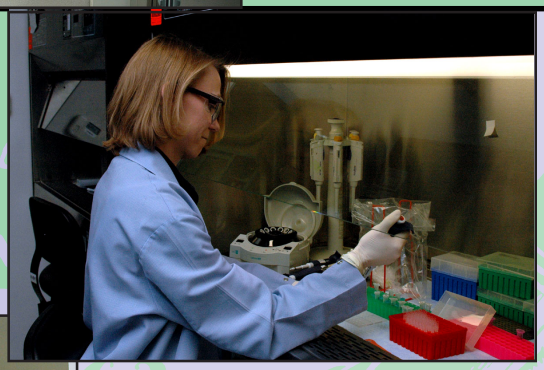
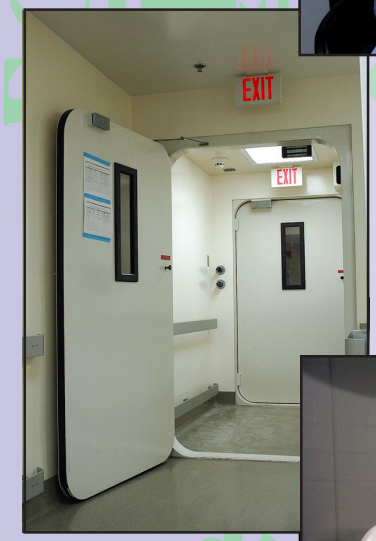
ARMED FORCES INSTITUTE OF PATHOLOGY

ANNUAL REPORT

2004





ARMED FORCES INSTITUTE OF PATHOLOGY
founded as
ARMY MEDICAL MUSEUM
1862
1949

CONSULTATIO • ERUDITIO • INVESTIGATIO

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 nation.

Vision

The foremost pathology knowledge center, combating disease through:

Authoritative diagnosis
Future focus
Innovative research
Preeminent education

Guiding Principles

Patient comes first

Integrity/honesty

Professionalism

Excellence

Teamwork

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.

The AFIP Annual Report 2004 is a production of the Center for Scientific Publications.

Fran Card—production and graphic design

Bonnie L. Casey—editor

Photo credits: Andy Morataya, AFIP Photography Branch photographer;
and Armed Forces Medical Examiner photographers.

2004 ANNUAL REPORT

Armed Forces Institute of Pathology
Washington, DC 20306-6000

CONTENTS

From the Army Surgeon General

The Armed Forces Institute of Pathology plays a critical supporting role in maintaining the health readiness of our forces deployed in the Global War on Terror. For soldiers, sailors, airmen, and marines, a rapid, accurate diagnosis from the experts at the AFIP means better medical treatment and a faster, safer return to duty.

The AFIP's multidisciplinary approach to diagnosis helps to ensure that our service members, and their families here at home, receive the finest health care available. In 2004, AFIP's world-class staff made the initial diagnosis in over 8,700 cases contributed by military treatment facilities, and made a major diagnostic change in 196 others, directly impacting patient treatment options.

The AFIP is poised to address future military challenges with the world's largest repository of tissue and tumor specimens, molecular and genetic techniques to combat disease, case-based education offerings for military healthcare providers, and scientific laboratories that provide a full range of new and evolving diagnostic and therapeutic aids to DoD hospital laboratories.

The AFIP has time and again proven to be an essential resource for military medical programs—for the US Army Center for Health Promotion and Preventive Medicine, the US Army Medical Research and Materiel Command, the Defense Threat Reduction Agency, and the DoD Global Emerging Infections System, to name just a few. I look forward to the Institute's continued development of technology and resources in support of military medical operations around the globe.

LTG Kevin C. Kiley, MD
US Army Surgeon General
Commander, US Army Medical Command

Director's Message

In 2004, the AFIP continued the dynamic challenge of transforming services and realigning resources to meet the challenges of present and future missions. How will we support military medicine in 2005, 2010, and even 2020? I expect that 3 very promising initiatives currently under development at the Institute will play a crucial role in the future of military and civilian medicine.

The first, tissue microarrays (TMA), utilizes our vast repository of 50 million paraffin-embedded blocks and 10 million formalin-fixed tissue specimens. TMA will allow physicians and researchers to study multiple disease processes on a single slide composed of hundreds of tiny cores taken from numerous tissue blocks. The creation of one unique slide from multiple pathology cases will provide significant opportunities to enhance research and education.

The second initiative is the Army Telemedicine Program, which provides a near- or real-time consultation, at no cost, to military pathologists around the globe, and to civilian pathologists for a fee. In the last year alone, with 26 real-time systems deployed around the world, military cases increased from 268 to 373. Through better access to pathology resources, telemedicine offers a practical, cost-saving alternative for military pathologists and physicians in need of our services, and has tremendous potential for biodefense and home-land security.

Our third initiative is Ask AFIP™, a Web-based program that premieres in the summer of 2005. Ask AFIP™ will link several of the Institute's unique assets, including case materials and authoritative publications by AFIP staff, to provide an innovative "just-in-time" educational experience to military and civilian pathologists, radiologists, and related specialists.

These initiatives, and a strong foundation of world-class pathology expertise, ensure that AFIP will have a critical role in support of military missions over the next 15 years. Future opportunities include:

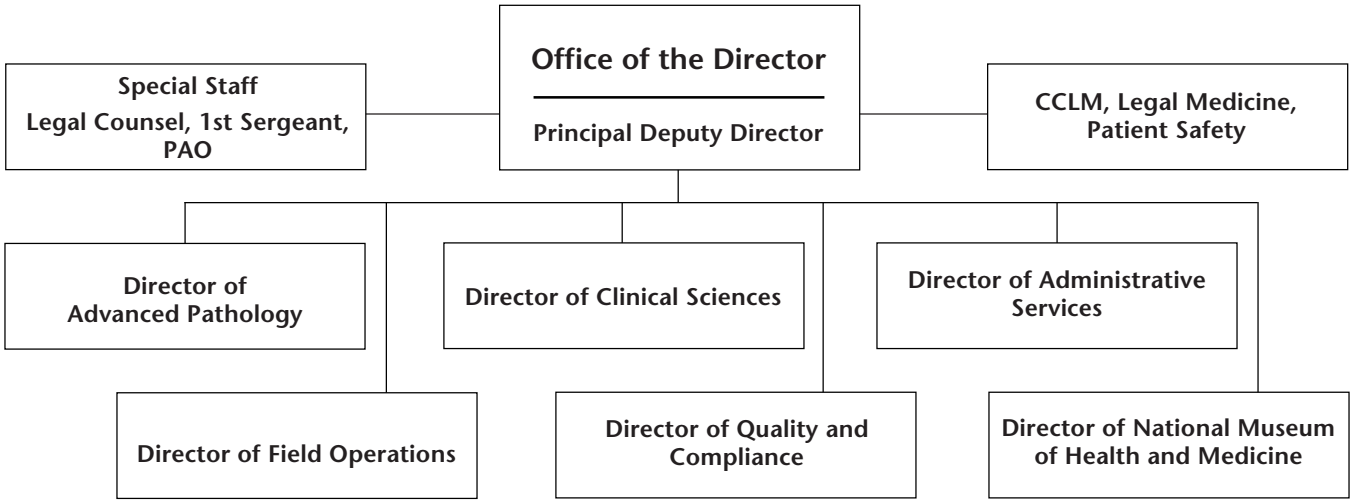
- Proteomic profiling of military personnel to identify predispositions to specific injuries and/or disease.
- Genomic libraries to aid in pathologic and forensic investigations.
- Molecular research to mitigate or eliminate chronic or metabolic diseases.
- Supporting telemedicine for an Internet-connected medical force.
- Integrating medical geology and medical intelligence.

This brochure and the attached CD give an overview of the critical support AFIP provided to deployed military personnel around the globe during 2004, including forensic investigations, identifying and treating infectious disease and environmental threats, offering advanced telemedicine, courses, and distance learning for military medical personnel, and collaborating on almost 200 pathology research protocols.

Next year, we will continue to focus on restructuring and realigning. Whatever the mission, wherever the need, the AFIP will use the newest advances in technology, communication, and diagnostics to provide the world's finest pathology and related services to our military personnel and the civilian medical community.

Renata B. Greenspan
COL, MC, USA
Director

Organization



AFIP Key Personnel

Renata B. Greenspan, COL, MC, USA
The Director, AFIP

Florabel G. Mullick, MD, ScD (Hon), FCAP, SES
Principal Deputy Director

Sumitra Parekh, COL, MC, USA
Director, Advanced Pathology

Charles W. Pemble III, Col, USAF, DC
Director, Field Operations
Deputy Director, Air Force

Christopher R. Owner, PhD
Director, Clinical Services

Thomas R. Himes, CAPT, MC, USN
Director, Quality and Compliance
Deputy Director, Navy

Paul Bluteau
Director, Administrative Services

Adrianne Noe, PhD
Director, National Museum of Health and Medicine, AFIP

William A. Gardner Jr, MD
Executive Director
American Registry of Pathology

Stephen W. Bross, LTC, JA, USA
Legal Counsel

Christopher C. Kelly
Public Affairs Officer

Timothy Davidson, MSgt, MSC,USA
First Sergeant

Executive Committee

Renata B. Greenspan, COL, MC, USA, Director (right); Florabel G. Mullick, MD, ScD (Hon), FCAP, SES (left), and Charles W. Pemble III, Col, USAF, DC, Deputy Director, Air Force, Director of Field Operations.

Renata B. Greenspan, COL, MC, USA, Director; Florabel G. Mullick, MD, ScD (Hon), FCAP, SES, Principal Deputy Director; Charles W. Pemble III, Col, USAF, DC, Deputy Director, Air Force, Director of Field Operations; Sumitra Parekh, COL, MC, USA, Director, Department of Advanced Pathology; Adrianne Noe, PhD, Director, National Museum of Health and Medicine; Paul Bluteau, MA, Director of Administrative Services; Timothy Davidson, MSgt, MSC, USA, First Sergeant; Thomas R. Himes, CAPT, MC, USN, Director of Quality and Compliance Office; Christopher R. Owner, PhD, Director of Clinical Services.

Board of Governors

The Board of Governors of the AFIP consists of the Assistant Secretary of Defense (Health Affairs), who serves as Chair 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 several times a year, 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. The Board of Governors met April 5, and August 20, 2004.

William Winkenwerder Jr, MD, MBA
Assistant Secretary of Defense for Health Affairs
Office of the Assistant Secretary of Defense for Health Affairs
Pentagon, Washington, DC

LG Kevin C. Kiley, MC, USA
The Surgeon General
Department of the Army
Falls Church, VA

VADM Donald Arthur, MC, USN
The Surgeon General
United States Navy
Bureau of Medicine and Surgery
Washington, DC

LtGen George Taylor, USAF, MC
The Surgeon General
Bolling Air Force Base
Washington, DC

Richard Carmona, MD, PhD
US Surgeon General
Department of Health and Human Services
Rockville, MD

Jonathan Perlin, MD, PhD, MSHA, FACP
Under Secretary for Health
Department of Veterans Affairs
Washington, DC

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 on scientific and technical matters. Board members are selected from outstanding specialists in their respective fields of medicine. The Board met May 13–14 and October 28–29, 2004.

A. Julian Garvin, MD
Professor and Chair, Pathology
Wake Forest/Bowman Gray School of Medicine
Winston-Salem, NC
(Awaiting reappointment)

Benjamin Gerson, MD
Chemistry/Lab Administration
University Services
Philadelphia, PA
(Awaiting appointment)

Ted Hadfield, PhD
Midwest Research Institite
Palm Bay, FL
(Awaiting appointment)

J. Carlos Manivel, MD
Division of Surgical Pathology
Mineapolis, MN
(Awaiting appointment)

Cesar A. Moran, MD
University of Texas
MD Anderson Cancer Center
Department of Pathology
Houston, TX
(Awaiting appointment)

Beverly P. Nelson, MD
Department of Pathology
Northwestern Memorial Hospital
Chicago, IL

Joseph E. Parisi, MD
Division of Anatomic Pathology
Mayo Clinic
Rochester, MN
(Awaiting appointment)

John E. Pless, MD
Indianapolis, IN
(Awaiting reappointment)

Alan D. Proia, MD, PhD
Department of Pathology
Duke University Medical Center
Durham, NC
(Awaiting appointment)

Robert L. Reddick, MD
Chair, Department of Pathology
University of Texas
San Antonio, TX
(Awaiting appointment)

Mary S. Richardson, MD
Director of Surgical Pathology
Department of Pathology and Laboratory Medicine
Medical University of South Carolina
Charleston, SC
(Awaiting appointment)

LeRoy Riddick, MD
Regional Medical Examiner
Mobile, AL
(Awaiting appointment)

Fred G. Silva, II, MD
US and Canadian Academy of Pathology
Augusta, GA
(Awaiting reappointment)

Stanford Stass, MD
Professor and Chair, Department of Pathology
Greenbaum Cancer Center
University of Maryland
Baltimore, MD
(Awaiting reappointment)

Patricia A. Thomas, MD
Professor and Chair of Pathology
Associate Dean, Office of Cultural Enhancement and Diversity
University of Kansas Medical Center
Kansas City, KS
(Awaiting appointment)

Ronald S. Weinstein, MD
Professor and Head, Department of Pathology
University of Arizona College of Medicine
Tucson, AZ

Bruce M. Wenig, MD
Chair, Department of Pathology and Laboratory Medicine
Beth Israel Medical Center
New York, NY
(Awaiting appointment)

Ex Officio Members of the SAB from the Federal Service

MG Lester Martinez-Lopez
Commanding General
Medical Research & Materiel Command
Ft Detrick, MD

COL Mark Brissette
Chief, Department of Pathology and Laboratory Medicine
Washington, DC

Col Paul B. Christianson
Commander, Air Force Medical Operations Agency
Office of the Surgeon General
McLean, VA

Lt Col Brian Kendall
Air Force Pathology Consultant
Wilford Hall Medical Center
Lackland AFB, TX

CDR David M. Larson
US Navy Pathology Consultant
Naval Hospital Jacksonville
Jacksonville, FL

CDR William O. Rogers
Naval Medical Research Unit 3
Ghana Det
Department of State
Washington, DC

Col Thomas Burke
Program Director, Mental Health Policy
Office of the Assistant Secretary of Defense (Health Affairs)
Falls Church, VA

Robert M. Friedman, MD
Professor and Chair, Department of Pathology
Uniformed Services University of the Health Sciences
Bethesda, MD

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

Fred H. Rodriguez, Jr, MD
Chief, Pathology and Laboratory Medicine Services
VA Medical Center
New Orleans, LA

Linda A. Sherman, MD, MPA
Advisory Committee Oversight & Management Staff
Office of the Commissioner
Food & Drug Administration
Rockville, MD

Sherif R. Zaki, MD, PhD
Infectious Diseases Pathology
Centers for Disease Control & Prevention
Atlanta, GA

Renata B. Greenspan, COL, MC, USA
The Director
Date of Appointment — 28 May 2003

OFFICE OF THE DIRECTOR

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

Dwan Soto
Secretary

Florabel G. Mullick, MD, ScD (Hon), FCAP, SES
Principal Deputy Director
Date of Appointment — 4 June 1999

OFFICE OF THE PRINCIPAL DEPUTY DIRECTOR

MISSION

The Principal Deputy Director (PDD) serves as the principal advisor, assistant to, and executive agent of the Director, AFIP for the overall direction, administration, policy formulation, business practices, operation and management of the organization in executing all of its assigned missions.

The PDD:

- Supports the Director, AFIP by providing broad guidance and leadership for all areas of the Institute, and insures that these areas contribute in an appropriate manner to the overall missions of the Institute.
- Ensures the integration of financial strategies, business planning, and the scientific activities of the Institute which fully support the Director's responsibilities for program development and management review of all Institute resources and missions, to insure they are consistent with planned resource objectives.
- Acts as the primary executive agent of the Director, AFIP in carrying out the responsibilities of scientific policy, financial budgeting, and resources management oversight of all Institute programs and missions.
- Monitors program evaluation activities throughout the Institute and recommends policy/program changes to the Director to improve the efficiency and effectiveness of Institute programs.

STAFF

James Affonco, MA, Chief of Staff
Ridgely L. Rabold, AAS, Executive Assistant
Hilda P. Elescano, Administrative Assistant

CONSULTATION, EDUCATION, RESEARCH

Dr. Mullick is credentialed and privileged in environmental pathology. As Chair, Department of Environmental and Infectious Disease Sciences, she continues to provide consultations in environmental pathology. She is a world-recognized expert in adverse drug reactions and continues to lecture widely on environmental and adverse drug reaction issues, especially in pediatric pathology, and participates in the development of funded research protocols. She also lectures at AFIP courses and serves as course director for the AFIP Spanish Course. Dr. Mullick obtained funding to continue the Summer Student Program at the AFIP and has been a strong champion for minority education through her work with the Ana G. Mendez University System. For additional information, see the Department of Environmental and Infectious Disease Sciences annual report.

PHYSICIAN-EXECUTIVE ADMINISTRATION

Dr. Mullick presides over the PDD Deputies' Council, which is composed of the Director of Field Operations, the Director of Advanced Pathology, the Director of Clinical Sciences, the Director of Administration, the Director of the National Museum of Health and Medicine, and the Associate Director for Navy, who serve as voting members as well as the Chair, Department of Legal Medicine and the Director, Patient Safety Center, who serve as nonvoting members.

Activities for 2004:

1. Reviewed all external contracts, assuring competitive benefits for the AFIP, including DoD's Depleted Uranium programs with the VA and at the US Army Center for Health Promotion and Preventive Medicine, as well as the Global Emerging Infections Survey. Promoted, monitored, and focused the program for developing monoclonal antibodies for infectious agents, which will allow DoD to identify biologic agents with greater specificity. Identified and controlled critical cost elements.
2. Reviewed budgets from all Directorates. Directed cost reduction and savings. Focused Council to reduce overall budget by 14% while keeping a high standard of performance.
3. Improved force structure by combining departments for greater strength and effectiveness. Insured that all members of the organization contributed in a positive way to the AFIP's approved Business and Transformation Plan.
4. Provided leadership in improving financial performance.
   a. Reduced Defense Health Program (DHP) expenses by $3.1M and expanded external revenue sources by well over 5% by the end of fiscal year 2004.
   b. Reduced DHP expenses in personnel costs by transferring people to external grant monies.
   c. Reduced DHP expenses in equipment by using GWOT funds for big-ticket items.
5. Contributed registry material to the National Library of Medicine in support of the Distance Learning Initiative. Electronic atlas-based continuing medical education courses are proliferating continually. Encouraged departments to submit new courses and revise old ones. Brought in additional funds by charging for telepathology cases. Increased business hits on sites.
6. Established mechanism to review all personnel actions and budgets. Realigned funding to areas producing greatest effect and reduced staffing for lesser-performing areas by the end of 2004. This mechanism assures that senior management policy is carried out at operator level. Personnel, travel, space, supplies, and equipment are now more directly linked to the budget process. The PDD Deputies' Council provides an objective vehicle for shifting resources.
7. Operation Iraqi Freedom Registry established to perform surveillance, identify concerns, and assess health status.
8. Leishmaniasis Registry established to perform surveillance and confirm diagnosis.
9. Passed the CAP laboratory inspection for the accreditation of the Institute.
10. ACCME approval for 5 additional years, which allows the Institute to provide CME credit for all professional courses it presents, and to sponsor fellowship and residency training programs.
11. Customer satisfaction survey has been extended to an annual program. Surveys consistently demonstrate that customers are satisfied with our products.

No single strategy can guide and drive the actions of a global organization today. The world is too complex, too changeable, too diverse. Better business practices in an environment of strong scientific innovation is our ultimate goal, but the ability to take action at the right time, as well as to react to, adapt to, and manage change are the winning ingredients to successfully achieving that goal.

We remain convinced that we have the right strategy in place for a world-class, top-tier scientific organization. We will do this by focusing on our priorities of turning cutting-edge science into breakthrough techniques and methodologies, supporting them through targeted and well-executed marketing, and improving our operational efficiency. In addition to investing to support our infrastructure, our efforts also will include a continuing, intense focus on our customers' needs and satisfaction.

Our ongoing mission to be able to respond to all kinds of needs in a variety of emergent situations requires the many talents and experiences of our multicultural workforce. We value this diversity – and seek to foster it – because it sparks innovation when employees with

different perspectives work together to offer solutions to the many challenges that science and the times present.

In the subsequent sections of this Annual Report devoted to individual service-line and department accomplishments, you will clearly see 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 2004, and continue to provide us with a hopeful view toward the future. It is through these 5 service lines that we are able to achieve the high level of response to all sorts of requirements in all sorts of situations. We stand ready as the "911" hotline for the Department of Defense.

PROFESSIONAL ACTIVITIES

Presentations

1. January 2004: India, Indo-USA Infectious Disease Symposium.
2. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, "Environmental pathology and exposure to toxic metals: an overview of lesions."
3. May 2004: Cancun, Mexico, Mexican National Congress Conference.
4. May/June 2004: San Juan, PR, AFIP Diagnostic Surgical Pathology Spanish Course, "AFIP: new perspectives."
5. July 2004: Atlanta, Ga, Indo-US Meeting.
6. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Medical geology: an emerging discipline in support of environmental and military medicine," "Depleted uranium: embedded fragments present unique exposure situations and concerns of possible health risks," "A medical surveillance program on depleted uranium exposure: tissue repository capabilities and chemical analysis in biological samples."
7. September 2004: Jackson, Miss, CAP Pathology Meeting, Plenary Session IV, "Medical geology and human health."
8. October 2004: Brisbane, Australia, 25th International Congress of the IAP, "Emerging disciplines in environmental pathology: part I and part II," "Hepatotoxicity of complementary and alternative medicines," "Drug- and chemical-related cancer."
9. November/December 2004: Perth, Australia, University of Western Australia, Environmental Toxins, Metal and Health Course, "An environmental pathology overview of tissue reactions to selected toxic metal and metal compounds," "Paediatric medicine and exposure to toxic metals."

Journal Articles

Merezhinskaya N, Mullick FG, Ogunwuyi SA, Fishbein WN. Presence and localization of three lactic acid tranporters (MCT1, -2, and -4) in separated human granulocytes, lymphocytes, and monocytes. *J Histochem Cytochem*. 2004;52:1483-1493.

Abstracts

1. Todorov TI, Ejnik JW, Mullick FG, Centeno JA. Depleted uranium analysis in biological fluids by inductively coupled plasma mass spectrometry. Book of Abstracts of the 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, Budapest, Hungary, May 18-22, 2004.
2. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible directory of DoD Public Laboratory Services. Book of Abstracts of the Force Health Protection Conference, Albuquerque, NM, August 6-12, 2004.
3. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible directory of DoD Public Health Laboratory Services. Book of Abstracts of the 35th International Congress on Military Medicine, Washington, DC, September 12-17, 2004.
4. Kalasinsky VF, Lewin-Smith MR, Maggio KL, Murakata LA, Mullick FG. Characterization of foreign materials from wound sites of US military personnel deployed in Operation Iraqi Freedom. Book of Abstracts of Terrorism and Trauma: A Transatlantic Perspective, Baltimore, Md, September 20-22, 2004.
5. Murakata LA, Lewin-Smith MR, Specht CS, Kalasinsky VF, McEvoy P, Vinh TN, Rabin L, Mullick FG. Characterization of embolization microsphere plastic in-vitro and in human tissue sections by light microscopy and infrared microspectroscopy. CAP, 2004.

6. Kalasinsky VF, Tristan JO, Luong TT, Pizzolato KM, Gaydos JC, MacInstosh VH, Malone JL, Mullick FG. Applications of an Internet-accessible DoD Directory of Public Health Laboratory Services. Book of Abstracts of the 44th Interscience Conference on Antimicrobial Agents and Chemotherapy, Sponsored by the American Society for Microbiology, Washington, DC, October 30-November 2, 2004.

Deployments

1. January 25-29, 2004, TRICARE Conference, Ft Detrick, Md.
2. January 30, 2004, TATRC and Related Topics, WRAIR, Silver Spring, Md.
3. February 9, 2004, MG Bester Briefing, CHIPPM, Aberdeen Proving Ground, Md.
4. February 16-20, 2004, MIE Advisory Board Meeting, San Juan, PR.
5. March 14-17, 2004, National Center for Environmental Health Conference, Atlanta, Ga.
6. March 18-20, 2004, AGMUS Board of Directors, San Juan, PR.
7. April 29-May 4, 2004, US Advisory Meeting, San Juan, PR.
8. May 22, 2004, 6th AGMUS Hepatitis Symposium, San Juan, PR.
9. May 27, 2004, AGMUS Board of Directors, San Juan, PR.
10. June 14-16, 2004, AGMUS School Graduation, San Juan, PR.
11. July 14-15, 2004, AGMUS Board of Directors Meeting, San Juan, PR.
12. July 28-30, 2004, CDC Meeting, Atlanta, Ga.
13. September 29-October 1, 2004, Chemistry Accreditation Simulated Inspection Visit, University of Turabo, PR.
14. October 4-9, 2004, AGMUS Board of Directors, San Juan, PR.
15. November 10-12, 2004, UMET Models of Institutional Excellence Board Meeting.
16. November17-19, 2004, AGMUS Board of Directors Meeting, San Juan, PR.

External Representation

1. DoD Representative to the National Advisory Environmental Health Sciences Council, National Institute of Environmental Health Sciences, Chapel Hill, NC.
2. AFIP representative to Armed Forces Epidemiology Board, DoD (HA), Washington, DC.
3. Editorial Reviewer:
   Annals of Internal Medicine
   Gastroenterology
   Hepatology
   Electronic Journal of Pathology and Histology
   Annals of Diagnostic Pathology
   Toxicologic Pathology
   Patologia: Revista Latinoamericana
4. Member, External Advisory Committee, Center for Environmental Health, Jackson State University, Jackson, Miss.
5. Member, International Geological Correlation Program in Medical Geology, International Union of Geological Sciences and UNESCO.
6. Member, Research Center for Minority Institutions, Metropolitan University, Ponce, PR.
7. President, National Science Foundation's Model Institutions for Excellence Advisory Board, Ana G. Mendez University System.
8. Chair, Task Force for National Science Foundation's Science and Technology Alliance, Ana G. Mendez University System.
9. Member, Scientific Advisory Board, FindCancerExperts.com, the patient Web resource for accurate cancer diagnosis.
10. Chair, US Presidential Advisory Board for Science and Technology, Ana G. Mendez University System.

Professional Societies

1. Member, Foundation for Advanced Education in the Sciences, Inc.
2. Member, Society for Pediatric Pathology
3. Member, US/Canadian Academy of Pathology
4. Member, American Academy of Federal Service Physicians
5. Member, American Association for the Study of Liver Diseases
6. Member, Hans Popper Society
7. Member, Sociedad de Gastroenterologia, Puerto Rico

8. Member, Academy of Medicine of Washington
9. Member, Senior Executives Association
10. Secretary, International Academy of Pathology
11. Member, Association of Directors of Surgical Pathology
12. Member, American Medical Association
13. Founding Member, History of Pathology Society
14. Member, Society of Toxicologic Pathologists
15. Member, Sociedad Latino Americana de Patologia
16. Member, Asociacion Mexicana de Patologos, AG, Mexico
17. Member, Latin America Pathology Foundation

AFIP Representations

1. Hispanic Employment Manager
2. Consultant, Equal Employment Opportunity
3. Member, Ash Library Committee
4. Member, Executive Committee
5. Member, Education Committee
6. Chair, Tissue Utilization Committee

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

OFFICE OF LEGAL COUNSEL

STAFF

Stephen W. Bross, LTC, JA, USA, Legal Counsel
Dwan Soto, Legal Assistant (part-time)

ACCOMPLISHMENTS

The Office of Legal Counsel provides legal advice and assistance to the Director and staff of the AFIP.

1. In 2004, Legal Counsel provided the following services to the Institute as part of its Business and Transformation Plan:

- Resubmitted a legislative change to 10 USC 176 for 2006, focusing specifically on expanded authority for AFIP to accept fees for all professional services, including education courses.
- Initiated an analysis of the authority of AFIP to enter into reference laboratory agreements as a provider, not recipient, of services, pursuant to its assumption of responsibility for consultation collections. The issue is pending.
- In ongoing coordination and consultation with the Executive Committee and as part of the periodic review process, we continued to study and develop various proposals for modifications to the Memorandum of Understanding between AFIP and ARP, including a proposal to adopt a cooperative research and development agreement format for research collaborations, similar to that employed between Army MTFs and the Henry M. Jackson Foundation. Guidance for federal employees who serve as registrars of ARP registries also took shape. These matters are still under review.

2. We provided substantial support and advice to the OAFME on a variety of matters, including:

- Negotiations between WRAMC, the District of Columbia Medical Examiner, and AFIP on the forensic jurisdiction applicable to deaths on the Walter Reed campus, an area of exclusive jurisdiction.
- Various issues about death certificates for detainees in the Global War on Terrorism and for deaths of service personnel at various US locations.
- Continuing issues about deaths of contractors and other civilians in Iraq and Afghanistan.
- Assistance to the FBI in the Jonathan Luna case.
- Initiation of a request through channels for permission for OAFME staff to testify in state or local law enforcement matters following forensic consultation.
- Litigation support in a federal case filed pro se by a paternity plaintiff for access to a DNA bloodstain card.
- Coordination of a military judge's order for a DNA bloodstain card under 10 USC 1565a.
- Coordination of a request from Jordanian law enforcement authorities for DNA profiling services.
- Requests for or appointment of OAFME personnel as experts for defendants in courts martial.

3. 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 several such interviews and depositions while advising the staff members providing the testimony. The office also continued its involvement as liaison to

the Army Litigation Division and the Department of Justice with regard to pending tort claims and litigation:

- In 2004 the Legal Counsel provided support to the Department of Justice in 2 ongoing AFIP medical malpractice tort claims, now settled, that had progressed to federal litigation in which the United States has been substituted for a contract employee who was a party to the lawsuit.
- The Legal Counsel also provided initial claims support for a new tort claim filed against the Institute.
- Discovery support was provided to other MEDCOM elements in a matter involving landmine research and cadavers.
- Support is being provided to Army Claims Service and Army Litigation Division on various claims filed against Army MTFs, as well as to various military prosecutors in courts martial.

4. 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. 2004 was the first year for face-to-face training for all Army military and civilian employees. Virtually all personnel received training as prescribed by the Department of the Army.

5. The Legal Counsel continued to provide advice on several copyright, licensing, software and nondisclosure issues. In the technology transfer area, we continued to oversee technology transfer activities, including coordination on additional cooperative research and development agreement proposals and management of material transfer agreement documents. Invention awards were processed for 2 inventors as their patent applications proceeded through the patent system. Inquiry also began into the feasibility of trademarks and various marks of interest to the Institute. The program is evolving and has the potential to provide important support to the Business Plan.

6. The Legal Counsel provided routine legal advice and guidance on the day-to-day work of the Institute in such areas as:

- MOAs 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 employees' travel expenses.
- Proposed revisions to Institute regulations.
- Military administrative law matters.
- Contract administration and procurement law matters.
- Fiscal law matters, including the structure of reimbursable operations.
- Issues specific to the operation of the National Museum of Health and Medicine.

7. Other matters of particular note include:

- Substantial work to develop a standard operating procedure and handbook for processing of agreements.
- Analysis of the rules for determining overhead charges.
- Substantial work on agreements involving the NTSB, a local high school providing student volunteer and employment opportunities at AFIP, the Red Cross, and the US Capitol Police, as well as numerous other recurring annual agreements for exchanges of services with entities such as the Coast Guard, the Federal Bureau of Prisons, the Department of Justice, and the Department of Homeland Security.
- Advice on FOIA requests for information about Iraq detainees and other figures of interest in Operation Iraqi Freedom.
- Extensive continuing support to the Institute's development of HIPAA procedures.
- Reviews of externally funded research protocols.

8. In 2004 the Legal Counsel received approval to initiate hiring for a civilian attorney to meet increasing demands for legal services.

9. Notary services are provided to military personnel and their dependents for any legal matters requiring notarization.

Christopher C. Kelly
Director
Date of Appointment — 13 January 1991

OFFICE OF PUBLIC AFFAIRS

STAFF

Christopher C. Kelly, MMgmt, Public Affairs Director
Michele R. Hammonds, BA, Public Affairs Specialist

IMPACT

The Office of Public Affairs provides a full range of external and internal communications programs in support of the AFIP's essential military and civilian health care missions. During 2004 we accomplished this by:

- Publishing 6 issues of the *AFIP LETTER*, distributed to over 16,000 pathologists worldwide, and a variety of proactive media relations programs.
- Arranging and conducting briefings for national and foreign dignitaries.
- Coordinating numerous special projects and events.
- Coordinating proactive community relations programs.

Our participation in AFIP's operational programs in 2004 involved a number of significant media issues:

- The May 2004 release of death certificates of foreign combatant detainees who died while in US custody.
- Multiple inquiries regarding forensic findings in cases of US personnel charged with crimes against foreign combatant detainees.
- Associated Press coverage of forensic pathology procedures used in the case of a Marine officer accused of abusing an Iraqi detainee.
- A *Washington Post* investigation into circumstances surrounding the death of SPC Pat Tillman.
- A *New York Times* investigation of body armor protection.

Michelle Hammonds, public affairs specialist, provided comprehensive support for a variety of activities and media queries, including:

- Inquiries about the Armed Forces DNA Identification Laboratory.
- Findings in the 1918 Spanish influenza outbreak.
- Background information on activities of the OAFME.
- Findings by the Department of Veterinary Pathology.

Ms. Hammonds also helped design and staff AFIP's exhibit at a number of military and civilian meetings in 2004, including:

- TRICARE.
- Association of the US Army (AUSA) Medical Symposium.
- Force Health Protection.
- Association of Military Surgeons of the US (AMSUS).

Ms. Hammonds was called to active duty in Iraq in October 2004.

Our office also coordinated the Institute's Ash Lecture and hosted and briefed over a dozen visitors and groups to the Institute. Mr. Kelly served as manager of the 2004 Walter Reed Combined Federal Campaign, and coordinated the talents of multiple organizations on the Walter Reed installation that contributed over $340,000.00 towards the Department of the Army's National Capital Area goal. Ms. Hammonds coordinated numerous other special events, tours, and community relations programs, organized visit requests, conducted quarterly briefings for newcomers, and developed feature stories on AFIP programs and personnel for publication.

EDUCATION

Courses: Our staff participated in one AFIP course in 2004.

Presentations

June 2004: Leesburg, Va, AFIP Forensic Anthropology Course, "Media issues in mass fatality events," CC Kelly.

PUBLICATIONS

1. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP Letter*. February 2004, Vol 162.
2. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP Letter*. April 2004, Vol 162.
3. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP* Letter. June 2004, Vol 162.
4. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP Letter*. August, 2004, Vol 162.
5. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP Letter*. October 2004, Vol 162.
6. Kelly CC, Hammonds MR, Casey BL, eds. *AFIP Letter*. December 2004, Vol 162.

PROFESSIONAL ACTIVITIES

Official Trips

1. January 2004, TRICARE Annual Meeting, Washington, DC, MR Hammonds (AFIP).
2. March 2004, US/Canadian Academy of Pathology Annual Meeting, Vancouver, BC, CC Kelly (AFIP).
3. June 2004, Association of the US Army Medical Symposium, San Antonio, Tex, MR Hammonds (AFIP).
4. August 2004, Force Health Protection Conference, Albuquerque, NM, MR Hammonds (AFIP).

Donna M. Roncarti, Col, USAF, BSC
Director
Date of Appointment — 1 September 2002

CENTER FOR CLINICAL LABORATORY MEDICINE

STAFF

Donna M. Roncarti, Col, USAF, BSC, Director
Brenda Bartley, CAPT, MSC, USN, Associate Director
William H. Boisvert, COL, MSC, USA, Associate Director
Denise T. Green, Lt Col, USAF, BSC, Deputy Director, Office of Lab Management
Karen M. House, Maj, USAF, BSC, Lab Management Fellow
Michael Genet, SMSgt, USAF, Air Force CLIP Program Manager
Gerry S. Rapisura, HMC, USN, LCPO, Navy CLIP Program Manager
Jacqueline M. Bryant, SSG, USA, Army CLIP Program Manager
Yvonne Easley-Haley, TSgt, USAF, Clinical Lab Management Indicator Program

IMPACT

The CCLM directs the operation of the DoD Clinical Laboratory Improvement Program (CLIP) and administers public law and federal policy for **military medical laboratory operations**, ensuring no restrictions or cessation of laboratory services that would impede DoD mission requirements.

Regulatory Oversight

CCLM:

- Determines policy for all military medical laboratory operations in the DoD.
- Directs activities and funding of an operating budget of over $3.5M annually for office administration and component central contracts for medical laboratory proficiency testing, accreditation and inspections.
- Resolves situations where public or state law is in conflict with DoD policy.
- Responds to congressional, military or public inquires relative to laboratory services.
- Reviews laboratory operations data including proficiency testing results, accreditation and regulatory inspection results.
- Coordinates laboratory technical assistance and intervention strategies among DoD laboratories.

Consultative Services

CCLM:

- Provides consultative services and impact analysis on clinical laboratory issues to the Director/AFIP, to each service's Surgeon General, and to the OASD (HA).
- Provides professional and management guidance to DoD laboratory officers and enlisted members.
- Cochairs the DoD Laboratory Joint Working Group (LJWG).
- Gatekeeper for Tri-Service and CDC initiative to develop a biological warfare detection and response system (National Laboratory Response Network).

Accomplishments

- DoD laboratory registration statistics, 2004:
  - Army: 690 certificates with 1,323 sites
  - Navy: 489 certificates with 814 sites
  - Air Force: 407 certificates with 834 sites
- Enhancement/sustainment of CDC and Tri-Service Laboratory Response Network (LRN) Partnership Initiative. The purpose of the LRN is to rapidly detect and identify biological threat agents and to alert public health and law enforcement agencies of a suspected release to minimize exposure to that agent. CCLM functions as the coordinating office for DoD participation in the LRN, as directed by the 3 service SGs. As the coordinator of DoD laboratory network participation, CCLM must communicate, implement and ensure compliance with all changes in federal law regarding handling of select agents, specimen collection and testing protocols, and maintenance of proficiency by DoD network labs. To assist with communication/coordination responsibilities, CCLM made the update of LRN progress, activities and issues, a standard agenda item at the biannual LJWG meetings. The DoD LRN gatekeeper provided a summary of 2004 LRN activities. The number of confirmatory labs will be expanding and most confirmatory sites now have the ability to do toxins. NNMC, Scott AFB, Ft Bragg, Ft Hood, and William Beaumont are still looking to join the LRN at the confirmatory level. The Naval Medical Research Center has BSL-3 capabilities and has been granted National Lab status. They do not have BSL-4 capability. $6B has been given to Ft Detrick to develop additional BSL-4 labs for interagency use. USAMRIID has never completed a Lab Qualification Checklist or been officially appointed a National Lab by CDC. They are in the process of developing the checklist.
- This office saved over $1M annually in registration and inspection fees. CCLM has avoided in excess of $13M in fees to the Center for Medicare and Medicaid Services since the inception of the program in 1993.
- Proficiency Testing (PT): All registered laboratories performing moderate- and/or high-complexity procedures were enrolled in centralized service-specific contracts during 2004. CCLM reviewed over 9,500 PT surveys for 2004. There were no instances of PT failure that required suspension, limitation or revocation of CLIP certification. Overall, PT performance for all survey events was 94%, well above the 80% standard.
- Accreditation: CAP, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), or the Commission on Office Laboratory Accreditation (COLA) accredits DoD laboratory facilities. Each facility is inspected every 2 years, and results of inspections are forwarded to CCLM for review.
- Laboratory Joint Working Group (LJWG): During 2004, membership was adjusted to align with the new TRICARE regions. Membership consists of the services' laboratory medicine and pathology consultants, Health Affairs and VA representatives, and an appointed laboratory and pathology representative from each TRICARE region. A new charter and corresponding strategic plan was written and approved by the membership. The LJWG facilitated DoD-wide referral laboratory contracts to reduce reference laboratory utilization costs and explored proposals to consolidate DoD testing sites to reduce reagent, supply and other direct operational costs where feasible. CCLM chairs the following LJWG subcommittees: Clinical Lab/Anatomic Pathology Information Management/Information Technology Working Group, and the Reference Lab Utilization Analysis/Testing Consolidation Committee.
- Laboratory Composite Health Care System (CHCS) Interconnectivity: Supported ongoing effort to train DoD MTF lab personnel and deploy CHCS interconnectivity software to establish laboratory data transfer between DoD facilities, DoD and VA facilities, and DoD and civilian reference laboratories. Training/deployment has been completed for approximately 60% of DoD clinical labs. At those sites, the interoperability software is working well and has resulted in significant reduction in man-hours expended processing referral tests.
- Expediently notified all DoD laboratories and service logistics centers of reagent manufacturing and equipment problems during the past year.
- Provided leadership for the CHCS II COTS acquisition working group as a voting member of the source selection technical evaluation panel which convened to evaluate vendor proposals submitted in response to the RFP for the acquisition of a commercial off-the-shelf (COTS), fully integrated, anatomic pathology/clinical laboratory information system. This system will replace the legacy CHCS lab module on the CHCS II platform. In 2004, the panel assessed the functional capabilities of the systems demonstrated by potential contractors. Contract award is expected late spring/early summer 2005.

