Principal Investigator: JA Centeno

1. Histopathologic and Laser Raman Microprobe Analysis of Regional Lymph Nodes from Patients with Silicone Breast Implants
2. Analysis and Speciation of Toxic Trace Elements in Body Fluids and Environmental Samples
3. Prospective Clinical and Laboratory Evaluation of Patients with Silicone Breast Implants: Determination of Baseline Silicon Levels
4. The Use of Spectroscopic and Calorimetric Techniques to Evaluate Soil-Contaminant Interactions for Toxic Organic Chemicals
5. Pathological and Biophysical Studies of Implantable Silicone Breast Prostheses
6. Development of an International Tissue and Tumor Repository for Chronic Arsenosis
7. EPR Spin Labeling Measurements of Nuclear, Chemical, and Biological Agent-Induced Alterations of the Insulin Receptor in Red Blood Cell Membranes: A Possible Biomarker for Dose Assessment

Principal Investigator: MR Lewin-Smith

1. The Anatomic Pathology of Former Prisoners of War
2. Pathology of the Lung in a Cohort of Former Prisoners of War

Principal Investigator: CS Specht

1. The Presence and Frequency of Conditions Endemic to the Persian Gulf Region in Surgical Pathologic and Cytopathologic Specimens from a Cohort of Gulf War Veterans
2. Histopathologic Study of Inflammatory and Neoplastic Colon Lesions in Gulf War Veterans
3. Histopathologic Study of Inflammatory and Neoplastic Skin Lesions in Gulf War Veterans
4. A Follow-Up Study of Colonic Specimens Without Overt Histopathologic Abnormalities from a Cohort of Persian Gulf War Military Veterans
5. A Follow-Up Study of 100 Liver Specimens from a Cohort of Persian Gulf War Military Veterans

Principal Investigator: DB Busch

1. In Vitro Isolation of Human Cell DNA Repair Mutants
2. Complementation Group Assignments of Mutagen-Sensitive Human Cells Isolated In Vivo

Research Projects in Collaboration with National and International Organizations:

1. Assessment and Understanding of Health Effects and Cancer Surveillance of Chronic Arsenic Toxicity in West Bengal. DN Guha Mazumder, Calcutta, India.
2. Etiology of Chronic Arseniasis in Southwest China. Baoshan Zheng, Guiyang, China.
3. Effects of Low and Ultra-Low Doses of Cadmium in RWPE-1 Prostate Cells. WB Jonas, USUHS.
4. Chronic Arsenic Exposure from Drinking Water and Reproductive Effects. C Hoppenhay-Rich, University of Kentucky.

Research Funds Received: In 2000, non-AFIP funds were received as part of interagency agreements developed through collaborative projects between staff from the Biophysical Toxicology Branch and several federal agencies.

1. A \$20,000 grant from the US Geological Survey to support a research program on the "Etiology of Chronic Arsenosis in Southwest China," a project in collaboration with US-GS and Chinese scientists.
2. \$10,000 in IAG funds to support a research program between the Biophysical Toxicology Branch and the FDA Division of Mechanics and Material Sciences for the development of collaborative research and testing of medical devices.
3. \$150,000 in IAG to support a research program between the Biophysical Toxicology Branch, the USEPA, NIEHS, and the NCI for the development of a Registry on Chronic Arsenosis Studies.
4. A \$45,000 contract grant from the USEPA to support a research program between the Biophysical Toxicology Branch and the University of Kentucky on reproductive effects of arsenic poisoning.

OTHER ACCOMPLISHMENTS

Collaborators: Consultation, education, and research projects on environmental toxicology, trace element and metal ion toxicology, and characterization of foreign materials have been developed in collaboration with the following institutions and scientists:

Military/Federal:

1. Uniformed Services University of the Health Sciences, Bethesda, Md, Dr. Wayne B. Jonas.
2. Walter Reed Army Medical Center, Plastic Surgery Clinic Services, Dr. Daniel Jorgenson.
3. US Naval Medical Center, Plastic Surgery Services, San Diego, Calif, Dr. Reed Panos.
4. Centers for Disease Control and Prevention-National Vaccine Program Office, Dr. Marty Myers.
5. US Environmental Protection Agency, Dr. Herman Gibb.
6. US Geological Survey, Dr. Robert B. Finkelman.
7. US Department of Agriculture, Dr. Rufus Chaney.
8. National Institute of Environmental Health Sciences, Dr. Claudia Thompson.
9. National Cancer Institute, Dr. David Longfellow, Dr. Ken Cantor.
10. US Food and Drug Administration, Dr. William Regnault.
10. National Cancer Institute, NIH, Dr. Ken Kraemer.
11. Lawrence Livermore National Laboratory, Calif, Dr. Larry H. Thompson.
12. Lawrence Berkeley National Laboratory, Berkeley, Calif, Dr. Dale Perry.

Civilian:

1. Center for Occupational and Environmental Medicine, Mich, Dr. Michael Harbut.
2. University of Kentucky, Department of Preventive Medicine, Dr. Claudia Hopenhayn-Rich.
3. University of California, James E. Cleaver, PhD.
4. University of California, Los Angeles, Dr. John Graham.
5. Jackson State University, School of Science and Technology, Environmental Toxicology Program, Dr. Paul Tchounwou, Dr. Abdul Mohamed.
6. Medical College of Wisconsin, Department of Pathology, Dr. Andre Balla.
7. University of Maryland, College Park, Dr. Alba Torrents.

International:

1. University of Otago, School of Medicine, Wellington, New Zealand, Dr. Philip Weinstein. Research collaboration on cadmium and prostate cancer.
2. Geological Survey of Sweden, Dr. Olle Selinus. Research collaboration on medical geology.
3. Academia Sinica and Institute of Geochemistry, China, Prof. Dr. Baoshan Zheng. Research collaboration on arsenic health effects.
4. Institute of Post Graduate Medical Education and Research, Calcutta, India, Prof. Dr. D.N. Guha Mazumder. Research collaboration on arsenic health effects.
5. National Taiwan University Hospital, Taipei, Taiwan, Prof. Dr. Chin-Hsiao Tseng. Research collaboration on arsenic health effects.
6. University of Manitoba, Winnipeg, Dr. Cheryl Greenberg.
7. Erasmus University, Rotterdam, The Netherlands, Drs. Jan Hoeijmakers, Jan de Wit,

Nicholaas G. J. Jaspers, Wim Vermullen.

8. University of Sussex, England, Dr. Alan Lehman.
9. Institute Nazionale di Sanita, Rome, Italy, Prof. Dr. Sergio Caroli. Research collaboration on trace element speciation studies.

Honors: Certificate of Appreciation, Provincial Government of Marinduque, The Philippines, JA Centeno.

Committees:

Editorial Boards:

JA Centeno

1. *Toxicologic Pathology*
2. *Biological Trace Element Research*
3. Senior Editor, *Metal Ions in Biology and Medicine*. Vol 6. Paris, France: John Libbey Eurotext; 2000.

Manuscripts Reviewed:

JA Centeno

1. *Biological Trace Element Research* (2)
2. *Frezenius Journal of Analytical Chemistry* (2)
3. *Archives of Pathology and Laboratory Medicine* (1)
4. *Toxicologic Pathology* (1)

Offices/Committee Memberships in National or International Societies:

JA Centeno

1. Member, TASCAs Interagency Testing Committee, USEPA, Washington, DC (1998-Present).
2. Member, UNESCO-International Working Group on Medical Geology (2000-Present).
3. Member, External Advisory Committee, Jackson State University Center for Environmental Health, National Institutes of Health-*Research Centers for Minority Institutions*, Jackson, Miss (1997-Present).
4. Member, US Presidential Advisory Board for Sciences, Math and Engineering, Ana G. Mendez University System of Puerto Rico, San Juan, PR (1995-Present).
5. Member, External Advisory Committee, National Science Foundation-Minority Institutions of Excellence Program, Universidad Metropolitana, Ana G. Mendez University System, San Juan, PR (1999 – Present).
6. Member, External Advisory Committee, National Science Foundation-STARGE Program at Jackson State University, Jackson, Miss (1999-Present).
7. Member, Joint US Geological Survey-AFIP Reconnaissance Field Evaluation Team, Marinduque Island, The Philippines, May 12-19.
8. Member, Organizing Committee and Session Moderator, 1st Workshop on Aluminum in Vaccines, San Juan, PR, May 11-12.
9. Cochair, 7th International Symposium on Metal Ions in Biology and Medicine, Saint Petersburg, Russia (2000-2002).
10. Member, International Scientific Committee and Invited Plenary Speaker, International Conference on Trace Element Speciation in Biomedical, Nutritional and Environmental Sciences, GSF, Germany (1998-2001).
11. Member, International Scientific Committee, 10th International Conference on Oral Chelators (ICOC) in the Treatment of Thalassemia and Other Diseases, Cyprus, March 22-26.

Faculty Appointments:

1. Universidad Metropolitana of Puerto Rico, Adjunct Professor, JA Centeno.
2. University of Puerto Rico at Mayaguez, Adjunct Professor, JA Centeno.

Continuing Education: Members of the division received the following training in 2000:

1. CME credits through Weekly Professional Staff Conferences, AFIP.
2. College of American Pathologists/American Society of Clinical Pathologists Annual

Meeting, San Diego, Calif.

3. Oakstone Medical Publishing/Albert Einstein College of Medicine.

Public Affairs Reports:

1. AFIP Web site (<http://www.afip.org>; "What's News?"). "AFIP's Environmental and Toxicologic Pathology Considered for US Team to Investigate Human Health Impact of Philippines Mine Waste Disaster," August 2000.
2. AFIP Web site (<http://www.afip.org>; "What's News?"). "International Symposium on Metal Ions in Biology and Medicine in San Juan, Puerto Rico, Examines Role of Metal Ions and Trace Elements in Human Health, Environmental Issues," August 2000.

PRESENTATIONS

1. January 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Topics in environmental and toxicologic pathology," MR Lewin-Smith.
2. February 2000: Washington, DC Office of Women's Health, Department of Health and Human Services, "The Silicone Breast Implant Registry," JA Centeno.
3. February 2000: Bethesda, Md, National Naval Medical Center, Metropolitan Washington Association of Cytology, "The cytology of infectious diseases," MR Lewin-Smith.
4. May 2000: San Juan, PR, Chairman, Scientific Program, 6th International Symposium on Metal Ions in Biology and Medicine, JA Centeno.
5. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, AFIP/USGS Course, "Metal ions in environmental health and disease," JA Centeno.
6. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Clinical and toxicological manifestation of arsenic poisoning," JA Centeno.
7. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Raman spectroscopy study of the interaction of metal cations with DNA and its nitrogen bases," JA Centeno.
8. May 2000: San Juan, PR, CDC/AFIP National Workshop on Aluminum in Vaccines, "MMF and aluminum: an introduction," JA Centeno.
9. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Environmental pathology of metal exposures – skin," FG Mullick.
10. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "Measurements of dental implant corrosion products and histologic correlation in peri-implant tissues," ER Ladich.
11. May 2000: San Juan, PR, 6th International Symposium on Metal Ions in Biology and Medicine, "The International Tissue and Tumor Repository on Chronic Arsenosis in Humans," NP Page.
12. May 2000: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Topics in environmental and toxicologic pathology," MR Lewin-Smith.
13. June 2000: Washington, DC, US Army Medical Defense Bioscience Review, "EPR/spin labeling measurements of nuclear, chemical and biological agent-induced alterations of the insulin receptor in red blood cell membranes: a possible biomarker for dose assessment," JA Centeno, et al.
14. September 2000: Uppsala, Sweden, Geological Survey of Sweden, "Environmental toxicology and pathology of metal ion exposures," JA Centeno.
15. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, "Environmental pathology and health effects of arsenic poisoning: an introduction and overview," JA Centeno.
16. October 2000: Nagoya, Japan, 23rd International Congress of the International Academy of Pathology and 14th World Congress of Academic and Environmental Pathology, "The International Tissue and Tumor Repository for Chronic Arsenosis: a source for environmental pathology studies," JA Centeno.
17. October 2000: Beijing, China, First Military Medical University, "Laboratory for trace elements research," JA Centeno.
18. October 2000: Taipei, Taiwan, National Taiwan University, "Chronic arsenic toxicity:

- natural history, pathology and speciation," JA Centeno.
19. October 2000: Taipei, Taiwan, National Taiwan University, "Environmental pathology and toxicology of toxic metal ion exposures: selected skin lesions," JA Centeno.
 20. October 2000: San Diego, Calif, Annual Meeting of the American Society of Clinical Pathologists/College of American Pathologists, "A study of lower gastrointestinal tract pathology specimens from a cohort of US Gulf War veterans," MR Lewin-Smith.
 21. October 2000: New York, NY, 65th Annual Meeting of the American College of Gastroenterology, "Histopathologic study of gastrointestinal tract specimens from Gulf War veterans," CS Specht.
 22. November 2000: Mayaguez, PR, University of Puerto Rico, AFIP Course, "Metals, Health and the Environment," JA Centeno.
 23. December 2000: Christchurch, New Zealand, University of Canterbury, AFIP Course, "Metals, Health and the Environment," JA Centeno.

PUBLICATIONS

Journal Articles:

1. Van Dyck K, Robberecht H, Van Cauwenbergh R, Deelstra H, Arnaud J, Benijts F, Centeno JA, Exley C, Taylor H, et al. Spectrometric determination of silicon in food and biological samples: an interlaboratory trial. *J Anal At Spectrom.* 2000;15:735-741.
2. Meira LB, Graham JM Jr, Greenberg CR, Busch DB, Doughty AT, Ziffer DW, Coleman DM, Savre-Train I, Friedberg EC. Manitoba aboriginal kindred with original cerebro-oculo-facio-skeletal syndrome has a mutation in the Cockayne syndrome group B (CSB) gene. *Am J Hum Genet.* 2000;66:1221-1228.
3. Slor H, Batko S, Khan SG, Sobe T, Emmert S, Khadavi A, Frumkin A, Busch DB, Albert RB, Kraemer KH. Clinical, cellular and molecular features of an Israeli xeroderma pigmentosum family with a frameshift mutation in the XPC gene: sun protection prolongs life. *J Invest Dermatol.* 2000;115:974-980.
4. Specht CS, Lewin-Smith MR, Kalasinsky VF, Peterson MR, Mullick FG. The surgical pathology and cytopathology of US Persian Gulf military veterans: identification of diseases endemic to the theater of operations. *Arch Pathol Lab Med.* 2000;124:1299-1301.

Extended Abstracts:

1. Ladich ER, Mullick FG, Centeno JA. Environmental pathology of metal exposures – skin. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:3-5.
2. Ladich ER, Martinez LE, Torres N, Eliis GL, Valenzuela AE, Mullick FG, Centeno JA. Measurements of dental implant corrosion products and histologic correlation in peri-implant tissues. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:345-347.
3. Music FC, Centeno JA, Hadfield TL, Arroyo CM, Steel-Goodwin L, Sweeney RE, Carmichael AJ. EPR spin labeling measurements of nuclear, chemical and biological agent-induced alterations of the insulin receptor in red blood cell membranes: a possible biomarker for dose assessment. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:334-338.
4. Page NP, Centeno JA, Mullick FG, Martinez LE, Ladich ER, et al. The International Tissue and Tumor Registry for Chronic Arsenosis in Humans. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:759-761.
5. Environmental Pathology Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed samples suspect for elevated iron content and hemochromatosis. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:688-690.
6. Rivera NK, Geonoga E, Hernandez SP, Centeno JA. Surface-enhanced Raman spectroscopy study of the interaction of metal cations with DNA and its nitrogen bases. In: Centeno JA, Collery PH, Vernet G, Finkelman RB, Gibb H, Etienne JC, eds. *Metal Ions in Biology and Medicine.* Vol 6. Paris, France: John Libbey Eurotext; 2000:355-360.

Monographs:

1. Centeno JA, Martinez L, Ladich ER, Page NP, Mullick FG, Ishak KG, Zheng BS, Gibb H, Thompson C, Longfellow D. *Arsenic-Induced Lesions*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
2. Plumlee GS, Morton RA, Boyle TP, Medlin JH, Centeno JA. An overview of mining-related environmental and human health issues, Marinduque Island, The Philippines: observations from a joint US Geological Survey – Armed Forces Institute of Pathology Reconnaissance Field Evaluation; May 12-19, 2000. *US Geological Survey Open-file Report 00-397*. Available at <http://geology.cr.usgs.gov/pub/open-file-reports/ofr-00-0397/>

Abstracts:

1. Centeno JA, Mullick FG. Environmental pathology and health effects of arsenic poisoning: an introduction and overview. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*. Nagoya, Japan; 2000:135-140.
2. Centeno JA, Mullick FG. The International Tissue and Tumor Registry on Chronic Arsenosis: a source for environmental pathology studies. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*. Nagoya, Japan; 2000:86-90.
3. Finkelman RB, Centeno JA, Zheng BS. Geological epidemiology: new tools to address arseniasis and fluorosis. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*. Nagoya, Japan; 2000:79-85.
4. Finkelman RB, Belkin HE, Zheng BS, Centeno JA. Arsenic poisoning caused by residential coal combustion in Guizhou Province, China. In: *Proceedings of the 31st International Geological Congress, Rio de Janeiro, Brazil*; 2000.
5. Mullick FG, Centeno JS, Ladich ER, Martinez LA, Page N. Pathology of arsenic-induced lesions of the skin and internal malignancies. In: *Proceedings of the 14th World Congress of Academic and Environmental Pathology*. Nagoya, Japan; 2000:76-78.
6. Lewin-Smith MR, Specht CS, Ladich ER, Kalasinsky VF, Peterson MR, Mullick FG. A study of lower gastrointestinal tract pathology specimens from a cohort of US Gulf War veterans. *Am J Clin Pathol*. 2000;114:638. Abstract 27.
7. Przygodzki RM, Goodman ZD, Rabin L, Centeno JA, Liu Y, Hubbs AE, O'Leary TJ. Hemochromatosis (HFE) gene analysis of formalin-fixed, archival liver samples suspect for elevated iron content and hemochromatosis. *Mod Pathol*. 2000;13:189A. Abstract 1112.
8. Panos RG, Centeno JA, Mullick FG, Wandel AG, Torres N, Allen K. In *Abstracts of the 6th International Symposium on Metal Ions in Biology and Medicine*. San Juan, PR; 2000.
9. Specht CS, Lewin-Smith MR, Ladich ER, Kalasinsky VF, Peterson MR, Mullick FG. Histopathologic study of gastrointestinal tract specimens from Gulf War veterans. *Am J Gastroenterol*. 2000;95:2502.
10. Garcia AR, Montali RJ, Dunn L, Torres NL, Centeno JA, Goodman Z. Hemochromatosis in captive otarids. In: *Abstracts of the International Association of Aquatic Animal Medicine*. New Orleans, La; 2000.

Book Chapter:

Specht CS, Laver NM. Benign and malignant lymphoid tumors, leukemia and histiocytic lesions. In: Albert DM, Jakobiec FA, eds. *Principles and Practice of Ophthalmology*. 2nd ed. Philadelphia, Pa: WB Saunders; 2000:5146-5168.



Victor F. Kalasinsky, PhD
 Chief
 Date of Appointment — 25 September 1989

DIVISION OF ENVIRONMENTAL TOXICOLOGY

MISSION

The Division of Environmental Toxicology conducts consultation, education, and research in environmental toxicology, and develops techniques for analyzing human and animal tissue and determining causes of injury.

STAFF

Scientific:

- Victor F. Kalasinsky, PhD, Chief
- Steven C. Cordero, Laboratory Manager, ARP
- Diane M. Wong-Verelle, Laboratory Technician, ARP
- Albin L. Moroz, Computer Analyst, ARP

Administrative:

- Kim M. Knight, Administrative Assistant, ARP

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	92
Army	80
Navy	5
Air Force	7
Federal	5
VA	4
OFA	1
Civilian	6
Interdepartmental	35
Total	138

By using gas chromatography, mass spectrometry, liquid chromatography, and Fourier transform infrared and Raman spectrometry, it was possible to identify or characterize unknown chemical substances in 38 cases. These included pesticides, plastics, therapeutic drugs, and 4 cases of dioxin analysis in patients thought to be exposed to Agent Orange in Vietnam. Other cases included serologic tests on Gulf War veterans.

Deployments:

1. March 12-17, 2000, New Orleans, La, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, VF Kalasinsky, SC Cordero.
2. March 22, 2000, Philadelphia, Pa, Society of Toxicology Annual Conference, VF Kalasinsky.
3. April 10, 2000, Gaithersburg, Md, National Institute of Standards and Technology, VF Kalasinsky.
4. June 25-29, 2000, Winnipeg, Manitoba, Spectroscopy 2000 Conference on Optical

Diagnostics, VF Kalasinsky.

5. June 20-23, 2000, Washington, DC, National Meeting of the American Chemical Society, VF Kalasinsky, SC Cordero, DM Wong-Verelle.
6. August 22, 2000, Aberdeen Proving Ground, Md, US Army Center for Health Promotion and Preventive Medicine, VF Kalasinsky.

Quality Assurance:

1. The division participated in 1 CAP proficiency test.
2. The division conducted 6 quality assurance analyses of xylene and ethyl alcohol in support of the solvent recycling program at AFIP and WRAMC.
3. Staff of the division participated as inspection team members for the College of American Pathologists in August (Northwest Hospital, Baltimore, Md), September (Suburban Hospital, Bethesda, Md), and November (Veterans Affairs Medical Center, Washington, DC).
4. Division staff reviewed 23 cases involving urinary calculi in 2000.

EDUCATION

Presentations and Seminars: Division staff made 9 presentations at meetings and conferences in 2000. Dates and titles are listed at the end of this report.

Trainees: Two SEAP high school summer students spent 8 weeks in the environmental toxicology laboratory learning analytical methods of toxicology.

RESEARCH

Publications: Division staff authored or coauthored 2 journal articles and 7 abstracts. A complete list of references appears at the end of this report.

Projects: Division staff conducted research described in 8 approved protocols:

1. Characterization of Asbestos Fibers in Tissue by Infrared Microspectroscopy
2. Military Working Dogs Deployed to Southwest Asia as Sentinels for Human Environmental Exposure During the Persian Gulf War
3. Histopathologic Study of Inflammatory and Neoplastic Skin Lesions in Gulf War Veterans
4. Histopathologic Study of Inflammatory and Neoplastic Colon Lesions in Gulf War Veterans
5. Infrared Spectroscopic Mapping of Atherosclerotic Plaques Associated with Sudden Cardiac Death
6. A Follow-Up Study of Colonic Specimens Without Overt Histopathologic Abnormalities from a Cohort of Persian Gulf War Military Veterans
7. A Histopathologic Review of Head and Neck Specimens from a Cohort of Persian Gulf War Veterans
8. The Anatomic Pathology of Former Prisoners of War

In Gulf War-related studies, the division is participating in the DoD's Comprehensive Clinical Evaluation Program (CCEP). AFIP is charged with the long-term storage of blood and serum specimens collected from Gulf War veterans and their families who are reporting symptoms that might be related to service in the Gulf region. A database for diagnosis of surgical biopsies is also being maintained for Gulf War veterans reporting to VA or military hospitals.

OTHER ACCOMPLISHMENTS

Scientific Appointments:

Guest Researcher at NIH (National Institute of Diabetes, Digestive, and Kidney Diseases), VF Kalasinsky

Committees:

Editorial Boards:

Associate Editor, *Vibrational Spectroscopy*, VF Kalasinsky

Manuscripts Reviewed:

VF Kalasinsky

1. *Analytical Chemistry* (1)

2. *Applied Spectroscopy* (3)
3. *Arthritis and Rheumatism* (1)
4. *Journal of Physical Chemistry* (2)
5. *Talanta* (1)
6. *Vibrational Spectroscopy* (2)

Continuing Education: The following workshops, courses, and conferences were attended by our division for continuing education:

1. Advanced Cell Biology, Johns Hopkins University, Baltimore, Md
2. Ecotoxicology, Johns Hopkins University, Baltimore, Md
3. Advances in High-Performance Liquid Chromatography, Columbia, Md
4. Applied Preparatory Mathematics, Johns Hopkins University, Applied Physics Laboratory, Laurel, Md
5. Environmental Organic Chemistry, Johns Hopkins University, Applied Physics Laboratory, Laurel, Md
6. Biochemical Sensors, Johns Hopkins University, Applied Physics Laboratory, Laurel, Md
7. Effective Writing and Speaking in the Sciences, Johns Hopkins University, Rockville, Md
8. WRAMC Research Course, Bethesda, Md
9. Problem-Solving in FT-IR Spectroscopy, Columbia, Md
10. Applications of Mass Spectrometry Coupled to Gas Chromatography and Liquid Chromatography, Baltimore, Md
11. Supervisory Symposium on Personnel Administration, WRAMC, Washington, DC
12. Chemical Warfare Agents and Terrorism, USAMRICCD, WRAMC, Washington, DC

PRESENTATIONS

1. January 2000: Boulder, Colo, Nicolet Research Symposium, "Infrared and Raman microscopy of foreign materials in tissue," VF Kalasinsky.
2. March 2000: New Orleans, La, 51st Pittsburgh Conference, "Determination of exposure to environmental chemicals using a transdermal sweat patch and GC/MS analysis," SC Cordero.
3. March 2000: New Orleans, La, 51st Pittsburgh Conference, "Applications of vibrational microspectroscopy to pathology specimens," VF Kalasinsky.
4. March 2000: New Orleans, La, 51st Pittsburgh Conference, "Headspace GC/MS analysis of volatile organic compounds in pathology specimens and consumer products," SC Cordero.
5. March 2000: Philadelphia, Pa, Society of Toxicology Conference, "Determination of topically applied antibiotics and other environmental chemicals by using a transdermal sweat patch and GC/MS analysis," VF Kalasinsky.
6. June 2000: Winnipeg, Manitoba, Spectroscopy 2000 Conference on Optical Diagnostics: Shedding New Light on Disease, "Applications of infrared and Raman microspectroscopy to pathology specimens," VF Kalasinsky.
7. June 2000: Washington, DC, AFIP Weekly Professional Staff Conference, "Assessment of Agent Orange/dioxin exposure in Vietnam veterans by GC/MS analysis: overview and case studies," DM Wong-Verelle.
8. August 2000: Washington, DC, American Chemical Society Meeting, "Headspace GC/MS analysis of volatile organic compounds in pathology specimens and consumer products," DM Wong-Verelle.
9. October 2000: New York, NY, American College of Gastroenterology Meeting, "Histopathologic study of gastrointestinal tract specimens from Gulf War veterans," CS Specht.
10. October 2000: San Diego, Calif, American Society of Clinical Pathologists (ASCP) Meeting, "A study of lower gastrointestinal tract pathology specimens from a cohort of Gulf War veterans," MR Lewin-Smith.

PUBLICATIONS

Journal Articles:

1. Specht CS, Lewin-Smith MR, Kalasinsky VF, Peterson MR, Mullick FG. The surgical pathol-

- ogy and cytopathology of US Persian Gulf War military veterans: identification of diseases endemic to the theater of operations. *Arch Pathol Lab Med.* 2000;124:1299-1301.
2. Kalasinsky VF, Subramaniam S, Su C-F, Cook RL. Raman, infrared, and microwave spectra and conformational preferences of meso-Bisoxirane. *J Mol Struct.* 2000;550-551:521-530.

Abstracts:

1. Kalasinsky VF, Jenkins HM, Johnson FB. Application of vibrational microspectroscopy to pathology specimens. In: *Abstracts of the 51st Pittsburgh Conference*; March 12-17, 2000; New Orleans, La.
2. Wong-Verelle DM, Cordero SC, Kalasinsky VF. Headspace GC/MS analysis of volatile organic compounds in pathology specimens and consumer products. In: *Abstracts of the 51st Pittsburgh Conference*; March 12-17, 2000; New Orleans, La.
3. Cordero SC, Corso CJ, Wong-Verelle DM, Kalasinsky VF. Determination of exposure to environmental chemicals using a transdermal sweat patch and GC/MS analysis. In: *Abstracts of the 51st Pittsburgh Conference*; March 12-17, 2000; New Orleans, La.
4. Kalasinsky VF, Corso CJ, Wong-Verelle DM, Cordero SC. Determination of topically applied antibiotics and other environmental chemicals by using a transdermal sweat patch and GC/MS analysis. In: *Abstracts of the Society of Toxicology*; March 20-23, 2000; Philadelphia, Pa.
5. Wong-Verelle DM, Cordero SC, Moeller B, Kalasinsky VF. Headspace GC/MS analysis of volatile organic compounds in pathology specimens and consumer products. In: *Abstracts of the American Chemical Society*; August 20-24, 2000; Washington, DC.
6. Specht CS, Lewin-Smith MR, Ladich ER, Kalasinsky VF, Mullick FG. Histopathologic study of gastrointestinal tract specimens from Gulf War veterans. *Am J Gastroenterol.* 2000;95:2502.
7. Lewin-Smith MR, Specht CS, Ladich, Kalasinsky VF, Mullick FG. A study of lower gastrointestinal tract pathology specimens from a cohort of US Gulf War veterans. *Am J Clin Pathol.* 2000;114:638. Abstract 27.



Douglas J. Wear, MD
Chair
Date of Appointment — 27 June 1988

DEPARTMENT OF INFECTIOUS AND PARASITIC DISEASES PATHOLOGY

MISSION

See individual division reports.

ORGANIZATION

The department is organized into 4 divisions and the Office of the Chair.

1. Division of AIDS Pathology and Emerging Infectious Diseases — Ann M. Nelson, MD
2. Division of Geographic Pathology — Peter L. McEvoy, LTC, MC, USA
3. Division of Microbiology — Ted L. Hadfield, LtCol, USAF, BSC
4. Division of Molecular Pathobiology — Shyh-Ching Lo, MD, PhD

STAFF

Office of the Chair

Medical:

- Douglas J. Wear, MD, Distinguished Scientist, ARP
- Ronald C. Neafie, MS
- Sarah S. Frankel, MD
- E. R. Brachtel, MD, Callender-Binford Fellow

Administrative:

- Darlene Wilson, Secretary to the Chair

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	175
Federal (VA/PHS)	91
Civilian.....	805
Interdepartmental.....	784
Total	1,855

Impact:

SS Frankel:

1. Continued first human clinical trial employing ex vivo-generated dendritic cells for reinfusion to establish immunity to HIV-1. This includes agreement with corporate partner Aventis-Pasteur, and a successful pre-IND meeting with the FDA, as well as the establishment of full support of the Division of Retrovirology, WRAIR.
2. Continued observations on the role of dendritic cells in dengue virus infection.
3. Provided scientific support for Department of Vaccine Research, Division of Retrovirology,

WRAIR, with regard to the targeting of dendritic cells.

EDUCATION

Presentations and Seminars: Department staff gave 40 presentations and seminars in 2000. See division reports for dates and titles.

Courses: Department staff participated in 4 non-AFIP courses and supported 2 nondepartmental AFIP courses. See division reports for complete information.

Trainees: The department provided training to 13 professionals, fellows, and students, for a total of 1,176 trainee-days.

RESEARCH

Publications and Projects: Department staff completed 95 publications in 2000, including 24 journal articles, 18 abstracts, 47 book chapters, 2 books, and 4 other publications, and worked on 22 research projects in 2000. See division reports for details.

OTHER ACCOMPLISHMENTS

Collaborators:

Military:

Division of Retrovirology, WRAIR, Rockville, Md.

Civilian:

Aaron Diamond AIDS Research Center, Rockefeller University, New York

PRESENTATIONS

1. February 2000: Loma Linda, Calif, Loma Linda University's Pathology Department Reunion Lectures, "Pathology of biowarfare agents," DJ Wear.
2. March 2000: Washington, DC, AFIP's Wednesday Staff Conference, "Pathology of biowarfare agents," DJ Wear.

PUBLICATIONS

Journal Articles

1. Ignatius R, Marovich M, Mehlhop E, Villamide L, Mahnke K, Cox WI, Isdell F, Frankel SS, Mascola JR, Steinman RM, Pope M. Canarypox virus-induced maturation of dendritic cells is mediated by apoptotic cell death and tumor necrosis factor alpha secretion. *J Virol.* 2000;74:11329-11338.
2. Lo SC, Levin L, Ribas J, Chung R, Wang RY, Wear D, Shih JW. Lack of serological evidence for *Mycoplasma fermentans* infection in army Gulf War veterans: a large scale case-control study. *Epidemiol Infect.* 2000;125:609-616.
3. Mascola JR, Frankel SS, Broliden K. HIV-1 entry at the mucosal surface: role of antibodies in protection. *AIDS.* 2000;14 (suppl 3):S167-S174.
4. Mascola JR, Stiegler G, VanCott TC, Katinger H, Carpenter CB, Hanson CE, Beary H, Hayes D, Frankel SS, Birx DL, Lewis MG. Protection of macaques against vaginal transmission of a pathogenic HIV-1/SIV chimeric virus by passive infusion of neutralizing antibodies. *Nat Med.* 2000;6:207-210.
5. Wu SJ, Grouard-Vogel G, Sun W, Mascola JR, Brachtel E, Putvatana R, Louder MK, Filgueira L, Marovich MA, Wong HK, Blauvelt A, Murphy GS, Robb ML, Innes BL, Birx DL, Hayes CG, Frankel SS. Human skin Langerhans' cells are targets of dengue virus infection. *Nat Med.* 2000;6:816-820.
6. Zhang S, Wear DJ, Lo S. Mycoplasmal infections alter gene expression in cultured human prostatic and cervical epithelial cells. *FEMS Immunol Med Microbiol.* 2000;27:43-50.
7. Zhong L, Granelli-Piperno A, Pope M, Ignatius R, Lewis MG, Frankel SS, Steinman RM. Presentation of SIVgag to monkey T cells using dendritic cells transfected with a recombinant adenovirus. *Eur J Immunol.* 2000;30:3281-3290.
8. Glenn GM, Taylor DN, Li X, Frankel S, Montermarano A, Alving CR. Transcutaneous immunization: a human vaccine delivery strategy using a patch. *Nat Med.* 2000;6:1403-1406.

Book

Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume*

1: *Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.

Book Chapters

1. Marty AM, Neafie RC, Klassen-Fischer MK, Ash LR, Wear DJ. Miscellaneous nematodiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:507-518.
2. Wear DJ, Meyers WM, Neafie RC. Creeping eruption. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:367-372.
3. Frankel S, Wenig B. Head and neck pathology of human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS). In: Fu, Wenig, Abemayor, Wenig, eds. *Pathology of the Head and Neck*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.

Abstracts

1. Brachtel ER, Grouard-Vogel G, Sun W, Wong H, Louder M, Wu S, Hayes C, Murphy G, Robb M, Birx D, Frankel SS, Mascola JR, Klassen-Fischer M. Dendritic cells are targets for dengue virus infection in humans. *Mod Pathol*. 2000;13:167A. Abstract 978.
2. Brachtel ER, Michael NL, Wenig BM, Nelson AM, Wear DJ, Mascola JR, Frankel SS. HIV-1 splice variants in paraffin embedded tonsils from infected patients, evaluated with reverse-transcriptase polymerase chain reaction (RT-PCR). *Mod Pathol*. 2000;13:167A. Abstract 979.
3. Frankel S, Wenig B. Head and neck pathology of human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS). In: Fu YS, Wenig BM, Wenig B, Abemayor C, eds. *Pathology of the Head and Neck: with Clinicopathologic Correlations*. New York, NY: Churchill Livingstone; 2000:65-80.

Other Publications

Wear DJ, Casey BL, Card FW, Mills JP, eds. *Armed Forces Institute of Pathology Annual Report 1999*. Washington, DC: Armed Forces Institute of Pathology; 2000.



Ann M. Nelson, MD
Chief
Date of Appointment — 1 March 1995

DIVISION OF AIDS PATHOLOGY AND EMERGING INFECTIOUS DISEASE

MISSION

The Division of AIDS Pathology and Emerging Infectious Diseases supports the United States Department of Defense and serves the American people by providing medical expertise in HIV-related and emerging infections in diagnostic consultation, education, and research to enhance the health and well-being of the people we serve.

STAFF

Medical:

Ann M. Nelson, MD, Chief
 Chandra A. Prabha, COL, MC, USA, Assistant Chief

Administrative:

Cynthia G. Wilson, Secretary, ARP

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	15
Army	7
Navy	4
Air Force.....	4
Federal	55
VA	55
Civilian	81
Interdepartmental.....	41
Total	192

The division made no change in the contributor diagnosis in 114 cases and a minor change in diagnosis in 32 cases. We received 6 cases with no contributor diagnosis; 1 case was recorded without coding.

Impact:

The division has developed the world's largest repository (>6,000 cases) of the pathology of HIV infection and AIDS. The collection dates back to the 1970s and includes material from original cases reported to the Centers for Disease Control and Prevention, and autopsy, surgical, and cytology material from the US, Africa, Central and South America, Europe, and Asia. Material from the repository has been used for 2 books and courses on the pathology of emerging infections and for contributions to the National Cancer Institute HIV-malignancy bank.

Material is organized by patient demographics, tissue site, and diagnosis. This new database has been the basis for:

- a multidisciplinary course on diagnosis of indicator conditions of HIV infection and AIDS (August 2000)
- chapters in the authoritative text on the histopathology of the spectrum of disease in HIV infection and AIDS.

Deployments:

Weekly, WRAMC, Department of Anatomic Pathology, Cytopathology, Dermatopathology, and General Surgical Pathology Case Signouts, CA Prabha.

EDUCATION

Presentations and Seminars: The division participated in the daily slide conference (5 times per week) of the Division of Geographic Pathology. In addition, division staff gave 12 presentations in 2000. A complete list of dates and titles appears at the end of this report.

Courses: The division presented the course Pathology of HIV Infection and AIDS for 31 attendees, for a total of 896 man-hours.

Trainees: The division had 1 trainee in rotation, for a total of 42 training-days.

Educational Aids:

- AIDS study sets (50 stained glass slides each)
- AIDS study sets (69 2x2 transparencies and case discussion booklet)

RESEARCH

Publications: The division published 4 refereed journal articles, 1 book chapter, 1 abstract, and 3 other publications, in 2000. A complete bibliographic list is included at the end of this report.

Projects: The division maintained 2 research projects in 2000, as listed below:

1. National Cancer Institute/Human Immunodeficiency Virus-Related Malignancy Bank
2. AIDS Atlas

OTHER ACCOMPLISHMENTS

Collaborators:

Military:

Walter Reed Army Institute of Research, Retrovirology, Rockville, Md.

Civilian:

1. L. Barth Reller, MD, Duke University Medical Center, Durham, NC.
2. John F. Madden, MD, Duke University Medical Center, Durham, NC.
3. C. Robert Horsburgh, Jr, MD, Emory University School of Medicine, Atlanta, Ga.
4. Jan Orenstein, MD, The George Washington University Medical Center, Washington, DC.
5. Michael N. Koss, MD, University of Southern California School of Medicine, Los Angeles, Calif.

Committees:

Editorial Boards:

1. Editor, *History of Pathology Society Newsletter*, AM Nelson
2. Section Editor, *Annals of Diagnostic Pathology*, AM Nelson

Manuscripts Reviewed:

1. *Annals of Diagnostic Pathology* (3), AM Nelson
2. *Archives of Pathology and Laboratory Medicine* (2), AM Nelson
3. *The American Journal of the Medical Sciences* (1), AM Nelson
4. *Archives of Medical Research* (1), AM Nelson
5. *Pathology Research and Practice* (2), AM Nelson

Offices/Committee Memberships in National or International Societies:

1. Education Committee, US and Canadian Academy of Pathology, AM Nelson
2. Secretary, History of Pathology Society, AM Nelson
3. American Board of Pathology, Test Committee Medical Microbiology 2000, AM Nelson

Continuing Education: The following courses were attended for training during 2000 by division staff:

1. The American Society of Dermatopathology Annual Meeting
2. AFIP Weekly Staff Conferences and Special Lectures

Official Trips (funding agency in parentheses):

1. January 2000, 7th Conference on Retroviruses and Opportunistic Infections, San Francisco, Calif, AM Nelson.
2. March 2000, SAFMLS, Los Angeles, Calif, AM Nelson.
3. March 2000, 89th Annual Meeting of the US and Canadian Academy of Pathology, New Orleans, La, Course Director, The Pathology of HIV Disease, AM Nelson (USCAP).
4. July 2000, Association of Pathologists of Eastern, Central, and Southern Africa, Victoria Falls, Zimbabwe, AM Nelson.
5. November 2000, USCAP Education Committee Meeting, Chicago, Ill, AM Nelson (USCAP).
6. November 2000, Health USA 2000, Mexico City, AM Nelson.

PRESENTATIONS

1. March 2000: Los Angeles, Calif, SAFMLS, "Diagnosis of emerging pathogens," AM Nelson.
2. March 2000: Atlanta, Ga, USCAP (Special Course), "Hits and misses at the AFIP: interesting and unusual cases," AM Nelson.

3. April 2000: New York, NY, New York University Hospital, Pathology Grand Rounds, "Emerging infections HIV and AIDS," AM Nelson.
4. May 2000: Washington, DC, George Washington University Hospital, Pathology Grand Rounds, AM Nelson.
5. June 2000: AFIP Weekly Staff Conference, "Acanthamoeba, case presentation," AM Nelson.
6. June 2000: AFIP Weekly Staff Conference, "Syphilis in HIV/AIDS case presentation," CA Prabha.
7. July 2000: Victoria Falls, Zimbabwe, Association of Pathologists of Eastern, Central, and Southern Africa, "Pathology of AIDS in Africa – adults," AM Nelson.
8. August 2000: Washington, DC, AFIP Course, HIV Infection and AIDS, "Pathology of the altered host response in AIDS," AM Nelson.
9. August 2000: Washington, DC, AFIP Course, HIV Infection and AIDS, "Pathology of dermatologic manifestations in HIV/AIDS," CA Prabha.
10. August 2000: Washington, DC, AFIP Course, HIV Infection and AIDS, "Pathology of fungal diseases in HIV/AIDS," CA Prabha.
11. August 2000: Washington, DC, AFIP Course, HIV Infection and AIDS, "Mycobacterium avium complex disease," AM Nelson.
12. November 2000: Mexico City, Health USA 2000, "Immune defects in HIV infection and AIDS," AM Nelson.

PUBLICATIONS

Journal Articles

1. Barbian LT, Sledzik PS, Nelson AM. Case studies in pathology from the National Museum of Health and Medicine, Armed Forces Institute of Pathology. *Ann Diagn Pathol.* 2000;4:170-173.
2. Nelson AM, Sledzik PS. Digging for pathogens [book review]. *Am J Epidemiol.* 2000;151:1-3.
3. Nelson AM. The cost of disease eradication: smallpox and bovine tuberculosis. In: Food and Agricultural Security. *New York Academy of Sciences.* 2000;894:83-91.
4. Rush WL, Andriko JA, Taubenberger JK, Nelson AM, Abbondanzo SL, Travis WD, Koss MN. Primary anaplastic large cell lymphoma of the lung: a clinicopathologic study of five patients. *Mod Pathol.* 2000;13:1285-1292.

Abstracts

Brachtel ER, Michael NL, Wenig BM, Nelson AM, Wear DJ, Mascola JR, Frankel SS. HIV-1 splice variants in paraffin embedded tonsils from infected patients, evaluated with reverse-transcriptase polymerase chain reaction (RT-PCR). *Mod Pathol.* 2000;13:167A. Abstract 979.

Book Chapter

Nelson AM, Neafie RC. Protothecosis. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases.* 8th ed. Philadelphia, Pa: WB Saunders; 2000:547-548.

Other Publications

1. Special Course: The Pathology of Infectious Diseases: Current Challenges, New Directions, USCAP, March 2000, New Orleans, La.
2. AFIP Course: HIV Infection and AIDS, August 2000, Washington, DC.
3. Nelson AM. Department of Defense Public Health Laboratory Services and Systems: The Armed Forces Institute of Pathology. 2000;165(suppl 2):71.



Peter L. McEvoy, LTC, MC, USA
 Chief
 Date of Appointment — 14 April 1997

DIVISION OF GEOGRAPHIC PATHOLOGY

MISSION

The Division of Geographic Pathology provides medical expertise in diagnostic consultation, education, and research on human tissues and body fluids for military, VA, and civilian hospitals in the United States and for missionary hospitals in Africa. Materials of epidemic, emerging, reemerging, and unusual diseases are studied, cataloged, and compiled in our teaching materials. These teaching materials enhance awareness and understanding in the medical community of the pathology and pathogenesis of infectious diseases. They also facilitate our special research interests in endemic tropical diseases.

STAFF

Medical:

Peter L. McEvoy, LTC, MC, USA, Staff Pathologist
 Mary K. Klassen-Fischer, Maj, USAF, MC, Chief, Fungal Diseases Branch

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	178
Army	102
Navy	35
Air Force	41
Federal	36
VA	34
OFA	2
Civilian	419
Interdepartmental.....	806
Total	1,439

For the 4 divisions of Geographic Pathology, Molecular Pathobiology, Microbiology, and AIDS Pathology, 1,510 cases for consultation, 72 for education, and 49 for research required the following types of procedures and analyses:

- H&E stains: 2,330 slides
- Special stains: 6,831 slides
- Immunohistochemical staining: 710 slides
- Electron microscopy: 51 cases
- Direct immunofluorescence: 156 tests for 61 cases
- HPV in situ hybridization: 36 slides for 7 cases
- Molecular biology examination: 44 tests for 12 cases
- I&P molecular biology examination: 52 tests for 50 cases
- Total recuts studied: 9,871

— Contributor slides studied: 3,397

The division made no change in the contributor diagnosis in 385 cases, a minor change in diagnosis in 98 cases, and a major change in diagnosis in 3 cases. We received 141 cases with no contributor diagnosis; 6 cases were recorded without coding.

Deployments:

1. Weekly, WRAMC Department of Anatomic Pathology, Case Signouts, MK Klassen-Fischer.
2. Weekly, WRAMC Department of Anatomic Pathology, Case Signouts, PL McEvoy.

Quality Assurance:

1. Improved quality of histopathology laboratory by tracking stain quality and presence of artifacts, especially Warthin-Starry and Grocott.
2. Maintained database to track reportable infectious diseases in active-duty military personnel.
3. Advised on development of joint federal epidemiological tracking of emerging infectious diseases.
4. Produced HQAP Case of the Quarter, PL McEvoy.

EDUCATION

Presentations and Seminars: The division presented 16 papers at scientific conferences and conducted departmental slide conferences 5 times per week. Dates and titles are listed at the end of this report.

Courses: The division's professional staff participated in 2 non-AFIP course and 4 AFIP courses.

Trainees: The division had 3 trainees, for 52 trainee-days.

Educational Aids: The division maintains glass teaching sets with examples of infectious diseases in tissues for trainees and visitors, and for the biannual departmental course. Assisted Discovery Channel in TV program.

RESEARCH

Publications: The division published 3 journal articles, 1 abstract, 1 book, and 39 book chapters in 2000. Complete references are listed at the end of this report.

Projects: The division maintained 2 research projects in 2000:

1. WHO Collaborating Center
2. Dengue Virus Vaccine, MK Klassen-Fischer

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Naval Medical Research Institute, Bethesda, Md
2. Walter Reed Army Institute of Research, Silver Spring, Md
3. Division of Retrovirology, WRAIR, Rockville, Md
4. Walter Reed Army Medical Center, Washington, DC

Civilian:

Henry M. Jackson Foundation, Rockville, Md

Committees:

Owl School Student Science Fair Committee, MK Klassen-Fischer

Manuscripts Reviewed:

Archives of Surgical Pathology (1), MK Klassen-Fischer

Offices/Committee Memberships in National or International Societies:

Chair, Scientific Program Committee of Binford-Dammin Society of Infectious Disease Pathologists, MK Klassen-Fischer.

Continuing Education: Division staff attended training courses in 2000 provided by the following:

1. Greater Washington Infectious Disease Society
2. Tropical Medicine Association of Washington
3. Tropical Medicine Dinner Club of Baltimore, Johns Hopkins

4. Helminthological Society of Washington
5. American Society of Microbiology
6. USCAP

PRESENTATIONS

1. January 2000: Washington, DC, George Washington University, "Viral and bacterial infections," MK Klassen-Fischer.
2. January – February 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Pathology small group sessions," MK Klassen-Fischer.
3. February 2000: Washington, DC, Georgetown University Medical Center, "Parasitology," PL McEvoy.
4. March 2000: New Orleans, La, 89th Meeting of the US and Canadian Academy of Pathology (USCAP), "Dendritic cells are targets for dengue virus infection in humans," EF Brachtel, MK Klassen-Fischer.
5. March 2000: New Orleans, La, 89th Meeting of the US and Canadian Academy of Pathology (USCAP), "Histoplasmosis," MK Klassen-Fischer.
6. March 2000: New Orleans, La, 89th Meeting of the US and Canadian Academy of Pathology (USCAP), "Identification of Gordian and mermithid worms submitted as human pathogens," MK Klassen-Fischer, RC Neafie.
7. March 2000: Bethesda, Md, Pathology Pizza Seminar, USUHS, "Interesting topics in infectious disease pathology," RC Neafie.
8. March 2000: Washington, DC, Diseases of Man Class for North Cross School, AFIP, "Some interesting infectious diseases," RC Neafie.
9. April 2000: Silver Spring, Md, 10th Annual Anatomic Pathology Review and Update Course, AFIP, "Pathology of infectious and parasitic diseases," PL McEvoy.
10. May 2000: Washington, DC, Senior Residents Symposium, "Interesting case presentations," RC Neafie.
11. June 2000: Washington, DC, AFIP Weekly Professional Staff Conference, "Interesting case presentations," PL McEvoy.
12. June 2000: Washington, DC, Senior Residents Symposium, "Interesting case presentations," PL McEvoy.
13. June 2000: Washington, DC, AFIP Weekly Professional Staff Conference, "Interesting case presentations," MK Klassen-Fischer.
14. July 2000: Bethesda, Md, Military Tropical Medicine Course, USUHS, "Loiasis and dracunculiasis," RC Neafie.
15. August 2000: Arlington, Va, HIV Infection and AIDS Course, AFIP, "Protozoal and parasitic diseases," "Pathology and laboratory diagnosis," RC Neafie.
16. September 2000: Washington, DC, Georgetown University Medical Center, "Granulomas," PL McEvoy.

PUBLICATIONS

Journal Articles

1. Hadfield TL, McEvoy P, Polotsky Y, Tzinslering VA, Yakovlev AA. The pathology of diphtheria. *J Infect Dis.* 2000;181(suppl) 1:S116-S120.
2. Kester KE, Visvesara GS, McEvoy P. Organism responsible for nodular cutaneous microsporidiosis in a patient with AIDS. *Ann Intern Med.* 2000;133:925.
3. Lemons-Estes FM, Capt HP, Skelton H, Smith KJ. A clonal cutaneous CD30+ lymphoproliferative eruption in a patient with evidence of past exposure to hepatitis E. *Int J Dermatol.* 2000;39:521-527.

Abstract

Klassen-Fischer MK, Abalos FA, Neafie RC. Identification of Gordian and mermithid worms submitted as human pathogens. *Mod Pathol.* 2000;13:170A. Abstract 995.

Book

Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume 1: Helminthiases.* Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.

Book Chapters

1. Meyers WM, Neafie RC. Tropical phagedenic ulcer. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:392-393.
2. Meyers WM, Neafie RC. Miscellaneous filarial infections. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:769-775.
3. Neafie RC, Meyers WM. Cutaneous larva migrans. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:797-799.
4. Marty AM, Neafie RC. Overview of the pathogenic helminths with discussion of non-pathogenic worms, arthropods, and other structures. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:1-21.
5. Cheever AW, Neafie RC. Schistosomiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, eds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:23-48.
6. Marty AM, Neafie RC. Paragonimiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:49-67.
7. Mas-Coma S, Castello MDB, Marty AM, Neafie RC. Hepatic trematodiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:69-92.
8. Marty AM, Andersen EM. Fasciolopsiasis and other intestinal trematodiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:93-105.
9. Marty AM, Mas-Coma S, Castello MDB. Miscellaneous trematodiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:107-115.
10. Neafie RC, Marty AM, Johnson LK. Taeniasis and cysticercosis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:117-136.
11. Marty AM, Neafie RC. Dipylidiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, eds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:137-144.
12. Marty AM, Johnson LK, Neafie RC. Hydatidosis (echinococcosis). In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:145-164.
13. Marty AM, Neafie RC. Diphyllbothriasis and sparganosis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:165-183.
14. Marty AM, Neafie RC. Coenurosis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:185-196.
15. Marty AM, Neafie RC. Hymenolepiasis and miscellaneous cyclophyllidiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:197-214.
16. Ottesen EA, Meyers WM, Neafie RC, Marty AM. Lymphatic filariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:215-243.

17. Baird JK, Neafie RC, Meyers WM. Mansonelliasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:245-260.
18. Marty AM, Duke BOL, Neafie RC. Loiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:261-274.
19. Marty AM, Neafie RC. Dirofilariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:275-285.
20. Neafie RC, Marty AM, Duke BOL. Onchocerciasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:287-307.
21. Font RL, Gutierrez Y, Semba RD, Marty AM. Ocular onchocerciasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:307-318.
22. Baird JK, Klassen-Fischer MK, Neafie RC, Meyers WM. American brugian filariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:319-328.
23. Neafie RC, Marty AM. Dracunculiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:329-339.
24. Meyers WM, Neafie RC, Marty AM. Strongyloidiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:341-352.
25. Meyers WM, Marty AM, Neafie RC. Ancylostomiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:353-365.
26. Wear DJ, Meyers WM, Neafie RC. Creeping eruption. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:367-372.
27. Marty AM, Neafie RC. Angiostrongyliasis cantonensis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:373-384.
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30. Marty AM. Toxocariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:411-421.
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32. Johnstone PAS, Hira PR, Neafie RC, Klassen-Fischer MK. Gnathostomiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:447-460.
33. Marty AM, Neafie RC. Trichuriasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, eds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:461-470.
34. Neafie RC, Marty AM, Andersen EM. Trichinosis. In: Meyers WM, ed; Neafie RC, Marty

- AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:471-480.
35. Cross JH, Neafie RC. Capillariasis (intestinal and hepatic). In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:481-492.
36. Gardiner CH, Meyers WM, Neafie RC. Halicephalobiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:493-497.
37. Neafie RC, Marty AM. Oesophagostomiasis and ternidenamiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:499-506.
38. Marty AM, Neafie RC, Klassen-Fischer MK, Ash LR, Wear DJ. Miscellaneous nematodiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:507-518.
39. Neafie RC, Marty AM. Acanthocephaliasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:519-529.