- Established Tri-Service contract for provision of liquid-based cytology equipment/reagents for DoD cytocenters. Volume-driven pricing substantially decreased cost per test.
- Championed adoption of the new recommendations made by the American College of Medical Genetics regarding expansion of newborn screening. CCLM is writing an RFP for a DoD contract with a commercial referral lab to provide the whole battery of screening tests now recommended.
- The LJWG Referral Subcommittee completed its BCA on the feasibility of consolidating genetics testing to one or more DoD facilities and recapture of molecular testing from the commercial market. The study demonstrated a potential annual return on investment of $1.8M if the subcommittee's recommendations are fully adopted.

EDUCATION

Courses: The department presented 15 workshops or seminars encompassing 300 man-hours of departmental time, with approximately 1,000 attendees.

Presentations

1. January 2004: Washington, DC, Laboratory Joint Working Group, "Global laboratory information transfer, CHCS clinical laboratory/AP COTS acquisition," P Barnicott, DT Green.
2. January 2004: Washington, DC, Laboratory Joint Working Group, "CLIP/CLIAC update," WH Boisvert.
3. January 2004: Washington, DC, Laboratory Joint Working Group, "LRN/biodefense issues," WH Boisvert.
4. February 2004: 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," "AF manpower model," "Clinical Laboratory Improvement Program," "PT basics," "LRN and biodefense," DT Green.
5. February 2004: Boston, Mass, Society of Armed Forces Medical Laboratory Scientists Meeting, "CAP inspections," GS Rapisura, JM Bryant.
6. February 2004: Boston, Mass, Society of Armed Forces Medical Laboratory Scientists Meeting, "The AF laboratory manpower formula and workload," DT Green, KM House.
7. August 2004: Washington, DC, Laboratory Joint Working Group, "CHCS clinical laboratory/AP COTS acquisition update," DT Green.
8. August 2004: Washington, DC, Laboratory Joint Working Group, "DoD genetics testing project update," DT Green.
9. August 2004: Washington, DC, Laboratory Joint Working Group, "LRN update," WH Boisvert.
10. August 2004: Washington, DC, Laboratory Joint Working Group, "New membership, charter, and strategic plan," DM Roncarti.
11. August 2004: Washington, DC, Laboratory Joint Working Group, "Veterans Affairs participation in the LJWG," DM Roncarti.

RESEARCH

Publications

1. Roncarti DM. Consultant's Corner, Society of Armed Forces Medical Laboratory Scientists Newsletter. *Society Scope.* 2004;7:1.
2. Roncarti DM. Consultant's Corner, Society of Armed Forces Medical Laboratory Scientists Newsletter. *Society Scope.* 2004;7:3.
3. Green DT. BOMO Lab breakout CD: a compendium of laboratory management topics and issues. Self-published.

Geoffrey W. Rake, MD, MSA
Director
Date of Appointment — 6 October 2003
(contractor, 2 September - 3 October 2003)

DEPARTMENT OF DEFENSE PATIENT SAFETY CENTER

STAFF

Professional

Geoffrey W. Rake, MD, MSA, Director
Ronald A. Nosek, CDR(P), USN, Pharmacist, Deputy Director
Rajasri Roy, PhD, Epidemiologist (Contractor)
Bridget Olson, Human Factors Engineer (Contractor)
Mary Ann Davis, RN, Safety Officer (Contractor)
(A) Pamela Copeland, RN, JD, Safety Officer (Contractor)
(A) Juanita Gray, Data Analyst (Contractor)
(A) Richard Hildreth, Information Systems (Contractor)
(D) Philip Pierce, Information Systems (Contractor)

Administrative

Peter Stifel, Administrator (Contractor)
Pamela Oetgen, Newsletter Editor (Contractor)
Nanette Barry, Secretary (Contractor)

IMPACT

In 2004, the PSC made substantial progress, from being solely a data repository to becoming a resource for DoD patient safety.

The PSC, established in 2000, maintains the DoD Registry for Patient Safety Data, collected from 143 military clinics and hospitals worldwide. Monthly summary reporting began in November 2002, making 2003 the first year for data reporting. In addition, during 2003 medication error reporting was split off and accomplished through the MEDMARX system under contract with US Pharmacopoeia. In March 2004, MEDMARX became the sole instrument for reporting and analyzing military treatment facility (MTF) medication errors.

Achievements in 2004:

- Produced 4 Quarterly Summaries and the first Annual Summary of Information Reported to the PSC, quarterly Patient Safety Newsletters, bimonthly DoD Patient Safety Hot Topics (focused on breaking relevant information for facility Patient Safety Officers), and a second DoD Patient Safety Alert.
- Two articles submitted by the PSC to the Agency for Healthcare Research and Quality were accepted for an upcoming publication.
- Began providing feedback to the services and facilities on the Root Cause Analyses (RCAs) submitted, to learn from their efforts and improve the quality of future submissions.

- Began to receive and analyze Failure Mode and Effects Analyses (FMEAs).
- Provided targeted data analysis for the services and intermediate commands, focused support for individual MTFs, support for Patient Safety Officer training, and a number of presentations at conferences and other settings.
- Participated in the procurement of a commercial patient safety database. While the first step planned for early 2005 is a Proof of Concept, the long-range plan is DoD-wide acquisition and deployment of a database serving the needs of MTFs, the services, and the DoD.

CONSULTATION

The DoD PSC Registry collects, analyzes, and reports cases on a fiscal-year basis. The cases are collected in 4 separate streams:

1. Monthly Summary Reports of nonmedication events (includes near misses and actual events) (47,040)
2. MEDMARX medication error events (inpatient: 7475; outpatient: 31,981)
3. RCAs (149)
4. FMEAs (72)

EDUCATION

Presentations

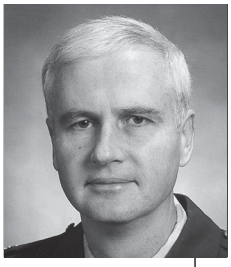
1. January 2004: San Antonio, Tex, DoD Patient Safety Orientation Course, "Medication safety and error reporting in the Department of Defense," RA Nosek.
2. January 2004: San Antonio, Tex, DoD Patient Safety Orientation Course, G Rake.
3. January 2004: Rockville, Md, Medication Safety Training DoD PSC/CERPS/US Pharmacopeia, "Patient safety tools: MEDMARX," RA Nosek.
4. February 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Medication safety and error reporting in the Department of Defense," RA Nosek.
5. February 2004: San Diego, Calif, Medication Safety Training DoD PSC/CERPS/US Pharmacopeia, "Patient safety tools: MEDMARX," RA Nosek.
6. April 2004: Portsmouth, Va, Medication Safety Training DoD PSC/CERPS/US Pharmacopeia, "Patient safety tools: MEDMARX," RA Nosek.
7. April 2004: Rockville, Md, Medication Safety Training DoD PSC/CERPS/US Pharmacopeia, "Patient safety tools: MEDMARX," RA Nosek.
8. June 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: MEDMARX," RA Nosek.
9. June 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: failure mode effects analysis, TapRooT software training," B Olson.
10. June 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools," G Rake.
11. July 2004: Washington, DC, Agency for Healthcare Research and Quality Conference, "Centralized medication error reporting in the Department of Defense: keys to successful implementation and using data to get results," RA Nosek.
12. July 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: MEDMARX," RA Nosek.
13. July 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: failure mode effects analysis, TapRooT software training," B Olson.
14. July 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools," G Rake.
15. July 2004: Fairbanks, Alaska, Medication Safety Training DoD PSC/CERPS/US Pharmacopeia, "Patient safety tools: MEDMARX," RA Nosek.
16. August 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: MEDMARX," RA Nosek.
17. August 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools: failure mode effects analysis, TapRooT software training," B Olson.

18. August 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Enhanced Patient Safety Manager Training, "Patient safety tools," G Rake.
19. October 2004: Naples NH, Italy; Ramstein AFB, Germany, "DoD patient safety training," B Olson.
20. December 2004: Rockville, Md, DoD PSC/CERPS/US Pharmacopeia Patient Safety Training Basic Course, "Patient safety tools: MEDMARX," RA Nosek.

PROFESSIONAL ACTIVITIES

Official Trips

1. January 2004: TRICARE Conference, Washington, DC, G Rake (DoD PSC).
2. January 2004: DoD Patient Safety Orientation Course, San Antonio Tex, P Copeland (DoD PSC).
3. February 2004: HIMMS Annual Conference and Exhibition, Orlando Fla, G Rake (DoD PSC).
4. May 2004: National Patient Safety Foundation Annual Conference, Boston, Mass, RA Nosek, P Copeland, G Rake, R Roy (DoD PSC).
5. September 2004: AHRQ National Summit on Patient Safety Research, Crystal City, Va, P Copeland, M Davis, G Rake, R Roy (DoD PSC).
6. September 2004: Human Factors and Ergonomics Society Annual Conference, New Orleans, La, B Olson (DoD PSC).
7. October 2004: Pathology Quality and Patient Safety Meeting, Pittsburgh, Penn, G Rake (DoD PSC).
8. October 2004: American Society for Healthcare Risk Management Annual Conference, Orlando, Fla, M Davis (DoD PSC).
9. October 2004: Advanced Statistical Analysis (SPSS) Training, Arlington, Va, R Roy (DoD PSC).
10. October 2004: Federation/HFES Human Factors and Patient Safety Forum, Washington, DC, B Olson (DoD PSC).



Frank T. Flannery, MD, JD
Chair
Date of Appointment — 9 October 1990

DEPARTMENT OF LEGAL MEDICINE

STAFF

Medical

Frank T. Flannery, MD, JD
Richard L. Granville, MD, JD
William J. Oetgen, MD, MBA
Alfred S. Buck, MD
Susan Freeburn, RN

Legal

Alan Cash, RN, JD
Jill E. Thach, JD
(D) Phyllis K. Oetgen, MSW, JD

Administrative

Kevin Slaton, TSgt, USAF
(D) Virginia R. Hunt, Legal Assistant
Herman Furlow, Administrative Assistant
Daniel Wheatley, MS, Statistics Specialist
(D) Marian Rodriquez, Administrative Assistant
(D) Wendy A. Downing, Administrative Assistant
(D) Taneka Childs, Credentials Manager
Mary Ann Millett, Credentials Manager
Amy Wynkoop, Credentials Manager
(A) Angela Dowzicky, Credentials Manager
(A) Patricia Broseker, Administrative Assistant
(A) Mary Conneran, Administrative Assistant
(A) Michael Orlowski, Legal Assistant

IMPACT

The department has had a significant impact on quality assurance and risk management activities of the **Military Health System**. Three of our major activities in 2004 were the utilization and analysis of data obtained from the Centralized Credentials Quality Assurance System (CCQAS), the expansion of a large sharing agreement with the Department of Homeland Security (DHS) to perform credentials management for the nation's emergency responders, and participation in the Maximus External Peer Review Program of the DoD to ensure compliance with the statement of work for this important quality management function.

1. CCQAS was developed over the past 10 years to facilitate credentials management in the DoD, with the goal of speeding deployment and movement of health care providers in support of **military operations**. Today, CCQAS continues to undergo further modification and development. Our department has an important role in this process as the DoD component analyzing medical malpractice cases, adverse privileging actions, and disability cases within CCQAS. Analysis and reporting of this information is **highly military relevant**, as it improves the quality of medical care for our soldiers in peacetime and during major deployments.

2. The continuance of a sharing agreement with the DHS for credentials management resulted in a pivotal role for the department in protecting our nation. The DHS Directorate of Emergency Preparedness and Response manages and coordinates the federal medical response to major emergencies and federally declared disasters, including natural disasters, technological disasters, major transportation accidents, and acts of terrorism. Through this sharing agreement, our department plays a vital role in ensuring that the thousands of health care providers who may potentially respond to these major events are properly credentialed for their important roles.
3. Our department actively participated in the analysis and review of several hundred **military** paid medical **malpractice cases**. This effort was performed in coordination with the Office of the Assistant Secretary of Defense for Health Affairs (OASD (HA)) and the Tricare Management Activity. The identification of high risk medical practices and procedures, providing the opportunity to appropriately target quality assurance efforts, has **significant military relevance** in improving the quality of medical care in the military health system.

CONSULTATION — QUALITY MANAGEMENT/RISK MANAGEMENT/CREDENTIALS MANAGEMENT

Cases	*Completed*
Military	291
Army (129)	
Navy (99)	
Air Force (63)	
Federal	482
DoJ (BoP) (191)	
DHS (259)	
DoJ (PSOB) (32)	
Interdepartmental	5
Total	778

The department is active in medical, legal, and credential consultations for DoD and other federal agencies, giving highest priority to **military relevant DoD projects**. We participate in and provide statistical input to a number of senior-level DoD committees related to quality improvement and risk management.

- A primary focus of the department has been an active involvement with the DoD Risk Management Committee, chaired by the OASD (HA). Our department assists OASD (HA) in analyzing aggregate tri-service malpractice data provided by the services. We also obtain medical malpractice data from the Department of the Treasury and report to that committee and the 3 services to enable DoD to monitor and respond in an appropriate, timely manner to paid medical malpractice cases. Our department also participates in the TRICARE Clinical Quality Forum. Members of the department periodically provide briefings to this senior-level DoD committee regarding our activities at AFIP, including CCQAS, malpractice case information, and Feres-barred (active duty) cases. Finally, the department has provided ongoing consultation to assist in the further development of the DoD's CCQAS through participation on the CCQAS Functional Steering Committee. The structure and content of the Risk Management, Disability and Adverse Actions modules of this large database, as well as the ad hoc and standard reporting features, were appropriately structured and modified by our staff in 2004.
- The department is actively involved with the Maximus External Peer Review Program (Maximus). Paid medical malpractice cases, which meet the standard of care at the offices of the respective Surgeons General, are reviewed by Maximus as an external entity under contract to DoD. Our department has an important role in insuring that all medical-legal review aspects conform to the particulars of the statement of work, so that the contractor adequately addresses issues of standard of care, compliance with causation, and system issues. The department analyzes the cases and provides feedback to OASD (HA).
- The department has important interaction with the Department of the Treasury. On a monthly basis, we receive and analyze financial reports from the DoT in order to assist

OASD (HA) in monitoring DoD medical malpractice payments and trends. This project is highly important because these figures are used for comparison with the larger database in the private sector. Treasury data also facilitate notification to the 3 Offices of the Surgeons General of newly paid medical malpractice cases, so that they can meet their statutory requirement of reporting to the National Practitioner Data Bank in a timely fashion.

- The department analyzes the Risk Management, Disability, and Adverse Action modules of the CCQAS. In 2004, members of the department actively participated on the CCQAS Configuration Control Board to further refine these modules and enhance the usefulness of the reports which can be produced from these databases.
- The department continues its valuable DoD credentials work through a sharing agreement with the Navy Recruiting Command by verifying the credentials and claims histories of health care providers who have applied to be accessioned as **military personnel** for the Department of the Navy. The department has a sharing agreement with the Bureau of Prisons in the evaluation and prime source verification of the credentials of newly hired health care providers for the DoJ. This work is so successful that the United States Coast Guard has requested our assistance in managing the credentials of their health care providers. This agreement is in the formative stage, and their providers will be prime source verified and entered into CCQAS.
- Case review for other federal agencies, according to the department's mission statement, was furthered through sharing agreements in 2004. Currently, we have active sharing agreements with the Department of Health and Human Services Inspector General's Office, the Bureau of Prisons' General Counsel, and the Nuclear Regulatory Commission. In 2004 an additional sharing agreement with the DoJ was signed and review has been performed on a number Public Safety Officer Benefits cases, in order to determine whether injured law enforcement officers or public safety officers are eligible to obtain benefits through that program after appropriate evaluation. These medical-legal reviews are important to the agencies involved in determining the standard of care, causation, and injury elements of these health care-related cases.
- The department participates as a voting member on the Public Health Service Quality Review Panel, reviewing malpractice claims involving the Indian Health Service and the other agencies. Panel members review malpractice claims information and determine whether the named health care providers have met the standard of care as it relates to the care provided the claimant, and if the standard of care was not met, they then decide whether this caused the alleged injury.
- The department maintains a repository of over 18,000 closed DoD medical malpractice cases. This repository has existed since 1990. In 2004, the department accessioned and cataloged 2,158 newly closed DoD medical malpractice cases, including risk management case files from the Office of the Army Surgeon General. In 2004 our department, in conjunction with Department of Repository and Research Services at AFIP, continued work with an outside contractor to image medical malpractice claim files in the repository. About 2,500 cases have been imaged to date. The imaging will preserve the claim files in an electronic format and decrease storage space for files. The repository has **high military relevance** since the 3 Offices of the Surgeons General often require these records to determine standard of care in paid medical malpractice cases. The repository has also been used in an ongoing collaborative relationship between our department and the American Society of Anesthesiology to reduce liability for anesthesia providers and improve patient care.

EDUCATION

- The department publishes *Legal Medicine*, an annual journal of risk management. By completing a quiz, physicians earn 5 category I CME credits, provided free of charge to military and full-time federal physicians. Approximately 15,000 CME credits were awarded in 2004, a substantial portion of which were awarded to **military** and federal civilian **physicians**.
- In 2004 we published a hard copy and Internet version of *Nursing Risk Management*. The journal had been produced electronically for 6 years, providing a total of 21.3 contact hours for registered nurses. It is provided free of charge to **military** and full-time federal civilian **nurses**. We have begun an aggressive solicitation campaign to increase the number of subscribers to this important journal. Both *Legal Medicine* and *Nursing Risk Management* have **proven military relevance**, especially for remotely deployed personnel who are unable to attend conferences. The *Legal Medicine* evaluation survey shows that over 98% of military subscribers affirm that *Legal Medicine* is relevant to their practice of medicine in the MHS.

- The department provided medical-legal training to a number of USUHS and other medical students.

Faculty Appointments

Georgetown University Medical School, Washington, DC, Clinical Assistant Professor, F Flannery.

Presentations

1. March 2004: Washington, DC, Presentation to Dr. Tornberg and Senior Staff of OASD(HA) and TMA, "Feres barred medical malpractice cases and the standard of care," R Granville, A Cash.
2. December 2004: Washington, DC, Georgetown University, "Medical malpractice today," F Flannery.

RESEARCH

Journal Articles

1. Stevenson E. Appendectomy: clinical and legal pitfalls in diagnosis and treatment. *Legal Med*. 2004:6-23.
2. Berran P. Avoiding errors in telepathology. *Legal Med*. 2004:14-19.
3. Flannery F. Recent court decisions. *Legal Med*. 2004:20-29.
4. Granville R. HIPDB: a tool to combat health care fraud (part II). *Legal Med*. 2004:30-36.
5. Cash A. Wrong site surgery. *Legal Med*. 2004:37-47.
6. Greenspan R. Armed Forces Medical Examiner System. *Legal Med*. 2004:48-49.
7. Summers K. Casting your net wide: an innovative process for closing the loop on risk management reporting. *Nurs Risk Manage*. 2004:7-16.
8. Benton J, Bunting R. Malpractice insurance principles for nurses. *Nurs Risk Manage*. 2004:17-21.
9. Killam P. Childhood asthma: reducing the risks. *Nurs Risk Manage*. 2004:22-30.
10. Michael J. Disciplinary actions by state boards of nursing. *Nurs Risk Manage*. 2004:32-37.
11. Cash A. The retention of foreign bodies after a procedure. *Nurs Risk Manage*. 2004:38-47.
12. Cash A. Case review: nurse medication error and punitive damages. *Nurs Risk Manage*. 2004:48-50.

PROFESSIONAL ACTIVITIES

Official Trips

1. February 2004, National Credentialing Forum, Phoenix, Ariz, S Freeburn (ARP).
2. September 2004, NAMSS Credentials Forum, Miami, Fla, S Freeburn (ARP).

Editorial

1. *Federal Practitioner*, F Flannery.
2. *Military Medicine*, R Granville.
3. *Nursing Risk Management*, A Cash.

DIRECTORATE OF ADVANCED PATHOLOGY

Sumitra Parekh
COL, MC, USA
Director, Advanced Pathology

GROUP 1—
- Genitourinary Pathology (Nephropathology)
- Gynecologic & Breast Pathology
- Neuropathology (Ophthalmic Pathology)

GROUP 2—
- Dermatopathology
- Orthopedic Pathology
- Soft Tissue Pathology
- Oral & Maxillofacial Pathology
- Endocrine & Otorhinolaryngic/Head-Neck Pathology

GROUP 3—
- Hematopathology
- Veterinary Pathology
- Environmental & Infectious Disease Pathology

GROUP 4—
- Hepatic & Gastrointestinal Pathology
- Cardiovascular Pathology
- Pulmonary & Mediastinal Pathology

ADVANCED PATHOLOGY

GROUP 1

Genitourinary Pathology (Nephropathology)

Gynecologic & Breast Pathology

Neuropathology (Ophthalmic Pathology)

Isabell A. Sesterhenn, MD
Chair
Date of Appointment — May 2004

DEPARTMENT OF GENITOURINARY PATHOLOGY AND NEPHROPATHOLOGY

STAFF

Medical

Isabell A. Sesterhenn, MD, Chair
Charles J. Davis, Jr., MD, ARP
Raj Shekar, COL, MC, USA, Staff Pathologist
(D) Robert L. Becker, Col, USAF, MC
William Winecoff, COL, MC, USA
Sharda G. Sabnis, MD, Nephropathologist
Thomas R. Himes, CAPT, MC, USN, Staff Pathologist (part-time)
Bungo Furusato, MD, Fellow
Yijun Guo, MD, PhD, Callender-Binford Fellow, January-June
Armida Orozco, MD, Callender-Binford Fellow, November-December

Scientific

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

Administrative

Renee Upshur-Tyree, Administrator
Annette D. Allen, Secretary, VA
Vera Pettus, Medical Secretary
Paulette Crampton, Secretary

IMPACT

- The department's relevance to the Institute and to the **military** can be seen in the GU laboratory's provision of immunohistochemistry, immunofluorescence, and in situ hybridization for our own and 10 other departments of the AFIP, and for the urology and pathology services of WRAMC, Malcolm Grow Medical Center, Ireland Medical Center, OAFME, and the Naval Medical Center–Camp Pendleton.
- Our **military relevance** is further illustrated by our role as the pathology center for the Center for Prostate Disease Research, a tri-service prostate specimen repository. In this capacity, we are frequently asked to provide personal consultations to members of Congress and high-ranking military officers.
- The department's contributions to civilian medicine entail not only our consultation work but our service as the WHO Collaboration Center for Histological Classification of Tumors of the Urinary Tract and Male Sex Organs. In 2004, the *WHO Classification of Tumours: Pathology and Genetics of the Urinary System and Male Genitourinary System* was published. Members of the staff contributed as authors and coeditors of this book. These books provide criteria for the diagnosis of tumors.
- In 2004, the department collaborated with the Center for Prostate Disease Research on gene expression profiling in formalin-fixed, paraffin-embedded specimens. This methodology will greatly enhance the utilization of specimens representing malignant and nonma-

lignant diseases of the genitourinary tract. The GU Registries at the AFIP, with their vast repository of typical and unusual diseases, can uniquely contribute to the study of molecular pathology.

- Nephropathology staff review all kidney biopsies performed at WRAMC and NNMC, and many other **military**, VA, and federal institutions. In 2004, 79% of nephropathology cases came from **military** and federal institutions, a 3% increase over 2003.

CONSULTATION—GENITOURINARY PATHOLOGY

The number of consultations on difficult kidney tumors and on bladder tumors in young patients increased in 2004. However, most of our surgical consultations were on prostate specimens, many of which are from patients in their forties and fifties.

Most of our prostate biopsies are received from **active members of the military**. Because of screening programs, we are seeing biopsies on totally asymptomatic patients who are found to have elevated PSA, a nodule on digital rectal examination, or an abnormal ultrasound. These biopsies, especially in a group of young patients from whom 6 or more biopsy specimens were taken, have led to problems in interpretation because we encounter changes not seen before. The major problem in these cases is whether the changes represent latent cancer (prostatic cancer found in patients who die of other causes). The problem is compounded by the fact that many patients have been pretreated with a variety of new drugs.

The overall number of consultations decreased from 5,150 in 2003 to 4,221 in 2004; 66% of these were military and VA cases.

Cases	*Completed*
Military	1,162
Army	578)
Navy	(168)
Air Force	(449)
Federal	1,374
VA	(1,411)
Civilian (1,332)	1,299
Interdepartmental	280
Total	4,221

The department provided telepathology consultation on 53 cases (25% of all telepathology cases) to national and international sites. Half of the telepathology cases were **military**.

We made no change in the contributor's diagnosis in 1,749 cases (2/3 of which were for confirmation), a minor change in diagnosis in 1,611 cases, and a major change in diagnosis in 107 cases and received 371 cases with no contributor diagnosis. A minor diagnostic change with respect to a pathological disagreement can have major impact on clinical management.

CONSULTATION—NEPHROPATHOLOGY

Cases	*Completed*
Military	229
Army	(128)
Navy	(57)
Air Force	(44)
Federal	116
VA	(99)
PHS	(17)
Civilian	90
Interdepartmental	78
Total	513

We were the primary pathologist in most of our cases. Most contributors request light, electron, and/or immunofluorescence microscopy to confirm a final diagnosis. This process involves time-consuming research for clinical data, and discussion with the clinicians or contributing pathologists.

We use immunohistochemistry (peroxidase method) when tissue for immunofluorescence microscopy is inadequate. Among the human kidney biopsies sent to us in 2004, 345 (79%) were from federal institutions and 90 (21%) were from civilian contributors. The average case turnaround time was 9.95 days.

Clinical Appointments

SG Sabnis:

1. Consultant, Department of Pathology, NNMC.
2. Adjunct Staff, Department of Pathology, WRAMC.

EDUCATION

Courses: Department staff participated in 3 AFIP and 1 non-AFIP course in 2004. Two online courses (bladder and penis) are available on the Web, as are virtual slides on 150 entities of the genitourinary tract.

Conferences

1. Nephropathology held a monthly renal biopsy conference for staff and fellows of the divisions of nephrology at WRAMC and NNNMC, for a total of 190 man-hours.
2. Dr. Sabnis participated in a monthly Federal Medical Monthly Nephrology Seminar at USUHS, for a total of 300 man-hours.

Genitourinary Pathology Trainees: The department hosted 2 urology residents from WRAMC, who spent 1 month in the department and additional time involved in a joint research project. We had 2 federal employees, 1 foreign national, and 1 nonfederal trainee for a total of 97 days.

Nephropathology Trainees: Staff train pathology fellows in electron microscopy for the joint residency program of WRAMC and NNMC. During 2004, we had 12 pathology and nephrology trainees (340 training days), 5 from federal institutions and 7 from nonfederal institutions. Trainees attended daily 2-hour microscopic pathology conferences. Our Callender-Binford Nephropathology Fellowship (1 to 2 years) has trained 7 fellows since 1998.

Faculty Appointments

IA Sesterhenn:

1. Assistant Professor of Pathology, USUHS, Bethesda, Md.
2. United States Military Cancer Institute, WRAMC, Washington, DC.

CJ Davis:

1. Assistant Professor of Pathology, USUHS, Bethesda, Md.
2. United States Military Cancer Institute, WRAMC, Washington, DC.

RL Becker:
Adjunct Assistant Professor of Pathology, USUHS, Bethesda, Md.

SG Sabnis:

1. Clinical Associate Professor of Pathology, USUHS, Bethesda, Md.
2. Clinical Associate Professor, Georgetown University, Department of Pathology.
3. Adjunct Associate Professor, George Washington University, Department of Pathology.
4. Clinical Associate Professor, Howard University, Department of Pathology.
5. Honorary Professor, Muljibhai Urological Institute, Nadiad, India.

Presentations—Genitourinary Pathology

1. February 2004: Washington, DC, AFIP VTC, “Pathology of kidney tumors.”
2. March 2004: Washington, DC, AFIP VTC, “Pathology of testis tumors.”
3. March 2004: Washington, DC, WRAMC; Bethesda, Md, NNMC, “Pathology of prostate, kidney, testis and bladder.”
4. October 2004: Washington, DC, George Washington University, “Pathology of carcinoma of the bladder.”
5. October 2004: Center for Prostate Disease Research.

Presentations—Nephropathology

1. January 2004: Nadiad, India, Muljibhai Urological Institute, "Case presentations and discussions," SG Sabnis.
2. March 2004: Washington, DC, WRAMC, Department of Pathology, "Evaluation of renal biopsy," SG Sabnis.
3. April 2004: Silver Spring, Md, Nephropathology Review Course, 4 lectures, SG Sabnis.
4. May 2004: Nadiad, India, Muljibhai Urological Institute, "Pathology of lupus nephritis and case discussion," SG Sabnis.
5. May 2004: Bethesda, Md, Annual Anatomic Pathology Review Course, "Evaluation of renal biopsy and case discussions," SG Sabnis.
6. May 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Unusual cases," SG Sabnis.
7. June 2004: Washington, DC, AFIP VTC, "Nodular lesions," SG Sabnis.
8. December 2004: Nadiad, India, Muljibhai Urological Institute, "Case presentations and discussions," SG Sabnis.

RESEARCH

Journal Articles

1. Petrovics G, Zhang W, Makarem M, Street JP, Connelly R, Sun L, Sesterhenn IA, Srikantan V, Moul JW, Srivastava S. Elevated expression of PCGEM1, a prostate-specific gene with cell growth-promoting function, is associated with high-risk prostate cancer patients. *Oncogene*. 2004;23:605-611.
2. Fetsch JF, Davis CJ Jr, Miettinen M, Sesterhenn IA. Leiomyosarcoma of the penis: a clinicopathologic study of 14 cases with review of the literature and discussion of the differential diagnosis. *Am J Surg Pathol*. 2004;28:115-125.
3. Griewe GL, Dean RC, Zhang W, Young D, Sesterhenn IA, Shanmugam N, McLeod DG, Moul JW, Srivastava S. p53 immunostaining guided laser capture microdissection (p53-LCM) defines the presence of p53 gene mutations in focal regions of primary prostate cancer positive for p53 protein. *Prostate Cancer Prostatic Dis*. 2003;6:281-285.
4. Sesterhenn IA, Davis CJ Jr. Pathology of germ cell tumors of the testis. *Cancer Control*. 2004;11:374-387.
5. Chu WS, Furusato B, Wong K, Sesterhenn IA, Mostofi FK, Wei MQ, Zhu Z, Abbondanzo SL, Liang Q. Ultrasound-accelerated formalin fixation of tissue improves morphology, antigen and mRNA preservation. *Mod Pathol*. 2004, epub.
6. Fetsch JF, Sesterhenn IA, Miettinen M, Davis CJ Jr. Epithelioid hemangioma of the penis: a clinicopathologic and immunohistochemical analysis of 19 cases, with special reference to exuberant examples often confused with epithelioid hemangioendothelioma and epithelioid angiosarcoma. *Am J Surg Pathol*. 2004;28:523-533.
7. Shen D, Lao Z, Zeng J, Zhang W, Sesterhenn IA, Sun L, Moul JW, Herskovits EH, Fichtinger G, Davatzikos C. Optimized prostate biopsy via a statistical atlas of cancer spatial distribution. *Med Image Anal*. 2004;8:139-150.
8. Fetsch JF, Davis CJ Jr, Hallman JR, Chung LS, Lupton GP, Sesterhenn IA. Lymphedematous fibroepithelial polyps of the glans penis and prepuce: a clinicopathologic study of 7 cases demonstrating a strong association with chronic condom catheter use. *Hum Pathol*. 2004;35:190-195.

Abstracts

1. Liu A, Furusato B, Shaheduzzaman S, Ravindranath L, Xu LL, Srikantan V, Sesterhenn IA, McLeod DG, Moul JW, Srivastava S, Petrovics G. Quantitative evaluation of a gene expression panel in matched benign and neoplastic prostate epithelial cells from patients with "high-risk" and "moderate-risk" of prostate cancer progression. 95th AACR, Orlando, Fla. Oral Minisymposium Session. Abstract 5585.
2. Sun C, Xu LL, Petrovics G, Makarem M, Furusato B, Shi Y, Zhang W, Sesterhenn IA, McLeod DG, Sun L, Moul JW, Srivastava S. Quantitative expression profile of PSGR in human prostatic epithelial cells of benign and malignant prostate. 95th AACR, Orlando, Fla. Poster Presentation. Abstract 2711.
3. Shaheduzzaman S, Srikantan V, Petrovics G, Furusato B, Liu A, Nau ME, Valladares M, Zhang W, Xu L, Sun L, Sesterhenn IA, Vahey M, McLeod DG, Moul JW, Srivastava S. Gene expression signatures in laser capture microdissected benign and malignant epithelial cells correlates with the clinico-pathological features of prostate cancer. 95th AACR, Orlando,

Fla. Poster Presentation. Abstract 2858.
4. Petrovics G, Ravindranath L, Street JP, Makarem M, Zhang W, Sesterhenn IA, Sun L, Moul JW, Srivastava S. Cellular functions and pathways affected by PCGEM1, a prostate-specific gene associated with African American prostate cancer patients. 95th AACR, Orlando, Fla. Oral Minisymposium Session. Abstract 4021.
5. Sesterhenn IA, Furusato B, Becker RL, McLeod DG, McCarthy WF. A comparison of two grading systems in predicting stage. *Pathol Int.* 2004;54 Suppl 2:A148.
6. Sesterhenn IA, Furusato B, McLeod DG, Dickason TJ, McCarthy W. Topographic correlation of largest tumor dimension with site-specific biopsy findings. *Pathol Int.* 2004;54 Suppl 2:A147.
7. Sesterhenn IA, Furusato B, Davis CJ. Alpha-methylacyl-coa racemase expression in nephrogenic adenoma and clear cell adenocarcinoma of the bladder and urethra. *Pathol Int.* 2004;54 Suppl 2:A147.
8. Sesterhenn IA, Furusato B, Shaheduzzaman S, Shrivastava S, McLeod DG. Definition of the gene expression signatures characteristic of prostate cancer differentiation. *Pathol Int.* 2004;54 Suppl 2:A147.
9. Sesterhenn IA, Davis CJ, Furusato B. Phyllodes tumors of the prostate: a clinical-pathological study of 63 cases. *Pathol Int.* 2004;54 Suppl 2:A5.
10. Sesterhenn IA, Furusato B, Chu WS, Mcleod DG, Becker RL. Does long-term fixation alter nuclear morphology? *Pathol Int.* 2004;54 Suppl 2:A34.
11. Sesterhenn IA, Furusato B, Potter K, Becker RL, Davis CJ. Magnetic resonance microscopy of radical prostatectomies at 7 TESLA. *Pathol Int.* 2004;54 Suppl 2:A37.
12. Furusato B, Furusato E, Becker R, Davis C, Moul J, McLeod DG, Sesterhenn IA. A comparison of two grading systems in predicting stage. *Br J Urol.* 2004;94 Suppl 2:205.
13. Furusato B, McLeod DG, Dickason TJ, Becker RL, Davis C, Moul J, Sesterhenn IA. Topographic correlation of largest tumor dimension with site-specific biopsy findings. *Br J Urol*. 2004;94 Suppl 2:154.
14. Davis CJ, Furusato B, Sesterhenn IA. Alpha-methylacyl-coa racemase: expression levels of this novel cancer biomarker in nephrogenic adenoma. *Br J Urol*. 2004;94 Suppl 2:47.
15. Furusato B, Shaheduzzaman S, Zhang W, Petrovics G, Srikantan V, Vahey M, Becker R, Davis C, Moul J, McLeod D. Definition of the gene expression signatures characteristic of prostate cancer differentiation. *Br J Urol*. 2004;94 Suppl 2:201.
16. Sesterhenn IA, Furusato B, Davis CJ. Phyllodes tumors of the prostate: a clinical-pathological study of 63 cases. *Br J Urol*. 2004;94 Suppl 2:103.
17. Furusato B, Potter K, Becker R, Davis, C, Sesterhenn I. Magnetic resonance microscopy of radical prostatectomies. *Br J Urol*. 2004;94 Suppl 2:201.
18. Davis C, Barton J, Sesterhenn IA. Angiomyolipoma, cystic type. *Br J Urol*. 2004;94 Suppl 2:108.
19. Sesterhenn IA, Furusato B, Davis CJ. Phyllodes tumors of the prostate: a clinical-pathological study of 39 cases. *Mod Pathol*. 2004;17 Suppl 1:176A.
20. Furusato E, Shaheduzzaman S, Zhang W, Petrovics G, Srikantan V, Vahey M, McLeod DG, Moul JW, Becker R, Davis C, Srivastava S, Sesterhenn IA. Definition of the gene expression signatures characteristic of prostate cancer differentiation. *Mod Pathol*. 2004;17 Suppl 1:152A.
21. Furusato B, Dickason TJ, Furusato E, McLeod D, Moul JW, Becker RL, Davis CJ, Sesterhenn IA. Topographic correlation of largest tumor dimension with site-specific biopsy findings. *Mod Pathol*. 2004;17 Suppl 1:152A.
22. Furusato B, Potter K, Becker R, Sesterhenn IA, Davis C. Prostatic carcinoma detection in radical prostatectomies by magnetic resonance microscopy and light microscopy. *Mod Pathol*. 2004;17 Suppl 1:152A.
23. Petrovics J, Ravindranath L, Street JP, Makarem M, Sesterhennn IA, Zhang W, Sun L, Moul JW, Srivastava S. Cellular functions of PGGEM1, prostate-specific gene associated with African American prostate cancer patients. *J Urol*. 2004;171:175.
24. Sun CH, Xu LL, Petrovics J, Makarem M, Furusato B, Shi Y, Zhang W, Sesterhenn IA, McCleod DG, Sun L, Moul JW, Srivastava S. Quantitative expression profile of PSGR in prostatic epithelial cells of benign and malignant prostate. *J Urol*. 2004;171:112.
25. Furusato B, Sesterhenn IA, Furusato E, McCarthy WF, Moul JW, Becker R, Davis C, McLeod DG, Sesterhenn IA. A comparison of two grading systems in predicting stage. *J Urol*. 2004;171:227.
26. Zeng J, Sun L, Chen Y, Moul JW, Sesterhenn IA, McLeod DG. Racial difference in

location, number and volume of prostate cancer based on 3-dimensional reconstructive radical prostatectomy specimens. *J Urol*. 2004;171:228.
27. Shaheduzzaman S, Furusato B, Srikantan V, Petrovics G, Nau M, Valladares M, Zhang W, Sun L, Sesterhenn IA, McLeod DG, Moul JW, Chen Y, Vahey M, Strivastava S. Gene expression signatures in benign and malignant epithelial cells of prostate cancer patients with "aggressive" and "nonaggressive" disease. *J Urol*. 2004;171:290.
28. Liu A, Furusato B, Shaheduzzaman S, Ravindranath L, Xu LL, Srikantan V, Fuhrman ST, Sesterhenn IA, McLeod DG, Moul JW, Strivastava S, Petrovics G. Quantitative expression characteristics of a panel of prostate cancer genes in matched benign and neoplastic prostate cells of patients with "aggressive" and "nonaggressive" cancer. *J Urol*. 2004;171:292.
29. Solomon N, Sabnis SG, Swanson SJ, Kliener DE, Yuan CM. Acute rejection of a nonfunctioning renal allograft in a hemodialysis patient with chronic hepatitis-C undergoing peg-interferon alfa-2b therapy. *J Am Soc Nephrol*. 2004;15:878A.

Books

World Health Organization Classification of Tumours, Pathology and Genetics, Tumours of the Urinary System and Male Genital Organs. WHO; 2004.

Syllabuses

1. Annual Anatomic Pathology Review Course, April 2004.
2. Nephropathology Review Course, April 2004.
3. Annual Genitourinary Pathology Course.
4. WHO/SIU Bladder Consensus.
5. Tokyo Urologic Pathology Course.

Projects—Genitourinary Pathology

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.

Projects—Nephropathology

1. Does a combination of pirfenidone, enalapril and lovastatin reduce proteinuria and glomerular/interstitial histologic score in rats with PAN-induced FSGS and existing nephrotic syndrome? (WRAMC/AFIP; completed).
2. Pattern of protein size- and charge-selectivity in clinical kidney disease (WRAMC/AFIP; completed).

Collaborators

Military/Federal:

1. Center for Prostate Disease Research, Urology Services of WRAMC, Naval Medical Center, San Diego, Malcolm Grow Medical Center, Madigan Army Medical Center, Brook Army Medical Center, UHUHS:
   - Characterization of prostate cancer-associated tumor suppressor gene locus on chromosome 6q16.1.
   - Maspin expression profile in prostate cancer: an induction of maspin by androgen ablation.
   - Characterization of PCGEM1, a novel prostate-specific gene overexpressed in prostate cancer.
   - A novel prostate-specific G-protein-coupled receptor gene, PSGR, is overexpressed in prostate cancer.
   - Preclinical evaluation of prostate-specific G-protein coupled receptor, PSGR, for developing prostate vaccine.
   - SAGE-bioinformatics to define prostate-specific and prostate cancer-associated quantitative gene expression profiles.
   - Coordinated gene expression patterns define endoplasmic reticulum (ER) stress response pathway as a novel component of androgen signaling in prostate cancer cells.
   - CPDR Prostate Tissue LCM-based RNA/DNA Bank.
   - The Prostate Cancer Cell Center in CPDR.

2. WRAMC Department of Surgery, Urology: Prostate Cancer Vaccine Program.
3. Tripler Army Medical Center and Queens Hospital Hawaii: Cancer localization in the prostate with F-18 fluorocholine PET.
4. Cancer Prevention Studies Branch, Center for Cancer Research, NCI and WRAMC: The utility of gene-specific DNA hypermethylation within diagnostic sextant biopsies as an early detection molecular marker of prostate cancer.

Civilian:

1. Division of Epidemiology and Genetics, NCI: International study on familial testicular tumors.
2. Division of Cancer, Epidemiology and Genetics, NCI: Comparison of Chinese and American prostatic carcinomas.
3. American Veterinary Association: Classification of canine bladder tumors.
4. WRAMC, Urology Department, VA, and civilian institutions: A phase 2, open label, randomized study to evaluate the efficacy of CP-675,206 in combination with neoadjuvant androgen ablation and androgen ablation alone in patients with high-risk prostate cancer.
5. Tripler Army Medical Center and Queens Hospital Hawaii: Cancer localization in the prostate with F-18 fluorocholine PET.

Interdepartmental:

Department of Hepatic and Gastrointestinal Pathology:

1. Evaluation of liver histology in 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).
2. Morphometric analysis of distribution of fibrosis.
3. Evaluation of liver histology in a phase 2, double-blind, randomized, placebo controlled, multicenter study of the safety and antifibrotic efficacy of interferon-gamma 1b in patients with severe liver fibrosis or compensated fibrosis due to hepatitis C.

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, US/Canadian Academy of Pathology, Vancouver, BC, SG Sabnis (ARP), IA Sesterhenn.
2. May 2004, 99th AUA Annual Meeting, San Francisco, Calif, IA Sesterhenn.
3. July 2004, Tokyo Genitourinary Working Group, Tokyo, Japan, IA Sesterhenn (Kyorin University).
4. October 2004, SIU Meeting, Honolulu, Hawaii, IA Sesterhenn.
5. October 2004, IAP Meeting, Brisbane, Australia, IA Sesterhenn.

Manuscripts Reviewed: CJ Davis and IA Sesterhenn reviewed 7 manuscripts for the following professional journals:

1. *Human Pathology*
2. *Urology*
3. *Oncogene*
4. *Journal of Andrology*

Editorial Boards

SG Sabnis:

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

Honors

1. Honorary Member, German Prostatakarzinom-Konsortium, IA Sesterhenn.
2. President, Association of Indian Pathologists in North America, March 2004 to March 2006, SG Sabnis.

Ross Barner, LTC, MC, USA
Interim Chair
Date of Appointment — 6 July 2004

DEPARTMENT OF GYNECOLOGIC AND BREAST PATHOLOGY

STAFF

Ross Barner, LTC, MC, USA, Staff Pathologist, Interim Chair
Tuyethoa N. Vinh, MD, Staff Pathologist, Assistant Chair
(A) Thomas H. Dougherty, Col, USAF, MC, Staff Pathologist
(A) Adonica Walker, Lt Col, USAF, MC, Staff Pathologist (Pediatric Pathology)
(D) Brian L. Strauss, Lt Col(s), USAF, MC, Outgoing Interim Chair
(D) Darren T. Wheeler, MAJ, MC, USAR, Staff Pathologist
(D) James W. Keating, MD, Staff Pathologist (Cellular Pathology)
(D) Chang Y. Liang, Col, USAF, MC, Staff Pathologist
(A) Rubina Mattu, MD, Staff Pathologist

Scientific

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

Fellow

Chengquan Zhao, MD

Administrative

Angeline Edmonds, Secretary
Consuelo Lewis, Administrative Assistant

IMPACT

During a year of transition, the department continued to provide excellent consultative services. The arrival of outstanding new professional staff with expertise in pediatric pathology and cytopathology has helped to stabilize the department and offset the departures of Dr. Strauss, Dr. Keating, Dr. Wheeler, and Dr. Liang. Despite fluctuations in staffing, our scientific staff has had one of their most productive years, and our overall turnaround time for military and civilian consultative cases has continued to be one of the best in the Institute.

CONSULTATION

Cases	***Completed***
Military	1,895
Army (1,073)	
Navy (390)	
Air Force (432)	
Federal	358
VA (346)	
USPHS (12)	
Civilian	1,650
Interdepartmental	274
Total	4,177

EDUCATION

Trainees: The department provided month-long observer training for 8 civilian senior pathology residents and 5 military senior pathology residents; 2-week active duty training for 2 pathologists in the reserves; and 2 teleconference presentations to outside military treatment facilities.

Presentations

1. February 2004: Nice, France, 7th International Symposium on the Molecular Basis of Predictive Oncology and Intervention Strategies, "Focal prostate basal cell layer disruptions and leukocyte infiltration are correlated events: implications for basal cell layer degradation and tumor invasion," YG Man, T Shen, YG Zhao, QX Sang.
2. February 2004: Nice, France, 7th International Symposium on the Molecular Basis of Predictive Oncology and Intervention Strategies, "Increasing BP1 expression correlates with progression and invasion of male breast and prostate tumors," YG Man, BL Strauss, PE Berg.
3. February 2004: Nice, France, 7th International Symposium on the Molecular Basis of Predictive Oncology and Intervention Strategies, "Morphologically similar normal and hyperplastic mammary ductal cells associated with and without malignant lesions have a different immunohistochemical profile," YG Man, PE Berg, R Barner, T Vinh, DT Wheeler, CY Liang, BL Strauss.
4. March 2004: Vancouver, BC, US/Canadian Academy of Pathology, "Cell clusters overlying focally disrupted myoepithelial cell layers and their adjacent counterparts within the same duct display a different pattern of mRNA expression," YG Man, X Zeng, T Shen, R Vang, R Barner, DT Wheeler, T Vihn, CY Liang, BL Strauss.
5. March 2004: Vancouver, BC, US/Canadian Academy of Pathology, "Non-smooth muscle restricted proteins exclusively or preferentially expressed in mammary myoepithelial cells: a programmed or induced phenomenon?" YG Man, R Barner, R Vang, DT Wheeler, CY Liang, T Vihn, GL Bratthauer, BL Strauss.
6. March 2004: Vancouver, BC, US/Canadian Academy of Pathology, "Allelic imbalances in endometrial stromal neoplasms: a model for genetic alterations in tumor and microenviromental tissues," F Moinfar, KL Kremser, YG Man, K Lax, K Zatloukal, FA Tavassoli, H Denk.
7. April 2004: Washington, DC, American Society for Investigative Pathology, "Morphologically comparable prostate acini and ducts with and without a focal basal cell layer disruption have a different cell proliferation rate: implications for tumor invasion," YG Man, T Shen, YG Zhao, QX Sang.
8. May 2004: Bethesda, Md, AFIP, 14th Annual Anatomic Pathology Course, "Breast core biopsy interpretation and differential diagnosis," R Vang.
9. May 2004: Bethesda, Md, AFIP, 14th Annual Anatomic Pathology Course, "Selected differential diagnostic problems in breast pathology," R Barner.
10. May 2004: Bethesda, Md, AFIP, 14th Annual Anatomic Pathology Course, "Pathology of the uterine cervix," DT Wheeler.
11. May 2004: Bethesda, Md, AFIP, 14th Annual Anatomic Pathology Course, "Pathology of the uterine corpus," BL Strauss.
12. May 2004: Bethesda, Md, AFIP, 14th Annual Anatomic Pathology Course, "Pathology of the ovary," R Vang.
13. October 2004: Washington, DC, DoD Center for Prostate Disease Research, Invited Lecture.
14. November 2004: Philadelphia, Penn, International Conference on Tumor Progression and Therapeutic Resistance, "Some in situ breast tumor cell clusters exhibit signs of invasion but lack expression of progression and proliferation related biomarkers: seeds for drug resistant tumors," YG Man, PE Berg.
15. November 2004: Philadelphia, Penn, International Conference on Tumor Progression and Therapeutic Resistance, "A subset of normal and hyperplastic appearing breast tissues contains cell clusters with malignant features: implications for tumor progression and invasion," YG Man, LP Wang.
16. December 2004: Washington, DC, National Capital Consortium Residency Program, "Pathology of the uterine cervix," R Barner.
17. December 2004: Washington, DC, National Capital Consortium Residency Program, "Variations on a theme: selected problems in breast pathology," R Barner.
18. December 2004: Washington, DC, National Capital Consortium Residency Program, "Gyn and breast unknown slide session," R Barner.

RESEARCH

Journal Articles

1. Man YG, Sang QX. The significance of focal myoepitehlial cell layer disruptions in breast tumor invasion: a paradigm shift from the "protease-centered" hypothesis. *Exp Cell Res*. 2004;301:103-118.
2. Man YG, Zhang H, Vang R, Strauss B, Zhang L, Gao CL. Direct and repeat uses of tissue sections as templates for liquid phase PCR amplification: applications and implications. *Appl Immunohistochem Mol Morphol*. 2004;12:266-270.
3. Man YG, Magrane GG, Lininger RA, Shen T, Kuhls E, Bratthauer GL. Morphologically similar epithelial and stromal cells in primary bilateral breast tumors display different genetic profiles: implications for treatment. *Appl Immunohistochem Mol Morphol*. 2004;12:305-314.
4. Zhao YG, Xiao AZ, Park HI, Newcomer RG, Yan M, Man YG, Heffelfinger SC, Sang QX. Endometase/matrilysin-2 in human breast ductal carcinoma in situ and its inhibition by tissue inhibitors of metalloproteinases-2 and -4: a putative role in the initiation of breast cancer invasion. *Cancer Res*. 2004;64:590-598.
5. Moinfar F, Kremser KL, Man YG, Lax K, Zatloukal K, Tavassoli FA, Denk H. Allelic imbalances in endometrial stromal neoplasms: frequent genetic alterations in the normal-appearing endometrial and myometrial tissues. *Gynecol Oncol*. 2004;95:662-671.
6. Man YG, Magrane GG, Lininger R, Shen T, Kuhls E, Bratthauer GL. Morphologically similar epithelial and stromal cells in primary bilateral breast tumors display different genetic profiles: implications for treatment. *Appl Immunohistochem Mol Morphol*. 2004;12:305-314.
7. Wheeler DT, Tai L, Bratthauer GL, Waldner DL, Tavassoli FA. Tubulolobular carcinoma of the breast: an analysis of 27 cases of a tumor with a hybrid morphology and immunoprofile. *Am J Surg Pathol*. 2004;28:1587-1593.
8. Maeda H, Nagata S, Wolfgang CD, Bratthauer GL, Bera TK, Pastan I. TARP, a prostate-specific protein localizing in mitochondria. *J Biol Chem*. 2004;279:24561-24568.
9. Bratthauer GL, Tavassoli FA. Assessment of lesions coexisting with various grades of ductal intraepithelial neoplasia of the breast. *Virchows Arch*. 2004;444:340-344.
10. Vang R, Barner R, Wheeler DT, Strauss BL. Immunohistochemical staining for Ki-67 and p53 helps distinguish Arias-Stella reaction from high-grade endometrial carcinoma, including clear cell carcinoma. *Int J Gynecol Pathol*. 2004;23:223-233.

Abstracts

1. Man YG, Zeng X, Shen T, Vang R, Barner R, Wheeler DT, Vihn T, Liang CY, Strauss BL. Cell clusters overlying focally disrupted myoepithelial cell layers and their adjacent counterparts within the same duct display a different pattern of mRNA expression. *Mod Pathol*. 2004;17(Suppl 1):40-41A.
2. Man YG, Barner R, Vang R, Wheeler DT, Liang CY, Vihn T, Bratthauer GL, Strauss BL. Non-smooth muscle restricted proteins exclusively or preferentially expressed in mammary myoepithelial cells: a programmed or induced phenomenon? *Mod Pathol*. 2004;17(Suppl 1):40A.
3. Moinfar F, Kremser KL, Man YG, Lax K, Zatloukal K, Tavassoli FA, Denk H. Allelic imbalances in endometrial stromal neoplasms: a model for genetic alterations in tumor and microenviromental tissues. *Mod Pathol*. 2004;17(Suppl 1):208A.
4. Man YG, Shen T, Zhao YG, Sang QX. Focal prostate basal cell layer disruptions and leukocyte infiltration are correlated events: implications for basal cell layer degradation and tumor invasion. *Cancer Detect Prev*. 2004;S-51:15.
5. Man YG, Strauss BL, Berg PE. Increasing BP1 expression correlates with progression and invasion of male breast and prostate tumors. *Cancer Detect Prev*. 2004;S-95:149.
6. Man YG, Berg PE, Barner R, Vinh T, Wheeler DT, Liang CY, Strauss BL. Morphologically similar normal and hyperplastic mammary ductal cells associated with and without malignant lesions have a different immunohistochemical profile. *Cancer Detect Prev*. 2004;S-137:282.
7. Berg P, Fu SW, Pinzone JJ, Man YG. The expression of BP1, a homeotic protein, increases with breast tumor progression. *Proc Am Assoc Cancer Res*. 2004;45:1159.
8. Man YG, Yousefi M, Wheeler DT, Barner R, Vang R, Vinh T, Liang CY, Bratthauer GL, Strauss BL. Focal myoepithelial cell layer disruptions and white blood cell infiltration are related events: implications for breast tumor progression and invasion. *Proc Am Assoc Cancer Res*. 2004;45.

9. Man YG, Shen T, Zhao YG, Sang QX. Morphologically comparable prostate acini and ducts with and without a focal basal cell layer disruption have a different cell proliferation rate: implications for tumor invasion. FASEB 2004;18:A1193.

Projects

1. Peutz-Jegher's syndrome.
2. Lobular intraepithelial neoplasia (LIN) of the breast: an examination of the relationship to ductal disease and infiltrating carcinomas.
3. STAT 5a in in situ ductal and lobular lesions and in invasive breast carcinomas.
4. Comparison of novel myoepithelial cell immunohistochemical markers with more established immunomarkers in the human breast.
5. New approaches for the early detection of breast cancer.
6. Low-grade spindle cell carcinoma of the breast.
7. Serous tumors with and without invasive and noninvasive implants.
8. Invasive adenocarcinoma of the cervix.
9. Loss of heterozygosity of bilateral breast tumors.
10. Genetic alterations in breast neoplasia.
11. Mesotheliomas of the ovary.
12. Detection of male breast tumor invasion.

Collaborators

1. Dr. Ira Pastan, Chief, Laboratory of Molecular Biology, NCI, NIH.
2. Dr. James L. Mulshine, Head, Intervention Section, NCI, NIH.
3. Dr. Robert F. Bonner, Chief, Section on Medical Biophysics, NIH.
4. Dr. Qing-Xiang Amy Sang, Associate Professor, Florida State University.
5. Dr. Patricia Berg, Associate Professor, George Washington University Medical Center.
6. Dr. Arnold Schwartz, Associate Dean, George Washington University Medical Center.
7. Dr. Judith Weitz, Director, Obstetrics and Gynecologic Research Lab, Hershey Medical Center.

PROFESSIONAL ACTIVITIES

1. YG Man: reviewed one manuscript for *Cancer Detection and Prevention*.
2. TH Dougherty: attended Annual American Association of Blood Banks Meeting.
3. R Barner: completed Phase I and II Non-Resident Studies, Command General and Staff College, Ft. Dix. Continuing Phase III, WRAMC.

Awards

YG Man: award for one of the best oral presentations and one of the best poster presentations, 7th International Symposium on the Molecular Basis of Predictive Oncology and Intervention Strategies, February 2004, Nice, France.

Elisabeth J. Rushing, COL, MC, USA
Interim Chair
Date of Appointment — 10 December 2004

DEPARTMENT OF NEUROPATHOLOGY AND OPHTHALMIC PATHOLOGY

STAFF – NEUROPATHOLOGY

Medical

(D) Hernando Mena, COL, MC, USA, Chair
Elisabeth J. Rushing, COL, MC, USA, Interim Chair
Glenn D. Sandberg, LTC, MC, USA, Staff Neuropathologist
(A) Charles S. Specht, MD, Staff Neuropathologist
(D) John-Paul Bouffard, Lt Col, USAF, MC, Chief, Division of Neuromuscular Pathology
(D) Miguel A. Riudavets, MD, Second-Year Resident, ARP
(A) Iren Horkayne-Szakaly, First-Year Resident, ARP

Administrative

Erlinda T. Castro, Secretary, ARP
Erma Campbell, Secretary, GS

IMPACT

Our staff's diagnostic expertise is in constant demand. Each year department members present lectures at military and civilian hospitals, including WRAMC, Madigan Army Medical Center, National Naval Medical Center, USUHS, University of Maryland Medical System, Georgetown University Medical Center, Howard University Medical School, and Washington Hospital Center. We have established a close relationship 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 for training of medical officers, including neurosurgeons and neurologists, in the field of neuropathology. Our trainees consistently receive 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 our semi-annual, intensive, 3-month didactic course in preparation for specialty board certification.

CONSULTATION

Cases submitted to the divisions of 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 OAFME and consultation for VA claim cases.

In 2004 we made no change in the contributor diagnosis in 284 cases, a minor change in diagnosis in 107 cases, and a major change in diagnosis in 19 cases. We received 777 cases with no contributor diagnosis.

DIVISION OF NEUROPATHOLOGY

Cases	*Completed*
Military	195
Army (124)	
Navy (49)	
Air Force (22)	
Federal	125
VA (106)	
USPHS (2)	
AFIP	3
Civilian	443
Interdepartmental	135
Total	901

DIVISION OF NEUROMUSCULAR PATHOLOGY

Cases	*Completed*
Military	241
Army (49)	
Navy (171)	
Air Force (21)	
Federal	147
VA (129)	
OFA (18)	
Civilian	292
Interdepartmental	10
Total	690

Deployments

1. March 2004, Guam, Expert Witness in Courts Martial, GD Sandberg.
2. WRAMC, Department of Pathology, monthly consults, Staff.

EDUCATION

Clinicopathologic Conferences

1. Neuropathology and Ophthalmic Pathology, AFIP: daily sign-out conference.
2. Department of Pathology, WRAMC: weekly intra-operative 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. WRAMC: monthly neurosurgery tumor board.
6. Department of Neuropathology, AFIP: monthly journal club.

Courses: Members of the staff participated as faculty members in 4 AFIP-sponsored general pathology courses and 1 non-AFIP course.

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 2004 the department had 2 full-time residents for a total of 500 training days.

Faculty Appointments

1. University of Maryland Medical System, Baltimore, Md, Clinical Assistant Professor, Department of Pathology, H Mena.
2. Georgetown University, Washington, DC, Adjunct Associate Professor, Department of Pathology, EJ Rushing.
3. WRAMC, Washington, DC: Consultant in Neuropathology, H Mena, EJ Rushing, GD Sandberg; Affiliated Staff Pathologist, JP Bouffard.

Presentations

1. January 2004: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Lysosomal/peroxysomal disorders," H Mena.
2. January 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Surgical neuropathology," EJ Rushing.
3. January 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Surgical neuropathology unknowns," EJ Rushing.
4. January 2004: Washington, DC, WRAMC, Department of Pathology, "Brain cutting conference," J-P Bouffard.
5. January 2004: Washington, DC, Washington Hospital Center, Department of Neurosurgery, "Selected topics in surgical neuropathology I," EJ Rushing.
6. February 2004: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Neurodegenerative diseases," H Mena.
7. February 2004: Bethesda, Md, AFIP 42nd Annual Neuropathology Review, "Introduction to neuropathology," GD Sandberg.
8. February 2004: Bethesda, Md, AFIP 42nd Annual Neuropathology Review, "Embryonal, neuronal and mixed neuronal-glial neoplasms of the central nervous system," H Mena.
9. February 2004: Bethesda, Md, AFIP 42nd Annual Neuropathology Review, "Toxic and metabolic diseases of the central nervous system," EJ Rushing.
10. February 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Surgical neuropathology unknowns," EJ Rushing.
11. February 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Astrocytomas," EJ Rushing.
12. February 2004: Washington, DC, Howard University Medical School, "Brain tumors," EJ Rushing.
13. March 2004: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Bacterial infections of the CNS," H Mena.
14. March 2004: Washington, DC, Washington Hospital Center, Department of Neurosurgery, "Selected topics in surgical neuropathology II," EJ Rushing.
15. March 2004: Washington, DC, WRAMC, Department of Pathology, "Brain cutting conference," J-P Bouffard.
16. March 2004: Vancouver, BC, 93rd Annual USCAP Meeting, "Meningiomas in the first two decades of life: new insights based on a clinicopathologic analysis of 86 cases," EJ Rushing.
17. March 2004: Anaheim, Calif, 227th National Meeting of the ACS, Biotechnology Division, Poster Presentation, "Swelling measurements on cartilage/hydrogel constructs," I Horkayne-Szakaly.
18. April 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Pituitary pathology," EJ Rushing.
19. April 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
20. April 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
21. April 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Skeletal muscle pathology I," GD Sandberg.
22. May 2004: Rockville, Md, AFIP 14th Annual Anatomic Pathology Course, "Introduction to dementia," J-P Bouffard.
23. May 2004: Rockville, Md, AFIP 14th Annual Anatomic Pathology Course, "Glial neoplasms," EJ Rushing.
24. April 2004: Washington, DC, WRAMC, Department of Pathology, "Brain cutting conference," J-P Bouffard.
25. April 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Pathology residents: neuropathology quiz I," EJ Rushing.

26. May 2004: Washington, DC, Washington Hospital Center and Medstar Research Institute, Poster Presentation, "Reducing the blood culture contamination rate at Washington Hospital Center: a Department of Pathology quality improvement initiative," I Horkayne-Szakaly.
27. May 2004: Washington, DC, Washington Hospital Center and Medstar Research Institute, Poster Presentation, "Gynecologic stromal/smooth muscle tumor of the colon: report of a rare case," I Horkayne-Szakaly.
28. May 2004: Washington, DC, Washington Hospital Center, Department of Neurosurgery, "Selected topics in surgical neuropathology III," EJ Rushing.
29. May 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Pathology residents: neuropathology quiz II," EJ Rushing.
30. June 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Unknown slide conference," EJ Rushing.
31. June 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Brain cutting conference," EJ Rushing.
32. June 2004: Cleveland, Ohio, American Association of Neuropathologists 80th Annual Meeting, Poster Presentation, "Relationship between radiation injury and Alzheimer-related neurodegenerative changes," M Riudavets.
33. June 2004: Cleveland, Ohio, American Association of Neuropathologists 80th Annual Meeting, Poster Presentation, "Muscle biopsy findings in Gulf War veterans," CS Specht.
34. June 2004: Washington, DC, WRAMC, Department of Pathology, "Brain cutting conference," J-P Bouffard.
35. June 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
36. June 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
37. June 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Skeletal muscle pathology II," GD Sandberg.
38. July 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Brain cutting conference," EJ Rushing.
39. August 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Unknown slide conference," EJ Rushing.
40. August 2004: Bethesda, Md, Polymer Networks 2004, Poster Presentation, "Osmotic swelling of tissue engineered cartilage samples," I Horkayne-Szakaly.
41. August 2004: Philadelphia, Penn, 228th ACS National Meeting, Biological Chemistry Division, Poster Presentation, "Swelling behavior of tissue engineered cartilage samples," I Horkayne-Szakaly.
42. August 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
43. August 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
44. August 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "CNS trauma," GD Sandberg.
45. September 2004: Phoenix, Ariz, CAP, "Characterization of embolization microsphere plastic (Embosphere®) in vitro and in human tissue sections by light microscopy and infrared spectroscopy," CS Specht.
46. September 2004: Phoenix, Ariz, CAP, Poster Presentation, "Intraoperative parathyroid evaluation as a diagnostic aid for parathyroid surgery: a large tertiary care center experience," I Horkayne-Szakaly.
47. September 2004: Phoenix, Ariz, CAP, Poster Presentation, "Reducing the blood culture contamination rate at a large tertiary care hospital (Washington Hospital Center), a Department of Pathology quality improvement initiative," I Horkayne-Szakaly.
48. October 2004: Montauk, NY, Eastern Ophthalmic Pathology Society, "Pilocytic astrocytoma of the optic nerve and chiasm in a 59-year-old woman," CS Specht.
49. October 2004: Washington, DC, Washington Hospital Center, Department of Neurosurgery, "Selected topics in surgical neuropathology IV," EJ Rushing.
50. November 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Unknown slide conference," EJ Rushing.
51. November 2004: Baltimore, Md, University of Maryland Medical System, Department of Neurosurgery, Neuropathology Course, "Vascular disorders of the central nervous system,"

H Mena.
52. November 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Techniques of gross brain examination," GD Sandberg.
53. November 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Microscopic slide unknowns," GD Sandberg.
54. November 2004: Tacoma, Wash, Madigan Army Medical Center, Department of Pathology, "Demyelinating diseases," GD Sandberg.
55. November 2004: Toronto, Ont, Society for NeuroOncology Meeting, Poster Presentation, "Prognostic value of epidermal growth factor receptor expression and small cell phenotype in patients with glioblastoma treated with induction chemotherapy, radiotherapy, 0-6 benzylguanine," EJ Rushing.
56. December 2004: Washington, DC, Georgetown University Medical Center, Department of Pathology, "Pathology residents: quiz," EJ Rushing.
57. December 2004: Washington, DC, WRAMC, VTC, "Astrocytomas," EJ Rushing.

RESEARCH

Journal Articles

1. Bouffard J-P, Riudavets MA, Holman R, Rushing EJ. Neuropathology of the brain and spinal cord in human West Nile virus infection. *Clin Neuropathol*. 2004;23:16-35.
2. Holman RP, Monserrate NM, Czander EW, Rushing EJ. West Nile poliomyelitis. *Emerg Infect Dis*. 2004;10:547-548.
3. Rushing EJ, Bouffard J-P, Neal CJ, Koeller K, Martin J, Ozdemirli M, Mena H, Ecklund JM. Erdheim-Chester disease mimicking a primary brain tumor: a case report. *J Neurosurg*. 2004;100:1115-1118.
4. Rushing EJ, Bouffard J-P. Basic pathology of the peripheral nerve. *Neuroimaging Clin N Am*. 2004;14:43-53.
5. Rushing EJ, Kaplan KJ, Mena H, Sandberg GD, Koeller K, Bouffard J-P. Erdheim-Chester disease of the brain: cytologic features and differential diagnosis of a challenging case. *Diagn Cytopathol*. 2004;31:420-422.
6. Kokkinakis DM, Rushing EJ, Shareef MM, Ahmed MM, Yang S, Singha UK, Luo J. Physiology and gene expression characteristics of carcinogen-initiated and tumor-transformed glial progenitor cells derived from the CNS of methylnitrosourea (MNU)-treated Sprague-Dawley rats. *J Neuropathol Exp Neurol*. 2004;63:1182-1189.
7. Mena H, Cadavid D, Rushing E. Human cerebral infarct: a proposed histopathologic classification based on 137 cases. *Acta Neuropathol (Berl)*. 2004;108:520-530.
8. Koeller K, Rushing EJ. Pilocytic astrocytoma: radiologic-pathologic correlation. *RadioGraphics*. 2004;24:1693-1708.
9. Bouffard JP, Sandberg GD, Golden JA, Rorke LB. Double immunolabeling of central nervous system atypical teratoid/rhabdoid tumors. *Mod Pathol*. 2004;17:679-683.
10. Wong K, Sidransky E, Verma A, Mixon T, Sandberg GD, Wakefield LK, Morrison A, Lwin A, Colegial C, Allman JM, Schiffmann R. Neuropathology provides clues to the pathophysiology of Gaucher disease. *Mol Genet Metab*. 2004;82:192-207.
11. Seidman JD, Horkayne-Szakaly I, Haiba M, Boice CR, Kurman RJ, Ronnett BM. The histologic type and stage distribution of ovarian carcinomas of surface epithelial origin. *Int J Gynecol Pathol*. 2004;23:41-44.

Abstracts

1. Quesado M, Santi M, Parry D, Rushing E. Familial chordomas: a morphologic and immunohistochemical study in relation to sporadic tumors. *J Neuropathol Exp Neurol*. 2004;63:546.
2. Riudavets MA, Mena H, Bouffard JP, Sandberg GD, Rushing EJ. Relationship between radiation injury and Alzheimer-related neurodegenerative changes. *J Neuropathol Exp Neurol*. 2004;63:523.
3. Specht CS, Lewin-Smith MR, Murakata LA, Mena H, Kalasinsky VF, Moroz AL, Mullick FL. Muscle biopsy findings in Gulf War veterans. *J Neuropathol Exp Neurol*. 2004;63:533.
4. Rapkiewicz A, Ronchetti R, Carr K, Blumenthal D, Rushing E, Santi M, Quesado M. Chromogenic in situ hybridization (CISH) accurately identifies EGFR amplification in small cell glioblastoma multiforme (SCGBM), a common subtype of primary GBM. *Mod Pathol*. 2004;17:319A.
5. Rushing EJ, Rueda-Pedraza M-E, Quesado M, Miettinen M, Mena H, Santi M.

Meningiomas in the first two decades of life: new insights based on a clinicopathologic analysis of 86 cases. *Mod Pathol.* 2004;17:319A.
6. Santi MR, Ronchetti R, Quezado M, Rushing EJ. Analysis of chromosome 7 in pediatric and adult ependymomas by chromogenic in situ hybridization (CISH). *Mod Pathol.* 2004;17:320A
7. Horkay F, Horkayne-Szakaly I, Basser PJ. Osmotic investigations on cartilage biopolymers and tissue engineered cartilage samples using a new tissue micro-osmometer. *Biophys J.* 2004; 86:480A.

Other Publications

1. Syllabus for 42nd Annual Neuropathology Review.
2. Handouts for lectures in 1 AFIP-sponsored course.

Projects

1. Penetrating head injury in Operation Desert Storm, GD Sandberg.
2. The specificity of florid plaques in the diagnosis of new variant Creutzfeldt-Jakob disease, GD Sandberg.
3. Ischemic lesions of the brain that mimic brain tumors, H Mena.
4. Proliferation markers of potential diagnostic and prognostic value in astrocytomas WHO grades II and III, H Mena.
5. Diagnosis of Alzheimer's disease: reappraisal of specific features, GD Sandberg.
6. Malignant astrocytic tumors of the spinal cord, EJ Rushing.
7. Primary cerebellar tumors: a comparative study, EJ Rushing.
8. Incidence of neuritic plaques related to brain radiation therapy, H Mena.
9. Extra-central nervous system meningiomas, J-P Bouffard.
10. Meningiomas: study of unusual variants, EJ Rushing.
11. Pleomorphic xanthoastrocytoma: immunohistochemical and clinicopathological studies for evaluation of aggressive variants, EJ Rushing.

Collaborators

Military/Federal

1. Ajay Verma, USUHS, Epo expression in brain tumors.
2. Martha Quesado, NIH, Chromogenic in situ hybridization of glioblastoma multiforme and ependymoma.
3. Peter J. Basser, Carlo Pierpaoli, Ferenc Horkay, NIH, Brain research: sudden infant death syndrome.

Civilian

1. Ravi Raghavan, University of Texas South Western Medical Center, Dallas, Tex, Pediatric oligodendrogliomas: molecular alterations on 1p 19q.
2. Mariarita Santi, Children's Hospital National Medical Center, Washington, DC, Pediatric meningiomas, CISH and ependymoma and GBM.
3. Diego Cadavid, University of Medicine and Dentistry of New Jersey, Newark, NJ, Morphological studies of human cerebral infarct.
4. Paul E. McKeever, University of Michigan Medical School, Ann Arbor, Mich, Proliferation markers of potential diagnostic and prognostic value in astrocytomas WHO grades II and III.
5. Juan C. Troncoso, Johns Hopkins University School of Medicine, Baltimore, Md, Histological review of brains in Baltimore longitudinal study of aging (BLSA).
6. David N. Louis, Matthew P. Frosch, Harvard University School of Medicine, AFIP central nervous system atlas on non-tumor pathology.
7. Peter Burger, Johns Hopkins University School of Medicine, Baltimore, Md, Histological review of ependymomas.
8. Darlene R. Ketten, Woods Hole Oceanographic Institute, Woods Hole, Mass, Blast trauma research on beaked whales.
9. Charles Eberhart, Tarik Tihan, Johns Hopkins University School of Medicine, Baltimore, Md, Histology and immunohistochemistry of Lhermitte-Duclos disease.

Interdepartmental

1. Markku Miettenen, Soft Tissue Pathology, Immunohistochemistry of meningiomas and mesenchymal tumors of the central nervous system.

2. Kelly Koeller, Radiologic Pathology, Cerebellar astrocytomas.

PROFESSIONAL ACTIVITIES

Official Trips

1. June 2004, American Association of Neuropathologists 80th Annual Meeting, Orlando, Fla, GD Sandberg, J-P Bouffard, MA Riudavets (AFIP, ARP).
2. March 2004, USCAP 93rd Annual Meeting, Vancouver, BC, EJ Rushing.
3. October 2004, Deutsche Gesellschaft fuer Neuropathologie und Neuroanatomie, Berlin, Germany, EJ Rushing (ARP).

Editorial Boards

Annals of Diagnostic Pathology, H Mena.

Manuscripts Reviewed

EJ Rushing (3 articles):

1. *Journal of Neuropathology and Experimental Neurology*
2. *Archives of Pathology and Laboratory Medicine*

Honors

Distinguished Superior Service Medal, December 2004, H Mena.

DIVISION OF OPHTHALMIC PATHOLOGY

STAFF

Medical

Ahmed A. Hidayat, MD, Staff Pathologist
Charles Specht, MD, Staff Pathologist
Emiko Furusato, MD, Fellow

Administrative

Erma R. Campbell, Secretary

IMPACT

- The division provides consultation services to pathologists of the Armed Forces, VA, US Public Health Service, and to civilians. Complete gross and microscopic examinations are made on enucleated eyeballs for contributors from hospitals where facilities and trained personnel are not available for this specialized work. Diagnoses are provided to medical centers on microslides of interesting, unusual, and/or difficult cases.
- Division staff conduct research based on the wealth of accumulated case material in the Registry of Ophthalmic Pathology. Research is often conducted with outside scientists or in collaboration with personnel in other departments and divisions, involving special histochemical, immunological, and electron microscopic techniques and specialized equipment.
- The division administers graduate training in ophthalmic pathology to residents and fellows, and organizes and conducts courses in ophthalmic pathology.

CONSULTATION

The division provides consultation services to military and VA hospitals, which involves "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, serves as the central laboratory for routine diagnostic work in ophthalmic pathology and provides consultation services as well.

Similarly, there are many civilian communities throughout the world where no facilities are available for this work. Through the auspices of the Registry of Ophthalmic Pathology, sponsored by the American Academy of Ophthalmology, the division renders consultation services to civilian contributors. Much of the routine work has been diverted to ophthalmic pathology laboratories at universities and other institutions. These laboratories now provide high-quality service and forward only the particularly difficult or unusually interesting cases to the AFIP, so that our division is receiving fewer but more difficult cases.

In 5 cases, we had major disagreements with the contributor; in 109 cases, there were minor diagnostic changes; and in 310 cases, no contributor diagnosis was given. We agreed with the contributor in 161 of the cases.

Cases	*Completed*
Military	83
Federal (VA/PHS/OFA)	121
Civilian	411
Interdepartmental	53
Total	668

EDUCATION

Courses: In 2004, the division presented its annual course, "Ophthalmic Pathology for Ophthalmologists." Division staff present a daily clinicopathologic conference to residents in ophthalmology at NNMC, WRAMC, and local civilian programs.

Trainees: Division facilities and personnel are in great demand for training in various phases of ophthalmic pathology and research. During 2004, approximately 18 physicians began or completed full-time training. We had one full-time fellow in training for a year, and 12 residents from local hospitals were assigned for 3 to 4 months. Two medical students spent their elective months in the division.

Presentations

1. October 2004: Montauk, NY, Eastern Ophthalmic Pathology Society Meeting, "Mucoepidermoid carcinoma of the lacrimal sac," AA Hidayat.
2. October 2004: Montauk, NY, Eastern Ophthalmic Pathology Society Meeting, "Pilocytic astrocytoma of the optic nerve and chiasm," C Specht.
3. October 2004: New Orleans, La, American Association of Ophthalmic Pathologists, "The myxomas and angiomyxomas of the orbit," AA Hidayat.
4. October 2004: New Orleans, La, American Academy of Ophthalmologists, "Cranial fascitis of the orbit," AA Hidayat.
5. December 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "The eye in systemic diseases," AA Hidayat.
6. December 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Pilocytic astrocytoma of the anterior visual pathways," C Specht.

RESEARCH

Journal Articles

1. Zdinak LA, Nik NA, Hidayat AA, Hargett NA. Renal medullary carcinoma metastatic to orbit: a clinicopathologic report. *Ophthal Plast Reconstr Surg*. 2004;20:322-325.
2. McLean IW, Saraiva VS, Burnier MN Jr. Pathologic and prognostic features of uveal melanomas. *Can J Ophthalmol*. 2004;4:343-350.

Projects

1. Retinal implant study, in collaboration with Washington Hospital Center, AA Hidayat.
2. Gynecologic pathology in Gulf War veterans, C Specht.
3. Neuropathology/neuromuscular pathology in Gulf War veterans, C Specht.
4. Update of skin disease biopsy data from Gulf War veterans.

PROFESSIONAL ACTIVITIES

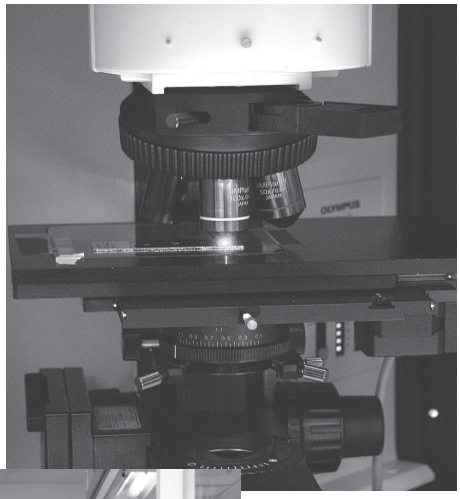
Manuscripts Reviewed

Division staff reviewed 29 manuscripts for scientific journals in 2004.

Editorial Boards

Saudi Ophthalmology Journal, AA Hidayat


PHILIPS


OLYMPUS

ADVANCED PATHOLOGY

GROUP 2

Dermatopathology

Orthopedic Pathology

Soft Tissue Pathology

Oral and Maxillofacial Pathology

Endocrine and Otorhinolaryngic/Head-Neck Pathology

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

DEPARTMENT OF DERMATOPATHOLOGY

STAFF

Medical

George P. Lupton, MD, Chair
Maria-Magdalena Tomaszewski, MD, Assistant Chair
Luke S. Chung, MD
Walter L. Rush, MD
(D) Sylvana M. Tuur-Saunders, MD
James R. Hallman, MD

Administrative

Clara Desane
Vishti A. Jefferson

IMPACT

- The Department of Dermatopathology provides expert consultation on the highest volume of cases of any department in the Institute.
- Department staff provide education in dermatopathology through lectures at local, regional and national meetings. Our Dermatopathology Fellowship Training Program is fully accredited by the Accreditation Council for Graduate Medical Education. This program, the only one of its kind in the DoD, provides training for **military physicians**, leading to board certification in dermatopathology for the **military services**. Training is provided to civilian physicians who meet military requirements. We also provide extensive training to numerous rotating **military** and civilian **residents** throughout the year.
- Members of the department conduct research on pertinent topics in dermatopathology and publish in respected national and international journals of dermatopathology, pathology, and dermatology.