Ted L. Hadfield, LtCol, USAF, BSC, Ret (Oct 2000)
Distinguished Scientist (Oct 2000)
Chief
Date of Appointment — April 1989

DIVISION OF MICROBIOLOGY

MISSION

The Division of Microbiology conducts research in the development of rapid, sensitive molecular assays to identify infectious agents in the laboratory or in the field. This effort has 6 components: (1) development of PCR assays employing fluorescent real-time technology for identification of biologic warfare agents from environmental and medical specimens; (2) identification of bacteria observed in paraffin-embedded tissues; (3) fingerprinting of bacterial agents using amplified fragment length polymorphism (AFLP) and pulse field gel electrophoresis; (4) support for the chemical-biological mass spectrometer program; (5) vaccine development; and (6) consultations on infectious diseases, especially mycobacterial diseases. The division supports educational efforts by presenting seminars and lecturing at courses.

ORGANIZATION

The division is organized into 3 branches and the Office of the Chief.

1. Experimental Molecular Biology Branch — Normita Bravo, Maj, USAF, BSC
2. Bacteriology/Virology Branch — John David, LT, MSC, USNR

3. Mycobacteriology Branch — Wayne M. Meyers, MD, PhD

STAFF

Medical:

Wayne M. Meyers, MD, PhD

Scientific:

- (A) Normita Bravo, Maj, USAF, BSC
- (A) Michael Dempsey, Capt, USAF, BSC
- John David, LT, MSC, USN
- Michael Dobson, CMDR, MSC, USN
- Robert Zagorski, Sgt, Research Assistant
- Kevin Dysinger, HM2, Research Assistant
- Mina Izadjoo, PhD, ARP
- Binxue Zhang, MD, PhD, ARP
- (D) Eu Ju Park, PhD, Molecular Virologist, ARP
- Joseph Thompson, Research Assistant/Animal Caretaker, ARP
- Marie Ellen D’Nicuola, Medical Technologist, ARP
- Adrian Ravizee, Research Assistant, ARP
- Robert Burgess, Microbiologist, ARP
- (D) Malcolm Smith, Molecular Biologist, ARP
- (D) William Cunningham, Laboratory Worker, VA
- Elizabeth Harvell, Laboratory Worker, VA

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	2
Army	2
Federal	1
VA	1
Civilian	312
Interdepartmental.....	11
<hr/>	
Total	326

The division performed 52 molecular biology tests for 50 patients for Geographic Pathology. The division made no change in the contributor diagnosis in 16 cases. We received 282 cases with no contributor diagnosis; 18 cases were recorded without coding.

The division developed 15 new molecular biology assays in 2000. The Bacteriology Branch continued development of fluorescent-labeled probe hydrolysis assays for several bacterial agents considered biological warfare threats, including *Yersinia pestis*, *Burkholderia* sp, *Brucella* sp, *Variola*, and West Nile virus.

Impact:

1. We participated in the Joint Field Trials at Dugway Proving Grounds to demonstrate the efficacy of identifying bacteria isolated from liquid samples. Results were excellent.
2. We extended studies of the pathogenesis of Buruli ulcer, especially in West Africa. Our studies have confirmed insects in swamp sediment as intermediate mechanical vectors for *Mycobacterium ulcerans*.
3. The Department of Infectious and Parasitic Diseases Pathology published the first volume of the long-awaited update to *Pathology of Tropical and Extraordinary Diseases*. This new book, *Pathology of Infectious Diseases, Volume 1: Helminthiases*, provides the most comprehensive description and illustration of the morphology and life cycles of helminths, and the history, clinical features, histopathology, diagnosis, and treatment of helminthic infections.

EDUCATION

Presentations and Seminars: Division staff made 13 presentations at professional meetings and conferences. A complete list of dates and titles appears at the end of this report.

Courses: In 2000, TL Hadfield gave educational presentations totaling 30 man-hours, and WM Meyers gave 450 man-hours of presentations.

Trainees: The division had 4 trainees (AF Academy students) in 2000, for a total of 576 hours of training. We also trained 4 military and civilian individuals and 1 foreign national, for a total of 496 hours.

RESEARCH

Publications: Division staff published 9 journal articles, 17 book chapters, 2 books, and 11 abstracts in 2000. See the end of this report for complete bibliographical listings.

Projects: The division maintained 11 research projects in 2000, as described below:

1. Pathology and Pathogenesis of *Mycobacterium ulcerans* Infections (Buruli Ulcer). We have now studied specimens from more than 2,500 patients with Buruli ulcer and have made several presentations on clinicopathologic correlations in this disease.
2. Clinicopathologic Correlations of Osteomyelitis in Buruli Ulcer. Observation of 25 Buruli ulcer patients suggests that osteomyelitis may arise by direct extension from cutaneous lesions, or by hematogenous spread from distant cutaneous lesions.
3. Expanded Studies on Lymphadenopathy in Buruli Ulcer Patients. Histopathologic analyses demonstrate that local and regional lymph nodes in patients with Buruli ulcer are invaded and severely damaged by *Mycobacterium ulcerans*.
4. Epidemiology and Transmission of Buruli Ulcer. Buruli ulcer prevalence exceeded that of tuberculosis and leprosy. Muddy sediment of swamps promotes the proliferation of *M. ulcerans*, and insects may serve as intermediate mechanical vectors. Fish also concentrate the bacteria by filtration in their gills.
5. WHO Reference Center for Buruli Ulcer. In 1998, WHO established a Reference Center for the Histopathologic Diagnosis and Study of Buruli Ulcer in the Mycobacteriology Branch at the AFIP. This effort remains active.
6. The Bacteriology Branch developed fluorescent-labeled probe hydrolysis assays for non-threat pathogens, such as West Nile virus, *Yersinia pestis*, *Burkholderia*, *Brucella*, and *Variola*. Progress is rapid and should result in several assays being available in the near future.
7. The Experimental Molecular Biology Branch continued to identify genes associated with pathogenesis and fingerprinting of infectious agents. Methodologies are being developed for molecular fingerprinting of organisms using fluorescent-labeled, uniquely identified DNA fragments generated during PCR.
8. The division continues to develop a *Brucella* vaccine.
9. The division continues to expand RAPID PCR and RTPCR cycling assays.

Non-AFIP/ARP Research Funds Received:

1. <i>Brucella</i> Vaccine Project	\$350,000
2. CPG-Induced Resistance to <i>Brucella</i> (Mina Izadjoo)	\$100,000
3. CBMS Project	\$1,000
4. PCR Database Project	\$150,000
5. Biological Aerosol Warning System	\$100,000
6. AF Force Protection Battle Lab	\$20,000
7. DNA Primers/Probes Development	\$50,000
8. DARPA	\$100,000
9. WHO	\$30,000
10. Multicenter Study	\$750,000

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. David Sickenberger, SBCCOM (ERDEC), Edgewood Proving Grounds
2. Michael Goode, SBCCOM (ERDEC), Edgewood Proving Grounds
3. Holly Franz, LtCol, USAF, Patrick AFB
4. David Hoover, COL, MC, USA, WRAIR
5. Luther Lindler, PhD, WRAIR

6. Eric Henchal, PhD, John Ezzell, PhD, Sophie Ibrahim, PhD, USAMRIID
7. Dan Martin, PhD, Dugway Proving Ground
8. Kent Lohman, PhD, Brooks AFB
9. Patricia Reilly, PhD, Wilford Hall Medical Center
10. Debbie Neimeyer, LtCol, USAF, Force Protection Battle Lab

Civilian:

1. Kent Vorhees, PhD, Franco Basila, PhD, Mike Beverly, Christie Hawkes, Angelo Madonna, Colorado School of Mines
2. Wayne Griess, PhD, Steve Lambert, Arpad Vass, PhD, Oakridge National Laboratories
3. Paul Jackson, PhD, Los Alamos National Labs
4. Robin Weyant, PhD, Diagnostic Bacteriology, CDC
5. Kurt Peterson, Deepika DeSilva, Randy Rasmussen, Idaho Technologies

International:

All studies on Buruli ulcer were carried out in collaboration with the following entities:

1. Institute of Tropical Medicine, Antwerp, Belgium
2. Benin Ministry of Health, Cotonou, Benin
3. World Health Organization, Geneva, Switzerland
4. Ghanaian Ministry of Health, Accra, Ghana
5. Ivory Coast Ministry of Health, Abidjan, Ivory Coast
6. Togo Ministry of Health, Lomé, Togo
7. Macedonian Army Medical Center, Microbiology Division, PCR Diagnosis of Brucella in Blood

Committees:

TL Hadfield:

1. Consultant, Signature Characterization (of Biological Agents), Patrick AFB
2. Member, Executive Committee for Common Medical Diagnostic Systems (for BWAs)
3. Member, American Public Health Association Bioterrorism Defense Panel (CDC-APHL-sponsored)
4. Panel Member, Defense Technology Objective for PCR
5. Panel Member, Computer-Based Training Committee, USAF

WM Meyers:

1. Member, Executive Committee, International Leprosy Association
2. Member, Organizing Committee, 16th International Leprosy Congress (2003)
3. Member, Board of Reference, American Leprosy Missions
4. Medical Consultant, American Leprosy Missions
5. Consultant, German Leprosy Relief Association
6. Consultant, Damien-Dutton Society for Leprosy Aid
7. Consultant, Leonard Wood Memorial (American Leprosy Foundation)
8. Research Affiliate, Tulane Regional Primate Research Center
9. Member, Buruli Ulcer Task Force, World Health Organization

Continuing Education: Division staff attended the following courses for training in 2000:

1. *Brucella* Research Conference
2. Training for Light Cycler
3. SAFMLS Meeting
4. ASM Meeting
5. 2nd Annual Conference on Vaccine Research
6. Transport of Biohazardous Materials Course
7. MIDI Instrument Training

Official Trips:

TL Hadfield:

1. January 10-14, 2000, La Palmas, Calif
2. January 18-24, 2000, Atlanta, Ga

3. January 24-26, 2000, San Antonio, Tex
4. February 2-4, 2000, Patrick AFB
5. February 22 & 23, 2000, Oak Ridge, Tenn
6. February 23-25, 2000, Los Alamos, NM
7. February 28 & 29, 2000, Patrick AFB
8. March 1-5, 2000, SAFMLS, Calif
9. March 19-24, 2000, Atlanta, Ga
10. April 10 & 11, 2000, Patrick AFB
11. April 11-13, 2000, Denver, Colo
12. May 21-25, 2000, American Society of Microbiology
13. June 8 & 9, 2000, Patrick AFB
14. June 18-July 16, 2000, Skopje, Macedonia
15. September 3-10, 2000, Nimes, France

WM Meyers:

1. February 8-17, 2000, Limuru, Kenya. Continuing Medical and Dental Education Conference XXI, cosponsored by the Christian Medical and Dental Society and the University of Louisville, Kentucky.
2. March 1-3, 2000, Geneva, Switzerland. 3rd WHO Ad Hoc Advisory Group Meeting on Buruli Ulcer.
3. April 26, 2000, Washington, DC. Symposium on Leprosy, sponsored by Novartis Corporation and facilitated by the Global Health Council, and the Novartis Foundation for Sustainable Development.
4. May 2000, Greenville, SC. Board of Directors Meeting, American Leprosy Missions, Inc.
5. June 5-7, 2000, Geneva, Switzerland. 4th WHO Ad Hoc Advisory Group Meeting on Buruli Ulcer. Working session for the preparation of WHO Monograph on Laboratory Methods for the Diagnosis of Buruli Ulcer (*Mycobacterium ulcerans* Infection).
6. June 2000, Antwerp, Belgium. Research consultation on Buruli ulcer.
7. August 26, September 2, 2000, Ghana, West Africa. Consultant on Buruli ulcer for WHO, American Leprosy Mission and Ghanaian Ministry of Health.
8. September 15-16, 2000, Bellmore, NY. Board Meeting, Damien-Dutton Society for Leprosy Aid, Inc.
9. September 25-29, 2000, Washington, DC. Designated Observer, 42nd Directing Council of the Pan American Health Organization, 52nd Session of the Regional Committee of the World Health Organization for the Americas.
10. October 19-20, 2000, Kobe, Japan. Kobe International University, Second Annual Symposium on Buruli Ulcer.
11. October 23, 2000, Nagoya, Japan. Seminar, Department of Dermatological Engineering, Nagoya University.
12. October 27-28, 2000, Greenville, SC. Board of Directors Meeting, American Leprosy Missions, Inc.
13. November 6-9, 2000, Agra, India. Asian Leprosy Congress.
14. November 10, 2000, Agra, India. Planning Committee, International Leprosy Association, and *International Journal of Leprosy*.

PRESENTATIONS

1. February 2000: Limuru, Kenya, Continuing Medical and Dental Education Conference XXI, Christian Medical and Dental Society and the University of Louisville (Ky), "Leprosy," WM Meyers.
2. February 2000: Limuru, Kenya, Continuing Medical and Dental Education Conference XXI, Christian Medical and Dental Society and the University of Louisville (Ky), "Buruli ulcer," WM Meyers.
3. March 2000: Geneva, Switzerland, 3rd WHO Advisory Group Meeting on Buruli Ulcer, "Pathogenesis and pathology of Buruli ulcer," WM Meyers.

4. April 2000: Washington, DC, AFIP Weekly Professional Staff Conference, "Update on Buruli ulcer," WM Meyers.
5. May 2000: Los Angeles, Calif, MASINT, "DOD PCR database: progress report," TL Hadfield.
6. May 2000: Los Angeles, Calif, 6th National Symposium: Basic Aspects of Vaccines, "Intranasal immunization of mice with purified *Brucella melitensis* lipopolysaccharide as a non-covalent complex with *Neisseria meningitidis* group B outer membrane protein," Y Liang, TL Hadfield, DL Hoover.
7. May 2000: Los Angeles, Calif, 100th General Meeting of the American Society for Microbiology, "Comparison of PCR specificity for lethal factor (LF) of *Bacillus anthracis* detection as analyzed by Perkin Elmer 7700 and Idaho Technology Light Cycler 32," B Zhang, TL Hadfield.
8. May 2000: Greenville, SC, American Leprosy Missions Board Meeting, "Thoughts on the future of basic research in leprosy," WM Meyers.
9. May 2000: Greenville, SC, American Leprosy Missions Board Meeting, "Another mycobacterial disease, Buruli ulcer," WM Meyers.
10. July 2000: Bethesda, Md, USUHS, Military Tropical Medicine Course, "Leprosy," WM Meyers.
11. July 2000: Bethesda, Md, USUHS, Military Tropical Medicine Course, "Buruli ulcer," WM Meyers.
12. August 2000: Washington, DC, National Youth Leadership Fellowship for Medicine, "Research on diseases in Africa and other countries," WM Meyers.
13. October 2000: Kobe, Japan, K.I.U. International Buruli Ulcer Symposium 2000, Kobe International University, Keynote Address, "Buruli ulcer: hope grows for prevention and cure," WM Meyers.

PUBLICATIONS

Journal Articles

1. Abalos FM, Aguiar J, Guedenon A, Portaels F, Meyers WM. *Mycobacterium ulcerans* infection (Buruli ulcer): a case report of the disseminated nonulcerative form. *Ann Diagn Pathol*. 2000;4:386-390.
2. Beverly MB, Voorhees KJ, Hadfield TL, Cody RB. Electron monochromator mass spectrometry for the analysis of whole bacteria and bacterial spores. *Anal Chem*. 2000;72:2428-2432.
3. Eze MO, Yuan L, Crawford RM, Paranaivitana CM, Hadfield TL, Bhattacharjee AK, Warren RL, Hoover DL. Effects of opsonization and gamma interferon on growth of *Brucella melitensis* 16M in mouse peritoneal macrophages in vitro. *Infect Immun*. 2000;68:257-263.
4. Gilligan K, Shipley M, Stiles B, Hadfield TL, Sofi Ibrahim M. Identification of *Staphylococcus aureus* enterotoxins A and B genes by PCR-ELISA. *Mol Cell Probes*. 2000;14:71-78.
5. Gomez A, Mve-Obiang A, Vray B, Remacle J, Chemlal K, Meyers WM, Portaels F, Fonteyne PA. Biochemical and genetic evidence for phospholipase C activity in *Mycobacterium ulcerans*. *Infect Immun*. 2000;68:2995-2997.
6. Gormus BJ, Baskin GB, Xu K, Ratterree MS, Martin LN, Mack PA, Bohm RP, Meyers WM, Walsh GP. Antileprosy protective vaccination of rhesus monkeys with BCG or BCG plus heat-killed *Mycobacterium leprae*: immunologic observations. *Int J Lepr Other Mycobact Dis*. 2000;68:27-39.
7. Hadfield TL, McEvoy P, Polotsky Y, Tzinslering VA, Yakovlev AA. The pathology of diphtheria. *J Infect Dis*. 2000;181(suppl 1):S116-S120.
8. Izadjoo MJ, Polotsky Y, Mense MG, Bhattacharjee AK, Paranaivitana CM, Hadfield TL, Hoover DL. Impaired control of *Brucella melitensis* infection in *Rag1*-deficient mice. *Infect Immun*. 2000;68:5314-5320.
9. Lagarrigue V, Portaels F, Meyers WM, Aguiar J. L'uliere de Buruli: attention aux atteintes osseuses: a propos de 33 observes au Bénin. *Med Trop (Mars)*. 2000;60:262-266.

Abstracts

1. David JC, Weyant RS, Zhang B, Dobson ME, Hadfield TL. Molecular fingerprinting using AFLP for temporally dispersed *Brucella melitensis* from Illinois. *Brucellosis 2000*, 53rd Brucellosis Research Conference, September 7-9, 2000; Nimes, France. Abstract 106.
2. Heppner D, Izadjoo M, Krieg A, Hoover D. CpG oligodeoxynucleotides protect mice

- against brucellosis. Brucellosis 2000, 53rd Brucellosis Research Conference, September 7-9, 2000; Nimes, France. Abstract 70.
3. Huang HZ, Chu MC, Hilyard EJ, Hadfield TL, Engelthaler DM, Lindler LE. Molecular genomic characterization of *Yersinia pestis*. American Society for Microbiology 100th General Meeting, May 21-25, 2000:148. Abstract C-89.
 4. Izadjoo MJ, Bhattacharjee AK, Nikolich M, Hadfield TL, Hoover DL. Passive transfer of brucella immunity in mice. Brucellosis 2000, 53rd Brucellosis Research Conference, September 7-9, 2000; Nimes, France. Abstract 32.
 5. Klassen-Fischer MK, Abalos FA, Neafie RC. Identification of Gordian and mermithid worms submitted as human pathogens. *Mod Pathol.* 2000;13:170A. Abstract 995.
 6. Liang Y, Bhattacharjee AK, Izadjoo M, Nikolich M, Hadfield TL, Hoover DL. Intranasal immunization of mice with purified *Brucella melitensis* lipopolysaccharide as a non-covalent complex with *Neisseria meningitidis* group B outer membrane protein. 6th National Symposium: Basic Aspects of Vaccines, May 3-5, 2000.
 7. Nikolich M, Warren R, Lindler L, Hadfield T, McQuiston J, Boyle S, Schurig G, Sriranganathan, Hoover D. Attenuation of *Brucella melitensis* 16M deleted in wboA and purE. Brucellosis 2000, 53rd Brucellosis Research Conference, September 7-9, 2000; Nimes, France. Abstract 84.
 8. Nikolich M, Warren R, Lindler L, Hadfield T, McQuiston J, Boyle S, Schurig G, Sriranganathan, Hoover D. Attenuation of *Brucella melitensis* wboA and wboA purE mutants. American Society for Microbiology, 100th General Meeting, May 21-25, 2000:304. Abstract E-50.
 9. Parnavitana C, Das R, Zelazowska E, Izadjoo M, Jett M, Hoover D. Analysis of changes in gene expression pattern induced by rough *B melitensis* (WR51) in normal and immunized mouse spleen cells using gene array blots. Brucellosis 2000, 53rd Brucellosis Research Conference, September 7-9, 2000; Nimes, France. Abstract 47.
 10. Polotsky Y, Mense M, Nikolich M, Izadjoo M, Bhattacharjee A, Hadfield T, Hoover D. Granulomatous inflammation in *Brucella melitensis*-infected mice. American Society for Microbiology, 100th General Meeting, May 21-25, 2000:311. Abstract E-74.
 11. Zhang BX, Kulesh D, Hadfield T. Rapid detection of Bacilli globigii spores and vegetative colonies by Roche's Light Cycler: a novel approach for bacteria detection. American Society for Microbiology, 100th General Meeting, May 21-25, 2000:173. Abstract C-189.

Book Chapters

1. Asiedu K, Meyers WM, Agbenorku P. Clinical features and treatment. In: Asiedu K, Scherpbier R, Raviglione M, eds. *Buruli Ulcer: Mycobacterium ulcerans Infection*. Geneva, Switzerland: World Health Organization; 2000:37-38.
2. Baird JK, Neafie RC, Meyers WM. Mansonelliasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiasis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:245-260.
3. Baird JK, Klassen-Fischer MK, Neafie RC, Meyers WM. American brugian filariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiasis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:319-328.
4. Fields P, Meyers WM. Mycobacterial infections. In: Farmer ER, Hood AF, eds. *Pathology of the Skin*. 2nd ed. New York, NY: McGraw-Hill; 2000:553-578.
5. Gardiner CH, Meyers WM, Neafie RC. Halicephalobiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiasis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:493-497.
6. Leopaicut J, Neafie RC, Meyers WM, Marty AM. Enterobiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiasis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:433-446.
7. Meyers WM. Leprosy. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:513-523.
8. Meyers WM. Nontuberculous mycobacterial skin infections. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB

- Saunders; 2000:524-528.
9. Meyers WM, Hayman J. Pathology. In: Asiedu K, Scherpbier R, Raviglione M, eds. *Buruli Ulcer: Mycobacterium ulcerans Infection*. Geneva, Switzerland: World Health Organization; 2000:35-36.
 10. Meyers WM, Horsburgh CR Jr, Portaels F. Buruli ulcer: review of a reemerging mycobacterial disease. In: Strecker W, Kinzl L, eds. *Tropen Chirurgie III [Tropical Surgery III], Hefte zur Zeitschrift, Der Unfallchirurg' 274*. Berlin, Germany: Springer-Verlag; 2000:262-271.
 11. Meyers WM, Marty AM, Neafie RC. Ancylostomiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:353-365.
 12. Meyers WM, Neafie RC. Miscellaneous filarial infections. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:769-775.
 13. Meyers WM, Neafie RC. Tropical phagedenic ulcer. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:392-393.
 14. Meyers WM, Neafie RC, Marty AM. Strongyloidiasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:341-352.
 15. Neafie RC, Meyers WM. Cutaneous larva migrans. In: Strickland GT, ed. *Hunter's Tropical Medicine and Emerging Infectious Diseases*. 8th ed. Philadelphia, Pa: WB Saunders; 2000:797-799.
 16. Ottesen EA, Meyers WM, Neafie RC, Marty AM. Lymphatic filariasis. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:215-243.
 17. Wear DJ, Meyers WM, Neafie RC. Creeping eruption. In: Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume I: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000:367-372.

Books

1. Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Pathology of Infectious Diseases. Volume 1: Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
2. Guédénon A, Portaels F, Aguiar J, Cissé, Debacker M, Meyers WM, Zinsou C. *Ulcère de Buruli (Infection à Mycobacterium ulcerans). Guide diagnostique à l'usage des professionnels de la santé* [monograph]. [Buruli ulcer (*Mycobacterium ulcerans* infection). Diagnostic guide for healthcare professionals.] Antwerp, Belgium: Programme National de Lutte contre l'Ulcère de Buruli, République du Bénin, and Institut de Médecine Tropicale; 2000.



Shyh-Ching Lo, MD, PhD
 Chief
 Date of Appointment — 2 May 1991

DIVISION OF MOLECULAR PATHOBIOLOGY

MISSION

The Division of Molecular Pathobiology provides consultation services to the AFIP, other federal agencies, civilian institutions, clinicians, and research scientists on the pathology of unusual infections, especially by mycoplasmas, chlamydias, and viruses. We provide consultation on electron-microscopic diagnosis and studies of bacteria, viruses, and mycoplasmas, on various disease processes related to infections by microorganisms, and on molecular techniques in diagnosis and research. We support the AFIP's educational program by providing lectures, courses, and training for visiting scientists, fellows, and students.

STAFF

Medical:

Shyh-Ching Lo, MD, PhD, Division Chief

Scientific:

- (D) Ziping Chen, MD, PhD, Research Scientist, ARP
- Susan Ditty, Research Microbiologist, ARP
- Shaw-Huey Feng, PhD, Immunologist/Scientist, ARP
- Christine L.D. Haley, Molecular Biology Technician, ARP
- Bing-Jie Li, MD, Molecular Microbiologist, ARP
- José Rodriguez, Research Technician, ARP
- Shien Tsai, PhD, Senior Research Scientist, ARP
- Shimin Zhang, MD, PhD, Senior Research Scientist, ARP

Impact:

1. Our division was the first to recognize that 2 unusual mycoplasmas, *M fermentans* and *M penetrans*, are associated with AIDS.
2. We were the first to discover and characterize the previously unknown mycoplasma *M penetrans*, isolated from patients with AIDS.
3. Our laboratory showed *M penetrans* infection is statistically associated with development of Kaposi sarcoma by serology in male homosexuals with AIDS.
4. *M fermentans* has been proposed to be the cause of Gulf War illness; however, our serological and molecular diagnostic studies argue against the possibility.
5. We were the first to demonstrate that chronic infection with mycoplasma could lead to malignant transformation of mammalian cells.
6. We developed a model system demonstrating a new molecular mechanism leading to cancer.
7. We identified a mycoplasmal membrane component that has antiapoptotic effects and can induce immortalization of mammalian cells.
8. Our laboratory pioneered the study of mycoplasmal effects on the alteration of gene expression in infected mammalian cells.

EDUCATION

Presentations and Seminars: Division staff gave 7 presentations in 2000, for a total of 430 man-hours. Dates and titles are listed at the end of this report.

CONSULTATION

Division staff gave 15 consultation presentations to patients and staff of Gulf War Health Center, Walter Reed Army Medical Center in 2000, for a total of 100 man-hours. The division was in charge of serological evaluation of 3,000 Gulf War veterans for antibodies specific for 3 different human mycoplasmas. The result and analysis was presented to the Army and published in a peer-reviewed medical journal in 2000, for a total of 1,200 man-hours. In addition, the division gave consultation to the Army on evaluation of current molecular diagnosis techniques of mycoplasmal infections in veterans with "Gulf War illness." The study used coded blood samples from 50 patients and 4 different PCR protocols, as well as a highly unusual chromatin fractionation method, for a total of 960 man-hours.

RESEARCH

Publications: Division staff published 2 journal articles and 5 abstracts in 2000. Complete references are listed at the end of this report.

Projects: The division maintained 7 research projects in 2000, as listed below:

1. Support for DoD Studies of Possible Association Between Infection by *Mycoplasma fermentans* and Development of Gulf War Illness in Veterans.
2. Support for DoD Studies to Verify Various Assays for Detecting Infections by Mycoplasmas in Veterans with Gulf War Illness.
3. Investigational Studies of Pathogenesis of a Newly Found Human Mycoplasma in Mice.
4. Mycoplasmal Molecular Genetics: Sequencing and Characterization of an Insertionlike Genetic Element in *M. orale*.
5. Gene Expression Change in Human Prostate and Cervical Epithelial Cells Induced by Acute and Chronic Mycoplasmal Infections.
6. Molecular Mechanisms Associated with Mycoplasma-mediated Malignant Cell Transformation.
7. Mycoplasmal Infection and Immortalization of Human Peripheral Blood Mononuclear Cells.

PRESENTATIONS

1. May 2000: Los Angeles, Calif, 100th General Meeting of the American Society for Microbiology, "Expression of Ras oncogene family in hematopoietic progenitor 32D cells prior to and after malignant transformation induced by mycoplasmal infections," S Zhang, S-C Lo.
2. May 2000: Los Angeles, Calif, 100th General Meeting of the American Society for Microbiology, "*Mycoplasma fermentans* infection and immortalization of human peripheral blood mononuclear cells," S-C Lo, T Wu, S Tsai, Z Chen.
3. May 2000: Los Angeles, Calif, 100th General Meeting of the American Society for Microbiology, "Study of mycoplasmal infection by culture, PCR, and serology in patients with 'Gulf War illness.'" B Li, M Connolly, R Chung, M Hayes, R Wang, J Ribas, S-C Lo.
4. August 2000: Fukuoka, Japan, General Meeting of the 13th International Congress of the International Organization for Mycoplasmaology, "Effects of mycoplasmal LAMPs on receptor responses in mammalian cells induced by steroid hormones," K Hamada, S Zhang S-C Lo.
5. August 2000: Fukuoka, Japan, General Meeting of the 13th International Congress of the International Organization for Mycoplasmaology, "Activation of GM-CSF transduction pathway supports continuous growth of 32D hematopoietic progenitor cells and is associated with malignant transformation induced by chronic mycoplasmal infections," S Zhang, S Tsai, S-C Lo.
6. August 2000: Fukuoka, Japan, General Meeting of the 13th International Congress of the International Organization for Mycoplasmaology, "Role of mycoplasmas in malignant transformation: immortalization of human peripheral blood mononuclear cells by *Mycoplasma fermentans*," S-C Lo.
7. October 2000: Washington, DC, AFIP Professional Staff Conference, "Mycoplasma transformation: Do you want to live forever?" S-C Lo.

PUBLICATIONS

Journal Articles

1. Lo SC, Levin L, Ribas J, Chung R, Wang RY, Wear D, Shih JW. Lack of serological evidence

for *Mycoplasma fermentans* infection in army Gulf War veterans: a large-scale case-control study. *Epidemiol Infect.* 2000;125:609-616.

2. Zhang S, Wear DJ, Lo S. Mycoplasmal infections alter gene expression in cultured human prostatic and cervical epithelial cells. *FEMS Immunol Med Microbiol.* 2000;27:43-50.

Abstracts

1. Zhang S, Lo S-C. Expression of Ras oncogene family in hematopoietic progenitor 32D cells prior to and after malignant transformation induced by mycoplasmal infections. In: *Abstracts of the 100th General Meeting of the American Society for Microbiology.* Los Angeles, Calif: American Society for Microbiology; 2000:342. Abstract G-4.
2. Lo S-C, Wu T, Tsai S, Chen Z. *Mycoplasma fermentans* infection and immortalization of human peripheral blood mononuclear cells. Abstracts of the 100th General Meeting of the American Society for Microbiology. Los Angeles, Calif: American Society for Microbiology; 2000:345. Abstract G-15.
3. Li B, Connolly M, Chung R, Hayes M, Wang R, Ribas J, Lo S-C. Study of mycoplasmal infection by culture, PCR and serology in patients with "Gulf War illness." In: *Abstracts of the 100th General Meeting of the American Society for Microbiology.* Los Angeles, Calif: American Society for Microbiology; 2000:346. Abstract G-18.
4. Hamada K, Zhang S, Lo S-C. Effects of mycoplasmal LAMPs on receptor responses in mammalian cells induced by steroid hormones. Abstracts of the 13th International Congress of IOM. Fukuoka, Japan: International Organization for Mycoplasmaology; 2000:171. Abstract P-F18.
5. Zhang S, Tsai S, Lo S-C. Activation of GM-CSF transduction pathway supports continuous growth of 32D hematopoietic progenitor cells and is associated with malignant transformation induced by chronic mycoplasmal infections. *Abstracts of the 13th International Congress of IOM.* Fukuoka, Japan: International Organization for Mycoplasmaology; 2000:172. Abstract P-F19.



Kelly K. Koeller, CAPT, MC, USN
Chair
Date of Appointment — 8 January 2001

DEPARTMENT OF RADIOLOGIC PATHOLOGY

MISSION

The Department of Radiologic Pathology provides preeminent educational programs, research, and consultation services to the Armed Forces Institute of Pathology, the Department of Defense, and the global medical community using a unique archive of radiologic and pathologic material.

ORGANIZATION

The department is organized into 6 sections and the Office of the Chair.

1. Gastrointestinal Radiology
2. Genitourinary Radiology
3. Musculoskeletal Radiology
4. Neuroradiology
5. Pediatric Radiology
6. Pulmonary and Mediastinal Radiology

STAFF

Medical:

- Jeffrey R. Galvin, MD, Chief, Pulmonary and Mediastinal Radiology, ARP
Kelly K. Koeller, CDR, MC, USN, Associate Chair, and Chief, Neuroradiology
(D) Angela D. Levy, MAJ, MC, USA, Special Assignment, Acting Chief, Genitourinary Radiology, WRAMC
(A) Angela D. Levy, LTC, MC, USA, Chief, Genitourinary Radiology
Gael J. Lonergan, Lt Col, USAF, MC, Course Director and Chief, Pediatric Radiology, MOU-USUHS
Mark D. Murphey, MD, Chief, Musculoskeletal Radiology, ARP
(A) Charles A. Rohrmann, Jr, MD, Distinguished Scientist, Gastrointestinal Radiology, ARP
Melissa L. Rosado de Christenson, Col, USAF, MC, Chair and Registrar
(D) Paula J. Woodward, MD, Distinguished Scientist, Genitourinary Radiology, ARP
(A) Paula J. Woodward, MD, Chief, Genitourinary Radiology, ARP
Aletta A. Frazier, MD, Medical Illustrator, ARP
(D) James Choi, MD, Junior Scientist, Musculoskeletal Radiology, ARP
(D) R. Scott Rosenblum, DO, Junior Scientist, Neuroradiology, ARP
(A) George C. Nomikos, MD, Junior Scientist, Musculoskeletal Radiology, ARP

Administrative:

- (A) Janeth Amarillo, Digitization Specialist, ARP
(D) William A. Cooper, HM2, USN, Medical Administrative Assistant
Arnold M. Gittleson, Course Coordinator, ARP
Adahlia M. Glover, Case Manager, ARP
Cindy M. McDonald, Digitization Technician, ARP
Kathy M. Rahimly, Case Manager, ARP, Part-time
Mike Richard, Systems Manager, Contract Employee

(A, D) Cassandra Smith, Medical Administrative Assistant, ARP
 Earlene Turner, Weekend Course Coordinator, ARP
 Alethia B. West, Case Management, Supervisor, ARP
 Carl D. Williams, Categorical Course Coordinator, ARP

DIAGNOSTIC CONSULTATION

The department conducts intramural radiologic consultation. Consultation was provided on 2,000 class cases (contributed by residents attending the 5 Radiologic Pathology Courses), and 400 cases submitted by the various AFIP pathology departments.

EDUCATION

Presentations and Seminars: Department staff gave 506 presentations in 2000. Complete dates and titles are listed at the end of this report.

Conferences: 444 departmental conferences were conducted during the year, as outlined below:

Intramural:

Gastrointestinal Radiology:

2 (2 hours) per month, Gastrointestinal Pathology Conference

1 (1.5 hours) per month, Endocrine Pathology Conference

2 (2 hours) annually, Hematopathology Conference

1 (1 hour) per month, Hepatic Pathology Conference

Genitourinary Radiology:

3 (1 hour) per month, Genitourinary Pathology Conference

1 (1 hour) per month, Endocrine Pathology Conference

Musculoskeletal Radiology:

16 (1 hour) per month, Orthopedic Pathology Conference

4 (1 hour) per month, Soft Tissue Pathology Conference

4 (1 hour) per year, Oral and Maxillofacial Pathology Conference

Neuroradiology:

3 (1.5 hours) per month, Neuropathology Conference

2 (1 hour) per month, Otolaryngic Pathology Conference

Pediatric Radiology:

1 (2 hours) per month, Pediatric Pathology Conference

Pulmonary and Mediastinal Radiology:

2 (2 hours) per month, Pulmonary and Mediastinal Pathology Conference

6 (1 hour) per year, Cardiovascular Pathology Conference

Extramural:

Genitourinary Radiology:

4 (1 hour) per month, Resident and Fellow Conference, University of Maryland Medical Center

Musculoskeletal Radiology:

4 (1.5 hours) per month, Orthopedic Oncology/Radiology Conference, National Institutes of Health

4 (1.5 hours) per month, Orthopedic Resident Conference, Walter Reed Army Medical Center

5 (1 hour) per month, Rheumatology Conference, Walter Reed Army Medical Center

1 (1 hour) per month, National Institutes of Health

1 (1 hour) per month, Washington Hospital Center

1 (1 hour) per month, Radiology Resident Conference, University of Maryland Medical Center

Maryland Medical Center:

4 (1 hour) per month, Orthopedic Oncology/Radiology/Pathology Conference, Sinai Medical Center, Baltimore, Md

1 (1 hour) per month, Walter Reed Army Medical Center

2 (1 hour) per month, Spine Trauma Conference, University of Maryland Medical Center

2 (1 hour) per month, Radiology Resident Teaching Conference, Walter Reed Army Medical Center, Georgetown University, National Naval Medical Center, and Howard University

4 (1 hour) per year, Sports Medicine Conference, National Naval Medical Center

Seminars:

Department staff conducted 247 seminars:

Gastrointestinal Radiology:

2 (1 hour) per year, Department of Radiology, Walter Reed Army Medical Center

26 (1 hour) per year, Department of Radiology, Uniformed Services University of the Health Sciences

2 (3 hours) per year, Oral Board Review, Department of Radiology, Walter Reed Army Medical Center

2 (1 hour) per year, Department of Gastroenterology, Walter Reed Army Medical Center

Genitourinary Radiology:

1 (1 hour) per week, University of Maryland resident and fellow conference

Musculoskeletal Radiology:

1 (1 hour) per month, National Naval Medical Center

1 (1 hour) bimonthly, University of Maryland Medical Center

2 (1 hour) per month, Rheumatology Department, Walter Reed Army Medical Center

1 (1 hour) per month, Washington Hospital Center

1 (1 hour) per month, National Institutes of Health

2 (1 hour) per year, Radiology Department, Walter Reed Army Medical Center

8 (1 hour) per year, Uniformed Services University of the Health Sciences

Neuroradiology:

1 (1 hour) per year, Walter Reed Army Medical Center

1 (1 hour) per year, National Naval Medical Center

1 (1 hour) per year, Uniformed Services University of the Health Sciences

Pediatric Radiology:

3 (1 hour) per year, National Naval Medical Center

3 (1 hour) per year, Walter Reed Army Medical Center

48 (1 hour) per year, Uniformed Services University of the Health Sciences

Pulmonary and Mediastinal Radiology:

12 (1 hour) per year, Uniformed Services University of the Health Sciences

6 (1 hour) per year, National Naval Medical Center

3 (1 hour) per year, George Washington University Medical Center

4 (1 hour) per year, Georgetown Medical Center

6 (1 hour) per year, Walter Reed Army Medical Center

5 (1 hour) per year, University of Maryland Medical Center

Workshop: April 6, 2000, "Introduction to digital scanning: electronic learning workshop," American Society of Neuroradiology 38th Annual Meeting, Atlanta, Ga, KK Koeller.

Courses:

1. **AFIP Courses in Collaboration with Foreign Radiological Societies:** Six International short courses were held in Spain, Austria, Portugal, Germany, Brazil, France, Canada, and Mexico. These courses were sponsored by the radiological societies of the host countries in association with the AFIP and the ARP. The Department of Radiologic Pathology provided the curriculum and faculty. Courses held in France, Brazil, and Canada were large scientific assemblies and annual meetings of the radiological societies of these countries and featured the Department of Radiologic Pathology as a specific section on Radiologic-Pathologic Correlation within the course curriculum. Courses held in Spain, Austria, Portugal, Germany, and Mexico were provided entirely by the staff of the Department of Radiologic Pathology in collaboration with the appropriate national radiological societies. These courses ensured dissemination of the principles of radiologic-pathologic correlation to radiologists and physicians who do not traditionally participate in the department's Radiologic Pathology Courses. The courses were extremely well received and will be offered annually. See exact listing of lectures at the end of this report.

2. **AFIP Radiologic Pathology Courses:**

- 6-week Radiologic Pathology Course: Five courses were conducted and attended by 953 radiology residents (51 federal, 902 nonfederal). Approximately 137 man-days of training were provided. The course remains subscribed nearly 2 years in advance and is attended by the vast majority of diagnostic radiology residents in the United States. One hundred seventeen residents from other countries also attend. The Radiologic Pathology

Course is also offered to radiologists who have completed their training.

- 1-week categorical courses (held within the 6-week Radiologic Pathology Courses): Four courses were offered in Pulmonary and Mediastinal Radiology, Neuroradiology, Musculoskeletal Radiology, and Pediatric Radiology and attended by 71 radiologists, providing approximately 149.5 hours of CME credit.
- Weekend courses: Five courses were provided. A total of 457 physicians attended, for a total of 914 attendee-days and 77.5 hours of CME credit.

Course	Enrollment	Man-Days
Neuroradiology Washington	172	344
Uroradiology Case Studies	90	180
Pulmonary and Mediastinal Radiology	54	108
Musculoskeletal Radiology	79	158
Neuroradiology San Diego	62	124

3. Radiologic Pathology Participation in Courses Held By Other AFIP Departments: Department staff provided lectures in courses held by Pulmonary and Mediastinal Pathology and Forensic Pathology.

Trainees: Fellowships are held from July 1 to June 30 of the following year in the Department of Radiologic Pathology and are called "junior scientist" positions. In addition, research assistants collaborate on various projects with the department's medical staff. In 2000, the department hosted 3 junior scientists and 3 research assistants (O Karakida, Junichi Matsumoto, Elena Roa Martinez).

RESEARCH

Publications: Department staff published 21 journal articles, 15 abstracts, 1 syllabus, 1 book chapter, and 1 medical illustration in 2000. Complete information is listed at the end of this report.

Projects: Research is based on the contents of the departmental archives, which are mainly derived from cases contributed by residents attending the Radiologic Pathology Courses. There were 3 investigative research projects and 15 educational research projects in progress in 2000.

Investigative:

1. Lonergan GJ, Comparison of Fracture Age Dating at Radiology versus Histology.
2. Rosado de Christenson ML, Survey of Radiology Residents' Lifestyles.
3. Rosado de Christenson ML, Lonergan GJ, Cystic Extralobar Sequestration: Correlation with Associated Cystic Adenomatoid Malformation.

Educational:

1. D'Alessandro MP, Galvin JR, Colbert SI, D'Alessandro DM, Choi TA, Aker BD, Carlson WS, Pelzer GD, Solutions to Challenges Facing a University Digital Library and Press.
2. Frazier AA, Galvin JR, Franks TJ, Rosado de Christenson ML, Pulmonary Vasculature: Hypertension and Infarction.
3. Grebenc ML, Rosado de Christenson ML, Burke A, Green C, Galvin JR, Primary Cardiac and Pericardial Neoplasms: Radiologic-Pathologic Correlation.
4. Koeller KK, Rosenblum SR, Morrison AL, Intramedullary Tumors of the Spine: Radiologic and Pathologic Correlation.
5. Koeller KK, Roa Martinez E, Glial Neoplasms: Radiologic-Pathologic Correlation.
6. Levy AD, Gallbladder Carcinoma, Radiologic-Pathologic Correlation.
7. Levy AD, Gastrointestinal Hemangiomas: Radiologic-Pathologic Correlation.
8. Levy AD, Choledochal Cysts: Imaging Classification with Pathologic Correlation.
9. Levy AD, Gastrointestinal Motility Disorders.
10. Levy AD, Intraductal Papillary Mucinous Tumors of the Pancreas: Imaging Findings with Pathologic Correlation.
11. Levy AD, Emphysematous Infections of the Abdomen and Pelvis.

12. Levy AD, Intra-abdominal Sarcoid.
13. Levy AD, Hepatic Malignancies.
14. Lonergan GJ, Autosomal Dominant Polycystic Kidney Disease.
15. Wilson JS, Galvin JR, Normal Diffusing Capacity in Patients with PiZ Alpha(1)-Antitrypsin Deficiency, Severe Airflow Obstruction, and Significant Radiographic Emphysema.
16. Woodward PJ, Endometriosis: Radiologic-Pathologic Correlation.
17. Woodward PJ, Mullerian Duct Anomalies Complicated by Obstruction: Evaluation with Pelvic Magnetic Resonance Imaging.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. Department of Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences
2. Robert M. Abbott, Maj, USAF, MC, Wilford Hall Medical Center, San Antonio, Tex
3. H. Theodore Harcke, COL, MC, USNG, E.I. duPont Hospital for Children, Wilmington, Del
4. David E. Grayson, Capt, USAF, MC, Wilford Hall Medical Center, San Antonio, Tex
5. Perry J. Pickhardt, LCDR, MC, USN, National Naval Medical Center, Bethesda, Md

Civilian:

1. Department of Radiology, University of Maryland Medical Center
2. American College of Radiology
3. Association of Program Directors in Radiology
4. American Osteopathic College of Radiology
5. Association of University Radiologists
6. American Roentgen Ray Society
7. Radiological Society of North America
8. Charles A. Rohrmann, Jr, MD, University of Washington, Seattle
9. Pablo R. Ros, MD, MPH, Brigham and Women's Hospital, Harvard University, Boston, Mass

International:

1. Society of Mexican Radiologic Imaging, Mexico City, Mexico
2. Fundación XIII Congreso Internacional de Radiologica, Madrid, Spain
3. Curso de Correlacao Anatomo-Radiologica, Oporto, Portugal
4. Jornada Paulista de Radiologica, Sao Paulo, Brazil
5. Journées Française de Radiologie, Paris, France
6. Canadian Association of Radiology, Toronto, Ontario

Honors:

1. Certificate of Merit Award, May 5-12, 2000, Imaging of Osseous and Soft Tissue Ewing Sarcoma and Primitive Neuroectodermal Tumor (PNET), 100th Annual Meeting of the American Roentgen Ray Society, Washington, DC. Robbin MR, Smith SE, Murphey MD, Choi JJ, Matthews WD, Young PC.
2. Examiner, Ultrasound Category, American Board of Radiology Oral Examination, Louisville, Ky, May 13-17, 2000, Woodward PJ.

Named Lectures:

1. April 7, 2000, Little Rock, Ark, Jack Diner Memorial Lecture, "Differential diagnosis of mediastinal masses," Rosado de Christenson ML.
2. October 12, 2000, Halifax, Nova Scotia, Atlantic Provinces Fall Meeting, JS Manchester Memorial Lecture, "Differential diagnosis of mediastinal masses," Rosado de Christenson ML.

Offices/Committee Memberships in National or International Societies:

Koeller KK:

1. Member, Learning File Development Committee, American College of Radiology

2. Audit Committee Member, American Society of Neuroradiology
3. Member, Scientific Exhibit Committee, American Society of Neuroradiology
4. Member, Audio-visual Committee, American Society of Neuroradiology
5. Judge, Annual Meeting Scientific Exhibits, American Roentgen Ray Society
6. Moderator, American Society of Neuroradiology 38th Annual Meeting, April 6, 2000, Atlanta, Ga
7. Course Codirector, Neuroradiology Categorical Course, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, Chicago, Ill, November 26 – December 1, 2000

Loneragan GJ:

Member, Program Committee, Society of Pediatric Radiology

Murphey MD:

1. Member, RadioGraphics Exhibit Review Committee, Musculoskeletal Section, Radiological Society of North America
2. Member, Scientific Exhibit Committee, American Roentgen Ray Society
3. Member, CPI/Musculoskeletal Radiology Expert Review Panel, American College of Radiology
4. Moderator, 27th Annual Refresher Course of the International Skeletal Society, Barcelona, Spain, September 16, 2000

Rosado de Christenson ML:

1. Member, International Committee, American Association for Women Radiologists
2. Member, Web Site Committee, American Association for Women Radiologists
3. Member, Instructional Courses Committee, American Roentgen Ray Society
4. Member, Education Committee, Association of Program Directors in Radiology
5. Member, Program Committee, Society of Thoracic Radiology
6. Member, Scientific Exhibits Committee, Radiological Society of North America
7. Member, Educational Exhibits Committee, Radiological Society of North America
8. Member, Multisystem/Special Interest Committee, Radiological Society of North America
9. Chair, Continuous Professional Improvement - Chest, American College of Radiology
10. Chair, Nominating Committee, American Association for Women Radiologists
11. Cochair, Public Relations Committee, American Association for Women Radiologists
12. Director, Research and Education Foundation, American Association for Women Radiologists
13. Chair, Ad Hoc Committee on the AFIP, Association of Program Directors in Radiology
14. Director, Chest Radiology Track, American Roentgen Ray Society
15. Secretary, Registrar's Forum, American Registry of Pathology

Woodward PJ:

1. Member, Genitourinary Program Committee, Radiological Society of North America
2. Moderator, Genitourinary Program, Radiological Society of North America Annual Meeting

Galvin JR:

President-elect, Society of Thoracic Radiology

Faculty Appointments:**Galvin JR:**

Clinical Professor, Department of Radiology, University of Maryland Medical System

Koeller KK:

1. Assistant Professor of Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences
2. Staff Radiologist, National Naval Medical Center

Levy AD:

1. Department of Radiology, Walter Reed Army Medical Center

2. Assistant Professor of Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences

Lonergan GJ:

1. Chief of Pediatric Radiology, Assistant Professor of Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences
2. Assistant Clinical Professor of Radiology, George Washington University School of Medicine
3. Staff Pediatric Radiologist, Children's National Medical Center

Murphey MD:

1. Associate Professor, Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences
2. Clinical Professor, Department of Radiology, University of Maryland School of Medicine

Rosado de Christenson ML:

1. Associate Professor of Radiology and Nuclear Medicine, Uniformed Services University of the Health Sciences
2. Consultant Radiologist, National Naval Medical Center
3. Staff Appointment, Department of Radiology, University of Maryland Medical System

Woodward PJ:

1. Clinical Associate Professor of Radiology, University of Maryland School of Medicine
2. Adjunct Associate Professor of Radiology, University of Utah School of Medicine

Editorial Boards:

1. Associate Education Editor, *RadioGraphics*, JR Galvin
2. Section Editor, The Pediatric Chest, *Chest Learning File*, American College of Radiology Institute, GJ Lonergan
3. Guest Editor, March 2000 issue, *Seminars in Musculoskeletal Radiology*, MD Murphey

Rosado de Christenson ML:

1. Editorial Board, *RadioGraphics*
2. Editorial Board, *Revista Mexicana de Radiología*
3. Editor-in-Chief and Section Editor, Mediastinal Masses Section, *Chest Learning File*, American College of Radiology Institute
4. Editorial Board, *Annals of Diagnostic Pathology*
5. Editorial Board, *Gamuts in Radiology*
6. Editorial Board, *Radiology*
7. Editor-in-Chief, *FOCUS* (American Association for Women Radiologists newsletter)

Manuscripts Reviewed: Department staff reviewed articles for the following professional journals in 2000:

1. *American Journal of Roentgenology*
2. *RadioGraphics*
3. *Radiology*
4. *Skeletal Radiology*
5. *Revista Mexicana de Radiología*
6. *Journal of Magnetic Resonance*
7. *Cancer*
8. *International Journal of Radiation Oncology*
9. *Ultrasound in Obstetrics and Gynecology*

Continuing Education: Department staff attended training courses at the following venues in 2000:

1. Society of Thoracic Radiology's Thoracic Imaging 2000
2. Big Sky Radiology Conference
3. American Roentgen Ray Society 2000 Annual Scientific Meeting

4. Duke University.
5. Radiological Society of North America, 86th Scientific Assembly and Annual Meeting
6. American Society of Neuroradiology
7. 15th Annual Washington Neuroradiology Review Course
8. 3rd Annual AFIP Neuroradiology Weekend Review Course
9. Society for Pediatric Radiology
10. Forensic Anthropology, USUHS
11. Pediatric Forensic Issues
12. International Skeletal Society Annual Refresher Course
13. International Skeletal Society Members Only Closed Course
14. International Institute for Continuing Medical Education
15. Abdominal Radiology Postgraduate Course 2000
16. Quality Assurance/Risk Management, Legal Medicine, AFIP
17. Society of Radiologists in Ultrasound, 10th Annual Meeting and Educational Course
18. Spiral CT in Clinical Practice
19. Uroradiology Review Course

PRESENTATIONS

Visiting Professorships:

1. March 2000: University of Utah, "Abdominal imaging board review," PJ Woodward.
2. March 2000: New York, NY, St. Vincent's Hospital and Medical Center, "Chest board reviews," ML Rosado de Christenson.
3. March 2000: New York, NY, Cornell University Medical Center, "Chest board reviews," ML Rosado de Christenson.
4. March 2000: Houston, Tex, Baylor College of Medicine, "Fundamental concepts of musculoskeletal tumors: CT and MRI," "Alphabet soup: cystic lesions of bone," MD Murphey.
5. April 2000: Farmington, Conn, University of Connecticut Health Center, "Radiology grand rounds," ML Rosado de Christenson.
6. April 2000: Houston, Tex, Baylor College of Medicine, "Chest board reviews," "Mediastinal masses: differential diagnosis," ML Rosado de Christenson.
7. May 2000: Cincinnati, Ohio, Children's Hospital of Cincinnati, "Adrenal tumors," GJ Lonergan.
8. May 2000: Cincinnati, Ohio, Children's Hospital of Cincinnati, "Forensic radiology of child abuse," GJ Lonergan.
9. May 2000: Cincinnati, Ohio, Children's Hospital of Cincinnati, "Liver tumors in children," GJ Lonergan.
10. May 2000: Cincinnati, Ohio, Children's Hospital of Cincinnati, "Adrenal tumors," GJ Lonergan.
11. May 2000: Cincinnati, Ohio, Children's Hospital of Cincinnati, "Liver tumors in children," GJ Lonergan.
12. August 2000: San Antonio, Tex, Wilford Hall Medical Center, Lackland Air Force Base, "Unusual pancreatic neoplasms," "Pancreatic carcinoma and pancreatitis: a discussion of retroperitoneal anatomy," AD Levy.
13. August 2000: San Antonio, Tex, "Unusual pancreatic neoplasms," "Pancreatic carcinoma and pancreatitis: a discussion of retroperitoneal anatomy," AD Levy.
14. August 2000: San Antonio, Tex, University of Texas Health Science Center, "Unusual pancreatic neoplasms," AD Levy.
15. August 2000: New York, NY, Beth Israel Medical Center, "Systematic approach to soft tissue tumors," MD Murphey.
16. September 2000: Charlottesville, Va, University of Virginia, "Chest board reviews," ML Rosado de Christenson.
17. October 2000: Boston, Mass, Boston Children's Hospital, "Cystic renal diseases of childhood," GJ Lonergan.