CONSULTATION

The department provides consultation services in dermatopathology for **military**, federal, and civilian **institutions**. Many accessioned federal and civilian consultations are difficult cases, such as melanocytic lesions, that could present high-risk medicolegal problems. Military and federal institutions submitted 6,784 cases, approximately 77% of our total caseload in 2004. We changed the patient's diagnosis from benign to malignant or vice versa in 246 cases (~ 3%), greatly changing the treatment outcome and leading to a potential saving of millions of dollars in medical malpractice suits. We received 4,185 cases (> 47%) without a contributor diagnosis.

Cases	*Completed*
Military	**3,990**
Army (1,928)	
Navy (847)	
Air Force (1,215)	
VA	2,794
Other	16
Civilian	2,043
Interdepartmental	975
Total	9,818

EDUCATION

Courses: Department staff presented teaching and diagnostic slide conferences 4 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, the Quarterly AFIP/VA and Military Histopathology Quality Assessment Program, and the 14th Annual Anatomic Pathology Review Course.

Trainees: The department provided training for 17 federal and 36 nonfederal physicians, fellows, and residents in dermatology, pathology, and dermatopathology. Trainees spent an average of 29 days in our department, for a total of 1,523 training-days. They came from teaching facilities including WRAMC, National Naval Medical Center, Washington Hospital Center, Howard University Medical Center, Georgetown University Medical Center, George Washington University Medical Center, NIH, and other military teaching hospitals and civilian institutions across the country. Two dermatopathology fellows (both **military pathologists**), 14 dermatology residents (6 federal and 8 nonfederal), 26 pathology residents (5 federal and 21 nonfederal), and 4 visiting pathologists (1 foreign medical doctor and 1 nonfederal intern) participated in our program. During the academic year 2003-2004, 2 **military physicians** (1 Air Force pathologist and 1 Navy pathologist) were trained as dermatopathology fellows. Two other **military pathologists** (1 Air Force and 1 Army) began their fellowship programs in July 2004.

Faculty Appointments

GP Lupton:

1. Uniformed Services University of the Health Sciences, Bethesda, MD
2. George Washington University School of Medicine, Washington, DC

Presentations

1. March 2004: Washington, DC, WRAMC, Dermatology Service, "Proliferations of fibrous and related tissues involving the skin," M-M Tomaszewski.
2. April 2004: Washington, DC, WRAMC, Dermatology Service, "Cutaneous lymphomas," M-M Tomaszewski.
3. May 2004: Bethesda, Md, AFIP, 14th Anatomic Pathology Review and Update, Dermatopathology Session, "Cutaneous lymphomas," M-M Tomaszewski.
4. May 2004: Bethesda, Md, AFIP, 14th Anatomic Pathology Review and Update, Dermatopathology Session, "Adnexal neoplasia," SM Tuur.
5. May 2004: Washington, DC, AFIP, VTC Lecture, "Problematic melanocytic lesions of the skin," GP Lupton.
6. August 2004: Washington, DC, WRAMC, Dermatology Service, "Granulomatous processes in the skin," M-M Tomaszewski.
7. October 2004: Washington, DC, WRAMC, Dermatology Service, "Panniculitis," M-M Tomaszewski.
8. October 2004: Boston, Mass, Poster Presentation, 41st Annual Meeting of the American Society of Dermatopathology, "Primary malignant mesothelioma presenting as an umbilical tumor," M-M Tomaszewski, GP Lupton.
9. November 2004: Washington, DC, George Washington University School of Medicine, Department of Pathology, "Cutaneous lymphomas," M-M Tomaszewski.

RESEARCH

Journal Articles

1. Fetsch JF, Davis CJ, Hallman JR, Chung LS, Lupton GP, Sesterhenn IA. Lymphedematous fibroepithelial polyps of the glans penis and prepuce: a clinicopathologic study of 7 cases demonstrating strong association with condom catheter use. *Hum Pathol*. 2004;35:190-195.
2. Nandedkar MA, Patterson RH, Bridgeman-Shah S, Rush WL, Tomaszewski M-M. A large friable tumor overlying the left side of the mandible. *Arch Dermatol*. 2004;140:609-610.
3. Sperling LC, Tomaszewski M-M, Thomas DA. Viral-associated trichodysplasia in patients who are immunocompromised. *J Am Acad Dermatol*. 2004;50:318-322.

Projects

1. Spindle cell and epithelioid cell nevi with atypia and metastasis (malignant Spitz nevus) (in preparation for publication).
2. Spindle cell and epithelioid cell (Spitz) nevus in the African-American population (ready for submission for publication).
3. Cutaneous cribriform carcinoma-variant of apocrine carcinoma (revised manuscript ready for resubmission for publication).
4. Primary malignant mesothelioma presenting as an umbilical tumor (ready for submission for publication).

PROFESSIONAL ACTIVITIES

Editorial Boards

American Journal of Dermatopathology, GP Lupton

Francis H. Gannon, MD
Acting Chair
Date of Appointment — September 2004

DEPARTMENT OF ORTHOPEDIC PATHOLOGY

In Memoriam

Donald E. Sweet, MD
Chair
Date of Appointment — 5 December 1982 - August 2004

STAFF

Medical

Donald E. Sweet, MD, Chair (Deceased)
Francis H. Gannon, MD, Acting Chair
Daniel Strum, COL, MC, USA, Staff Pathologist
Francis X. McGuigan, CDR, MC, USN, Orthopedic Surgeon
Arthur Ward, LCDR, MC, USN, Podiatrist

Scientific

(D) Arron Jurist, HPC1, USN
(A) Tameeka Davis, HM2, USN

Administrative

(D) Jean C. Banks, Secretary
(A) Cynthia Wilson, Secretary

IMPACT

Our professional staff underwent significant changes in 2004. We especially mourn the loss of Dr. Donald E. Sweet, who dedicated 30 years to this department.

Military consultations and education initiatives have remained relatively stable over the last few years. Work continued in our fully operational Biomechanical and Musculoskeletal Research Laboratory, which is capable of evaluating the cause of **military-related** biomechanical **injuries** of active duty personnel. We also provided training, equipment, and activity modifications necessary to eliminate and/or reduce the risk of such injuries, including the use of protective head and body armor. Our department developed 4 interdisciplinary (pathology, radiology, orthopedic surgery) 3-day workshops on bone neoplasia, metabolic bone disease, inflammatory bone disease, and arthritis, expanding the radiologic-pathologic correlative concept as currently applied to bone neoplasia.

CONSULTATION

The department completed approximately 1,308 cases (there may be a discrepancy between the computer-based consultation numbers listed below and the transcribed physical case count). This entailed the study of approximately 8,420 x-rays (40,100 radiographic images),

approximately 4,010 of which were copied in Log-E and/or digitized format, and examination of approximately 4,801 contributor slides, 1,211 recuts, and 1,240 immunohistochemical stains, special stains, and studies. This resulted in rendering approximately 1,308 final, 154 consultative, and a lesser number of phone reports, with an average turnaround time of 6 days. These figures do not include an almost equal number of interim and follow-up reports. Of these cases, approximately 35% had no contributor diagnosis, 45% had no diagnostic change, 16% had minor diagnostic changes, and 4% had major diagnostic changes. Approximately 24+ 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 tumor-like conditions. The department is particularly 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.

Cases	*Completed*
Military	195
Army (89)	
Navy (71)	
Air Force (35)	
Federal	119
VA (119)	
Civilian	756
Interdepartmental	154
X-ray Transfers	84
Total	1,308

EDUCATION

The department's commitment to education through its courses, presentations, guest lectures, and trainee program resulted in 1,965 man-days of training during 2004, excluding exhibits and/or posters.

Courses: Department staff conducted 8 courses and tutorials in 2004, for a total of 1,495 attendee-days and 116 CME hours.

Trainees: Department staff provided training in 2004 for 3 trainees, plus visitor study and board preparation for military, federal, and civilian medical students, pathologists, orthopedic surgeons, and fellows, for a total of 49 trainee-days.

Faculty Appointments

1. Georgetown University Medical School, Clinical Professor of Pathology, DE Sweet.
2. USUHS, Clinical Professor of Pathology, DE Sweet.
3. University of Pennsylvania, Associate Professor of Orthopedic Surgery, FH Gannon.
4. USUHS, Assistant Professor of Pathology, FH Gannon.
5. USUHS, Associate Professor of Orthopedic Surgery, FX McGuigan.

Visiting Professorships

National Naval Hospital, National Naval Academy, Quantico, Va, DeWitt Army Hospital, Consultant Orthopedic Surgeon, FX McGuigan.

Presentations

1. January 2004: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
2. February 2004: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
3. March 2004: Washington, DC, Georgetown University Medical School, "Development of bone and pathogenesis of bone tumors," DE Sweet.
4. March 2004: Washington, DC, Georgetown University Medical School, "Metabolic bone disease," DE Sweet.
5. March 2004: Washington, DC, Georgetown University Medical School, "Circulatory, inflammatory, and Paget's disease of bone," DE Sweet.
6. March 2004: Washington, DC, Georgetown University Medical School, "Arthritic disorders of bone," DE Sweet.

7. April 2004: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," DE Sweet.
8. May 2004: Washington, DC, Georgetown University Medical School, "Pathogenesis of primary bone tumors," DE Sweet.
9. May 2004: Washington, DC, Georgetown University Medical School, "Radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
10. May 2004: Bethesda, Md, AFIP General Surgical Pathology Review Course, "Pathogenesis of solitary bone lesions," FH Gannon.
11. July 2004: Bethesda, Md, AFIP Diagnostic Surgical Pathology Review Course, "Pathogenesis of primary bone tumors and radiologic/pathologic correlation of solitary bone lesions," DE Sweet.
12. July 2004: Washington, DC, AFIP, "Skeletal growth and development and mechanisms of disease," FH Gannon.
13. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Growth and development," FH Gannon.
14. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Radiologic/pathologic correlation of solitary bone lesions," FH Gannon.
15. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Circulatory disorders of bone," FH Gannon.
16. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Fibrous and cystic lesions of bone," FH Gannon.
17. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Cartilage lesions of bone," FH Gannon.
18. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Arthritic disorders of bone," FH Gannon.
19. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Metabolic disorders of bone," FH Gannon.
20. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Periarticular and soft tissue tumors," FH Gannon.
21. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Giant cell, round cell and vascular tumors of bone," FH Gannon.
22. September 2004: Washington, DC, AFIP/ARP Orthopedic Pathology Course and Tutorial, "Unknown case discussions and laboratory study sets," FH Gannon.

RESEARCH

Journal Articles

1. Gannon FH, Thompson L. Ossifying fibroma of the jaw. *Ear Nose Throat J*. 2004;83:458.
2. Murphey MD, Carroll JF, Flemming DJ, Pope TL, Gannon FH, Kransdorf MJ. From the archives of the AFIP: benign musculoskeletal lipomatous lesions. *Radiographics*. 2004;24:1433-1466.
3. Murphey MD, Jelinek JS, Temple HT, Flemming DJ, Gannon FH. Imaging of periosteal osteosarcoma: radiologic-pathologic correlation. *Radiology*. 2004;233:129-138.
4. Wyckoff MH, El-Turk C, Laptook A, Timmons C, Gannon FH, Zhang X, Mumm S, Whyte MP. Neonatal lethal osteochondrodysplasia with low serum level of alkaline phosphatase and osteocalcin. *J Clin Endocrinol Metab*. Epub 2004 Nov 23.

Projects

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.
7. Consulted on 2 DoD grants in association with the Baylor College of Medicine.

PROFESSIONAL ACTIVITIES

Manuscripts Reviewed: In 2004, department staff reviewed articles for the following professional journals:

1. *Cancer*
2. *Clinical Orthopedics and Related Research*
3. *Diagnostic Surgical Pathology*

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

DEPARTMENT OF SOFT TISSUE PATHOLOGY

STAFF

Medical

Markku Miettinen, MD, PhD, Chair
John J. Fetsch, MD, Assistant Chair
Julie C. Fanburg-Smith, MD, Director of Education
(D) Thomas Dougherty, COL, MC, USAF
Sumitra L. Parekh, COL, MC, USA

Scientific

Jerzy P. Lasota, MD, PhD, Research Pathologist
Virginia Achstetter, HT(ASCP), Senior Laboratory Technologist

Administrative

David Dinges, Administrator
Charmaine Howard, Secretary

IMPACT

In 2004 we continued our analysis of AFIP's database of over 2,000 gastrointestinal stromal and smooth muscle tumors, the world's largest, and generated systematic data on the behavior of gastric stromal tumors with different biologic parameters, such as histologic subtype, antigen expression, and specific types of KIT mutations. These data are vitally important for the rational application of the new KIT tyrosine kinase inhibitor drugs. We reported several series of unique penile tumors, including epithelioid hemangiomas that should not be confused with angiosarcomas, and a novel type of penile polyp of iatrogenic origin.

CONSULTATION

Consultations included cytology, needle biopsies, excisional biopsies, resection, and autopsy specimens of a wide variety of soft tissue lesions from a broad range of anatomical sites. These included tumors with a wide variety of histogeneses and inflammatory, degenerative, post-traumatic, and iatrogenic conditions. We also saw specimens from a wide variety of locations as interdepartmental consultations, including specimens from diverse animal species submitted by the Department of Veterinary Pathology. The volume of Army consultations increased substantially (31.5%) over the previous year, and overall consultations increased slightly over the previous year (0.4%).

Cases	*Completed*
Military	547
Army (292)	
Navy (132)	
Air Force (123)	
Federal	377
VA (372)	
USPHS (5)	
Civilian	1,349
Interdepartmental	1,251
Total	3,524

Deployments

COL Parekh and COL Dougherty provided manning assistance for the AFIP cytology program as staff pathologists. COL Parekh participated in diagnostic anatomic pathology activities at WRAMC, and Dr. Fanburg-Smith delivered 4 lectures on specific types of soft tissue tumors for the residency program at WRAMC.

EDUCATION

Courses: Department staff participated in 2 AFIP courses and 1 non-AFIP course as instructors or directors.

Training: 8 federal employees, 8 nonfederal trainees, and one foreign trainee attended the department for a total of 248 training days. The department participated in HPQA for DoD and VA facilities, with one submission to the monthly case program (T Dougherty).

Faculty Appointments

1. Jefferson Medical College of Thomas Jefferson University, Philadelphia, Penn, Adjunct Professor of Pathology, Anatomy and Cell Biology, M Miettinen.
2. University of Helsinki, Finland, Adjunct Professor of Pathology, M Miettinen.
3. USUHS, F. Edward Hebert School of Medicine, Bethesda, Md, Instructor in Pathology, JC Fanburg-Smith.
4. Georgetown University Medical Center, Washington, DC, Adjunct Associate Professor, JC Fanburg-Smith.
5. Georgetown University Medical Center, Washington, DC, Clinical Tutor of Pathology, SL Parekh.

Presentations

1. March 2004: Bethesda, Md, NNMC Pathology Residency Program, “Soft tissue pathology,” JC Fanburg-Smith.
2. March 2004: Washington, DC, WRAMC Department of Pathology, “Soft tissue tumors,” JC Fanburg-Smith.
3. March 2004: Vancouver, BC, US/Canadian Academy of Pathology, “PDGFRA mutations in GISTs,” J Lasota, LH Sobin, M Miettinen.
4. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Smooth and skeletal muscle tumors,” T Dougherty.
5. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Classification of soft tissue tumors,” JC Fanburg-Smith.
6. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Lipomatous tumors of soft tissue,” JC Fanburg-Smith.
7. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Nerve sheath tumors of soft tissue,” JC Fanburg-Smith.
8. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Myofibroblastic tumors of soft tissue,” JC Fanburg-Smith.
9. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Vascular tumors of soft tissue,” JC Fanburg-Smith.
10. May 2004: Bethesda, Md, AFIP Anatomic Pathology Course, “Soft tissue tumors of uncertain phenotypes,” SL Parekh.
11. May 2004: Washington, DC, AFIP Weekly Professional Staff Conference, “PDGFRA mutations in gastrointestinal stromal tumors,” J Lasota.

12. May 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Differential diagnosis of gastrointestinal stromal tumors," M Miettinen.
13. July 2004: Indianapolis, Indiana University, "Dr. Gregory Derringer Grand Rounds and slide session," JC Fanburg-Smith.
14. July 2004: Tokyo, Japan, 37th Annual Musculoskeletal Tumor Conference of the Japanese Orthopedic Association, "Malignant peripheral nerve sheath tumors: an update," M Miettinen.
15. July 2004: Tokyo, Japan, 37th Annual Musculoskeletal Tumor Conference of the Japanese Orthopedic Association, "Immunohistochemistry and molecular genetics: opening new understanding on soft tissue tumors," M Miettinen.
16. July 2004: Kitakyushu, Japan, University of Enivironmental Sciences, Department of Pathology, "Update on gastrointestinal stromal tumors," M Miettinen.
17. October 2004: Washington, DC, AFIP, VTC for Military Pathologists, "Soft tissue tumors," JC Fanburg-Smith.
18. October 2004: Malta, International Skeletal Society, "Presentation of two cases: collagenous fibroma and clear cell sarcoma," JC Fanburg-Smith.
19. October 2004: Washington, DC, AFIP Oral and Maxillofacial Pathology Course, "Soft tissue tumors," JC Fanburg-Smith.
20. November 2004: Philadelphia, Penn, Jefferson Medical College of Thomas Jefferson University, "Fibroblastic and myofibroblastic tumors," M Miettinen.

RESEARCH

Journal Articles

1. Fanburg-Smith JC, Miettinen M, Folpe AL, Weiss SW, Childers EL. Lingual alveolar soft part sarcoma: 14 cases. Novel clinical and morphological observations. *Histopathology*. 2004;45:526-537.
2. Fetsch JF, Davis CJ Jr, Miettinen M, Sesterhenn IA. Leiomyosarcoma of the penis: a clinicopathologic study of 14 cases with review of the literature and discussion of the differential diagnosis. *Am J Surg Pathol*. 2004;28:115-125.
3. Fetsch JF, Davis CJ Jr, Hallman JR, Chung LS, Lupton GP, Sesterhenn IA. Lymphedematous fibroepithelial polyps of the glans penis and prepuce: clinicopathologic study of 7 cases demonstrating a strong association with chronic condom catheter use. *Hum Pathol*. 2004;35:190-195.
4. Fetsch JF, Laskin WB, Michal M, Remotti F, Heffner D, Ellis G, Furlong M, Miettinen M. Ectopic hamartomatous thymoma: a clinicopathologic and immunohistochemical analysis of 21 cases with data supporting reclassification as a branchial anlage mixed tumor. *Am J Surg Pathol*. 2004;28:1360-1370.
5. Fetsch JF, Sesterhenn IA, Miettinen M, Davis CJ. Epithelioid hemangioma of the penis. A clinicopathologic and immunohistochemical analysis of 19 cases, with special reference to exuberant examples often confused with epithelioid angiosarcoma. *Am J Surg Pathol*. 2004;28:523-533.
6. Folpe AL, Fanburg-Smith JC, Billings SD, Bisceglia M, Bertoni F, Cho JY, Econs MJ, Inwards CY, Jan de Beur SM, Mentzel T, Montgomery E, Michal M, Miettinen M, Mills SE, Reith JD, O'Connell JX, Rosenberg AE, Rubin BP, Sweet DE, Vinh TN, Wold LE, Wehrli BM, White KE, Zaino RJ, Weiss SW. Most osteomalacia-associated mesenchymal tumors are a single histopathologic entity: an analysis of 32 cases and a comprehensive review of the literature. *Am J Surg Pathol*. 2004;28:1-30.
7. Furlong MA, Fanburg-Smith JC, Childers EL. Lipoma of the oral and maxillofacial region. Site and subclassification in 125 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2004;98:441-450.
8. Kazakov DV, Fanburg-Smith JC, Suster S, Neuhauser TS, Palmedo G, Zamecnik M, Kempf W, Michal M. Castleman disease of the subcutis and underlying skeletal muscle: report of 6 cases. *Am J Surg Pathol*. 2004;28:569-577.
9. Koon N, Schneider-Stock R, Sarlomo-Rikala M, Lasota J, Smolkin M, Petroni G, Zaika A, Boltze C, Meyer F, Andersson L, Knuutila S, Miettinen M, El-Rifai W. Molecular targets for tumour progression in gastrointestinal stromal tumours. *Gut*. 2004;53:235-240.
10. Lasota J, Dansonka-Mieszkowska A, Sobin LH, Miettinen M. A great majority of GISTs with PDGFRA mutations represent gastric tumors of no or low malignant potential. *Lab Invest*. 2004;84:874-883.
11. Levy AD, Cantisani V, Miettinen M. Abdominal lymphangiomas: imaging features with

pathologic correlation. *AJR Am J Roentgenol*. 2004;182:1485-1491.
12. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH. Gastrointestinal stromal tumors in patients with neurofibromatosis: imaging features with clinicopathologic correlation. *AJR Am J Roentgenol*. 2004;183:1629-1636.
13. Velagaleti GV, Miettinen M, Gatalica Z. Malignant peripheral nerve sheath tumor with rhabdomyoblastic differentiation (malignant triton tumor) with balanced t(7;9)(q11.2;p24) and unbalanced translocation der 16t(1;16)(q23;q13). *Cancer Genet Cytogenet*. 2004;149:23-27.

Abstracts

1. Billings SD, Giblen J, Fanburg-Smith JC. Superficial low grade fibromyxoid sarcoma: an analysis of 19 cases. *Mod Pathol*. 2004;17:11A.
2. Lasota J, Dansonka-Mieszkowska A, Sarlomo-Rikala M, Sobin LH, Miettinen M. PDGFRA exon 18 mutations in gastrointestinal stromal tumors (GISTs): a molecular genetic study of 350 KIT mutation-negative tumors. *Mod Pathol*. 2004;17:16A.
3. Thompson LD, Penner C, Foss R, Miettinen M, Wieneke J. Sinonasal tract and nasopharyngeal adenoid cystic carcinoma: a clinicopathologic and immunophenotypic study of 73 cases. *Mod Pathol*. 2004;17:233A.
4. Rushing EJ, Rueda-Pedraza ME, Quezado M, Miettinen M, Mena H. Menigniomas in the first two decades of life: new insights based on a clinicopathologic analysis of 86 cases. *Mod Pathol*. 2004;17:319A.

Book Chapters

1. Fetsch JF, Miettinen M. Mesenchymal tumors of the penis. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, eds. *World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs*. Lyon, France: IARC Press; 2004:292-296.
2. Davis CJ, Woodward PJ, Dehner LP, Jones MA, Srigley JR, Sesterhenn IA, Gerald WL, Miettinen M, Fetsch JF. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, eds. *World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs*. Lyon, France: IARC Press; 2004:267-276.
3. Travis WD, Tazelaar HD, Miettinen M. Epithelioid hemangioendothelioma/angiosarcoma. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:97-98.
4. Travis WD, Churg A, Aubry MC, Ordonez NG, Tazelaar H, Pugatch R, Manabe T, Miettinen M. Mesenchymal tumors of the pleura. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:141-144.

Projects

1. Classification of unusual vascular tumors.
2. Comparative genomic hybridization and other genotypic and phenotypic characterization of muscle cell tumors.
3. Fibrosarcomatous transformation of dermatofibrosarcoma protuberans.
4. Ectopic hamartomatous thymoma.
5. Epithelial differentiation in synovial and epithelioid sarcoma and related tumors.
6. Molecular pathologic analysis of soft tissue tumors.
7. Triton tumors.
8. Malignant peripheral nerve sheath tumors arising in neurofibroma.
9. Pathology of fibromas.
10. Soft tissue cartilaginous neoplasms.

Collaborators

Civilian:

1. Wa'El El-Rifai, University of Virginia, Charlottesville, Va
2. Sonja Erikson-Steigen, University of Tromso, Norway
3. Andrew Folpe, Emory University, Atlanta, Ga
4. Mary Furlong, Georgetown University, Washington, DC
5. Zoran Gatalica, Creighton University, Omaha, Neb

6. William B. Laskin, Northeastern University, Chicaco, Ill
7. Janusz Limon, Medical Academy of Gdansk, Poland
8. Michal Michal, Faculty Hospital, Pilsen, Czech Republic
9. Fabrizio Remotti, College of Physicians and Surgeons, New York, NY
10. Janusz Rys, Oncology Hospital, Krakow, Poland
11. Maarit Sarlomo-Rikala, University of Helsinki, Finland
12. Regine Schneider-Stock, Otto von Guericke University, Magdeburg, Germany
13. Albert Roessner, Otto von Guericke University, Magdeburg, Germany
14. Brian Rubin, University of Washington, Seattle, Wash
15. Jerzy Stachura, Jagellonian University, Krakow, Poland
16. Sharon W. Weiss, Emory University, Atlanta, Ga

Interdepartmental:

1. Greg Saturday, CAPT, MC, USN, Department of Veterinary Pathology
2. Esther Childers, COL, MC, USA, Department of Oral and Maxillofacial Pathology
3. Hernando Mena, COL, MC, USA, Department of Neuropathology
4. Elisabeth Rushing, COL, MC, USA, Department of Neuropathology
5. Charles Davis, Department of Genitourinary Pathology
6. Gary Ellis, Department of Oral and Maxillofacial Pathology
7. Dennis Heffner, Department of Otolaryngologic Pathology
8. Timothy O'Leary, Department of Cellular Pathology
9. Isabell Sesterhenn, Department of Genitourinary Pathology
10. Leslie H. Sobin, Division of Gastrointestinal Pathology

PROFESSIONAL ACTIVITIES

Editorial

Department members reviewed 48 manuscripts during 2004 and served on the editorial boards of the following journals:

1. *American Journal of Surgical Pathology*, M Miettinen
2. *Applied Immunohistochemistry and Molecular Morphology*, M Miettinen
3. *Annals of Diagnostic Pathology*, JC Fanburg-Smith, M Miettinen
4. *Human Pathology*, J Lasota, M Miettinen
5. *Virchows Archiv*, M Miettinen

Bone and Soft Tissue Abstract reviewer for US/CAP, JC Fanburg-Smith

Academic Peer Review

M Miettinen performed academic promotion reviews for:

1. Drexel University of Philadelphia, Penn
2. Memorial Sloan-Kettering Cancer Center, New York, NY
3. University of Pennsylvania, Philadelphia

Administrative

1. Director, Directorate of Center for Advanced Pathology, AFIP, SL Parekh.
2. Editor and author for Air Force performance evaluations, T Dougherty.
3. Director, Annual Anatomic Pathology Review Course, JC Fanburg-Smith.
4. Institutional Review Board, JC Fanburg-Smith.

Robert D. Foss, CAPT, DC, USN
Chair
Date of Appointment — 16 September 2004

DEPARTMENT OF ORAL AND MAXILLOFACIAL PATHOLOGY

Esther B. Childers, COL, DC, USA
Chair
Date of Appointment — 27 August 2002 to 31 May 2004

Robert D. Foss, CAPT, DC, USN
Chair
Date of Appointment — 16 September 2004 to present

STAFF

Medical

Esther B. Childers, COL, DC, USA, Chair
Robert D. Foss, CAPT, DC, USN, Chair
Stephen B. Williams, COL, DC, USA
Christopher G. Fielding, LTC (P), DC, USA
David L. Wells, Lt Col, USAF, DC (until July 2004)
Kevin R. Torske, LCDR, DC, USN
Jose Colon, DMD
Gretchen Folk, LT, DC, USN, Resident
Walter Henry, LTC, DC, USA, Resident
Preston Welch, LTC, DC, USA, Resident
Mark Stokes, LT, DC, USN, Resident

Administrative

Patricia Ashburn, Secretary

IMPACT

- The department supports the OAFME through expertise in forensic dental identification and provides on- and off-site training in forensic odontology for the US Army, Air Force, Navy and other government agencies. Deployments on forensic missions in support of the OAFME included a number of high-profile mass disasters and missions in support of Operation Iraqi Freedom. Forensic missions provide rapid, accurate identification of disaster victims that result in the timely return of remains to next of kin.
- In 2004, we performed 948 postmortem dental examinations at Dover AFB. Dental identifications were recorded on 644 cases, with 600 “positive” identification, 33 “consistent with” identifications, and 11 “unidentified.”
- We deployed off-site forensic dental identification training laboratories to 12 military commands and provided 4,400 man-hours of readiness training for future mass casualty disasters. These laboratory exercises represent a major source of forensic dental identification training in the US Armed Forces.

- At the American Academy of Oral and Maxillofacial Pathology Annual Meeting, the AFIP Slide Seminar is the most popular continuing education course and is always fully subscribed. In its 24th year, the seminar promotes the Department and Registry of Oral and Maxillofacial Pathology as a world leader in the specialty of oral and maxillofacial pathology.
- The third year of the residency program in oral and maxillofacial pathology, National Naval Dental School, conducted at the AFIP, is structured to provide opportunities for research, slide and case review with staff. Residents' presentations of research projects at the American Academy of Oral and Maxillofacial Pathology Annual Meeting promote our missions of education and research.
- The department chair is Consultant to the Surgeon General of the Navy for Oral and Maxillofacial Pathology.

CONSULTATION

Cases	*Completed*
Military	420
Army (216)	
Navy (113)	
Air Force (91)	
Federal	282
VA (277)	
OFA (5)	
Civilian	866
Interdepartmental	176
Total	1,744

Department staff consult on the wide variety of pathologic processes that affect the oral mucosa, jaws, major and minor salivary glands, and associated structures in the maxillofacial region, including odontogenic cysts and tumors, fibro-osseous lesions, salivary gland neoplasias and metastatic disease. We perform consultative services for military medical treatment facilities, VA medical centers, and US Public Health Service medical treatment centers, as well as civilian treatment facilities worldwide.

Our department received 1,568 outside consultation cases in 2004. Major changes in contributor diagnosis were made in 20 cases, minor changes in 614 cases, and no change in 823 cases. We received 94 cases with no contributor diagnosis; 17 cases were recorded without coding. Turnaround time averaged 4.46 days.

Deployments

Members of the department are ready to deploy within 4 hours of notification. Using state-of-the-art digital technology, we can complete rapid, accurate, and reliable dental identification within hours of a postmortem examination. This vital service facilitates the rapid return of remains to the family.

Operation Iraqi Freedom Forensic Missions, Dover AFB

January 2004
KR Torske: 4
CG Fielding: 11
RD Foss: 1

February 2004
CG Fielding: 3
RD Foss: 3
SB Williams: 4
EB Childers: 5

March 2004
KR Torske: 1
RD Foss: 1

April 2004
RD Foss: 2
DL Wells: 3
KR Torske: 4
W Henry: 2
EB Childers: 6
SB Williams: 5

May 2004
SB Williams: 6
RD Foss: 2

June 2004
SB Williams: 6
KR Torske: 4
DL Wells: 1
RD Foss: 2

July 2004
RD Foss: 2
DL Wells: 4
P Welch: 1

August 2004
CG Fielding: 1
SB Williams: 1

September 2004
DL Wells: 3
SB Williams: 4
P Welch: 1
CG Fielding: 3

October 2004
RD Foss: 1
CG Fielding: 1
M Stokes: 1

November 2004
DL Wells: 3
M Stokes: 1
J Colon: 3

December 2004
DL Wells: 1

EDUCATION

Courses: Department staff participated in 12 AFIP/ARP courses, including the department's 2 major course offerings, Forensic Identification, and Surgical Oral and Maxillofacial Pathology, for a total of 11,000 man-hours of training. The staff participated in 13 non-AFIP courses for 1,809 man-hours of education.

Trainees: The department had 3 third-year residents in oral and maxillofacial pathology from January 1 to June 30, 2004. One resident remained as a staff member for an additional 6 months. Two third-year residents were assigned to the department from July 1 to December 31, 2004. We had 3 visiting pathologists for 118 man-days of training. Portable forensic dental identification workshop kits were deployed 12 times for 4,400 man-hours of training of military personnel.

Presentations

1. January 2004: Washington, DC, AFIP, "Oral and maxillofacial pathology for radiologists," KR Torske.
2. January 2004: Washington, DC, AFIP, "Weekly junior staff pathology conference," KR Torske.
3. February 2004: Landstuhl, Germany, DENTAC, "Oral and maxillofacial pathology review," EB Childers.
4. February 2004: Landstuhl, Germany, DENTAC, "Mock board examination," EB Childers.
5. February 2004: Landstuhl, Germany, DENTAC, "Forensic dentistry," EB Childers.
6. February 2004: Landstuhl, Germany, DENTAC, "Oral cancer," EB Childers.
7. February 2004: Bethesda, Md, National Naval Dental School, "Odontogenic tumors," RD Foss.
8. February 2004: San Diego, Calif, Naval Dental Center Southwest, "Forensic dentistry overview," RD Foss.
9. February 2004: San Diego, Calif, Naval Dental Center Southwest, "Hematology and lymphoid tumors of of the head and neck," RD Foss.
10. February 2004: Bethesda, Md, National Naval Dental School, "Bone pathology," KR Torske.
11. February 2004: Washington, DC, AFIP, "Oral and maxillofacial pathology for radiologists," KR Torske.
12. February 2004: Bethesda, Md, National Naval Dental School, "Malignant bone tumors," KR Torske.
13. February 2004: Washington, DC, AFIP, Otolaryngic Pathology Course, "Malignant bone tumors," RD Foss.
14. February 2004: Bethesda, Md, Naval Postgraduate Dental School (Long Course), "Odontogenic cysts," DL Wells.
15. February 2004: Bethesda, Md, Naval Postgraduate Dental School (Short Course), "Odontogenic cysts," DL Wells.
16. February 2004: Washington, DC, AFIP, "Weekly junior staff pathology conference," KR Torske.
17. March 2004: Honolulu, Hawaii, 82nd General Session and Exhibition of the International Association of Dental Research, "An immunohistochemical assessment of the odontogenic myxoma," DL Wells.
18. March 2004: Washington, DC, AFIP Radiology Course, "Differential diagnosis of the jaws," RD Foss.
19. March 2004: Washington, DC, AFIP Forensic Dental Identification and Emerging Technologies Course, "Forensic dental support of Operation Iraqi Freedom," RD Foss.
20. March 2004: Washington, DC, George Washington University, "Salivary gland pathology," KR Torske.

21. April 2004: Silver Spring, Md, WRAMC, “Fibro-osseous lesions of the jaws,” RD Foss.
22. April 2004: Silver Spring, Md, WRAMC, “Developing a differential diagnosis,” EB Childers.
23. April 2004: Silver Spring, Md, WRAMC, “Clinico-pathologic conference,” SB Williams.
24. April 2004: Silver Spring, Md, WRAMC, “Pediatric oral pathology,” EB Childers.
25. April 2004: Washington, DC, AFIP, “Head and neck basic sciences course,” KR Torske.
26. April 2004: Washington, DC, AFIP, “Oral and maxillofacial pathology for radiologists,” KR Torske.
27. May 2004: Naval Postgraduate Dental School, “An immunohistochemical assessment of the odontogenic myxoma,” DL Wells.
28. May 2004: Washington, DC, AFIP, “Diagnostic disagreement and the influence on educational objectives,” DL Wells.
29. May 2004: Charleston, SC, AAOMP AFIP Seminar, “Low-grade central osteosarcoma and clear cell chondrosarcoma,” SB Williams.
30. May 2004: Charleston, SC, AAOMP AFIP Seminar, “Large cell undifferentiated carcinoma and undifferentiated neuroendocrine carcinoma,” RD Foss.
31. May 2004: Charleston, SC, AAOMP AFIP Seminar, “Salivary duct carcinoma and basal cell adenocarcinoma with dedifferentiation to high grade adenocarcinoma and nodular lymphocyte predominant Hodgkin lymphoma,” KR Torske.
32. May 2004: Charleston, SC, AAOMP AFIP Seminar, “Extranodal marginal zone B-cell lymphoma and malignant melanoma, metastatic,” EB Childers.
33. July 2004: San Antonio, Tex, Dental Public Health Service Annual Meeting, “Oral cancer,” DL Wells.
34. August 2004: Washington, DC, AFIP Radiology Course, “Differential diagnosis of the jaws,” DL Wells.
35. August 2004: Ft Sill, Okla, Advanced Educational Program in General Dentistry, “Selected topics in oral and maxillofacial pathology and forensic science (2-day presentation),” CG Fielding.
36. August 2004: Ft Sill, Okla, DENTAC Continuing Education Program, “Oral manifestations of systemic disease,” CG Fielding.
37. August 2004: Washington, DC, AFIP Grand Rounds VTC, “Benign fibro-osseous lesions: beyond fibrous dysplasia,” RD Foss.
38. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Practical oral pathology,” EB Childers.
39. October 2004: Rockville, Md, George Washington University Forensic Science Course, “Introduction to forensic odontology,” CG Fielding.
40. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Odontogenesis,” DL Wells.
41. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Oral cancer,” CG Fielding.
42. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Odontogenic tumors,” RD Foss.
43. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Odontogenic cysts,” SB Williams.
44. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Fibro-osseous lesions,” RD Foss.
45. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Differential diagnosis of ulcerative conditions,” DL Wells.
46. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Differential diagnosis of oral mass lesions,” RD Foss.
47. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Epithelial dysplasia and white lesions,” CG Fielding.
48. October 2004: Bethesda, Md, AFIP, Surgical Oral and Maxillofacial Pathology, “Squamous cell carcinoma and their variants,” CG Fielding.
49. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Pigmented lesions,” SB Williams.
50. October 2004: Bethesda, Md, AFIP, Clinical Oral and Maxillofacial Pathology, “Clinico-pathologic conference,” SB Williams.

RESEARCH

Journal Articles

1. Fanburg-Smith JC, Miettinen M, Folpe AL, Weiss SW, Childers EL. Lingual alveolar soft part sarcoma: 14 cases: novel clinical and morphological observations. *Histopathology*. 2004;45:526-537.
2. Furlong MA, Fanburg-Smith JC, Childers EL. Lipoma of the oral and maxillofacial region: site and subclassification of 125 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2004;98:441-450.

Abstracts

1. Folk G, Abbondanzo S, Childers E, Foss R. Plasmablastic lymphoma: a clinicopathologic correlation. American Academy of Oral and Maxillofacial Pathology Annual Meeting, Charleston, SC, 2004.
2. Henry W, Foss R, Childers E. Forensic dental identification in support of Operation Iraqi Freedom. American Academy of Oral and Maxillofacial Pathology Annual Meeting, Charleston, SC, 2004.
3. Thompson LD, Penner C, Foss R, Miettinen M, Wieneke J. Sinonasal tract and nasopharyngeal adenoid cystic carcinoma: a clinicopathologic and immunophenotypic study of 73 cases. US/Canadian Academy of Pathology Meeting, Vancouver, BC, March 2004.

Projects

1. Sialoblastomas.
2. Molecular diagnosis of malignant salivary gland tumors.
3. Mesenchymal tumors of the head and neck.
4. Atypical chondroid neoplasia of the jaws.
5. Clear cell odontogenic tumors.
6. Adenoid cystic carcinoma of the nasal region.
7. Dermoid cysts of the maxillary sinus.
8. Genotyping and immunohistochemical analysis of odontogenic tumors.
9. Teleforensic dental identification demonstration project.
10. Reticular myoepithelioma.
11. Lymphoepithelial carcinoma of the skin from the head and neck.

Collaborators

Military/Federal:
Frederic Kaye, MD: Molecular diagnosis of malignant salivary gland tumors.

Civilian:
Jennifer Hunt, MD: Genotyping of odontogenic tumors.

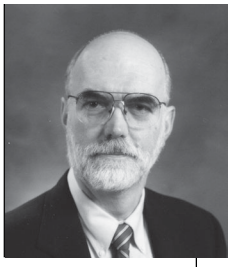
Interdepartmental:
Julie Fanburg-Smith, MD: Soft tissue tumors of the head and neck.

PROFESSIONAL ACTIVITIES

Official Trips

1. February 2004, Federal Services General Dentistry Board Review, Ramstein, Germany, EB Childers (Landstuhl DENTAC).
2. March 2004, International Association of Dental Research, Honolulu, Hawaii, DL Wells (Naval Postgraduate Dental School).
3. May 2004, American Academy of Oral and Maxillofacial Pathology, Charleston, SC, EB Childers, RD Foss, SB Williams, KR Torske (AFIP).
4. July 2004, Dental Public Health Service, San Antonio, Tex, D.Wells (Naval Postgraduate Dental School).
5. October 2004, American Board of Oral and Maxillofacial Pathology, Tampa, Fla, DL Wells (AFIP).

Honors: Legion of Merit (2), EB Childers.



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

DEPARTMENT OF ENDOCRINE AND OTORHINOLARYNGIC/HEAD-NECK PATHOLOGY

STAFF

Medical

Dennis K. Heffner, MD, Chair
Clara S. Heffess, MD, Chief, Division of Endocrine Pathology
Jacqueline A. Wieneke, MD, Chief, Division of Otorhinolaryngic/Head-Neck Pathology

Administrative

Carlos Mena, Administrative Officer

IMPACT

Approximately 30% of our consultations resulted in a change of diagnosis from the contributors' impressions, and most changes had a significant and sometimes crucial effect on patient treatment decisions. The quality and impact of our diagnostic consultation are seen most clearly in those rare or difficult cases where our diagnostic experience could not have been matched anywhere in the world.

CONSULTATION

In 2004, the department caseload increased by 14% over 2003. Our staff consults on difficult or controversial histopathologic diagnostic cases received from US military medical commands or facilities, VA medical centers, US Public Health Service centers, and nongovernmental civilian hospitals in the United States and abroad. The vast majority of cases are active surgical pathology cases with patient treatment decisions awaiting a consultative diagnostic evaluation. Our staff deals with 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 diseases of the pancreas, adrenal, thyroid, and parathyroid glands.

Cases	***Completed***
Military	539
Army (270)	
Navy (114)	
Air Force (155)	
Federal	515
VA (510)	
USPHS (4)	
OFA (1)	
Civilian	1,682
Interdepartmental	290
Total	3,026

EDUCATION

Trainees: WRAMC Resident Training Program. "Pathology of the thyroid and parathyroid," February 2004, J Wieneke.

Presentations

1. February 2004: Washington, DC, Georgetown University Medical School, guest faculty lecturer for 2nd-year medical students, "Pathology of the thyroid gland, parathyroid gland and adrenal gland," J Wieneke.
2. March 2004: Vancouver, BC, 93rd US/Canadian Academy of Pathology Annual Meeting, "Sinonasal adenoid cystic carcinoma," J Wieneke.
3. March 2004: Washington, DC, 42nd Annual Otorhinolaryngic/Head-Neck Surgery: Pathology in the Management of Head and Neck Patients, "General pathology of the thyroid and parathyroid glands," J Wieneke.
4. May 2004: Washington, DC, 14th Annual Anatomic Pathology Review Course, "Select entities in otorhinolaryngic/head-neck pathology," J Wieneke.
5. June 2004: Washington, DC, Georgetown University Hospital, Department of Pathology, Grand Rounds, "Pancreas: neoplasms of low-grade malignant potential," J Wieneke.

RESEARCH

Journal Articles

1. Fetsch JF, Laskin WB, Michal M, Remotti F, Heffner D, Ellis G, Furlong M, Miettinen M. Ectopic hamartomatous thymoma: a clinicopathologic and immunohistochemical analysis of 21 cases with data supporting reclassification as a branchial anlage mixed tumor. *Am J Surg Pathol*. 2004;28:1360-1370.
2. Heffner DK. Benign postoperative spindle cell nodule of the urinary bladder? Don't think so. *Ann Diagn Pathol.* 2004;8:108-l14.
3. Heffner DK. Brain in the middle ear or nasal cavity: heterotopia or encephalocele? *Ann Diagn Pathol.* 2004;8:252-257.
4. Heffner DK. Allergic fungal sinusitis is a histopathologic diagnosis; paranasal mucocele is not. *Ann Diagn Pathol.* 2004;8:316-323.

Abstract

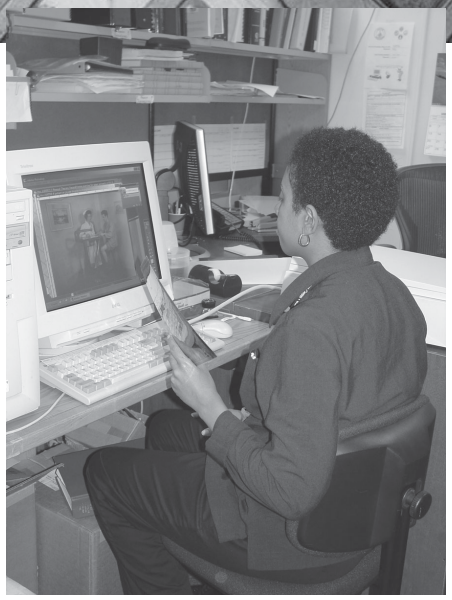
Elsheikh TM, Asa SL, Chan JK, DeLellis RA, Heffess CS, Livolsi V, Wenig BM. Inter-observer variation among experts in diagnosis of follicular variant of papillary carcinoma. *Mod Pathol.* 2004;17:422A

Book Chapters

1. Thompson LD, Heffess CS. Diseases of the pituitary gland. Non-neoplastic lesions. Benign neoplasms. Malignant neoplasms. In: *Foundations in Diagnostic Pathology Series*. Elsevier: 2004.
2. Thompson LD, Heffess CS. Pancreas. In: Sternberg SS, ed. *Diagnostic Surgical Pathology*. 4th ed. New York: Raven Press; 2004.
3. Wenig BW, Heffess CS. Thyroid gland: embryology, anatomy and histology. Classification of non-neoplastic lesions of the thyroid gland. Benign thyroid neoplasms. Malignant thyroid neoplasms. Parathyroid gland: embryology, anatomy and histology. Classification of non-neoplastic lesions. Neoplasms of the parathyroid glands: benign and malignant. In: *Atlas of Head and Neck Pathology*. Elsevier: 2004
4. Wenig BM, Heffess CS. Inflammatory and infectious diseases of the pancreas. In: Odze R, Goldblum J, Crawford J, eds. *Surgical Pathology of the Gastrointestinal Tract, Liver, Biliary Tract and Pancreas*. 1st ed. Philadelphia: WB Saunders; 2004.

PROFESSIONAL ACTIVITIES

Editorial: Department staff reviewed numerous professional articles for suitability for publication in peer-reviewed professional journals.



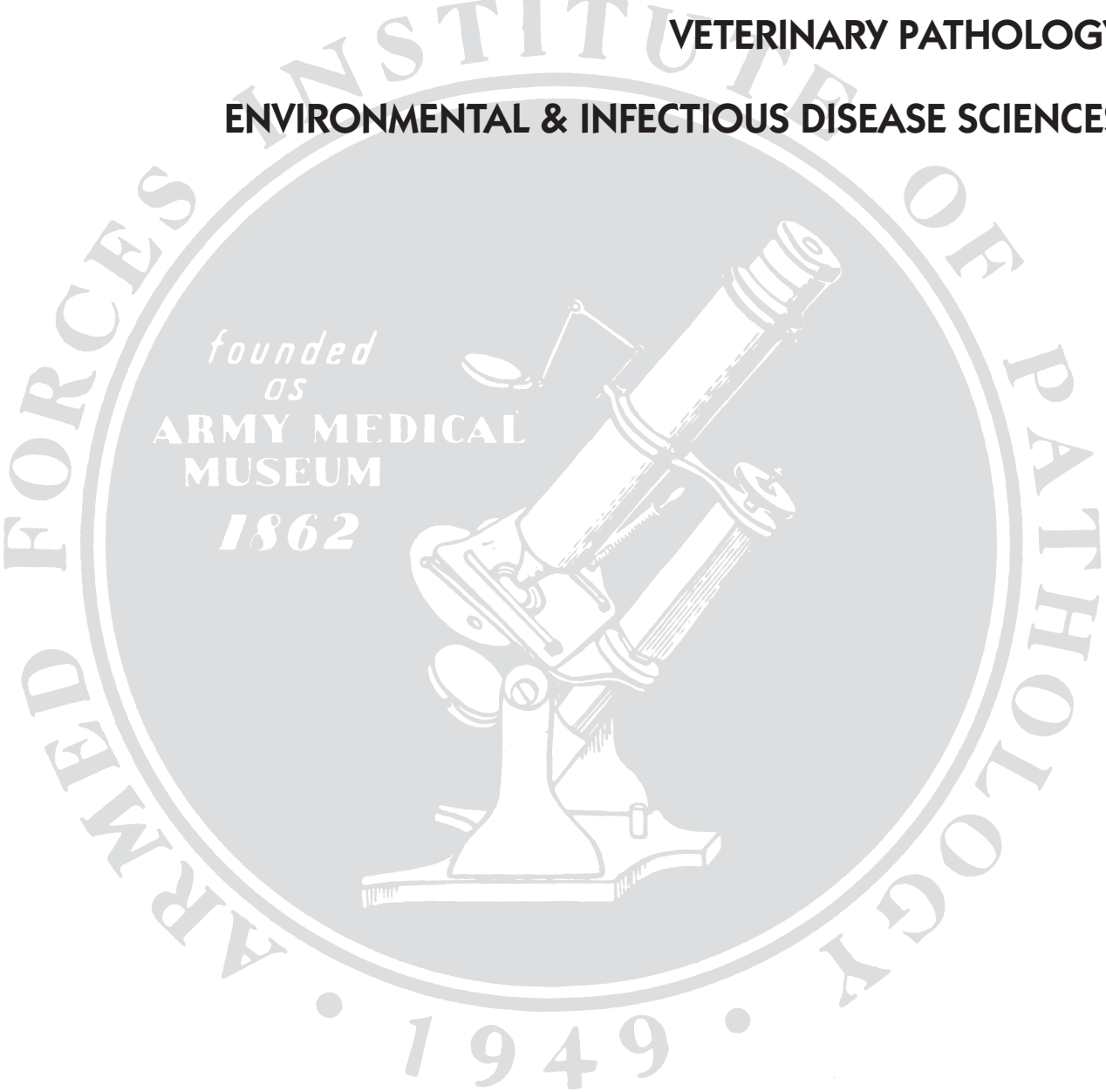
ADVANCED PATHOLOGY

GROUP 3

HEMATOPATHOLOGY

VETERINARY PATHOLOGY

ENVIRONMENTAL & INFECTIOUS DISEASE SCIENCES



Susan L. Abbondanzo, MD
Chair
Date of Appointment — 1 May 1994

DEPARTMENT OF HEMATOPATHOLOGY

STAFF

Medical

Susan L. Abbondanzo, MD, Chair
Nadine S. Aguilera, MD, Assistant Chair
(A) Aaron Auerbach, MD, Junior Staff
(A) Jeannie Muir-Pedilla, MAJ, MC, USA, Fellow
(D) Carol Barekman, LTC, MC, USA, Staff Pathologist
(D) Julie Plumbley, Maj, USAF, MC, Staff Pathologist
(D) Jeffery Vos, MAJ, MC, USA, Fellow

Administrative

Michele L. Kelly, Administrator
Tasha Portee, Secretary

IMPACT

We are the only ACGME-accredited hematopathology training program serving the 3 branches of the military. Cases are submitted by the DoD and VA, and by civilian hospitals worldwide. Staff members participate in various local and national educational and research endeavors on topics related to hematopathology.

CONSULTATION

The department renders expert consultation on cases involving the pathology of the hematopoietic system.

Cases	*Completed*
Military	280
Army (140)	
Navy (68)	
Air Force (72)	
Federal	673
VA (669)	
Other (4)	
Civilian	441
Interdepartmental	1,142
Total	2,536

EDUCATION

Courses: May 2004, Rockville, Md, AFIP Anatomic Pathology Review Course, 5 lectures.

Trainees

- The department trained 2 military fellows in 6-month rotations in 2004. We also had 2 one-month visitors in the department. We completed 271 training days, with responsibili-

ties involving service work (under the constant supervision of a credentialed staff pathologist), research, and lecturing.
- Our department is accredited by the ACGME for a hematopathology fellowship program for 2 hematopathology fellows. The program utilizes the clinical laboratories and staff at WRAMC and the NNMC in a combined institutional fellowship headed at the AFIP. It is the only accredited military graduate medical education program in hematopathology.

Faculty Appointments

1. Georgetown University Medical Center, Department of Pathology, Adjunct Clinical Assistant Professor, SL Abbondanzo.
2. USUHS, Adjunct Associate Professor, NS Aguilera.

Presentations

1. January 2004: Washington, DC, National Capital Consortium Pathology Residents, "Lymphomas and lymphoid hyperplasia of the gastrointestinal tract," SL Abbondanzo.
2. May 2004: Rockville, Md, AFIP Anatomic Pathology Review Course, "Small B-cell lymphomas," "High-grade lymphoma," J Plumbley.
3. May 2004: Rockville, Md, AFIP Anatomic Pathology Review Course, "Benign reactive lymphadenopathy," SL Abbondanzo.
4. May 2004: Rockville, Md, AFIP Anatomic Pathology Review Course, "T and NK-cell lymphoma," "Hodgkin lymphoma," NS Aguilera.
5. September 2004: Washington, DC, WRAMC, "Lymphomas and lymphoid hyperplasia of the gastrointestinal tract," SL Abbondanzo.
6. October 2004: Washington, DC, National Capital Consortium Pathology Residents, "T and NK-cell lymphoma," NS Aguilera.

RESEARCH

Journal Articles

1. Chen H, Thompson LD, Aguilera NSI, Abbondanzo SL. Kimura disease: a clinicopathologic study of 21 cases. *Am J Surg Pathol*. 2004;28:505-513.
2. Abbott RM, Levy AD, Aguilera NS, Gorospe L, Thompson WM. Primary vascular neoplasms of the spleen: radiologic-pathologic correlation. *Radiographics*. 2004;24:1137-1163.
3. Cook JR, Aguilera NS, Reshmi-Skarja S, Huang X, Yu Z, Gollin SM, Abbondanzo SL, Swerdlow SH. Lack of PAX5 rearrangements in lymphoplasmacytic lymphomas: reassessing association with t(9;14). *Hum Pathol*. 2004;35:447-454.
4. Levy AD, Abbott RM, Abbondanzo SL. Littoral cell angioma of the spleen: CT features with clinicopathologic comparison. *Radiology*. 2004;230:485-490.
5. Thompson LD, Fisher SI, Chu W-S, Nelson A, Abbondanzo SL. HIV-associated Hodgkin lymphoma: a clinicopathologic and immunophenotypic study of 45 cases. *Am J Clin Pathol*. 2004;121:727-738.

Abstracts

1. Abbondanzo SL. Infectious mononucleosis lymphadenitis: the differential diagnosis of diffuse paracortical hyperplasia. *Pathol Case Rev*. 2004;9:192-198.
2. Barekman CL, Aguilera NS, Dement-Brown JL, Lichy JH, Abbondanzo SL. Paracortical large B-cell lymphoma. *Mod Pathol*. 2004;17:239A.
3. Cook JL, Aguilera NS, Reshmi-Skarja S, Gollin SM, Huang X, Yu Z, Abbondanzo SL, Swerdlow SH. Del (6q) is not a characteristic marker of nodal lymphoplasmacytic lymphoma. *Mod Pathol*. 2004;17:244A.
4. Vos JA, Abbondanzo SL, Barekman CL, Andriko JW, Aguilera NS. Histiocytic sarcoma: a clinicopathologic study of 5 cases. *Mod Pathol*. 2004;17:276A.
5. Selbs E, Chu W-S, Abbondanzo SL, Sobin LH, Franks TJ, Travis WD. TTF-1 expression in the spectrum of neuroendocrine tumors from the lungs and gastrointestinal carcinoids. *Mod Pathol*. 2004;17:343A.
6. Shilo K, Chu W-S, Abbondanzo SL, Franks TJ, Travis WD. Diagnostic utility of Langerin (CD207) for histological diagnosis of pulmonary Langerhans cell histiocytosis. *Mod Pathol*. 2004;17:344A.

Projects: The department had 7 active research protocols as of December 31, 2004, and several ongoing research projects, including the following:

1. Ultrasound technology in tissue fixation.

2. Atypical follicular hyperplasia in children.
3. Splenic nonlymphomatous neoplasms.
4. Lymphoplasmacytoid lymphoma/immunocytoma.
5. Determination of proto-oncogene overexpression in lymphoma.
6. Ultrasound fixation and its affect on molecular genetic studies.
7. Diffuse large B-cell lymphoma, 2 unusual subtypes.

Collaborators

Military/Federal: With the accreditation of our fellowship program, we have added a collaborative education mission with NNMC and WRAMC and an education mission with the National Capital Consortium Pathology Residency.

1. Elaine S. Jaffe, MD, NIH: Histiocytic neoplasms.
2. Frederick W. Miller, MD, PhD, FDA: 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.
3. Lynn Levin, MD, WRAIR: Viral etiology of Hodgkin lymphoma.

International:

J. Geradts, MD, Oxford University, UK: Tumor suppressor genes in malignancy.

Interdepartmental:

1. J Lichy, Department of Cellular Pathology: Semi-quantitative method for detecting tumor markers.
2. A Nelson, Department of Infectious and Parasitic Diseases Pathology.
3. A Levy, Department of Radiologic Pathology.

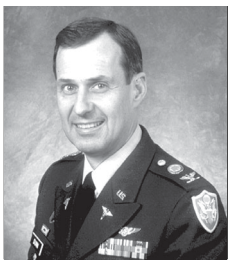
PROFESSIONAL ACTIVITIES

Official Trips: March 2004, US/Canadian Academy of Pathology, Vancouver, BC, SL Abbondanzo, NS Aguilera.

Manuscripts Reviewed

SL Abbondanzo:

1. *Mayo Clinic Proceedings*
2. *Cancer*
3. *Archives of Pathology and Laboratory Medicine*
4. *American Journal of Clinical Pathology*



Dale G. Dunn, COL, VC, USA
Chair
Date of Appointment — 1 September 2003

DEPARTMENT OF VETERINARY PATHOLOGY

STAFF

Administrative

(D) Rhonda J. Martin, MSgt, USAF, NCOIC
(A) Krista S. Ponzo, MSG, USA, NCOIC
Teresa G. Cannady, Administrative Officer
Martha A. Koerner, Secretary

DIVISION OF LABORATORY ANIMAL MEDICINE

Norman D. Wiltshire, LTC, VC, USA
Chief
Date of Appointment — 13 August 2004

STAFF

Medical

(D) James T. Sheets, MAJ, VC, USA
David E. Bentzel, MAJ, VC, USA, Deputy Chief

Scientific

Angela Y. Ward, SGT, USA, NCOIC
(D) Manuel F. Taveras, SGT, USA, Animal Care Specialist
Omar A. Feliciano, SPC, Animal Care Specialist
Aaron J. Jackson, SPC, Animal Care Specialist
Rodolfo E. Marenco, QA Technician, ARP
Steven P. McNair, Surgery Technician
Greeley A. Stones, Caretaker Supervisor
Michael B. Cannon, Animal Caretaker
Rashaan O. Jackson, Animal Caretaker
Jerome D. Escoe, Animal Caretaker
James P. Pollock, Animal Caretaker

DIVISION OF RESEARCH AND EDUCATION

Mark G. Mense, LTC, VC, USA
Chief
Date of Appointment — 15 April 2002

STAFF

Medical

Terrell W. Blanchard, LTC, VC, USA, Chief, Education Branch
Duane A. Belote, LTC, VC, USA, Chief, Research Branch
(D) Sophie Bouchiha-Olson, DVM, Education Research Pathologist

Administrative

Sean Hahn, Administrator, Registry of Toxicologic Pathology for Animals

Scientific/Technical

Henry J. Jenkins, Electron Microscopist and Laboratory Technician
(A) Scott Shaffer, Computer Technology Education Specialist

Residents

Bridget S. Lewis, MAJ, VC, USA (3rd year)
Gloria A. Marselas, MAJ, VC, USA (3rd year)
Thomas J. Steinbach, MAJ, VC, USA (3rd year)
Kimberly A. Whitten, MAJ, VC, USA (3rd year)
Derron A. Alves, MAJ, VC, USA (3rd year)
Jennifer L. Chapman, MAJ, VC, USA (3rd year)

DIVISION OF CONSULTATION AND TRAINING

Dana P. Scott, LTC, VC, USA
Chief
Date of Appointment — 7 July 2003

STAFF

Medical

(D) Sarah L. Hale, MAJ, VC, USA, Chief, Training Branch
(A) Greg A. Saturday, MAJ, VC, USA, Chief, Training Branch
Michelle L. Fleetwood, DVM, Chief, Consultation Branch
Thomas P. Lipscomb, DVM, Consultant Pathologist
F. Yvonne Schulman, DVM, Consultant Pathologist

Administrative

Monique E. Barnes, SGT, USA, Training NCO
Katherine M. Randall, Secretary

Residents

(D) Jerry R. Cowart, MAJ, VC, USA
(D) Greg A. Saturday, MAJ, VC, USA
(D) Deidre E. Stoffregen, MAJ, VC, USA
(D) Kathleen A. Szabo, MAJ, VC, USA
Louis M. Huzella, MAJ, VC, USA (2nd year)

Mark A. Smith, MAJ, VC, USA (2nd year)
Shannon Wallace, MAJ, VC, USA (2nd year)
Shelley P. Honnold, MAJ, VC, USA (2nd year)
(A) Ammon W. Brown, CPT, VC, USA (1st year)
(A) James R. Dwyer, CPT, VC, USA (1st year)
(A) Carl I. Shaia, MAJ, VC, USA (1st year)

IMPACT

- The department's most significant program is the DoD Veterinary Pathology Residency, which has significant military relevance. With few exceptions, the Army veterinary pathologists now on active duty completed their postgraduate training at AFIP. Army veterinary pathologists are directly involved in critical DoD biomedical research efforts to protect the soldier. They are also trained in the detection and recognition of foreign animal diseases, many of which are potential biological weapons and of great importance to the nation's global war on terrorism. Army veterinary pathologists are the only comparative pathologists in the US trained to conduct postmortem examinations in the biosafety level 4 (BSL-4) environment. In the face of a worldwide shortage of veterinary pathologists, our Veterinary Pathology Residency Program is the most cost-effective and efficient source of trained pathologists for all DoD research, investigative, and diagnostic pathology needs. Currently, 13 officers are enrolled in the program.
- We are collaborating with WRAIR's Division of Military Casualty Research in support of the DoD's wound detection sensor project. The goal of this project is to create a soldier-portable circuit to detect penetrating impacts. This study is the next in a series of steps in the development of a passive acoustic sensor, to be worn by all combat soldiers, that will provide immediate notification to the soldier medic of a penetrating ballistic wounding event. This research has the potential to increase battlefield casualty survival rates.
- We provided laboratory animal medicine support onsite in Russia for the Department of State/DoD Cooperative Threat Reduction program.
- Operation of the laboratory animal facility at AFIP provided for important animal model-based research on human diseases for the AFIP and WRAMC, Department of Clinical Investigation.
- The department provided critical diagnostic pathology services for military working animal and other federal animal programs. Members also provided consultation services to the National Marine Fisheries Service on several issues, including sonar and marine mammal deaths.
- We continued online veterinary systemic pathology training with the assistance of a Department of Education grant and in collaboration with 4 universities. This resource contains case manuscripts with digital photomicrographs of more than 675 disease entities, including high-consequence zoonotic and foreign animal diseases of importance in the global war on terrorism. All department online programs are freely available to military medical professionals.
- We conducted a 25-week histopathology slide conference with 134 participating institutions in 22 countries. This conference has an enormous impact on training programs and hundreds of veterinary pathologists and residents around the world. It has been the signature program of this department for 52 years.
- The WHO Collaborating Center continued to publish the first updates in 25 years of the Histologic Classification of Tumors in Domestic Animals. These fascicles are an important reference used worldwide in diagnostic and research pathology.
- Annual courses provided essential training for military medical research specialists and are core components of the DoD Residency Program. These courses are unique to the profession.
- Department staff conducted a toxicologic histopathology Web conference, the first Web-based course for the Institute and the first Web-based histopathology conference for the profession of veterinary pathology.
- The department published the *Standardized System of Nomenclature for Diagnostic Criteria*. These guides are critical to the standardization of diagnostic terminology for veterinary toxicologic pathologists.
- Our department is highly regarded in the US and abroad for its professionalism and competence, as evidenced by highly favorable media attention this year. Staff members were featured in a Discovery Channel documentary film entitled "The Dolphin Murders," produced by Tigress Productions, Ltd, of Britain, which aired in Europe, November 2004.

Department staff were also featured in a series entitled "The Perilous Voyage: Secrets of the Dead," published in *The Virginian-Pilot* newspaper of Richmond, Virginia, which ran in December 2004.

CONSULTATION

- The department provides essential diagnostic pathology services for the DoD military working dog program and other federal working animal programs, including the Navy Marine Mammal Program and those conducted by the Customs Service, Border Patrol, and Secret Service. Veterinary pathology consultation is vital to maintaining the health and deployability of these important assets in the global war on terrorism. It is also important in maintaining disease surveillance measures in military communities. The importance of surveillance has substantially increased with the threat of bioterrorism. All of the known potential biological weapons, with the exception of smallpox, are zoonotic diseases. Members of the department also provided consultation and investigative services to the National Marine Fisheries Service on issues of military importance, including Navy sonar systems.
- The department completed 2,340 consultation cases, which originated primarily from the DoD and other federal agencies. Over 50% of cases reported represent complete autopsies in which wet tissue was received. The majority of these cases are military working dogs and marine mammals, which generate a continuous high demand for histopathological assessment of tissues. The department reviews over 10,000 separate tissue specimens annually.
- The department performed 226 cytological case examinations, which included tissue aspirates and bone marrow impressions. Twelve cases received a quality diagnosis code of "4," representing a major disagreement with the contributor's diagnosis. Department staff and residents conducted 392 autopsies. Histopathology was performed on almost all autopsy cases. National Zoological Park (NZP) and Maryland State Diagnostic Laboratory (MDX) autopsy cases are not included with AFIP consultation case totals, since they are assessed by AFIP residents with NZP or MDX staff pathologists.

Cases Completed	
Military	990
Army (525)	
Navy (145)	
Air Force (320)	
Federal	92
USPHS (7)	
OFA (85)	
Civilian	950
No Final Report (NFR)	308
Total	2,340

Autopsies	
Division of Laboratory Animal Medicine, AFIP	34
National Zoological Park (NZP)	118
Maryland State Diagnostic Lab (MDX)	79
National Institutes of Health	156
Other (marine mammals/military working dogs)	5
Total	392

Deployments

1. January 2004, St. Petersburg/Moscow, Russia, Consultation on laboratory animal issues for the Defense Threat Reduction Agency, JT Sheets.
2. January 2004, Washington, DC, Army Veterinary Corps Consultants Meeting, DG Dunn.
3. January 2004, Plum Island, NY, Foreign Animal Disease Diagnosticians Course, DE Bentzel, LM Huzella, SM Wallace, SP Honnold, MA Smith.

4. February 2004, Minneapolis/St. Paul, Minn, Minnesota Veterinary Medicine Association Conference, TJ Steinbach.
5. March 2004, Boston, Mass, IACUC 101 Workshop and the ARENA/PRIM and R IACUC Conference, DE Bentzel.
6. April 2004, Rockville, Md, Food Emergency Response Network Steering Committee Meeting, DP Scott.
7. May 2004, Falls Church, Va, Veterinary Corps Food and Water Safety Committee Meeting, DP Scott.
8. May 2004, Athens, Ga, Subcommittee Meeting for the Food Emergency Response Network, DP Scott.
9. June 2004, Silver Spring, Md, WRAIR Summer Fellowship in Veterinary Public Health: Bioterrorism, JT Sheets, DP Scott.
10. July 2004, St. Petersburg/Moscow, Russia, Consultation on laboratory animal issues for the Defense Threat Reduction Agency, JT Sheets.
11. July 2004, Philadelphia, Penn, 141st AVMA Annual Convention, TW Blanchard, MG Mense.
12. September 2004, Rockville, Md, Food Emergency Response Network Steering Committee Meeting, DP Scott.
13. September 2004, Landstuhl, Germany, 9th Annual Pathology for Clinical Veterinarians Course, TW Blanchard.
14. September 2004, Washington, DC, 35th International Congress on Military Medicine, DA Belote.
15. September 2004, Washington, DC, Council of Army Veterinarians, DG Dunn.
16. November 2004, San Antonio, Tex, Strategic Planning Committee for Veterinary Corps, US Army, DP Scott.
17. December 2004, Aberdeen Proving Grounds, Md, US Army Veterinary Corps Consultants Meeting, DG Dunn.

EDUCATION

Courses

The department sponsored 2 AFIP courses attended by staff members and DoD Veterinary Pathology Program residents, and conducted conferences and workshops on a daily, weekly, and quarterly basis.

Trainees

- 14 full-time DoD residents (13 veterinary pathology, 1 laboratory animal)
- 12 visiting residents
- 10 visiting students

Presentations

1. January 2004: Washington, DC, Army Veterinary Corps Consultants Meeting, "Veterinary pathology update," DG Dunn.
2. January 2004: Andrews AFB, Md, North Atlantic Regional Veterinary Command Symposium, "Diagnostic cytology," DA Belote.
3. January 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Neoplastic disease of military working dog Persian Gulf veterans compared to non-deployed controls," DA Belote.
4. January 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "DoD veterinarians and biological threat reduction in the former Soviet Union," J Sheets.
5. February 2004: Biddeford, Me, University of New England, Marine Mammal Rehabilitation Center Seminar Series, "Pathology of selected diseases of marine mammals," TP Lipscomb.
6. February 2004: San Antonio, Tex, US Army Veterinary Command, "Neoplastic disease of military working dog Persian Gulf veterans compared to non-deployed controls," DA Belote.
7. February 2004: Kobe, Japan, Japanese Society of Toxicologic Pathology/International Federation of Societies of Toxicologic Pathology Joint Meeting, "AFIP online veterinary pathology training programs," MG Mense.
8. February 2004: St. Paul, Minn, Minnesota Veterinary Medical Association Conference, "Career opportunities in the US Army Veterinary Corps," TJ Steinbach.

9. March 2004: Bethesda, Md, AFIP Histotechnology Conference, "Leptospirosis in a California sea lion," JL Chapman.
10. March 2004: Bethesda, Md, AFIP Histotechnology Conference, "Neoplastic disease of military working dog Persian Gulf veterans compared to non-deployed controls," DA Belote.
11. March 2004: Bethesda, Md, Army Laboratory Animal Medicine Program Seminar Series, "Quality assurance techniques for animal care equipment and supplies," JT Sheets.
12. April 2004: Washington, DC, Current Veterinary Activities in Chemical, Biological, Radiological, Nuclear and Explosives Research Symposium, "Army veterinary pathology," DG Dunn.
13. April 2004: Washington, DC, AFIP Hot Topics Online, "Mad cow disease," ML Fleetwood.
14. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Ultrastructural descriptive techniques," DP Scott.
15. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," MG Mense.
16. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," DP Scott.
17. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," ML Fleetwood.
18. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," DA Belote.
19. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," SL Hale.
20. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," DG Dunn.
21. June 2004: Washington, DC, 13th Annual Descriptive Veterinary Pathology Course, "Histologic case descriptions," TW Blanchard.
22. June 2004: Silver Spring, Md, WRAIR Summer Fellowship in Veterinary Public Health: Bioterrorism, "DoD veterinarians and biological threat reduction in the former Soviet Union," JT Sheets.
23. June 2004: Silver Spring, Md, WRAIR Summer Fellowship in Veterinary Public Health: Bioterrorism, "Theater Army medical laboratories," DP Scott.
24. July 2004: Philadelphia, Penn, 141st AVMA Annual Convention, "On-line veterinary pathology training," TW Blanchard.
25. July 2004: Philadelphia, Penn, 141st AVMA Annual Convention, "On-line veterinary pathology training," MG Mense.
26. July 2004: St. Petersburg, Russia, 4th Annual Cooperative Biological Research Program Review, "Requirements for animal use in DoD-sponsored projects," JT Sheets.
27. August 2004: San Diego, Calif, Joint Conference of the American Association of Zoo Veterinarians, American Association of Wildlife Veterinarians and Wildlife Disease Association, Zoo Pathology Workshop, "Bilateral ovarian hilar-Leydig cell hyperplasia in a white lion (*Panthera leo*)," ML Fleetwood.
28. September 2004: Washington, DC, Council of Army Veterinarians, "Veterinary pathology update," DG Dunn.
29. September 2004: Landstuhl, Germany, 9th Annual Pathology for Clinical Veterinarians Course, "Necropsy techniques and descriptive gross pathology," "Veterinary pathology support for DoD CBRNE research," TW Blanchard.
30. September 2004: Olsztyn, Poland, Annual Meeting of the European Society of Veterinary Pathology, "Online veterinary pathology training," MG Mense.
31. October 2004: Cobleskill, NY, Northeast Veterinary Pathology Conference, "Toxoplasmosis in a Hawaiian monk seal," SP Honnold.
32. October 2004: Cobleskill, NY, Northeast Veterinary Pathology Conference, "A case of unusual lymphadenopathy in a cat," LM Huzella.
33. October 2004: Cobleskill, NY, Northeast Veterinary Pathology Conference, "Parosteal osteosarcoma in a ferret," MA Smith.
34. October 2004: Cobleskill, NY, Northeast Veterinary Pathology Conference, "Hepatic angiomatosis in a dog," SM Wallace.
35. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "Ovarian placental site trophoblastic tumor in a cynomolgus monkey

(*Macaca fascicularis*)", ML Fleetwood.
36. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "Dabska-like tumor in a chimpanzee," DA Alves.
37. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "Ossifying fibroma in an adult rabbit," KA Whitten.
38. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "AFIP Wednesday Slide Conference on the World Wide Web," GA Marselas.
39. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "Canine cutaneous clear cell adnexal carcinoma: histopathology, immunohistochemistry and biologic behavior," FY Schulman.
40. November 2004: Orlando, Fla, 55th Annual Meeting of the American College of Veterinary Pathologists, "Neuropathology mystery slide seminar session," FY Schulman.
41. November 2004: Washington, DC, National Zoological Park, Resident Seminar, "Overview of marine mammal diseases," ML Fleetwood.
42. December 2004: Bow, NH, Bow Middle School, Sixth Grade Class, "Pathologic effects of the Exxon Valdez oil spill on the sea otters of Prince William Sound, Alaska," TP Lipscomb.
43. December 2004: Aberdeen Proving Grounds, Md, Army Veterinary Corps Consultants Meeting, "Veterinary pathology update," DG Dunn.

RESEARCH

Journal Articles

1. Bentzel DE, Elliott TB, Keller CE, Brook I, Shoemaker MO, Knudson GB. Antimicrobial therapies for pulmonary Klebsiella pneumoniae infection in B6D2F1/J mice immunocompromised by sublethal irradiation. *Comp Med*. 2004;54:185-192.
2. Dubey JP, Lipscomb TP, Mense M. Toxoplasmosis in an elephant seal (Mirounga angustirostris). *J Parasitol*. 2004;90:907-908.
3. Fauquier D, Gulland F, Haulena M, Dailey M, Rietcheck RL, Lipscomb TP. Meningoencephalitis in two stranded California sea lions (Zalophus californianus) caused by aberrant trematode migration. *J Wildl Dis*. 2004;40:816-819.
4. Lehman RA Jr, Kuklo TR, Freedman BA, Cowart JR, Mense MG, Riew KD. The effect of alendronate sodium on spinal fusion: a rabbit model. *Spine J*. 2004;4:36-43.
5. Mense MG, Borschel RH, Wilhelmsen CL, Pitt ML, Hoover DL. Pathologic changes associated with brucellosis experimentally induced by aerosol exposure in rhesus macaques (Macaca mulatta). *Am J Vet Res*. 2004;65:644-652.
6. Schulman FY, Lipscomb TP. Questions data supporting conclusions on grade-III mast cell tumors. *J Am Vet Med Assoc*. 2004;224:501.
7. Stanton JB, Brown CC, Poet S, Lipscomb TP, Saliki J, Frasca S Jr. Retrospective differentiation of canine distemper virus and phocine distemper virus in phocids. *J Wildl Dis*. 2004;40:53-59.
8. Steinbach TJ, Reischauer A, Kunkemoller I, Mense MG. An oral choristoma in a foal resembling hairy polyp in humans. *Vet Pathol*. 2004;41:698-700.
9. Szabo KA, Mense MG, Lipscomb TP, Felix KJ, Dubey JP. Fatal toxoplasmosis in a bald eagle (Haliaeetus leucocephalus). *J Parasitol*. 2004;90:410-411.

Abstracts

1. Alves DA, Stidworthy MF, Hamilton JM, et al. Dabska-like tumor in a chimpanzee (Pan troglodytes). *Vet Pathol*. 2004;41:561.
2. Belote D, Dunn D, Burkman K, et al. Neoplastic disease of military working dog Persian Gulf veterans compared to non-deployed controls. Scientific Abstracts of the 35th International Congress on Military Medicine, *Public Health* and *Preventative Med*. 2004;285.
3. Fauquier DA, Barros NB, Lipscomb TP, et al. Causes of mortality in bottlenose dolphins (Tursiops truncatus) stranded along central west Florida from 1985-2003. Proceedings of the Southeast and Mid-Atlantic Marine Mammal Meeting, Harbor Branch Oceanographic Institute, Fort Pierce, Fla, March 2004.
4. Fleetwood M, Dunn DG, Stamatakos MD, et al. Ovarian placental site trophoblastic tumor in a cynomolgus monkey (Macaca fascicularis). *Vet Pathol*. 2004;41:582.
5. Fleetwood M, Garner M, Lipscomb TP, et al. Bilateral ovarian hilar-Leydig cell hyperplasia

in a white lion (Panthera leo). Proceedings of the Joint Conference of the American Association of Zoo Veterinarians, American Association of Wildlife Veterinarians and Wildlife Disease Association, Zoo Pathology Workshop, San Diego, Calif, August 2004.

6. Goldstein T, Lowenstine L, Lipscomb TP, et al. Identification of a gammaherpesviral infection in northern elephant seals (Mirounga angustirostris). Proceedings of the Joint Conference of the American Association of Zoo Veterinarians, American Association of Wildlife Veterinarians and Wildlife Disease Association, Zoo Pathology Workshop, San Diego, Calif, August 2004.
7. Kiupel M, Lipscomb TP, Schulman FY et al. Microscopic grading of canine cutaneous mast cell tumors: a multi-institutional review. *Vet Pathol*. 2004;41:576.
8. Marselas GA, Smith MA, Chapman JL, et al. Wednesday Slide Conference on the World Wide Web. *Vet Pathol*. 2004;41:564.
9. Mense MG, Blanchard TW, Atkin TJ, et al. AFIP online veterinary pathology training programs. Proceedings of the Japanese Society of Toxicologic Pathology/International Federation of Societies of Toxicologic Pathology Joint Meeting, Kobe, Japan, 2004;15-18.
10. Raverty S, Ketten D, Fleetwood M, et al. Pathological findings in harbor porpoises (Phocoena phocoena) stranded in Washington State 2 May to 2 June 2003 coincident with the mid-frequency sonar exercises by the USS Shoup. *Vet Pathol*. 2004;41:575.
11. Schulman FY, Lipscomb TP, Atkin TJ. Canine cutaneous clear cell adnexal carcinoma: histopathology, immunohistochemistry and biologic behavior. *Vet Pathol*. 2004;41:555.
12. Whitten KA, Popielarczyk MM, Belote DA, et al. Ossifying fibroma in an adult rabbit. *Vet Pathol*. 2004;41:561.

Books

Meuten DJ, Everitt J, Inskeep W, Jacobs RM, Peleteiro M, Thompson KG. *Histological Classification of Hematopoietic Tumors of Domestic Animals*. Vol 11. WHO International Histological Classification of Tumors of Domestic Animals. Schulman FY, ed. Washington, DC: AFIP; 2004

Reports

Raverty S, Ketten D, Fleetwood M, et al. "Preliminary Report of the Multidisciplinary Investigation of Harbor Porpoises (*Phocoena phocoena*) Stranded in Washington State 2 May to 2 June 2003 Coincident with the Mid-Frequency Sonar Exercises by the USS Shoup." National Oceanic and Atmospheric Administration, February 2004.