18. October 2000: Boston, Mass, Boston Children's Hospital, "Renal tumors of childhood," GJ Lonergan.
19. October 2000: Boston, Mass, Boston Children's Hospital, "Adrenal tumors of childhood," GJ Lonergan.
20. October 2000: New York, NY, Milstein Hospital, "Paget disease," "Alphabet soup: cystic lesions of bone," MD Murphey.
21. November 2000: Columbus, Ohio, The Ohio State University and Central Ohio Radiological Society, "Radiology grand rounds," ML Rosado de Christenson.

Department of Radiologic Pathology Courses:

1. January 2000: Washington, DC, Uroradiology Review Course, "Basics of computed tomography," "Basics of ultrasound," "Solid renal masses," "Infiltrative renal masses," "MRI case studies," PJ Woodward.
2. January 2000: Washington, DC, Uroradiology Review Course, "Pediatric uroradiology review," GJ Lonergan.
3. February 2000: Bethesda, Md, 15th Annual Washington Neuroradiology Review Course, "Acquired white matter diseases," "Spinal cord neoplasms," KK Koeller.
4. June 2000: Oporto, Portugal; Madrid, Spain; Vienna, Austria; Armed Forces Institute of Pathology in Europe Course, "Evaluation of female pelvic pathology: a multimodality approach - parts 1 and 2," "Evaluation of male pelvic pathology," "Spiral CT of urinary tract disorders," "First trimester ultrasound," "Common fetal anomalies," PJ Woodward.
5. August 2000: San Diego, Calif, 3rd Annual Armed Forces Institute of Pathology Neuroradiology Weekend Review Course, "Neoplasms of the spinal cord and filum terminale," "Imaging of cerebral ischemia," KK Koeller.
6. September 2000: San Antonio, Tex, 9th Annual Course in Pulmonary and Mediastinal Radiology, "An approach to diffuse lung disease I-II," "The diagnosis of pulmonary embolism," "Inhalation lung disease," JR Galvin.
7. September 2000: San Antonio, Tex, 9th Annual Course in Pulmonary and Mediastinal Radiology, "Mediastinum I and II," "Congenital lung disease I and II," "Unknown cases," ML Rosado de Christenson.
8. October 2000: Mexico City, Mexico, 12th Reunion of Radiology and Imaging Conference, Hospital Central Militar, "Hepatobiliary ultrasound," "Gastric malignancies," "Testicular ultrasound," "Adenocarcinoma of the colon," "Pancreatic malignancies," AD Levy.

Radiologic Pathology 6-Week Course Lectures (held 5 times in 2000):

JR Galvin:

- An Approach to Diffuse Lung Disease I-II
- Lung Carcinoma: WHO Classification
- Airway Disease I-II
- Staging of Lung Cancer
- Pulmonary Angiitis and Granulomatosis
- Pulmonary Hypertension and Infarction
- Imaging in Febrile Bone Marrow Transplant
- The Diagnosis of Pulmonary Embolism
- Inhalation Lung Disease
- Lymphoid Lesions
- Seminars in Chest Radiology

KK Koeller:

- Head Trauma
- Cerebral Ischemia
- Acquired White Matter Disease
- CNS Lymphoma
- Suprahyoid Neck
- Infrahyoid Neck
- Orbit I-II
- Congenital Cystic Neck Masses
- Temporal Bone I-II
- Congenital CNS Anomalies
- Seminars in Neuroradiology

AD Levy:

- Infectious and Parasitic Disease of the Abdomen I-II
- Gastric and Duodenal Malignant Neoplasms
- Abdominal Manifestations of Lymphoma
- Non-neoplastic Diseases of the Stomach
- Seminars in Gastrointestinal Radiology

GJ Loneragan:

- Cranial Sonography
- Congenital Heart Disease I-IV
- Forensic Radiology of Child Abuse I-II
- Cystic Fibrosis
- Cystic Renal Disease of Childhood
- Adrenal Tumors of Childhood I-II
- Radiology of Situs
- Pediatric Nuclear Medicine
- Seminars in Pediatric Radiology

MD Murphey:

- Total Joint Replacement/Bone Graft
- Musculoskeletal Manifestations of Chronic Renal Insufficiency
- Musculoskeletal Neoplasm: Fundamental Concepts I-II
- Cartilaginous Lesions of Bone I-II
- Osseous Lesions of Bone I-II
- Fibrous Lesions of the Musculoskeletal System I-II
- Alphabet Soup: Cystic Lesions of Bone
- Juxta-articular Musculoskeletal Masses I-II
- Musculoskeletal Angiomatous Lesions
- Paget Disease
- Musculoskeletal Infections I-II
- Seminars in Musculoskeletal Radiology

ML Rosado de Christenson:

- Pleural Neoplasia
- Non-neoplastic Pleural Disease
- Pulmonary Metastases
- Mediastinal Masses I-III
- Tuberculosis
- Congenital Diseases of the Chest I-II
- Seminars in Chest Radiology

PJ Woodward:

- Uterine Disorders I-II
- Malignant Renal Masses
- Benign Renal Masses
- First Trimester Ultrasound
- Fetal CNS Malformations
- Retroperitoneum
- GU Trauma
- Seminars in Genitourinary Radiology

Other AFIP Pathology Courses:

September 2000: Rockville, Md, Telepathology 2000 Workshop, "Teleradiology for pathologists," MD Murphey.

Non-AFIP Courses:

1. January-February 2000: Mexico City, Mexico, 34th Curso Anual de Radiología e Imagen Sociedad Mexicana de Radiología e Imagen, "Panel de diagnóstico radiológico," "Metástasis pulmonares," "TB pulmonar: estado actual," "Tumores pulmonares malignos poco frecuentes," ML Rosado de Christenson.
2. February 2000: Vail, Colo, Spiral CT in Clinical Practice: Interventional and Multislice, "Spiral CT of the liver: general considerations and diffuse disease," "Focal liver lesions: spiral CT, MRI, and ultrasound correlation," "Spiral CT evaluation of renal abnormalities,"

- “Spiral CT of renal calculi,” PJ Woodward.
3. February 2000: Kawasaki, Japan, St. Marianna University School of Medicine, “Pulmonary vasculature: hypertension and infarction,” JR Galvin.
 4. February 2000: Kawasaki, Japan, St. Marianna University School of Medicine, “Scientific seminar, unknown cases,” JR Galvin.
 5. February 2000: Tohoku, Japan, Tohoku University School of Medicine, “Pulmonary vasculature: hypertension and infarction,” JR Galvin.
 6. February 2000: Tohoku, Japan, Tohoku University School of Medicine, “Scientific seminar, unknown cases,” JR Galvin.
 7. February 2000: Miami, Fla, Orthopedic Pathology Course, University of Miami School of Medicine, “Radiologic evaluation of bone tumors,” MD Murphey.
 8. February 2000: Tokushima, Japan, University of Tokushima, “Scientific seminar, unknown cases,” JR Galvin.
 9. March 2000: Vienna, Austria, European Congress of Radiology Annual Meeting, “Tumors of the lung, pleura, and chest wall,” ML Rosado de Christenson.
 10. March 2000: Davos, Switzerland, 32nd International Diagnostic Course, “Congenital and neoplastic spinal disease,” KK Koeller.
 11. April 2000: Boston, Mass, Harvard Review Course, “Congenital heart disease,” GJ Lonergan.
 12. May 2000: Washington, DC, 100th Annual Meeting of the American Roentgen Ray Society, “Imaging of thoracic sarcoidosis and tuberculosis,” SA Rubin, ML Rosado de Christenson.
 13. May 2000: Washington, DC, American Roentgen Ray Society Annual Meeting, “Imaging of fetal anomalies: radiologic/pathologic correlation,” “CT and MRI in gynecologic malignancy,” PJ Woodward.
 14. May 2000: Washington, DC, 100th Annual Meeting of the American Roentgen Ray Society, “Musculoskeletal tumors: changing trends in imaging and treatment,” MD Murphey, MJ Kransdorf.
 15. May 2000: Washington, DC, 6th Annual Musculoskeletal Imaging Weekend, “Systematic approach to imaging of bone tumors, imaging of stress fractures,” “Unknown case review,” MD Murphey.
 16. June 2000: Toronto, Ontario, Annual Meeting of the Canadian Association of Radiologists, “Cerebral ischemia,” KK Koeller.
 17. June 2000: Toronto, Ontario, Annual Meeting of the Canadian Association of Radiologists, “Radiologic evaluation of soft tissue tumors: a systematic approach and imaging of arthritis approach and inflammatory disease,” MD Murphey.
 18. August 2000: Hong Kong, PRC, 8th Annual Scientific Meeting, Hong Kong College of Radiologists, “Imaging of arthritis I: approach and inflammatory disease,” “Imaging of arthritis II: osteoarthritis, crystal disease, and neuropathic arthropathy,” “Fundamental concepts of musculoskeletal neoplasm: CT and MRI,” “Common osteoid lesions of bone,” “Unknown case seminar,” MD Murphey.
 19. August 2000: Taipei, Taiwan, Department of Medical Imaging, National Taiwan University Hospital, “An approach to diffuse lung disease,” JR Galvin.
 20. August 2000: Taipei, Taiwan, Department of Medical Imaging, National Taiwan University Hospital, “Bronchogenic carcinoma: the new WHO classification,” JR Galvin.
 21. August 2000: Taipei, Taiwan, Department of Medical Imaging, National Taiwan University Hospital, “Tuberculosis: a review,” JR Galvin.
 22. August 2000: Hong Kong, PRC, 8th Annual Scientific Meeting, Hong Kong College of Radiologists, “An approach to diffuse lung disease,” JR Galvin.
 23. August 2000: Hong Kong, PRC, 8th Annual Scientific Meeting, Hong Kong College of Radiologists, “Tuberculosis: a review,” JR Galvin.
 24. September 2000: Barcelona, Spain, 27th Annual International Skeletal Society Closed Meeting, “Imaging of soft tissue hemangioma with pathologic correlation,” MD Murphey, GA McRae, HT Temple, AH Torop, J Fanburg-Smith.
 25. September 2000: Barcelona, Spain, 27th Annual International Skeletal Society Closed Meeting, “Musculoskeletal angiomatous lesions,” MD Murphey.

16. October 2000: Mexico City, Mexico, 12th Reunión de Radiología e Imagen, Profesora Adjunta, ML Rosado de Christenson.
27. October 2000: Cancun, Mexico, 19th Congresso Nacional de Radiologia, "Renal masses: radiologic-pathologic correlation," "MRI of the female pelvis," PJ Woodward.
28. October 2000: Cancun, Mexico, 19th Congresso Nacional de Radiologia, "Gastric malignancies," "Update in primary gastrointestinal lymphoma," AD Levy.
29. October 2000: Halifax, Nova Scotia, Atlantic Provinces Fall Meeting, "Differential diagnosis of mediastinal masses," "Pleural neoplasia," "Update on tuberculosis," "Congenital lesions of the lung," ML Rosado de Christenson.
30. October 2000: Boston, Mass, Boston Children's Hospital, "Cystic renal diseases of childhood," GJ Lonergan.
31. October 2000: Boston, Mass, Boston Children's Hospital, "Adrenal tumors of childhood," GJ Lonergan.
32. October 2000: Paris, France, Journées Françaises de Radiologie 2000, "Imaging of cerebral ischemia," "Imaging of the suprahyoid neck," "CNS lymphoma," "Imaging of head trauma," "Congenital cystic neck masses," KK Koeller.
33. October 2000: Paris, France, Journées Françaises de Radiologie 2000, "Imaging of arthritis I: approach and inflammatory disease," "Imaging of arthritis II: osteoarthritis, crystal disease and neuropathic," "Common juxta-articular masses: enchondroma vs. chondrosarcoma: fact and fiction," "Primary sacral neoplasms," MD Murphey.
34. October-November 2000: Philadelphia, Pa, American College of Rheumatology, "Musculoskeletal imaging," MD Murphey.
35. October 2000: Luxembourg City, Luxembourg, Radiologic-Pathologic Symposium, "CNS lymphoma," "Acquired white matter disease," "Neoplasms of the spinal cord and filum terminale," KK Koeller.
36. October 2000: Luxembourg City, Luxembourg, Radiologic-Pathologic Symposium, "Update on tuberculosis," "Sarcoidosis," "Differential diagnosis of mediastinal masses," ML Rosado de Christenson.
37. November 2000: Chicago, Ill, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, Neuroradiology Categorical Course, "Central nervous system neoplasms: intra-axial," KK Koeller.
38. November 2000: Chicago, Ill, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, "The diagnosis of pulmonary embolus: a rational approach to familiar tests and new technologies," JR Galvin, M Remi-Jardin.
39. November 2000: Chicago, Ill, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, "Sarcoidosis: from head to toe," ML Rosado de Christenson, JR Galvin, KK Koeller, AD Levy, MD Murphey.
40. December 2000: Las Vegas, Nev, Pediatric Forensic Issues, "Radiology of pediatric head trauma," GJ Lonergan.
41. December 2000: Las Vegas, Nev, Pediatric Forensic Issues, "Basic radiology of child abuse," GJ Lonergan.

Presented Abstracts:

1. March 2000: Tumors of the lung, pleura, and chest wall. European Congress of Radiology Annual Meeting, Categorical Course: Radiologic-Pathologic Correlations. *Eur Radiol.* 2000 (suppl 1);10:5. ML Rosado de Christenson.
2. March 2000: Liposclerosing myxofibrous tumor: radiologic-pathologic distinct fibro-osseous lesion of bone with a marked predilection for the intertrochanteric region of the femur. Society of Skeletal Radiology 23rd Annual Meeting. MJ Kransdorf, MD Murphey, DE Sweet.
3. March 2000: MR appearance of pseudotumors of the plantar soft tissues of the foot. Society of Skeletal Radiology 23rd Annual Meeting. DJ Flemming, PA Kaplan, RG Dussault, MW Anderson, MD Murphey, HT Temple.
4. March 2000: Imaging of soft-tissue hemangioma with pathologic-correlation. Society of Skeletal Radiology 23rd Annual Meeting. MD Murphey, GA McRae, HT Temple, AH Torop, J Fanburg-Smith.
5. March 2000: Advanced imaging features of metastatic carcinoma to the soft tissue and

- skeletal muscle. Society of Skeletal Radiology, 23rd Annual Meeting. JJ Choi, MD Murphey, HT Temple, JS Jelinek, MJ Kransdorf.
6. April 2000: Intravascular lymphomatosis: pathology and imaging spectrum. American Society of Neuroradiology 38th Annual Meeting, Atlanta, Ga. RH Wiggins III, AG Osborn, KK Koeller, JJ Townsend.
 7. November 2000: Limbic encephalitis: clinical, pathologic, and imaging spectrum. Radiological Society of North America 86th Scientific Assembly and Annual Meeting, Chicago, Ill. KL Salzman, AG Osborn, JJ Townsend, KK Koeller.
 8. November 2000: Sarcoidosis from head to toe. Radiological Society of North America 86th Scientific Assembly and Annual Meeting. *Radiology*. 2000;217(P):44. ML Rosado de Christenson, JR Galvin, KK Koeller, AD Levy, MD Murphey.
 9. November-December 2000: Differential diagnosis of mediastinal masses. 86th Scientific Assembly and Annual Meeting, Chicago, Ill. *Radiology*. 2000;217 (P):91. ML Rosado de Christenson, EA Kazerooni.
 10. November 2000: Imaging of chordoma of the spine: radiologic-pathologic correlation. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. JJ Choi, MD Murphey, FH Gannon, DE Sweet, JS Jelinek.
 11. November 2000: A systematic approach to imaging of musculoskeletal tumors. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. MD Murphey, M Sundaram.
 12. December 2000: Imaging of hibernoma. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. MD Murphey, MJ Kransdorf, JJ Choi, JS Jelinek, H Temple.
 13. December 2000: Imaging of well-differentiated fatty tumors: distinction of lipoma and well-differentiated liposarcoma. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. MJ Kransdorf, LW Bancroft, MD Murphey, H Temple, WC Foster.
 14. December 2000: Unicameral bone cysts and interosseous lipomas in the foot: a radiologic review. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. TP Prince, BJ Murphy, MD Murphey, H Temple.
 15. December 2000: Imaging manifestations of hemangiomas of bone: a review of 214 lesions. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. O Karakida, MD Murphey, JJ Choi.
 16. December 2000: Imaging of osseous hemangioendothelioma with pathologic correlation and emphasis on advanced imaging. 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill. SE Smith, MD Murphey, JJ Choi, FH Gannon.

Scientific Exhibits/Abstracts:

1. April 2000: Atlanta, Ga, American Society of Neuroradiology 38th Annual Meeting, "Differentiating features of ring-enhancing masses: radiologic-pathologic correlation," RS Rosenblum, KK Koeller.
2. May 2000: Washington, DC, 100th Annual Meeting of the American Roentgen Ray Society, "Chordomas of the spine: radiologic-pathologic correlation," JJ Choi, MD Murphey, RS Rosenblum, KK Koeller.
3. May 2000: Washington, DC, 100th Annual Meeting of the American Roentgen Ray Society, "Imaging of osseous and soft tissue Ewing sarcoma and primitive neuroectodermal tumor (PNET)" (Certificate of Merit Award), MR Robbin, SE Smith, MD Murphey, JJ Choi, WD Matthews, PC Young.
4. November-December 2000: Chicago, Ill, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, "Emphysematous infections of the abdomen and pelvis: a pictorial review," RM Abbott, DE Grayson, PM Sherman, SL Novick, WC Chocallo, AD Levy.
5. November-December 2000: Chicago, Ill, Radiological Society of North America 86th Scientific Assembly and Annual Meeting, "Radiologic spectrum of Paget's disease and its complications, including advanced imaging and pathologic correlation," SE Smith, ME Mulligan, MD Murphey, CS Resnik, JT Wargo, KW Davis.
6. November-December 2000: Chicago, Ill, Radiological Society of North America 86th

Scientific Assembly and Annual Meeting, "Imaging of osseous and soft tissue Ewing sarcoma and primitive neuroectodermal tumor (PNET)," MR Robbin, SE Smith, MD Murphey, JJ Choi, WD Matthews, PC Young.

PUBLICATIONS

Journal Articles

1. Cadavid D, Mena H, Koeller K, Frommelt RA. Cerebral B-amyloid angiopathy is a risk factor for cerebral ischemic infarction: a case-control study in human brain biopsies. *J Neuropathol Exp Neurol.* 2000;59:768-773.
2. Choi JJ, Murphey MD. Angiomatous skeletal lesions. *Semin Musculoskeletal Radiol.* 2000;4:103-112.
3. D'Alessandro MP, Galvin JR, Colbert SI, D'Alessandro DM, Choi TA, Aker BD, Carlson WS, Pelzer GD. Solutions to challenges facing a university digital library and press. *J Am Med Inform Assoc.* 2000;7:246-253.
4. Flemming DJ, Murphey MD. Enchondroma and chondrosarcoma. *Semin Musculoskeletal Radiol.* 2000;4:59-71.
5. Frazier AA, Galvin JR, Franks TJ, Rosado de Christenson ML. Pulmonary vasculature: hypertension and infarction. *RadioGraphics.* 2000;20:491-524.
6. Grebenc ML, Rosado de Christenson ML, Burke A, Green C, Galvin JR. Primary cardiac and pericardial neoplasms: radiologic-pathologic correlation. *Radiographics.* 2000;20:1073-1103.
7. Islinger RB, Kuklo TR, Owens BD, Horan PJ, Choma TJ, Murphey MD, Temple HT. Langerhans' cell histiocytosis in patients older than 21 years. *Clin Orthop.* 2000;379:231-235.
8. Koeller KK, Rosenblum RS, Morrison AL. Neoplasms of the spinal cord and filum terminale: radiologic-pathologic correlation. *Radiographics.* 2000;20:1721-1749.
9. Kransdorf MJ, Murphey MD. Radiologic evaluation of soft-tissue masses: a current perspective. *AJR Am J Roentgenol.* 2000;175:575-587.
10. Lonergan GJ, Rice RR, Suarez ES. Autosomal recessive polycystic kidney disease: radiologic-pathologic correlation. *Radiographics.* 2000;20:837-855.
11. McAdams HP, Kirejczyk WM, Rosado de Christenson ML, Matsumoto S. Bronchogenic cyst: imaging features with clinical and histopathologic correlation. *Radiology.* 2000;217:441-446.
12. Montemarano H, Lonergan GJ, Bulas DI, Selby DM. Pancreatoblastoma: imaging findings in ten patients and review of the literature. *Radiology.* 2000;21:476-482.
13. Murphey MD, Choi JJ, Kransdorf MJ, Flemming DJ, Gannon FH. Imaging of osteochondroma: variants and complications with radiologic-pathologic correlation. *Radiographics.* 2000;20:1407-1434.
14. Murphey MD. Imaging of arthritis I: approach and inflammatory disease. *J Hong Kong College of Radiologists.* 2000;3(suppl):177-179.
15. Parman LM, Murphey MD. Alphabet soup: cystic lesions of bone. *Semin Musculoskeletal Radiol.* 2000;4:89-101.
16. Murphey MD. Imaging of arthritis II: osteoarthritis, crystal disease, and neuropathic arthropathy. *J Hong Kong Coll Radiol.* 2000;3(suppl):180-183.
17. Murphey MD. Fundamental concepts of musculoskeletal neoplasm: CT and MRI. *J Hong Kong Coll Radiol.* 2000;3(suppl):184-186.
18. Murphey MD. Common osteoid lesions of bone. *J Hong Kong Coll Radiol.* 2000;3(suppl):187-191.
19. Pickhardt PJ, Lonergan GJ, Davis CJ, Kashitani N, Wagner BJ. Infiltrative renal lesions: radiologic-pathologic correlation. *Radiographics.* 2000;20:215-243.
20. Robbin MR, Murphey MD. Benign chondroid neoplasms of bone. *Semin Musculoskeletal Radiol.* 2000;4:45-58.
21. Rush WL, Andriko JAW, Galateau-Salle F, Brambilla E, Brambilla C, Ziani-bey I, Rosado de Christenson ML, Travis WD. Pulmonary pathology of Erdheim-Chester disease. *Mod Pathol.* 2000;13:747-754.
22. Wilson, JS, Galvin JR. Normal diffusing capacity in patients with PiZ alpha(1)-antitrypsin deficiency, severe airflow obstruction, and significant radiographic emphysema. *Chest.* 2000;118:867-871.

Announcements

1. Rosado de Christenson ML. Charles A. Rohrmann, Jr, MD: 2000-2001 Armed Forces Institute of Pathology Distinguished Scientist. *Acad Radiol.* 2000;7:454-455.
2. Rosado de Christenson ML. Charles A. Rohrmann, Jr, MD: 2000-2001 Armed Forces Institute of Pathology Distinguished Scientist. *ACR Bull.* 2000;5:10.
3. Rosado de Christenson ML. Charles A. Rohrmann, Jr, MD. Armed Forces Institute of Pathology 2000-2001 Distinguished Scientist. *Radiology.* 2000;7:454-455.
4. Rosado de Christenson ML. Charles A. Rohrmann, Jr, 2000-2001 Armed Forces Institute of Pathology Distinguished Scientist. *Am J Radiol.* 2000;175:338.

Abstracts

1. Abbott RM, Grayson DE, Sherman PM, Novick SL, Chocallo WC, Levy AD. Emphysematous infections of the abdomen and pelvis: a pictorial review. *Radiology.* 2000;217 (P):660.
2. Choi JJ, Murphey MD, Rosenblum RS, Koeller KK. Chordomas of the spine: radiologic-pathologic correlation. *Am J Radiol.* 2000;174 (suppl):119.
3. Choi JJ, Murphey MD, Gannon FH, Sweet DE, Jelinek JS. Imaging of chordoma of the spine: radiologic-pathologic correlation. *Radiology.* 2000;217 (P):271.
4. Karakida O, Murphey MD, Choi JJ. Imaging manifestations of hemangiomas of bone: a review of 214 lesions. *Radiology.* 2000;217 (P):573.
5. Kransdorf MJ, Bancroft LW, Murphey MD, Temple H, Foster WC. Imaging of well-differentiated fatty tumors: distinction of lipoma and well-differentiated liposarcoma. *Radiology.* 2000;217 (P):573.
6. Murphey MD, Sundaram M. A systematic approach to imaging of musculoskeletal tumors. *Radiology.* 2000;217 (P):69.
7. Murphey MD, Kransdorf MJ, Choi JJ, Jelinek JS, Temple H. Imaging of hibernoma. *Radiology.* 2000;217 (P):573.
8. Prince TP, Murphy BJ, Murphey MD, Temple H. Unicameral bone cysts and interosseous lipomas in the foot: a radiologic review. *Radiology.* 2000;217 (P):573.
9. Robbin MR, Smith SE, Murphey MD, Choi JJ, Matthews WD, Young PC. Imaging of osseous and soft tissue Ewing sarcoma and primitive neuroectodermal tumor (PNET). *Am J Radiol.* 2000;174 (suppl):152.
10. Robbin MR, Smith SE, Murphey MD, Choi JJ, Matthews WD, Young PC. Imaging of osseous and soft tissue Ewing sarcoma and primitive neuroectodermal tumor (PNET). *Radiology.* 2000;217 (P):685.
11. Rosado de Christenson ML, Galvin JR, Koeller KK, Levy AD, Murphey MD. Sarcoidosis from head to toe. *Radiology.* 2000;217 (P):44.
12. Rosado de Christenson ML, Kazerooni EA. Differential diagnosis of mediastinal masses. *Radiology.* 2000;217 (P):91.
13. Salzman KL, Osborn AG, Townsend JJ, Koeller KK. Limbic encephalitis: clinical, pathologic, and imaging spectrum. *Radiology.* 2000;217 (P):336.
14. Smith SE, Mulligan ME, Murphey MD, Resnik CS, Wargo JT, Davis KW. Radiologic spectrum of Paget's disease and its complications including advanced imaging and pathologic correlation. *Radiology.* 2000;217 (P):681.
14. Smith SE, Murphey MD, Choi JJ, Gannon FH. Imaging of osseous hemangioendothelioma with pathologic correlation and emphasis on advanced imaging. *Radiology.* 2000;217 (P):573.

Other Publications

1. Koeller KK. *Central Nervous System Neoplasms: Intra-axial* [syllabus]. Categorical Course in Neuroradiology, Radiological Society of North America 86th Scientific Assembly and Annual Meeting; November 26-December 1, 2000; Chicago, Ill.
2. Woodward PJ. *Residency Calendar. Survival Guide of Women Radiologists; The AAWR Pocket Guide.* American Association for Women Radiologists; 2000.
3. Rosado de Christenson ML, Galvin JR, Koeller KK, Lonergan GL, Murphey MD, Woodward PJ. Sarcoidosis from head to toe [biomedical illustration]. Special Focus Session, 86th Scientific Assembly and Annual Meeting. Chicago, Ill. *Radiology.* 2000;217(P) suppl:44.



William Inskeep II, COL, VC, USA
Chair
Date of Appointment — 24 December 1996

DEPARTMENT OF VETERINARY PATHOLOGY

MISSION

The Department of Veterinary Pathology provides diagnostic and consultation services and conducts educational and research programs in veterinary, comparative, and toxicologic pathology to ensure the medical readiness of DoD and to advance federal and civilian medicine. The department:

- Conducts the only veterinary pathology residency program within DoD.
- Conducts diagnostic pathology services for military animals worldwide.
- Oversees the Institute's animal care and use program.
- Serves as the WHO Collaborating Center for Worldwide Reference on Comparative Oncology.
- Serves as an international center for pathology training.
- Supports the DoD and the AFIP by conducting medical research in collaboration with military, federal, and civilian agencies.
- Operates the Institute's laboratory animal facility.
- Provides comprehensive support to investigators using laboratory animal models of human disease.
- Provides animal research consultation services to the Director, the Institute Animal Care and Use Committee (IACUC), and investigators.
- Conducts education courses in pathology and laboratory animal science.

ORGANIZATION

The department is organized into 2 divisions and the Office of the Chair.

1. Division of Veterinary Pathology
2. Division of Laboratory Animal Medicine

STAFF

Medical:

William Inskeep II, COL, VC, USA, Chair, Department of Veterinary Pathology, Deputy Director (Army), AFIP
James C. Eastep, DVM, MS, Computer-Aided Education Specialist, ARP
Jagannatha V. Mysore, Veterinary Pathologist, ARP
(D) Cynthia X. Bacmeister, Callender-Binford Fellow, Robert W. Leader Veterinary Pathology Fellow
(A) Sophie Bouchiha, Callender-Binford Fellow, Robert W. Leader Veterinary Pathology Fellow

Scientific:

Henry J. Jenkins, Electron Microscopist and Laboratory Technician

(D) Samir E. Kodsí, Immunohistochemistry and Molecular Biology Laboratory Technician, ARP

(D) Monzer R. Chorbaji, Tissue Prosector and Laboratory Technician, ARP

(A) Michelle L. Fleetwood, Tissue Prosector and Laboratory Technician, ARP

Administrative:

(D) Tony M. Bowers, SFC, USA, NCOIC

(A) Daneen E. Harris, MSG, USA, NCOIC

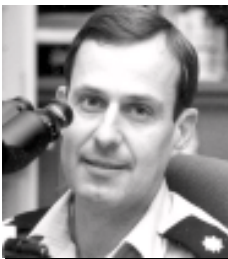
Martha A. Koerner, Secretary

Michele B. Richman, Administrator/Editor, Registry of Toxicologic Pathology for Animals, ARP

Teresa G. Cannady, Administrative Officer



Thomas P. Lipscomb, LTC, VC, USA
Chief (January-September)
Date of Appointment — 1 November 1992



Dale G. Dunn, LTC, VC, USA
Chief (October-December)
Date of Appointment — 1 October 2000

DIVISION OF VETERINARY PATHOLOGY

STAFF

Medical:

Thomas P. Lipscomb, LTC, VC, USA, Chief, Division of Veterinary Pathology

Dale G. Dunn, LTC, VC, USA, Chief, Division of Veterinary Pathology

Denzil F. Frost, LTC, VC, USA, Chief, Research Branch

(D) Jo Lynne Raymond, MAJ, VC, USA, Chief, Diagnostic Services Branch

(A) T. Joy Atkin, MAJ, VC, USA, Chief, Diagnostic Services Branch

(A) Edward L. Stevens, CAPT, VC, USA, Chief, Anatomic Pathology Branch

Brett H. Saladino, MAJ, VC, USA, Chief, Training Branch

F. Yvonne Schulman, DVM, Staff Pathologist, ARP

Residents:

(D) Thelda J. Atkin, MAJ, VC, USA

(D) Howard D. Gobble, MAJ, VC, USA

(D) Todd O. Johnson, MAJ, VC, USA

(D) Edward L. Stevens, MAJ, VC, USA

James S. Estep, MAJ, VC, USA (3rd year)

Venee L. Morthole, MAJ, VC, USA (3rd year)
Nancy T. Santiago, MAJ, VC, USA (3rd year)
(D) Scott D. Bormanis, CAPT, VC, USA
(D) Chris J. Lanier, CAPT, VC, USA
Randall L. Rietcheck, MAJ, VC, USA (2nd year)
(A) Brad A. Blankenship, CAPT, VC, USA (1st year)
(A) Mary F. Cooper, MAJ, VC, USA (1st year)
(A) Joseph Novak Jr, MAJ, VC, USA (1st year)

Administrative:

Mary A. West, Secretary

Terri R. Clark, MAJ, VC, USA
Chief (January - June)
Date of Appointment — 26 August 1999



Rebecca A. Cockman-Thomas, LTC, VC, USA
Chief (July - December)
Date of Appointment — 10 July 2000

DIVISION OF LABORATORY ANIMAL MEDICINE

STAFF

Medical:

(D) Terri R. Clark, MAJ, VC, USA, Chief, Division of Laboratory Animal Medicine
(A) Rebecca A. Cockman-Thomas, LTC, VC, USA, Chief, Division of Laboratory Animal Medicine
(D) Mary F. Cooper, MAJ, VC, USA, Deputy Chief, Division of Laboratory Animal Medicine

Scientific:

Rodolfo E. Marengo, SGT, USA
Christina Kowalske, PFC, USA
(D) Kristina Klorig, PFC, USA
Tia Coleman, PV2, USA
Stephen M. Cameron, SPC, USA
(A) Steven P. McNair, Biological Assistant
Michael B. Cannon, Animal Caretaker Supervisor
Rashaan O. Jackson, Animal Caretaker Floor Leader
James P. Pollock, Animal Caretaker
Jerome D. Escoe, Animal Caretaker
(D) Theafers J. Kidd, Animal Caretaker Supervisor

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	582
Federal	186
Civilian	812
Interdepartmental.....	10
Total	1590

Autopsies Conducted

Division of Laboratory Animal Medicine, AFIP	74
National Zoological Park (NZIP)	119
Maryland State Diagnostic Lab (MDX)	130
Other (primarily military dogs).....	18
Total	341

The department received over 1,590 cases for consultation and/or submission to the Registry of Veterinary Pathology and the Registry of Toxicologic Pathology for Animals for educational and research purposes. Over 50% of cases reported represent complete autopsies in which wet tissue was received. The percentage of military working dogs necropsied worldwide in 2000 (over 99% compared to less than 50% in 1992) has greatly increased the workload and number of tissues assessed histopathologically. Each military working dog case has approximately 70 tissues for assessment. Of the 1,590 completed cases, 1,152 special stains were required; 1,162 immunohistochemical stains were obtained from the AFIP laboratory or performed by department personnel in collaboration with the WRAIR Veterinary Immunohistochemical Laboratory; 9 molecular biological techniques were performed; and 174 electron microscopy cases were completed. We examined radiographs from 8 cases. In addition to the above histopathological cases, the 138 transmission electron microscopy and the 36 scanning electron microscopy cases resulted in 3,499 EM prints. Many of these prints were used in publications. We performed 51 cytological case examinations, which included tissue aspirates and bone marrow impressions. Forty-one cases received a quality diagnosis code of “4,” representing a major disagreement with the contributor’s diagnosis. Special gross examinations were performed on 3 marine mammals and 5 military working dogs. Department staff members and residents conducted 266 autopsies. Histopathology is performed on almost all cases. NZP and MDX cases are not included with AFIP consultation cases since they are assessed by residents and reviewed by NZP or MDX staff pathologists. The number of cases submitted to the Registry of Veterinary Pathology is considered adequate.

Impact:

- Our most significant program is the DoD Veterinary Pathology Residency. We train and prepare all veterinary pathologists for ACVP Board Certification, specialists necessary for DoD biomedical research laboratories and clinical investigation directorates.
- The department provides diagnostic pathology for military working animals and federal animal programs (Customs, Border Patrol, and Secret Service).
- The WHO Collaborating Center is conducting the first update in 25 years of the Histologic Classification of Tumors in Domestic Animals. These fascicles are used worldwide in diagnostic pathology and research with domestic animals.
- The Registry of Toxicologic Pathology for Animals publishes the Standardized System of Nomenclature for Diagnostic Criteria, and 3 Guides were published in 2000. These Guides are critical to the standardization of diagnostic terminology for veterinary toxicologic pathologists in drug-safety studies.
- The department is evaluating military working dogs deployed during Operation Desert Shield/Storm as the only biological sentinel system within the theater, as an indicator of human disease.

- Annual courses provide essential training for military medical research specialists and are key components of the DoD Residency Program. These courses are unique to the profession, as no university conducts a similar course.
- Completed the first Web-based histopathology course for the Institute. This was the first Web-based histopathology conference for the profession of veterinary pathology.
- Conducted a 30-week histopathology slide mail-out conference with 135 participating institutes in 16 countries. This conference is in its 49th year, and no similar conference exists for the profession of veterinary pathology.
- We contributed significantly in the discoveries that domoic acid was the cause of extensive mortality of sea lions along the California coast; that a novel herpesvirus is implicated as the cause of a common genital cancer of sea lions; that *Bartonella vinsonii*, an emerging human disease, is a significant cause of endocarditis in dogs.
- Completed final document for OTSG Editorial Review of Technical Bulletin Medical 283 - Veterinary Necropsy Protocol for Military Working Dogs.
- Provided Laboratory Animal Medicine support for the State Department's Cooperative Threat Reduction Program (Nonproliferation/Science Cooperation Program) and DoD's Office of the Secretary of Defense, Strategy and Threat Reduction in the former Soviet Union.
- Laboratory Animal Medicine Division supports one of only 2 DoD facilities with a CT arm scanner and the only DoD facility with animal cardiac catheter capability.

Deployments:

1. March and October, 2000, Schaumburg, Ill. American Veterinary Medical Association Council on Research. W Inskeep.
2. March 2000, San Antonio, Tex. US Army Military Veterinary Medical Seminar. TJ Atkin.
3. March 2000, Ft. Collins, Colo. Veterinary Corps Recruiting Meeting. W Inskeep.
4. March 2000, Plum Island, NY. Foreign Animal Disease Diagnosticians Course. W Inskeep.
5. March 2000, San Antonio, Tex. Current Issues Course. W Inskeep.
6. March 2000, San Antonio, Tex. US Army Veterinary Medical Command Seminar. M Carter.
7. April 2000, Silver Spring, Md. National Marine Fisheries Service Workshop on Mass Stranding of Beaked Whales in the Bahamas. DG Dunn.
8. April 2000, Bethesda, Md. Weapons of Mass Destruction and Biological Terrorism Course. W Inskeep.
9. April 2000, Landstuhl, Germany. Pathology for Clinical Veterinarians Course. DG Dunn, W Inskeep.
10. April 2000, San Antonio, Tex. Council of Army Veterinarians. W Inskeep.
11. May 2000, Lackland AFB, Tex. DoD Military Working Dog Veterinary Service. DG Dunn.
12. June, July, and August 2000, Lackland AFB, Tex. Military working dog necropsy support to DoD Military Working Dog Center—AFIP residents. R Rietcheck, V Morthole, J Estep, N Santiago, J Eighmy.
13. July 2000, Tel Aviv, Israel. Hebrew University, Defense Advanced Research Projects Agency (DARPA) site visit. RA Cockman-Thomas.
14. August 2000, Wye River, Md. Wye River Strategic Planning Conference. DG Dunn.
15. October 2000, Wye River, Md. Wye River Strategic Planning Conference. W Inskeep.
16. October 2000, Wurzburg, Germany. International Military Veterinary Symposium. W Inskeep.
17. December 2000, Front Royal, Va. North Atlantic Veterinary Command, Junior Officer Development Seminar. TJ Atkin, EL Stevens.

Quality Assurance:

1. The chair or senior staff members review 10% of the monthly consultation cases.
2. Board-certified staff members sign all case letters.
3. Second review: Chief, Division of Veterinary Pathology, Senior Surgical Pathologist, or

- Chair, Department of Veterinary Pathology.
4. Chair, AFIP Quality Assurance Committee, W Inskeep.
 5. The Division of Laboratory Animal Medicine provides quality assurance in procurement and housing of research animals in accordance with Association for the Assessment and Accreditation of Laboratory Animal Care, International Standards.
 6. Three department personnel are members of the AFIP Institute Animal Care and Use Committee, an essential quality oversight element of the command.
 7. Two department personnel are members of the AFIP Research Committee, an essential quality oversight element of the command.
 8. One department person is a member of the AFIP Safety and Biosafety Committees, essential quality oversight elements of the command.

EDUCATION

Presentations and Seminars: In 2000, the department made 54 single presentations at various seminars, symposia, conferences, courses, and workshops, representing 59,500 man-hours of instruction. Dates and venues for these presentations are listed at the end of this report. The department also conducted regular conferences and workshops on a daily, weekly, and quarterly basis.

Courses: Members of the department conducted 7 AFIP courses, representing 8,448 attendee-days. The department codirected the USDA-DoD-FEMA Foreign Animal Disease Satellite Seminar that was downlinked to 73 sites in 5 countries, representing 9,000 man-hours of instruction.

Annual courses sponsored by the department and attended by Division of Veterinary Pathology DoD residents include:

1. 24th Annual CL Davis Symposium Diagnostic Veterinary Pathology
2. CL Davis Foundation Gross Pathology of Animals (cosponsored by the CL Davis Foundation)
3. Descriptive Veterinary Pathology (2 courses)

Personnel from Army research medical laboratories and other government and civilian agencies attend many of our formal training sessions throughout the academic year.

Trainees:

1. 12 residents, 2,131 trainee-days
2. Callender-Binford Fellow, 252 days
3. 17 visiting veterinary residents studying for ACVP Exam, 201 days
4. 11 veterinary students, 153 days

Residency Program: The Division of Veterinary Pathology operates the DoD's only residency in veterinary pathology. In 2000, the 3-year training program had 12 residents preparing for the American College of Veterinary Pathologists' (ACVP) certifying examination. Our program is recognized as one of the most effective in the country. In the last 12 years, 34 AFIP residents have taken the ACVP examination and 27 have achieved board certification. In 2000, 50% of AFIP residents taking the certifying examination for the first time passed all parts and were board certified. The national pass rate for first-time applicants was 35%. Our residency program is based on diagnostic service cases, formal training sessions given throughout the academic year, and 3 or 4 annual courses.

The cornerstone of our formal training program is the Systemic Pathology Seminar, organized so that diseases of all organ systems of major animal species are covered over the course of the 3-year residency. Another integral component of the program is the Wednesday Slide Conference. Thirty weekly conferences are held during an academic year, each consisting of 4 unknown cases. Staff and guest moderators call on residents to describe the lesions and discuss differential diagnosis and pathogenesis. In addition, the Wednesday Slide Conference is a mail-out histopathology seminar for 135 institutes in 16 countries. Residents serve as prosectors for the Division of Laboratory Animal Medicine of the AFIP, the National Zoological Park, and the Maryland State Animal Diagnostic Laboratory in Frederick, Md.

The residency program requires a variety of types of case material, including those that represent infectious, toxic, neoplastic, and metabolic diseases from a wide variety of animal species. To this end, we obtain training material from civilian diagnostic services as well as

from military sources. Diagnostic support for the military working animal programs is given the highest priority. Detailed histopathologic studies with extensive review by experienced staff members, frequent utilization of electron microscopy, immunohistochemistry, and molecular techniques, as well as consultations with other departments within the Institute, insure the highest quality of diagnostic work.

Educational Aids:

1. Systemic Pathology of Animals Study Sets, Eleven Body Systems (3 sets), available only at AFIP
2. Histopathology Examinations (60), available only at AFIP
3. Gross Pathology Examinations (30), available only at AFIP
4. Wednesday Slide Conference, 4 cases per week for 30-week training year distributed to 135 contributing institutes worldwide
5. Wednesday Slide Conference Study Sets (26 years), available only at AFIP
6. Wednesday Slide Conferences, including text and images, on the Internet for the Conference Years 1995-96, 1997-98, and 1998-99 (partial)
7. CL Davis Foundation study sets containing over 3,000 histology slides
8. Normal histology and species-specific study sets (63), available only at AFIP
9. Database of histology/gross pathology slides for the study of comparative pathology (12,000 slides)
10. Missouri Gross Pathology study sets (1,150 Kodachromes)
11. Interlibrary Loan Study Sets (79 titles), available within the department or from the AFIP MIS Library
12. Internet - 3 levels of case information from the Wednesday Slide Conference Years 1998-99 (partial) accessible by selection to distant viewers:
 - Level 1: Brief history of unknown case
 - Level 2: Initial diagnosis following completion of each conference, followed as quickly as possible by photomicrographs illustrating major morphologic features
 - Level 3: Complete written results and prepared comments about each of the 4 weekly cases
13. Wednesday Slide Conference Year 1993-94 CD-ROM – available at AFIP and through the ARP Bookstore
14. Internet - RTPA Toxicologic Histopathology Web Slide Conference 2000 hosted 4 conference sessions, each session focused on 4 thought-provoking cases submitted by participating organizations. This online conference series provides toxicologic pathologists with a neutral, anonymous forum for exchange of ideas and information concerning toxicologic research and related issues. The conferences are open for a 2-week period, 7 days a week, 24 hours a day. Over 250 pathologists from 25 institutions worldwide participated. This material is available free to the DoD Residency Program.
15. Visiting veterinarians studying for the American College of Veterinary Pathologists' certifying examination (17 in 2000) use our extensive collection of histologic and gross pathology slide sets, many of which are available only at the AFIP.

RESEARCH

Publications: The department produced or contributed to 15 journal articles, 6 abstracts, and 3 books. A complete list of references is included at the end of this report. FY Schulman is editing the second series of the *World Health Organization Histologic Classification of Tumors of Domestic Animals*. DG Dunn is updating the *Army Technical Bulletin Medical* on necropsy procedures for military working dog. The *Guides to the Standardized System of Nomenclature and Diagnostic Criteria for Toxicologic Pathology* continue to be published, with completion of proliferative lesions in the rat and initiation of nonproliferative lesions in the rat. D Frost provides oversight of the *Guides*, and Ms. Michele Richman coordinates the subject-matter expert groups and edits each publication.

Projects: The department is conducting/supporting numerous pathology and laboratory animal research projects. Specific projects focused on military readiness include the following:

1. Indicators of Human Disease from Persian Gulf Service: A Study of Military Working Dogs Deployed in Operations Desert Shield and Desert Storm, a collaborative effort with the DoD Military Working Dog Veterinary Service, Lackland AFB, Tex.

2. Genital Tract Carcinomas of Free-Ranging Sea Lions (sea lions serve as military working animals).
3. Causes of Marine Mammal Disease (dolphins and whales serve as military working animals).
4. CD-ROM of the Necropsy of the Military Working Dog.
5. *Bartonella vinsonii* in Military Working Dogs with Endocarditis.

The department had one animal use training protocol entitled “Technician/Investigator Training at the AFIP” and one animal use research protocol entitled “Indicators of Human Disease from Persian Gulf Service: A Study of Military Working Dogs Deployed in Operations Desert Shield and Desert Storm,” open as of December 31, 2000.

In 2000, the Division of Veterinary Pathology conducted independent research and/or provided pathology support for the following ongoing intramural and extramural research projects:

1. Effects of Persian Gulf War Service on Military Working Dogs
2. FDA Interagency Research Support Agreement
3. CNS Tumors of Domestic Animals Study Set
4. Causes of Marine Mammal Disease
5. Applications of CD-ROM Technology to Training in Veterinary Pathology
6. Characterization and Etiology of Genital Tract Carcinomas of Free-Ranging Sea Lions
7. Search for *Bartonella vinsonii* in Military Working Dogs with Endocarditis
8. Characterization of Gastrointestinal Stromal Tumors in Animals
9. Characterization and Etiology of Feline Sarcoids
10. Characterization and Biological Behavior of Pleomorphic Feline Mast Cell Tumors
11. Morbilliviral Disease in Pilot Whales
12. Etiologic Investigation of Papillomas in Manatees
13. Characterization of Seminoma in Dolphins
14. Disseminated Herpesvirus Infections in Bottlenose Dolphins
15. Feline Subependymal Giant Cell Astrocytoma
16. Multiple Epulides in Cats
17. Infanticide in Dolphins
18. Web-Based Distance Learning in Veterinary Pathology
19. Morbilliviral Dermatitis in Pinnipeds
20. Characterization and Etiology of Camelid Fibropapillomas
21. Characterization and Pathology Associated with Calyptospora in Arapaima

The Division of Laboratory Animal Medicine provided support to 23 animal use research protocols involving over 4,000 animals. These protocols involve primarily cardiovascular and infectious disease research.

Research Funds Received: The department received a total of \$210,000 in extramural funds for research-related activities, including the following:

1. FDA Interagency Research Support Agreement - \$10,000
2. Diagnostic histopathology support of the marine mammal programs of the federal government, with an annual workload of 186 cases, approximately 95% of which were autopsies - \$50,000, National Marine Fisheries Service
3. Persian Gulf Initiative - \$150,232
4. The department is working under an ARP grant – Sea Lion Carcinoma Study

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. National Marine Fisheries Service, marine mammal studies.
2. US Fish and Wildlife Service, marine mammal studies.

3. US Navy, marine mammal pathology support.
4. DoD Military Working Dog Veterinary Service, Persian Gulf military dog study, and MWD morbidity/mortality studies.
5. Walter Reed Army Institute of Research, immunohistochemical and molecular techniques.
6. US Food and Drug Administration, human heart valve, cardiac vessels, and cell culture studies.

Civilian:

1. University of California at Davis, marine mammal studies.
2. Pathogenesis Corporation, Seattle, Wash, marine mammal studies.
3. Marine Mammal Center, Sausalito, Calif, marine mammal studies.
4. Auburn University, Auburn, Ala, Persian Gulf military dog study.
5. University of Texas School of Public Health, Persian Gulf military dog study.
6. University of North Carolina at Wilmington, marine mammal studies.
7. Virginia Marine Science Museum, marine mammal studies.
8. CL Davis Foundation, education in veterinary and comparative pathology.
9. VA-MD Regional College of Veterinary Medicine, training of veterinary students.
10. National Zoological Park, Washington, DC, conduct prosector program.
11. Maryland State Diagnostic Laboratory, Frederick, Md, conduct prosector program.
12. Society of Toxicologic Pathology, publish Toxicologic Pathology Guides.
13. University of California, Davis, Military Working Dog Study.
14. Uniformed Services University of the Health Sciences, Persian Gulf military dog study.
15. The Ohio State University, Columbus, Ohio, domestic animal tumor study.

In 2000, the Division of Veterinary Pathology provided extensive pathology support to federal marine mammal programs through a funded Memorandum of Agreement. In recent years, this involvement has led to the discovery that morbilliviruses caused the dolphin epizootics along the Atlantic coast (1987-1988) and in the Gulf of Mexico (1993-1994). Collaboration with the Department of Cellular Pathology has resulted in development of a sensitive polymerase chain reaction test for dolphin morbillivirus. In 2000, this collaboration led to the detection of a novel morbillivirus in a pilot whale, adding important new information on the epidemiology of this emerging pathogen. In other research, a novel gamma herpesvirus has been confirmed as a possible cause of a prevalent genital cancer of California sea lions. Forensic evidence of infanticide in bottlenose dolphins has been found. In collaboration with the University of California, Davis, the division provided support to identify *Bartonella vinsonii* ssp *berkhofii* in archived tissue as a cause of endocarditis in military working dogs.

International:

Hebrew University, Tel Aviv, Israel, Defense Advanced Research Projects Agency (DARPA) site visit.

Interdepartmental:

1. Department of Environmental and Toxicologic Pathology, Persian Gulf military dog study.
2. Department of Epidemiology, Repository and Research Services, Persian Gulf military dog study and military dog epidemiological studies.
3. Department of Cellular Pathology, marine mammal and domestic animal studies.
4. Department of Soft Tissue Pathology, gastrointestinal stromal tumors.
5. American Registry of Pathology, domestic animal tumor study, CD-ROM project, Web-based education.

Honors:

1. The Army Commendation Medal – B Blankenship
2. The Army Commendation Medal – D Stoffregen
3. NATO Medal – D Stoffregen
4. Kosovo Campaign Medal – D Stoffregen
5. Joint Services Achievement Medal – M Cooper
6. Meritorious Service Medal – M Cooper

7. The Army Commendation Medal – G Saturday
8. The Army Commendation Medal – K Ryan
9. NATO Medal – K Ryan
10. Armed Forces Services Medal – K Ryan
11. Army Achievement Medal – J Novak
12. “A” Proficiency Designator, US Army Veterinary Corps – LTC Thomas P Lipscomb

Committees:

Manuscripts Reviewed: Members of the department reviewed 4 articles for the following professional journals:

1. *Toxicologic Pathology*
2. *Veterinary Pathology*

Offices/Committee Memberships in National or International Societies:

1. Member, Society of Toxicologic Pathologists, Nomenclature and Diagnostic Criteria Steering Committee - W Inskeep II
2. Member, American Veterinary Medical Association, Council on Research - W Inskeep II
3. Member, National Marine Fisheries Service, Working Group on Unusual Mortalities of Marine Mammals - FY Schulman
4. Member, ACVP Credentialing of Candidates Committee - TP Lipscomb
5. Member, ACVP National Examination Committee – DG Dunn
6. Member, Armed Services Biomedical Research Evaluation and Management Committee, Joint Technical Working Group - TR Clark, RA Cockman-Thomas
7. Council, CL Davis Foundation – JL Raymond
8. Chair, American College of Laboratory Animal Medicine Training Program Recognition Committee - RA Cockman-Thomas
9. Member, American College of Veterinary Pathologists, Training Coordinators Committee - BH Saladino
10. Member, National Marine Fisheries Service workshop on mass stranding of beaked whales in the Bahamas - DG Dunn
11. Member, Florida Department of Natural Resources workshop on manatee mortality- DG Dunn, TP Lipscomb
12. Member World Health Organization Committee on the Histologic Classification of Tumors of the Renal System – W Inskeep II

Faculty Appointments:

Uniformed Services University of the Health Sciences, Adjunct Professor, Preventive Medicine and Biometrics Department, RA Cockman-Thomas.