Projects

1. Determination of surface acoustic signatures from high-velocity impacts in swine. Military relevance: This protocol is a step in the development of a passive acoustic sensor to be worn by all combat soldiers, that will provide immediate notification to the soldier medic of a penetrating ballistic wounding event.
2. Military working dog Persian Gulf veterans as sentinels for human disease. Military relevance: The Department of Veterinary Pathology determined there is no significant difference in the prevalence, histogenesis, or systemic distribution of neoplasia between deployed and non-deployed dogs. A manuscript is being developed for submission to *Environmental Health Perspectives* to report our findings.
3. Investigation of stranded harbor porpoises and possible association with naval sonar exercise of USS Shoup in the Haro Strait.
4. Investigation of gas bubble lesions in cetaceans.
5. Methods to protect against various infectious diseases at Biosafety Level 2 and 3.
6. Web-based distance learning in veterinary pathology.
7. Development of an International Tissue and Tumor Repository for chronic arseniasis.
8. Progressive bone lesions in the sperm whale, and chronic effects of deep diving.
9. Adnexal carcinomas in dogs: histopathology, immunohistochemistry and biologic behavior.
10. Cerebral trematodiasis in California sea lions.
11. Testicular neoplasia in dolphins.
12. Toxoplasmosis in an elephant seal.
13. Toxoplasmosis in a bald eagle.
14. CNS tumors of domestic animals study set.
15. Causes of marine mammal disease.
16. Feline subependymal giant cell astrocytoma.
17. Cardiovascular disease: arterial responses to injury, atherosclerosis, therapies for re-

stenosis following stent placement.
18. Immunohistochemistry and semi-nested RT-PCR for diagnosis of morbilliviral diseases in seals.
19. Orthopedic research.
20. Brucellosis.
21. Anthrax.

Collaborators

Military:

1. DoD Military Working Dog Veterinary Service.
2. WRAIR.
3. WRAMC.
4. US Army Research Institute of Infectious Diseases.

Civilian:

1. National Zoological Park, Washington, DC.
2. Maryland State Diagnostic Laboratory, Frederick, Md.
3. National Marine Fisheries Service.
4. US Fish and Wildlife Service.
5. US Food and Drug Administration.
6. National Institutes of Health, Center for Environmental Health.
7. US Department of Agriculture, Agriculture Research Service.
8. Marine Mammal Center, Sausalito, Calif.
9. University of Texas School of Public Health.
10. Virginia Marine Science Museum.
11. C.L. Davis DVM Foundation.
12. Society of Toxicologic Pathology.
13. USUHS.
14. University of Pennsylvania, School of Veterinary Medicine, New Bolton, Penn.
15. New Jersey Marine Mammal Stranding Center, Brigantine, NJ.
16. Iowa State University.
17. Louisiana State University.
18. Washington State University.
19. University of Georgia.

PROFESSIONAL ACTIVITIES

Official Trips

1. January 2004, St. Petersburg/Moscow, Russia, Consultation on laboratory animal issues for the Defense Threat Reduction Agency, JT Sheets (DTRA).
2. January 2004, Army Veterinary Corps Consultants Meeting, Washington, DC, DG Dunn.
3. January 2004, Foreign Animal Disease Diagnosticians Course, Plum Island, NY, DE Bentzel, LM Huzella, SM Wallace, SP Honnold, MA Smith (Academy of Health Sciences).
4. February 2004, Minnesota Veterinary Medicine Association Conference, Minneapolis-St. Paul, Minn, TJ Steinbach (3rd AMEDD Recruiting Detachment).
5. February 2004, Japanese Society of Toxicologic Pathology Annual Meeting, Kobe, Japan, S Hahn, MG Mense (RTPA Registry).
6. February 2004, Annual Medical Laboratory Symposium, Boston, Mass, RJ Martin (AFIP).
7. March 2004, IACUC 101 Workshop and ARENA/PRIM and R IACUC Conference, Boston, Mass, DE Bentzel (AFIP).
8. March 2004, Review of grant proposals for Florida's "Protect Wild Dolphins" program, Ft Pierce, Fla, TP Lipscomb (ARP).
9. April 2004, Food Emergency Response Network Steering Committee Meeting, Rockville, Md, DP Scott.
10. May 2004, Veterinary Corps Food and Water Safety Committee Meeting, Falls Church, Va, DP Scott.
11. May 2004, ACVP Examination Committee Meeting, Ft Collins, Colo, DG Dunn, DP Scott (ACVP).
12. May 2004, ACLAM 4th Examination Review Committee, Tucson, Ariz, JT Sheets (AFIP).
13. May 2004, Methods Subcommittee Meeting for the Food Emergency Response Network,

Athens, Ga, DP Scott (DODVSA/OTSG).
14. June 2004, Society of Toxicologic Pathology Annual Meeting, Salt Lake City, Utah, S Hahn (RTPA Registry), TW Blanchard (AFIP).
15. July 2004, St. Petersburg/Moscow, Russia, Consultation on laboratory animal issues for the Defense Threat Reduction Agency, JT Sheets (DTRA).
16. July 2004, 141st AVMA Annual Convention, Philadelphia, Penn, TW Blanchard (AFIP).
17. July 2004, Working Group for Unusual Marine Mammal Mortality Events Annual Meeting, Washington, DC, ML Fleetwood.
18. August 2004, Joint Conference of the American Association of Zoo Veterinarians, American Association of Wildlife Veterinarians and Wildlife Disease Association and the Zoo Pathology Workshop, San Diego, Calif, ML Fleetwood (ARP).
19. September 2004, Food Emergency Response Network Steering Committee Meeting, Rockville, Md, DP Scott.
20. September 2004, 9th Annual Pathology for Clinical Veterinarians Course, Landstuhl, Germany, TW Blanchard (AMEDD Academy of Health Sciences).
21. September 2004, Meeting of the European Society of Veterinary Pathology, Olsztyn, Poland, MG Mense (ARP).
22. September 2004, 35th International Congress on Military Medicine, Washington, DC, DA Belote.
23. September 2004, Council of Army Veterinarians, Washington, DC, DG Dunn.
24. September 2004, ACVP Examination, Ames Iowa, S Bouchiha-Olson (ARP), DG Dunn, DP Scott (ACVP), JR Cowart, GA Saturday, DE Stoffregen, KA Szabo (AFIP).
25. October 2004, American Association for Laboratory Animal Science (AALAS) National Conference, Tampa, Fla, DE Bentzel, ND Wiltshire (AFIP).
26. October 2004, Northeast Veterinary Pathology Conference, Cobleskill, NY, SP Honnold, SM Wallace, LM Huzella, MA Smith, DP Scott, GA Saturday (AFIP).
27. November 2004, American College of Veterinary Pathologists Annual Meeting, Orlando, Fla, JL Chapman, KA Whitten, DG Dunn, ML Fleetwood, DA Belote, GA Marselas, MG Mense, DA Alves (AFIP), FY Schulman, TP Lipscomb (ARP), S Hahn (RTPA Registry).
28. November 2004, Strategic Planning Committee for Veterinary Corps, US Army, San Antonio, Tex, DP Scott (DODVSA/OTSG).
29. December 2004, US Army Veterinary Corps Consultants Meeting, Aberdeen Proving Grounds, Md, DG Dunn (DODVSA/OTSG).

Manuscripts/Reports Reviewed

Schulman FY

1. *Journal of the American Veterinary Medicine Association*
2. *American Journal of Veterinary Research*
3. *Journal of Zoo and Wildlife Medicine*
4. *Veterinary Pathology*
5. Editor, *WHO International Histological Classification of Tumors of Domestic Animals*

Mense MG

Associate Editor for Online Media, *Veterinary Pathology*

Lipscomb TP

1. National Marine Fisheries Service protocol for killer whale necropsies.
2. National Marine Fisheries Service investigation of harbor porpoises stranded in Washington State coinciding with the mid-range sonar exercises of the USS Shoup.
3. Public relations fact sheets for the American College of Veterinary Pathologists.
4. *Veterinary Pathology*
5. *Journal of Wildlife Diseases*

Dunn DG

Behavior

Fleetwood ML

1. National Marine Fisheries Service Prescott Marine Mammal Stranding Grant Program.
2. National Marine Fisheries Service protocol for killer whale necropsies.
3. National Marine Fisheries Service interim report of the bottlenose dolphin unusual mortality event along the panhandle of Florida.

Florabel G. Mullick, MD, ScD (Hon), FCAP, SES
Chair
Date of Appointment — 27 June 1996

DEPARTMENT OF ENVIRONMENTAL AND INFECTIOUS DISEASE SCIENCES

The Department of Environmental and Infectious Disease Sciences was newly established in 2004 by merging the Department of Environmental and Toxicologic Pathology with the Department of Infectious and Parasitic Diseases Pathology, bringing together experts in infectious and tropical diseases, microbiology, molecular pathobiology, AIDS and emerging infections, environmental pathology, environmental toxicology, and biophysical toxicology. The department conducts consultation, education, and research in global diseases; studies environmental factors causing negative health effects and organisms that cause a specific illness; and studies threats and diseases that affect our **deployed soldiers** and their health upon return.

ORGANIZATION

- Office of the Chair
- Division of Environmental Pathology, Michael R. Lewin-Smith, MD, Chief
- Division of Environmental Toxicology, Victor F. Kalasinsky, PhD, Chief
- Division of Biophysical Toxicology, Jose A. Centeno, PhD, Chief
- Division of Infectious and Tropical Diseases Pathology, Peter L. McEvoy, COL, MC, USA, Chief
- Division of Microbiology, Robert Crawford, PhD, Chief
- Division of Molecular Pathobiology, Shyh-Ching Lo, MD, PhD, Chief

STAFF—OFFICE OF THE CHAIR

Medical

Florabel G. Mullick, MD, ScD, FCAP, Chair
Douglas J. Wear, MD, Associate Chair for Research and Education

Administrative

Kim Knight, Administrative Officer
Darlene Wilson, Executive Assistant
Ana Erica Revelo, Administrative Assistant

Individual division reports cover achievements in consultation, education and research.

The creation of the INTOX Data Center consolidates all our **military-related databases**, facilitating the follow-up of **war-related diseases** in military personnel.

Michael R. Lewin-Smith, MD
Chief
Date of Appointment — 1 November 2001

DIVISION OF ENVIRONMENTAL PATHOLOGY

STAFF

Medical

Michael R. Lewin-Smith, MD, Chief
(D) Charles S. Specht, MD, Staff Pathologist,
(D) Linda A. Murakata, Lt Col, USAF, MC, Staff Pathologist

Administrative

(A) Albin L. Moroz, MS, Analyst/Programmer

IMPACT

- The division conducts consultation, education, and research in environmental toxicology and environmental, drug-induced, and radiation pathology. We study ways to develop and apply toxicological techniques for analyzing human and animal tissue to determine causes of injury and disease. Following the retirement of Frank B. Johnson, MD, SES in May 2004, his pathology consultation work was transferred to this division.
- We provide medical/pathology support to the divisions of Environmental Toxicology, Chemical Microscopy, and Biophysical Toxicology within the newly formed Department of Environmental and Infectious Disease Sciences. Division staff signed or cosigned 5 cases for the Division of Biophysical Toxicology, and signed or cosigned 443 reports for the Division of Chemical Pathology/Chemical Microscopy in 2004.
- The division maintains several registries of anatomic pathology material from **military and militarily-relevant cohorts**, including former prisoners of war, Vietnam War/Agent Orange veterans, 1990-1991 Kuwait/Persian Gulf War veterans, and ionizing radiation veterans. In 2003, new registries for **military personnel** deployed to Iraq and Afghanistan were initiated and continued to grow during 2004. Also in 2004, a new registry for leishmaniasis was developed in collaboration with the Division of Tropical and Infectious Diseases Pathology.
- A poster describing muscle biopsy pathology findings among veterans of the 1990-1991 Gulf War was presented at a national meeting of neuropathologists in 2004. Our **military-relevant** consultation work was illustrated in a poster presentation demonstrating the chemical characterization of implanted fragments resulting from blast injuries suffered by **US soldiers** serving in Iraq. The poster was a collaborative effort with the Division of Environmental Toxicology and a contributor from WRAMC.
- Division staff reported one VA claims case in 2004 relating to Agent Orange.

CONSULTATION

- The Registry for Former Prisoners of War (POWs), which contains histopathologic specimens dating back to 1945, was established in 1980. Since then, we have received 27,742 accessions from 14,119 former POWs. During 2004, 1,050 new POW accessions were received and 1,040 were finalized, including those with no report required. The division received 302 fewer POW accessions in 2004 than in 2003, mainly due to declining numbers of surviving former POWs from World War II.
- The division also maintains the Kuwait/Persian Gulf Registry for pathology specimens from veterans of the 1990-1991 Persian Gulf War. This Registry is supported by funding from the DoD and contains pathologic material contributed by **military** medical treatment facilities and VA medical centers. During 2004, 1,605 new Kuwait/Persian Gulf Registry accessions were received and 1,577 accessions were finalized, including 1,353 with no report required. The division received 179 fewer Kuwait/Persian Gulf accessions in 2004 than in 2003. The AFIP Kuwait/Persian Gulf Registry contained 12,050 accessioned cases from 8,332 verified

1990-1991 Gulf War military veterans on December 31, 2004. In addition, there were 1,308 accessioned cases from 906 veterans who had been in the theater of operations, but not during the period August 1, 1990 to July 31, 1991, and 5,092 accessioned cases from 4,052 patients whose status could not be verified.

- A special study conducted in the 1980s for Vietnam War veterans formed the basis for the AFIP Registry for Agent Orange, maintained by this division. Since then, we have received additional cases. We periodically receive autopsy contributions, mainly from VA medical centers, for dioxin evaluation, which is performed as part of a research protocol by the Division of Environmental Toxicology. In 2004, 200 new Agent Orange Registry accessions were received and 191 were finalized, including 70 with no report required. The division received 1,062 fewer Agent Orange Registry cases in 2004 than in 2003. There were 9,111 accessioned cases from 7,623 patients in the Agent Orange database on December 31, 2004.
- For the 3 registries described above, the division received a combined total of 2,855 new accessions in 2004, representing a decrease of 1,518 accessions compared to 2003.
- 818 accessioned cases from 728 patients have been flagged at the AFIP as being from Operation Iraqi Freedom since 2003.
- 13 accessioned cases from 13 patients have been flagged at the AFIP as being from Afghanistan since 2003.
- The Radiation Biology Registry, formerly under the Mutagen Branch, was retained by the division. No replacement for the previous radiation biology pathologist has been appointed.
- The INTOX database, which contained several thousand cases, was reorganized in 2001. It was renamed the INTOX Data Center and is now an umbrella for several databases, which have been separated to more easily identify related cases. Division staff have been actively involved with the development of the new data center, and in redesigning the computerized records for the Tissue Reaction to Drugs (TRD) Registry. The registries for Agent Orange, Former Prisoners of War, Kuwait/Persian Gulf and Radiation Pathology are databases in the INTOX Data Center. Division staff have also worked on the material for the Breast Explant Registry, Depleted Uranium Registry and Chronic Arseniasis Registries. A new database for environmental agents has been created for cases previously included in the TRD registry, but which are not recognized as conventional drugs, diagnostic or therapeutic agents, or alternative therapies. The reorganization may take several years to complete, but will improve the utility of the data for future research and prove useful for collaborative work, particularly with **military** and other government agencies. Three intramural TRD consultations were reviewed by division staff in 2004 and entered into the database.

Cases	*Completed*
Military	22
Army (15)	
Navy (4)	
Air Force (3)	
VA	2,921
Civilian	19
Interdepartmental	88
(8 additional for Chemical Pathology)	
Total	3,050

EDUCATION

Courses: LA Murakata codirected the Annual AFIP Anatomic Pathology Course, May 2004, Bethesda, Md.

Trainees: The division provided training to one Nelson S. Irey Environmental Pathology Fellow (6 months/182 days).

Faculty Appointments

1. George Washington University, Assistant Clinical Professor of Pathology, Department of Pathology, MR Lewin-Smith.
2. Georgetown University, Adjunct Assistant Professor, Department of Pathology, MR Lewin-Smith.

Presentations

1. March 2004: Baltimore, Md, Baltimore VA Medical Center, “Depleted uranium follow-up

visit 5," "Histopathology of embedded depleted uranium shrapnel in soft tissue," LA Murakata.
2. March 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Environmental and toxicologic pathology: the impact of exposure data," MR Lewin-Smith.
3. April 2004: Portland, Ore, DoD ACTUR, 2004 Cancer Registrars Training Meeting, "Environmental and toxicologic pathology: the impact of exposure data," MR Lewin-Smith.
4. June 2004: Cleveland, Ohio, 2004 American Association of Neuropathologists Meeting, "Muscle biopsy findings in Gulf War veterans," CS Specht.
5. September 2004: Phoenix, Ariz, Poster Presentation, CAP Annual Meeting, "Characterization of embolization microsphere plastic in vitro and in human tissue sections by light microscopy and infrared microspectroscopy," LA Murakata.
6. September 2004: Baltimore, Md, Poster and Oral Presentation, The Royal Society of Medicine/Association of Academic Health Centers/University of Maryland, Baltimore Combined Conference, "Terrorism and trauma; a transatlantic perspective," "Characterization of foreign materials from wound sites of US military personnel deployed in Operation Iraqi Freedom," MR Lewin-Smith.
7. September 2004: Alexandria, Va, 35th International Congress on Military Medicine, "Depleted uranium: embedded fragments present unique exposure situations and concerns of possible health risks," LA Murakata.

RESEARCH

Abstracts

Specht CS, Lewin-Smith MR, Murakata LA, Mena H, Kalasinsky VF, Moroz AL, Mullick FG. Muscle biopsy findings in Gulf War veterans. *J Neuropathol Exp Neurol*. 2004;63:533.

Projects

MR Lewin-Smith, PI:

1. A histopathologic study of hematologic specimens from Persian Gulf War military veterans.
2. The timing of hepatitis C seroconversion in a cohort of US military Gulf War veterans.
3. A histopathologic study of liver specimens from Persian Gulf War military veterans.
4. Pathology of the lung in a cohort of former prisoners of war.

CS Specht, PI:

1. A review of gynecologic histopathology in a group of Gulf War veterans.
2. A review of the neuromuscular pathology of Gulf War veterans.
3. Update of skin pathology in Gulf War veterans.

Other Projects

1. Identification of microembolization beads in pathology specimens.
2. A case of silicone and sarcoid granulomas in a patient with "highly cohesive" silicone breast implants: a histopathologic and laser Raman microprobe analysis.
3. Depleted Uranium Registry at the AFIP.

Collaborators

Military:

1. KC Holtzmuller, WRAMC: Hepatic disease in US military Gulf War veterans.
2. KL Maggio, WRAMC: Identification of material from blast wounds in US military personnel.

Civilian:

C Watkins, S Stofko, Prisoner of War Information System (POWIS): Pathology of the lung in former prisoners of war.

Interdepartmental:

1. H Mena: Neuromuscular pathology of Gulf War veterans.
2. L Rabin: Hepatic disease in US military Gulf War veterans.
3. SL Abbondanzo: A histopathologic study of hematolymphoid specimens from Persian Gulf War military veterans.

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, Baltimore VA Medical Center, Depleted uranium follow-up visit 5, LA

Murakata.
2. April 2004, DoD ACTUR, 2004 Cancer Registrars Training Meeting, Portland, Ore, MR Lewin-Smith (ACTUR).
3. June 2004, American Association of Neuropathologists Meeting, Cleveland, Ohio, CS Specht.
4. September 2004, CAP Annual Meeting, Phoenix, Ariz, LA Murakata (AFIP).
5. September 2004, The Royal Society of Medicine/Association of Academic Health Centers/University of Maryland, Baltimore Combined Conference, MR Lewin-Smith (AFIP).
6. September 2004, 35th International Congress on Military Medicine, Alexandria, Va, LA Murakata.

Editorial

LA Murakata:

1. Associate Editor and Acting Director, Center for Scientific Publications, AFIP.
2. Edited Tumors of the Kidney, Bladder, and Related Urinary Structures, Series 4, Fascicle 1.
3. Edited Placental Pathology, Fascicle 3, Non-tumor Pathology.
4. Reviewed one article for *Modern Pathology*.

Victor F. Kalasinsky, PhD
Chief
Date of Appointment — 25 September 1989

DIVISION OF ENVIRONMENTAL TOXICOLOGY

STAFF

Scientific

Victor F. Kalasinsky, PhD, Chief
(D) Steven C. Cordero, MS, Laboratory Manager
Thuy T. Luong, MS, Laboratory Manager
(A,D) Jody Donnelley, BS, Laboratory Technician
(A) Karen Pizzolato, BS, Laboratory Technician
(A) Esta Y. Tamanaha, BS, Laboratory Technician
(A) Susanna Tsukerman, BS, Laboratory Technician
Albin L. Moroz, MS, Computer Program Analyst
Jesse Tristan, BS, Computer Applications Specialist

Administrative

Kim M. Knight, Administrative Officer

IMPACT

- Work continued on discriminating among different genera of microorganisms using various spectroscopic methods, including microspectroscopy and chemical imaging in collaboration with the Division of Microbiology and Aberdeen Proving Ground.
- A number of white powders suspected of being biological agents were identified using infrared and Raman spectroscopy and scanning electron microscopy with energy dispersive x-ray analysis.
- Involved in a DARPA project to evaluate new technologies for the detection of biological aerosols.
- Supported USACHPPM, WRAMC, and the OAFME by analyzing specimens from patients

serving in Iraq.
- Work continued on improving detection limits for insect repellents sampled from transdermal sweat patches.
- The AFIP-DoD-GEIS Directory of Public Health Laboratory Services was available online. Monthly newsletters were prepared highlighting important news related to emerging infections, and real-time demonstrations of the computerized database were displayed in booths at 2 conferences.
- Worked with USACHPPM to add military environmental laboratory capabilities to the online database in a format compatible with the EPA.

CONSULTATION

By using gas chromatography, mass spectrometry, liquid chromatography, Fourier transform infrared and Raman spectrometry, and scanning electron microscopy with energy dispersive x-ray analysis, it was possible to identify or characterize unknown chemical substances in 18 cases. These included pesticides, plastics, therapeutic drugs, and cases of dioxin analysis in patients thought to have been exposed to Agent Orange in Vietnam. Other cases included serologic tests on Gulf War veterans.

Cases	*Completed*
Military	657
Army (511)	
Navy (10)	
Air Force (136)	
VA	91
Civilian	10
Interdepartmental	18
Total	776

EDUCATION

Trainees: Two high school students received training during the summer of 2004.

Faculty Appointments

Adjunct Professor, Hamline University, VF Kalasinsky, SC Cordero.

Scientific Appointments

Guest Researcher, National Institute of Diabetes, Digestive, and Kidney Diseases, NIH, VF Kalasinsky.

Presentations

1. February 2004: Boston, Mass, Meeting of the Society of Armed Forces Medical Laboratory Scientists, “An Internet-accessible DoD Directory of Public Health Laboratory Services,” VF Kalasinsky.
2. March 2004: Atlanta, Ga, International Conference on Emerging Infections and Diseases, “Development of a virtual DoD Directory of Public Health Laboratory Services,” TT Luong.
3. March 2004: Chicago, Ill, 55th Pittsburgh Conference on Analytical Chemistry and Spectroscopy, “Examination of medicinal preparations in clinical and forensic cases,” SC Cordero.
4. March 2004: Bethesda, Md, AFIP Histotechnology Course, “Selected scanning electron microscopy cases,” VF Kalasinsky.
5. March 2004: Bethesda, Md, AFIP Histotechnology Course, “Spectroscopy, microscopy, and electron microscopy,” VF Kalasinsky.
6. August 2004: Albuquerque, NM, Force Health Protection Conference, “An Internet-accessible Directory of DoD Public Health Laboratory Services,” TT Luong.
7. August 2004: Philadelphia, Penn, American Chemical Society Meeting, “Near infrared imaging of biological tissue: correlation with infrared and Raman point detection,” VF Kalasinsky.
8. September 2004: Arlington, Va, 35th International Congress on Military Medicine, “An Internet-accessible Directory of DoD Public Health Laboratory Services,” TT Luong.
9. September 2004: Baltimore, Md, Terrorism and Trauma: A Transatlantic Perspective, “Characterization of foreign materials from wound sites of US military personnel deployed in Operation Iraqi Freedom,” VF Kalasinsky.

10. October 2004: Portland, Ore, Federation of Analytical Chemistry and Spectroscopy Societies Annual Meeting, "The role of infrared and Raman imaging in biological warfare detection," KS Kalasinsky.
11. November 2004: Washington, DC, 44th Interscience Conference on Antimicrobial Agents and Chemotherapy, "Applications of an Internet-accessible DoD Directory of Public Health Laboratory Services," TT Luong.

RESEARCH

Journal Articles

Cordero SC, Goodhue WW, Splichal EM, Kalasinsky VF. A fatality due to ingestion of hydrofluoric acid. *J Anal Toxicol*. 2004;28:211-213.

Abstracts

1. Kalasinsky VF, Luong TT, Charak JR, Tristan JO, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible DoD Directory of Public Health Laboratory Services. Society of Armed Forces Medical Laboratory Scientists, February 23-26, 2004, Boston, Mass.
2. Luong TT, Tristan JO, Charak JR, Kalasinsky VF, Mullick FG, Gaydos JC, MacIntosh VH, Malone JL. Development of a virtual DoD Directory of Public Health Laboratory Services. International Conference on Emerging Infections and Diseases, February 29-March 3, 2004, Atlanta, Ga.
3. Cordero SC, Charak JR, Luong TT, Meakim K. Examination of medicinal preparations in clinical and forensic cases. 55th Pittsburgh Conference on Analytical Chemistry and Spectroscopy, March 7-12, 2004, Chicago, Ill.
4. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible Directory of DoD Public Health Laboratory Services. Force Health Protection Conference, August 6-12, 2004, Albuquerque, NM.
5. Kalasinsky VF, Lewis EN. Near infrared imaging of biological tissue: correlation with infrared and Raman point detection. National Meeting of the American Chemical Society; August 22-26, 2004, Philadelphia, Penn.
6. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible Directory of DoD Public Health Laboratory Services. 35th International Congress on Military Medicine, September 12-17, 2004, Washington, DC.
7. Kalasinsky VF, Lewin-Smith MR, Maggio KL, Murakata LA, Mullick FG. Characterization of foreign materials from wound sites of US military personnel deployed in Operation Iraqi Freedom. Terrorism and Trauma: A Transatlantic Perspective, September 20-22, 2004, Baltimore, Md.
8. Kalasinsky K, Kalasinsky V. The role of infrared and Raman imaging in biological warfare detection. Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies, October 3-7, 2004, Portland, Ore.
9. Kalasinsky VF, Tristan JO, Luong TT, Pizzolato KM, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. Applications of an Internet-accessible DoD Directory of Public Health Laboratory Services. 44th Interscience Conference on Antimicrobial Agents and Chemotherapy, October 30-November 2, 2004, Washington, DC.

Projects

1. Military working dogs deployed to Southwest Asia as sentinels for human environmental exposure during the Persian Gulf War.
2. Prospective clinical and laboratory evaluation of patients with silicone breast implants: determination of silicon baseline levels and molecular microanalysis of pathological specimens associated with fibrous capsules.
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 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.
9. Pathology of the lung in a cohort of former prisoners of war.

10. The timing of hepatitis C seroconversion in a cohort of Gulf War veterans.
11. A histopathologic study of liver specimens from Gulf War veterans.
12. Histopathologic review and chemical analysis of autopsy material from the Agent Orange Registry.

In Gulf War-related studies, the division is participating in the DoD's Comprehensive Clinical Evaluation Program. 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.

Collaborators

Military/Federal:

1. IW Levin, NIH, Bethesda, Md: Vibrational imaging of tissue samples.
2. KC Holtzmuller, WRAMC: Hepatic disease in US military Gulf War veterans.
3. KL Maggio, WRAMC: Blast injuries in military personnel.
4. JP Malone, JC Gaydos, VH MacIntosh, Global Emerging Infections System, Silver Spring, Md: DoD Directory of Public Health Laboratory Services.
5. AC Samuels, US Army Soldier Biological and Chemical Command, Aberdeen, Md: Infrared and Raman spectroscopic characterization of microorganisms.
6. JM Heller, US Army Center for Health Promotion and Preventive Medicine, Aberdeen, Md: Deployment surveillance of active duty US troops.
7. JD Eversole, Naval Research Laboratory: Rapid aerosol agent detection.
8. R Crawford, Division of Microbiology, AFIP: Infrared and Raman spectroscopic characterization of microorganisms.

PROFESSIONAL ACTIVITIES

Official Trips

1. February 2004, Society of Armed Forces Medical Laboratory Scientists, Boston, Mass, VF Kalasinsky, TT Luong (ARP), JO Tristan.
2. February-March 2004, International Conference on Emerging Infections and Diseases, Atlanta, Ga, VF Kalasinsky, TT Luong (ARP).
3. March 2004, 55th Pittsburgh Conference on Analytical Chemistry and Spectroscopy, Chicago, Ill, SC Cordero (ARP).
4. March 2004, Joint Environmental Surveillance Work Group, San Antonio, Tex, VF Kalasinsky.
5. August 2004, Force Health Protection Conference, Albuquerque, NM, VF Kalasinsky, TT Luong (ARP).
6. August 2004, American Chemical Society, Philadelphia, Penn, VF Kalasinsky.

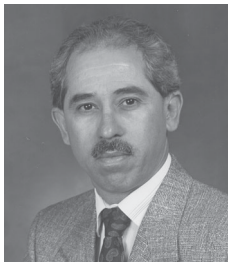
Manuscripts Reviewed

VF Kalasinsky:

1. *Applied Spectroscopy* (5)
2. *Journal of Molecular Structure* (1)
3. *Journal of Physical Chemistry* (2)
4. *Spectrochimica Acta* (3)
5. *Vibrational Spectroscopy* (1)

Editorial Boards

Vibrational Spectroscopy, VF Kalasinsky



Jose A. Centeno, PhD
Chief
Date of Appointment — October 2001

DIVISION OF BIOPHYSICAL TOXICOLOGY

STAFF

Scientific

Jose A. Centeno, PhD, Chief
Todor Todorov, PhD, Research Chemist and Laboratory Manager, ARP
(A) Marion Gray, PhD, Callender-Binford Fellow, ARP
Simina Lal, BS, MS, Environmental Chemistry Technician, ARP
(A,D) Kwadwo Bekoe, BS, Laboratory Technician

IMPACT

The division conducts consultation, education, and research in environmental and biophysical toxicology, health effects, and analysis of trace elements, toxic metals, and minerals. We develop chemical and biophysical techniques for the characterization of these materials in human and other animal tissues, with particular emphasis on elemental composition and chemical/toxicological speciation of toxic metals. In 2004, the division accomplished the following:

1. Concerning research, consultation, and analytical toxicology programs on depleted uranium (DU):
   - The division completed the development and implementation of the Depleted Uranium (DU) Registry. This Registry consists of archival materials, the development of a central analytical laboratory core facility dedicated to the analysis of total and isotopic uranium ratio in biological tissues and fluids, and a biological surveillance program to monitor potential cases of DU exposure within the 3 services. The DU Registry was established in collaboration with the DU program at the Baltimore VAMC, and provides archival and chemical analysis for all the services of the US Armed Forces. In 2004, the DU Registry consisted of over 1,400 archived samples from the DU Biological Surveillance Program and 3 histological cases from the Baltimore-VA Clinical Follow-Up Program. The Registry is maintained by funds obtained from the VA Baltimore DU Program and USCHPPM.
   - The division provided support and information on different topics related to DU, including measurement techniques, environmental monitoring, soldier biomonitoring, epidemiology, and histopathologic evaluations. The division's laboratory on DU analysis provided analytical support to USCHPPM, WRAMC-Health Physics and Preventive Medicine Programs, and to the Deployment Health Support Directorate on assessing potential DU exposure to soldiers attached to the New York 442nd Military Police Company. Press reports about this unit presented an inaccurate view of the DU levels and health risks associated with exposure to DU. The results provided by the AFIP DU Registry indicated that these soldiers were not exposed to DU.
2. In close collaboration with the DoD Deployment Health Support Directorate, division staff have been actively involved in a Biomonitoring Working Group and the development of guidelines for biomonitoring of nerve agent exposures.
3. The division provided consultation and analytical toxicological support to the OAFME, US Center for Health Promotion and Preventive Medicine, Deployment Health Support Directorate, WRAMC, Navy Bureau of Medicine and Surgery, Brooke Army Medical Center, Navy Criminal Investigative Services, Navy Health Research Center, Depleted Uranium Program at the Baltimore VAMC, and Army Criminal Investigative Division, in several cases concerning potential exposure to environmental agents and toxic trace elements including mercury, arsenic, lithium, lead, and depleted uranium.

4. The division successfully established the Center for Analysis and Quality Assurance for the study of complementary medicine preparations of **military relevance** (MIL-CAM). Division staff were able to secure grant funds totaling $100,000 for the continuing development of this Center. This Center is aimed at establishing laboratory procedures and tests to elucidate the chemical properties and health effects of remedies and supplements which may be used by soldiers.
5. The division maintains the Breast Explant Registry and conducts a research program on the archiving, consultation, and biophysical studies of silicone breast explants and bioimplantable materials database. This Registry has an extensive collection of published literature, CDs, and a list of patents on materials used in the manufacture of silicone breast implants and other biomedical devices.
6. The division has developed and maintains the International Tissue and Tumor Repository for Chronic Arseniasis, with the partial support of the EPA and NCI. This Repository serves as a centralized facility for collecting, archiving, and studying tissue specimens from populations chronically exposed to arsenic. In 2004, the repository consisted of 135 clinical cases submitted to the AFIP for consultation, 57 cases from an arsenic-exposed population in Torreon, Mexico, 1,668 placental and clinical samples from Chile on which arsenic speciation analysis has been conducted, and several tissue collections obtained from studies in which experimental laboratory animals have been used to study the toxicology of arsenic.
7. The division has developed and maintains the only DoD Registry on Medical Geology, with partial support from national and international organizations including the US Geological Survey, UNESCO and the International Union of Geological Sciences. This Registry is aimed at the study and characterization of geological and environmental factors and their role in the development of health problems in humans and other animals. Health problems associated with exposure to lead, mercury, fluoride, cadmium, arsenic and other toxic metals are being studied. The division has also developed a teaching and training unit on medical geology, based on a 3-day course titled "Metals, Health and the Environment."
8. In collaboration with other DoD and federal agencies, including USUHS, Naval Health Research Center San Diego, EPA, and USGS, division staff provide scientific humanitarian assistance to the government of The Philippines in studying potential health effects associated with exposure to mining waste on the Island of Marinduque. This project is expected to be completed by early 2005.

CONSULTATION

The division provides analytical toxicology support for the study of toxic metals and the identification and quantification of environmental and chemical agents in tissues and other biological specimens. In 2004, the division was involved on over 600 cases requiring DU analysis. In addition, division staff worked closely with the OAFME and the Navy Criminal Investigative Division in several suspected cases of toxic metal poisoning and one case of lithium poisoning. In 2004, the division reported 5 cases in which foreign materials were identified employing confocal laser Raman microscopy, infrared microspectroscopy and scanning electron microscopy with energy dispersive x-ray microanalysis. Multielement quantitative analysis was provided on 3 cases and single element quantitative results were provided on 17 intradepartmental consults.

Cases	***Completed***
Military	476
Army (472)	
Navy (3)	
Air Force (1)	
VA	329
Civilian	20
Interdepartmental	17
Total	842

Deployments

1. January 2004, National Institute of Standards and Technology, Gaithersburg, Md, Invited Seminar Speaker, JA Centeno.

2. March 2004, CDC, Agency for Toxic Substances and Disease Registry, Atlanta, Ga, Invited Conference Speaker, JA Centeno.
3. March 2004, AFIP Histopathology Course, Bethesda, Md, Course Faculty, JA Centeno.
4. April 2004, WRAMC, Invited Seminar Speaker, 2 lectures, JA Centeno.
5. August 2004, 7th Annual Force Health Protection Conference, Albuquerque, NM, Invited Conference Speaker, 4 lectures, JA Centeno.
6. August 2004, National Academy of Sciences-National Research Council Committee of Earth Sciences and Public Health, JA Centeno.
7. September 2004, NIOSH Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, Morgantown, WV, Invited Conference Speaker, JA Centeno.
8. September 2004, 35th International Congress on Military Medicine, Washington, DC, JA Centeno, T Todorov, L Murakata.

EDUCATION

Courses: In collaboration with the Education and Research Programs Branch, division staff organized 4 AFIP short courses and gave a total of 22 lectures. These activities had a total of 230 attendees for ~1,380 man-hours.

Trainees: In 2004, division staff provided training to one Callender-Binford Fellow (ARP) and one college student (2-month internship in environmental and biophysical toxicology).

Faculty Appointments

JA Centeno:

1. Adjunct Professor of Environmental and Occupational Health, The George Washington University School of Public Health.
2. Adjunct Professor for Research, Universidad Metropolitana, San Juan, PR.
3. Distinguished Visiting Professor, University of Turabo, School of Sciences and Technology, Caguas, PR.
4. William Evans Visiting Fellow, University of Otago and Wellington School of Medicine, Wellington, NZ.
5. Guest Professorship, China University of Mining and Technology, Beijing, China.

Presentations

1. February 2004: Gaithersburg, Md, National Institute of Standards and Technology, "Confocal Raman chemical imaging of histpathological samples as an aid to an understanding of the pathology of the disease state," JA Centeno.
2. February 2004: Taipei, Taiwan, National Taiwan University Hospital, Department of Internal Medicine, "A clinical and toxicological perspective of mercury poisoning," JA Centeno.
3. February 2004: Taipei, Taiwan, National Taiwan University Hospital, First USA-Taiwan Symposium on Micronutrients, Trace Elements and Human Health, "Environmental health and the role of trace elements on the development of human diseases," JA Centeno.
4. February 2004: Taipei, Taiwan, National Taiwan University Hospital, First USA-Taiwan Symposium on Micronutrients, Trace Elements and Human Health, "An overview of tissue reactions as a result of exposure to toxic metals – the case of arsenic," JA Centeno.
5. March 2004: Wellington, NZ, University of Otago, Wellington School of Medicine, Department of Pathology, "An overview of tissue reaction as a result of exposure to toxic metals and metalloids – the case of arsenic," JA Centeno.
6. March 2004: Wellington, NZ, Science Soapbox Seminar Series, Environmental Science Research, "Environmental health and the role of trace elements on the development of human diseases," JA Centeno.
7. March 2004: Wellington, NZ, Wellington School of Medicine and School of Public Health, Public Health Seminar, "Medical geology: an emerging discipline in protection of public health," JA Centeno.
8. March 2004: Atlanta, Ga, International Conference on Biomarkers for Toxicology and Molecular Epidemiology, CDC-ATSDR, "Chemical speciation of arsenic metabolites in rat tissues," JA Centeno.
9. March 2004: Bethesda, Md, AFIP Histopathology Seminar, "Toxic elements, metals, metalloids and medical geology," JA Centeno.
10. April 2004: Washington, DC, WRAMC, Department of Anatomic Pathology, Resident Lecture Program, "Microscopy, microspectroscopy in chemical and environmental pathology," JA Centeno.

11. April 2004: Washington, DC, WRAMC, Department of Anatomic Pathology, Resident Lecture Program, "Trace metal analysis in environmental pathology – biomonitoring and clinical assessment of exposure to depleted uranium," JA Centeno.
12. May 2004: Munich, Germany, International Conference on Trace Element Speciation in Biomedical, Nutritional, and Environmental Science, "Trace element speciation in environmental medicine: arsenic and depleted uranium as examples," JA Centeno.
13. May 2004: Stockholm, Sweden, Karolinska Institute, School of Public Health, "Arsenic poisoning: natural history, toxicology and chemical speciation," JA Centeno.
14. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, "Environmental pathology and exposure to toxic metal ions," JA Centeno.
15. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, "Serum aminotransferases as biomarkers of arsenic-induced hepatotoxicity in Sprague-Dawley rats," PB Tchounwou, K Patlolla, JA Centeno.
16. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, "Environmental exposure to cadmium, zinc and selenium and risk of prostate disease," M Gray, D Slaney, JA Centeno, et al.
17. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, "Depleted uranium analysis in biological fluids by inductively coupled plasma mass spectrometry," TI Todorov, JW Ejnik, FG Mullick, JA Centeno.
18. May 2004: Budapest, Hungary, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, "Chemical speciation of arsenic metabolites in rat tissues," TI Todorov, JW Ejnik, PB Tchounwou, et al.
19. August 2004: Albuquerque, NM, 7th Annual Conference on Force Health Protection, "Depleted uranium program: repository, and chemical analysis in biological samples," JA Centeno.
20. August 2004: Albuquerque, NM, 7th Annual Conference on Force Health Protection, "Confocal Raman chemical images of histopathological samples," JA Centeno.
21. August 2004: Albuquerque, NM, 7th Annual Conference on Force Health Protection, "Chronic arsenic poisoning: environmental health, natural history and chemical speciation," JA Centeno.
22. August 2004: Albuquerque, NM, 7th Annual Conference on Force Health Protection, "Medical geology – an emerging discipline in support of environmental and military medicine," JA Centeno.
23. August 2004: Albuquerque, NM,7th Annual Conference on Force Health Protection, "Integrated earth and health-science methods for assessing potential health effects form exposure to dusts and soils," GS Plumlee, JA Centeno, et al.
24. August 2004: 29th Inter-American Congress, Inter-American Association of Sanitary and Environmental Engineering, "Medical geology – impacts of the natural environment on public health," JA Centeno.
25. August 2004: Ispra, Italy, European Centre for the Validation of Alternative Methods, Joint Research Centre, "Environmental pathology, epidemiology and toxicology of arsenic exposure," JA Centeno.
26. September 2004: Morgantown, WV, NIOSH, "Cadmium, zinc, selenium and prostate cancer," JA Centeno.
27. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Medical geology – an emerging discipline in support of military medicine," JA Centeno, et al.
28. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Depleted uranium fragments present unique exposure situation and concern of possible health risks," L Murakata, JA Centeno.
29. September 2004: Washington, DC, 35th International Congress on Military Medicine, "A medical surveillance program on depleted uranium, tissue repository capabilities and chemical analysis in biological samples," TI Todorov, JA Centeno.
30. September 2004: Jackson, Miss, 1st International Symposium on Recent Advances in Environmental Health Research, "Medical geology – an emerging discipline in support of environmental and military medicine," JA Centeno, RB Finkelman, et al.
31. September 2004: Jackson, Miss, 1st International Symposium on Recent Advances in

Environmental Health Research, "Confocal Raman microspectroscopy characterization of organic and inorganic arsenic species," CN Mosley, TI Todorov, JA Centeno.