Other Appointments:

1. Army, Deputy Director AFIP - W Inskeep II
2. Defense Veterinary Liaison Officer to USDA - W Inskeep II
3. AVMA Liaison Officer to ARP - W Inskeep II
4. AVMA Liaison Officer to National Association for Biomedical Research - W Inskeep II
5. Senior Enlisted Advisor for Army Personnel - DE Harris
6. Alternate 1SG - DE Harris
7. Task Area Support Officer - DE Harris

New Missions and/or Missions Dropped: The department discontinued the mission of providing a Professional Officer Filler System veterinary pathologist for the Theater Army Medical Laboratory. As a new mission, the department is developing a Web-based Systemic Veterinary Pathology Course that is designed to have images of over 700 disease entities from multiple species of animals. Eleven body systems will have categories of neoplastic, viral, bacterial, fungal, parasitic, toxic, metabolic, and miscellaneous.

Official Trips (funding agency in parentheses):

1. January 2000: Quarterly Meeting of the Dolphin Project, Savannah, Ga, DG Dunn (AFIP).

2. January 2000: Foreign Animal Disease Diagnosticians Course, Plum Island, NY, W Inskeep (USDA).
3. March 2000: CL Davis Gross Pathology of Animals Course, Washington, DC, JL Raymond (local).
4. March 2000: US Army Military Veterinary Medical Seminar, San Antonio, Tex, TJ Atkin (MEDCOM).
5. March 2000: Veterinary Corps Recruiting Meeting, Ft. Collins, Colo, W Inskeep (USAREC).
6. March 2000: Foreign Animal Disease Diagnosticians Course, Plum Island, NY, W Inskeep (AFIP).
7. March 2000: Association of American Colleges of Veterinary Medicine Meeting, Washington, DC, W Inskeep (local).
8. March 2000: Association of American Colleges of Veterinary Medicine Meeting, Washington, DC, J Mysore (local).
9. March 2000: Current Issues Course, San Antonio, Tex, W Inskeep (AFIP).
10. March 2000: US Army Veterinary Medical Command Seminar, San Antonio, Tex, M Carter (AFIP).
11. March 2000: American Veterinary Medical Association, Council on Research, Schaumburg, Ill, W Inskeep (AVMA).
12. April 2000: National Marine Fisheries Service workshop on mass stranding of beaked whales in the Bahamas, Silver Spring, Md, DG Dunn (local).
13. April 2000: Northern Virginia Community College Veterinary Technician Course, Alexandria, Va, JL Raymond (local).
14. April 2000: Weapons of Mass Destruction and Biological Terrorism Course, Bethesda, Md, W Inskeep (local).
15. April 2000: Pathology for Clinical Veterinarians Course, Landstuhl, Germany, DG Dunn, W Inskeep (MEDCOM).
16. April 2000: Council of Army Veterinarians, San Antonio, Tex, W Inskeep (MEDCOM).
17. May 2000: Florida Department of Natural Resources Workshop on Manatee Mortality, Tampa, Fla, DG Dunn, TP Lipscomb (AFIP).
18. May 2000: DoD Military Working Dog Veterinary Service, Lackland AFB, Tex, DG Dunn (AFIP).
19. August 2000: Descriptive Veterinary Pathology Course, England, JL Raymond (AFIP).
20. August 2000: Foreign Animal Disease Diagnosticians Course, Plum Island, NY, W Inskeep (USDA).
21. August 2000: Wye River Strategic Planning Conference, Wye River, Md, DG Dunn (ARP).
22. September 2000: American Association of Zoo Veterinarians and International Association for Aquatic Animal Medicine, New Orleans, La, TP Lipscomb, NT Santiago (AFIP).
23. September 2000: American College of Veterinary Pathologists Certification Examination, Ames, Iowa, TJ Atkin, H Gobble, E Stevens, T Johnson (AFIP).
24. September 2000: American Veterinary Medical Association, Council on Research, Schaumburg, Ill, W Inskeep (AVMA).
25. October 2000: Wye River Strategic Planning Conference, Wye River, Md, W Inskeep (ARP).
26. October 2000: Non-human Primate Models for AIDS Pathology Seminar and Workshop, Madison, Wis, D Frost (ARP).
27. October 2000: International Military Veterinary Symposium, Wurzburg, Germany, W Inskeep (MEDCOM).
28. November 2000: 51st National AALAS Meeting, San Diego, Calif, RA Cockman-Thomas (AFIP).
29. December 2000: North Atlantic Veterinary Command, Junior Officer Development Seminar, Front Royal, Va, TJ Atkin, EL Stevens (local).
30. December 2000: Association of Veterinary Pathology Chairpersons Annual Meeting, Amelia Island, Fla, W Inskeep, J Eastep (AFIP).

31. December 2000: American College of Veterinary Pathologists Annual Meeting, Amelia Island, Fla, J Mysore, JL Raymond, JS Estep, J Eastep, TP Lipscomb, CX Bacmeister, DF Frost, DG Dunn, V Morthole, BH Saladino (AFIP).

Continuing Education: Department staff and residents attended the following training courses during 2000 (funding included in parentheses):

1. American Association of Laboratory Animal Science Annual Conference, San Diego, Calif (AFIP).
2. American Association of Laboratory Animal Science, National Capital Area Branch, Hagerstown, Md (AFIP).
3. American College of Veterinary Pathologists Annual Meeting, Amelia Island, Fla (AFIP).
4. CL Davis Gross Pathology of Animals Course, Washington, DC (Local).
5. Foreign Animal Diseases in Wildlife Course, Athens, Ga (AFIP).
6. Public Responsibility in Medicine and Research and Applied Research Ethics National Association Meetings, Boston, Mass (AFIP).
7. Society of Toxicologic Pathologists Annual Meeting, Phoenix, Ariz (AFIP).
8. US Army Military Veterinary Medical Seminar, San Antonio, Tex (MEDCOM).
9. USDA Foreign Animal Disease Diagnosticians Course, Plum Island, NY (USDA).

Public Affairs Reports:

1. Armed Forces News Europe and Far East Networks – roles of military veterinary pathologists – Interview with W Inskeep II.
2. Armed Forces News Service - interview with DG Dunn published on Internet, November 1999, in *AFIP LETTER*, Feb 2000 and *Mercury*, April 2000.
3. Quarterly Newsletter of The Dolphin Project, interview with DG Dunn published February 2000.
4. Planet.gov, interview with DG Dunn published on Internet, October 2000.

Exhibits: The department's Registry of Veterinary Pathology and Registry for Toxicologic Pathology of Animals and DoD Veterinary Pathology Residency Program exhibit was displayed at the annual meetings of the Society of Toxicologic Pathologists, the Society of Toxicologists, and the American College of Veterinary Pathologists.

Registries: The Registries of Veterinary Pathology and Toxicologic Pathology for Animals are active and productive. The Registry of Toxicologic Pathology for Animals (RTPA) (DF Frost, Director, appointed May 1999):

1. Continued publication of the *Guides to the Standardized System of Nomenclature and Diagnostic Criteria for Toxicologic Pathology*, completing *Guides* to proliferative lesions in the rat and issuing 3 *Guides* to nonproliferative lesions in the rat. Subscriptions reached a total of 174 in 2000.
2. Participated in international conferences that defined the preferred terminology for entry of proliferative lesions of rats and mice into the North American Control Animal Database.
3. Hosted regular quarterly membership panels and diagnostic consultation meetings. The RTPA hosted a 1-day symposium on Telepathology and Informatics in conjunction with the annual meeting of the Society of Toxicologic Pathology in Phoenix, Ariz. The Registry hosted educational exhibit booths at the annual meetings of the American College of Veterinary Pathologists, the Society of Toxicology, and the Society of Toxicologic Pathology.
4. Four conferences were offered via the RTPA Toxicologic Histopathology Web Conference series, which is the first Web conference organized within the AFIP, registering 25 pharmaceutical firms with over 250 participants from around the world.

PRESENTATIONS

1. January 2000: Savannah, Ga, Quarterly Meeting of the Dolphin Project, "The Armed Forces Institute of Pathology-history and mission," DG Dunn.
2. January 2000: Savannah, Ga, Quarterly Meeting of the Dolphin Project, "Evidence for infanticide in bottlenose dolphins of the western North Atlantic," DG Dunn.

3. January 2000: Plum Island, NY, Foreign Animal Disease Diagnosticians Course, "Military interests in foreign animal diseases," W Inskeep.
4. January 2000: Plum Island, NY, Foreign Animal Disease Diagnosticians Course, "Agroterrorism," W Inskeep.
5. March 2000: Ft. Collins, Colo, Veterinary Corps Recruiting Meeting, "Opportunities in the US Army Veterinary Corps," W Inskeep.
6. March 2000: Ft. Collins, Colo, Veterinary Corps Recruiting Meeting, "Opportunities in the US Army Veterinary Corps," W Inskeep.
7. March 2000: Washington, DC, CL Davis Gross Pathology of Animals Course, "Diseases of laboratory animals," JL Raymond.
8. March 2000: Plum Island, NY, Foreign Animal Disease Diagnosticians Course, "Military interests in foreign animal diseases," W Inskeep.
9. March 2000: Washington, DC, Association of American Colleges of Veterinary Medicine Meeting, "AFIP Web systemic veterinary pathology," W Inskeep.
10. March 2000: Washington, DC, Association of American Colleges of Veterinary Medicine Meeting, "AFIP Web systemic veterinary pathology," J Mysore.
11. March 2000: San Antonio, Tex, US Army Military Veterinary Medical Seminar, "Novel morbillivirus in a long-finned pilot whale," TJ Atkin.
12. March 2000: San Antonio, Tex, Current Issues Course, "AFIP command briefing," W Inskeep.
13. March 2000: San Antonio, Tex, Current Issues Course, "Veterinary pathology department briefing," W Inskeep.
14. March 2000: San Antonio, Tex, US Army Veterinary Medical Command Seminar, "Current research finding in military working dog epidemiology," M Carter.
15. April 2000: Bethesda, Md, Weapons of Mass Destruction and Biological Terrorism Course, "Agroterrorism," W Inskeep.
16. April 2000: Washington, DC, AFIP Resident/Fellow Symposium, "Nitric oxide isoforms in gastric dilatation-volvulus syndrome: immunohistochemical localization and differential expression in canine pylorus and duodenum," CX Bacmeister.
17. April 2000: Alexandria, Va, Northern Virginia Community College Veterinary Technician Course, "Diseases of rabbits," JL Raymond.
18. April 2000: Landstuhl, Germany, Pathology for Clinical Veterinarians Course, "Necropsy and cytology techniques," DG Dunn.
19. April 2000: Landstuhl, Germany, Pathology for Clinical Veterinarians Course "Necropsy techniques and cytology wet laboratory," DG Dunn, W Inskeep.
20. April 2000: Landstuhl, Germany, Pathology for Clinical Veterinarians Course, "Cytology: a very useful diagnostic aid," W Inskeep.
21. May 2000: Washington, DC, AFIP Scientific Advisory Board, "Veterinary Pathology Department briefing," W Inskeep.
22. May 2000: Silver Spring, Md, Veterinary Pathology Orientation Conference, "Veterinary Pathology Department briefing," W Inskeep.
23. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," BH Saladino.
24. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," TP Lipscomb.
25. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," DG Dunn.
26. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," FY Schulman.
27. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," W Inskeep.
28. June 2000: Washington, DC, Descriptive Veterinary Pathology Course, "Slide test review," D Frost.
29. August 2000: England, Descriptive Veterinary Pathology Course, "Diagnostic immunohis-

- tochemistry," JL Raymond.
30. August 2000: Plum Island, NY, Foreign Animal Disease Diagnosticians Course, "Military interests in foreign animal diseases," W Inskeep.
 31. September 2000: New Orleans, La, American Association of Zoo Veterinarians and International Association for Aquatic Animal Medicine, "Morbilliviral dermatitis in seals," TP Lipscomb.
 32. September 2000: New Orleans, La, 2000 Joint Meeting of the American Association of Zoo Veterinarians and the International Association for Aquatic Animal Medicine, Zoo and Wildlife Pathology Workshop, "Morbilliviral disease in a long-finned pilot whale (*Globicephala melas*)," TP Lipscomb.
 33. September 2000: New Orleans, La, Joint Conference of the American Association of Zoo Veterinarians and the International Association for Aquatic Animal Medicine, "Two novel herpesviruses associated with fatal disseminated infections in bottlenose dolphins (*Tursiops truncatus*)," NT Santiago.
 34. October 2000: Madison, Wis, Non-human Primate Models for AIDS Pathology Seminar and Workshop, "The characterization of gastric stromal tumor in a chimpanzee (*Pan troglodytes*)," D Frost.
 35. October 2000: Wurzburg, Germany, International Military Veterinary Symposium, "Opportunities in veterinary pathology," W Inskeep.
 36. November 2000: San Diego, Calif, 51st National AALAS Meeting, "Clinical management of buphthalmia with novel ophthalmics in a New Zealand white rabbit," TR Clark, SD Bormanis, MF Cooper, JL Raymond. Poster.
 37. November 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "The Guide for the Care and Use of Laboratory Animals," RA Cockman-Thomas.
 38. November 2000: Washington, DC, Weekly Professional Staff Conference, AFIP, "Gastric stromal tumor in a chimpanzee (*Pan troglodytes*)," D Frost.
 39. November 2000: Washington, DC, Professional Staff Conference, AFIP, "Characterization and etiology of disseminated herpesvirus infections in bottlenose dolphins," NT Santiago.
 40. November 2000: Washington, DC, AFIP Professional Staff Conference, "Malignant seminoma in an Atlantic bottlenose dolphin," JS Estep.
 41. November 2000: Washington, DC, Professional Staff Conference, AFIP, "Fibropapilloma in cats," FY Schulman.
 42. December 2000: Front Royal, Va, North Atlantic Veterinary Command, Junior Officer Development Seminar, "Opportunities in veterinary pathology," TJ Atkin, EL Stevens.
 43. December 2000: Amelia Island, Fla, Association of Veterinary Pathology Chairpersons Annual Meeting, "AFIP Web systemic veterinary pathology," W Inskeep.
 44. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "AFIP Web systemic veterinary pathology," J Mysore.
 45. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Pathology training: sharing resources and utilization of current technology," J Mysore.
 46. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Gonadostromal tumor in a rabbit," JL Raymond. Poster.
 47. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Malignant seminoma with abdominal dissemination in an Atlantic bottlenose dolphin (*Tursiops truncatus*)," JS Estep.
 48. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Canine necropsy training on CD-ROM," J Eastep.
 49. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Malignant rhabdoid tumor in a ferret (*Mustela putorius furo*)," V Morthole, TJ Atkin, C Knott, S Wolfensohn, TP Lipscomb. Poster.
 50. December 2000: Amelia Island, Fla, American College of Veterinary Pathology Annual Meeting, Pathology Department Head Breakfast, "AFIP veterinary systemic pathology study sets on the World Wide Web," JC Eastep.

51. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists Annual Meeting, "Nitric oxide isoforms in gastric dilatation-volvulus syndrome: immunohistochemical localization and differential expression in canine pylorus and duodenum," CX Bacmeister, T Blanchard, M Carter. Poster.
52. December 2000: Bethesda, Md, Uniformed Services University of the Health Sciences, "Cats: research models, applications, and management," TR Clark.
53. December 2000: Amelia, Island, Fla, 51st Annual Meeting of the American College of Veterinary Pathologists, "On-line conferencing: removing the barriers of time, cost, and distance to create a new type of histopathology conference," D Frost.
54. December 2000: Amelia Island, Fla, 51st Annual Meeting of the American College of Veterinary Pathologists, "Panel discussion on pathology training: sharing resources and utilization of current technology," D Frost.
55. December 2000: Amelia Island, Fla, American College of Veterinary Pathology Annual Meeting, Education Session, "Canine necropsy training on CD-ROM," J Eeastep.

PUBLICATIONS

Journal Articles

1. Allison N, Moeller RB. Spinal ataxia in a horse caused by an arachnoid diverticulum (cyst). *J Vet Diagn Invest.* 2000;12:279-281.
2. Dubey JP, Clark TR, Yantis D. Frenkelia microti infection in a chinchilla (*Chinchilla laniger*) in the United States. *J Parasitol.* 2000;86:1149-1150.
3. Duniho S, Schulman FY, Morrison A, Mena H, Koestner A. A subependymal giant cell astrocytoma in a cat. *Vet Pathol.* 2000;37:275-278.
4. Hendrix DVH, Boschler PN, Saladino BH, Cawrse MA, Thomas J. Malignant teratoid medulloepithelioma in a llama. *Vet Pathol.* 2000;37:680-683.
5. Elsayed NM, Armstrong KL, Williams MT, Cooper MF. Antioxidant loading reduces oxidative stress induced by high-energy impulse noise (blast) exposure. *Toxicology.* 2000;155:91-99.
6. Lipscomb TP, Scott DP, Garber RL, Krafft AE, Tsai MM, Lichy JH, Taubenberger JK, Schulman FY, Gulland FMD. Common metastatic carcinoma of California sea lions (*Zalophus californianus*): evidence of genital origin and association with novel gammaherpesvirus. *Vet Pathol.* 2000;37:609-617.
7. Moore GE, Mathey WS, Eggers JS, Estep JS. Osteosarcoma in adjacent lumbar vertebrae in a dog. *J Am Vet Med Assoc.* 2000;216:1038-1040.
8. Murray S, Zdziarski JM, Bush M, Citino SB, Schulman FY, Montali R. Diverticulitis with rupture and fatal peritonitis in a Sumatran orangutan (*Pongo pygmaeus*). *Comp Med.* 2000;50:452-454.
9. Peterson MR, Frommelt RA, Dunn DG. A study of the lifetime occurrence of neoplasia and breed differences in a cohort of German shepherd dogs and Belgian Malinois military working dogs that died in 1992. *J Vet Int Med.* 2000;14:140-145.
10. Rico PJ, Johnson TE, Mitchell MA, Saladino BH, Roach WP. Median effective dose determination and histologic characterization of porcine (*Sus scrofa domestica*) dermal lesions induced by 1540-nm laser radiation pulses. *Comp Med.* 2000;50:633-638.
11. Raymond JT, Tell L, Bush M, Nichols DK, Schulman FY, Montali RJ. Subcutaneous atypical mycobacteriosis in captive tiger quolls (*Dasyurus maculatus*). *Vet Pathol.* 2000;37:137-142.
12. Scholin CA, Gulland F, Doucette GJ, Benson S, Busman M, Chavez P, Cordaro J, DeLong R, De Vogelaere A, Harvey J, Haulena M, Lefebvre K, Lipscomb TP, Loscutoff S, Lowenstine LJ, Marin R, Miller PE, McLellan WA, Moeller PDR, Powell CL, Rowles T, Silvagni P, Silver M, Spraker T, Trainer V, Van Dolah FM. Mortality of sea lions along the central California coast linked to a toxic diatom bloom. *Nature.* 2000;403:80-84.
13. Taubenberger JK, Tsai MM, Atkin TJ, Fanning TG, Krafft AE, Moeller RB, Kodsí SE, Mense MG, Lipscomb TP. Molecular genetic evidence of a novel morbillivirus in a long-finned pilot whale (*Globicephalus melas*). *Emerg Infect Dis.* 2000;6:42-45.
14. Work TM, Massey JG, Rideout BA, Gardiner CH, Ledig DB, Kwok OC, Dubey JP. Fatal toxoplasmosis in free-ranging endangered 'Alala from Hawaii. *J Wildl Dis.* 2000;36:205-212.

Abstracts

1. Bacmeister CX, Blanchard T, Carter M. Nitric oxide isoforms in gastric dilatation-volvulus syndrome: immunohistochemical localization and differential expression in canine pylorus and duodenum. *Vet Pathol.* 2000;37:533.
2. Eastep J, Dunn DG, Inskeep W. Canine necropsy training on CD-Rom. *Vet Pathol.* 2000;37:530.
3. Estep J, McLellan W, Pabst D, Dunn DG. Malignant seminoma with abdominal dissemination in an Atlantic bottlenose dolphin (*Tursiops truncatus*). *Vet Pathol.* 2000;37:530.
4. Morthole V, Atkin TJ, Knott C, Wolfensohn S, Lipscomb, TP. Malignant rhabdoid tumor in a ferret (*Mustela putorius furo*). *Vet Pathol.* 2000;37:536.
5. Mysore J, Eastep J, Saladino BH, Inskeep W. AFIP veterinary systemic pathology sets on WWW. *Vet Pathol.* 2000;37:559.
6. Raymond JW, Atkin TJ. Gonadostromal tumor in a New Zealand white rabbit (*Oryctolagus cuniculus*). *Vet Pathol.* 2000;37:537.

Books

1. Ruben Z, Arceo RJ, Bishop SP, Elwell MR, Kerns WD, Mesfin GM, Sandusky GE, Van Vleet JF. Non-proliferative lesions of the heart and vasculature in rats. CV-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
2. Frith CH, Ward JM, Chandra M, Losco P. Non-proliferative lesions of the hematopoietic system in rats. HL-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
3. Frith CH, Botts S, Jokinen MP, Eighmy JJ, Hailey JR, Morgan SJ, Chandra M. Non-proliferative lesions of the endocrine system in rats. E-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
4. Estep JS. *Veterinary Pathology Department Wednesday Slide Conference*[syllabus] Washington, DC: Armed Forces Institute of Pathology; 2000.



GROUP 5

LEGAL MEDICINE & FORENSIC SCIENCES

LEGAL MEDICINE

**OFFICE OF THE ARMED FORCES
MEDICAL EXAMINER**

DIVISION OF FORENSIC TOXICOLOGY

DOD DNA REGISTRY



Frank T. Flannery, COL, MC, USA
 Chair
 Date of Appointment — 9 October 1990

DEPARTMENT OF LEGAL MEDICINE

MISSION

The Department of Legal Medicine provides consultation, education, and research on medicolegal, medical quality assurance, and risk management matters confronting the military, federal agencies, and civilian sectors.

STAFF

Medical:

Frank T. Flannery, COL, MC, USA
 Richard L. Granville, MD, JD
 William J. Oetgen, MD, MBA

Legal:

Georgia A. Martin, RN, JD, PhD
 Jennifer L. Walters, JD
 Jill E. Thach, JD

Administrative:

Virginia R. Hunt, Legal Assistant
 Licardello J. Ware, TSgt, USAF, Administrative Assistant
 Amy Fine, Database Administrator
 (A) Anne Marie Schroeder, Secretary
 (A) Herman Furlow, Administrative Assistant
 Daniel Wheatley, MS, Statistics Specialist

QUALITY MANAGEMENT/RISK MANAGEMENT CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	225
Army	(46)
Navy	(104)
Air Force.....	(75)
Federal	205
DOJ (BOP)	(200)
HHS (IG)	(5)
Interdepartmental.....	9
Total	439

The above cases reflect the department’s involvement in several different areas of medicolegal consultation for the DoD and other federal agencies:

1. The department has continued its active involvement in various senior-level committees within the DoD. The department served on the quarterly DoD Risk Management Committee, contributing medicolegal information to the senior leadership. Members of the department also participated in the Centralized Credentials Quality Assurance

System (CCQAS) Configuration Control Board. The CCQAS database will be an integral part of the DoD Quality Assurance program. Not only will it contain the credentials on all privileged health care providers within the DoD, but it will also contain the medical malpractice cases and adverse privilege action cases that have been completed at DoD health care facilities. The department also in 2000 participated actively on the DoD Patient Safety Working Group. This senior-level committee has been responsible for the implementation of the Patient Safety Program within the DoD. The AFIP, by public law, has been centrally situated in this effort as the site of the Military Health System (MHS) Patient Safety Center.

2. The department has been actively involved with monitoring the review of medical malpractice cases by the Keystone Peer Review Organization (KePro). All paid medical malpractice cases, where the initial determination has been that the applicable standard of care was met or a system problem has occurred, are reviewed by the Keystone Peer Review Organization. The department evaluates these reviews for their completeness and timeliness, and informs the Office of the Assistant Secretary of Defense for Health Affairs (OASD (HA)) of any problems with this program.
3. The department has continued to maintain an active cooperative working arrangement with the Department of the Treasury. The Financial Management Service staff of the Department of the Treasury meets with the Department of Legal Medicine staff on a monthly basis. Reports of all closed medical malpractice payments involving DoD health care providers are produced by department staff. This information is then forwarded to appropriate personnel in the Offices of the Surgeons General of the Army, Navy, and Air Force as well as OASD (HA). These reports are vitally important to enable the timely required response to paid medical malpractice cases. Selected cases, by law, are required to be forwarded to the National Practitioner Data Bank.
4. The department through its activities on the CCQAS Configuration Control Board has remained apprised of the development of the Tort2 and the Clin2 databases. In mid 2000, those databases as legacy systems were turned off. The CCQAS database, which is expected to be deployed in early 2002, will replace those 2 databases. The Tort2 database is the traditional medical malpractice database used by DoD (Health Affairs) for trending medical malpractice cases. The Clin2 database has been used to trend adverse clinical privilege actions.
5. The department has continued its sharing agreements with other agencies involving consultative assistance in the performance of credentials verifications of newly hired health care providers. The department verified the credentials of 190 newly hired health care providers for the Bureau of Prisons and verified the credentials of 45 health care providers for the Navy Recruiting Command.
6. The department continued to perform case reviews of medical malpractice cases from the Bureau of Prisons and reviews of cases referred from the Department of Health and Human Services Inspector General's Office to determine the appropriateness of the medical care. These cases are only done on a selected basis as time permits.
7. The department has maintained its repository of closed DoD malpractice claims. In 2000, the department accessioned and cataloged 1,351 newly closed DoD malpractice cases.

Impact:

The most important area of involvement during 2000 for the Department of Legal Medicine was its new involvement in the Patient Safety Reporting program of the DoD. The National Defense Authorization Act of 2001 mandated that the AFIP would establish a Patient Safety Center and a Patient Safety database for the trending of medical errors within DoD medical treatment facilities. The department was a very active participant on the Patient Safety Working Group, which was chaired by OASD (HA) with membership from the TriCare Management Activity, the 3 military services, and the Uniformed Services University of the Health Sciences, in addition to the AFIP. A DoD instruction was drafted during this time, and a pilot test was initiated in October 2000. Initial pilot test training occurred in October 2000, and the pilot test lasted for 6 months. The second area of involvement with impact for the Department of Legal Medicine was its involvement with the MedTeams program. This team-training program has been developed in military and civilian health care facilities under the auspices of the Dynamics Research Corporation. The department has become the contracting officer representative for this program and will oversee this program in future years. It is expected that the impact of this program will be significant in reducing medical error.

Quality Assurance: The department was visited by the Scientific Advisory Board in fall 2000, and all department activities were favorably reviewed.

EDUCATION

Presentations and Seminars: Department staff made 11 presentations in 2000. Dates and titles are listed at the end of this report.

Educational Aids: The department continued its annual risk management and quality assurance journal entitled, *Legal Medicine*. The journal has been printed and placed on the Internet as well. Clinicians who satisfactorily complete a quiz after studying the journal receive 5 hours of continuing medical education credits. The department sends copies of *Legal Medicine* to all medical corps officers of the 3 military services. Many physicians in the Department of Veterans Affairs, as well as other federal physicians, receive complimentary copies of this valuable risk management educational product. During 2000, 19,625 continuing medical education hours were provided to physicians worldwide. Nearly half of the total credit hours were granted to military and other federal physicians. A *Journal of Nursing Risk Management* was also produced. This Internet-based publication is free to military nursing professionals and provides them with relevant medical legal material. When nurses complete an examination successfully, they are awarded appropriate continuing education units.

RESEARCH

Publications: Department staff published 11 articles in 2000. Complete information is listed at the end of this report.

OTHER ACCOMPLISHMENTS

Faculty Appointments: Georgetown University, Clinical Assistant Professor, Department of Family Medicine, F Flannery.

New Missions: As stated above, the major new mission of the Department of Legal Medicine centered around the development of a Patient Safety Center at the AFIP, as part of the MHS Patient Safety program. The department also has become involved with the Health Care Team Coordination program by virtue of its management of the MedTeams program.

PRESENTATIONS

1. March 2000: Washington, DC, DoD Congressional Advisory Committee, "Overview of malpractice in the Department of Defense," RL Granville.
2. April 2000: San Antonio, Tex, United States Army Medical Command, "Managing risks through autopsies," JL Walters.
3. May 2000: Washington, DC, AFIP Professional Staff Conference, "The DoD patient safety program," RL Granville.
4. May 2000: Washington, DC, Professional Staff Meeting/Dart Lecture, AFIP, "Patient safety initiative," JL Walters.
5. October 2000: Bethesda, Md, DoD Pilot Training Conference at USUHS, "AFIP reports and analysis regarding DoD patient safety," RL Granville.
6. November 2000: Washington, DC, AFIP, Scientific Advisory Board, "The MHS patient safety center at AFIP," RL Granville.
7. November 2000: Bethesda, Md, The National Practitioner Data Bank Research Symposium at NIH, "The use and analysis of medical malpractice data in DoD," RL Granville.
8. November 2000: Bethesda, Md, USUHS, DoD Scientific Advisory Board Briefing, "Department of Legal Medicine's missions in education, consultation, and research," GA Martin.
9. November 2000: Silver Spring, Md, Scientific Advisory Board Briefing, Department of Legal Medicine, "Patient safety initiative," JL Walters.
10. November 2000: Washington, DC, Scientific Advisory Board, "Department of Legal Medicine's overview," FT Flannery.
11. December 2000: Bethesda, Md, USUHS, DoD Patient Safety Work Group, "DoD Patient Safety Center's Internet distance learning program," GA Martin.

PUBLICATIONS

1. Granville RL, Rogers WJ. Payment of federal malpractice claims. *Legal Medicine*. 2000;7-11.
2. Calhoun BC, Hume RR, Walters JL. Shoulder dystocia as a risk for obstetric liability. *Legal*

- Medicine*. 2000:12-15.
3. Hilaman BL. Legal implications of prescribing hormone replacement therapy for patients who have survived breast cancer. *Legal Medicine*. 2000:16-19.
 4. Flannery FT. Presidential emphasis on medical errors: a major quality assurance initiative. *Legal Medicine*. 2000:20-21.
 5. Walters JL. Managing risk through autopsies. *Legal Medicine*. 2000:24-26.
 6. Kaar JF. A compilation of legal issues facing health care professionals who provide medical information over the Internet. *Legal Medicine*. 2000:27-31.
 7. Fuller GF, Flannery FT. Family practice and the requisite standard of care. *Legal Medicine*. 2000:32-34.
 8. Martin GA. Medication errors. *Legal Medicine*. 2000:35-39.
 9. Thach JE. The AFIP in 2000. *Legal Medicine*. 2000:40-42.
 10. Martin GA. Torts-R-US. *Journal of Nursing Risk Management*. 2000.
 11. Martin GA. Medication Errors. *Journal of Nursing Risk Management*. 2000.



Jerry D. Spencer, MD, JD
Armed Forces Medical Examiner, Distinguished Scientist
Date of Appointment — 1 October 1996

OFFICE OF THE ARMED FORCES MEDICAL EXAMINER (OAFME)

MISSION

The Office of the Armed Forces Medical Examiner (OAFME) is primarily responsible for multidisciplinary forensic (medicolegal) investigations of unnatural or violent deaths due to known or suspected accidents, homicide, suicide, or undetermined means. In these cases, the OAFME must establish positive identity by scientific means, determine the cause and manner of death, and certify the death. This responsibility normally applies to:

- Members of the Armed Forces on active duty or on active duty for training.
- Civilians, including dependents of military members, whose deaths come under exclusive federal jurisdiction.

Deaths to be investigated include, but are not limited to, the following categories:

1. Unnatural or violent deaths from known or suspected accidents, homicide, suicide, or undetermined means.
2. Deaths related to the occupation or employment of the deceased and deaths of individuals enrolled in the Personnel Reliability Program.
3. Deaths related to vehicular, aircraft, or vessel accidents.
4. Sudden and unexpected deaths in which the cause of death is not readily apparent.
5. Deaths potentially related to diseases that might constitute a threat to the public health.
6. Deaths occurring in individuals in the custody of law enforcement officials.
7. When the commander of a Military Medical Treatment Facility (MMTF) where the death occurred or the decedent's commander in the grade of O-4 or higher notifies the OAFME that a medicolegal investigation on a military member is necessary for reasons of US national security or for the protection of the military community.

The department reviews cases in consultation and conducts on-site medicolegal investigations, providing consultative as well as diagnostic services to the Department of Defense and other federal and nonfederal agencies. When requested and approved by higher authority, these services may be extended to foreign governments.

ORGANIZATION

- The Armed Forces Medical Examiner (AFME) performs the executive functions of the OAFME. Administrative and fiscal functions are provided, as well as oversight of the 5 OAFME divisions and regional and associate medical examiner functions and responsibilities, under the Armed Forces Medical Examiner System (AFMES).
- Medicolegal Investigations and Operations (OPS) – AbuBakr A. Marzouk, LtCol, USAF, MC, FS. This division is responsible for day-to-day OAFME operations to support worldwide forensic consultations and on-site investigations, including aircraft accidents.
- Education and Research – Joyce Lapa, CDR, MC, USN. This division coordinates and facilitates all departmental education and research efforts, including fellowship and residency programs sponsored by military and civilian education institutions.

- Special Investigations – William C. Rodriguez III, PhD. This division is responsible for anthropological investigation and consultation for the OAFME. It also maintains the Trace Materials Analysis Laboratory to aid the OAFME in identifying materials associated with medicolegal investigations.
- Forensic Toxicology – Aaron Jacobs, COL, MS, USA. This division provides toxicology laboratory testing and consultation for OAFME investigations and for the Department of Defense Drug-Testing Quality Assurance Program. It also provides education and research for this discipline. The division is organized into 4 branches: the DoD Drug Testing Branch; the Forensic Toxicology Branch; the Research and Education Branch; and the Quality Assurance Branch.
- Department of Defense DNA Registry – Brion C. Smith, COL, DC, USA. This division encompasses the Armed Forces DNA Identification Laboratory (AFDIL), which is responsible for DNA-based identification of human remains for the OAFME, and for performing consultation, education, and research in the area of forensic DNA analyses. The division also maintains the Armed Forces Repository of Specimen Samples for the Identification of Remains for the Department of Defense.

STAFF

Medical:

- Jerry D. Spencer, MD, JD, Armed Forces Medical Examiner, Distinguished Scientist
 (D) William T. Gormley, Col, USAF, MC, Assistant Armed Forces Medical Examiner
 AbuBakr A. Marzouk, LtCol, USAF, MC, FS, Chief Deputy Medical Examiner,
 Medicolegal Investigation and Operations
 Brion C. Smith, COL, DC, USA Chief Deputy Medical Examiner, DoD DNA Registry
 Joyce Lapa, CDR, MC, USN, Chief Deputy Medical Examiner, Education and Research
 Branch
 Peter Schilke, Maj, USAF, MC, Deputy Medical Examiner
 Andrew Baker, Maj, USAF, MC, Deputy Medical Examiner
 Steven C. Campman, Maj, USAF, MC, Deputy Medical Examiner
 Kathleen Ingwersen, LTC, MC, USA, Regional Medical Examiner (Landstuhl, Germany)
 James W. Green, CAPT, MC, USN, Regional Medical Examiner (Far East)
 Craig Mallak, LCDR, MC, USN, Regional Medical Examiner (Millington, Tenn)
 Stephen Cina, Maj, USAF, MC, FS, Regional Medical Examiner (San Antonio, Tex)
 (A) Bruce Ensign, Maj, USAF, MC, Forensic Pathology Fellow
 Eric Berg, LTC, MC, USA, Regional Medical Examiner (Ft. Campbell, Ky)
 (D) John W. Gardner, COL, MC, FS, USA, Chief Deputy Medical Examiner
 Scott E. Kornman, Maj, USAF, MC, Associate Medical Examiner
 Douglas Knittel, CDR, USN, MC, Regional Medical Examiner
 (D) Corinne E. Stern, DO, Associate Medical Examiner, ARP

Scientific:

- William C. Rodriguez, PhD, Chief Deputy Medical Examiner, Special Investigations,
 Forensic Anthropology, Distinguished Scientist

Administrative:

- Betty L. Streams, Administrative Officer
 Robert Veasey, Operational Administrator/Investigator, ARP
 (D) Jeanmarie Sentell, Special Agent, NCIS
 (A) Russell Strasser, Special Agent, NCIS
 Michael Godwin, SSgt, USAF, Administrative Assistant
 Jean T. Lawson, Secretary
 Carolyn Parker, Administrative Assistant, ARP
 Joyce White, Secretary
 Sean Doyle, PHC, USN, Photographer
 (D) Donald Kolb, PH3, USN, Photographer
 Louis Briscese, SSgt, USAF, Photographer
 (D) Grant D. Graham, MSgt, USAF, Chief, Forensic Trace Materials Analysis Laboratory
 Christopher L. Williams, PH3, USN, Photographer

DIAGNOSTIC CONSULTATION

Cases	Completed
Military	630
Federal	40
Civilian	148
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Total	818

The OAFME accessioned 818 cases during 2000. The majority of the forensic pathology consultations were submitted by, or in conjunction with, the military services investigative agencies (NCIS, CID, or OSI) as part of a medicolegal investigation. The remainder of the contributors were military pathologists and other federal agencies, such as the Department of Justice, the FBI, and the Department of Labor.

Regional and Associate Medical Examiners:

AFME appointed (with the concurrence of the service surgeons general) regional medical examiners (RME) and associate medical examiners (AME) who continued to significantly expand our geographic scope. The RMEs and AMEs conducted over 100 medicolegal investigations in 2000, under the guidance of the OAFME, and this investment is directly reflected in immense savings in travel dollars and man-hours for the government. The RMEs and AMEs are located at Lackland AFB, Brook Army Medical Center, and Ft. Hood, Tex; Ft. Campbell, Ky; Ft. Rucker, Ala; NMC Portsmouth, Va; NMC San Diego, Calif; Tripler ARMC, Hawaii; Landstuhl ARMC, Germany; and Camp Lester, Okinawa, Japan.

Anthropology Consultations:

OAFME cases requiring specialized examinations remained greatly in demand, with a major increase in caseload. OAFME directed multiple on-site military homicide investigations requiring body recovery and examination. One out-of-country mission on behalf of the Department of State and DoD involved the recovery and examination of human remains in Grenada believed to be the remains of Prime Minister Maurice Bishop and multiple high-ranking government officials who were murdered during the 1983 government uprising. Anthropological consultation support was also provided to various DoD branches concerning war crime investigations in Kosovo and Bosnia, and to the Justice Department on multiple high-profile homicides in the US and abroad.

Special Investigation Division of OAFME:

The Special Investigation Division continued its support by providing forensic anthropological and trace evidence expertise to an ever-increasing number of OAFME cases. Search and recovery expertise was also provided to a number of military investigations, as well as local civilian police jurisdictions. The Special Investigation Division continued to engage in multiple projects in ballistic research, blood-spatter analysis, footwear impression, and the examination of various trace evidence associated with badly decomposed and skeletonized remains. The nonhuman comparative bone thin-section collection continues to grow and be utilized in forensic cases.

Extensive collaborative research was conducted at the OAFME Ballistic Range in conjunction with the Department of Orthopedic Pathology at AFIP. Primary research avenues included examination of orthopedic ballistic injuries in relationship to new-generation personal ballistic armor.

Impact:

The OAFME has continued to provide outstanding service and support to the DoD and other federal agencies. During 2000, both the autopsy examinations provided on missions and written consultations were invaluable in promoting aviation safety and the administration of justice. Specific noteworthy missions of high national interest included the V22 Osprey crash and the investigation of the *USS Cole* terrorist attack.

Deployments:

OAFME teams deployed on 34 medicolegal missions. On-site scene investigations were conducted in essentially all of these deployments. Of note was the investigation of the *USS Cole* attack conducted at Dover AFB Port Mortuary. OAFME teams again demonstrated the uniqueness of our institution, using this one-of-a-kind facility, in expediting the processing and identification of human remains in mass-casualty situations. Additionally, an OAFME representative traveled to Yemen to evaluate tissue collection from the seabed underlying the *USS Cole*.

1. January 7, 2000, Bethesda Naval Hospital, Md. Natural death. A Baker, D Knittel, D Kolb.
2. January 20, 2000, Starr, Idaho. Accident investigation. SC Campman.
3. February 14, 2000, Ft. Sill, Okla. Homicide investigation. AA Marzouk, L Bricese, D Knittel, J Sentell.
4. March 14, 2000, Ft. Sill, Okla. Exhumation. A Baker, D Knittel.
5. March 20, 2000, Corpus Christi, Tex. F16 air show accident investigation. R Veasey, J Sentell, S Doyle, S Cina.
6. March 20, 2000, LA. Hanging investigation. SC Campman, CL Williams, L Bricese, D Knittel.
7. March 27, 2000, Bethesda, Md. Drowning investigation. A Baker, SC Campman, L Bricese.
8. March 30, 2000, Sheppard AFB. Training death investigation. L Bricese, P Schilke.
9. March 30, 2000, WRAMC. Accidental death. SC Campman, L Bricese, CE. Stern, CL Williams.
10. April 8, 2000, Marana, Ariz. MV-22 mishap, conducted at Dover AFB. J Lapa, SC Campman, M Godwin, SE Kornman, AA Marzouk, WC Rodriguez, P Schilke, CE Stern, L Bricese, S Doyle, CL Williams, Mr. Kruger, CAPT Arendt, Dr. Warnock, MAJ Tyler, LCDR Torske, HM2 Filburn, HMME Miller, J Sentell, GD Graham.
11. April 17, 2000, Bethesda, Md. Natural death investigation. AA Marzouk, CL Williams.
12. April 29, 2000, Grenada. FBI investigation. AA Marzouk, WC Rodriguez, CAPT Arendt.
13. May 2, 2000, Milton, Fla. T-34C mishap. J Lapa, S Doyle.
14. May 9, 2000, Bethesda, Md. Suicide investigation. P Schilke, CL Williams.
15. May 15, 2000, WRAMC. Natural death. A Baker, CL Williams.
16. May 19, 2000, WRAMC. Overdose investigation. AA Marzouk.
17. May 26, 2000, Oklahoma City, Okla. Found dead. A Baker.
18. June 19, 2000, Horsham, Pa. F-14 mishap. A Baker, SE Kornman, R Veasey, L Bricese.
19. July 12, 2000, Bethesda, Md. T38 Talon. A Baker, S Doyle.
20. August 16, 2000, Guantanamo Bay, Cuba. Accident investigation. SC Campman.
21. August 18, 2000, Ft. Campbell, Ky. Infant death. SE Kornman, L Bricese.
22. August 21, 2000, Battered child syndrome death investigation. R Strasser, SC Campman, L Bricese.
23. August 26, 2000, Ft. Bragg, NC. Homicide investigation. WC Rodriguez, R Veasey.
24. September 11, 2000, Yuma, Ariz. F18 mishap. R Veasey, L Bricese, Dr. Beach, CAPT Robinson.
25. September 14, 2000, Yuma, Ariz. R Veasey, L Bricese, Dr. Beach, CAPT Robinson.
26. September 20, 2000, Bethesda, Md. Natural death. Dr. Beach, JD Spencer, CL Williams.
27. September 21, 2000, Bethesda, Md. Electrocution. A Baker, SE Kornman, CL Williams.
28. September 25, 2000, Ft. Campbell, Ky. Blunt-force investigation. SE Kornman, S Doyle.
29. September 28, 2000, Pensacola, Fla. T-34 mishap. A Baker, L Bricese.
30. October 11, 2000, Denver, Colo. Suicide investigation. SE Kornman.
31. October 12, 2000, Aden, Yemen. *USS Cole*, at Dover AFB, returned on October 14, 2000 to Dover for 12 more bodies. A Baker, L Bricese, SC Campman, S Doyle, B Ensign, M Godwin, SE Kornman, J Lapa, AA Marzouk, WC Rodriguez, P Schilke, R Strasser, MASJ Tyler, R Veasey, LTC Washington, CL Williams.
32. November 30, 2000, Norfolk, Va. D Knittel.
33. December 12, 2000, Marine Corps aircraft crash MV-22 Osprey. A Baker, B Ensign, D Knittel, R Veasey, CL Williams, R Strasser, L Bricese.
34. December 13, 2000, Bethesda, Md. Accident investigation. J Lapa, S Doyle.

Quality Assurance:

The OAFME Quality Assurance Program has maintained its group quality peer review of 100% of the consultation cases. The forensic pathologists participate in the biannual CAP Apex Forensic Pathology and Autopsy Pathology Programs. Check Samples in Forensic Pathology are also reviewed regularly.

EDUCATION

Presentations and Seminars: OAFME staff gave a total of 79 presentations in 2000. Three to five conferences were conducted per week, where working cases were presented to staff and visitors.

Courses: OAFME staff participated in 79 non-AFIP courses and 1 AFIP course sponsored by other departments. The AFIP course conducted by our department is Basic Forensic Pathology. The total attendee-days for this course was 77.

Trainees: D Knittel and C Stern completed the AFIP Forensic Pathology Residency of 365 days. B Ensign commenced the same residency in 2000. Five Military Services investigative agents completed the AFIP Fellowship Program while attaining their master of forensic science degrees in 2000. The fellows were Renea Hilton (Air Force), Shan Nuckols (Air Force), Tom Brady (Navy), John Tigmo (Navy), and Edgar Collins (Army). Approximately 80 trainee-days were accomplished by this group at AFIP. This program greatly benefits our medicolegal investigative efforts worldwide, in that these special agents then serve as forensic specialists and coordinators throughout the world.

RESEARCH

Publications: OAFME staff published 4 articles in peer-reviewed journals. Complete information is listed at the end of this report.

Projects: OAFME staff were involved with one research project in 2000: Evaluation of the Biomechanical Effects of Closed-Chest Blunt Trauma.

OTHER ACCOMPLISHMENTS

Collaborators: OAFME works closely with the Military Services Safety Centers in aircraft accident investigations, safety issues, and educational endeavors for their respective aeromedical communities. We also provide aviation pathology training to the Canadian aeromedical community.

Committees:

Editorial Boards:

1. *American Journal of Forensic Medicine and Pathology*, WC Rodriguez
2. *Journal of Forensic Sciences*, WC Rodriguez

Offices/Committee Memberships in National or International Societies:

National Association of Medical Examiners Board of Directors, J Spencer

Faculty Appointments: Eight OAFME staff received appointments as professorial lecturers for George Washington University.

Exhibits: OAFME designed and manned exhibits at the following meetings:

1. American Academy of Forensic Sciences
2. Aerospace Medical Association
3. Association of Military Surgeons of the United States

Consultants:

WC Rodriguez:

1. Chief Forensic Anthropological Consultant for the State of Maryland and the District of Columbia.
2. Chief Consultant, FBI Forensic Science Training Unit and the FBI's Child Abduction and Serial Killer Unit.
3. Codirector of the FBI's yearly Evidence Response Team Field Course: Search and Recovery of Decomposed and Skeletonized Remains Evidence Response Team. FBI National Training Academy, Quantico, Va.

OAFME staff testified as expert witnesses in 17 homicide trials, 1 assault case, and 1 Article 32 hearing.

PRESENTATIONS

1. January 2000: Navy Student Flight Surgeons, NAMI, "Aircraft accident investigation," J Lapa.
2. January 2000: Rockville, Md, George Washington University Masters in Forensic Science

- Students, AFIP, "Introduction to forensic pathology," J Lapa.
3. January 2000: Tampa, Fla, Expert Witness at Homicide Trial, S Kornman.
 4. January 2000: Rockville, Md, Ft. Army Mortuary Officers, W Rodriguez.
 5. February 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP "Aircraft accident investigation," J Lapa.
 6. February 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Natural deaths," J Lapa.
 7. February 2000: Washington, DC, Washington Metropolitan Police Department, "Blunt-force injury," A Baker.
 8. February 2000: Washington, DC, Washington Metropolitan Police Department, "Blunt-force injuries in children," A Baker.
 9. February 2000: Reno, Nev, American Academy of Forensic Science, WC Rodriguez.
 10. March 2000: Rockville, Md, AFIP Forensic Dental Course, WC Rodriguez.
 11. March 2000: USASAM, Army Student Flight Surgeons, "Aircraft accident investigation," J Lapa.
 12. March 2000: Washington, DC, George Washington University, "Principles of forensic pathology," J Spencer.
 13. March 2000: Washington, DC, George Washington University Medical School, Pathology Residents, "Forensic pathology," J Spencer.
 14. March 2000: Tampa, Fla, Expert Witness at Homicide Trial, S Kornman.
 15. April 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Explosive deaths," J Lapa.
 16. April 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Pediatric pathology," J Lapa.
 17. April 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Pediatric pathology," J Lapa.
 18. April 2000: Columbus, Ohio, Riverside Hospital, Family Practice Departments, "Who wants to be a medical examiner?" A Baker.
 19. April 2000: Chiemsee, Germany, Army CID Death Investigation Course, J Spencer.
 20. April 2000: Rockville, Md, AFIP Annual Review of Pathology, "Forensic pathology," J Spencer.
 21. April 2000: Rockville, Md, Medical Examiners Office, CID Europe Homicide Seminar, Germany, WC Rodriguez.
 22. April 2000: Rockville, Md, "Advanced pathology practicum course," WC Rodriguez.
 23. May 2000: Quantico, Va, FBI Training Academy, 19th FBI Evidence Response Team field Course, WC Rodriguez.
 24. May 2000: Baltimore, Md, Harvard Police Science Annual Homicide Seminar, WC Rodriguez.
 25. May 2000: AFIP Forensic Dentistry Course, "Introduction of forensic pathology," J Lapa.
 26. May 2000: AFIP Forensic Dentistry Course, "Aircraft accident investigation," J Lapa.
 27. May 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Introduction to forensic pathology," J Lapa.
 28. May 2000: Bethesda, Md, Fourteenth Conference on Military Medicine, "Fatally abused substances in the US military," S Campman, JV Sentell.
 29. May 2000: Bethesda, Md, Fourteenth Conference on Military Medicine, "Playing with firearms: preventable military mortality," S Campman.
 30. May 2000: Bethesda, Md, Fourteenth Conference on Military Medicine, "Alcohol and balconies: a fatal combination for military members," S Campman, JV Sentell.
 31. May 2000: Tampa, Fla, Expert Witness at Homicide Trial, S Kornman.
 32. June 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Natural deaths," J Lapa.
 33. June 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Aircraft accident investigation," J Lapa.

34. June 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Explosive deaths," J Lapa.
35. June 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Pediatric pathology," J Lapa.
36. June 2000: Washington, DC, George Washington University, "Principles of forensic pathology," J Spencer.
37. June 2000: Chapel Hill, NC, North Carolina State Homicide and Death Investigation Seminar, WC Rodriguez.
38. July 2000: Rockville, Md, AFIP/Masters in Forensic Science Students, George Washington University, "Introduction to crime scenes," R Strasser.
39. July 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Death investigations," R Strasser.
40. August 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Impressions evidence," R Strasser.
41. August 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Crime scene laboratory," R Strasser.
42. August 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Child physical and sexual abuse," R Strasser.
43. August 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Introduction to forensic pathology," J Lapa.
44. August 2000: Fort Carson, Colo, Basic Forensic Pathology, Advanced Education in General Dentistry Residency Class, "An overview with case studies," A Baker.
45. August 2000: Bethesda, Md, Fourteenth Conference on Military Medicine, USUHS, "Homicide in the military," J Spencer.
46. August 2000: New Orleans, La, University of New Orleans, "Basic forensic pathology for law enforcement," J Spencer.
47. September 2000: Washington, DC, George Washington University, "Principles of forensic pathology," J Spencer.
48. September 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Gross anatomy," J Lapa.
49. September 2000: NAMI, Navy Student Flight Surgeons, "Aircraft accident investigation," J Lapa.
50. September 2000: Delaware Emergency Management Conference, "Mass disasters," J Lapa.
51. September 2000: Indianapolis, Ind, National Association of Medical Examiners, "A novel hunting accident," A Baker.
52. September 2000: Indianapolis, Ind, National Association of Medical Examiners Annual Meeting, "The sensitivity and specificity of control surface injuries in aircraft accident fatalities," S Campman.
53. September 2000: Rockville, Md, OAFME CME, "Crime scene searches," R Strasser.
54. September 2000: Indianapolis, Ind, National Association of Medical Examiners Annual Meeting, "Fatal envenomation by wasps," S Kornman.
55. September 2000: Indianapolis, Ind, 19th National Association of Medical Examiners Meeting, WC Rodriguez.
56. October 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Explosive deaths," J Lapa.
57. October 2000: USASAM, Army Student Flight Surgeons, "Aircraft accident investigation," J Lapa.
58. October 2000: NAMI, Army Student Flight Surgeons, "Aircraft accident investigation," J Lapa.
59. October 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Aircraft accident investigation," J Lapa.
60. October 2000: Minnesota Society of Coroners and Medical Examiners, "An Iowa boy in Kosovo," A Baker.
61. October 2000: Rockville, Md, AFIP/Masters in Forensic Sciences Students, George Washington University, "Introduction to crime scenes," R Strasser.

62. October 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Death investigations," R Strasser.
63. October 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Impressions evidence," R Strasser.
64. October 2000: Lubbock County, Tex, Death Investigation Course, J Spencer.
65. October 2000: Discovery Channel National TV Broadcast, "Forensic science live," WC Rodriguez.
66. November 2000: Rockville, Md, "Basic forensic pathology course," WC Rodriguez.
67. November 2000: Rockville, Md, AFIP Basic Forensic Pathology Course, J Spencer.
68. November 2000: Rockville, Md, George Washington University Masters in Forensic Science Students, AFIP, "Pediatric pathology," J Lapa.
69. November 2000: AFIP Basic Forensic Pathology Course "Mass disasters," J Lapa.
70. November 2000: AFIP Basic Forensic Pathology Course, "Aircraft accident investigation," J Lapa
71. November 2000: Newport, RI, Newport Naval Station, Defense Institute of International Legal Studies, "War crimes investigation and prosecution," A Baker.
72. November 2000: Newport, RI, Naval Justice School, Newport Naval Station, "The forensic pathologist as an expert witness," A Baker.
73. November 2000: Washington, DC, Metropolitan Police Department, "Sharp-force injuries," S Campman.
74. November 2000: Washington, DC, Metropolitan Police Department, "Gunshot wounds," S Campman.
75. November 2000: Andrews Air Force Base, Md, AFOSI/USAFSIA, "Crime scene laboratory," R Strasser.
76. November 2000: Andrews Air Force Base, Md, AFOSI/ USAFSIA, "Child physical and sexual abuse."
77. December 2000: Watkins Mill High School, "Career in forensic pathology," J Lapa.
78. December 2000: Washington, DC, Georgetown University Medical School, "Introduction to forensic pathology," J Spencer.
79. December 2000: Bethesda, Md, National Naval Medical Center, "Jurisdiction of medicolegal deaths," J Spencer.

PUBLICATIONS

1. Mabry RL, Holcomb JB, Baker AM, Cloonan CC, Uhorchak JM, Perkins DE, Canfield AJ, Hagmann JH. US Army Rangers in Somalia: analysis of combat casualties on an urban battlefield. *J Trauma*. 2000;49:515-529.
2. Baker AM, Morey MK, Berg KK, Crosson J. Trophoblastic microemboli as a marker for preeclampsia-eclampsia in sudden unexpected maternal death: a case report and review of the literature. *Am J Forensic Med Pathol*. 2000;21:354-358.
3. Campman SC, Springer FA, Henrikson, DM. The chain saw: an unusual means of committing suicide. *J Forensic Sci*. 2000;45:471-473.
4. Campman SC, Holmes JF, Sokolove PE, Romero JA, Yost BA, Lie JT. Pulmonary arterial fibromuscular dysplasia: a rare cause of fulminant lung hemorrhage. *Am J Forensic Med Pathol*. 2000;21:69-73.



Brion C. Smith, COL, DC, USA
Chief Deputy Medical Examiner
DNA Program Director

DoD DNA REGISTRY OFFICE OF THE ARMED FORCES MEDICAL EXAMINER

MISSION

The Department of Defense DNA Registry supports the ongoing missions of the Armed Forces Medical Examiner's Office (OAFME) and the AFIP with consultation, education, and research. We also support the US Army Central Identification Laboratory-Hawaii (CILHI) in the identification of personnel from prior armed conflicts of the United States.

STAFF

Administrative:

- James J. Canik, Deputy Program Director (ARP)
- Thomas J. Parsons, PhD, Chief Scientist (ARP)
- (D) Kim M. McKneely, Administrative Officer (ARP)
- (A) Deborah Baker, Project Assistant (ARP)
- (A) Arceli Galapon, Secretary
- Jeanette Ransom, Secretary (GS)
- Richard Lewis, RMT, Quality Assurance/Safety Officer (GS)
- Theodore D. Anderson, MFS,-Training Manager (ARP)

Information Technology Branch (New):

- James P. Ross, Chief Information Officer (ARP)
- Aaron Waldner, Network Administrator (EDS)
- Manuel Aniebonim, PhD, LIMS Project Manager (FTI)
- (A) Richard Coughlin, Desktop Support (FTI)
- Vinh Lam, LIMS Project (FTI)
- Earl Begala, LIMS Project (FTI)
- Jon Norris, LIMS Project (FTI)
- John Conner, LIMS Project (FTI)

Resource Management Office:

- Kevin S. Carroll, CLS (NCA), Resource Manager (GS)
- Marjorie Q. Bland, DNA Program Coordinator (GS)
- Candace Eastman, MBA, Budget Officer (ARP)
- (D) Mary Odom, Procurement Specialist (GS)
- Larry A. Miles, Supply Technician (GS)

Armed Forces DNA Identification Laboratory (AFDIL):

- (D) Mitchell M. Holland, PhD, Scientific Laboratory Director (ARP)

AFDIL Mitochondrial DNA Section and Database Team:

- (D) John Ryan, PhD, Technical Leader (ARP)
- Suzanne Barritt, MS, Technical Leader (ARP)
- Christine Boyer, MSFS, Supervisory DNA Analyst (ARP)
- Amanda Blanchard, MS, Supervisory DNA Analyst (ARP)
- Mark J. Wadhams, MS, Supervisory DNA Analyst (ARP)
- (D) Richard Wilson, MS, Supervisory DNA Analyst (ARP)
- (D) Molly A. Morgan, MFS, DNA Analyst III (ARP)

Jacqueline S. Raskin, MS, DNA Analyst III (ARP)
 Michael A. Fasano, DNA Analyst III (ARP)
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 Jennie C. Groover, DNA Analyst II (ARP)
 Jennifer Kappeller, DNA Technician I (ARP)
 (D) Fredrik Starmark, DNA Analyst I (ARP)
 (D) Jason Longchamps, DNA Analyst I (ARP)
 (A) Gregory N. Smith, MFS (ARP), DNA Analyst (ARP)
 Robert M. Fisher, MFS, DNA Analyst II (ARP)
 Nicol R. Jimerson, Supervisor, Database Team (ARP)
 Amy B. Welsh, DNA Technician II (ARP)
 Miriam Narvaez-Thompson, DNA Technician I (ARP)
 George Lin, MFS, DNA Technician I (ARP)
 Joy Hurst, MFS, DNA Technician I (ARP)
 Samir Kodsi, MFS, DNA Technician I (ARP)

AFDIL Nuclear DNA Section and QC Team:

Demris A. Lee, MSFS, Technical Leader (ARP)
 (D) Jeanne Willard, MFS, DNA Analyst IV (ARP)
 Kimberly B. Murga, MFS, DNA Analyst II (ARP)
 (D) Yasser Daoudi, DNA Analyst III (ARP)
 Susan Jones, PhD, DNA Analyst II (ARP)
 Ethny Obas, MT, QC DNA Technician (ARP)

AFDIL Research Section:

Thomas J. Parsons, PhD, Chief Scientist, ARP
 Jodi A. Irwin, MS, Research DNA Technologist II (ARP)
 Michael D. Coble, Research DNA Technologist (ARP)
 (A) Ilona Letmanyi, Research DNA Technician (NIJ)
 (A) Christine T. Harvie, Research DNA Technician (NIJ)

Proficiency Test Operations (PTO) Section:

Theodore D. Anderson, MFS (ARP)
 Kimberly B. Murga, MFS (ARP)
 (A) Gregory N. Smith, MFS (ARP)

Armed Forces Repository of Specimen Samples for the Identification of Remains (AFRSSIR):

David Boyer, Director, Repository Operations (ARP)
 (D) David Altenburg, Repository Supervisor (ARP)
 Herbert Simms, Inventory Management Specialist (GS)
 (D) Amanda Buitrago, Senior Quality Control Technician (ARP)
 Marie Reese, Quality Control Technician (ARP)
 George Galapon, Senior Specimen Processor (ARP)
 Marifae Vance, Senior Specimen Processor (ARP)
 Gloria Lindmark, Senior Specimen Processor (ARP)
 Arvin Solis, Specimen Processor (ARP)
 Diane Giampetroni, Specimen Processor (ARP)
 Tonya Summers, Specimen Processor (ARP)
 Marcelino G. Padilla, Jr., Specimen Processor (ARP)
 (A) Ernie Costes
 (D) Peter Skillings, Specimen Processor (ARP)
 (D) Jesse Blor, Specimen Processor (ARP)
 Lisa Gallman, Specimen Processor (ARP)
 Michael Kokoski, Network Administrator, EDS
 Susan L. Haneklau, Systems Engineer, EDS
 Matthew Anders, System Administrator, EDS
 Umesh Sharma, Systems Engineer, EDS

ARMED FORCES DNA IDENTIFICATION LABORATORY (AFDIL)

The Armed Forces DNA Identification Laboratory (AFDIL) was short-staffed by approximately 75% in 2000 as a result of problems encountered in ARP contract negotiations, budget shortfalls (AFIP and CMAOC), and normal attrition. These personnel shortfalls have had an impact on productivity, as described below. While both administrative and laboratory space remain constrained, staff morale remains relatively high. The AFIP has secured additional administrative and laboratory space for 2001 that will satisfy AFDIL's immediate needs and provide a healthier working environment.

Mitochondrial DNA Section:

The mtDNA Section of the AFDIL experienced anticipated levels of growth during the first quarter of 2000, and was well on its way to breaking all productivity records. However, growth was significantly curtailed and productivity levels have since begun to dip below 1999 levels. This reduction in productivity is a direct result of deficiencies in personnel staffing levels. Despite these deficiencies in casework productivity, the family reference databasing team of the mtDNA Section significantly reduced the backlog of reference bloodstain cards requiring mtDNA analysis by more than 50%.

The relationship between the scientists and administrative staffs of AFDIL and Central Identification Laboratory-Hawaii (CILHI) continues to strengthen. The interaction between these organizations has been fostered by several activities this year. The DoD DNA Registry sponsored a joint AFDIL-CILHI symposium at the annual meeting of the American Academy of Forensic Sciences, Dr. Florabel G. Mullick, MD, PhD, SES, Principal Deputy Director, visited the CILHI facility on Hickam AFB in March, and the scientific exchange program has continued.

Nuclear DNA Section:

The nucDNA Section undertook 2 major projects in 2000. First, assisting the NTSB in the identification of 217 individuals killed in the EgyptAir disaster (still an active case). Second, assisting the NTSB in the identification of 88 individuals killed in the Alaska Airlines disaster (still an active case). We anticipate that these cases will be completed in summer 2001. These cases will represent the largest human remains identification cases performed in a single forensic DNA laboratory in history, illustrating once again the capabilities of AFDIL and the value of this organization. Another milestone in 2000 was the formation of a new entity within the nucDNA section called AFDIL Consultative Services (AFDILcs), established to address the growing need for processing casework from outside agencies (e.g., state and local crime laboratories, military investigative agencies, and hospital pathology laboratories). We anticipate that routine outside casework productivity will increase by at least 50% in 2001.

ARMED FORCES REPOSITORY OF SPECIMEN SAMPLES FOR THE IDENTIFICATION OF REMAINS (AFRSSIR)

In 2000, AFRSSIR received DNA reference specimens from 1,014 separate collection sites (Army-379, USAF-217, USN-312, USMC-70, USCG-36). The Director of Repository Operations continues to visit collection sites to evaluate collection compliance, provide recommendations for improvement when appropriate, and answer questions.

On 23 February 2000 the repository accessioned its 3,000,000th specimen. The Active Forces have collected specimens from about 87% of their current populations. The same population having a duplicate panograph on file has dwindled to about 59%. The repository has processed 21 donor requests for destruction of their DNA sample and 2 requests for release of specimens from next of kin of deceased service members.

The DNA module to the Army Medical Occupational Data System (MODS) has proven valuable to units accessing DNA reports through the Internet to identify soldiers who do not have a DNA specimen on file. In 2000 the DNA module in MODS logged over 27,000 field queries. Direct repository database queries from the field totaled 1,384 (the largest request containing 48,949 names). Increased compliance visibility has assisted in reducing the number of duplicate donor samples submitted from the field by 30%.

The repository has released 63 specimens to AFDIL in support of remains identification. The registry continues to evaluate filter paper technology, with a goal of facilitating room temperature storage of DNA specimens. Test samples have been collected for initial evaluation. A prototype donor card has been developed for fielding at Ft. Leonard Wood, Mo. The target completion date for this evaluation is 2002.

The Assistant Secretary of Defense for Health Affairs is staffing changes to DoD Directive 5154.24 for approval. Included in these proposed changes is a provision expanding DNA specimen sample access for "identification of any member of the Armed Forces, or DoD civilian employee/contractor personnel supporting military forces, who is suspected of being missing in action, a prisoner of war, or detainee, and for any other purpose deemed to be in the best interest of such absent member or person, and as authorized by ASD (HA)."

Our Quality Assurance Committee proposed and adopted a change to the monthly quality control process. Existing protocols require random selection of 100 accessioned DNA samples for redundant, blind, and independent testing by AFDIL and a contracted laboratory. The new procedure will increase sample testing to 200 specimens per month and eliminate the use of an independent laboratory. This change allows the repository to expand its test base without compromising the process, while reducing the operating expense of outside laboratory services.

The Director of Repository Operations was the lead OAFME representative to the Rhode Island Medical Examiner's Office in support of DNA identification in the mass fatality of EgyptAir Flight 990, which claimed the lives of all 217 passengers and crew. Collection teams sampled more than 1,300 human remain fragments for DNA testing by AFDIL.

Public Affairs Report

"AFDIL offers forensic DNA casework services to civilian community." *The AFIP Letter*. 2000;158:1.

PUBLICATIONS

Journal Articles

1. Parsons TJ, Irwin JA. Questioning evidence for recombination in human mitochondrial DNA. *Science*. 2000;288:1931.
2. Ericson PG, Johansson US, Parsons TJ. Major divisions of oscine passeriforms revealed by insertions in the nuclear gene c-myc, a novel gene to avian phylogenetics. *The Auk*. 2000;117:1077-1086.
3. Tully LA, Parsons TJ, Steighner RJ, Holland MM, Marino MA, Prenger VL. A sensitive denaturing gradient-Gel electrophoresis assay reveals a high frequency of heteroplasmy in hypervariable region 1 of the human mitochondrial DNA control region. *Am J Hum Genet*. 2000;67:432-43.
4. Pruess KP, Adams BJ, Parsons TJ, Zhu X, Powers TO. Utility of the mitochondrial cytochrome oxidase II gene for resolving relationships among black flies (Diptera: simuliidae). *Mol Phylogenet Evol*. 2000;16:286-295.



Aaron Jacobs, COL, MS, USA
Chief
Date of Appointment — 30 May 2000

DIVISION OF FORENSIC TOXICOLOGY

MISSION

The Division of Forensic Toxicology provides toxicology laboratory testing and consultation for medical examiner investigations, other DoD forensic cases, and the drug testing quality assurance program. We also provide education and research for DoD organizations worldwide for these areas of pathology.

ORGANIZATION

The division is organized into 6 branches and the Office of the Chief.

- Forensic Toxicology Branch – Karla A. Moore, LtCol, USAF, BSC
- DoD Drug Detection QA Laboratory Branch – Kenneth A. Cole, LCDR, MSC, USN
- Research and Education Branch – Kathryn S. Kalasinsky, PhD
- Drug Testing Research Branch – Buddha D. Paul, PhD
- Analytical Services Branch – Joseph Magluilo, Jr.
- Quality Assurance Branch – Virginia J. Makale, CDR, MSC, USN

STAFF

Scientific:

- (A) Aaron Jacobs, COL, MS, USA, Chief Deputy Medical Examiner, Forensic Toxicology
- (D) Michael L. Smith, COL, MS, USA, Chief Deputy Medical Examiner, Forensic Toxicology
- Karla A. Moore, LtCol, USAF, BSC, Chief Toxicologist, Forensic Toxicology Lab
- Kenneth A. Cole, LCDR, MSC, USN, Chief, DoD Drug Detection QA Laboratory
- Kathryn S. Kalasinsky, PhD, Chief, Research and Education
- Buddha D. Paul, PhD, Chief, Drug Testing Research
- Joseph Magluilo, Jr, Chief, Analytical Services
- Virginia J. Makale, CDR, MSC, USN, Chief, Quality Assurance
- Barry S. Levine, PhD, Toxicologist
- Eric T. Shimomura, PhD, Chemist
- Jason Sklerov, Senior Mass Spectroscopist
- Robert L. Jones, Analytical Toxicologist
- Robert O. Hughes, MS, QA Chemist
- Joseph W. Addison, Analytical Toxicologist Technician
- Marcie M. Dixon, Research Assistant
- Alison F. Grieshaber, Research Assistant
- Karoline K. Shannon, Analytical Services Technician
- William E. Mayo, Laboratory Technician
- (D) Shawn P. Vorce, Laboratory Technician
- Lucas Zarwell, Laboratory Technician
- Sherry L. Pluche, HM1, USN, Laboratory Technician
- Amy Nodine Sulog, HM1, USN, Laboratory Technician
- (D) Jacqueline L. Summers, SSG, USA, Laboratory Technician
- John D. Filburn, HM2, USN, Laboratory Technician
- Gwendolyn D. Hodge, SGT, USA, Laboratory Technician
- Brian M. Hower, HM2, USN, Laboratory Technician
- (D) Anissa R. Johnson, SGT, USA, Laboratory Technician

James E. Miller, HM2, USN, Laboratory Technician
(A) Gregory R. Shepard, SGT, USA, Laboratory Technician

Administrative:

Steve W. Hale, SMSgt, USAF, Superintendent, Division of Forensic Toxicology
Jeffrey D'Nicuola, MSgt, USAF, Superintendent, DoD Drug Detection QA Laboratory
Teresa M. Schaefer, Computer Specialist
Jaqueline O. Jordan, Secretary
(D) Tyree J. Jamison, HM1, USN, Administrative Assistant

DIAGNOSTIC CONSULTATION

In 2000, the division completed 4,613 cases, with 5.9 calendar days average turnaround time.

Type of Case	Source of Case
Aircraft Incidents	USA
Air Fatalities	USAF
Criminal/Investigative	USN
Quality Controls	USMC
Surveys	USCG
Postmortem	DCME
	Civilian
	Other
TOTAL	TOTAL

Our division developed 7 new methods for toxicological analysis, as listed below:

1. Detection of crack cocaine in postmortem specimens
2. Detection of smoked cocaine, pyrolytic methylecgonidine, and 6 metabolites in urine
3. Liquid chromatography-electrospray ionization mass spectrometry for the detection of lysergide and a major metabolite, 2-oxo-3-hydroxy-LSD in urine and blood
4. Gamma-hydroxybutyrate detection in blood, brain, and hair
5. Ketamine detection in urine by GC/MS
6. LC-MS screen for ketamine and metabolites
7. Benzodiazepines detection by LC/MS and GC/MS

Deployments:

1. January 2000, Davis Monthan AFB, Expert Witness, KA Cole
2. March 2000, Naval Air Station, North Island, San Diego, Calif, Arbitration, KA Cole
3. April 2000, McCord AFB, Expert Witness, KA Cole
4. September 13, 2000, Ft. Bragg, NC, Expert Witness, BS Levine
5. December 2000, Norfolk Naval Operations Base, Expert Witness, KA Cole
6. December 19-22, 2000, Shaw AFB, SC, Expert Witness, KA Moore

Local Military/Federal/Civilian Expert Testimony:

1. January 5, 2000, DC Superior Court, KA Moore
2. January 21, 2000, Military District of Washington, KA Moore
3. January 26, 2000, DC Superior Court, KA Moore
4. February 3, 2000, DC Superior Court, KA Moore
5. February 17, 2000, DC Superior Court, KA Moore
6. March 2, 2000, DC Superior Court, KA Moore
7. March 9, 2000, DC Superior Court, KA Moore
8. March 24, 2000, Ft. McNair Military Court, BS Levine
9. March 27, 2000, DC Superior Court, KA Moore
10. April 4, 2000, US District Court, KA Moore
11. April 13, 2000, DC Superior Court, KA Moore.
12. April 18, 2000, DC Superior Court, KA Moore

13. May 1, 2000, DC Superior Court, BS Levine
14. May 10, 2000, DC District Court, KA Moore
15. May 16, US District Court, KA Moore
16. May 19, DC Superior Court, KA Moore
17. May 24, DC Superior Court, KA Moore
18. June 16, 2000, DC Superior Court, KA Moore
19. July 6, 2000, Prince George's County Circuit Court, BS Levine
20. July 12, 2000, DC Superior Court, KA Moore
21. July 18, 2000, Naval Media Center, Washington DC, BD Paul
22. October 10, 2000, DC Superior Court, BS Levine
23. October 24, 2000, US District Court, KA Moore
24. November 7, 2000, US District Court, KA Moore
25. December 12, 2000, US District Court, KA Moore
26. Five (5) Telephonic Civilian Arbitrations (3 Navy, 1 USCG, 1FAA), KA Cole
27. Thirty-eight (38) Telephonic Military Administrative Discharge Boards, KA Cole

National/International Consultations:

BD Paul:

1. Naval Legal Service Office, Navy Yard, Washington DC
2. Naval Legal Service Office, Norfolk, Va
3. Army Legal Service Office, Ft. Hoode, Tex
4. Navy Legal Service Office, San Diego, Calif
5. Law Office of David Court, Frankfort, Germany
6. Research Triangle Institute, Research Triangle Park, NC
7. Corning Clinical Laboratory, St. Louis, Mo
8. Army Drug Testing Laboratory, Tripler, Hawaii
9. Air Force Drug Testing Laboratory, San Antonio, Tex
10. Navy Environmental Health Center, Norfolk, Va
11. OME-District of Columbia, Washington, DC
12. Army Legal Office, Ft. Carson, Colo
13. Army Carlisle Barrack, Pa
14. SMA, Judge Advocate Office, West Point, NY
15. Hurlburt AFB, Fla
16. Minot AFB, ND
17. USCGC Hamilton
18. NS Roosevelt Roads, NCIS, Puerto Rico
19. Naval Air Station, New Orleans, La
20. Keesler AFB, La
21. Elmendorf AFB, Alaska
22. Walter Reed AMC, Washington, DC
23. Sheppard AFB, Tex
24. Ft. Buchanan, Puerto Rico
25. Lackland AFB, Tex
26. Kadena AB, Japan
27. VA Hospital, Huntington, WV
28. Andrews AFB, Md
29. Barkdale AFB, La
30. Kirtland AFB, NM
31. Wamac AMC, Ft. Bragg, NC
32. Naval Hospital, San Diego, Calif

33. Ft. Drum, NY
34. Madigan AMC, Ft. Lewis, Wash
35. RAF Lakenheath, UK
36. Office of the Secretary of Defense, Pentagon, Va
37. US Coast Guard, Grand Haven, Mich

Quality Assurance:**Inspection Teams:**

1. March 2000, Naval Air Station, North Island, San Diego, Calif, KA Cole
2. April 2000, Naval Training Center, Great Lakes, Ill, KA Cole
3. November 2000, Brooks AFB, Tex, KA Cole, SW Hale, J D'Nicuola, GD Hodge
4. November 12-16, 2000, Navy Drug Screening Laboratory, San Diego, Calif, BD Paul

Proficiency Exams:

1. Participated in 6 proficiency tests (AL-1, SO, UDC, UT, T, NHTSA: Blood Alcohol)
2. Performed in-house proficiency testing for psilocin and gamma-hydroxybutyrate
3. Ran the DoD drug testing open and blind proficiency program worldwide, producing a total of 22,460 QC specimens for FY00 (4,906 military open proficiency specimens, 14,976 military blind proficiency specimens, 1,518 civilian proficiency samples, and 1,060 special certification validation specimens)

Litigation Support:

Produced 46 Discovery Requests/Litigation Packages for prosecution of drug and alcohol offenses

EDUCATION

Presentations and Seminars: Division staff made 55 presentations in 2000 at conferences, meetings, and courses. Dates and titles are listed at the end of this report.

Courses: Division staff participated in 6 non-AFIP courses in 2000, for a total of 104 man-hours of teaching. Continuing education seminars were given throughout the year by external and internal professionals for the scientific staff of the division.

Trainees: The division provided toxicology training for Army reservist Dr. A. Verma (under the direction of BD Paul). The division also supported training for a toxicology internship for Naval Academy midshipman 2/C Shaver, and West Point cadet 2/C Summers (under the direction of KS Kalasinsky).

RESEARCH

Publications: The division published 10 articles in refereed journals. Complete bibliographic data are included at the end of this report.

Projects: The division maintained 11 research projects in 2000. Seven official research protocols were open as of December 31, 2000.

1. Effect of Oral DHEA (100 mg) on T/E Ratios
2. Hemp Oil-Human Use
3. Biotransformation of Explosives
4. Hair Analysis for Drugs of Abuse
5. Drug Distribution in Brain of Autopsied Overdose Cases
6. Stability Studies of Ion Trap Mass Spectrometry for Drugs of Abuse
7. Direct Sampling of Abused Drugs for GC/MS Analysis
8. GC/IR Methods of Analysis for Drugs of Abuse
9. Detection of LSD in Urine by MS Techniques
10. Clinical Studies of Heroin Administered to Humans
11. Detection of Chemical Markers in Tissues after Smoking Cocaine

Research Funds Received: Three ARP research grants were in operation in the division for 2000.

1. "Direct Sampling of Abused Drugs for GC/MS Analysis" - \$10,000
2. "Detection of LSD in Urine by Gas Chromatography/Ion Trap Mass Spectrometry Follow-

- ing a Novel Immunoaffinity Chromatography Technique” - \$16,000
3. “Drugs in Hair by Synchrotron Infrared Microscopy” - \$10,000

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. LCDR Lisa McWhorter, Navy Drug Screening Laboratory, San Diego, Calif, Detection of Pyrolytic Products of Cocaine in Urine
2. LTC Shippee, Army Drug Testing Laboratory, Ft. Meade, Md, Clinical Studies of Heroin Administered to Humans
3. Dr. Marilyn Huestis, Addiction Research Center, NIDA, NIH, Baltimore, Md, Clinical Studies of Heroin Administered to Humans
4. Dr. Stacy Barschik, Oak Ridge National Laboratory (DOE), Oak Ridge, Tenn, Biotransformation of Explosives
5. Dr. Stephen Stein, National Institute of Standards and Technology, Gaithersburg, Md, Infrared Spectral Databases
6. All DoD Drug Testing Laboratories. Development of New Drug Testing Methods

Civilian:

1. Dr. Alphonse Poklis, Medical College of Virginia, Richmond, Effect of Oral DHEA (100 mg) on T/E Ratios
2. Dr. David Cameron, DHC Analysis Inc, Cleveland, Ohio, Hair Analysis for Drugs of Abuse
3. Dr. Peter Griffiths, University of Idaho, Moscow, GC/LC/IR Methods of Analysis for Drugs of Abuse

International:

Dr. Stephen Kish, Clarke Institute of Psychiatry, Toronto, Ontario, Drug Distribution in Brain of Autopsied Overdose Cases

Committees:

Editorial Boards:

1. *Applied Spectroscopy Reviews*, KS Kalasinsky
2. *Spectroscopy*, KS Kalasinsky
3. *Spectrochimica Acta Part A: Molecular Spectroscopy*, KS Kalasinsky

Manuscripts Reviewed:

1. *Clinical Chemistry* (2), BD Paul
2. *Spectroscopy* (1), KS Kalasinsky

Research Proposals Reviewed:

1. Naval Criminal Investigative Service, Technical Support Working Group (5), KS Kalasinsky
2. Howard University College of Medicine (1), BD Paul

Offices/Committee Memberships in National or International Societies:

1. President, Society of Forensic Toxicologists, ML Smith
2. Board of Managers, Coblenz Society, KS Kalasinsky
3. Newsletter Editor, Coblenz Society, KS Kalasinsky
4. Nominating Committee, Society for Applied Spectroscopy, KS Kalasinsky
5. Lippincott International Award Selection Committee, KS Kalasinsky
6. Program Committee, International Conference on Advanced Vibrational Spectroscopy, KS Kalasinsky

National Panels:

1. NMLC (Navy Medical Logistics Command) Technical Evaluation Board, A Jacobs, KA Cole, BD Paul
2. Naval Criminal Investigative Service, Technical Support Working Group, Evaluation Board, KS Kalasinsky
3. DoD Biochemical Testing Advisory Committee, A Jacobs (Chair), KA Cole
4. HHS Drug Testing Advisory Board Working Group, KA Cole

5. National Drug Control Policy Working Study, KA Cole
6. DoD Drug Testing Reagent Contract Technical Evaluation Board, KA Cole
7. DoD Laboratory Certification Inspection Program, A Jacobs, KA Cole, BD Paul, J D'Nicuola
8. COR Inspection Service Contract, A Jacobs, KA Cole, J D'Nicuola

Faculty Appointments:

University of Maryland at Baltimore, Department of Pathology, Clinical Associate Professor, BS Levine

New Mission:

Contract Officer Representative of DoD Immunoassay Contracts

Official Trips:

1. August 1-4, 2000, Naval Air Station, Jacksonville, Fla, Technical Evaluation Board, KA Cole
2. August 28-31, 2000, Naval Air Station, Jacksonville, Fla, Technical Evaluation Board, KA Cole

Continuing Education: The following courses were attended for training during 2000 by division staff, military and civilian:

1. Marijuana: A Forensic Symposium
2. Forensic Applications of LC-MS
3. Presenting Scientific Evidence in Court: Meeting the Daubert Standard for Reliability
4. Forensic Toxicology of Opiate Alkaloids and Synthetic Analgesics
5. Emerging Threats in Bioterrorism
6. Contracting Officer Representative Course

PRESENTATIONS

1. February 2000: Washington, DC, Office of National Drug Control Policy, "Hemp product update," KA Cole.
2. February 2000: Reno, Nev, American Academy of Forensic Sciences Meeting, "A case of dothiepin intoxication," KA Moore, BS Levine, RL Jones, JI Smith, ML Smith.
3. February 2000: Reno, Nev, American Academy of Forensic Sciences Meeting, "The detection of psilocin in human urine," AF Grieshaber, KA Moore, B Levine, ML Smith.
4. March 2000: New Orleans, La, Pittsburgh Conference on Analytical Chemistry and Spectroscopy, "Analytical techniques for drugs of abuse detection in biological matrices," KS Kalasinsky, SP Vorce.
5. April 2000: Military Appellate Judges, "US vs Campbell," KA Cole.
6. April 2000: Alexandria, Va, US Attorneys, Eastern District of Virginia, "Pharmacology and forensic issues of ethanol," KA Moore.
7. May 2000: Maxwell AFB, Ala, Advanced Trial Advocacy Course, "Hair analysis," KS Kalasinsky.
8. May 2000: Washington, DC, FRENZY Forensic Sciences & Crime Scene Technology Exposition, "Hair analysis," KS Kalasinsky.
9. May 2000: Harvard Associates for Police Science, "Use of toxicological information in the final diagnosis," BS Levine.
10. June 2000: Waukegan, Ill, Installation Biochemical Testing Coordination, "Overview of DoD drug deterrence program and lab operation," KA Cole.
11. June 2000; Millington, Tenn, Alcohol Drug Counseling Officer Course, "Hemp product update and special testing services," KA Cole.
12. June 2000: Norfolk, Va, Conference on Implication of US vs Campbell on LSD Opiate Testing, "Cutoffs – purpose and how they are established," KA Cole.
13. June 2000: Albany, NY, Society of Forensic Toxicologists - The Chemistry of Derivatization Workshop, "The chiral analysis of amphetamines," KA Moore.
14. June 2000: Alexandria, Va, American Association for Clinical Chemistry – Contemporary Practice of Clinical Toxicology Course, "LSD," BS Levine.
15. June 2000: Alexandria, Va, American Association for Clinical Chemistry – Contemporary Practice of Clinical Toxicology Course, "Cocaine," BS Levine.

16. June 2000: Alexandria, Va, American Association for Clinical Chemistry – Contemporary Practice of Clinical Toxicology Course, “The pharmacology and toxicology of sympathomimetic amines,” KA Moore.
17. June 2000: Alexandria, Va, American Association for Clinical Chemistry – Contemporary Practice of Clinical Toxicology Course, “Gamma-hydroxybutyrate analysis,” KA Moore.
18. July 2000: Kailua-Kona, Hawaii, International Union of Microbeam Analysis Societies, “Microanalysis of human matrices for foreign substances,” KS Kalasinsky, VF Kalasinsky.
19. August 2000: Tennessee National Guard, “Hemp product update and special testing services,” KA Cole.
20. August 2000 – December 2000: Baltimore, Md, University of Maryland Toxicology 607 Course, 21 lectures (“Clinical poisonings,” “Postmortem forensic toxicology,” “Human performance toxicology,” “Forensic drug testing,” “Pharmacokinetics,” “Specimen preparation,” “Spectrophotometry,” “Chromatography,” “Mass spectrometry,” “Immunoassay,” “Alcohol I,” “Alcohol II,” “Therapeutic drugs I,” “Therapeutic drugs II,” “Opiates I,” “Opiates II,” “Cocaine,” “Hallucinogens,” “Date rape drugs,” “Carbon monoxide/cyanide,” “Metals”), BS Levine.
21. August 2000 – December 2000: Baltimore, Md, University of Maryland Toxicology 607 Course, 2 lectures (“Pharmacology/toxicology of sympathomimetic amines,” “Stereochemistry/chiral analytical techniques”), KA Moore.
22. September 2000: Nashville, Tenn, Federation of Analytical Chemistry and Spectroscopy Societies Conference, “Forensic investigations of hair as a biological matrix for abused substances,” KS Kalasinsky.
23. October 2000: Milwaukee, Wis, Society of Forensic Toxicologists Meeting, “Postmortem examination of liver and brain for the presence of methylecgonidine (MED) and ecgonidine (ED), cocaine, and benzoylecgonine (BZE) by selected ion monitoring (SIM) GC/MS,” ET Shimomura, GD Hodge, BD Paul.
24. October 2000: Milwaukee, Wis, Society of Forensic Toxicologists Meeting, “GHB overdose case: examination of blood, brain and hair,” MM Dixon, KS Kalasinsky, SJ Kish, GA Schmunk.
25. October 2000: Milwaukee, Wis, Society of Forensic Toxicologists Meeting, “Applicability of the new federal opiate cutoffs to opiate intoxication cases,” KA Moore, JW Addison, BS Levine, JE Smialek.
26. October 2000: Ft. Meade, Md, Tri-Service Drug Testing Laboratory Managers Meeting, “Postmortem examination of body tissues for the presence of methylecgonidine, ecgonidine, cocaine, and benzoylecgonine by selected ion monitoring GC/MS,” ET Shimomura, GD Hodge, BD Paul.
27. October 2000: Navy Environmental Health Center Workshop, “Chemical biological radiological environmental response development for forward deployed labs,” KA Cole.
28. October 2000: Ft. Meade, Md, Tri-Service Drug Testing Laboratory Managers Meeting, “Armed Forces Institute of Pathology quality assurance update,” KA Cole.
29. November 2000: Harvard Associates for Police Science, “Use of toxicological information in the final diagnosis,” BS Levine.
30. November 2000: Cleveland, Ohio, Nicolet Research Symposium, “Infrared microscopy of human hair for the study of ingested drugs,” KS Kalasinsky.
31. November 2000: San Diego, Calif, Society of Forensic Toxicologists and the California Association of Toxicologists - The Chemistry of Derivatization Workshop, “The chiral analysis of amphetamines,” KA Moore.
32. November 2000: Baltimore, Md, University of Maryland Toxicology 601 Course, 2 lectures (“Forensic toxicology I,” “Forensic toxicology II”), BS Levine.
33. December 2000: Washington, DC, Georgetown University, “Postmortem changes in chemistry and toxicology,” BS Levine.

PUBLICATIONS

Journal Articles

1. Kalasinsky KS, Bosy TZ, Schmunk GA, Ang L, Adams V, Gore SB, Smialek J, Furakawa Y, Guttman M, Kish SJ. Regional distribution of cocaine in postmortem brain of chronic human cocaine users. *J Forensic Sci.* 2000;45:1041-1048.

2. Paul BD, Martin KK, Magluilo J Jr, Smith ML. Effects of pyridinium chlorochromate adulterant (urine luck) on testing for drugs of abuse and a method for quantitative detection of chromium (VI) in urine. *J Anal Toxicol.* 2000;24:233-237.
3. McLeman ER, Warsh JJ, Ang L, Li PP, Kalasinsky KS, Ross BM, Tong J, Schmunk G, Adams V, Kish SJ. The human nucleus accumbens is highly susceptible to G-protein downregulation by methamphetamine and heroin. *J Neurochem.* 2000;74:2120-2126.
4. Worsley JN, Moszczynska A, Falardeau P, Kalasinsky KS, Schmunk G, Guttman M, Furukawa Y, Ang L, Adams V, Reiber G, Anthony RA, Wickham D, Kish SJ. Dopamine D1 receptor protein is elevated in nucleus accumbens of human, chronic methamphetamine users. *Mol Psychiatry.* 2000;5:664-672.
5. Paul BD. Can ecgonidine in urine be a marker for use of cocaine? *Clinical & Forensic Toxicology News.* June 2000:6-7.6. Kish SJ, Furukawa Y, Ang L, Vorce SP, Kalasinsky KS. Striatal serotonin is depleted in brain of a human MDMA (ecstasy) user. *Neurology.* 2000;55:294-296.
7. Smith ML, Shimomura ET, Summers J, Paul BD, Nichols D, Shippee R, Jenkins AJ, Darwin WD, Cone EJ. Detection times and analytical performance of commercial urine opiate immunoassays following heroin administration. *J Anal Toxicol.* 2000;24:522-529.
8. Sklerov JH, Magluilo J Jr, Shannon KK, Smith ML. Liquid chromatography–electrospray ionization mass spectrometry for the detection of lysergide and a major metabolite, 2-oxo-3-hydroxy-LSD, in urine and blood. *J Anal Toxicol.* 2000;24:543-549.
9. Bosy TZ, Cole KA. Consumption and quantitation of D⁹-tetrahydrocannabinol in commercially available hemp seed oil products. *J Anal Toxicol.* 2000;24:562-566.
10. Vorce SP, Sklerov JH, Kalasinsky KS. Assessment of the ion-trap mass spectrometer for routine qualitative and quantitative analysis of drugs of abuse extracted from urine. *J Anal Toxicol.* 2000;24:595-601.

GROUP 6

SPECIALIZED SERVICES

**DEPARTMENT OF MEDICAL EDUCATION
(DME)**

CENTER FOR SCIENTIFIC PUBLICATIONS

**EPIDEMIOLOGY, REPOSITORY &
RESEARCH SERVICES**

OFFICE OF QUALITY ASSURANCE

TELEMEDICINE



Christopher R. Owner, PhD
Chair
Date of Appointment — 4 August 1997

DEPARTMENT OF MEDICAL EDUCATION

MISSION

The Department of Medical Education supports continuing medical education in pathology, radiology, and related medical disciplines by providing specialized information and advanced research and technology in the study of the pathophysiology of disease.

ORGANIZATION

The department is organized by function and comprises workshop and seminar design and development, residents/fellows programs, text-based education, Web-based instruction, meeting planning, marketing, art and graphics, study sets, audiovisual, and accounting. The department chair reports to the CAP Director, Dr. Florabel G. Mullick. The Oversight Committee for Continuing Medical Education oversees the department's activities.

STAFF

Technical:

Christopher R. Owner, PhD, Chair
Ontee W. Biggs, CSMgt (Sel), USAF, Superintendent
Arnold Gittleson, Educational Coordinator (Radiology)
Carl Williams, Educational Coordinator (Radiology)
Carlos Moran, Educational Coordinator (International)
Catherine Abbott, Web Coordinator
Manpreet Singh, Web Education Developer
James Eastep, DVM, World Wide Web Support
Earlene Turner, Educational Coordinator (Radiology)
Isaac J. Miller, TSgt, USAF, Educational Coordinator (Pathology)
Stephen W. Huntington, SSgt, USAF, Educational Coordinator (Pathology)
Virginia A. McMillan, Visual Information Specialist

Administrative:

Lisa P. Holmes, Meeting Management
Carolyn Tuchis, Accounts Manager
Kim L. Williams, Office Management
Rene Sutton, Marketing Coordinator

Other AFIP/ARP Staff in Support of Mission:

Frank Roberts, Histopathology QA
Estelle Page, Histopathology QA
Mark Sacks, CPR Program (AFIP Physicians and Staff)
Michele M. Block, Floor Administrator

Audiovisual:

Willie L. Jefferson, Jr, Audiovisual Supervisor
Joseph Frederick, Audiovisual Support Technician

Media Center:

Haydee Velazquez, Study Set Coordinator

Ash Library:

Ruth Li, Librarian

Prem Kalra, Library Consultant
 Judith Paige, Library Technician
 Daniel Mulholland, Library Technician

MIS Library:

Thomas Gaskins, Archive Technician

EDUCATIONAL DIVISION

Scope: The AFIP uses numerous approaches to determine how courses are structured and what information to include. First and foremost is the material we glean from our tertiary consult service. The AFIP receives over 55,000 cases annually, many of which are difficult diagnostic cases that become resources for our educational activities. This ongoing dialogue with the community of pathologists shapes the information selected for both our workshops and didactic programs to accurately reflect the informational needs of both the military and civilian physician. To augment these data, we also assess scientific advances in the field of pathology and medicine, seek the consensus of expert pathologists and clinicians, solicit feedback from both potential and actual attendees at our programs, and monitor the media to determine issues and topics of importance to the public. The effectiveness of these audience assessment activities can be seen in the evaluation data. The courses we offer cover most of the subspecialties in pathology, including dentistry, veterinary, forensics, and environmental medicine.

Audience: Our primary audience includes military and civilian pathologists, radiologists, and related subspecialty clinicians in the United States and Canada, and around the world. Secondary audiences include other physicians, health professionals, and interested ancillary medical support systems.

Activities: In 2000, the AFIP offered 76 programs and 1 virtual conference to 11,754 pathologists, clinicians, legal medicine professionals, veterinary pathologists, radiologists, dentists, forensic anthropologists, military and civilian residents, and professionals in related disciplines.

Marketing: The Marketing Department conducted marketing activities on behalf of 34 seminars and workshops, targeting anatomic and clinical pathologists and radiologists either in practice or serving in residencies. As part of this effort, we designed, produced, and mailed over 180,000 brochures, and arranged for advertisements to appear in numerous journals, newsletters, and Web sites, including our own AFIP site, which provides detailed course information and the opportunity to register online. This year, approximately 26% (ranging from 13% to 46%) of our registrants applied through the Internet.

Web Education: The AFIP Web development team has expanded to include 2 full-time positions: a Web coordinator and a Web developer. We also have the services of a veterinary pathologist (40% FTE) and a database expert (25% FTE). We offered the first module in the virtual Genitourinary Course and a total of 7 virtual sessions for the Registry of Toxicologic Pathology in Animals (RTPA). We also added the Department of Legal Medicine's *Open File* program for 2000 and an archive of previous editions.

Financial Support: We are continuing to develop and promote our Medical Education Fund to defray some of the costs of conducting our programs. The fund seeks grants and exhibitors to help pay for preparing syllabi, producing brochures, and marketing existing courses. To date, only the Radiology Department has been successful in raising educational grants. We will continue seeking educational grants in support of our pathology workshops and Internet activities.

AUDIOVISUAL DIVISION

In 2000, the Audiovisual Division supported an increased number of CME courses (42), supported workshops and seminars, and engaged in the following official activities:

- 34 Weekly Professional Staff Conferences
- 2 Board of Governors Meetings

- 2 Scientific Advisory Board Meetings
- 2 Chest Body Armor Joint Impact Trauma Seminars
- Surgery of the Knee live satellite transmission from the WRAMC O.R. to Russell Auditorium
- Association of Microbiologists Meeting
- USDA Emergency Preparedness Seminar live satellite transmission to Russell Auditorium
- Various evening and weekend events at the National Museum of Health and Medicine

Audiovisual personnel continued to facilitate video teleconferences, until that system was dismantled. PowerPoint presentations are rapidly replacing 35-mm slide projection as the preferred format for information dissemination. To accommodate this transition, the division proposed the installation of LCD/computer projection systems in AFIP's primary conference rooms. A near-term goal is to have these systems operational by mid-2001. Five additional LCD projectors have been acquired to support the increased demand and offset the decline in the requests for 35-mm slide projectors.

1. PROPERTY VALUE HR E5M	
a. \$380,869.94	
b. 122 total items listed on the hand receipt	
2. AUDIOVISUAL PROPOSED BUDGET	
a. Equipment (new and replacement)	\$27,129.27
b. Supplies	\$500.00
c. Maintenance	\$8,000.00
Total	\$35,629.27
3. AUDIOVISUAL OPERATOR SUPPORT REQUESTS	
a. In-house	949
b. CME courses	42
c. WRAMC	36
d. Outside organizations	07
4. AUDIOVISUAL EQUIPMENT LOAN REQUESTS	
a. In-house	750
b. CME courses	42
c. WRAMC	15
d. Outside organizations	04
5. A/V EQUIPMENT ON INDEFINITE LOAN	
a. In-house	12
b. WRAMC-TV	05
6. VIDEO TELECONFERENCES	51
7. VIDEO RECORDINGS	12

MEDIA CENTER

In 2000, the Media Center began charging non-DoD physicians and libraries a fee to borrow AFIP slide sets. We projected revenue of about \$14,000 to help offset some of the cost of maintaining this important DoD activity. We actually recouped \$8,151. This year, we began reviewing and remounting many of our slide sets in an attempt to maintain the highest quality possible.

1. PUBLIC SERVICES	
a. Sets used by AFIP personnel	100
b. Circulation Patrons Loans	

Checked in	93
Checked out	92
c. Interlibrary Loans	
Federal	162
Nonfederal	410
d. Ready Reference	
Media Center	376
Phone calls	568
2. TECHNICAL SERVICES	
a. New sets acquired	
Veterinary Department	7
b. Catalogued study sets	7
c. Collection	
Microscopic slides and Kodachromes	1,240
Veterinary study sets (glass and Kodachromes)	121

GROUP 6—Specialized Services

DEPARTMENTAL TRAINING STUDY

	Federal Attendees	Non Federal Attendees	International Attendees	Training Days Fed	Training Days Non-Fed	Training Days International	Hours
DNA Laboratory	0	0	0	0	0	0	0
Medical Examiners	3	5	0	396	146	0	4,336
Cardiovascular Path	1	2	0	21	183	0	1,632
Cellular Pathology	5	8	4	103	70	308	3,848
Center for Advanced Pathology	0	1	0	0	39	0	312
Dermatopathology	9	18	13	517	389	297	9,624
Environmental & Toxicologic Pathology	0	2	1	0	78	42	960
GU & Nephropathology Pathology	5	17	8	89	325	150	4,512
Gynecologic & Breast Pathology	8	5	6	176	318	61	4,440
Hematopathology	0	8	0	0	415	0	3,320
Hepatic & Gastrointestinal Pathology	4	10	9	87	573	185	6,760
Information Management	0	1	0	0	39	0	312
Infectious Diseases, AIDS & Microbiology	10	3	1	104	83	41	1,824
Legal Medicine	0	0	0	0	0	0	0
Medical Museum	0	4	0	0	156	0	01,248
Neuropathology	5	7	3	590	137	137	6,912
Ophthalmic Pathology	3	16	3	59	715	62	6,688
Oral Pathology	0	1	0	0	5	0	40
Orthopedic Pathology	0	0	0	0	0	0	0
Otolaryngic Pathology	3	2	19	279	124	575	7,824
Pediatric Pathology	1	3	1	20	65	20	840
Pulmonary & Mediastinal Pathology	1	11	9	20	700	931	13,208
Radiologic Pathology	0	1	1	0	251	81	2,656
Scientific Laboratories	4	2	0	19	10	0	232
Soft Tissue Pathology	1	8	1	20	410	251	5,448
Telepathology	4	3	0	71	105	0	1,408
Veterinary Pathology	8	30	1	4,912	419	125	43,648
SUBTOTAL	75	156	80	7,483	5,755	3,266	128,084
TOTAL			323			16,504	132,032

LONG COURSES

	Federal Attendees	Non Federal & International Attendees	Federal Training Days	Non Federal & International Training Days	Hours
Anatomic Pathology	35	57	210	342	4,416
Basic Sciences ENT	15	10	225	150	3,000
Neuropathology	2	11	122	671	6,344
Neuropathology	3	5	171	285	3,648
Orthopedic Pathology	7	1	70	10	640
Radiologic Pathology	9	155	261	4,495	38,048
Radiologic Pathology	8	213	232	6,177	51,272
Radiologic Pathology	8	213	240	6,390	53,040
Radiologic Pathology	10	193	290	5,597	47,096
SUBTOTAL	97	858	1,821	24,117	207,504
TOTAL ENROLMENT	97	858	1,821	24,117	207,504

SHORT COURSES

	Federal Attendees	Non Federal & International Attendees	Federal Training Days	Non Federal & International Training Days	Hours
Thoracic Radiology	0	9	0	45	360
34 th Annual Uro pathology Course	33	100	198	600	6,384
Uroradiology Review Course	31	92	62	184	1,968
15 th Annual Neuroradiology Course	34	139	68	278	2,768
38 th Annual Neuropathology Review	14	129	70	645	5,720
36 th Annual Forensic Dentistry	38	65	190	325	4,120
Review & Update of Renal Biopsies	4	35	12	105	936
13 th Annual Forensic Anthropology	16	35	80	175	2,040
Lymph Node & Extranodal Sites	10	57	20	114	1,072
6 th Int'l Symposium on Metal Ions					
In Biology and Medicine	3	385	12	1,540	12,416
The Dermatopathology Workshop	19	102	38	204	1,936
6 th Musculoskeletal Imaging Weekend	20	38	40	76	928
Urological Path Course – May 2000	14	90	84	540	4,992
9 th Descriptive Veterinary Pathology	1	38	4	152	1,248
Diagnostic Surgical Path (France)	1	68	4	272	2,208
Musculoskeletal Radiology	5	13	25	65	720
Neuroradiology	5	28	25	140	1,320
Pathology of HIV Infection and AIDS	3	28	12	112	992
Descriptive Veterinary Path (London)	0	29	0	116	928
Ophthalmic Pathology	34	94	204	564	6,144
Orthopedic Pathology	24	28	144	168	2,496
21 st Annual Hepatopathology: The					
Interpretation of Liver Biopsies	32	76	96	228	2,592
11 th Annual GI Surgical Path &	30	84	60	168	1,824
Pulmonary & Mediastinal Radiology	16	19	32	38	560

GROUP 6—Specialized Services

The Pap Smear	1	46	2	92	752
Telepathology Work	0	10	25	0	200
Pediatric Radiology	0	11	30	75	840
Diagnostic Surgical Path (Savannah)	9	97	0	55	440
Surgical Oral & Maxillofacial Path	5	39	27	291	2,544
Basic Forensic Pathology	21	56	15	117	1,056
Actualizacion Diagnostico en			105	280	3,080
Patologia Conferencias y Taller	0	122	0	488	3,904
Current Issues in Breast Pathology	6	61	18	183	1,608
Legal Medicine Open File	1,618	2,307	1,011	1,440	19,615
<hr/>					
SUBTOTAL	2,047	4,530	2,625	9,717	100,711
TOTAL	6,577		12,342		100,711

YEAR-ROUND TRAINING/EDUCATION

	Total Attendees	Days	Units	Hours
RTPA Web Conference	279	627	18	5,022
Weekly Professional Staff Conference	1,058	132	1	1058
Histopathology Quality Assessment Program	654		17	9805
Virtual Gastrointestinal Endoscopic Biopsy	0	0	0	0
CPR Recertification Program	13	2	3	39
Calender-Binford				
One Month Fellows	15	3,900		31,200
<hr/>				
TOTAL	2,019	4,661		47,124
GRAND TOTALS	9,874	59,445		475,560



Leslie H. Sobin, MD, SES
Director
Date of Appointment — 20 September 1987

CENTER FOR SCIENTIFIC PUBLICATIONS

MISSION

The Center for Scientific Publications supports the research and educational aspects of the Institute's mission. Center staff:

- Oversee editorial and publishing matters for the entire Institute, review proposals for AFIP-generated publications, provide editorial review of manuscripts, oversee the processing and transmitting of manuscripts to publishers, maintain the Institute's publications records and archives, and collect and distribute reprints of AFIP publications.
- Edit, design, and produce for publication the *Annual Report*, the *Annual Research Progress Report*, the Institute's nonserial publications, the *AFIP LETTER*, informational brochures, catalogues, and a variety of institutional documents using desktop electronic publishing.
- Coedit the *AFIP Atlas of Tumor Pathology* and prepare 4-color separation films and black-and-white halftone films for the *Atlas* and the Institute's nonserial publications, generating digitized images for archiving and reproduction.
- Design, coordinate, and produce CD-ROMs of Institute publications, and provide user support via a toll-free line, e-mail, and the Electronic Fascicle Home Page on the World Wide Web (<http://www.afip.org/ef/ef.html>).
- Promote the development of standardized diagnostic nomenclatures and classifications of the World Health Organization (WHO) and the International Union Against Cancer (UICC), coordinate the revision of the WHO's *International Histological Classification of Tumors* and the UICC's *TNM Classification*, and oversee publication of the revised editions.

ORGANIZATION

The center is organized into 4 subdivisions and the Office of the Director:

- Editorial
- Publications Preparation
- Photographic Scanning
- CD-ROM Production

The director chairs the AFIP Editorial Committee. The WHO Collaborating Center for International Histological Classification of Tumors is under the Office of the Director.