32. September 2004: Jackson, Miss, 1st International Symposium on Recent Advances in Environmental Health Research, "Speciation of five arsenic metabolites in kidney, liver, lung and brain rat tissues" TI Todorov, JW Ejnik, PB Tchounwou, et al.
33. October 2004: Brisbane, Australia, 25th Congress of the International Academy of Pathology, "Medical geology – an emerging discipline," JA Centeno, et al.
34. October 2004: 8th International Conference on the Chemistry and Biology of Mineralized Tissues, "Manganese-enhanced magnetic resonance microscopy of mineralization," K Potter, TI Todorov, JA Centeno, J Small.
35. November 2004: Denver, Colo, Annual Conference, Geological Society of America, "Mercury in the environment from past mining and use of mercury-enriched coal: the example of Gorlovka, Ukraine," A Kolker, BS Panov, et al.

RESEARCH

Journal Articles

1. Gorham ED, Garland CF, Garland FC, Kaiser K, Travis WD, Centeno JA. Trends and occupational associations in incidence of hospitalized pulmonary sarcoidosis and other lung diseases in Navy personnel. *Chest*. 2004;126:1-8.
2. Tchounwou PB, Centeno JA, Patlolla AK. Arsenic toxicity, mutagenesis and carcinogenesis: a health risk assessment and management approach. *Mol Cell Biochem*. 2004;255:47-55.
3. Centeno JA, Finkelman RB, Olle S. Medical geology: an emerging discipline. *Pathol Int.* 2004;54(Suppl 1):S128-S130.

Abstracts

1. Tchounwou PB, Patlolla AK, Centeno JA. Serum aminotransferases as biomarkers of arsenic-induced hepatotoxicity in Sprague-Dawley rats. *Metal Ions Biol Med*. 2004;8:284-288.
2. Tchounwou PB, Centeno JA, Patlolla AK. Health risk assessment and management of arsenic toxicity and carcinogenesis. *Metal Ions Biol Med*. 2004;8:14-18.

Book Chapters

1. Centeno JA, Mullick FG, Ishak KG, Franks TJ, Burke AP, et al. Environmental pathology. In: Selinus O, Alloway B, Centeno JA, et al, eds. *Essentials of Medical Geology: Impacts of the Natural Environment on Public Health*. Elsevier-Academic Press; 2004:563-594.
2. Centeno JA, Todorov TI, Pestaner JP, Mullick FG. Histochemical and microprobe analysis in medical geology. In: Selinus O, Alloway B, Centeno JA, et al, eds. *Essentials of Medical Geology: Impacts of the Natural Environment on Public Health*. Elsevier-Academic Press; 2004:725-736.

Projects

JA Centeno, PI:

1. Sarcoidosis and occupational lung disease quality assurance program.
2. Depleted uranium follow-up program: biological surveillance and repository.
3. Uranium-spiked control semen study statement of work.
4. In vivo studies of the comparison of biokinetics between implanted tungsten and depleted uranium in rats: a pilot study.
5. Center for Advanced Analytical Toxicology studies on complementary alternative medicine applications of military relevance (MIL-CAM).
6. The anatomic pathology of former prisoners of war.
7. Dietary and occupational risk factors for prostate disease.
8. Development of the International Tissue and Tumor Repository for Chronic Arseniasis.
9. Histopathologic and laser Raman microprobe analysis of regional lymph nodes from patients with silicone breast implants.

In Operation Iraqi Freedom-related studies, division staff collaborated with the Department of Toxicology, the University of Maryland, Baltimore, the Inorganic Laboratory Section at the CDC, USCHPPM, Deployment Health Directorate and Preventive Medicine Section at WRAMC. The division is participating on a research program to study low levels of DU in tissues and body fluids from exposed service personnel.

Collaborators

Military/Federal:

1. JS Little, R Swatski, US Army Center for Health Promotion and Preventive Medicine, Aberdeen, Md: Uranium and isotopic uranium ratio analyses and archival of samples.
2. D Hack, WRAMC, Preventive Medicine: Depleted uranium analysis on soldiers from the 442nd MP unit.
3. DI Bannon, US Army Center for Health Promotion and Preventive Medicine, Aberdeen, Md: Relative bioavailability of copper and lead in soil from military ranges using *Colinus virginianus*.
4. MA McDiarmid, K Squibb, University of Maryland, Baltimore and VA Baltimore Center: Follow-up and monitoring of Gulf War veterans with fragments of depleted uranium and other sources of depleted uranium exposure.
5. WB Jonas, USUHS and Samueli Institute for Information Biology: Effects of low and ultra-low doses of cadmium in RWPE-1 prostate cells; Complex homeopathy drug development in neurodegenerative diseases.
6. J Medlin, G Plumlee, US Geological Survey: Environmental medicine of mining-related activities in the Island of Marinduque, The Philippines.
7. RB Finkelman, US Geological Survey, C Groves, Western Kentucky University: Environmental health research in China: a consortium between AFIP, Western Kentucky University, US Geological Survey, and US EPA.
8. A Kolker, US Geological Survey, H Gibb, Science International: Feasibility of assessing health risks from lontg-term mercury exposure in Gorlovka, Ukraine.
9. WF Regnault, FDA: Mechanistic determination of stress-induced dystrophic calcification in cardiovascular materials and devices; Assessment of calcium phosphate deposition mechanisms in dental and orthopedic applications.

Civilian:

1. C Groves, Western Kentucky University, Bowling Green, Ky; RB Finkelman, USGS: Establishment of Center of Excellence for Environmental Health Research in China.
2. C Hopenhayn, University of Kentucky; H Gibb, Science International: Chronic arsenic exposure from drinking water and reproductive effects.
3. H Brandon, Washington University: Center for Implant Retrieval and Analysis of Plastic and Reconstructive Surgery Devices.

International:

1. P Weinstein, University of Western Australia, School of Public Health: Medical geology and emerging infectious diseases.
2. D Slaney, Environmental Science Research, Wellington, NZ: Establishment of NZ/USA Centre of Research Excellence in Environmental Health.
3. O Selinus, Geological Survey of Sweden: Medical geology.
4. S Caroli, Institute Nationale di Sanita, Rome, Italy: Speciation of trace elements and depleted uranium analysis.
5. E Sabbioni, European Centre for the Validation of Alternative Methods, Joint Research Centre, Ispra, Italy: Toxicology of arsenic and nanotechnologies.
6. C-H Tseng, National Taiwan University Hospital, Taipei, Taiwan: Arsenic health effects.
7. B Zheng, Academia Sinica and Institute of Environmental Geochemistry, China: Medical geology and health effects of toxic trace elements.

In 2004, non-AFIP research funds were received as part of interagency and defense sharing agreements developed through collaborative projects, including:

1. IAG with the FDA Division of Mechanics and Material Sciences.
2. IAG with the NCI, US-EPA.
3. Statement of Work between the AFIP and the US Center for Health Promotion and Preventive Medicine to support the analysis of DU cases and archival of samples at the AFIP DU Registry.
4. VA/DoD Sharing Agreement to support Depleted Uranium Follow-up, Surveillance and Archival Program.

In 2004, the division was awarded a research grant ($88,460) from the Samueli Institute for Information Biology for the development of the AFIP Center for Advanced Analytical Toxicology Studies on Complementary Alternative Medicine Applications of Military Relevance (MIL-CAM).

PROFESSIONAL ACTIVITIES

Official Trips

JA Centeno:

1. February 2004, National Taiwan University Hospital, Department of Internal Medicine, Taipei, Taiwan.
2. March 2004, University of Otago, Wellington School of Medicine, Department of Pathology, Wellington, NZ.
3. March 2004, International Conference on Biomarkers for Toxicology and Molecular Epidemiology, CDC-ATSDR, Atlanta, Ga.
4. May 2004, International Conference on Trace Element Speciation in Biomedical, Nutritional, and Environmental Science, Munich, Germany.
5. May 2004, Karolinska Institute, School of Public Health, Stockholm, Sweden.
6. May 2004, 8th International Symposium on Metal Ions in Biology and Medicine, Hungarian Academy of Sciences, Budapest, Hungary.
7. August 2004, 7th Annual Conference on Force Health Protection, Albuquerque, NM.
8. August 2004, 29th Inter-American Congress, Inter-American Association of Sanitary and Environmental Engineering.
9. August 2004, European Centre for the Validation of Alternative Methods, Joint Research Centre, Ispra, Italy.
10. September 2004, National Institute for Occupational Safety and Health, Morgantown, WV.
11. September 2004, 1st International Symposium on Recent Advances in Environmental Health Research, Jackson State University, Jackson, Miss.
12. October 2004, 25th Congress of the International Academy of Pathology, Brisbane, Australia.
13. November 2004, University of Western Australia, School of Population Health, Perth, Australia.
14. December 2004, Geological Survey of India, Lucknow, India.

Manuscripts Reviewed

JA Centeno:

1. *Biological Trace Element Research* (1)
2. *Environmental Health Focus* (1)
3. *International Journal of Environmental Research and Public Health* (1)
4. *Analytical and Bioanalytical Chemistry* (1)

Editorial Boards

JA Centeno:

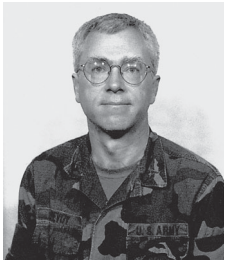
1. Biological Trace Element Research
2. International Journal of Environmental Research and Public Health
3. Environmental Health Focus

Research Proposals Reviewed and Participation at Study Sessions:

Peer Review Panel 2004, USAID. Panel on US-Israel Cooperative Development Research Program and Middle East Regional Cooperation Program (4 proposals reviewed), JA Centeno.

PhD Thesis Reviewed

"The Wellington Region Community Prostate Study," by Marion Gray, Department of Public Health, Wellington School of Medicine and Health Sciences, University of Otago, JA Centeno.



Peter L. McEvoy, COL, MC, USA
Chief
Date of Appointment — 14 April 1997/2001

DIVISION OF INFECTIOUS AND TROPICAL DISEASES PATHOLOGY

STAFF

Medical

Peter L. McEvoy, COL, MC, USA, Chief
Mary K. Klassen-Fischer, MD, Chief, Fungal Diseases Branch
Ronald C. Neafie, MS, Chief, Parasitology Branch
(D) Ann M. Nelson, MD (to AIDS Division)
Wayne M. Meyers, MD, PhD, Chief, Mycobacteriology Branch and Registrar, Leprosy Registry
Douglas J. Wear, MD, DS, ARP, Associate Chair

Fellow

Melanie Maleombho-Usher, MD, Red Cross Volunteer

Administrative

Darlene Wilson, Office Manager, ARP

IMPACT

Operation Iraqi Freedom produced significant numbers of cases of cutaneous leishmaniasis for the division. A Leishmania Registry was established to capture patient data and allow for long-term follow-up. As of December 31, 2004, 573 patients were enrolled: 553 Army, 2 Air Force, 9 Navy, and 9 unknown. Two patients with visceral leishmaniasis are included. This division of the AFIP is the **military's gold standard** for the diagnosis of leishmaniasis.

CONSULTATION

Our division is the only group of pathologists in the world dedicated to the pathology of infectious diseases. Glass slides and paraffin blocks of tissues suspected to contain lesions caused by infectious disease agents are stained with a number of special stains to capture Gram-positive or Gram-negative bacteria, fungi, mycobacteria, or immunostains for viruses. Our many years of experience observing infectious agents' destructive footprints in tissue, and the tissue's reaction, help us judge whether a lesion is due to an infectious agent and, if so, which is most likely. Infectious diseases are a major cause of morbidity in the **military** and a significant possible cause of mortality, as judged by DHS.

Cases	***Completed***
Military	1,319
Army (1,199)	
Navy (59)	
Air Force (61)	
Federal	103
VA (99)	
USPHS (2)	
OFA (2)	
Civilian	371
Interdepartmental	903
Total	2,696

Clinical Appointments

1. PL McEvoy, Visiting Pathologist, WRAMC.
2. MK Klassen-Fischer, Visiting Pathologist, WRAMC.

Deployments

1. Monthly, WRAMC, sign-out pathology cases, PL McEvoy, MK Klassen-Fischer.
2. August 2003, WRAMC, 12-day Reservist Active Duty Training, MK Klassen-Fischer.

EDUCATION

Courses: Division staff participated as faculty in one AFIP course in 2004.

Trainees: The division hosted a Red Cross volunteer and a visiting pathologist for training in 2004.

Presentations

1. January 2004: Bethesda, Md, USUHS, "Case presentations," RC Neafie.
2. February 2004: Washington, DC, George Washington University Medical Center Pathology Residency Program, "Pathology of infectious diseases 1," PL McEvoy.
3. February 2004: Washington, DC, George Washington University Medical Center Pathology Residency Program, "Pathology of infectious diseases 2," PL McEvoy.
4. March 2004: Bethesda, Md, AFIP Histopathology Seminar, "Infectious and parasitic disease cases," RC Neafie.
5. March 2004: Geneva, Switzerland, 7th WHO Advisory Group Meeting on Buruli Ulcer, "Osteomyelitis in *Mycobacterium ulcerans* disease," WM Meyers, M Maleombho-Usher, F Abalos, J Aguiar, RC Johnson, A Guedenon, M Debacker, F Portaels.
6. March 2004: Basel, Switzerland, Swiss Tropical Institute, Minisymposium on Laboratory Research on *Mycobacterium ulcerans* Disease (Buruli Ulcer), "A clinicopathologic classification of *Mycobacterium ulcerans* disease," WM Meyers.
7. April 2004: Baltimore, Md, Tropical Medicine Dinner Club, "What else could it be?" RC Neafie.
8. April 2004: Washington, DC, Catholic University of America, "Case presentations," RC Neafie.
9. April 2004: Washington, DC, AFIP Anatomic Pathologic Review Course, "Pathology of infectious diseases," PL McEvoy.
10. April 2004: Washington, DC, George Washington University Medical Center Pathology Residency Program, "Pathology of infectious diseases 3," PL McEvoy.
11. April 2004: Washington, DC, AFIP Professional Staff Conference, "Buruli ulcer: clinicopathologic classification of *M. ulcerans* disease," WM Meyers.
12. April 2004: Washington, DC, AFIP Professional Staff Conference, "Osteomyelitis in *Mycobacterium ulcerans* disease," WM Meyers, M Maleombho-Usher, F Abalos, J Aguiar, RC Johnson, A Guedenon, M Debacker, F Portaels.
13. June 2004: Washington, DC, AFIP, Introduction to Science for AFIP Summer Students, "You have to know it to see it," DJ Wear.
14. July 2004: Bethesda, Md, USUHS, Military Tropical Medicine Course, "Loiasis and dracunculiosis," RC Neafie.
15. July 2004: Baltimore, Md, Johns Hopkins School of Hygiene and Public Health Summer Tropical Medicine Course, "Pathology of tropical diseases," PL McEvoy.
16. July 2004: Washington, DC, AFIP Grand Rounds, "Buruli ulcer," WM Meyers.
17. August 2004: Washington, DC, WRAMC Pathology Residents, "Identification of fungal infections," M Klassen-Fischer.
18. August 2004: Washington, DC, WRAMC Pathology Residents, "Identification of worms 1," RC Neafie.
19. August 2004: Washington, DC, WRAMC Pathology Residents, "Identification of worms 2," RC Neafie.
20. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Buruli ulcer (*Mycobacterium ulcerans* disease)," WM Meyers, M Maleombho-Usher, F Abalos, F Portaels.
21. October 2004: Washington, DC, AFIP Professional Staff Conference, "Real or imaginary? The story of virtual parasites," PL McEvoy.
22. October 2004: Washington, DC, AFIP Professional Staff Conference, "Surgical pathology of arthropods," MK Klassen-Fischer.

23. October 2004: Brisbane, Australia, 25th Congress of the International Academy of Pathology, Symposium on Infectious Diseases, "Clinicopathologic classification of *Mycobacterium ulcerans* disease (Buruli ulcer)," WM Meyers.
24. October 2004: Bellmore, NY, Damien-Dutton Society for Leprosy Aid, Inc., Symposium on Leprosy and Other Related Diseases, "Leprosy and other diseases in the tropics," WM Meyers.
25. November 2004: Washington, DC, Catholic University Graduate Student Seminar Series, "Leishmaniasis," PL McEvoy.
26. November 2004: Miami Beach, Fla, American Society of Tropical Medicine and Hygiene, "Clinicopathologic classification, diagnosis and transmission of Buruli ulcer disease," WM Meyers.
27. November 2004: Miami Beach, Fla, American Society of Tropical Medicine and Hygiene, "Apoptosis in human lesions of Buruli ulcer," KS Myint, DS Walsh, WM Meyers, F Portaels, JE Lane.
28. November 2004: Miami Beach, Fla, American Society of Tropical Medicine and Hygiene, "Experimental animal models for Buruli ulcer," DS Walsh, WM Meyers, GP Walsh, P Small, SR Pattyn, F Portaels.
29. November 2004: Miami Beach, Fla, American Society of Tropical Medicine and Hygiene, Poster Presentation, "High rates of apoptosis in human *Mycobacterium ulcerans* culture positive lesion samples of Buruli ulcer," DS Walsh, WM Meyers, F Portaels, JE Lane, KS Myint.
30. November 2004: London, England, "Presenting Michael F. R. Waters, Recipient of Damien-Dutton Award for 2004," WM Meyers.

RESEARCH

Journal Articles

1. Aronson N, Ananthakrishnan M, Bernstein W, Hochberg L, Marovich M, Ockenhouse C, Yoon I, Weina P, Benson P, Fischer J, Hack D, Hawkes C, Polhemus M, Wortmann G, McEvoy P, Neafie R, Defraites R, Herwaldt BL. Update: cutaneous leishmaniasis in U.S. military personnel – Southwest/Central Asia, 2002-2004. *MMWR*. 2004;53:264-265.
2. Debacker M, Aguiar J, Steunou C, Zinsou C, Meyers WM, Guedenon A, Scott JT, Dramaix M, Portaels F. Mycobacterium ulcerans disease (Buruli ulcer) in a rural hospital, Southern Benin, 1997-2001. *Emerg Infect Dis*. 2004;10:1391-1398.
3. Debacker M, Aguiar J, Steunou C, Zinsou C, Meyers WM, Scott JT, Dramaix M, Portaels F. Mycobacterium ulcerans disease: role of age and gender in incidence and morbidity. *Trop Med Int Health*. 2004;9:1297-1304.
4. Eddyani M, Ofori-Adjei D, Teugels G, De Weirdt D, Boakye D, Meyers WM, Portaels F. Potential role for fish in transmission of Mycobacterium ulcerans disease (Buruli ulcer): an environmental study. *Appl Environ Microbiol*. 2004;70:5679-5681.
5. Hong IS, Zaidi SY, McEvoy P, Neafie RC. Diagnosis of Strongyloides stercoralis in a peritoneal effusion from an HIV-seropositive man. A case report. *Acta Cytol*. 2004;48:211-214.
6. Klassen-Fischer M, McEvoy P, Neafie RC, Nelson AM. Accurate diagnosis of infection with Histoplasma capsulatum var. duboisii. *Clin Infect Dis*. 2004;38:595; author reply 595-596.
7. Lesho EP, Wortmann G, Neafie RC, Aronson NE. Cutaneous leishmaniasis: battling the Baghdad boil. *Fed Practitioner*. 2004;21:59-67.
8. Polhemus ME, Aronson N, Weina P, McEvoy P, Neafie R, Wortmann G. A US soldier who returned from Iraq with nonhealing sores. *Clin Infect Dis*. 2004;39:1008-1009; 1065-1066.
9. Portaels F, Aguiar J, Debacker M, Guedenon A, Steunou C, Zinsou C, Meyers WM. Mycobacterium bovis BCG vaccination as prophylaxis against Mycobacterium ulcerans osteomyelitis in Buruli ulcer disease. *Infect Immun*. 2004;72:62-65.
10. Weina PJ, Neafie RC, Wortmann G, Polhemus M, Aronson NE. Old world leishmaniasis: an emerging infection among deployed US military and civilian workers. *Clin Infect Dis*. 2004;39:1674-1680. Epub 2004 Nov 9.
11. Debacker M, Aguiar J, Steunou C, Zinsou C, Meyers WM, Guedenon A, Scott JT, Dramaix M, Portaels F. Buruli ulcer in a health center in rural Benin [in French]. *Bull Assoc Lepr Lang Franc*. 2004;14:34-36.
12. Johnson RC, Makoutode M, Sopoh GE, Elsen P, Gbovi J, Pouteau LH, Meyers WM, Boko M, Portaels F. Is use of river water for domestic purposes related to frequency of Buruli ulcer in the villages? Results of a study in Lalo District in Benin [in French]. *Bull Assoc Lepr Lang Franc*. 2004;14:39-42.

13. Kibadi K, Muyembe T, Phanzu D, Mbala L, Meyers WM, Portaels F. A case of pleurisy associated with a homolateral large thorax Buruli ulcer [in French]. *Med Afr Noire*. 2004;51:643-648.

Abstracts

1. Klassen-Fischer MK, Neafie RN. Corynebacterium as a cause of granulomatous mastitis. *Mod Pathol*. 2004;17(Supp 1):280A, Abstract 1178.
2. Wortmann G, McEvoy P, et al. A comparison of diagnostic methods for Old World cutaneous leishmaniasis. ICAAC, 2004.
3. Meyers WM, Abalos F, Aguiar J, Maleombho-Usher M, Portaels F. Clinicopathologic classification of Mycobacterium ulcerans disease (Buruli ulcer). *Pathol Int*. 2004;54(Suppl 1):S278-S281.

Book Chapters

1. Meyers WM. Leprosy and Buruli ulcer: the major cutaneous mycobacterioses. In: Feigin RD, Cherry JD, Demmler GJ, Kaplan SL, eds. *Textbook of Pediatric Infectious Diseases*. 5th ed. Vol 1. Philadelphia: WB Saunders (Elsevier); 2004:1390-1414.
2. Asiedu K, Portaels F, Meyers WM, Buntine J. Buruli ulcer. In: Kamel R, Lumley J, eds. *Tropical Surgery*. London: Springer-Verlag; 2004:173.1-173.3.

Other Publications

1. Meyers WM, Maleombho-Usher M, Portaels F. Buruli ulcer. AFIP Hot Topics Website, 2004. http://www.afip.org/hot-topics.html
2. McEvoy PL. Chlamydial epididymitis. HQAP-1-3,2004, AFIP.

Collaborators

Military:

1. WRAMC, Infectious Disease Department: Leishmaniasis.
2. WRAIR, Leishmaniasis Diagnostic Laboratory: Leishmaniasis.

Civilian

American Leprosy Mission

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, US/Canadian Academy of Pathology, Vancouver, BC, WM Meyers, M Klassen-Fischer, RC Neafie.
2. September 2004, Armed Forces Epidemiological Board (AFEB), San Antonio, Tex, DJ Wear (AFIP).

Editorial

Reviewer, photomicrographs for various articles in *Clinical Infectious Diseases*, MK Klassen-Fischer.

Honors

1. Chair, AFIP Biosafety Committee, MK Klassen-Fischer.
2. Performance Award and Certificate of Official Commendation for Most Exceptional Performance, 1 July 2003 through 30 June 2004 as Medical Officer, AFIP, Department of the Army, Washington, DC, October 2004, WM Meyers.

Robert Crawford, PhD
Chief
Date of Appointment — October 1, 2003

DIVISION OF MICROBIOLOGY

The division is organized into 8 branches and the Office of the Chief:

1. Bacteriology – Stephen Francesconi, PhD
2. Molecular Diagnostics – Clarence Gagni, CPT, USA
3. Microbial Forensics Research, Genomics and Sequencing – Susan Jones, PhD, MFS
4. Immunology and Animal Research – Mina Izadjoo, PhD
5. Optical Spectroscopy – Kathryn S. Kalasinsky, PhD
6. Virology – Lynn Copper, PhD
7. Quality Assurance – James Hanson, Capt, USAF
8. Division Operations – Michael Dobson, PhD

STAFF

Scientific

Robert Crawford, PhD, Chief
Richard Schoske, Maj, USAF, Deputy Division Chief
(A) James Hansen, Capt, USAF, Chief, Quality Assurance
(D) Normita Bravo, Maj, USAF, Chief, Quality Assurance
Michael Dobson, PhD, Chief, Division Operations
Stephen Francesconi, PhD, Chief, Bacteriology
Clarence Gagni, Capt, USAF, Chief, Molecular Diagnostics
Susan Jones, PhD, Chief, Genomics and Sequencing
(A) Mina Izadjoo, PhD, Chief, Immunology and Animal Research
Kathryn S. Kalasinsky, PhD, Chief, Optical Spectroscopy
Lynn Cooper, PhD, Chief, Virology
Binxue Zhang, PhD, Senior Research Scientist
(A) Michael Dempsey, Maj, USAF, AFIT, PhD Student
David Cepeda, LT, USN, Microbiologist
Kenesah Ferebee, TSgt, USAF, Laboratory Technician, NCOIC
Bryan Balignot, SGT, USA, Laboratory Technician, Asst NCOIC
Robert Burgess, Microbiologist
(A) Mark Chrustowski, Molecular Biologist
(D) Sue Ditty, Molecular Biologist
(D) Michelle Ekis, Microbiologist
(D) Karen Hiza, Molecular Biologist
(A) Elizabeth Kurrle, Molecular Biologist
Ellen LaMorena, Molecular Biologist
Vanessa Marcel, Molecular Biologist
Meron Mathias, Molecular Biologist
John McGraw, Molecular Biologist
(D) Erica Penn, Molecular Biologist
Adrein Ravizee, Research Technician
(A) April Shea, Microbiologist
Wendell Thomas, Microbiologist
(A) Joe Thompson, Animal Research Technician
(A) Kimberly Wahowski, Microbiologist
(A) Miranda Ward, Microbiologist

Administrative

Levi Horton, Administrative Assistant

IMPACT

The division is one of the nation's foremost biodefense laboratories, providing broad-spectrum microbial laboratory research, testing and consultation for federal government laboratories. It is part of the national Laboratory Response Network (LRN) for select agent pathogens and provides education and research for DoD organizations worldwide in this area of pathology.

Honors

1. Distinguished Service Award, Society of Applied Spectroscopy, KS Kalasinsky.
2. Letters of Commendation from AOAC and JPO-CRP.

CONSULTATION

Type of Case		*Source of Case*	
Environmental	167	FBI.	54
Clinical	17	Consolidated Safety	113
Clinical (16S)	41	Army	15
		Navy	1
		White House	1
		WRAMC	…30
		OAFME	1
		DTRA	16
TOTAL	225		

New Techniques

1. Developed methods for collecting reference signatures of biothreat materials via infrared and Raman microscopy.
2. Designed and optimized 2 PCR assays, one conventional and one real-time, for a unique polymorphism identified in a European subpopulation of *Francisella tularensis*, subspecies *holatica*. We also designed and optimized 2 conventional *F. tularensis* biovar-differential PCR assays.
3. Replicative element polymerase chain reaction and microelectrophoresis on the Agilent 2100 and training of 3 technicians on system.
4. Amplified length fragment polymorphism PCR and 16S sequencing improvements.
5. DNA isolation using MoBIO kits for standardized microscale DNA isolations from nonselect and select agent microorganism.

National/International Consultations

1. FBI, Washington, DC
2. Edgewood Chemical and Biological Command, Aberdeen, Md
3. National Interagency Genome Science Coordinating Committee, Arlington, Va
4. Armed Forces Radiobiological Research Institute (Forensic Remains Study)
5. OAFME (Forensic Remains Study)
6. Department of Homeland Security National BioForensic Analysis Center, Frederick, Md
7. AOAC/Homeland Defense Special Anthrax Diagnostic Test
8. Joint Program Executive Office-Chem/Bio Defense, Critical Reagents Program
9. Air Force Surgeon General
10. Air Force Technical and Applications Center
11. Air Force Air Combat Command
12. Defense Threat Reduction Agency
13. Civilian Research and Development Foundation
14. Former Soviet Union/Georgia, Kazakhstan, Uzbekistan
15. USAMRIID
16. NMRC
17. Pentagon Force Protection

Proficiency Exams

1. Our division successfully completed 5 proficiency surveys provided by CAP, including 3 bacteriology and 2 laboratory preparedness surveys.

2. Served as proficiency testing program developer and manager for Air Force Homeland Defense Laboratories (AF-HLD). Provided and graded 104 proficiency samples for 52 AF-HLD laboratories.

EDUCATION

Presentations

1. January 2004: Pittsburgh, Penn, Spectroscopy Society of Pittsburgh Meeting, "Infrared and Raman imaging in forensic toxicology and microbiology," KS Kalasinsky.
2. February 2004: Dallas, Tex, American Academy of Forensic Sciences, "DNA identification by STR analysis after decontamination of human autopsy specimens by ionizing radiation," SW Jones.
3. February 2004: Dallas, Tex, American Academy of Forensic Sciences, "Use of MDA (the "love drug") and methamphetamine in Toronto by unsuspecting users of Ecstasy (MDMA)," KS Kalasinsky, J Hugel, S Kish.
4. February 2004: Baltimore, Md, American Chemical Society Maryland Section Meeting, "Infrared imaging in forensic toxicology," KS Kalasinsky.
5. March 2004: Chicago, Ill, Pittsburgh Conference on Analytical Chemistry and Spectroscopy, "Infrared and Raman imaging of forensic and biological samples," KS Kalasinsky.
6. May 2004: Granada, Spain, 8th World Congress on Biosenors, "A rapid optical assay for the detection of bioterrorism agents using thin-film technology," SC Francesconi, BA Oyofo, AM Churilla.
7. May 2004: New Orleans, La, American Society for Microbiology General Meeting, "Real-time FRET RT-PCR developed for alphavirus detection: sensitivity and specificity assessment," B Zhang, M Power, T Hadfield, R Crawford.
8. May 2004: New Orleans, La, American Society for Microbiology General Meeting, "Whole genome sequencing of human adenovirus 4 prototype, Wyeth Ad4 vaccine strain and two clinical isolates using a PCR based custom primer walking strategy," J McGraw, S Ditty, D Xia, ML Gibson, A Purakayastha, J Su, M Yuen, T Hadfield, C Tibbetts, D Seto.
9. July 2004: Arlington, Va, DTRA Microarray Forum, "Microarray-based differentiation of *Francisella tularensis* subspecies," M Dempsey.
10. August 2004: Albuquerque, NM, 7th Annual Force Health Protection Conference, "Raman chemical imaging biothreat detection system," KS Kalasinsky, R Crawford, R Schoske, S Vanni, P Treado.
11. October 2004: Portland, Ore, Federation of Analytical Chemistry and Spectroscopy Societies Conference, "The role of infrared and Raman imaging in biological warfare detection," KS Kalasinsky, VF Kalasinsky.
12. March 2004: Budapest, Hungary, Cooperative Biological Research Conference, "Regulatory and biosafety/biosurety aspects of international biological agent transfers," R Schoske.

RESEARCH

Journal Articles

1. Izadjoo MJ, Bhattacharjee AK, Paranavitana CM, Hadfield TL, Hoover DL. Oral vaccination with Brucella melitensis WR201 protects mice against intranasal challenge with virulent Brucella melitensis 16M. *Infect Immun*. 2004;72:4031-4039.
2. Moszczynska A, Fitzmaurice P, Ang L, Kalasinsky KS, Schmunk GA, Peretti FJ, Aiken SS, Wickham DJ, Kish SJ. Why is Parkinsonism not a feature of human methamphetamine users? *Brain*. 2004;127:363-370.
3. Siegal D, Erickson J, Voroqui H, Ang L, Kalasinsky KS, Peretti FJ, Aiken SS, Wickham DJ, Kish SJ. Brain vesicular acetylcholine transporter in human users of drugs of abuse. *Synapse*. 2004;52:223-232.
4. Mirecki A, Fitzmaurice P, Ang L, Kalasinsky KS, Peretti FJ, Aiken SS, Wickham DJ, Sherwin A, Norbrega J, Forman HJ, Kish SJ. Brain antioxidant systems in human methamphetamine users. *J Neurochem*. 2004;89:1396-1408.
5. Kalasinsky KS, Hugel J, Kish SJ. Resurgence of use of MDA (the "love drug") by unsuspecting users of Ecstasy (MDMA). *J Forensic Sci*. 2004;49:1106-1112.
6. Hogan J, Sherlock O, Ryan D, Whelan C, Francesconi S, Rivilla R, Dowling DN. Fluorescence resonance energy transfer (FRET) based molecular detection of a genetically modified PCB degrader in soil. *FEMS Microbiol Lett*. 2004;236:349-357.
7. Gamage SD, Patton AK, Hanson JF, Weiss AA. Diversity and host range of Shiga toxin-encoding phage. *Infect Immun*. 2004;72:7131-7139.

Book Chapter

Hoover DL, Nikolich MP, Izadjoo MJ, Borschel RH, Bhattacharjee AK. Development of new Brucella vaccines by molecular methods. In: Lopez-Goni I, Moriyon I, eds. *Brucella: Molecular and Cellular Biology*. Horizon Bioscience; 2004:chapter 17.

Projects

1. Use of liposome or formulation with CpG DNA to enhance protective efficacy of lipopolysaccharide-based *Brucella* subunit vaccine in BALB/c mice (MJ Izadjoo).
2. Raman chemical imaging biothreat detection (KS Kalasinsky).
3. Infrared detection of biothreat materials (KS Kalasinsky).
4. Geographic differentiation of *Francisella tularensis* using molecular methods (M Dempsey).
5. Bioforensic Analysis Center FBI DNA select agent inactivation experiments task #1 (S Jones).
6. Bioforensic Analysis Center DNA concentration task #2 (literary portion) (S Jones).
7. Development of real-time RT-PCR analysis for identification of alphaviruses (B Zhang).
8. Microarry (nanogen) application for biothreat agents detection: array design, test and optimization (B Zhang).
9. Whole genome amplification for biothreat agents identification (B Zhang).
10. Purification of orthopox virus (S Francesconi).
11. Clinical specificity of the Joint Biological Agent Identification and Diagnostic System (JBAIDS)-anthrax detection system (J Hanson).

Research Funds

1. Congressional Plus-Up funds: $2,550,000 to support the Raman Chemical Imaging Biothreat Detection program.
2. BioForensic Grant from Bioforensic Analysis Center, Department of Homeland Security, Frederick, Md: $2,980,000 for microbial and viral nucleic acid and cultures production, and bioforensic research tasks.
3. Joint Science and Technology Office JSTO/Defense Threat Reduction Agency (DTRA): $900,000 for the following funded projects:
   a. Proteomic versus genomic approach to identification of proteins for evaluation diagnostic test.
   b. Rapid transition of existing nucleic acid detection assays and proactive role toward centralized assay evaluation.
   c. Evaluation of diagnostic assays using veterinary and human clinical cases in the former Soviet Union.
4. Joint Program Office: $500,000 for developing and maintaining the DoD National Critical Reagents Agent and Genomic Repository.
5. Air Force Applications: $800,000 for maintaining Biological Standards and Reference Laboratory (BSRL) and proficiency testing for biothreat agents.
6. Edgewood Chemical and Biological Center: $75,000 for providing highest-quality select agent genomic standards, as needed.

Collaborators

Military/Federal:

1. J Burans, National Bioforensic Analysis Center, DHS, Frederick, Md.
2. P Rozmajzl, Naval Medical Research Command, Department of Rickettsial Diseases, Forest Glen, Md.
3. D Niemeyer, Brooks AFB: Select agent viral assays.
4. P Reilly, Defense Threat Reduction Agency, Washington, DC: Proteomics, FSU, select assay development and testing.

Civilian:

1. S Vanni, ChemImage Corporation, Pittsburgh, Penn: Raman chemical imaging biothreat detection.
2. P Griffiths, University of Idaho, Moscow: Infrared methods of analysis for increased signal response.
3. S Hinrichs, P Fey, P Iwen, University of Nebraska Medical Center: DNA preparation and proteomics.
4. A Benson, University of Nebraska, Lincoln: Comparative genomic hybridization (CGH) microarrays.

5. P Emanuel, Joint Program Office, Washington, DC: Critical reagents.
6. M Balady, Defense Threat Reduction Agency, Washington, DC: Former Soviet Union projects.

International:

1. S Kish, Human Neurochemical Pathology Laboratory, CAMH, Toronto, Ont: Foreign material distribution in brain from autopsies of overdose cases.
2. A Nematov, Ministry of Health, Uzbekistan: Former Soviet Union projects.
3. B Atshabar, Center for Zoonotic Diseases, Kazakhstan: Former Soviet Union projects.
4. L Bakanidze, National Center for Disease Control, Georgia: Former Soviet Union projects.

PROFESSIONAL ACTIVITIES

Official Trips

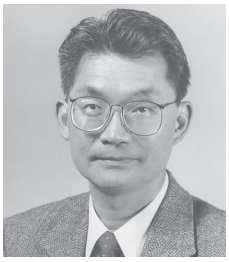
1. January 2004, ChemImage Corporation and Duquesne University, Pittsburgh, Penn, KS Kalasinsky.
2. January 2004, Goucher College, Baltimore, Md, KS Kalasinsky.
3. March 2004, Cooperative Biological Research Conference, Budapest, Hungary, R Schoske.
4. July 2004, 4th Annual Cooperative Biological Research Program Review Conference, St. Petersburg, Russia, R Crawford, L Cooper.
5. August 2004, Thermo Nicolet, Madison, Wis, KS Kalasinsky.
6. October 2004, Allegany General Hospital, Pittsburgh, Penn, KS Kalasinsky, AA Shea.
7. October 2004, Rural Homeland Security Technology Expo, Johnstown, Penn, KS Kalasinsky, AA Shea.
8. December 2004, Quarterly Meeting with Sponsor, Patrick AFB, Fla, R Crawford, SW Jones, JF Hanson.
9. November 2004, Cooperative Biological Research Program, Almaty, Kazakhstan, L Cooper.