STAFF

Leslie H. Sobin, MD, Director
Frances W. Card, Visual Information Specialist
Bonnie L. Casey, Scientific Editor, ARP
James C. Eastep, DVM, MS, Computer Aided Instruction Consultant, ARP
Ricky H. Giles, Administrative Assistant, ARP
JoAnn P. Mills, Senior Technical Writer-Editor
Junko Monroe, Multimedia Production Technician, ARP
Linda A. Murakata, CDR, MC, USNR, Associate Editor
Kenneth Stringfellow, Scanning Technician

AFIP EDITORIAL COMMITTEE

Jeffrey Cossman, MD
 Kamal G. Ishak, MD, PhD
 Adrienne Noe, PhD
 Florabel G. Mullick, MD
 Leslie H. Sobin, MD

ACTIVITIES

During 2000, noteworthy activities of the center included:

1. Publication of 3 new AFIP *Atlases of Tumor Pathology* (third series):
 - No. 26, Upper Aerodigestive Tract and Ear
 - No. 27, Gallbladder, Extrahepatic Bile Ducts, and Ampulla of Vater
 - No. 28, Prostate Gland, Seminal Vesicles, Male Urethra, and Penis
2. Publication of 2 new AFIP books:
 - Atlas of Gastrointestinal Endoscopy & Endoscopic Biopsies
 - *Pathology of Tropical Diseases: Vol. 1, Helminthiases*
3. Publication of 2 CD-ROM versions of AFIP tumor atlases: Pituitary and Ovary
4. Publication of 2 new issues of the WHO *Histological Classification of Tumors* series, *Pathology and Genetics of Tumors: Nervous System, Digestive System*

Dr. Sobin participated in the annual meeting on the TNM project of the International Union Against Cancer (Geneva), of which he is chair. He served as a consultant to the International Agency for Research on Cancer (Lyon) for the preparation of the new WHO series on pathology and genetics of tumors of the nervous system and tumors of the digestive system, and for the preparation of the third edition of the *International Classification of Diseases for Oncology (ICD-O)*. Dr. Sobin participated in meetings of the editorial boards of the third and fourth series of the *Atlas of Tumor Pathology*, of which he is associate editor.

2000 AFIP PUBLICATIONS (SEE PUBLICATIONS LIST, P. 376)

Professional journals	286
Books and chapters	107
Abstracts	186
Other publications	38
Manuscripts processed	346
Reprint requests processed	13,126
Books sold (Atlas and nonseries)	31,966
CD-ROMs sold (Atlas)	1,589

Impact:

The center produced a number of significant publications during 2000:

- 3 new fascicles of the *Atlas of Tumor Pathology*
- 3 new WHO tumor classifications
- an atlas on endoscopic gastrointestinal biopsies
- an atlas on helminthiases

The worldwide distribution of these publications has great impact on the Institute's reputation as a major international source of authoritative information, standardized classifications, and nomenclature. The outstanding quality of illustrations, the hallmark of AFIP publications, has drawn continued praise in scientific journal reviews. This is also reflected in book sales, which increased by 20%.

The Institute's WHO Collaborating Center for International Histological Classification of Tumors has been selected to develop the new WHO *Histological Classification of Tumors* series, *Pathology and Genetics of Tumors*. There is close consultative work with the WHO to prepare the third edition of the *International Classification of Diseases for Oncology*, the standard coding system for tumors and the basis for the SNOMED tumor morphology code. Close collaboration continues with the International Union Against Cancer on tumor classification and staging (TNM system) and the interaction of staging with nonanatomic prognostic factors

OTHER ACCOMPLISHMENTS

Collaborators:***Military/Federal:***

National Cancer Institute/NIH, Surveillance, Epidemiology, End Results (SEER) Program, *International Classification of Diseases for Oncology*

Civilian:

Mayo Clinic, Correlation between Endoscopy and Endoscopic Biopsies

International:

1. WHO, *International Histological Classification of Tumors*
2. WHO, *International Classification of Diseases for Oncology (ICD-O)*
3. International Agency for Research on Cancer, WHO *International Classification of Tumors: Pathology and Genetics of Tumors*
4. International Union Against Cancer, *TNM/Prognostic Factors Classification and Cancer Staging*

Committees:

Offices/Committee Memberships in National or International Societies:

LH Sobin

1. Chair, TNM/Prognostic Factors Project of the International Union Against Cancer
2. Head, WHO Collaborating Center for International Histological Classification of Tumors
3. Editor, *International Histological Classification of Tumors*
4. Member, WHO Expert Advisory Panel on Cancer
5. Associate Editor, *Cancer*
6. Consultant, American Joint Committee on Cancer
7. Series Coeditor, WHO *International Classification of Tumors: Pathology and Genetics of Tumors*

Editorships (Intramural):**LH Sobin**

1. Associate Editor, AFIP *Atlas of Tumor Pathology*, 3rd Series
2. Associate Editor, AFIP *Atlas of Tumor Pathology*, 4th Series
3. Associate Editor, AFIP/ARP *Atlas of Non-neoplastic Diseases*

Official Trips (funding agency in parentheses):***LH Sobin:***

1. February 25-26, 2000, London, England, International Association for the Study of Lung Tumors (UICC)
2. February 29, 2000, Lyon, France, Pathology and Genetics of Tumors, Breast Tumor Planning Meeting (WHO)
3. March 16, 2000, New York, NY, *Cancer* Associate Editors Meeting (American Cancer Society)
4. May 1-5, 2000, Geneva, Switzerland, TNM Project Meeting, International Union Against Cancer (UICC)
5. June 24, 2000, Chicago, Ill, American Joint Committee on Cancer Annual Meeting (AJCC)
6. July 30-August 4, 2000, Lyon, France, Pathology and Genetics of Digestive System Tumors, Editorial Meeting (WHO)
7. September 9, 2000, Seattle, Wash, Cancer Control Meeting, International Union Against Cancer (UICC)
8. October 12, 2000, New York, NY, *Cancer* Associate Editors Meeting (American Cancer Society)
9. November 8-12, 2000, Lyon, France, Pathology and Genetics of Tumors of Hematopoietic and Lymphoid Tissues Meeting (WHO)

PUBLICATIONS

Books:

1. Albores-Saavedra J, Henson DE, Klimstra DS. *Tumors of the Gallbladder, Extrahepatic Bile Ducts, and Ampulla of Vater*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. Series 3, Fascicle 27, Atlas of Tumor Pathology.
2. Centeno JA, Martinez L, Ladich ER, Page NP, Mullick FG, Ishak KG, Zheng B, Gibb H, Thompson C, Longfellow D. *Arsenic-Induced Lesions*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
3. Emory TS, Carpenter HA, Gostout CJ, Sobin LH. *Atlas of Gastrointestinal Endoscopy & Endoscopic Biopsies*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
4. Fitzgerald PJ. *From Demons and Evil Spirits to Cancer Genes: The Development of Concepts Concerning the Causes of Cancer and Carcinogenesis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000.
5. Frith CH, Botts S, Jokinen MP, Eighmy JJ, Hailey JR, Morgan SJ, Chandra M. Non-proliferative lesions of the endocrine system in rats, E-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
6. Frith CH, Ward JM, Chandra M, Losco P. Non-proliferative lesions of the hematopoietic system in rats, HL-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
7. Meyers WM, ed; Neafie RC, Marty AM, Wear DJ, coeds. *Helminthiases*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. *Pathology of Infectious Diseases*; vol 1.
8. Mills SE, Gaffey MJ, Frierson HF Jr. *Tumors of the Upper Aerodigestive Tract and Ear*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. Series 3, Fascicle 26, Atlas of Tumor Pathology.
9. Ruben Z, Arceo RJ, Bishop SP, Elwell MR, Kerns WD, Mesfin GM, Sandusky GE, Van Vleet JF. Non-proliferative lesions of the heart and vasculature in rats, CV-1. In: *Guides for Toxicologic Pathology*. Washington, DC: STP/ARP/AFIP; 2000.
10. Young RH, Srigley JR, Amin MB, Ulbright TM, Cubilla AL. *Tumors of the Prostate Gland, Seminal Vesicles, Male Urethra, and Penis*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. Series 3, Fascicle 28, Atlas of Tumor Pathology.

CD-ROMs:

1. Asa SL. *Tumors of the Pituitary Gland* [book on CD-ROM]. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. Series 3, Fascicle 22, Atlas of Tumor Pathology.
2. Scully RA, Young RH, Clement PB. *Tumors of the Ovary, Maldeveloped Gonads, Fallopian Tube, and Broad Ligament* [book on CD-ROM]. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2000. Series 3, Fascicle 23, Atlas of Tumor Pathology.

WHO Publications:

1. Hamilton SR, Aaltonen LA, eds. *World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of the Digestive System*. Lyon, France: IARC Press; 2000.
2. Kleihues P, Cavenee WK, eds. *World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of the Nervous System*. Lyon, France: IARC Press; 2000.
3. Solcia E, Kloppel G, Sobin LH, in collaboration with 9 pathologists from 4 countries. *World Health Organization International Histological Classification of Tumours: Histological Typing of Endocrine Tumours*. 2nd ed. Berlin, Germany: Springer-Verlag; 2000.

Other Publications:

1. Armed Forces Institute of Pathology Annual Research Progress Report 2000. Anderson A, Card FW, Mills JP, eds. Washington DC: Armed Forces Institute of Pathology; 2001.
2. AFIP/ARP 2001 Calendar. Published by American Registry of Pathology. Buchhagen D, Card F, Casey B, Hawk A, Lindsay H, Noe A, Rhode M, Squazzo K.



Michael R. Peterson, DVM, DrPH
Chair
Date of Appointment — 1 February 1995

Annette R. Anderson, MS, RHIA
Administrator
Date of Appointment — 14 November 1994

DEPARTMENT OF EPIDEMIOLOGY, REPOSITORY, AND RESEARCH SERVICES

MISSION

The Department of Epidemiology, Repository, and Research Services provides administrative support to the Center for Advanced Pathology in achieving the Institute's objectives in consultation, education, and research. We do this by:

1. Maintaining the AFIP Repository, consisting of over 2.7 million case files and associated paraffin blocks, microscopic glass slides, and formalin-fixed tissue specimens.
2. Receiving and accessioning case materials.
3. Providing a case pick-up and delivery service throughout the Institute.
4. Responding to outside requests for release of medical information and pathologic materials.
5. Coding and entering pathologic diagnoses and case demographic data into the Institute's research database.
6. Performing administrative quality review of case files following final report.
7. Obtaining patient follow-up information for clinicopathologic correlation studies.
8. Conducting periodic quality assurance audits to case record completeness, the integrity of the research database, and the accurate tracking of case materials.
9. Coordinating research protocol administrative requirements, including review, approval, and monitoring of research activities by the various Institute research-related committees.
10. Publishing the Institute Annual Research Progress Report; periodically updating other research-related publications; and preparing reports as required for outside monitoring agencies.
11. Providing statistical support to investigators concerning protocol development and results analyses.
12. Maintaining a repository of pathologic materials from closed military medical facilities in accordance with applicable DoD regulations and federal statutes.
13. Serving as Institute coordinator for the Partnership Program with Rock Terrace High School, Rockville, Md.
14. Providing data analysis and policy guidance for the DoD Automated Central Tumor Registry (ACTUR).
15. Conducting the departmental epidemiologic research program.

ORGANIZATION

The department is organized into 6 divisions:

1. Receiving and Accessions
2. Records Repository
3. Materials Repository

4. Research Services Division
5. Epidemiology Division
6. Case Materials Accountability Division

The Epidemiology Division reports directly to the chair. All other divisions report to the department administrator for day-to-day management. Reports from each division follow.

EPIDEMIOLOGY DIVISION

MISSION

1. Market the research potential of the AFIP repository to outside organizations in collaborative research efforts with AFIP staff.
2. Develop a viable epidemiology program within the Institute.
3. Serve as Institute biostatistics and epidemiology consultants.
4. Serve on the Institute's 3 research-related committees.
5. Support the DoD Automated Central Tumor Registry (ACTUR) by ensuring the quality of ACTUR data and serving as liaison between ACTUR and the North American Association of Central Cancer Registries (NAACCR).

STAFF

Michael R. Peterson, DVM, DrPH — Chair
R. Allen Frommelt — Staff Epidemiologist

CONSULTATIONS

Intramural:

1. Department of Veterinary Pathology — Assessed disease in military working dogs deployed during the Persian Gulf War vs nondeployed dogs.
2. Department of Veterinary Pathology — Obtained records from the Military Working Dog Center in San Antonio, Texas, to abstract for military working dog database and began the process of data entry for each record.
3. AFIP Institutional Animal Care and Use Committee — Performed statistical analyses to determine the minimum number of laboratory animals required to achieve statistically significant results in protocols brought before the committee.

Extramural:

1. Centers for Disease Control and Prevention — Conducted cancer surveillance studies on data from ACTUR (CDC grant-supported). Data on all active-duty cancer diagnoses for the period 1988 to 1998 were abstracted, validated, entered into a statistical package for analysis, and a copy without identifiers forwarded to CDC for further analysis.
2. Centers for Disease Control and Prevention — A contract was funded by CDC to determine the data quality within the ACTUR database. An outside consultant was hired to visit a selected group of military medical treatment facilities throughout the United States. The consultant is to perform case-finding and reabstract records for a designated series of diagnoses within a specified time frame and then compare this information with the data in ACTUR. This contract is currently in progress, and several facilities have already been surveyed. A final report was due at the end of March 2001.

EDUCATION

Seminar: A Web-based seminar for investigators on basic statistics was completed by division staff in collaboration with the Department of Medical Education and is available to Institute researchers.

RESEARCH

Projects:

Division personnel completed 2 research projects during 2000 and submitted the results for publication:

1. Pap Smear Screening in the USAF: Yield of Screening and Predictors of Squamous

Intraepithelial Lesions and Atypical Squamous Cells of Undetermined Significance, MR Peterson

2. Incidence of Invasive Cervical Cancer in a Beta Test Group of Tumor Registries, RA Frommelt

MR Peterson is currently serving as the principal investigator or the AFIP responsible individual on the following research protocols:

1. Lifetime Occurrence of Neoplasia in Military Working Dogs
2. Building the Foundation for a National Canine and Feline Cancer Registry
3. Evaluation of the DoD ACTUR for Epidemiological Analyses

OTHER ACCOMPLISHMENTS

Official Trips (funding agency in parentheses):

1. February 17-18, 2000, New Orleans, La, North American Association of Central Cancer Registries (NAACR) Beta Testing Conference (Registry of Public Health and Epidemiology).
2. February 27-29, 2000, Atlanta, Ga, National Coordination Council on Cancer Surveillance (CDC).
3. May 8-12, 2000, DoD ACTUR Annual Conference, Albuquerque, NM (DoD ACTUR).
4. July 21-26, 2000, Salt Lake City, Utah, American Veterinary Medical Association Annual Meeting (Registry of Public Health and Epidemiology).
5. October 24-27, 2000, Portland, Ore, Visit to Vetsmart Corporation to facilitate research collaboration (Registry of Public Health and Epidemiology).

PUBLICATION: Peterson MR, Frommelt RA, Dunn DG. A study of the lifetime occurrence of neoplasia and breed differences in a cohort of German shepherd dogs and Belgian Malinois military working dogs that died in 1992. *J Vet Intern Med.* 2000;14:140-145.

RESEARCH SERVICES DIVISION

MISSION

The Research Services Division supports the mission of the AFIP through the following activities:

1. Reviewing and processing protocols and educational projects submitted by AFIP staff for approval and funding.
2. Ensuring protocol administrative requirements are met and maintaining official protocol files.
3. Coordinating activities of the AFIP Research Committee, Institutional Review Board (IRB), Biosafety Committee, Institutional Animal Care and Use Committee (IACUC), and Tissue Utilization Committee.
4. Performing annual protocol reviews, conducting semiannual laboratory animal facility inspections, publishing meeting minutes, preparing committee action documents and notices to investigators, and preparing required reports for various accrediting and oversight organizations.
5. Monitoring the status of conditionally approved projects and publishing a monthly status report of all active protocols within the Institute.
6. Coordinating publication of the AFIP Annual Research Progress Report and the Institute's Annual Report to Congress on Laboratory Animal Care and Use.
7. Ensuring effectiveness of internal departmental quality assurance procedures through periodic monitoring and auditing processes.
8. Monitoring institutional compliance with materials accountability, timely return of

blocks to contributors, database retrieval request screening, case transfer and case location audits, uncoded records audits, and researching lost records and materials.

STAFF

Annette R. Anderson, MS, RHIA — Administrator
Joyce C. Manus, RHIT — Repository Quality Assurance Coordinator
Chonté Long — Secretary

ACTIVITIES

In 2000, the Research Program included 312 in-house projects, extramural grants, research contracts, and agreements, a slight decrease from the 315 in 1999. At the end of 2000, there were a total of 40 active educational projects, a slight drop from last year's total of 48. Following are reports from each research-related committee:

Institutional Animal Care and Use Committee (IACUC): The committee met 7 times in 2000, reviewing 9 new protocols requesting the use of laboratory animals and 5 amendments to existing protocols requesting the use of additional animals. It conducted two 3-year reviews. A number of minor amendments were approved throughout the year by the IACUC chair and the chief, DLAM. Semiannual inspections of the laboratory animal facilities were conducted in April and October. The committee updated the animal protocol submission form to reflect the latest DoD guidance. It also approved a revision to the annual review form in order to obtain additional information from investigators required to complete the annual report to the USDA and the DoD annual report to Congress on animal care and use.

Institutional Review Board (IRB): The board met 7 times in 2000, granted 38 requests to extend educational project approvals for an additional year, and approved 13 new educational project efforts. It reviewed and approved 24 protocols under the expedited review process, and reviewed and approved 17 protocols at full committee meetings. A total of 14 exemptions from IRB review were granted by the IRB chair. The committee conducted 137 annual reviews using expedited review procedures, and performed full committee reviews of 7 protocol annual reports. The committee terminated 3 protocols during the course of the year for failure to complete annual review requirements.

Biosafety Committee: The committee met 4 times in 2000. The committee continued to support the Safety Office by conducting monthly inspections of the BL2 and BL3 suites within the Institute. It also began review of work practices within the BL3 suite and discussion on central monitoring of environmental/occupational health requirements. During the course of the year, the committee reviewed and approved 5 protocols that involved the use of biohazardous agents.

Research Committee: The committee met 3 times in 2000, reviewed and approved 40 new protocols under expedited review and approval procedures, and granted 7 protocols preliminary approval prior to review at a full committee meeting. It conducted formal committee reviews of 7 protocols.

The Institute's long-standing relationship with Rock Terrace High School continued in 2000. Approximately 15 students worked at the Institute as volunteer student aides, paid part-time workers, and summer hires. Most of the students worked in the Materials Repository Division, the Receiving and Accessions Division, and the Records Repository Division. A group of volunteer students and their instructor began the labor-intensive project of inventorying the case folders within the Records Repository and updating the PIMS locator system with the information.

Division staff continued to play a significant role in the development and implementation of the new Pathology Information Management System (PIMS). We tested and implemented the new RETCH version of the system that included inactive case materials tracking. We also continued to spend many hours tracking down and resolving problem cases within the PIMS database and locating records that had been identified as misplaced during the 1998 DoD IG inspection and subsequent internal quality assurance audits.

In November 2000, the Research Services Division was reviewed by the AFIP Scientific Advisory Board. They were most interested in approval channels for publications, and, as a result, the Institute regulation governing publications was revised.

Toward the end of the year, the Research Services Division and the Epidemiology Division had to temporarily move their offices to accommodate an asbestos-abatement project.

OTHER ACCOMPLISHMENTS

Official Trips (funding agency in parentheses):

1. March 2000, DoD Case Management Symposium, Washington, DC.
2. May 2000, Albuquerque, NM, DoD ACTUR Training Conference held in conjunction with the yearly meeting of the National Cancer Registrars Association (DoD ACTUR).
3. May 2000, Rockville, Md, Annual Meeting of the International Society for Biologic and Environmental Repositories (AFIP).

PUBLICATION: Anderson AR, Card FW, Mills JP, eds. *Armed Forces Institute of Pathology Annual Research Progress Report 1999*. Washington, DC: Armed Forces Institute of Pathology; 2000.



Myra A. Moxley

Chief

Date of Appointment — 12 October 1993

RECEIVING AND ACCESSIONS DIVISION

MISSION

The Receiving and Accessions Division is responsible for the receipt and accessioning of all pathology cases submitted for consultation, education, and research from the Department of Defense and other federal agencies, including the Department of Veterans Affairs, and from civilian pathologists from all over the United States and the world. The division also is responsible for running a messenger service that picks up and delivers pathologic case materials throughout the Institute at least 4 times each day. In addition, the division receives and processes all express and courier mail.

STAFF

Rosetta Jackson — Supervisory Medical Records Technician
Gloria Countiss — Lead Medical Records Technician
Norma Garey — Lead Medical Records Technician
Delorise Harvey — Lead Medical Records Technician
Luke Howell — Lead Medical Records Technician
Adrian Bingham - Medical Records Technician
Geraldine Key-Lovett — Medical Records Technician
Irene Ford — Medical Records Technician
Velda Jones — Medical Records Technician
Constance Balthrop — Medical Records Technician
Juanita Howard — Medical Records Technician
Travis Jones — Medical Records Technician
Kenny Melton — Medical Records Technician
Adrienne Newton — Medical Records Technician
Raymond Riley — Medical Records Technician
Towanna Tibbs — Medical Records Technician
Janice Robinson — Medical Records Technician
Diane Turner — Medical Records Technician
Stephen Banda — Accessions Clerk

Joel Ryerson — Accessions Clerk
 Aaron Askew — Messenger
 Tyrone Henderson — Messenger
 Emily Williams — Messenger
 Anna Semiah — Student Aide

ACTIVITIES

The division’s workload statistics for 2000, compared to 1999, are as follows:

Workload Factor	2000	1999
Cases Accessioned	57,544	57,186
Federal Accessions	32,004	32,213
Civilian Accessions	25,540	24,973

PIMS development continued during calendar 2000, and several enhancements to the system were implemented to improve the case-accessioning process, including improved editing and reporting functions. In April 2000, a Case Management Re-engineering Team was formed to study the entire active case-processing system in the Institute and to recommend and implement changes required to improve case turnaround time, as well as materials and data accuracy and accountability. The team developed a new active case-processing model that was presented to the AFIP Executive Committee at the end of year for full implementation in 2001, given assignment of required resources. Meanwhile, steps taken to improve turnaround time within Accessions, such as no longer pulling slides for previously indexed cases, deleting the requirement to annotate case-tracking numbers, and using the blue “Sers” and yellow “return to contributor” folder tags, were implemented. Due to problems in accounting for cases delivered to the pathology departments, a system in which pathology departments had to sign for case deliveries was also implemented. This greatly decreased the number of complaints that cases were not delivered in a timely manner from the Receiving and Accessions Division, as well as almost eliminating the number of complaints concerning misdelivered cases.

As a result of these changes, AFIP Regulation 40-9, Case Accessioning, Processing, and Storage, was revised and published.



Mercedes E. Russell
 Chief
 Date of Appointment — 2 October 1995

RECORDS REPOSITORY DIVISION

ACTIVITIES

The Records Repository Division is organized into 3 branches.

1. Record Archives Branch:
 - Receives, stores, maintains, and retrieves all forms (microfiche, optical disk, paper) of pathologic case files.
 - Scans selected pathologic case files into an optical disk imaging system.
 - Retrieves previously indexed cases and associated slides in response to the accessioning of a new case sequence on the same patient.
2. Pathology Data Branch:
 - Abstracts, codes, and classifies final diagnoses of accessioned cases according to SNOMED International.

- Retrieves demographic and diagnostic data from the research database to assist Institute staff members in their research and teaching endeavors.
- Obtains patient follow-up information in support of approved clinicopathologic correlation or descriptive pathology studies.
- Contacts contributing pathologists, hospitals, tumor registrars, patients, military records centers, and clinicians to obtain complete information.
- Prepares search requests to forward to the National Death Index (NDI) to include NDI Plus, at the request of investigators.

3. Medical Information Release Office:

- Processes all requests for release of information from the pathologic case files.
- Processes all requests for loan or return of submitted pathologic materials (slides, paraffin blocks, or wet tissue specimens).
- Tracks submission of all Department of Veterans Affairs claims cases.

RECORD ARCHIVES BRANCH/MEDICAL INFORMATION RELEASE OFFICE

STAFF

Louise Matthews — Lead Medical Records Technician
 Eva D. Duncan — Medical Information Release Specialist
 Erma Campbell — Medical Records Clerk
 Tiloría Brooks-White — Medical Records Clerk
 Lenora Vaughn — Medical Records Clerk
 Pamela Poteat — Medical Records Clerk
 George Fanning — File Clerk
 Serita Hewitt — Scanning Clerk (ARP)
 Glenda Taylor — Scanning Clerk (ARP)
 Sharon Verner — Scanning Clerk (ARP)
 Jacquelyn Bailey — Scanning Clerk (ARP)
 Ronald Singleterry — Scanning Supervisor (ARP)
 Margaret Hosseini — Student Aide

ACTIVITIES

The division’s workload statistics for calendar year 2000, as compared to 1999, are as follows:

Workload Factor	2000	1999
Folder/Materials Actions	52,294	38,780
Retrieval/Sent Actions	5,935	1,030
Number of Cases Archived	29,957	15,424
Information Release Requests	1,477	1,584

In 2000, an interactive previously indexed case-tracking system was developed in PIMS that significantly improved the efficiency and accountability of this process. Additionally, the reports process was improved and refined so that productivity and activity reports could be generated on a daily basis, if needed. The RETCH inactive case-tracking portion of PIMS was also implemented by the Records Repository during calendar year 2000, allowing tracking of all case materials received by the repository or pulled and sent to the pathology departments or other requesters.

The contractor working on migrating the PADSTARS system to a new platform completed the work. Unfortunately, due to long-standing problems with the work done by the previous contractor, the new contractor was not able to recover or migrate all of the records, nor could the ones not successfully migrated be identified; therefore, all the paper copies had to be retained for manual retrievals. Many of the records became corrupted under the old system maintained by the previous contractor, and the back-ups were not deemed reliable. The new platform is functioning well, and scanning of records resumed under the new system.

The Rock Terrace students completed the conversion of paper records from the old filing cabinets into their new storage containers, but lack of space for continued paper storage is becoming a significant concern.

PATHOLOGY DATA BRANCH

STAFF

Toni Dickens — Lead Medical Records Technician
 Janice Powell — Medical Records Technician
 Terry Lloyd — Medical Records Technician
 Tammie Miles — Medical Records Technician
 Jacqueline Pinnix — Medical Records Technician
 Celeste Brannon — Medical Records Technician
 Frances Wise — Medical Records Technician
 Andre Thornton — Data Quality Technician

ACTIVITIES

The Pathology Data Branch’s workload for 2000, compared with that of 1999, is as follows:

Workload Factor	2000	1999
Cases Uploaded	85,365	44,348
Data Retrievals	397	329

With the implementation of the SNOMED coding system in PIMS in November 1999, Pathology Data Branch personnel began to make inroads into the coding backlog that had accumulated since the implementation of PIMS in March 1999. They began to work on cases in groups by pathology department and sought guidance, as needed, concerning how to code cases under the new system. By the end of the calendar year, the coding backlog had been halved and all pathology department cases were being coded based on date received. Additionally, early in 2000, an enhancement to PIMS was implemented that allows PACAMS cases that were never coded under the old system to be entered into PIMS by Pathology Data personnel and then coded under SNOMED. As a result, the backlog for coding of these cases also decreased substantially in 2000.



Kenneth A. Rawley
 Chief
 Date of Appointment — 11 April 1982

MATERIALS REPOSITORY DIVISION

MISSION

The Materials Repository Division processes, stores, and retrieves accessioned formalin-fixed tissue, microscopic glass slides, and paraffin blocks in support of the Institute’s consultation, education, and research missions. In addition, a tissue-grossing laboratory is maintained for use by Institute staff. The division also maintains a repository of pathologic materials and reports from closed military medical facilities. The division maintains a storage area within Bldg 54, the AFIP main building, along with the central grossing laboratory. In addition, it maintains two 15,000-square foot warehouses located at the Forest Glenn Annex of Walter Reed Army Medical Center in Silver Spring, Maryland.

STAFF

- Richard James — NCOIC, Materials Repository
- Alfonzo Riddick — Materials Handler Warehouse Supervisor
- Gregory Corbin — Materials Handler Work Leader
- Thelma P. Best — Materials Handler
- Ronald L. Duell — Materials Handler
- Wayne Hamilton — Materials Handler
- Woodrow Williams — Materials Handler
- Willie Lovett — Materials Handler
- Della M. Owens — Materials Handler
- Larry Middleton — Materials Handler
- James C. Stinney — Materials Handler
- Audrey E. Tinker — Materials Handler
- Marvin L. Alston — Materials Handler/Driver
- Jennifer Johnson — Materials Handler
- Kendrick Summers — Materials Handler
- James Eady — Materials Handler
- John McClenny — Materials Handler
- Johnny Williams — Materials Handler
- Michael Piccone — Materials Handler Clerk
- Antonio Eveline — Materials Handler Clerk
- Justin Sicard — Materials Handler Clerk
- Virginia Walker — Materials Handler Clerk

ACTIVITIES

The division’s workload statistics for 2000 are as follows:

Workload Factor	2000
Cases received for file	80,273
Actual materials received	682,938
Cases forwarded	7,765
Actual materials forwarded	92,260

Comparison data for 1999 are not included because the Materials Repository changed the way it accounts for workload, based on new reporting utilities now available in PIMS. Comparisons between the old and new data would, therefore, not be consistent. Along with these new reporting utilities, the Materials Repository also implemented the inactive case materials-tracking portion of PIMS, known as RETCH, which has significantly increased the ease and efficiency of acknowledging cases into the repository. Additionally, later in the calendar year, the division began putting bar code labels on the block boxes. Blocks can now be acknowledged into the repository through the use of these bar codes, instead of manually typing in the accession numbers of each case.

A large amount of material was returned to the repositories during calendar year 2000, as a result of the ongoing departmental inventories. The receipt of large volumes of material at once occasionally caused backlogs in the acknowledgement and filing of these materials by repository personnel. However, by the end of the calendar year, the division had basically caught up and no significant backlogs existed of current incoming case materials. There were some backlogs in the acknowledgement and filing of large study sets that had been turned in by the pathology departments because room had to be created within the repository to interfile these older case numbers.

Also during calendar year 2000, a significant amount of material was moved from the AFIP main building to Forest Glen to create additional space within the repository space in Bldg 54 for newer incoming material.

CASE MATERIALS ACCOUNTABILITY DIVISION

SFC Deborah Pratt

Chief

Date of Appointment — 1 November 1999

MISSION

1. Support the pathology departments in ensuring timely and accurate processing of case materials to and from the repositories and the Receiving and Accessions Division.
2. Assist the pathology departments in the return of blocks to contributors.
3. Assist the pathology departments in conducting inventories of case materials and in updating the PIMS locator information.
4. Conduct periodic audits of materials as requested by the AFIP records custodian, to include conducting searches for lost or missing cases.
5. Assist in resolving the status of problem cases within the PIMS system.

STAFF

Jacqueline Martinez — Medical Records Technician (ARP)

Dean Gibson — Special Projects Coordinator

ACTIVITIES

The Case Materials Accountability Division (CMAD) was implemented this year. Personnel were trained extensively in repository, accessioning, and PB case-processing procedures. Due to the limited resources available, the division began work in support of all pathology departments located in the south wing of the ground floor, including the Departments of Dermatopathology, the Neuropathology, and Otorhinolaryngic-Head and Neck Pathology, and the Division of Nephropathology. All departments were briefed on the concept, and a point of contact was established within each participating department. This point of contact is contacted each day by CMAD personnel regarding work case-processing activities. As a result of the ongoing departmental inventories, CMAD personnel spend many hours helping pathology department personnel account for and return materials to the repositories. Additionally, they greatly assisted in the return of blocks to contributors in these areas. As more resources become available, we plan to expand this concept to other departments and to expand the scope of case-processing activities involving CMAD personnel. The further development of CMAD is one of the main priorities of the Case Management Re-engineering Committee.



Frank J. Roberts
Quality Assurance Coordinator
Date of Appointment — 19 January 1993

OFFICE OF QUALITY ASSURANCE

MISSION

The Office of Quality Assurance oversees the Institute's quality assurance, risk management, and residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME).

STAFF

Frank J. Roberts, Quality Assurance Coordinator
Nicole Jenkins, Health System Specialist
Estella Page, Office Automation Clerk

ACTIVITIES

To accomplish its mission, the Office of Quality Assurance engages in a variety of management and oversight activities:

- Monitors Institute compliance with DoD's Clinical Laboratory Improvement Program and the accreditation requirements of the College of American Pathologists (CAP) and the ACGME, as well as the Department of the Army and the AFIP quality assurance and graduate medical education regulations.
- Serves as AFIP liaison with the Department of Veterans Affairs (VA) Diagnostic Services quality assurance staff and manages the AFIP/Military/VA Histopathology Quality Assessment Program (HQAP), the VA Cytopathology Proficiency Testing Program, and the Systematic External Review of Surgical Cases Program (SERS).
- Manages and coordinates the AFIP American Red Cross volunteer programs. The quality assurance coordinator represents the AFIP on WRAMC's American Red Cross Advisory Council.
- Maintains a reference library containing publications from CAP, National Committee for Clinical Laboratory Standards, and Occupational Safety and Health Administration standards.
- Manages the medical surveillance and respirator protection programs for American Registry of Pathology contract employees.
- Reviews annually and updates as needed AFIP Regulation 40-8, *Veterans Affairs Pathology Review Program*, AFIP Regulation 40-68, *Quality Assurance Administration*, and AFIP Regulation 351-2, *Policies and Procedures for the Administration of Graduate Medical Education*.
- In coordination with the Office of Safety Management, reviews and updates annually the Institute's bloodborne pathogen exposure control and chemical hygiene plans. The office also instructs Institute staff in the use of universal precautions and protection against bloodborne pathogens, as required by the Occupational Safety and Health Administration (OSHA). Office staff conduct annual training to comply with OSHA's Laboratory Safety Standard and CAP fire extinguisher training requirement.
- As part of the Institute's Risk Management Program, conducts trend analysis on job-

related accident/illness injuries of federal and contract employees.

- Provides senior staff members with statistical data on case accessioning, management, and trends, as requested.
- Manages an external peer-review program with the Brazilian Society of Pathology, State of Sao Paulo. On a bimonthly basis, between 12 to 14 cases are sent to the AFIP for in-house review, and 6 cases per year are sent to Brazil for their review.
- Coordinated an external peer review for VA Diagnostic Services in 2000.
- Four Histopathology Quality Assessment Program (HQAP) cases are assembled and mailed quarterly to all military and VA medical centers/hospitals reviewing surgical cases. In 2000, 664 military and VA pathologists were awarded in excess of 7,794 hours of continuing medical education credit for participation in the program.
- On a biweekly basis, 4 cytopathology proficiency testing cases are mailed to 40 participating VA medical centers (all participating VA medical centers receive one mailing per quarter).
- Mr. Roberts serves as recorder for the Graduate Medical Education Committee (GMEC), which is established to provide organization, supervision, and monitoring of all GME programs and their related functions. The GMEC is chaired by a senior member of the medical staff, with membership including the Director (CAP), program directors for Dermatopathology, Forensic Pathology, Neuropathology, National Capital Pathology Consortium, a resident, quality assurance coordinator, CAP training administrator, and a representative from the American Registry of Pathology.
- Mr. Roberts manages a comprehensive medical surveillance and respirator protection program for American Registry of Pathology employees.
- January—mailed AFIP Fascicle #25, *Tumors of the Testis, Adnexa, Spermatic Cord, and Scrotum* to all active-duty military pathologists and VA chiefs of anatomic pathology.
- May—mailed AFIP Fascicle #26, *Tumors of the Upper Aerodigestive Tract and Ear* to all active-duty military pathologists and VA chiefs of anatomic pathology.
- August—coordinated the AFIP's CAP accreditation inspection of Northwest Hospital, Baltimore, Md.
- September—coordinated the AFIP's CAP accreditation inspection of Suburban Hospital, Bethesda, Md.
- October—mailed AFIP/ARP publications *Rheumatic Fever*, *Atlas of Gastrointestinal Endoscopy & Endoscopic Biopsies*, and *Pathology of Infectious Diseases Vol 1: Helminthiases* to all active-duty military pathologists and VA chiefs of anatomic pathology.
- November—coordinated the AFIP's CAP accreditation inspection of the VA Medical Center, Washington, DC.



Bruce H. Williams, DVM, DACVP
 Chair
 Date of Appointment — 1 October 1997

DEPARTMENT OF TELEMEDICINE

MISSION

The Department of Telemedicine supports and enhances the missions and strategic goals of the Armed Forces Institute of Pathology and the American Registry of Pathology by evaluating and deploying emerging telecommunications technology within the Institute. The department maximizes the cost-effectiveness, speed of delivery, and quality of health care services and educational opportunities provided by the AFIP, and serves as a fertile testbed for new and innovative usage of emerging technology.

STAFF

Medical:

Bruce H. Williams, DVM, DACVP

Administrative:

Daniel R. Butler, HM1, Systems Administrator

Roderick F. Herring, Technical Support Services Specialist

(AD) Saundra Boulware-Tabron, Webmaster

(D) YNSN Jeremy Griffin

DIAGNOSTIC CONSULTATION

<i>Cases</i>	<i>Completed</i>
Military	86
Federal	
VA	16
Civilian	235
Total	337

Average turnaround time for 2000 was 3.4 hours, down from 3.72 hours in 1999. The distribution of cases by department for 2000 was as follows:

- Derm—65
- GYN—56
- GU—34
- GI—29
- Soft Tissue—22
- Cell Path—15
- Endocrine—15
- Hematopathology—16
- Hepatic—11
- Oral and Maxillofacial—13
- Ophthalmic—6
- Pulmonary—14
- Neuromuscular—13

Orthopedic—11
Hematolymphatic—10
Infectious Disease—7
Veterinary—8
Radiologic Path—1
Pediatric—2
Cardio—2
OAFME—1

Impact:

The AFIP's electronic consultation program continues to be the largest of its kind, as well as the most efficient in terms of case turnaround time. The telemedicine program provides pathology consultation in near- or real-time, impacting at point of care and making significant contributions to patient care. The primary contributors to the department operate in small, independent laboratories with 1 or 2 pathologists, often without recourse to other consultative services.

The quality assurance data arising from our caseload continue to provide an unparalleled source of benchmarking data for programs of this type, and allow close monitoring of trends in the marketplace and within AFIP. These data are being compiled for a retrospective paper on the AFIP telepathology program, as well as subspecialty feasibility publications (telecytology, telehematology) currently in progress.

In 2000, the department provided a unique course on the imaging of pathologic lesions in a wide range of pathology subspecialties. This course was the first of its kind and addressed the most pressing problem in the area of static telepathology. A second course introduced telepathology to groups exploring its uses for the first time, including the Society for Toxicologic Pathology and the International Academy of Pathology.

In 2000, the department released the first prototypes for the AFIP online version of the *Atlas of Tumor Pathology*. This electronic version of the Institute's flagship publication provides functionality previously unseen in electronic textbooks, and was received with great enthusiasm by its editorial board and all pathologists chosen to view the prototypes. This prototype provides the same information covered in the print version, with enhanced search capabilities and links into the NLM Medline database for all references.

EDUCATION

Presentations and Seminars: Department personnel gave a total of 36.5 hours of presentations, for over 2,650 contact hours.

Courses: Department personnel participated in a total of 8 courses. The 3-day Telemedicine Course biannual workshop, Telepathology 2000, provided 150 attendee-days, and one-day seminars in Introduction to Basic Digital Imaging and Telepathology in Phoenix, Ariz and Nagoya, Japan provided 75 and 100 attendee-days, respectively.

Trainees: In 2000, the department provided 71 training days to 4 military resident pathologists and 105 to 3 nonfederal pathologists.

Educational Aids: The department provided updates or original design to 26 AFIP Web sites, provided extensive content to 2 AFIP sites, and e-commerce functionality to 2 ARP Web sites.

RESEARCH

Publications: Department staff prepared 1 book chapter, 3 refereed journal articles, 2 abstracts, 2 posters, and 4 course syllabi during 2000. Complete references are listed at the end of this report.

Projects: One active research protocol was conducted in the department during 2000: UBYG—Telepathology Consultation at the AFIP. Research was completed on a 5-year research project on coronavirus infection in ferrets, culminating in publication of results in a prestigious mainstream veterinary medical journal.

OTHER ACCOMPLISHMENTS

Collaborators:

Military/Federal:

1. NIAAA, National Institutes of Health: Cyclocreatine in Rat Hepatocarcinogenesis Model

2. NIAAA, National Institutes of Health: Modulation of Iron Metabolism in Mouse Macrophages by Cytokines

Civilian:

1. American Registry of Pathology: Online Fascicles of Tumor Pathology
2. American Telemedicine Association: Telemedicine Special Interest Working Group
3. Illumea Corporation: Feasibility Study of Real-time Pathology Consultation

International:

UICC-TPCC Collaboration Center, Berlin, FRG: WHO Second Opinion Electronic Consultation.

Interdepartmental:

1. Department of Cellular Pathology: Telecytology
2. Department of Hematopathology: Telehematology

Committees:

Manuscripts Reviewed: Members of the department reviewed 8 articles for the following professional journals:

1. Veterinary Pathology
2. Lab Animal
3. Journal of the American Veterinary Medical Association

Offices/Committee Memberships in National or International Societies:

1. Senior Vice President, C.L. Davis Foundation for the Advancement of Veterinary Pathology, BH Williams
2. Member, ACVP WWW Committee, BH Williams

New Missions:

1. AFIP Online Atlas of Tumor Pathology
2. Real-time Pathology Consultation Feasibility Study

Missions Dropped:

Lensless Scanner Evaluation

Official Trips (funding agency in parentheses):

1. March 2000, United States/Canadian Academy of Pathology, New Orleans, La, BH Williams, DR Butler (ARP)
2. October 2000, International Academy of Pathology, Nagoya, Japan, BH Williams, DR Butler.

Public Affairs Report

"AFIP has banner year in telemedicine," *AFIP LETTER*, February 2000.

Exhibit

USCAP Meeting, New Orleans, La, International Academy of Pathology, Nagoya, Japan.

PRESENTATIONS

1. March 2000: Herndon, Va, NOVA, "Basic care and diseases of the domestic ferret," BH Williams.
2. March 2000: Washington, DC, "Gross morbid anatomy of diseases of animals: macroscopic description in veterinary pathology."
3. May 2000: Rockville, Md, Telepathology 2000, "Introduction to telepathology," BH Williams.
4. May 2000: Rockville, Md, Telepathology 2000, "Legal aspects of telepathology," BH Williams.
5. May 2000: Rockville, Md, Telepathology 2000, "Network security," DR Butler.
6. June 2000: Washington, DC, AFIP Weekly Professional Staff Conference, BH Williams.
7. June 2000: Washington, DC, "Macroscopic and microscopic description in veterinary pathology," BH Williams.
8. June 2000: Phoenix, Ariz, Society for Toxicologic Pathologists, "Introduction to telepathology," BH Williams.
9. June 2000: Phoenix, Ariz, Society for Toxicologic Pathologists, "Legal aspects of

- telepathology,” BH Williams.
10. June 2000: Phoenix, Ariz, Society for Toxicologic Pathologists, “Network security,” DR Butler.
 11. August 2000: Toronto, Canada, Ferrets 2000, “What’s new and important in ferret Medicine?” BH Williams.
 12. August 2000: Washington, DC, AFIP Pathology of Laboratory Animals Course, “Pathology of the domestic ferret,” BH Williams.
 13. August 2000: Bethesda, Md, “Introduction to diagnostic pathology in laboratory medicine and research,” BH Williams.
 14. August 2000: London, England, “Macroscopic and microscopic description in veterinary pathology,” BH Williams.
 15. September 2000: Seattle, Wash, International Union Against Cancer Annual Conference, “Telepathology,” BH Williams.
 16. October 2000: Nagoya, Japan, International Academy of Pathology Congress, “AFIP telemedicine services,” BH Williams.
 17. October 2000: Nagoya, Japan, International Academy of Pathology Congress, “Introduction to digital imaging and telepathology,” BH Williams.
 18. December 2000: Amelia Island, Fla, American College of Veterinary Pathologists, “Coronavirus-associated epizootic catarrhal enteritis in ferrets,” BH Williams.

PUBLICATIONS

Journal Articles:

1. Williams BH, Kiupel M, West KH, Raymond JT, Grant CK, Glickman, LT. Retrospective study: coronavirus-associated epizootic catarrhal enteritis (ece) in ferrets (*Mustela putorius furo*): 119 cases (1993-1998). *J Am Vet Med Assoc.* 2000;217:526-530.
2. Williams BH. Therapeutics in ferrets. *Vet Clin North Am Exot Anim Pract.* 2000;3:131-153.
3. Jeong KS, Park SJ, Lee CS, Kim TW, Kim SH, Ryu SY, Williams BH, Veech RL, Lee YS. Effects of cyclocreatine in rat hepatocarcinogenesis model. *Anticancer Res.* 2000;20:1627-1633.

Abstracts:

Williams BH. Coronavirus-associated epizootic catarrhal enteritis in ferrets. American College of Veterinary Pathologists; 2000.

Poster:

Kiupel M, Williams BH, West KH, Raymond JT, Grant CK, Glickman LT. Coronavirus-associated epizootic catarrhal enteritis in ferrets. American Association of Veterinary Laboratory Diagnosticians; November 2000; Birmingham, Ala.



ADMINISTRATION

OFFICE OF THE CHIEF OF STAFF

**DIRECTORATE OF HEADQUARTERS
OPERATIONS**

**DIRECTORATE OF INFORMATION
MANAGEMENT**

DIRECTORATE OF LOGISTICS

OFFICE OF PUBLIC AFFAIRS

**DIRECTORATE OF RESOURCES
MANAGEMENT**

OFFICE OF SAFETY MANAGEMENT



Lawrence E. Shaw, LTC, MS, USA
Date of Appointment — 1 December 2000

OFFICE OF CHIEF OF STAFF FOR ADMINISTRATION

MISSION

The Office of the Chief of Staff for Administration engages in a variety of management and oversight activities:

- Oversees the administrative activities of the Armed Forces Institute of Pathology, an administrative staff of over 200 personnel in Resources Management, Information Management, Military Personnel, Safety, Civilian Personnel, Public Affairs, and Logistics:
- Provides management oversight for the Institute's \$51 million operating budget and the \$17 million construction project.
- Acts as liaison between the Institute and the executive staff of OTSG, NARMC, and WRAMC.
- Serves on the Institute's Executive and Personnel Development Committees.
- Serves as chair for the Safety and the Awards and Recognition Committees.
- Advises the Director and the Principal Deputy Director on matters pertaining to administrative efficiency and overall welfare of the Institute.

STAFF

(A) Lawrence E. Shaw, LTC, MS, USA, Chief
(D) Marjorie Jackson, COL, MS, USA
(D) John T. Wilcox, COL, MS, USA

COMMITTEES

Executive Committee
Safety Committee, Chair
Personnel Development Committee
Awards and Recognition Subcommittee, Chair

GOALS

"Supporting the Mission and Vision of the AFIP through Quality Service and Support"

- Increase the scope and quality of support provided to the AFIP.
- Increase accountability and responsiveness to the needs of the departments providing consultation, education, and research services in support of the mission of the AFIP.
- Continue to refine the table of distribution and allowances (TDA) to meet the continued personnel changes in mission requirements.
- Expand the safety program to adequately track life-safety issues arising within the AFIP.
- Develop an Information Management System that provides appropriate documentation and accountability for the consultation process.
- Provide second-to-none logistical and contract support.
- Support and improve all measures taken to publicize the many first-class diagnostic consultation, research, and educational missions at AFIP.
- Improve support for increased service compliance with the DoD-mandated DNA specimen sample collections.



Patricia A. Marshall
 LTJG, MSC, USNR
 Director, Headquarters Operations
 Chief, Military Personnel
 Date of Appointment—22 May 2000

DIRECTORATE OF HEADQUARTERS OPERATIONS

MISSION

The directorate is comprised of the Military Personnel Office and serves as Headquarters Operations. The two branches of the directorate fall directly under the Chief of Staff in order to further solidify its position as one central office responsible for all military personnel actions. The AFIP Tri-Service Military Personnel Office is the liaison between assigned military personnel and the Air Force Military Personnel Flight, the Army Military Personnel Office, and the Navy Personnel Support Detachment and provides expert personnel service, guidance, and referrals. The functions of this office include military personnel in/out processing, military performance evaluations, military leave, finance actions, medical special pays, issue of security badges, coordination for special schools or training, duty rosters, collateral duty assignments, and military awards.

STAFF

Tyrone Green, HMCS, USN, Senior Enlisted Advisor, Assistant Chief, MILPO, HQ Ops
 Rayford Jones, TSgt, USAF, NCOIC Military Personnel, Air Force Personnel Representative
 George Davis, SGT, USA, Army Personnel Representative
 Cecilia Porter, YN3, USN, Navy Personnel Representative
 Alisha Green, YN3, USN, Navy Personnel Representative
 Joseph Kirby, YNSN, USN, Navy Personnel Representative

OVERVIEW

The Military Personnel Office provides administrative support to over 800 civilians, and 175 military officer and enlisted personnel located at three different sites. The staff provides management information tools to track and monitor personnel evaluations, finance, promotions, awards, training, and medical and dental readiness.

The military personnel office is also responsible for reviewing and evaluating the activity's manpower documents, ensuring requirements are accurately stated and identified by current classification codes, and preparing change requests as directed.

Additionally, office staff supervise the interview and assignment of personnel; prepare personnel rosters and strength reports; process personnel transfers, reenlistments, separations, and retirements; and maintain liaison with Army Medical Command, Navy Personnel Command, and Air Force Medical Operations Agency.

The following new programs were established within the Division: DoD Personnel TEMPO Management and Tracking System, Electronic Personnel Security Program, and the new Awards and Recognition Program.

The focus for the most part of the year was the improvement of the Award and Recognition processes at the AFIP. The new goal of the program is to foster mission accomplishment by recognizing excellence of both military and civilian members of the AFIP, motivating them to high levels of performance and service.



Cathy N. Troutman, MAJ, MS
Director
Date of Appointment — 1 June 2000

DIRECTORATE OF INFORMATION MANAGEMENT

MISSION

The Directorate of Information Management provides information management, technology, and services to the AFIP. Under the provisions of AR 25-1, the directorate provides support for automation, visual information, telecommunication, records management, and distribution services in support of a worldwide mission of consultation, education and research. Design and implement state-of-the-art technologies to solve important military issues.

ORGANIZATION

The directorate was organized into 5 divisions and the Office of the Director:

1. Automation Management Services Division
2. Distribution Services/Mailroom
3. Records Management Division
4. Visual Information Division
5. Ash Library

STAFF

Cathy N. Troutman, MAJ, MS, Director
Albert J. Judd, Deputy Director
Bobbie J. Turner, ENS, Special Project Officer
Faith Dixon, Secretary

GOALS

- Provide an expert, responsive, top-quality infrastructure of services and technology.
- Provide the sound planning and advice Institute leaders need to manage information resources.
- Develop a user-friendly enterprise solution to provide the technology.

AUTOMATION MANAGEMENT SERVICES DIVISION (AMSD)

Hazelann Teamer, ENS, MSC, USN
Chief

MISSION

The Automation Management Services Division (AMSD) provides a comprehensive range of automation support, communications, and other information management services to the Institute. AMSD manages a local area network of more than 1,000 devices, including support to remote buildings at Forest Glen, Silver Spring, and the AFIP Annex in Rockville, Md. AMSD acquires and maintains administrative and clinical software applications for the Institute.

ORGANIZATION

The division is organized into 5 branches:

1. Customer Support/Training
2. Systems Development/Migration
3. Computer Operations
4. Network Support/Migration
5. Contract Support

STAFF

Office of the Chief

Hazelann Teamer, ENS, MSC, USNR, Chief
Rose Oscars, Telecommunication Security and Control Officer (TSCO)

Customer Support/Training

Edwanna Jones, Help Desk Manager
Jim Adams, SPC, USA
Gerald Winchester
John Simpson
Luz Velasco

Systems Development/Migration

Robert (Bob) Mills, Deputy Chief
Dante Buruss
Alec MacClintock
Barry Schell

Computer Operations

Bobby Knight, Assistant Chief
Billy Bryant
Glenda Williams

Network Support/Migration

William Rohland, Assistant Chief

Herbert Greene

Contract Support

Barry Randolph
Peter Gray
Peter Uba
Michael Richard
Annette Simpson
Samson Seyfou (part-time)
Tan Ly
Theodore Blount
Guy Kelly
Lester LaForce
Roza Podkovyrova
James Wood
Salita Vladimir

ACCOMPLISHMENTS

- AMSD greatly improved the organization's firewall protecting AFIP's servers from external threats.
- PIMS, firewall security, and improving the Intranet dominated much of AMSD's activities in 2000.
- PIMS development team added many new services to the barebones release of PIMS 1999 and tripled the amount of functions available to AFIP staff on the PIMS intranet site including many new reports. Our e-mail server and primary storage devices were vastly improved in capacity and speed.
- AMSD staff continued support of network, server, telecommunications, and PC operations.
- Migrated the Exchange server to a Server with more hard disk space and memory. Installed the intelligent drive recovery software on the tape backup servers so that the server can be brought back online with a bootable floppy disk. Configure a new router for the Scientific network in the Gillette building. Installed the updated Computerized Application Program for the Logistics department.

DISTRIBUTION SERVICES DIVISION

Lenora Hicks, Supervisor

STAFF

Lenora Hicks, Supervisor
Kevin Doster
Sharon Sanders-Davis

MISSION AND ACCOMPLISHMENTS

The mailroom processes approximately 100,000 pieces of mail annually. The staff works with installation post office personnel to ensure the timely delivery of incoming and outgoing mail. The mailroom also takes delivery of packages other than case materials from private courier services.

RECORDS MANAGEMENT DIVISION

Bonnie Short, Records Management Officer

MISSION

The Records Management Division supports the staff of the AFIP with forms, publications, printing, training, consultation, and archiving under the records management program. The office ensures that all Institute forms, directives, and media are current, while keeping up with the latest technology to optimize time and economy and enhance the "paperless office."

ACCOMPLISHMENTS

The office is responsible for the Institute's digital imaging copier program. Subsequent developments to the program included the replacement of many of the centrally located copiers, a new lease agreement, and an improved maintenance service agreement for owned copiers. The office continued supporting Freedom of Information (ACT) FOIA and Privacy Act (PA) functions. Presently, a conversion project is being undertaken to convert files to CD for easier accessibility of records on the computer.

VISUAL INFORMATION DIVISION

Joseph Durick, Jr. Chief

MISSION

The Visual Information Division provides photography, illustrations, exhibit production and illustration archiving services to the Institute.

ORGANIZATION

The Division is organized into 5 branches and the Office of the Chief:

1. Photography Branch—Robin-Anne Ferris
2. Photography Branch (Lab)—Kenneth J. Vrtacnik
3. Electronic Multimedia Imaging Center—Douglas Landry
4. Exhibit Production and Digital Media Illustration Branch—Larry W. Claiborne
5. Medical Illustration Services (MIS) Library—Thomas Gaskins, Acting Chief

STAFF

Office of the Chief

Joseph Durick, Jr., Chief
Bobby Meeks

Photography Branch (Photo)

Robin-Anne Ferris, Lead Medical Photographer
Anthony Shirley
Andy Morataya

Photography Branch (Lab)

Kenneth J. Vrtacnik, Chief
Aubrey Chester
Robert Edwards
Leonard Fitzgerald
Beverly (BJ) Jones
Seth B. Jones
Sharon Kelley
Steve Kruger
Thomas Lynn
Vincent Neaz
Julie Toohey

Electronic Multimedia Imaging Center

Douglas Landry, Chief, Electronic Multimedia Imaging Center
TSgt. Mike Smith
SrA Sheryl Hollis

Exhibit Production & Digital Media Illustration Branch

Larry Claiborne, Chief
Pauline Dixon
Harold Felder
Alan Giese
William McLain
Erin Oliphint, SrA, USAF
Roy Stevens, TSgt, USAF
Venetia Valiga
Cassandra Wood-Gilchrist

Medical Illustration Services Library (MIS)

Thomas Gaskins, Acting Chief

PHOTOGRAPHY BRANCHES (PHOTO AND LAB)

MISSION

The Photography Branches provide all phases of medical photography for AFIP staff and the medical services of the Armed Forces, other federal agencies and authorized civilian medical institutions and individuals. The branches provide training in medical and scientific photography and personnel for technical assistance in investigative studies of pathological and medical research and clinical problems. The branches provide photographic laboratory services for the processing of all black and white and color photographic illustrations.

ACCOMPLISHMENTS

Requests for photographic services remained approximately the same in 2000. Photographic processing was a total of 609,892 items. About 20% of that production represented services offered to WRAMC customers. The Branch similarly upgraded its equipment for improved service and has expanded digital photographic capabilities. During FY2000 the branch has extended its abilities to produce a much wider variety of digital photographic products

ELECTRONIC MULTIMEDIA IMAGING CENTER

MISSION

The Electronic Multimedia Imaging Center produces medical art, illustrations, poster sessions, layout design and camera-ready copy for brochures, educational syllabi and other publications and requested general artwork. The branch also provides digital imaging in all forms of media and illustration and training in all applications of digital imaging to the AFIP professional staff.

ACCOMPLISHMENTS

In FY2000, 88 poster sessions were completed. This is up approximately 10% from the previous year. In addition, the Branch produced 800 – 2x2 slides for presentation, 4000 miscellaneous digital graphic media items and nine education syllabi. The production of educational syllabi was greatly increased during FY2000.

EXHIBIT PRODUCTION BRANCH (EPD)

MISSION

EPD provided management services for portable and custom made exhibits. These services included; design/creation, storage, maintenance, shipping and showing services for traveling medical/scientific exhibits to conventions, symposiums and exhibitions nationally and internationally. In the year 2000, we were responsible for managing 140 conferences. EPD provided continued exhibit and poster session support to the Institute, the Pentagon, OTSG, and the Tri-Service Agencies of DOD, as well as Walter Reed Army Medical Center. Those services were also provided to our National Museum of Health and Medicine. EPD's engraving and carpentry service projects for the Institute and WRAMC break down into the following itemizations:

- Engraving
- Carpentry/Exhibits
- Lamination
- Display Windows
- Custom Framing
- Museum Exhibits

ACCOMPLISHMENTS

Date(s)	Associations	#Booths	Sites	Agencies
17-19 JAN	NARMC	2	DC	NARMC/WRAMC
20-24 JAN	Reserved Officers Assoc.	6	VA	CHPPM NARMC MEDCOM
23-25 JAN	Tricare Management Conf.	11	DC	4 Agencies
7-11 MAR	US & Canadian Conference	3	TN	AFIP-ARP
20-24 MAR	SOT	1	LA	AFIP-TPA
30-31 MAR	CMSA	1	DC	AFIP-AO
14-19 APR	Uniformed Services Academy	1	GA	AFIP-CRI
18-19 APR	Sr. Leadership Conference	5	TX	CHPPM MEDCOM PASBA
9-10 MAY	Tricare Conference Central	1	NV	DoD/VA
10-14 MAY	AMOPS	1	CA	CHPPM
14-19 MAY	Sr. Enlisted Conference	3	TX	MEDCOM
15-16 MAY	Tricare – Mid Atlantic	2	TX	CHPPM
16-17 MAY	AEROSPACE	2	TX	NAMRL
16-17 MAY	Real World Air Conference	2	GA	CHPPM
20-25 MAY	Armor Conference	5	KY	CHPPM DoD/VA MEDCOM
21-24 MAY	DDW 2000 Conference	3	CA	ARP
22-24 MAY	AIHCE	3	FL	CHPPM DOEHRS
2-15 JUN	Infantry Conference	5	GA	CHPPM MEDCOM
16-17 JUN	NEHA	1	CO	CHPPM
21-23 JUN	American Optometric Assoc.	1	MD	CHPPM
23-28 JUN	STP	1	AZ	CHPPM
1-6 JUL	American Soc. Photobiology	2	CA	CHPPM
16-19 JUL	ICEID	1	GA	AFIP-PAO
18-19 JUL	Tricare Region III	1	NC	DoD/VA
25 JUL	Regimental Week	3	VA	MEDCOM
6-11 AUG	Forced Health Protection	5	MD	CHPPM MEDCOM
15-17 AUG	Tricare West	1	WA	DoD/VA
28-30 AUG	AMEDD 2000	1	TX	DoD/VA
11-14 SEP	National Guard Conference	4	NJ	MEDCOM CHPPM
14-17 OCT	AUSA	5	DC	MEDCOM TRICARE CHPPM
16-20 OCT	IAP – Nagoya Japan	4	JAP	AFIP-ARP
13-17 NOV	Recruitment Week	3	TX	MEDCOM
12-15 NOV	AMSUS	46	NV	16 Agencies
29NOV-1DEC	RSNA	2	IL	TATRC AFIP-RAD
3-5 DEC	ACVP	1	FL	AFIP-RTPA
13-14 DEC	DERPC	2	LA	CHPPM

Shop Services to the Institute, Museum, Pentagon, OTSG and WRAMC were as follows:

	AFIP _____	WRAMC ___	DOD (OTSG/Pentagon)
1. Engraving	147	60	120
2. Construction	22 (projects)		
3. Framing (Custom)	38		
4. Museum Exhibits	4 (custom)	3 (Custom)	
5. Exhibits	4	6	
6. Laminating	55	25	
7. Show Services	142		
8. Table Top Exhibits	3(new)		

EPD collaborated with DMIS on 15 newly created design themes for exhibits. DMIS (Digital Media Illustration Services) and Exhibit Production Branch were reorganized as one unit in FY2000.

DIGITAL MEDIA ILLUSTRATION SERVICES (DMIS)

MISSION

The Digital Media and Illustrations Branch produces medical art, illustrations, poster sessions, exhibit design and camera-ready copy for brochures, educational syllabi, and other publications, and requested general art work. The branch also provides digital imaging in all forms of media and illustration, and training in all applications of digital imaging to the AFIP professional staff.

ACCOMPLISHMENTS

DMIS produced 7,780 units of work in FY2000. This was a 32% increase over the preceding year. In addition, the branch produced 1000 slides for presentations; 850 poster sessions and 5,930 miscellaneous art projects.

1. A - Poster Boards—300
2. A - Posters—313
3. Name Plates—51
4. Frame/Matt—118
5. Lamination—248
6. General Art—800
7. Medical Illustration—16
8. Slides - Scan/Print—17
9. A - Poster Sessions—237
10. Exhibits—9
11. Brochures—1,300
12. Invitations—400
13. Color Copies—896
14. Certificates—1,500
15. Flyers—1,570
16. Windows—5

MEDICAL ILLUSTRATION SERVICES LIBRARY (MIS)

MISSION

The Medical illustration Services Library (MIS) maintains a permanent file of medical photographic materials for the Army, Air Force, VA, Navy, Civilian medical institutions and physicians and the AFIP Staff. The Library is responsible for receiving, accessioning and coding all medical photographic materials as well as processing work requests for the reproduction of all

materials for the library file.

ACCOMPLISHMENTS

The MIS Library received 4,185 new medical illustrations for recording and filing, retrieved 808 illustrations from files for requestors, coded 62 photographic cases, dia-typed 22,158 33mm slides, processed 12 work orders for outside requestors and provided MIS numbers for 75 new photographic work orders. After many years of dedicated service, the MIS Library began the process of preparing it's collection for storage. The MIS Library was transferred in June 2000, to the Center for Advanced Medical Education Division.

ASH LIBRARY

Ruth Li, Librarian

STAFF

Ruth Li, Librarian
Judith Paige
Daniel Mulholland

Contract Support

Prem Kalra

MISSION

The Ash Library provides public and technical library services to the Institute. Its collection includes over 5,800 books, approximately 500 journals, and a study set collection of over 50,000 items.

ACCOMPLISHMENTS

The Ash Library was moved to the Medical Education Center under the Center for Advanced Pathology this year. The automation of the Ash Library continues. Through the use of four new computers, and the Voyager software, members are able to get information faster.



William McCarthy, MAJ, MS, USA
Director
Date of Appointment – 28 August 2000

DIRECTORATE OF LOGISTICS

MISSION

The Directorate of Logistics integrates long-range and daily sustainment efforts with the AFIP to provide on-time materials and services. Sustainment efforts include equipment acquisition, receipt, and delivery; supply requisition processing; property accountability; facility maintenance and repair; housekeeping; space management; hazardous substance management services; construction project management; biomedical maintenance operations; and contract management encompassing the American Registry of Pathology, Franchise Business Activity (Star Digital), J&J Maintenance, and B&B Housekeeping contracts. The directorate strives to provide flexible, responsive, economical, and attainable supplies, equipment, and services to enhance and support the array of missions and operations at the AFIP.

ORGANIZATION

The directorate is organized into 5 major divisions, including the Office of the Director:

- Office of the Director of Logistics
- Facilities and Services Division
- Materiel Acquisition Division
- Materiel Receiving and Distribution Division
- Property Management Division

The directorate is also organized into 4 special staff functional areas organized under the Director and Deputy Director:

- Space Management
- Engineering and Renewal
- Logistics Analyst
- Hazardous Materials Management

STAFF

- (A) William McCarthy, MAJ, MS, USA, Director
- (A) Lonnie Winley, Deputy Director, Chief Property Management Division
- Viola Fugate-Watkins, SGT, USA, DOL NCOIC, Acting Chief of Materiel Division
- Sonia Cross, Logistics Analyst
- Ted Gross, Mechanical Engineer and Chief Renewal Project
- Ted Polk, Space Manager
- (A) Parks Wilson, Administrator for Transition Planning

Facilities and Services Division:

- Cornelius L. Reeder, Chief and Facility Manager
- Amaryllis B. Olasehinde, ENS, USN, Chief Facility Management Branch
- Allen Harris, Quality Assurance/Quality Control Manager
- Alan Terpolilli, Project Manager
- Rosalind Vines, DLMSS Manager
- Phyllis Nicholson, Purchasing Agent
- Willie Poole, Parts & Tools Attendant
- Rick Phillips, Maintenance Supervisor

- (A) George Williams, Chief Biomedical Maintenance
Paul Komula, SGT, USA, Biomedical Maintenance Technician
- (A) Michael Patnode, SPC, USA, Biomedical Maintenance Technician
Al Bradley, Lead Engineer
Mark Waddy, Maintenance Mechanic
Raj Jeevaraj, Carpenter
Francis Foreman, Plumber
Larry Harris, HVAC Mechanic
John Massey, Maintenance Mechanic
Gary Brown, Executive Housekeeper
Rey Reyes, Project Manager
Maria O. Reyes, Supervisor
Esther Aleman, Housekeeper
Rosa Amaya, Housekeeper
Imorou Brimah, Housekeeper
Gloria Buruca, Housekeeper
Fredy Fuentes, Housekeeper
Maria D. Mejia, Housekeeper
Bladimir Plaitez, Housekeeper
Idalia Reyes, Housekeeper
Isabel Reyes, Housekeeper
Silvia Reyes, Housekeeper
Sonia Salamanca, Housekeeper
Eleno Sibrian, Housekeeper
Gloria Viera, Housekeeper
Edward Dantley, Housekeeper
Jose Romero, Housekeeper
Denis Rosendo, Housekeeper
Sandra Vasquez, Housekeeper
Blanca Abarca, Housekeeper
Jose Martinez, Laborer
Jose Guevara, Laborer

Materiel Acquisition Division:

- Jennifer Ferguson, CPT, MS, USA, Chief and COR, ARP Contract
- Viola Fugate-Watkins, SGT, USA, Acting Chief
- (A) Alberto Quinones, SGT, USA, NCOIC/Supply Technician
Ricardo Montalvo, SGT, USA, NCOIC/Supply Technician
Jerome Thorpe, Lead Supply Technician
Alonza Snipes, Purchasing Agent/IMPAC Coordinator
Selena Cirino, SPC, USA, Supply Technician
Chastain Black, SPC, USA, Supply Technician
Debbie Kohnhorst, Project Support Clerk

Materiel Receiving and Distribution Division:

- Willie Vaughn, Chief
- Dierdra Carey, Inventory Technician
- Gary Dangerfield, Driver/Materiel Handler
- Leroy Nelson, Materiel Handler
- Mitchel Feaster, Materiel Handler

Property Management Division:

- Lonnie Winley, Chief
- Rudolph Wynn, Property Book Officer
- Gordon Whitsitt, MEDCASE Manager
- Ty Lassiter, Supply Technician
- Luis Christeen Baker, Supply Technician
- Luis Flores, SPC, USA, Supply Specialist

FACILITIES AND SERVICES DIVISION

Mr. Cornelius L. Reeder, Jr, facility manager, is responsible to the director of Logistics for facility management and maintenance for approximately 600,000 sq ft of research and administrative buildings, and for technical and administrative management of Facility Maintenance, Biomedical Maintenance, Environmental Services, Services Procurement, and Project Management Branches. Served as the Institute's facilities safety officer and is responsible for adherence to Life Safety Codes and construction safety programs. Served as senior physical security manager for the Institute. Assures clear and definitive intercommunication and intracommunication between the Institute's activities and activities subordinate to the division relative to facilities and biomedical issues, procedures, and reporting. Established and implemented operating procedures and policies in accordance with established objectives, schedules, and program funds. Managed sustainment program through facility assessment, major repair program, Medical Military Construction (Medical MILCON) program, technical assistance program, monitoring facility management of research facilities and continuous communication with the United States Army Medical Command (MEDCOM). Provided daily guidance for the operation, maintenance, and repairs, including heating, ventilation, and air conditioning systems; fire protection systems; safety advice; and electrical and communication systems for all facilities within the AFIP. Provided program to ensure performance of a high quality of maintenance and service actions. Implements, documents, and assesses programs to ensure continued quality of services provided. Exercised discretionary authority to approve the allocation and distribution of UMB K and UMB L funds in the AFIP facility budget. Coordinates with US Army Medical Command (MEDCOM), US Army Health Facility Planning Agency (HFPA), US Corps of Engineers District and Headquarters (COE-HQ), and Walter Reed Army Medical Center (WRAMC) issues relating to AFIP's facilities.

Maintenance Budget:

1. \$1.7 million Facility O&M budget
2. \$1.8K Credit Card
3. \$10 million Renewal Projects
4. \$2.3 million Repair and Renovation Projects

Accomplishments:

1. Increase of 10% in annual O&M budget.
2. Award of \$2 million ESPC Contract.
3. Award of \$10 million for Life Safety Upgrade Project.
4. 100% successful transition to Y2K without failure to facility of biomedical system.
5. Developed and initiated a Quality Assurance (QA) program.
6. Performed 568 mechanical room inspections.
7. Averaged 15 work request weekly generated from (QA) inspections.
8. Developed a spreadsheet documenting QA inspections and findings on the facilities intranet system.
9. Conducted 90 telephone surveys and site visits to gather information on customer satisfaction.
10. Updated Real Property Equipment Inventory and the equipment identification and documentation list.
11. Developed equipment histories to document reoccurring or specialized repairs.
12. Provided contract management to ensure contractor's obligations are fulfilled.
13. Provided project management in upgrade access for ADA requirements, removal of abandoned Halon fire extinguishing system.
14. Provided project management in sewage ejector rewiring to the emergency power system.
15. Initiated predictive maintenance-infrared inspection program.
16. Assumed responsibilities of information assurance officer (IAO) for Facilities and Services Division.
17. Developed protocols and mandates concerning in-house maintenance system.
18. Created signage to use on equipment during PM procedures to aid in safety and efficiency of work.

19. Published shutdown/startup procedure postings to alleviate uncertainty during maintenance procedures.
20. Met regularly with in-house maintenance supervisor on QA report results providing information for continuous quality improvement measures.
21. 100% increase in correct work request documentation.
22. Substantial drop in recall work requests.

Facility Maintenance Branch: During the millennial year, the Facilities and Services Branch set out to serve customers in an effective and efficient manner, and to provide our staff with the education and training to effect such an outcome. The primary mission was to provide sustained scheduled repair and preventive maintenance to facilities housing the Institute. Additionally, the branch provided and managed the Command physical security program and key control program. To accomplish the mission requirements, the chief increased the number of staff and provided weekly training. Areas of training included lockout/tagout, protection against falls, lab safety, Life Safety Code training, fire extinguisher training, and pneumatic controls.

Accomplishments:

1. Tracked and documented performance of 100% of the required scheduled services for the Institute's Real Property.
2. 2,354 in-house work requests were received and completed.
3. Trained 11 technicians at HVAC controls training.
4. Daily preventive maintenance inspections were expanded to include a review of the building's automated energy management system.
5. Pre- and post utility-outage meetings were initiated. The 5 "Ws" and the impact are defined prior to utility interruptions.
6. Overhauled steam stations in Bldgs. 53 and 54.
7. Replaced defective gate valves and added zone valves to hot water supply lines in the North Wing of Bldg. 54.
8. Past files have been converted to disc for historical filing.
9. Transition of the chilled water supply from WRAMC to an energy-saving project.
10. Museum front landscaping.
11. Trane chiller rebuilding.
12. 2 emergency DPW service orders were received and completed within 1 day of the call.
13. 3 life safety work requests were completed within 2 days of the request.
14. Installation of moisture eliminators in B093.
15. Installation of fire-rated doors and access control system for 5th floor.
16. ADA revisions to parking lot and sidewalks.
17. Extended access control system for the Museum.
18. Repaired HVAC and control systems at Bldgs. 509 and 510.
19. Removed abandoned fire alarm system.
20. Installed domestic water pumps.
21. Installed new ice machines, vacuum pumps for South Wing laboratories, and a secondary domestic water pump for the North Wing.
22. 3 HVAC units were returned to service after 5 years of nonuse.
23. Multiple safety enhancements: painted mechanical room entry ramps with a nonslip coating; fabricated and installed fan guards on motor and pulley assemblies; and replaced many of the older wooden ladders with fiberglass.
24. Installed in-line booster fans for G095 supply airshafts.
25. Installed zone valves for domestic water lines in the North Wing.
26. Demolished and removed abandoned distillers and storage tanks on the 5th floor.
27. Exceptional rating on annual physical security inspection (PSI).

Facilities Projects Branch: Provided total project management support for renewal, site preparation for new equipment, and renovation projects. Provided professional engineering support

to the Facility Maintenance Branch in support of facility maintenance services. Acted as liaison between project contractors, the contracting agency, and the requesting activity. During 2000, design and construction contracts totaling over \$17 million were either completed or awarded. Planning and design for 2001 is underway. Construction projects totaling over \$5.2 million were completed during the year: recovering lost space, correcting deficiencies, and providing renovated facilities. The South Wing mechanical upgrade was completed, allowing immediate occupancy of the 5th and basement floors and fit-up design for the 2nd floor. The Hyper/Hypobaric Chamber project was completed, freeing up space. The Director's project and landscaping of the Museum enhanced high-profile areas while correcting known facility deficiencies. The new North Wing BL3 laboratory was also completed and occupied. Replacement of the AFIP chiller plant began with the award of an energy-saving contract. The project will be completed by summer 2001, and will provide AFIP the capacity for stand-alone operation. This capability is crucial, as Building 54 will be shed from the central plant by 2005.

Environmental issues were addressed by completion of an automated hazardous materials survey, \$300,000 in asbestos abatement, and award of a contract for preparation of an AFIP Asbestos Operation and Maintenance Plan. The plan is scheduled for completion by spring 2001.

The Renewal Program, a multiyear comprehensive revitalization of AFIP facilities, began in earnest during 2000, with an award of over \$10 million in construction contracts for the Life Safety Upgrade, Transition Space, and Time and Materials projects: a building fire protection system; replacement of the emergency generators; repairs to fire-rated barriers; renovations of offices, corridors, and support space of the South Wing; and recovery of space from abandoned equipment. Additionally, design awards totaling \$835K were made for comprehensive renovation of the 5th floor, repair of all mechanical room infrastructure, and structural repair of damage caused by the South Wing terrace leaks. These designs will form the basis of the 2001 construction program.

Accomplishments:

1. South Wing Mechanical Upgrade (\$3,000K)
2. Asbestos Abatement, Basement Mechanical Rooms (\$292K)
3. Hyper/Hypobaric Chambers (\$304K)
4. Director's Project (\$150K)
5. BL3 New Laboratory (\$1,100K)
6. Museum Landscaping (\$190K)
7. Trane Chiller Rebuild (\$140K)
8. Safety Office (\$50K)
9. Replace Switch-gear Batteries (\$35K)
10. Renovation of G110 and G119 [Vet Path] (\$17K)

On-Going Projects:

Life Safety Upgrade, Renewal (\$5,895K)

1. Transition Space Renewal (\$2,776K)
2. Time & Materials Renewal (\$361K)
3. South Wing Terrace Design (\$60K)
4. 5th Floor Renewal Design (\$410K)
5. HVAC Renewal Design (\$425K)
6. Chiller Plant Replacement (\$1,900K)

Housekeeping Branch: Provided clinical/laboratory grade routine, event, emergency, and on-call custodial/snow removal services to the Armed Forces Institute of Pathology, National Museum of Health and Medicine, Radiology Pathology classroom, and pathological repositories.

Accomplishments:

1. Prepared and negotiated custodial/snow removal contract.
2. Established an evening shift to provide daily floor (VCT) maintenance.
3. Established intense cleaning protocols to proactively minimize the possibility of "sick

- building syndrome.”
4. Responded to 3 floods (afterhours).
 5. Project manager inspects one fifth of AFIP daily. 3,721 QA inspections in 2000.
 6. Reduced response time to requests for routine services by implementing a multilevel customer service team. Responses were made within 60 minutes from time of call.
 7. Implemented an emergency action team (EAT) to respond quickly during inclement weather, to clear sidewalks, entranceways, stairs, and wheelchair ramps of snow and ice prior to 7 a.m.
 8. Purchased and implemented specially designed canister vacuums to “capture” dirt and dust.
 9. Managed the Chief of Staff’s “Clear the Hallway of Clutter” Project.
 10. 531 general maintenance requests to the facility maintenance system (SERVREQ).
 11. Replaced 2,700 damaged ceiling tiles.
 12. Instituted a daily light bulb replacement program.
 13. Performed cleaning services in support of the 2000 Ash Lecture.
 14. Performed 27 postconstruction cleanings.
 15. Participated in the WRAMC HSMS project.
 16. Installed handsfree paper towel dispensers throughout the building.
 17. Housekeeping e-mail is monitored continuously for customer requests.
 18. Implemented a new project on maintaining the grounds.

Services Branch:

Procurement: Provided procurement processing for maintenance and related services for the Institute. Service was provided in a timely, professional, and courteous manner. Services supplied included processing and follow-up on Purchase Request and Commitment (DA Form 3953) of routine, emergency, and renewal services; construction; repairs and maintenance; rentals and leases; and lectures and training. Acted as liaison between the vendor, DFAS, and the AFIP customer. Provided information regarding payments and status on requests (telephonically or via e-mail). 95% of the receiving reports were processed to DFAS on or ahead of the scheduled date.

Accomplishments:

1. 239 Purchase Requests were submitted and processed.
2. Instituted a tracking system to account for each request as it was processed to MEDCOM.
3. 471 Receiving Reports (DD Form 250) were prepared and sent to Defense Finance & Accounting Section, (DFAS), located in San Antonio, Texas.
4. Provided quarterly classes to Institute staff.
5. Implemented the use of CAPSW to reduce delinquent bills.

Parts/Credit Card: Managed 243 lines of stocked parts valued at approximately \$257K in support of the Biomedical and Facility Maintenance Branches. Managed parts and services budget in excess of \$150K. Procured maintenance services and repair parts using the Government Impact Credit Card. Managed an office supply budget of \$12K. Acted as TMDE support coordinator for the Institute. Served as key control custodian and hand receipt manager.

Accomplishments:

1. 430 credit card transactions valued at over \$150K .
2. Procurement savings in excess of \$12K, resulting from cost-negotiating.
3. Ensured 100% accountability for division’s inventory of tools and test equipment.
4. Ensured 100% accountability of stocked parts.
5. Ensured 100% calibration of Institute’s TMDE, within appropriate time frames.
6. Attained an exceptional rating from physical security inspector during the annual inspection.

Emergency Events:

1. November 2000: Mechanical Room #4094. A pipe burst over a weekend, and staff arrived to make repairs and clean up.

2. May 2000: Power outage. Emergency power generators were energized.
3. August 2000: The South Wing main switch-gear was disabled by a car accident on a weekend.
4. May 2000: Flooding in B048 Mechanical Room from sewage ejectors.
5. December 2000: Christmas Eve frozen water line. Flood damage to 2nd, 3rd, and 4th floors.
6. November 2000: Café patio drain blockage. 1st floor flood.

Biomedical Maintenance Branch: Provided periodic scheduled maintenance, unscheduled repairs, technical inspections, and site surveys for the MEDCASE and newly purchased laboratory equipment throughout the Institute.

Accomplishments:

1. Accomplished 98% of all preventive maintenance on 6,000 pieces of laboratory equipment, exceeding MEDCOM's baseline annual goal of 95%. These services required over 3,409 annual hours.
2. Reduced the cost of the Cellular Pathology Department move by \$30,000. This was accomplished by providing special in-house services to deinstall and reinstall most of the laboratory equipment, resulting in minimum disruption and downtime of laboratory research.
3. The branch improved services by opening a new satellite shop at the Gillette building in Rockville. On-site repairs are provided biweekly.
4. Performed all on-site technical inspections of equipment installed in the new Biological Safety Level Three (BL3) laboratory located on the 5th floor.
5. The Biomedical Maintenance Shop relocated to B092 in Building 54, providing more shop and administrative space.
6. Improved the turn-in procedure for Logistics, to facilitate disposal of equipment to Defense Reutilization Material Office (DRMO). Performed technical inspections for turn-in of over 900 items.
7. Performed 17 site survey evaluations on laboratory equipment for facilities project managers, resulting in timely installations of new equipment.
8. Provided enhanced services to the Department of Medical Education by performing additional preventive maintenance on over 500 microscopes.
9. Opened a satellite shop at the Gillette building in Rockville.

MATERIEL ACQUISITION DIVISION

The Materiel Acquisition Division provides customer service to the AFIP in the following areas:

1. The AFIP Credit Card Program, established in 1996, has significantly reduced the number of small purchases forwarded to the WRAMC Directorate of Contracting.
2. The Credit Card Program has decreased the lead-time for receipt of supplies.
3. \$2.6 million worth of expendable supplies were bought with the credit card during 2000.
4. Total local expenditures using the local purchase process exceeded \$3 million.
5. Prime Vendor Contract has streamlined all laboratory and research supply procurements, with a single vendor providing supplies in an expedient manner to the customer at a much lower cost.
6. Prime Vendor Contract for laboratory and research supplies, implemented in 1997, expanded to include additional departments.
7. Prime Vendor expenditures reached \$2 million for 2000.
8. Umbrella contract for American Registry of Pathology collaborative enterprise services completed its fourth option year of the contract.
9. 26 new requirements were added to the ARP contract.
10. Over 180 contract positions supported various collaborative enterprises in 2000.
11. Total cost of contracted services was approximately \$11.6 million.

12. A new contract with ARP to began in 2000. Emphasis is on cost savings and adherence to legal and regulatory guidance.

PROPERTY MANAGEMENT DIVISION

The Property Management Division worked to maintain 100% accountability of all property. In 2000, over \$1.7 million worth of new equipment was received. Excess equipment turn-ins totaled over \$4 million. Report of Surveys were initiated for missing equipment were over \$69,158. All old open surveys were closed out this year. Ninety-one hand receipts have been established and are current in accordance with regulatory property accounting procedures. This year, the hand receipt managers began conducting the annual inventory update with each hand receipt holder. The Institute's formal property book now exceeds \$50 million. Under the Medical Care Equipment Program (MEDCASE), three requirements for fiscal year 2000 were ordered and received, totaling \$605,594. Submitted into the fiscal year 2001 MEDCASE program this year were eight requirements receiving 1AC approval from the MEDCOM for \$1,655,397. The goals for the year 2001 are to submit more MEDCASE program requirements into the MEDCASE program and reestablish the CEEP program. Biomedical Maintenance was merged with Property Management. Our future goal is to work together to provide the best customer service to all of AFIP.

MATERIEL RECEIVING AND DISTRIBUTION DIVISION

The division provided support in receiving, storing, distribution, and disposal of supplies and equipment.

Accomplishments:

1. Reduced inventory of the Office Supply Store.
2. Received new equipment and supplies worth \$5.5 million.
3. Warehouse continued receiving and disposing of unserviceable and excess equipment.
4. Division supports local schools that request technology and automation equipment with the AFIP serviceable computer and automation turn-ins, according to Title 3, Presidential Executive Order 12821 of November 16, 1992, Improving Mathematics and Science Education in Support of the National Education Goals.
5. Implemented the Hazardous Substance Management System. Two personnel have been trained for this program.
6. Managed the contract for Corporate Express Office Supply System.
7. Processed and delivered to the customer door-to-door over 300 line items daily.



Christopher C. Kelly
Public Affairs Director
Date of Appointment – 13 January 1991

OFFICE OF PUBLIC AFFAIRS

MISSION

The Office of Public Affairs provides a full range of external and internal communications programs in support of AFIP's essential military and civilian health care mission. The office provides timely information about AFIP's medical expertise in diagnostic consultation, education, and research to the Department of Defense and the worldwide civilian medical community. We accomplish this through the *AFIP LETTER* (distributed to over 18,000 pathologists worldwide) and a variety of proactive media relations programs; by arranging and conducting briefings for national and foreign dignitaries; by coordinating numerous special projects and events; and through proactive community relations programs.

ORGANIZATION

The office consists of a public affairs director, public affairs specialist, and interns.

STAFF

Christopher C. Kelly, MMgmt, BA, Public Affairs Director
(D) Ann C. Ham, BS, Public Affairs Specialist
(D) Laura Torma, intern
(D) Naila Smith, intern

DEPLOYMENTS

1. January 2000, Washington, DC, TRICARE Conference 2000, designed, produced and manned AFIP exhibit – AC Ham
2. March 2000, New Orleans, La, US and Canadian Academy of Pathology, staffed the AFIP Exhibit – CC Kelly
3. March 2000, Washington, DC, Case Management Society of America Conference, manned AFIP Exhibit – AC Ham
4. July 2000, Atlanta, Ga, International Conference on Emerging Infectious Diseases, manned AFIP exhibit – AC Ham
5. November 2000, Las Vegas, Nev, Association of Military Surgeons of the US, manned AFIP exhibit – AC Ham.

EDUCATION

Presentations and Seminars: Office staff gave two outside presentations representing 80 man-hours in 2000. Dates and titles are listed at the end of this report.

OTHER ACCOMPLISHMENTS

1. Oversaw production of the bimonthly *AFIP LETTER*, mailed to over 18,000 pathologists worldwide, including over 5,000 pathologists from Spanish-speaking nations.
2. Prepared exhibits for:
 - TRICARE Conference 2000
 - US and Canadian Academy of Pathology
 - Case Management Society of America Conference
 - International Conference on Emerging Infectious Diseases

— Association of Military Surgeons of the US

Committees:

CC Kelly:

1. Chair, 2000 Ash Lecture Planning Committee
2. Chair, 2000 AFIP Organization Day Program
3. Chair, 2000 AFIP Combined Federal Campaign

Public Affairs Reports:

January:

Coordinated request by Lisa Crowley, Irish Public Radio, for a live radio interview with Dr. Jeff Taubenberger on 1918 Spanish flu. Interview took place on January 17.

Provided referral to CDC for a producer from Discovery News wishing to tape laboratory work related to 1918 Spanish flu.

WRC-TV, (NBC affiliate), Washington, DC, coordinated interview with Dr. Bill Rodriguez on recovery of remains of a local child missing for over 14 years.

Coordinated response with FBI regarding case of a body found at Ft. Sill, Oklahoma, in reply to request for comment from a Lawton, Oklahoma newspaper reporter.

Coordinated response with Department of Justice to a request from CBS News regarding status of pathology materials related to the murder case of Jeffrey MacDonald.

Provided response to a reporter from the Waco (Texas) *Tribune-Herald* regarding status of tissue specimens from the Branch Dividian case, with potential for DNA testing of specimens being requested by the Danforth Commission.

Provided information to a *Washington Post* reporter who wanted to know how the Army identifies its war dead. Focused on DNA testing and specimen repository. Information was to be utilized by a foreign correspondent reporting on the Russian war in Chechnya and why Russians were unable to positively identify their deceased soldiers.

Received request from Odyssey Productions to film DNA research on remains of Samuel Washington, brother of George Washington. Coordinated filming request.

February:

Provided historic photos of 1918 Spanish flu victims to a Seattle, Washington area public health department.

Provided subject-matter comments on flu research to producer Elmar Bartimae of *Welt der Wunder* in Germany.

Coordinated logistics for interview with C-Span's *Washington Journal* by Dr. Jeff Taubenberger on February 28 related to Gina Kolato's book on the 1918 flu.

Provided corrected information to reporter Darryl Kelley of the *Los Angeles Times* regarding AFIP involvement in the DNA testing of specimens from the Alaska Air crash.

Coordinated request for background information on difficulties/challenges faced in aircraft accident identifications from Surya Nelson, *Los Angeles Times*.

Provided AFIP expert commentary from Dr. Mitchell Holland regarding the science of DNA testing in response to questions from a *Virginia Pilot* (Norfolk) reporter about mitochondrial (mt) DNA in a criminal case.

Provided an outside expert to give commentary on aircraft accident investigations in response to a request from a Seattle (WA) *Post-Intelligencer* reporter. Included commentary on DNA identification work related to the Alaska Air crash.

Provided information to an Albany (NY) newspaper reporter on the use of DNA databanks in the military.

Provided information to a CNN producer regarding military working dogs that did not return from Vietnam. Producer sought policy letters. Coordinated with AFIP Veterinary Pathology Department and referred producer to Army Surgeon General's office for official copies.

Assisted a Radio America Network producer seeking an outside expert to talk on drug-resistant bacteria. Referred to Walter Reed Army Institute of Research.

Provided information to a Scripps-Howard news service reporter regarding methods used to confirm identities on four sets of remains from the Korean War buried in the Cemetery of the Pacific, Hawaii.

Provided resource materials to a producer from Hoggard Films for an upcoming Discovery Channel story on military medicine, including information about body armor.

Provided initial coordination for ARTE (French/German TV) seeking interview with Dr. Mitchell Holland, AFDIL, on testing of military unknowns.

Provided coordination for Ivanhoe Broadcast News request to interview an AFIP staff member on protection against hair loss. Eventually referred inquirer to another outside source.

Referred a freelance writer from Valrico, Florida to Army SG regarding interest in anthrax research, and offered to provide information regarding Gulf War illness.

March:

Provided information to a Lowell, Mass *Sun* reporter regarding DNA technology.

Provided a subject-matter expert to discuss AFIP's database of MIA identifications to a Brockton, Mass *Enterprise* reporter.

Provided extensive resource material to Janet Shagam, a writer from Albuquerque, New Mexico who was writing a textbook on microbiology. Assisted her with slides and photos of various tropical diseases taken from our archives.

Provided information to AP reporter Dave Rising, Providence, RI, regarding status of DNA identification progress on the Egypt Air crash.

Assisted a reporter from *WebMD* seeking commentary from AFIP staff on a genetic test for melanoma. Referred reporter to source at NIH.

Assisted producer Mitch Eisen, Timeline productions, with request to film at AFIP in April 2000 regarding collection of tissue samples of atomic bomb victims.

Coordinated reply to St. Louis *Post-Dispatch* reporter Terry Gainey regarding inquiry about the Danforth Commission and status of samples stored at AFIP related to the Waco case.

April:

Assisted producer Leah Bakston, Discovery Channel, with visuals for an upcoming show on parasites. Coordinated with AFIP parasitologist Ron Neafie for this information.

Provided background information on Dr. Fredrick Hellman, the newly appointed chief medical examiner for Delaware County (Pa), to a reporter from the *Delco Daily Times*.

Dr. Hellman was a former AFIP forensic pathologist.

Coordinated filming request for producer Rebecca Ruddle from YAP Productions, Toronto, Canada, to film at the Office of the Armed Forces Medical Examiner. Subject: the use of mtDNA in forensic anthropology cases. Dr. Kathy Reichs, who took part in the filming at the DNA lab, hosted the program.

Developed a prepared statement for the public affairs officer at Sheppard AFB, Wichita Falls, Texas, regarding findings in the death of a recruit during training. OAFME performed the autopsy. Statement was used to reply to interest from local media.

Provided information to a Houston *Chronicle* reporter regarding the death of a Houston-area Persian Gulf veteran. Reporter Alan Turner wanted information about Persian Gulf illness listed as a cause of death. We clarified AFIP's role and provided alternate contact information.

Coordinated feature story request for *West Virginia University Alumni Magazine* focusing on the work of WVU graduate Allison Director-Myska, PhD, a research scientist in AFIP's Department of Cellular Pathology.

May:

Provided information to correspondent Susan Brink, *U.S. News and World Report*, on AFIP expertise in prostate cancer diagnosis, along with contact information for readers seeking a second opinion.

A *Boston Globe* reporter interviewed AFIP forensic anthropologist Dr. Bill Rodriguez on the science of entomology for an upcoming book review.

June:

Michael Bawaya, a writer for *American Archeology*, contacted AFIP for information on DNA testing as applied to archeology.

David Martin, CBS News, came to the DNA laboratory to conduct an interview with staff members about difficulty obtaining DNA from remains of Korean War MIAs buried in the Cemetery of the Pacific.

Provided Todd Silver, *US Medicine*, with a statement regarding the status of a US Navy/AFP study into sarcoidosis.

Provided information to Elizabeth St. Philip for a documentary on “The Gene Hunters” set for Discovery Channel, regarding a recovery mission in New Guinea of WWII servicemembers who were killed. Conducted a conference call with subject-matter expert COL Brion Smith, AFDIL.

Held a background briefing for CBS News *60 Minutes*, producer Amiel Weissfugel with Dr. Bill Rodriguez on his work with Dr. William Bass and “the body farm” for a potential story on the subject.

July:

Coordinated request by Lanny Johnson, ZDF-German TV, to film at Dr. Jeff Taubenberger’s laboratory on 1918 flu. Arranged all associated details for the filming, which took place on July 3.

Arranged interview for Nancy Shute, correspondent for *U.S. News and World Report*, with Dr. Mitchell Holland at AFDIL on the subject of DNA technology and its possibilities and limitations related to identification of Vietnam-era remains.

Granted permission to Philip Novales-Li, writer for Biogenex, to include a one-page article on soft tissue tumors submitted by Dr. Miettinen, chair of AFIP’s Department of Soft Tissue Pathology.

Assisted a reporter from the *Potomac News* seeking comment from Dr. Gael Lonergan, Department of Radiologic Pathology, on her CT evaluations of an ancient Inca mummy.

Arranged for an interview and filming by Armed Forces TV with AFIP staff members Dr. Marlene DeMaio and Mr. Bob Veasey regarding the reopening of the firing range.

Provided background information to a WUSA-TV (CBS affiliate, Washington, DC) producer on the DNA registry and policies limiting the use of the DNA repository in requested paternity cases.

Dallas *Morning News* reporter Laura Beil wrote an article on epidemiology related to military working dogs assigned to the Persian Gulf. We provided background information and contacts at outside universities involved with the study.

Arranged for producers from the History Channel to come to the DNA laboratory to interview Dr. Mitchell Holland about his work on the identification of the Vietnam Unknown. Story will air in November, on Veterans Day, as part of the series *This Week in History*.

August:

Coordinated with producers from ABC News for expert background information on research into the drug “Ecstasy.” Provided information through appropriate DoD channels.

Provided official commentary to reporter Dave Rising, AP, Providence, Rhode Island regarding status of DNA identifications in Egypt Air crash. Referred him to NTSB for further information.

Arranged and monitored interview with writer Beth Cape, from *WebMD*, on the subject of a metastasizing mixed tumor of the parotid gland, with Dr. Gary Ellis of the Department of Oral and Maxillofacial Pathology.

Arranged and monitored interview with correspondent Dan Peterson, *Newsweek*, and Dr. Bill Rodriguez on an upcoming story about “the body farm” at the University of Tennessee, and its founder, Dr. William Bass. Dr. Rodriguez was a student of Dr. Bass’s and helped create the “body farm” program.

Coordinated all media inquiries regarding the homicide of Dr. Greg Derringer, Department of Hematopathology. Obtained coverage in the *Washington Post* and coordinated interviews with all major local television stations.

Assisted reporter Paul Wagner, WTTG-TV, Washington, DC, on a story about the backlog in forensic toxicology testing at the District of Columbia Medical Examiner’s Office. Clarified AFIP’s role in the matter and resolved the situation satisfactorily.

Assisted correspondent Michael Minks, *Investors Business Daily*, Los Angeles, with a story on Dr. Rudolph Virchow (“the father of pathology”). Minks interviewed Dr. Donald Sweet, Department of Orthopedic Pathology, for commentary on Dr. Virchow.

September:

Coordinated interview with Dr. Jeff Taubenberger and *New Scientist* for article to appear in

October on the 1918 Spanish flu. Provided photos to accompany text.

Assisted reporter from Minnesota Public Radio with questions about the 1918 Spanish flu, and predictions for the upcoming flu season. Provided her with contacts at CDC.

Coordinated interview with Seth Borenstein, *Knight-Ridder News Service*, and Dr. Taubenberger and Ann Reid, on the 1918 Spanish flu. Furnished background material including videotapes and photos.

Provided official AFIP commentary to writer Lawrence Jolidon, *ink-slinger.com*, about DNA analysis on Korean War remains, and arranged conference call with COL Brion Smith for a formal interview on the subject.

Assisted reporter John Donnelly from the *Boston Globe* with questions about DNA identifications of Korean War veterans. Mr. Donnelly was particularly interested in whether we had tested remains of a New England MIA. I informed him we had not.

Coordinated interview with Hillary Mayell, *National Geographic.com*, and Ann Reid regarding the 1918 flu research.

Assisted with request from Discovery Channel to hold a live interview with Dr. Bill Rodriguez on "the body farm."

Referred a request from the *Virginia Pilot* for expert commentary on the cardiac-related death of a man in custody to the National Association of Medical Examiners.

October:

Assisted Stacey Mahoney, producer from Discovery Channel-Digital Science Net, with request for Dr. Bill Rodriguez to appear live on *Strange Science*, on November 1, 2000. Subject: insects used in solving homicides. Coordinated approvals at DoD level.

Coordinated with Museum on interview request received by Judy Hevrdejs, *Chicago Tribune*, for information about Abraham Lincoln and other famous cases held in our collections,

Coordinated interview with LTC Dale Dunn, Department of Veterinary Pathology, and Barbara Saffir, *Planetgov.com*, on a story about the euthanasia policy surrounding elderly military working dogs. Worked with Lackland AFB public affairs and head of the Dog Center. Successfully provided commentary to this story.

Arranged interview with Jane McHugh, *Army Times*, and Dr. Jeff Taubenberger on the 1918 Spanish flu.

Provided assistance to AP reporter Dave Rising for latest update on DNA findings in the Egypt Air crash.

November:

Provided assistance for information requested by Katherine Drew, Channel News Asia, about DNA testing following a Singapore Air crash. Referred commentary to civilian sector.

Handled request from Tristan Marshall, BBC, Horizon, for an interview with Dr. Taubenberger on the 1918 flu, as part of an update to a documentary completed in 1999.

Provided extensive coordination for an interview with Dr. Taubenberger and supplied photos to *GEO Magazine*, Germany, on the 1918 Spanish flu. Story set to appear in an upcoming *GEO Magazine* article about influenza.

Assisted Richard Aedy, Australian Broadcasting Company, on differences between "synthesizing" and "sequencing" 1918 Spanish flu.

Coordinated interview request from producer Joe Levine, WGBH, Boston, for Dr. Taubenberger, regarding the flu.

Coordinated interview request from Jennifer Hillman, *Wired* magazine, with Dr. Taubenberger.

Coordinated interview request from Dean Ward, Discovery Health TV Network, Boston, for an update on the Spanish flu.

Jonathan Wickham, ZOE-TV (for NOVA), interviewed Dr. Tom Parsons at AFDIL on his work with Emory University on an Egyptian mummy collection there.

December:

Coordinated interview request from Jennifer Power, History TV (Canada), with Dr. Taubenberger for *Turning Points of History*.

Coordinated request from Electric Sky Productions, United Kingdom, about filming DNA lab attempts to identify remains associated with General Custer and the Battle of Little Big Horn.

Coordinated filming by NBC News, John Rutherford, producer, at the DNA identification laboratory regarding the recovery and identification of the Makin Island raiders.

Assisted Abu Dabi TV with request to film at DNA lab for a report on the Bosnia war crimes investigation.

Assisted investigative reporter Trish Wood, *Elm Street Magazine*, with background expertise in a review of chemical substances applied to the victim in a death investigation.

Visits and Briefings: The office coordinated visits to AFIP by the following in 2000:

1. CAPT Steve Hart, Asst. Chief for Operational and Fleet Support, BUMED
2. BG William G. Bester, Assistant Surgeon General, USAMEDCOM
3. COL Shipley, Dean, AMEDD Health Science School
4. Philippine congressman Edmund O. Reyes, Jr
5. CAPT David Sachs, Naval Environmental Health Center
6. MG Seung-Yuck Kim, Commanding General, Armed Forces Medical Command, Republic of Korea.
7. Lt. Gen Menzies, Surgeon General, United Kingdom, Briefing and Tour
8. Delivered command briefing to MG Peake, Acting USAMEDCOM Surgeon General, at OTSG Headquarters, Falls Church, Va
9. Medical military officers, People's Republic of China, visit
10. J-4 legal interns, for a command briefing and overview of AFIP
11. National Junior Science and Humanities Symposium, 40 students, visit
12. Rock Creek Terrace students, visit
13. Delivered command briefing to LTC Kerkorian at Ft. Detrick
14. Delivered command briefing to Biologic Arms Control National Trial Exercise Group at the Pentagon
15. Delivered command briefing to the Council of Colonels, Falls Church, Va
16. Delivered command briefing to the Military Coalition on their visit here to AFIP
17. Delivered command briefing to DoD Senior Budget Officials, led by Dr. Carla Tighe, SES
18. Delivered command briefing to staff from Center for Naval Analysis

PRESENTATIONS

1. April 2000: Quantico, Va, FBI Academy, Advanced Forensic Pathology Course, "Managing the media following mass disasters."
2. May 2000: Bethesda, Md, USUHS, Forensic Anthropology Course, "Managing the media following mass disasters."

PUBLICATIONS

1. Kelly C, Mills JP, Ham A, eds. *AFIP LETTER*. February 2000; 158.
2. Kelly C, Mills JP, Ham A, eds. *AFIP LETTER*. April 2000; 158.
3. Kelly C, Mills JP, Ham A, eds. *AFIP LETTER*. June 2000; 158.
4. Kelly C, Mills JP, Ham A, eds. *AFIP LETTER*. August 2000; 158.
5. Kelly C, Mills JP, Ham A, Casey BL, eds. *AFIP LETTER*. October 2000; 158.
6. Kelly C, Mills JP, Ham A, eds. *AFIP LETTER*. December 2000; 158.



Terrence J. Flanagan, MAJ, MS, USA
Comptroller
Date of Appointment — 17 July 1999

DIRECTORATE OF RESOURCES MANAGEMENT

MISSION:

The Directorate of Resources Management provides financial and human resource management, analysis, information, advice, and assistance to the AFIP Director and staff, the Board of Governors, and the Scientific Advisory Board.

ORGANIZATION:

The directorate is organized into 3 divisions:

- Civilian Personnel Division
- Financial Management Division
- Manpower and Management Division

STAFF:

Civilian Personnel Division

- Vaughany Casey, Chief
- Joyce Jones, Program Assistant
- Irvine Arthur, Liaison Pay Assistant

Financial Management Division

- Katie L. Askew, Chief
- Mary L. Ward, Budget Assistant
- Reginald Wilkes, Budget Assistant
- Alfreda Dempsey, Budget Assistant
- Debra Jones, Budget Assistant
- Janet Corthon, Budget Assistant

Manpower and Management Division

- Tom Tamanaha, Management Analyst
- Rosalyn Payne, Management Analyst

CIVILIAN PERSONNEL DIVISION

The Civilian Personnel Division services over 300 Army Government Service employees working at the AFIP. Despite the effects of downsizing of the Walter Reed Army Medical Center's Civilian Personnel Office and the Civilian Personnel Operations Center, National Capitol Region, this office has strived to provide the highest level of customer service through-out the entire year. As a result of the staff's efforts toward continued improvement, the processing time for civilian personnel actions has significantly improved. Additionally, the AFIP has established an outstanding working relationship with the WRAMC Civilian Personnel Advisory Center (CPAC). This relationship and continuous liaison with the WRAMC CPAC has contributed to an overall reduction in the number of personnel vacancies within the AFIP compared to 1999.



Ronald H. Suter
Safety and Occupational Health Specialist
Date of Appointment — 6 March 1994

OFFICE OF SAFETY MANAGEMENT

MISSION

The Office of Safety Management was established in March 1994, to develop and manage a Safety Program, as outlined in Army Regulation 385-10, the *Department of the Army Safety Program*. This office monitors guidelines set forth by the Environmental Protection Agency (EPA), Occupational and Safety Health Administration (OSHA), and the College of American Pathologists (CAP); serves as AFIP liaison with US Army Medical Command (MEDCOM) Safety Office; coordinates with the following Walter Reed Army Medical Center departments — Safety Office, Occupational Health, Industrial Hygiene, Health Physics, Department of Public Works, and the Fire Department. This office also serves as a member of many safety-related committees; investigates all on-the-job injuries; and maintains a reference library of EPA, OSHA, DOD, and local safety-related publications. In keeping with the DOD goal of pollution prevention, this office operates four distillation units that recycle alcohol and xylene back into the AFIP laboratories.

STAFF

Ronald H. Suter – Safety Officer
* Melvin W. Lynch – Assistant Safety Officer

NOTE: Mr. Melvin W. Lynch, assistant safety officer since October 1997, died November 2000.

ACTIVITIES

The Office of Safety Management currently sits on the following committees: AFIP Safety Committee; AFIP Biosafety Committee; AFIP Quality Assurance Committee; AFIP Space Committee; Installation Safety Committee; Installation Hazardous Substance Management System (HSMS) Committee; Environmental Overwatch Training Subcommittee; Installation Plans and Implementation Subcommittee; and Installation Asbestos Management Team.

The Office of Safety Management has sole responsibility for disposal of hazardous waste to the WRAMC Hazardous Waste Bunker, which includes making many entries in the Hazardous Substance Management System (HSMS), a computerized tracking system mandated by DOD. This system tracks hazardous substances from receiving from the vendor through disposal.

This office published a new *Safety Program* regulation in February 1998, consolidating 4 to 5 safety-related publications. This publication is updated every 12 to 8 months.

The Office of Safety Management and Quality Assurance presents all of the annual training required by OSHA (hazardous communication, bloodborne pathogen, fire extinguisher training) to the staff of AFIP.

The Office of Safety Management manages the Waste Management Program, which includes the distillation of xylene and alcohol, management of regulated medical waste, monitoring of hazardous (chemical) waste, and monitoring of the Silver Recovery Program.

Collaborations:

From April 2000 through December 2000, the WRAMC Industrial Hygiene Office provided the following industrial hygiene management, oversight, and services to AFIP. Sandra L. Witek-Eames is the industrial hygienist assigned to AFIP:

1. Completed inspections of 55 areas covering over 100 rooms, for a total of over 1,200

hours.

2. 205 worksite visits, resulting in 30 written reports and 117 Health Hazard Information Management System (HHIMS) evaluations.
3. The ongoing development of the industrial hygiene program at AFIP.
4. Proposed protocols on procedures involving filter changing on automated laboratory machines and nonvented laboratory hoods, ergonomic program elements, and indoor air quality issues.
5. AFIP asbestos abatement operations affecting AFIP employees.
6. Industrial hygiene design review for renovation/new construction.
7. Proper operation of vented chemical hoods.
8. Proper use of engineering and work practices to keep occupational exposure to contaminants from occurring.
9. Proper use and maintenance of personal protective clothing and respirators.
10. Evaluations of DLAM areas to meet accreditation requirements of the AAALAC.
11. Evaluations of laboratory areas to meet accreditation requirements of CAP.
12. Evaluations of all AFIP facilities to meet OSHA, EPA, ANSI, and ASHRAE standards and guidelines for occupational health.
13. Personnel and environmental air and bulk sampling for OSHA-regulated carcinogens, including asbestos and formaldehyde, involving 38 air and bulk samples.
14. Evaluation of use and work practices involving hazardous and toxic chemicals such as xylene, resulting in 44 air-sampling surveys including 456 direct-reading measurements.
15. Ergonomic surveys involving laboratory ergonomic issues such as pipette use and microscope use and office ergonomic issues such as VDT use.
16. Workplace noise surveys, including 114 measurements with evaluation of the hearing conservation program.
17. Evaluation of room general mechanical ventilation to ensure room air changes and pressure differentials are in accordance with OSHA, ASHRAE, and military standards and guidelines, resulting in 48 surveys involving about 2,500 measurements.
18. Laboratory chemical hood testing and certification of over 50 units to ensure flows that meet OSHA, ANSI, and ACGIH guidelines.
19. Indoor air quality evaluations involving odors, allergens, temperature, and relative humidity.
20. Education and training, including 222 consultations and 64 hours of AFIP employee training.

NATIONAL MUSEUM OF HEALTH AND MEDICINE





Adrienne Noe, PhD
Director
Date of Appointment — September 1995

NATIONAL MUSEUM OF HEALTH AND MEDICINE, AFIP

MISSION AND ACTIVITIES

The NMHM promotes understanding of medicine, past, present, and future, with a special emphasis on American military medicine; it inspires interest in personal and public health. As the nation's museum of health and medicine since 1862, we aggressively identify, collect, and preserve important resources to achieve a broad agenda of innovative exhibitions', educational programs; and scientific, historical, and medical investigations.

To achieve this, we promote the responsible use of the nation's National Historic Landmark collection by continuing to catalog the collections to record detailed information about the holdings and edit records to make databases ready for the Internet, which will allow the collection to be more accessible to researchers. We are continuing to cultivate ties with professional medical societies and with the Department of Defense to assist in collecting artifacts significant to the history of the practice of medicine and the evolution of medical technology, emphasizing military medicine. Finally, we are continuing to collect, preserve, and interpret modern examples of significant medical technology to document the history of the practice of military medicine and the evolution of medical technology to ensure the continued development of the National Museum of Health and Medicine, AFIP, as a national and international resource for the military medical community, professional health care workers, and the general public.

In so doing, we emphasize the Museum's focus on critical public and military health issues, the importance of the Museum as a bridge between biomedicine and the general public, the Museum's role in helping to recruit the health professionals of tomorrow, and the Museum's research programs in medical medicine, medical imaging, and other areas.

ORGANIZATION

The Museum is organized into 3 areas: Office of the Director, Public Programs and Exhibitions, and Collections and Research

OFFICE OF THE DIRECTOR

STAFF

Adrienne Noe, PhD, Director
Donna R. White, Administrator
(D) Luana Bossolo, Public Affairs Officer
Erin Roy, Public Affairs Assistant
Steven Solomon, Public Affairs Officer
Theresa Butler, Staff Assistant
Cynthia Muldrow, Administrative Support Assistant
Victoria Cosner, Special Events and Facilities Manager

The Office of the Director oversees the general activities and governance of all aspects of the Museum and provides policy, technical, and scientific direction. This office directs all

activities for the site, facility, and programs of the Museum as its activities evolve. Activities handled within the office are external and internal relations, governmental affairs, press and public relations, and institutional development. The office works with print and broadcast media; congressional offices; and local, national, and community organizations to encourage contact with the AFIP's National Museum of Health and Medicine. The office provides general supervision of the Office of Public Affairs, the Division of Programs and Exhibitions, and the Division of Collection and Research. The Office of the Director communicates and coordinates with the American Registry of Pathology (PL94-361) and numerous public and private organizations for institutional development. The Director of the National Museum of Health and Medicine is a member of the AFIP Executive Committee and an Associate Director of the AFIP.

The Office of the Director has also represented the NMHM within the Institute at numerous regular and special meetings, including as a convener in the Institute's strategic planning process and as a leader in the continued development of multiple projects. Service to the Armed Forces Institute of Pathology by staff of this office includes membership in the Information Guidance Council, the Scientific Computing Group, the Master Planning Group, the Resources Management Committee, the Strategic Planning Committee, the Research Committee, the American Registry of Pathology Registrars Forum, the Tissue Utilization Committee, and the Office of Continued Medical Education.

Extensive work toward promotion of Museum programs has been completed with professional medical, veterinary, and other groups, and such federal organizations as the National Institutes of Health, the HHS Women's Health Coordinating Committee, the National Science Foundation, the Smithsonian Institution, and the Uniformed Services University of the Health Sciences. Other groups with whom the Office worked include the Howard Hughes Medical Institute, the National Science Writers Association, the American Association of Museums, the Osler Society, the Ocular Heritage Society, the Aerospace Medical Association, the American Anatomical Association, the Association of Clinical Anatomists, and the National Academy of Sciences. Office staff members have also supported activities at WRAMC's Ward 72. Forty-eight informal and formal lectures regarding the Museum and its mission were given.

Exhibition development activities have led to work with the Association of Science and Technology Centers and as a member of the Board of Directors of the National Health Sciences Consortium and a representative of the Consortium's only Washington, DC site. Most of the work with the latter organization represented the fulfillment of the plans for a world-class, unique exhibition on women's health, with leadership provided by the Consortium, the Office of Research on Women's Health (NIH), Women's Health at the Centers for Disease Control and Prevention, and the Office of Women's Health, HHS. The exhibit will have its venue at the National Museum of Health and Medicine in 2001. In addition, the Museum participated in the national observance of the 50th anniversary of the Korean Conflict by producing an exhibition on its medical aspects and preparing complementary public programs. Administrative improvements facilitated by the Museum's administrator have materially contributed to these advances.

As part of a continued effort to increase the effectiveness of the Museum's budget and staff efforts, the staff has accelerated its participation in collaborative projects with other universities, museums, and federal agencies. Activities include joint programming, collection collaborations, and shared exhibition development or installation. During 2000, work continued on several extramurally funded research projects, entailing collaborations with the George Mason University, the Congenital Heart Research Center at the Oregon Health Sciences University in Portland, the University of Illinois at Champaign-Urbana Biomedical Research Laboratory, and others. Significant in-kind support for the promotion of the exhibition "The Changing Face of Women's Health" was planned. These activities facilitated two major successes of the year: increased public outreach and expanded media activities.

Collections development has proceeded apace, and the office appreciates all Museum donors. The staff is particularly grateful to AFIP staff members who have chosen the Museum as the repository of objects, many of them dear to the donors, that represent the medical and service accomplishments of their family members.

PUBLIC AFFAIRS

During 2000, the Museum's Public Affairs Office continued marketing efforts and strengthened relationships within the business, museum, and tourism communities to increase awareness of the Museum throughout the Washington, DC metropolitan area, and among

tourism and military audiences. The Museum cultivated ties with several area grassroots and cultural-based organizations to better position itself as a significant historical, community, and cultural attraction.

The Museum remained an active member of the DC Heritage Tourism Coalition, a consortium of more than 80 cultural and community organizations in Washington, DC, with a common goal to strengthen the image and the economy of the District of Columbia by engaging visitors in the diverse heritage of the city beyond the National Mall and monuments.

Through the DC Heritage Tourism Coalition, the Museum received prominent recognition in its publication providing an inventory of all DC cultural attractions by neighborhood and theme. The Museum benefits from other efforts organized through the Coalition, such as collaborative marketing materials, a joint product-licensing program, and a neighborhood heritage trail tour along the Georgia Avenue corridor.

The Museum also fostered ties with the DC Convention and Visitors Association, the District of Columbia Chamber of Commerce, and the Historical Society of Washington, DC.

The Museum remained a designated site on the Civil War Discovery Trail, one of 16 National Millennium Trails in the United States, by the White House. As a result, the Museum received recognition in marketing and promotional materials produced by the Civil War Trust, at no addition to operating costs.

Promotion and Marketing:

The Museum continued brochure distribution to public kiosks located throughout the Washington, DC metropolitan area, including 240 hotels and the Capitol Hill offices of the US House of Representatives and the US Senate. In addition, brochures were included in welcome packets distributed to attendees at a variety of conferences held at the Washington, DC Convention Center.

Working closely with the Museum's Public Programming Department, Public Affairs placed an emphasis on promoting programs and workshops to the local community to raise awareness of the Museum's educational offerings and to increase program attendance.

Print advertisements for the Museum and its exhibits and programs appeared in the *Washington Post* (daily circulation: 782,779; Sundays 1,095,091) and in the Spring 2000 issue of *MAP Washington* that was distributed in tourist racks throughout the DC metropolitan area, as well as in hotels. As an element of the AFIP, the Museum also reached the local military community through publication of print advertisements in the 10 major military papers supporting the government installations within the National Capital region: *Pentagram* (weekly circulation: 27,000); *The Beam* (weekly circulation: 15,000); *National Naval Medical Center Journal* (weekly circulation: 10,000); *Henderson Hall News* (weekly circulation: 5,500); *Capital Flyer* (weekly circulation: 15,500); *Sea Services Weekly* (weekly circulation: 10,000); *Stripe* (weekly circulation: 10,000); *Standard* (weekly circulation: 6,000); *Trident* (weekly circulation: 11,000); and *Tester* (weekly circulation: 16,500). In addition, advertisements were published in two separate supplements, *Welcome to DC* and *A Day With*, inserted into the 10 Washington, DC area military papers, reaching a combined circulation of more than 100,000.

In 2000, the Museum continued broadcast advertising with WGMS-FM 103.5, one of the longest-standing radio stations in the Washington, DC area, reaching a targeted audience of ages 35 to 54. The station ran 25 10-second commercial spots per month during the morning and afternoon drive-time hour, reaching 190,000 listeners. It also produced and aired holiday season greetings from the Museum to the listening audience as a contribution to our promotion efforts.

The Museum also continued *Yellow Pages* advertising in the DC, Southern Maryland, and Northern Virginia telephone books with a color photo, 75 words of text, and a 60-second recorded message in the *Info Scene* directory.

Media Coverage:

In 2000, the Public Affairs Office continued to utilize PR Newswire, a national wire service capable of disseminating Museum press releases and media advisories to more than 1,000 print and electronic press newsrooms across the United States. PR Newswire enhanced the Public Affairs Office communications abilities by increasing the speed of delivering information to an expanded press core. Public Affairs also worked with Media Map, a press database including contact and profile information on several thousand US print and electronic reporters and editors. To help track print coverage, the Museum continued to use Bacon's news clipping service.

The Museum received media coverage in local, national, and international publications, as

well as coverage in television and radio outlets. Several major highlights included: an article in *The Sunday Journal* with the statement, “. . . the National Museum of Health and Medicine has it all. For school children, adults and everyone in between, the museum is an opportunity to see how we all tick, from the inside out”; a feature in *Maxim* magazine that said, “When you walk in, they’ll actually let you feel a human brain - and it only gets better from there”; and a review in a paper called *Play* that said, “Aside from frequenting graveyards, another good way to get cozy with the dead is to spend a little time at the National Museum of Health and Medicine, one of the most intriguing museums in the city. Aside from the extreme and the side show-esque, the museum has an abundance of conventional medical history, including comprehensive exhibits such as the evolution of the microscope, human development, and history of AIDS and its effects on the world.” *The Washington Times* suggested, “Hospital trips are harrowing for any child, and the X-ray machine often can be scariest of all. But the National Museum of Health and Medicine at Walter Reed Army Medical Center in the District can help change that.”

Additional extensive media coverage included articles from the *Washington Post* and other local periodicals, such as a *Museums Washington* review that offered, “If your recollections of the Korean conflict (1950-53) all feature Hawkeye, Radar, and the rest of TV’s M*A*S*H unit, “Blood, Sweat and Saline” should expand your historical horizons.”

The Museum and staff were also interviewed for a number of documentaries airing on the Discovery Channel, the History Channel, and the Learning Channel.

The World Wide Web Site:

The Museum Public Affairs Office was principally involved in expanding content on the Museum Web site to include information reflecting ongoing exhibits and programs such as “Blood, Sweat and Saline: Combat Medicine in the Korean Conflict” and the upcoming “The Changing Face of Women’s Health.” In addition, the Museum worked with a Web master to handle daily maintenance. The Museum also continued to pursue opportunities to be added to other museum and tourism Web sites. The site is recognized by several organizations as among the most effective K-12 education sites.

DIVISION OF PUBLIC PROGRAMS AND EXHIBITIONS

The division directs and coordinates operational and interpretive components of the Museum. This includes related administration, exhibitions, public programs, educational tours, facilities use, and associated activities. Division staff worked with governmental agencies, professional associations, museums, and individuals to develop interpretive strategies that promote greater public awareness of contemporary and historical perspectives on disease, public health, and health education.

STAFF

- (A) Janet Melson Burns, MA, Public Programs Coordinator
- Jeanne Levin, BS, Tour Program Manager
- Jeffrey Mitchell, MA, Visual Information Specialist
- (A) Stacie Bland, Visitor Services Representative
- Nicole Gunter, Visitor Services Representative
- (A) Melba Stewart, Visitor Services Representative
- Maurice Young, Visitor Services Representative

DOCENTS

Dr. Sal Battiata, Dr. Ed Beeman, Catherine Bonomo, Dr. Merlin Brubaker, Edward Byrde, James DePersis, Peggy Garner, Dr. Jason Geiger, Dr. Ira Green, Regina Hunt, Albert Jacobs, Carol Jorgensen, LaVerne Madancy, Kay McMahon, Dr. Richard Mulvaney, Sol Pargament, Colleen Pettis, Anne Pollin, Dr. Edward Rea, Enid Rosen, Dr. George Sharpe, Dr. Stephen Schiaffino, Caroline Whittenberg, and Rose Zimmerman. The year’s new cadre of docents includes Marina Bruner, Jacqueline Burton, Ashwini Chavan, Marjorie Hughes, Marianne Jessee, Gail Katz, Dr. Richard Lei, Anthony Rondello, Christian Sepulveda, Dr. Shen Sung, and Dr. Alan Winshel. (Peggy Garner passed away in June 2000).

Visitor Services:

Overall attendance at the Museum in 2000 was 75,295. Additional special events include programs by the Museum for public audiences, receptions for organizations with missions

related to those of the Museum, meetings or courses offered by other divisions of the AFIP, and meetings or training sessions. Outreach activities accounted for an additional 25,000 participants. In-house groups' activities were distributed as follows:

Category	Attendees
Scheduled Tour Groups (396)	13,283
Unscheduled Tours	13,773
Special Events	5,848

Overall attendance increased by 2.4% over last year. The number of tours given increased by .01 %, with the number of visitors participating in unscheduled tours increasing by 36%. Special event attendance increased by .065% over 1999.

Programs:

Programs offered in conjunction with the exhibition "Linus Pauling and the Twentieth Century: Quest for Humanity" included a "Peace Games" program that was presented in January for children and adults. A "Kids' Science Day" in February offered children and families a chance to explore chemistry through a variety of fun, hands-on science activities.

A symposium, "Power of Peace: Dialogue on Nonviolence," presented in May looked at the power of the individual to pursue the possibilities of creating a culture of peace and a nonviolent community.

Programming for the exhibition "Blood, Sweat and Saline: Combat Medicine in the Korean Conflict" included a lecture in November by Robert J. T. Joy, MD, Professor Emeritus in the Department of Medical History at the Uniformed Services University of the Health Sciences and Colonel in the Medical Corps, Retired. He highlighted two medical conditions affecting a significant number of military personnel during this conflict, specifically combat stress and cold injuries.

Dale C. Smith, PhD, professor and chairman of the Department of Medical History and assistant professor of the Department of Preventive Medicine and Biometrics at the Uniformed Services University of the Health Sciences spoke at the Museum in December. He discussed the refinement of surgical techniques and practices established during World War II that successfully advanced the treatment of disease and injuries during the Korean conflict, as well as the newly created Mobile Army Surgical Hospital (MASH) and the development of the helicopter as an evacuation vehicle.

Other Museum programs included a popular Halloween program that featured the Museum's curator of Anatomical Collections, Paul Sledzik, discussing "Vampires: Truth or Fiction?" and Allison Wilcox on "Mummies Unwrapped." Dr. Lenore Barbian, the assistant curator of Anatomical Collections, discussed "The Raw and the Cooked: Osteological Evidence for Prehistoric Cannibalism." The program also included "Forensics Mystery" tours for kids — hands-on activities allowing participants to use skeletal remains to identify a missing person.

NMHM collaborated with the Dana Alliance for Brain Initiatives and the National Institutes of Health to present a special program that celebrated "Brain Awareness Week " in March 2000. This 2-day program offered elementary and middle school students the chance to interact with local area neuroscientists. They also got to see and touch and learn all about the human brain. Dr. Gerald Fischbach, director of the National Institute of Neurological Disorders and Stroke (NINDS), Dr. Cheryl Kitt (NINDS), Dr. Lucinda L. Miner (National Institute on Drug Abuse (NIDA)), Dr. Catherine Sasek (NIDA), Dr. Molly Wagster (National Institute on Aging (NIA)), Dr. Steve Snyder (NIA), and Dr. Jay Giedd (National Institute of Mental Health) were the participating neuroscientists.

Teacher Workshop/Open House:

Local area teachers and educators received a special preview of a guided tour that school students receive at the Museum. Adrienne Noe, Museum Director, Paul Sledzik, curator of Anatomical Collections, and Archie Fobbs, of the Neuroanatomical Collections, discussed ways that the Museum's collections are used to address curriculum requirements in the classroom.

Ongoing Programs:

The Museum offered weekend public tours to walk-in visitors on the second and fourth Saturday of each month. In addition, the Discovery Carts continued to be popular with Museum visitors and were staffed most weekends and holidays.

Tour Program:

After a successful fall recruitment, new Museum docents participated in a training program that

was held in the spring of 2000. Eleven new docents joined the docent program. Current docents benefited from these training sessions as part of their continuing education.

In addition to the General tour, which introduces visitors to the highlights of the exhibition galleries, the following Curriculum Connection tours were offered during 2000: "The Human Body," "To Bind up the Nation's Wounds: Medicine During the Civil War." The "Forensics Mystery" tour continues to be a popular hands-on activity tour for school students and adults.

COLLECTIONS AND RESEARCH

STAFF

Jim T. H. Connor, PhD, Assistant Director for Collections
 Lenore Barbian, PhD, Collections Manager
 Alan Hawk, BA, Collections Manager
 (D) Heather Lindsay, Assistant Archivist
 Donna Quist, BA, Assistant Collections Manager
 Michael Rhode, Chief Archivist
 Paul Sledzik, MS, Curator
 (D) Christina Sweet, MS, Conservator
 (D) Wendy Turman, MA, Registrar
 (D) Alex George, Marcy Le Verenz (Volunteers)
 Markus Ring (Volunteer)
 Rudolf D'Souza, Danielle Wheller, Angelina De Vito (Interns)
 (D) Dianne Bodeen, Jas Min Valention (Interns)

The Collections Division of the NMHM preserves materials representing the broad subject areas related to the history and practice of American medicine, military medicine, and modern medical and health issues and research. Each collecting division specializes in different media and subject areas. The division's responsibilities are to: (1) provide the highest level of professional care for the NMHM collections and their associated documentation; (2) collect objects, specimens, and related archival materials deemed significant and relevant to the mission of the NMHM; and (3) support research, exhibits, and public programs through access to collections.

Accessions:

Individuals and institutions donating material to the Museum included Ardith Kramer; Arthur Barondes; Irwin Hoffman; WRAIR; WRAMC; Patricia Hamilton Mitcham; Douglas Wear; Evans US Army Hospital; Bruce Smith; Theme Prints Ltd; Bruce Williams; Albert Vickers; Skulls Unlimited; Pennsylvania State University/Milton Hershey Medical Center; Biological Defense Research Directorate/Naval Medical Research Institution; Ira Rezak; Timothy O'Leary; Mrs. Robert Hills; George Fleury, Jr; Lee Rogers; Michael Shapiro; Joe Lolley; Rick Booth; Catherine Liberto; Lawrence Rayman; Focused Distribution Management Branch/US Army Medical Materiel Agency; Manuel Cerro; Thomas Brown; and Bernard Kliunsky.

Loans:

The Museum loaned a total of 32 objects to 9 borrowers. Among these were loans to the Exploratorium for "Revealing Bodies," University of Iowa Hospitals for "Treating War's Wounds," Howard Hughes Medical Institute, University of Albany Art Museum, Museum Victoria for "Medical Melbourne," and the Museum of the Rockies for "Weapons that Changed the West."

ANATOMICAL COLLECTIONS:

PRESENTATIONS

1. January 22, 2000: NMHM/AFIP, Smithsonian Resident Associate Program, "Civil War medicine," L Barbian.
2. February 18, 2000: Reno, Nevada, American Academy of Forensic Sciences, "A career takes form: Ellis Kerley's tenure at the Armed Forces Institute of Pathology (1957-1966)," P Sledzik.
3. March 27, 2000: Baltimore, Md, Johns Hopkins University School of Professional Studies in Business and Education, Odyssey Lecture Series, "Interpreting the dead: modern

disasters and historical mysteries," P Sledzik.

4. April 8, 2000: Bethesda, Md, "National Capital area skeptics, vampires: the truth behind the legend," P Sledzik.
5. April 12, 2000: San Antonio, Texas, Paleopathology Association Annual Meeting, "Skeletal trauma: trauma, infection, and healing rates," L Barbian.
6. October 14, 2000: NMHM/AFIP, "Vampires: the truth behind the legend," P Sledzik.
7. October 14, 2000: NMHM/AFIP, "The raw and the cooked: osteological evidence for prehistoric cannibalism," L Barbian.

PUBLICATIONS

1. Barbian LT, Sledzik PS, Nelson AM. Case studies in pathology from the National Museum of Health and Medicine, Armed Forces Institute of Pathology. *Ann of Diagn Pathol.* 2000;4:170-173.
2. Sledzik PS. 2000 Nasty Little Things: Molds, Fungi, and Spores. In: D Poirier and K Feder, eds, *Dangerous Places: Health, Safety, and Archeology.* Westport, Conn: Bergin and Garvey; 2000:71-77.

Abstracts

Saul FP, Sledzik, PS, Ciaccio FA, Jumbelic MI, Kenney JP, McGivney J, Saul JM, Shank RL, Simons A, Smith BC, Warnick AJ. The Disaster Mortuary Operational Response Team (DMORT) Model for Managing Mass Fatality Incidents (MFIs). In: *Proceedings of the American Academy of Forensic Sciences;* 2000;6:8-9.

RESEARCH REQUESTS

Research Requests: 61

EXHIBIT

"Secret Agents: Detecting Biological Assault," Research Matters Exhibit, P Sledzik.

NAGPRA

Repatriation to Tribes: 1

Notices of Inventory Completion published in *Federal Register*: 3

NICs submitted for publication: 8

More than 300 letters of consultation were sent out regarding prehistoric/culturally unaffiliated remains.

OTHER ACTIVITIES

Participated in docent training, Montgomery County teacher training (3 trainings), and AFIP Forensic Dentistry Course Laboratory.

Anatomical Collections staff provided 21 lectures/presentations to school groups at the NMHM/AFIP and in the DC metropolitan area.

Lenore Barbian and Paul Sledzik planned and managed an inventory of the pathological and anatomical holdings of the Warren Anatomical Museum at Harvard Medical School.

Paul Sledzik served as team commander for a Disaster Mortuary Team response to an aircraft accident in Wilkes-Barre, Pennsylvania.

HISTORICAL COLLECTIONS

The Division of Historical Collections acquires and preserves both artifacts of record and of note documenting the history of the practice of medicine, innovations in biomedical research, and the evolution of medical technology. The collection emphasizes the role of the Armed Services of the United States, the United States Public Health Service, and the United States federal government as it relates to the above themes. The collection is made available for the education of medical professionals, Department of Defense personnel, historians, and the public through exhibits in the Museum, loans to other institutions, and individualized study.

Research Support:

Military: 7

Federal: 3

Civilian: 78

Consultation to Museum and History Professionals: Col. Leonard LeWayne of Virginia Military Institute, Rose Melnick Medical Museum, Erik Soiferman of Medical Antiques Online, Texas Pharmacy Museum, Project Bionics of the National Museum of American History, and the American Society for Artificial Internal Organs. Members of the Ocular Heritage Society and the American Association for the History of Medicine toured Historical Collections as a part of their annual meeting. John Pearn, Surgeon General of the Australian Defense Force, also toured Historical Collections.

Collections Management:

Computerized inventory of artifacts stored in Hammond Hall, the microscope storage area, the warehouse, and the exhibit halls now include 16,049 artifacts, approximately 98% of Historical Collections. Artifacts are listed by catalog number, accession number, classification based on Medical Subject Headings, and object name and location. The Historical Collections Computer Catalog, which differs from the inventory by containing a more detailed description of the artifact, now includes 11,613 artifacts, approximately 64% of the collection. The 345 items catalogued in 2000 include new accessions, previously accessioned artifacts, and artifacts going out on loan.

Significant additions to Historical Collections in 2000 include the following: CAPOC (Computer Assisted Practice of Cardiology), which was a computer used by DoD Regional Medical Commands as an early version of telemedicine and represented the beginning of Tri-Care; a medal presented to Surgeon General John B. Hamilton in recognition of his assistance against the yellow fever epidemic by the citizens of Jacksonville, Florida, in 1887; three PCR thermal cyclers used by the Naval Medical Research Institute to identify biological agents developed by Iraq during and after the Persian Gulf War; a microperidontometer developed by Timothy O'Leary of the United States Air Force, to measure tooth mobility of astronauts in the mid-1960s; and a Beckman Model E Ultracentrifuge, used to characterize molecules to better understand biochemical interactions.

Collections Utilization:

Historical Collections staff developed, researched, and wrote the exhibit "Blood Sweat and Saline, Military Medicine during the Korean Conflict," as a part of the commemoration of the 50th anniversary of the Korean conflict. The exhibit highlights achievements of military medicine, such as the Mobile Army Surgical Hospital, the treatment of epidemic hemorrhagic fever, infantry body armor, US Army Cold Injury Team, and the deployment of the artificial kidney in Korea. Advisors for the exhibit included: Jan Herman, US Navy Bureau of Medicine and Surgery; Dale Smith, Uniformed Services University of the Health Sciences; Herman Wolk, Air Force History Support Office; William Y'Blood, Air Force History Support Office and Lorenz Zimmerman, Armed Forces Institute of Pathology. The exhibit opened on June 25, 2000.

Artifacts from Historical Collections were filmed for the Discovery Channel TV program about military medicine "The Real MASH." Artifacts were also filmed for the History Channel's "Modern Marvels: War Inventions" and the Discovery Channel's "The Changing Face of Reconstructive Surgery."

PRESENTATIONS

March 2000: Society of Civil War Surgeons, 7th National Convention.

"Fredericksburg, the real medical turning point of the Civil War?" A. Hawk.

OTIS HISTORICAL ARCHIVES

Research Requests:

The Archives received approximately 200 requests for information this year, excluding medical museum and AFIP requests, visitors, or referrals to other institutions.

Researchers were affiliated with AFIP and WRAMC, including the Director's Office, Pulmonary Pathology, Legal Counsel, Department of Neuropathology, WRAMC Head Trauma Dept; and WRAIR. External users included Aberdeen Proving Grounds, American Social Health Association, BBC, BBH, Belgian TV, Beyond Productions, Bishop Books, Catholic University Library School, Connell Foley Law Library, Cornell University, Disabled American Veterans, Film Garden Entertainment, Ford's Theatre, *Geo* magazine, Geodome Design Communications, Globe and Mail, Governors State University - Psychology Department, Hoggard Films, Instituto Oncologico Nacional, Kaeske-Reeves, MPH Entertainment, *Maine Antiques Digest*, Millbrook

Press Inc, NIH, National Library of Medicine, Nagasaki Broadcasting Company, Naval School of Health Sciences, Pinball Productions, Reed College, Sharf Marketing Group, State Historical Society of Wisconsin, Straight Ahead Pictures, T.O. Richardson Co, *Time* magazine, University of North Carolina, Vanderbilt University Medical Center, VFW, WRAMC, and WUSF-TV.

Acquisitions:

New material acquired included AFIP-related material like veterinary reprints from noted veterinary pathologist Leon Z. Saunders and additional material from former director Bruce Smith. Also received were Korean War slides from Dr. Hoffman, who served with the 11th Evacuation Hospital working on hemorrhagic fever. The very large WRAIR film collection was transferred to us, as was part of their still picture collection. Papers of Dr. Bernard Klionsky on the pathological diagnosis and photocopies of letters from and articles about Dr. George McCoy (1876-1952), director of the Leprosy Investigation Station in Hawaii (1911-1915) and head of NIH (1915-1937), were given to the Archives. Four pieces were given from Dr. Jonas B. Rayman on military medicine. A 19-page copy of the Saga Prefectural Hospital Register, which identified victims of the atomic bombing at Nagasaki and was presented to Dr. Thomas Brown in the fall of 1945, was donated to the National Museum of Health and Medicine by Dr. Brown. Family members of Dr. Gabriel Kirschenbaum, chief medical adviser to the director of the New York City Selective Service System, donated records of his work on radiology, Parkinson's disease, and the Selective Service. Many small donations of books, posters, pamphlets, trade literature, and photographs were added to the overall collection. Museum records from staff members were added to the Archives.

Research:

2000 was a productive year for lectures and publications. In addition, chief archivist Michael Rhode assisted on, and was quoted in, an article on a Museum staff artist during the Civil War, Pennington C. Hermann Faber, in *Maine Antique Digest* (September 2000). Anita McGee's lecture and photographs were published in the catalogue, *A Well-Watched War: Images from the Russo-Japanese Front, 1904-1905*, by Fred Sharf, based on an exhibit at the Smithsonian's Sackler Gallery.

Exhibit Support:

Archival images of the Korean War were provided for the exhibit.

Collections Management:

Computerized cataloguing on the collection level continued in the shelf inventory. Initial research into a comprehensive computer catalogue for the entire Museum continued. Heather Lindsay and Tabitha Oglesby processed Dr. Nelson Irey's papers. Lindsay worked on processing and writing finding aids for Barondes, Vorwald, Schiaffino, Draize, and Russell collections. She inventoried part of the Reeve photograph collection. Oglesby arranged and completed finding aids for the Klionsky, Kirschenbaum, and Lorenz Zimmerman ophthalmic reprint collections. Lindsay and Oglesby also added material to the AFIP Historical Files and updated the finding aid, and completed various smaller processing projects. Lindsay, Oglesby, and Rhode catalogued additions to the Medical Ephemera, New Contributed Photographs, and General Medical Products Information collections. D'Souza arranged and described 19th century photographs and Bruce Smith's records. Wheeler's projects included describing the Barondes collection of Siberian intervention photographs from 1918, cataloguing Korean War-era photographs of wounded soldiers, helping research captions for the Museum's 2001 calendar, and updated a finding aid for the McGee collection. Angelina de Vito volunteered in the Museum through the Howard County school system in the fall of 2000. Her projects included cataloguing Korean War ballistic photographs and medical trade literature, photocopying medical records, and giving general assistance on archival projects.

Projects and Other Activities:

Paintings done by Dorothy Sturm to illustrate *The Morphology of Human Blood Cells*, by Sturm, Diggs, and Bell were scanned for a new issue of the atlas published by Abbott Laboratories. The work was done in cooperation with the University of Tennessee at Memphis and supported by a grant from Abbott. A significant Archives presence, including the *Guide to the Collections* of the Museum, continues to bring in researchers. More archival collections were listed in the Library of Congress' National Union Catalogue of Manuscript Collections (NUCMC), ensuring wider researcher use of the collections. Mr. Rhode served during the year on the AFIP's Institutional Review. Mr. Rhode continued to serve this year on the Museum's Administrative Committee. The National Museum of Health and Medicine of the AFIP 2001 Calendar focussed on the Museum this year and used extensive images from the Archives.

PRESENTATIONS

1. January 2000: Michael Cuthbert and Allan Stypeck's National Public Radio's "The Book Guys" interview discussing the Museum, M Rhode.
2. April 2000: Washington, DC, Nagasaki Broadcasting Company's television interview on Armed Forces Institute of Pathology atomic bomb records, M Rhode.
3. August 2000: Bethesda, Md, "Yellow Jack and Walter Reed" Commentary, Science in the Cinema film series, National Institutes of Health, Office of Science Education, M Rhode.
4. October 2000: Washington, DC, Third Annual Archives Fair at the Smithsonian Institution's Ripley Center, M Rhode and T Oglesby.

PUBLICATIONS

1. Rhode M. *She may look clean, but.* Cartoons played an important role in the military's health-education efforts during World War II. *Hogan's Alley*. 2000;8:94-99.
2. Rhode M. Illustrating the Civil War: The Career of Hermann Faber." *The History of Pathology Society Newsletter*. August 2000:9.
3. Rhode M. Reviews – Edward Sorel: Unauthorized Portraits exhibit. *International Journal of Comic Art*. 2:1
4. Rhode M. The National Museum of Health and Medicine. *The Watermark: Newsletter of the Archivists and Librarians in the History of the Health Sciences*. 2000;23: 2.

Book Chapter

Goler R, Rhode M. From individual trauma to national policy: tracking the uses of Civil War veteran medical records. In: Gerber G, ed. *Disabled Veterans In History*. Ann Arbor, Mich: University of Michigan Press; 2000:163-184.

RESEARCH COLLECTIONS DIVISION

The focus of the division is to acquire, preserve, and encourage the use of major research collections for all qualified members of the research community. The collections are made available for research and education by appointment and via Web site. Continued stimulation of new hypothesis-driven research is a top priority.

The Research Collections consist of two areas: the Human Developmental Anatomy Center and the Neuroanatomy Collections.

HUMAN DEVELOPMENT ANATOMY CENTER (HDAC)

STAFF

Adrienne Noe, PhD, Director
 Elizabeth C. Lockett, Imaging Specialist
 William F. Discher, Imaging Technician
 Kumudini Mayur, PhD Imaging Scientist

Student Interns

Andrew Wasson, Emory University; Laura Zendel and Julia Young, Science and Engineering Program, George Washington University; David Cogbill, Longreach High School; Mireille Yeboua, Paint Branch High School

Collections:

Arey-DaPena Pediatric Pathology Collection
 Carnegie Institution Human Embryological Collection
 Cornell Human and Comparative Embryology Collection
 Hooker Humphrey Collection
 The Elizabeth Maplesden Ramsey Collection
 George Sedgewick Minot Embryological Collection
 Gaenssler Pulmonary Pathology Collection

Tours

The Anatomy Center hosted 13 tours this past year. Visiting military VIPs, school tours, professional organizations, and AFIP staff have all come through the center. Generally, the tours are orientation tours; others have specific research orientations.

Workshops:

HDAC staff presented a workshop in 3-D computer modeling for disadvantaged high school

girls, St. Anne Institute, Albany, NY, May 2000.

Research:

Nine visiting researchers used the collections for a total of 31 days this past year. Research topics facilitated included the developing heart, maxillo-facial development, urogenital development, and neuro-anatomy. AFIP staff requested information on pediatric pathology from the collection and teratology in 17 instances. The Center had 22 requests for images from the collection and 8 major requests for electronic data sets, requiring 19 staff days to process. These included 3-D CGI models of embryos, a package of images of early human development, and assorted images of development.

Exhibitions and Exhibition Support:

The Carnegie Institute of Washington, DC received a loan of several objects and images from the Center relating to the career of Elizabeth Ramsey, MD.

Extramural Support:

"Human Embryology Digital Library and Support Tools" (phase 2), Next Generation Internet Project, with George Mason University, et al, funded by the National Library of Medicine.

"Human Embryology on DVD," with Louisiana State University Medical Center, funded by the National Institute of Child Health and Development.

Conservation:

All glass slide material was consolidated to a new, protective mobile aisle system or onto shelving in one room in the HDAC. All remaining paper objects were boxed and moved into the mobile aisle system.

Collaborative Projects:

The Human Developmental Anatomy Center continued its collaborative project with George Mason University as it received second-year, second-phase funding of the grant "Human Embryology Digital Library and Support Tools." This grant is part of a Next Generation Internet project, funded by the National Library of Medicine. Its goal is to develop prototype databases and other technologies to enable collaboration among multiple, distributed researchers, and to make progress towards advanced clinical and educational goals in human embryology. In addition, the Center collaborates with Professor Raymond Gasser, PhD, at the Louisiana State University Medical Center (LSUMC) on an educational project, "Human Embryo Sections on DVDs for Education." The objective of this project is to provide students, educators, and researchers accurate, inexpensive, and accessible visual information on human embryonic development. Aligned digital images of the serial sections of representative normal human embryos in the Carnegie Collection will be made available on computer DVD. The Center continued its collaborative nomenclature project with the Congenital Heart Research Center at Oregon Health Sciences University. The University of Illinois at Chicago continued a collaboration to produce a series of available animations depicting normal human development using models generated at the Center. These will be viewed via Web site for teaching and patient information. As of January 1, 2001, this collaboration will become a part of the George Mason University grant.

William Discher participated as an advisor on the grant with the Neuroanatomy Collections, "Magnetic Resonance Imaging of Dolphin, Porpoise, and Whale Brains."

The Center worked with the AFIP Department of Orthopedic Pathology to train on and evaluate a tool for text indexing and a tool for systems development and evaluation.

HDAC staff worked with the Montgomery County Public Schools on grant development and with Howard County Schools on community development activities.

Equipment:

New equipment to the Center includes three NIKON E800 microscopes and three SONY DTK digital video cameras and computer systems for the automation of digital microscopic images for the Digital Embryo Library.

PRESENTATIONS

1. March 2000: New Orleans, La, USCAP, "Microscopy and meaning." A Noe.
2. April 2000: Bethesda, Md, Uniformed Services University of the Health Sciences Research Day/Graduate Student Colloquium, "The Digital Embryo Library and collaborate tools," presented by EC Lockett and W Discher. Authored by EC Lockett and A Noe.

NEUROANATOMICAL COLLECTIONS

STAFF

Archibald J. Fobbs, Jr, Museum Specialist
Nathalie Humblot, PhD, NSF Project Technician

Volunteers:

Stephen Schiaffino, PhD

Student Interns:

Tim Geoff, Anjali Nana, Vikas Patel, Michael D'Abreu, Aneesha Green, Allison Bornath, Pratik Patel

Collections:

Yakovlev-Haleem Neuropathology and Development Collection
Blackburn-Newmann Collection
Lindenburg Forensic Pathology Collection
Welker Comparative Neuroanatomy Collection
Rubenstein Collection
Adolph Meyer Neuropathology and Development Collection
Isabel Lockhard Comparative Neuroanatomy Collection
The Pubols Anatomical Collection

Web site:

The University of Wisconsin-Madison and Michigan State University presently implement the Web site. The Neuroanatomy Collections site presents inventories, images, and user information. Financial support for this Web site is provided by a grant from the National Science Foundation. This year, collection inquiries via the Web site increased by 10%. Requests for collection images and scheduled visits to the collection and to the Museum have all increased as a result of the Web site. The Web site receives about 95 accesses per day from all over the world.

Educators used the Web site as a curriculum development resource. Students used the site as a resource for science projects and for answering structural and functional questions about the brain. Parents and the general public use the site for answers to neuropathology questions and to get general information about the brain.

Conservation:

The wet tissue conservation for the Yakovlev-Haleem Collection and the Welker Comparative Neuroanatomy Collection continues. Conservation procedures are performed on a regular schedule, and fluids are changed as needed. In an effort to improve conservation, the wet tissue of the Yakovlev-Haleem Collection is being transferred to the Museum's off-site storage facility in Gaithersburg, Maryland.

The Blackburn-Neumann Collection wet tissue evaluation and conservation effort has been completed. As a result of this survey, the condition of the tissue, the type and condition of the fluid, and the condition of the containers were obtained. This information has been used to develop a statement of work and a standard operating procedure for implementation of a complete conservation overhaul of all wet tissue specimens in the collection. Additional paper documents of the Blackburn-Neumann Collections were moved from the Department of Neuropathology and safely rehoused in map cases. This process is presently ongoing.

Collections staff are presently examining Welker Comparative Neuroanatomy Collection slides to determine immediate conservation needs. This assessment will be used to develop a conservation plan.

The Yakovlev-Haleem library is being organized into new bookcases. As the reorganization is taking place, the condition of the contents is being evaluated and recorded. Some rehousing has taken place; this process continues.

Equipment:

A new server has been added to handle file transport process, image acquisition, data basing, brain specimen reconstruction and digital graphic imaging. This equipment is available to researchers and student interns.

RESEARCH

Researchers visiting the Neuroanatomical Collections increased by 10% over the previous reporting period. The number of researchers visiting the collections during 2000 totaled 150.

The total number of research days in 2000 was 370. Increases are attributed to walk-in researchers who obtained collection information via the Internet and staff participation in neuroscience organizations. Visitor service representatives of the Museum provide important guidance to this group of visitors to the collection. Elementary and secondary educators are becoming increasingly interested in using the collection in their classrooms. The National Science Foundation has identified the collaboration between the National Museum of Health and Medicine/AFIP, the University of Wisconsin-Madison, and Michigan State University as one of its model projects, based in part on the effectiveness of its Web tools in encouraging research. This year, the number of students taking part in various research activities increased by 10%.

The Neuroanatomical Collections were instrumental in providing valuable educational experiences for students from Paint Branch High School in Silver Spring, Maryland; Hebrew Day Elementary School in Silver Spring, Maryland; Holmes Middle School in Alexandria, Virginia; The Congressional Page School in Washington, DC; and DeMatha Catholic High School in Hyattsville, Maryland. In 2000, the Howard County Technology Magnet Applications and Research Laboratory Program teamed with the Neuroanatomical Collections and the Human Developmental Anatomy Center of the National Museum of Health and Medicine of the AFIP in developing internships for high school students of Howard County. This relationship will provide research opportunities for students attending the counties technical magnet programs at Long Reach High School in Columbia and River Hill High School in Clarksville, Maryland.

Formal collaborations with Wally Welker, PhD, of the University of Wisconsin-Madison, and John I. Johnson, PhD, of Michigan State University, are in the second year of a 3-year grant from the National Science Foundation. This provides a project technician to assist the curator with research and development projects. This grant has been identified by the National Science Foundation as one of its most productive projects.

National Geographic has used slides from the Yakovlev-Haleem Collection in the development of a publication on the brain, entitled *Mysteries of the Mind*, which provides graphic illustrations of neuropathologies.

Manuel Casanova, MD, professor of psychiatry and neurology, Veterans Administration Medical Center, Augusta, Georgia, and Daniel Buxhoevedan, PhD, assistant professor, Medical College of Georgia, are using the collection in developing quantitative comparative morphologies for characterizing cell columns in human and nonhuman primate brains. The goal of this project is to compare the organization of cell columns in the temporal region of humans to that of primates.

Lori Marino, PhD, associate professor of biology in the Department of Biology at Emory University in Atlanta, Georgia, is collaborating with neuroanatomy staff and developmental anatomy staff on a research project investigating magnetic resonance imaging (MRI) of dolphin, porpoise, and whale brains. The project goal is to produce an electronic brain atlas for the Internet with 3-D models. The atlas will be designed for both education and research.

The Neuroanatomical Collections and AFIP's Kondi Wong, MD, are working on an Alzheimer's imaging project. This collaborative effort will reconstruct and quantitatively characterize Alzheimer's specimens and normal specimens from the Yakovlev-Haleem Collection.

Outreach:

Collections staff, the Dana Alliance for Brain Initiatives, and the National Institutes of Health collaborated on a Brain Awareness program at the Museum. Students from Virginia, Maryland, and the District of Columbia were invited to hear featured speakers from NIH, take part in interactive demonstrations and artifacts from the museum's brain collections. Four hundred students were in attendance for the two days the program was held.

Tours:

The Neuroanatomy Center hosted approximately 45 tours during 2000.

Loans:

Yakovlev-Haleem Collection Library usage increased by 15%. The major source of the increase was attributed to students attending the Neuropathology Review Course, Department of Neuropathology staff members, and visiting researchers.

Transfers:

Archival documents found in the Yakovlev-Haleem collection library were transferred to the Otis Historical Archives in the Museum.

PRESENTATIONS

1. April 2000: Bethesda, Md, Uniform Services University of Health Science Research Day, Museum resources for teaching of neuroscience, AJ Fobbs, A Noe, JI Johnson, WI Welker, BR Walker, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, DC 20306; Anatomy Dept, Michigan State University, E. Lansing, MI 48824; Department of Neurophysiology, University of Wisconsin, Madison, WI 53706; Department of Pharmacology, Georgetown University Medical Center, Washington, DC 20007.
2. April 2000: Bethesda, Md, Uniform Services University of Health Science Research Day. Brain library: primate brains—prototype of a CD-ROM for making available images of whole brains and stained sections from the brain collections Web site as a neuroscience teaching resource, AJ Fobbs, and A Noe, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, DC 20306; WI Welker, Department of Neurophysiology, CL Dizack, Medical Illustrations Department, University of Wisconsin-Madison, Madison WI 53706; JI Johnson, Anatomy Dept, Michigan State University, E. Lansing, MI 48824.
3. November 2000: New Orleans, La, Society for Neuroscience Annual Meeting, Three-dimensional reconstruction of cetacean (dolphin, whale, and porpoise) brains from postmortem magnetic resonance images, AJ Fobbs, L Marino, JI Johnson and JA Morris, National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, DC 20306; Neuroscience and Behavioral Biology Program, Emory University, Atlanta, GA 30322; Radiology and Anatomy Departments and Neuroscience Program, Michigan State University, E. Lansing, MI 48824.

AMERICAN REGISTRY OF PATHOLOGY





Donald West King, MD
Executive Director
Date of Appointment — 1 July 1990

AMERICAN REGISTRY OF PATHOLOGY

The American Registry of Pathology underwent marked changes in its programs and organization in the millennial year of 2000.

EDUCATION

The ARP continued its highly successful pathology fellowship programs with 18 Callender-Binford fellows and 80 one-month fellows selected from medical centers throughout the country. They have been assigned among the 18 diagnostic departments of the AFIP. In addition, approved residencies are available in the Departments of Hematopathology, Neuro-pathology, Dermatopathology, and Veterinary Pathology. A 3-day symposium attended by 83 senior civilian residents from hospitals around the country was held on May 18-20, 2000, with good success.

RESEARCH

The ARP continues to support a pilot research program for young investigators. Sixteen individual grants totalling \$200,000 were awarded.

ACCOMPLISHMENTS

The ARP completed a new 5-year contract with the AFIP to supply personnel and oversight over the DNA Repository and its AFDIL Identification Division, as well as administrative, secretarial, and technical staff in the 27 departments of the AFIP.

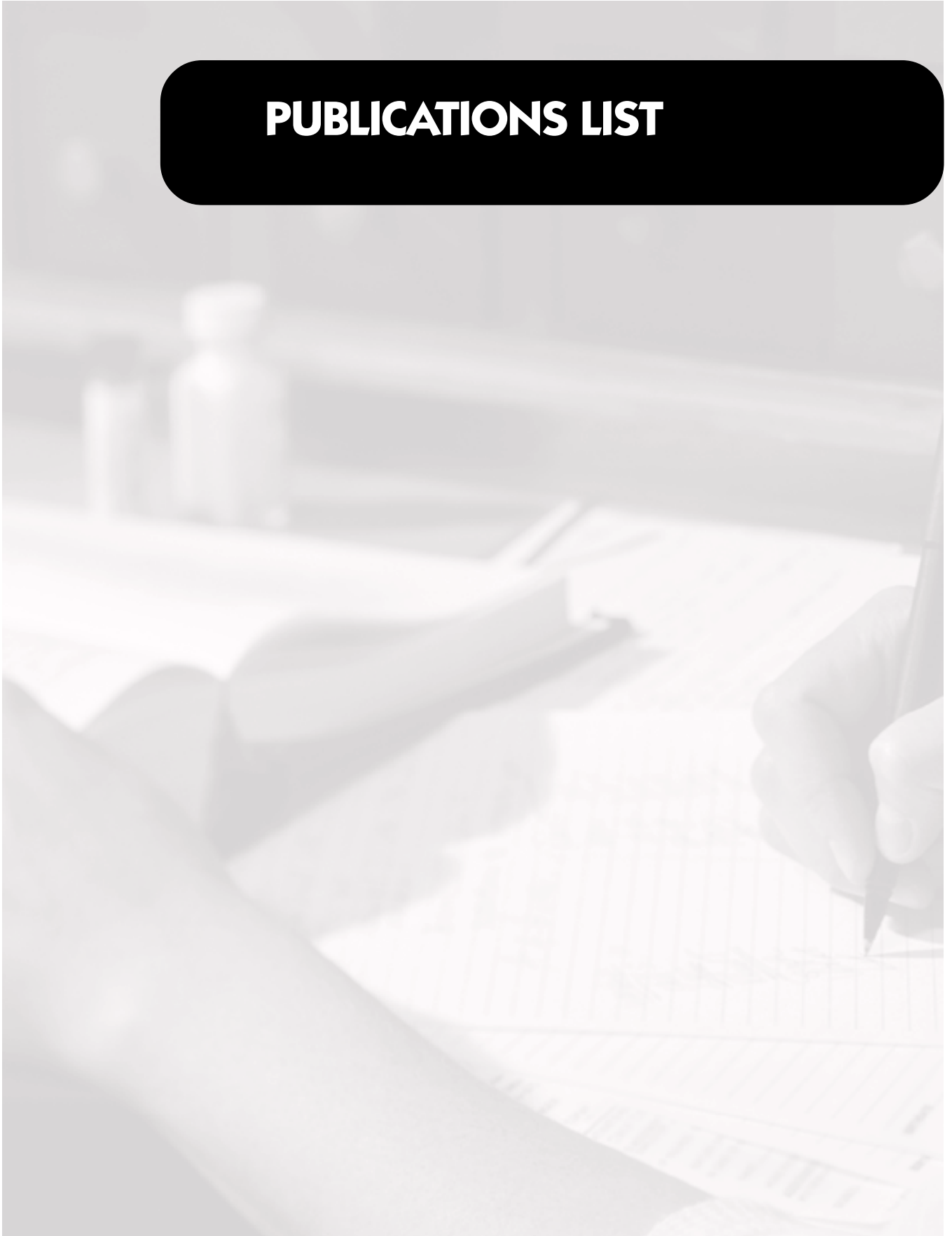
The ARP and the AFIP completed a new Memorandum of Understanding (MOU), including 9 annexes, which clearly outlines the responsibilities and financial relationships of the two organizations. The ARP will continue to administer the fiduciary responsibilities for the consultation and education services, but all profits will return to individual registries and a new Cooperative Enterprise Registry. The latter registry will initiate and fund programs concerned with Institute-wide activities. As a corollary, all administrative and financial concerns associated with publications will be the responsibility of the ARP. Editorial direction will be continued as a joint effort with UAREP (Universities Associated for Research and Education in Pathology). The new fourth series of AFIP Tumor Fascicles is presently being prepared under the editorship of Dr. Steve Silverberg, and a new series of Non-Tumor Fascicles has been initiated. Beginning volumes for each of these series will be published this year. In addition, the ARP has published a new book on the history of cancer by Dr. Patrick Fitzgerald entitled *From Demons and Evil Spirits to Cancer Genes*.

The ARP has continued its efforts to gain Congressional support for a new Armed Forces Institute of Pathology building. Documentation of the necessity and justification of this building is being distributed to a large group of ARP supporting societies as well as contributors to the consultation, education, and publication programs.

The Ash Reception was held on May 11, in the National Museum of Health and Medicine. The address, "To Preserve and Protect: The Mission of Military Medicine," was given by Dr. Sue Bailey, Assistant Secretary for Health Affairs (DoD). The Robert E. Stowell Lecture was presented by Dr. William Haseltine, chairman of the Board of Directors and chief executive officer of Human Genome Sciences, Inc, on October 5, 2000. The title of his lecture was "Genomics: A New Scientific and Medical Paradigm."

The ARP was started in 1921 with the formation of the Registry of Ophthalmological Pathology, quickly followed by the Registry of Otolaryngology. The ARP was formally chartered by Congress as a 501(c)3 foundation in 1976. Next year (2001) represents the 80th year since its founding and the 25th year after its charter. A celebration of this event will be held on May 30-31, 2001. It will include a dinner honoring former members of the board, a scientific symposium, and the Ash Lecture.

PUBLICATIONS LIST



2000 PUBLICATIONS

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