Manuscripts Reviewed

1. *Applied Spectroscopy* (2), KS Kalasinsky
2. *Biochimica et Biophysica Acta* (1), KS Kalasinsky

Editorial Boards

1. *Spectroscopy*, KS Kalasinsky
2. *Spectrochimica Acta Part A: Molecular Spectroscopy*, KS Kalasinsky



Shyh-Ching Lo, MD, PhD
Chief
Date of Appointment — 2 May 1991

DIVISION OF MOLECULAR PATHOBIOLOGY

STAFF

Medical

Shyh-Ching Lo, MD, PhD, Chief

Scientific

Shaw-Huey Feng, PhD, Immunologist/Scientist, ARP

Bing-Jie Li, MD, Molecular Microbiologist, ARP
Tamara Newsome, MS, Research Microbiologist, ARP
Jose Rodriguez, Research Technician, ARP
Shien Tsai, PhD, Senior Research Scientist, ARP
Shimin Zhang, MD, PhD, Senior Research Scientist, ARP
Nianxiang Zou, PhD, Research Scientist, ARP

IMPACT

- 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.
- Provides 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. Our laboratory also conducts molecular studies of the submitted cases needed for microbial identification and speciation by amplifying the highly conserved ribosomal sequences from genetic material retrieved from paraffin blocks followed by sequencing. The molecular study information often complements histopathology findings for the final consultation report.
- Expanded its service to the **military** through its efforts for the DHS and the Defense Threat Reduction Agency of DoD. Both the military and DHS urgently need reagents to rapidly detect and differentiate biowarfare agents, specific antibodies for therapeutic use, and vaccines against these agents. We have prepared monoclonal antibodies from mouse ascitic fluids that specifically recognize *Bacillus anthracis*, *Yersinia pestis*, and *Francisella tularensis*. We have also developed a series of monoclonal antibodies that could differentiate between closely related *Burkholderia pseudomallei* and *Burkholderia mallei*, and from other nonpathogenic *Burkholderia* bacteria. Our laboratory has been using phage-displayed combinatorial human single chain antibody (scFv) libraries to develop human monoclonal antibodies against complex antigens, specifically whole *Burkholderia* bacteria antigens. This represents a new approach in the development of monoclonal antibodies, based on the conformation (shape and charge) of protein antigens.
- Actively seeking external support to develop therapeutic agents against smallpox virus, anthrax toxin, botulinum toxins, and staphylococcal enterotoxins, and to develop a multivalent vaccine. We continue to study the AIDS-associated mycoplasmas originally discovered in this laboratory and to search for the etiologic agents of various human chronic illnesses. We have published a study demonstrating that chronic infection with mycoplasma can lead to malignant transformation of mammalian cells, and that mycoplasmas can markedly enhance transcriptional function of steroid receptors and alter expression of many genes in mammalian cells.

CONSULTATION

In addition to consultation support in electron microscopic and immunohistochemical diagnosis of unusual microbes for the Institute, division staff conduct molecular studies by amplifying ribosomal genes of bacteria and fungi for molecular identification and speciation. All consultations rendered by this division are reported with the Division of Infectious and Tropical Diseases Pathology.

EDUCATION

We support the AFIP's educational program by providing lectures, courses, and training for visiting scientists, fellows, and students.

Presentations

1. February 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Melioidosis: a brief clinical pathological overview in the era with bioterrorism concern," S-C Lo.
2. February 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Development of mouse hybridoma for production of monoclonal antibodies (mabs) specific to *Burkholderia pseudomallie* and *B. mallei,*" S Feng.
3. February 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Developing single-chain Fv (scFv) antibodies against *Burkholderia mallei* and *Burkholderia pseudomallei,*" N Zou.
4. March 2004: Baltimore, Md, American Society for Microbiology Biodefense Research Meeting, American Society for Microbiology, "Development of mouse hybridomas for production of monoclonal antibodies specific to *Burkholderia pseudomallei* and

Burkholderia mallei," S Feng, S-C Lo.
5. May 2004: New Orleans, La, 104th General Meeting of the American Society for Microbiology, "Chronic mycoplasmal infection significantly increases the transcriptional activity of the glucocorticoid receptor in mammalian cells," S Zhang, S-C Lo.
6. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Developing single-chain Fv (scFv) antibodies against *Burkholderia mallei* and *Burkholderia pseudomallei*," N Zou, S-C Lo.

RESEARCH

Journal Articles

1. Newsome T, Li B, Zou N, Lo S-C. Presence of bacteriophage-like DNA in Taq DNA polymerase enzymes. *J Clin Microbiol*. 2004;42:2264-2267.
2. Zhang S, Tsai S, Wu TT, Li B, Shih JW, Lo S-C. Mycoplasma fermentans infection promotes immortalization of human peripheral blood mononuclear cells in culture. *Blood*. 2004;104:4252-4259.

Abstracts

1. Zhang S, Lo S-C. Chronic mycoplasmal infection significantly increases the transcriptional activity of the glucocorticoid receptor in mammalian cells. Abstracts of the American Society for Microbiology 104th General Meeting, New Orleans, La, 2004. Abstract G-016.
2. Feng S, Tsai S, Rodriguez J, Newsome T, Lo S-C. Development of mouse hybridomas for production of monoclonal antibodies specific to Burkholderia pseudomallei and Burkholderia mallei. Abstracts of the American Society for Microbiology 104th General Meeting, New Orleans, La, 2004. Abstract 25(A1).
3. Zou N, Newsome T, Li B, Tsai S, Lo S-C. Developing single-chain Fv (scFv) antibodies against Burkholderia mallei and Burkholderia pseudomallei. Abstracts of the 35th International Congress on Military Medicine, 2004.

Projects

1. Development of mouse hybridomas for production of monoclonal antibodies specific to *Burkholderia pseudomallei* and *Burkholderia mallei*.
2. Production of mouse ascitic fluid with monoclonal antibodies specifically against various biological warfare agents.
3. Investigational studies of pathogenesis of a newly found human mycoplasma in mice.
4. Effect of mycoplasmas on steroid receptor functions.
5. GM-CSF signal pathway in IL-3 dependent 32D cells following mycoplasma infection and mycoplasma-mediated transformation.
6. Identification of mycoplasma gene(s) involved in transforming mammalian cells.
7. Mycoplasmal infection and immortalization of human peripheral blood mononuclear cells.

Achievements

1. Continued to develop and characterize specific monoclonal antibodies to *Burkholderia pseudomallei* and *Burkholderia mallei*, category B biological warfare agents.
2. Developed techniques of screening phage-displayed combinatorial human single-chain antibody (scFv) libraries against complex whole bacteria antigens of *B. pseudomallei* and *B. mallei*.
3. Continued to prepare monoclonal antibodies from mouse ascitic fluids for detection and diagnosis of infections of *Bacillus anthracis, Yersinia pestis* and *Francisella tularensis*.
4. Completed a microarray study to document mycoplasmal effects on the alteration of gene expression in infected mammalian cells.
5. Developing in vitro assays to compare inhibitory and killing effects against bacteria by specific monoclonal antibodies evaluated as the potential therapeutic reagents against infections of the target bacteria.
6. Reported that infection with mycoplasma could markedly enhance immortalization of human peripheral blood cells in culture.
7. Completed a study that is accepted for publication demonstrating P35 and P38 of *Mycoplasma penetrans* LAMPs are the main targets of the antibody immune responses of the infected human hosts.
8. Continued to develop and assess highly sensitive and specific techniques to identify and

clone genetic materials of previously unknown organisms that fail to grow in our current culture systems.

9. Actively seeking more external funding to develop therapeutic agents against smallpox virus, anthrax toxin, botulinum toxins and staphylococcal enterotoxins, listed as the most concerned biothreat agents to the **military** and the nation.

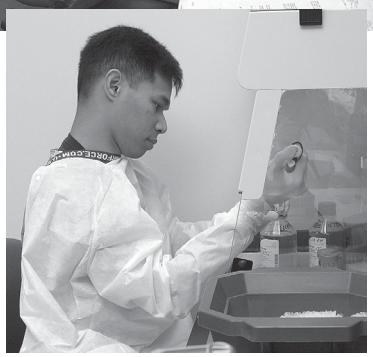
Collaborators

Military:
Naval Medical Research Institute, Silver Spring, Md.

Civilian:
Clinical Center, NIH, Bethesda, Md.

PROFESSIONAL ACTIVITIES

Editorial board, *Methods in Cell Science*, S-C Lo.



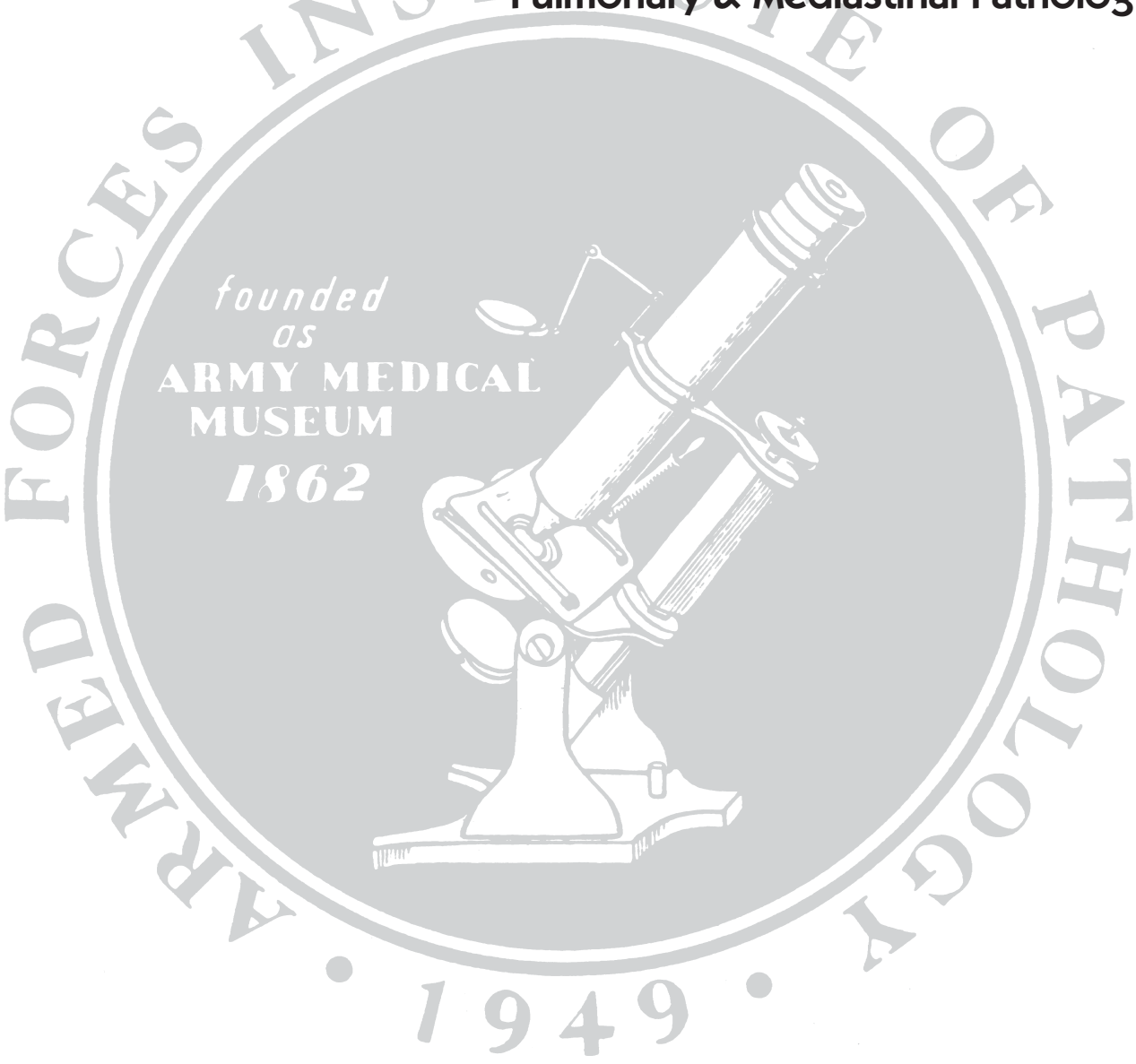
ADVANCED PATHOLOGY

GROUP 4

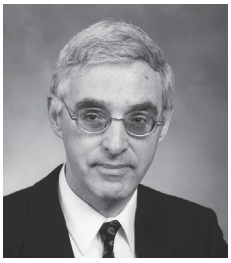
Hepatic & Gastrointestinal Pathology

Cardiovascular Pathology

Pulmonary & Mediastinal Pathology

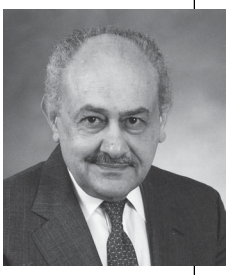


Zachary D. Goodman, MD, PhD
Co-Chair
Date of Appointment — May 2004



Leslie H. Sobin, MD, SES
Co-Chair
Date of Appointment — May 2004

DEPARTMENT OF HEPATIC AND GASTROINTESTINAL PATHOLOGY



In Memoriam

In April 2004, the Department of Hepatic and Gastrointestinal Pathology and the Institute suffered the loss of Dr. Kamal G. Ishak, Chair of Hepatic Pathology since 1965 and of Hepatic and Gastrointestinal Pathology since the 2 departments merged in 1991. Dr. Ishak was widely regarded as one of the foremost hepatic pathologists in the world. He brought great prestige to the department and the AFIP, and his wisdom and expertise will be sadly missed.

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

DIVISION OF HEPATIC PATHOLOGY

STAFF

Medical

Zachary D. Goodman, MD, PhD, Chief
Lionel Rabin, MD, Staff Pathologist
Anupamjit K. Mehrotra, MD, Staff Pathologist
(D) Aaron Auerbach, MD, MPH, Staff Pathologist (transferred to Department of Hematopathology)
(A) Hala Makhlouf, MD, PhD, Research Staff Pathologist, ARP
(A) Guanghua Wang, MD, Callender-Binford Fellow

Scientific

Michelle Parks, Director of Morphometry Laboratory, ARP

Administrative

Fanny X. Revelo, Administrative Officer

IMPACT

In 2004 the division continued its tradition of collaboration with other federal agencies, academic medical centers, and industry to maximize our impact on the medical community. Participation in multicenter clinical trials sponsored by NIH and pharmaceutical companies has led to increasing numbers of fruitful collaborations and publications, and has provided funding for our own intramural research. In education, the annual Hepatic Pathology Course was again highly successful, and members of the staff continue to be invited to speak at national and international meetings. The growing number of cases submitted for consultation shows that the division's reputation for diagnostic expertise remains undiminished.

Cases	*Completed*
Military	450
Army (243)	
Navy (105)	
Air Force (102)	
Federal	581
VA (569)	
USPHS (9)	
OFA (3)	
Civilian	1,097
Interdepartmental	73
Total	2,201

Most cases submitted to the division 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 consultation material. The division made no change in the contributor diagnosis in 800 cases (38%), a minor change in diagnosis in 862 cases (40%), and a major change in diagnosis in 229 cases (11%). In 237 cases (11%), the contributor had not even attempted a diagnosis. Many cases are sent at the request of clinicians or patients for second opinions, and despite increased consultation fees, the number of civilian cases has shown only a slight decline (4.8%), while military and federal cases increased by 13% in 2004. Overall, extramural consultations increased by 3.2% over 2003.

EDUCATION

Courses: Members of the division participated in 4 non-AFIP courses, 1 nondepartmental AFIP course, and the 24th Annual Course in Hepatopathology, attended by 120 participants for 360 training days. Division staff also conducted daily microscopic pathology conferences for the staff and rotating fellows and residents.

Trainees: The division provided training to 16 civilian and military pathologists and gastroenterology fellows for a total of 221 training days.

Faculty Appointments

1. USUHS, Bethesda, Md, Clinical Professor, ZD Goodman.
2. Georgetown University, Washington, DC, Adjunct Associate Professor, ZD Goodman.
3. Temple University, Philadelphia, Penn, Adjunct Professor, L Rabin.
4. Ain Shams University School of Medicine, Cairo, Egypt, Professor, H Makhlouf.

Presentations

1. January 2004: Washington, DC, WRAMC, Department of Pathology, "Introduction to liver biopsy interpretation," ZD Goodman.
2. February 2004: Bethesda, Md, NIH Laboratory of Pathology, "Tumors of the liver," A Auerbach.

3. March 2004: Washington, DC, Sophomore Pathology Course, Georgetown University School of Medicine, "Introduction to liver disease" (4 lectures), ZD Goodman.
4. March 2004: Vancouver, BC, US/Canadian Academy of Pathology Annual Meeting, "A longstanding misconception: cytokeratin 7 and cytokeratin 20 expression in hepatocellular carcinoma," A Auerbach.
5. April 2004: Knoxville, Tenn, Tennessee Society of Pathologists, "Liver update," ZD Goodman.
6. April 2004: Washington, DC, WRAMC, Department of Pathology, "Tumors of the liver," A Auerbach.
7. May 2004: Bethesda, Md, AFIP Anatomic Pathology Review and Update, "Inflammatory diseases of the liver," ZD Goodman.
8. May 2004: Bethesda, Md, AFIP Anatomic Pathology Review and Update, "Tumors of the liver," A Auerbach.
9. June 2004: Graz, Austria, International Liver Pathology Study Group Annual Meeting, "Progression of fibrosis in advanced chronic hepatitis C," ZD Goodman.
10. September 2004: Bethesda, Md, AFIP/ARP Course Hepatopathology 2004, 1) "Introduction to liver pathology," 2) "Biopsy diagnosis of hepatitis," 3) "Biopsy diagnosis of cholestatic liver disease," 4) "Drug-induced liver disease," ZD Goodman.
11. September 2004: Bethesda, Md, AFIP/ARP Course Hepatopathology 2004, "Iron overload diseases," A Auerbach.
12. September 2004: Bethesda, Md, AFIP/ARP Course Hepatopathology 2004, "Fibrosis, cirrhosis and pre-neoplastic lesions," H Makhlouf.
13. September 2004: Bethesda, Md, AFIP/ARP Course Hepatopathology 2004, "Tumors of the liver," AK Mehrotra.
14. September 2004: Bethesda, Md, AFIP/ARP Course Hepatopathology 2004, "Representative cases," L Rabin.
15. October 2004: Baltimore, Md, Washington Hospital Center Board Review in Gastroenterology, "Liver histopathology," ZD Goodman.
16. October 2004: Brisbane, Australia, 25th International Congress of the International Academy of Pathology, "Drug-induced liver disease," ZD Goodman.
17. October 2004: Brisbane, Australia, 25th International Congress of the International Academy of Pathology, "Biliary tumors," ZD Goodman.
18. October 2004: Brisbane, Australia, 25th International Congress of the International Academy of Pathology, "Histologic patterns of injury in liver disease: an overview," ZD Goodman.
19. October 2004: Brisbane, Australia, 25th International Congress of the International Academy of Pathology, "Liver biopsy grading and staging," ZD Goodman.
20. October 2004: Boston, Mass, American Association for the Study of Liver Diseases Annual Postgraduate Course, "Liver histology: applications to clinical research," ZD Goodman.
21. November 2004: Washington, DC, AFIP VTC, "Fatty liver disease: the impending epidemic," ZD Goodman.
22. December 2004: New Delhi, India, 14th Biennial Conference, Asian Pacific Association for the Study of the Liver, "Correlation of intrahepatic markers in patients with chronic hepatitis B," AK Mehrotra.
23. December 2004: New Delhi, India, 14th Biennial Conference, Asian Pacific Association for the Study of the Liver, "Value of histologic examination in patients with chronic hepatitis B," AK Mehrotra.

RESEARCH

Journal Articles

1. Shiffman ML, Di Bisceglie AM, Lindsay KL, Morishima C, Wright EC, Everson GT, Lok AS, Morgan TR, Bonkovsky HL, Lee WM, Dienstag JL, Ghany MG, Goodman ZD, Everhart JE. Peginterferon alfa-2a and ribavirin in patients with chronic hepatitis C who have failed prior treatment. *Gastroenterology*. 2004;126:1015-1023.
2. Werle-Lapostolle B, Bowden S, Locarnini S, Wursthorn K, Petersen J, Lau G, Trepo C, Marcellin P, Goodman Z, Delaney WE 4th, Xiong S, Brosgart CL, Chen SS, Gibbs CS, Zoulim F. Persistence of cccDNA during the natural history of chronic hepatitis B and decline during adefovir dipivoxil therapy. *Gastroenterology*. 2004;126:1750-1758.
3. Goodman ZD. Kamal G. Ishak, M.D., Ph.D. (1928-2004). *Hepatology*. 2004;40:2-3.

4. Goodman ZD. Biopsy grading and staging. *Pathol Int*. 2004;54(Suppl 1):S287-S302.

Abstracts

1. Auerbach A, Ishak KG, Goodman ZD. A longstanding misconception: cytokeratin 7 and cytokeratin 20 expression in hepatocellular carcinoma. *Mod Pathol*. 2004;17:295A.
2. Lok A, Goodman Z, Marcellin P, Hadziyannis S, Hudson S, Currie G, Brosgart C. Models to predict inflammation and fibrosis in patients with chronic hepatitis B. *J Hepatol*. 2004;40(Suppl 1):129.
3. Schlauch K, O'Reilly L, Ziegler K, Ong J, Elariny H, Gorreta F, Del Giacco L, Younoszai A, Grant G, Chandhoke V, Goodman Z, Younossi Z. An enomic and proteomic study of obesity-related non-alcoholic fatty liver disease (NAFLD). *J Hepatol*. 2004;40(Suppl 1):177-178.
4. Lok A, Hudson S, Goodman Z, Marcellin P, Hadziyannis S, Currie G, Brosgart C. Models to predict inflammation and fibrosis in patients with chronic hepatitis B. *Gastroenterology*. 2004;126(Suppl 2):A660.
5. Werle B, Bowden S, Locarnini S, Wursthorn K, Petersen J, Lau G, Trepo C, Marcellin P, Goodman Z, Delaney WE, Xiong S, Brosgart C, Chen SS, Gibbs C, Zoulim F. Reductions in serum hepatitis B surface antigen occur in parallel with reductions in intrahepatic HBV covalently closed circular DNA in chronic hepatitis B patients receiving adefovir dipivoxil. *Gastroenterology*. 2004;126(Suppl 2):A661.
6. Chang TT, Gish R, de Man R, Gadano A, Sollano J, Han KH, Goodman Z, Zhu J, Cross A, Dehertogh D, Apelian D. Entecavir is superior to lamivudine for the treatment of HBeAg(+) chronic hepatitis B: results of phase III study ETV-022 in nucleoside-naive patients. *Hepatology*. 2004;40:193A.
7. Schlauch K, Gorreta F, Born TL, Elariny H, Del Giacco L, Ziegler K, van Meter A, Collantes R, Goodman Z, Younossi ZM. Hepatic gene expression and serum protein profile of patients with metabolic syndrome. *Hepatology*. 2004;40:236A.
8. Sherman M, Yurdaydin C, Sollano J, Silva M, Goodman Z, Chen L, Cross A, Dehertogh D, Hindes R. Entecavir is superior to continued lamivudine for the treatment of lamivudine-refractory, HBeAg(+) chronic hepatitis B: results of phase III study ETV-026. *Hepatology*. 2004;40:664A.

Projects: The following active projects progressed in 2004:

1. 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.
2. Morphometric analysis of progression of fibrosis in advanced chronic hepatitis C.
3. Evaluation of liver histology in clinical trials of entecavir for treatment of chronic hepatitis B infection.
4. Evaluation of liver histology in a multicenter study of the epidemiology of nonalcoholic fatty liver disease (Epi-NAFL).
5. Fatty liver disease and hepatic energy homeostasis in the LOOK AHEAD study.

Collaborators

Military/Federal:
NIH, NIDDK Liver Unit and NCI Laboratory of Pathology: The HALT-C trial.

Civilian (and Civilian/Military):

1. New England Research Institutes, University of Washington Laboratory of Virology, University of Massachusetts, Massachusetts General Hospital, Saint Louis University, University of Colorado, University of California at Irvine, University of Texas South Western, University of Southern California, University of Michigan, Medical College of Virginia, AFIP Divisions of Gastroenterology/Hepatology and Departments of Pathology: The HALT-C trial.
2. Beth Israel Deaconess Medical Center, AFIP Division of Gastroenterology, and Intermune, Inc.: Progression of fibrosis in advanced chronic hepatitis C.
3. Bristol-Meyers Squibb Pharmaceutical Research Institute: Entecavir for treatment of chronic hepatitis B infection.
4. Inova Fairfax Hospital (Georgetown University) Center for Liver Disease: Multicenter study of the epidemiology of nonalcoholic fatty liver disease (Epi-NAFL).
5. Johns Hopkins University, Division of Gastroenterology: Fatty liver disease and hepatic energy homeostasis in the LOOK AHEAD study.

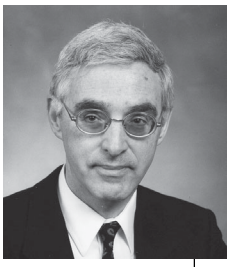
PROFESSIONAL ACTIVITIES

Editorial Boards

Annals of Diagnostic Pathology, ZD Goodman.

Manuscripts Reviewed: Division staff reviewed 3 manuscripts in 2004 for the following journals:

1. *Human Pathology*
2. *Gastroenterology* (2)



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

DIVISION OF GASTROINTESTINAL PATHOLOGY

STAFF

Medical

Leslie H. Sobin, MD, FRCPath, Chief; Director, Center for Scientific Publications
(A) Michael A. Armstrong, COL, MC, USA, Staff Pathologist
Nancy S. Dow, LTC, MC, USA, Staff Pathologist
(A) Douglas J. Grider, Lt Col, USAF, MC, Staff Pathologist
(D) Christine M. Hobbs, MD, Staff Pathologist
(D) Marc H. Labovich, MAJ, MC, USA, Staff Pathologist
(A) Anupamjit K. Mehrotra, MD, Staff Pathologist
(A) Guanghua Wang, MD, Callender-Binford Fellow

Administrative

Mayra E. Aguilera, Secretary, ARP

Visiting Scientists

Helen E. Remotti, MD
Birgitte H. Federspiel, MD

IMPACT

The division's impact in consultation and education was impressive despite a considerable turnover in staff. The education mission was highlighted by:

- publication of 2 book chapters;
- an impressive number of presentations by the staff;
- continued success of the highly acclaimed Annual Course on Endoscopic GI Tract Biopsies;
- participation in distance learning exercises with VTCs and video recordings for DVD production;
- the Virtual Gastrointestinal Endoscopic Biopsy Course, which provides CME credits; and
- several faculty appointments at USUHS.

Research collaborations with the departments of Soft Tissue Pathology and Radiologic Pathology continued.

CONSULTATION

The total number of cases was the same as in 2003. The cases received represent primarily neoplastic and precancerous lesions, as well as inflammatory diseases. Among the relatively uncommon lesions that are unusually prominent in the division's accessions are carcinoids, mesenchymal tumors, lymphomas, appendiceal mucinous tumors, and surveillance biopsies for dysplasia in cases of ulcerative colitis and Barrett esophagus. The last of these is particularly frequent. Of the cases reported, 7% had no contributor diagnosis, 45% had a correct diagnosis, 47% had a minor diagnostic change, and 1% had a major diagnostic change. Staff members also participate in the review of consultation cases in the Division of Hepatic Pathology.

Cases	*Completed*
Military	966
Army (465)	
Navy (208)	
Air Force (293)	
Federal	1,260
VA (1,252)	
USPHS (7)	
OFA (1)	
Civilian	1,213
Interdepartmental	147
Total	3,586

EDUCATION

Conferences: 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. A monthly gastroenterology-pathology correlation conference is held at WRAMC with AFIP staff and members of the WRAMC/NNMC gastroenterology program.

Courses: Staff members participated in the following courses in 2004 (approximately 2,300 man-hours of training):

- 14th Annual Anatomic Pathology Review Course, MH Labovich, Director.
- 15th Annual Course on Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, LH Sobin, Director.
- the Virtual Gastrointestinal Endoscopic Biopsy Course provides CME credit for 40 cases on the AFIP website, http://www.afip.org/Departments/edu/webed/vgi/hgss01/frameset3.html.

Trainees: The division provided training to 16 civilian and military gastroenterology fellows and pathologists, for a total of 221 training days.

Faculty Appointments

1. USUHS, Bethesda, Md, Professor of Pathology, LH Sobin.
2. Georgetown University Medical School, Washington, DC, Adjunct Professor of Pathology, LH Sobin.
3. USUHS, Bethesda, Md, Adjunct Associate Professor of Pathology, DM Burch.
4. USUHS, Bethesda, Md, Adjunct Associate Professor of Pathology, CM Hobbs.
5. USUHS, Bethesda, Md, Adjunct Associate Professor of Pathology, MH Labovich.

Presentations

1. January 2004: Washington, DC, WRAMC, WRAMC-NNMC Pathology Video Teleconference, "Precancerous lesions of the GI tract and their imitators," LH Sobin.
2. January 2004: Washington, DC, WRAMC Department of Pathology, "Overview of colorectal polyps," NS Dow.
3. January 2004: Washington, DC, AFIP Video Recording for DVD, "Pitfalls in the diagnosis of intestinal polyps," LH Sobin.
4. January 2004: Washington, DC, WRAMC, Gastroenterology–AFIP Pathology Correlation

Conference, "Non-neoplastic disorders of the small intestine, part II," CM Hobbs.
5. January 2004: Washington, DC, WRAMC, Presentation to Pathology Residents, "Non-neoplastic disorders of the small intestine," CM Hobbs.
6. January 2004: Washington, DC, WRAMC, Presentation to Pathology Residents, "Non-neoplastic disorders of the large intestine," CM Hobbs.
7. February 2004: Washington, DC, WRAMC, Gastroenterology–AFIP Pathology Correlation Conference, "Inflammatory disorders of the large intestine," CM Hobbs.
8. March 2004: Erlangen, Germany, University of Erlangen Symposium on Prognostic Factors in Patients with Colorectal Carcinoma, "TNM classification: relation to prognostic factors," LH Sobin.
9. March 2004: Vancouver, BC, US/Canadian Academy of Pathology Annual Meeting, "Solitary rectal ulcer syndrome with colitis cystica profunda," CM Hobbs.
10. March 2004: Washington, DC, National Academy of Sciences, US National Committee for the International Union Against Cancer, "TNM classification: evolution and current challenges," LH Sobin.
11. April 2004: Washington, DC, Georgetown University Medical School, "Pathology of the gastrointestinal tract" (6 lectures to second-year medical students), LH Sobin.
12. May 2004: Bethesda, Md, 14th Annual Anatomic Pathology Course, "Pitfalls in the diagnosis of intestinal polyps," LH Sobin.
13. May 2004: Bethesda, Md, 14th Annual Anatomic Pathology Course, "Carcinoids, GISTs, and gastric carcinoma," NS Dow.
14. May 2004: Bethesda, Md, 14th Annual Anatomic Pathology Course, "Non-neoplastic diseases of the lower gastrointestinal tract," AK Mehrotra.
15. May 2004: Bethesda, Md, 14th Annual Anatomic Pathology Course, "Non-neoplastic conditions of the upper GI tract and appendiceal pathology," MH Labovich.
16. May 2004: Washington, DC, AFIP Staff Conference, "Unusual and difficult intestinal polyps," LH Sobin.
17. June 2004: Washington, DC, WRAMC Gastrointestinal Pathology-Gastroenterology Conference, "Esophageal and gastric unknowns," LH Sobin.
18. August 2004: Bethesda, Md, AFIP/ARP Course, Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, 1) "Precancerous lesions of the GI tract and their imitators," 2) "Unusual and difficult intestinal polyps," 3) "Gastrointestinal carcinoids and neuroendocrine tumors," LH Sobin.
19. August 2004: Bethesda, Md, AFIP/ARP Course, Gastrointestinal Surgical Pathology and Endoscopic Biopsies of the Gastrointestinal Tract, "GI stromal tumors: pitfalls in diagnosis," NS Dow.
20. September 2004: Washington, DC, WRAMC Gastrointestinal Pathology-Gastroenterology Conference, "Small bowel unknowns," LH Sobin.
21. September 2004: Baltimore, Md, Washington Hospital Center, Gastroenterology Board Review, "Pathology rounds," LH Sobin.
22. October 2004: Washington, DC, WRAMC Gastrointestinal Pathology-Gastroenterology Conference, "Large bowel unknowns," LH Sobin.
23. October 2004: Bethesda, Md, USUHS, "Pathology of the gastrointestinal tract" (4 lectures to second-year medical students), LH Sobin.
24. October 2004: Orlando, Fla, American College of Gastroenterology Postgraduate Course, "Unusual and difficult intestinal polyps," LH Sobin.
25. November 2004: Ellicott City, Md, Maryland Society of Pathologists, Gastrointestinal Seminar, "Unusual and difficult intestinal polyps," LH Sobin.
26. November 2004: Bethesda, Md, NIH Department of Pathology, "Gastrointestinal carcinoid tumors," NS Dow.
27. December 2004: Washington, DC, WRAMC Gastrointestinal Pathology-Gastroenterology Conference, "Gastric unknowns," DJ Grider.

RESEARCH

Journal Articles

1. Gospodarowicz MK, Miller D, Groome PA, Greene FL, Logan P, Sobin LH. The process for continuous improvement of the TNM classification. *Cancer*. 2004;100:1-5.
2. Grand DJ, Sobin LH, Fishman EK. Enteric duplication cyst of the pancreas: CT findings. *Crit Rev Comput Tomogr*. 2004;45:105-110.

3. Hobbs CM, Burch DM, Sobin LH. Elastosis and elastofibromatous change in the gastrointestinal tract: a clinicopathologic study of thirteen cases and a review of the literature. *Am J Clin Pathol*. 2004;122:232-237.
4. Hobbs CM. Anal gland carcinoma. *Pathol Case Rev*. 2004;9:147-149.
5. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH. Gastrointestinal stromal tumors occurring in patients with neurofibromatosis: imaging features with clinicopathologic correlation. *AJR Am J Roentgenol*. 2004;183;1629-1636.
6. Levy AD, Hobbs CM. From the archives of the AFIP. Meckel diverticulum: radiologic features with pathologic correlation. *Radiographics*. 2004;24:565-587.
7. Lissowska J, Gail MH, Pee D, Groves FD, Sobin LH, Nasierowska-Guttmejer A, Sygnowska E, Zatonski W, Blot WJ, Chow W-H. Diet and stomach cancer risk in Warsaw, Poland. *Nutr Cancer*. 2004;48:149-159.
8. Sobin LH. TNM: 6 new rules [letter]. *Bull R Coll Pathol*. 2004;128:779-780.
9. Uy GB, Kaw LL, Punzalan CK, Querol RI, Koustova EV, Bowyer MW, Hobbs CM, Sobin LH, Wherry DC. Clinical and molecular biologic characteristics of early-onset versus late-onset colorectal carcinoma in Filipinos. *World J Surg*. 2004;28:117-123.

Abstracts

1. Gospodarowicz M, Sobin L, Greene R, Benhamou-Borowski E, Brierley J, Denis L, O'Sullivan B, Wittekind C, Yamasaki S, Ngan H, Groome P, Miller D, Friedman C. The UICC TNM Project Global Advisory Group – Internet based collaboration (Abstract F044). UICC World Conference for Cancer Organizations, Dublin, Ireland, November 2004.
2. Brierley J, Sobin L, Wittekind CH. The Internet facilitates cancer staging. UICC World Conference for Cancer Organizations, Dublin, Ireland, Proceedings of the UICC World Conference for Cancer Organisations, p150, November 2004.

Book Chapters

1. Carr NJ, Emory TS, Sobin LH. Epithelial neoplasms of the appendix. In: Odze RD, Goldblum JR, Crawford JM, eds. *Surgical Pathology of the GI Tract, Liver, Biliary Tract and Pancreas*. Philadelphia: WB Saunders; 2004:473-481.
2. Carr NJ, Sobin LH. Pathology and natural history of small bowel and appendiceal cancers. In: Abbruzzese JL, Evans DB, Willett CG, Fenoglio-Preiser C, eds. *Gastrointestinal Oncology*. New York: Oxford University Press; 2004:549-559.

Projects

1. Gastrointestinal stromal tumors (GISTs), clinicopathologic studies.
2. Follicular lymphoma of the GI tract, clinicopathologic study.
3. Proliferation, apoptosis, microsatellite instability, and cell adhesion molecules in neoplasms of the colorectum and appendix.
4. Neurogenic tumors of the GI tract, clinicopathologic study.
5. Pathology of eosinophilic gastroenteritis.
6. Endoscopic detection of dysplasia in Barrett esophagus.
7. Radiologic-pathologic correlations: gastrointestinal stromal tumors.
8. Radiologic-pathologic correlations: Meckel diverticulum.
9. Elastosis and elastofibromatous changes in the gastrointestinal tract.
10. Comparison of the clinical and molecular biological characteristics of early versus late age onset colorectal carcinoma in Filipinos.

Collaborators

Military/Federal:

1. National Cancer Institute, Surveillance, Epidemiology, End Results (SEER) Program: International Classification of Diseases for Oncology and TNM/Prognostic Factors Classification and Cancer Staging.
2. CDC: TNM/Prognostic Factors Classification and Cancer Staging.
3. Naval Medical Research Institute: Pathology of small adenomas.
4. National Institute of Allergy and Infectious Diseases: Pathology of eosinophilic gastroenteritis.
5. WRAMC/NIH: Endoscopic detection of dysplasia in Barrett esophagus.
6. USUHS: Comparison of the clinical and molecular biological characteristics of early versus late age onset colorectal carcinoma in Filipinos.

7. WRAMC, Division of Gastroenterology: Gastroenterolology-pathology correlation conference (monthly).

Civilian:
University of Southampton, UK: Proliferation, apoptosis, microsatellite instability, and cell adhesion molecules in neoplasms of the colorectum and appendix.

International:
1. WHO: International Classification of Diseases for Oncology (ICD-O).
2. International Agency for Research on Cancer: WHO Classification of Tumors.
3. International Union Against Cancer (UICC): TNM/Prognostic Factors Classification and Cancer Staging.

PROFESSIONAL ACTIVITIES

Official Trips
1. March 2004, University of Erlangen Symposium on Prognostic Factors in Patients with Colorectal Carcinoma, Erlangen, Germany, LH Sobin (German Cancer Society-University of Erlangen).
2. May 2004, TNM-Prognostic Factors Project Committee Meeting, Geneva, Switzerland, LH Sobin (International Union Against Cancer).
3. October 2004, American College of Gastroenterology Postgraduate Course, Orlando, Fla, LH Sobin (American College of Gastroenterology).

Committees and Officers (Extramural):
1. Chair, TNM/Prognostic Factors Project of the International Union Against Cancer –LH Sobin.
2. Member, WHO Expert Advisory Panel on Cancer –LH Sobin.
3. Series Coeditor, WHO Classification of Tumors: Pathology and Genetics of Tumors –LH Sobin.
4. Deputy Regional Commissioner for Military European Laboratories, College of American Pathologists DJ Grider

Awards
Dr. Sobin received the International Union Against Cancer's 2004 Award for Excellence in Global Cancer Control for his work on the TNM Classification of Malignant Tumors.

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

DEPARTMENT OF CARDIOVASCULAR PATHOLOGY

STAFF

Medical

Renu Virmani, MD
Allen Burke, MD
Andrew Farb, MD
Frank D. Kolodgie, PhD
Robert Kutys, MS
Herman K. Gold, MD (Interventional Cardiologist, 20%)

Scientific

Wendy Creighton, MD, Research Scientist, ARP
You-hui Liang, MD, Research Assistant
Helwig Avallone, HT (ASCP), Histopathology Laboratory Supervisor, ARP
Hengjing Ouyang, MD, Histopathology Technician, ARP
Xin Xu, HT (ASCP), Histopathology Technician, ARP
Russell M. Jones, Research Associate, ARP
Lila Adams, HT, MLT (ASCP), IHC Qualified, Immunohistochemical Research Technician, ARP
Patricia S. Wilson, BS, Research Assistant, ARP
Deena Weber, MS, Research Scientist, ARP
Leslie Keefer, BA, HTL (ASCP), Research Assistant, ARP
Rosalind Matthew, HT (ASCP), Histopathology Technician, ARP
Jinky Beyer, Histopathology Technician, ARP
Abebe Atiso, HT (ASCP), Histopathology Technician, ARP
Eduardo Acampado, Research Associate, ARP
Elias Rivera, MS, Pathologist Assistant, ARP
Addis Taye, Research Assistant, ARP
Paul Yates, Research Assistant, ARP
Kirubel Tefera, BS, Research Assistant, ARP
Simone Ramnarine, Histopathology Technician, ARP
Giselle Rivera, Histopathology Technician, ARP
Narva Thompson, Histopathology Technician, ARP
Barbara Munjal, MA, Quality Assurance Specialist, ARP

Administrative

Carol Ward, MSG, USA (Ret), BS, Administrator, ARP
Leslie Middleton, Administrative Officer

IMPACT

The department supports the mission of the AFIP by providing consultation, education, and research on the cardiovascular system for the active **military force**, the VA, and other federal and civilian agencies.

Because sudden unexpected death is a common presentation in young **military** recruits

with cardiac disease, we are studying genotypes of channel genes in collaboration with the OAFME in the epidemiologic study of sudden cardiac deaths. We are also participating in a study of myocarditis following smallpox vaccination and evaluating whether myocarditis, as a cause of sudden cardiac death, has decreased in the recruit population in the last decade versus earlier decades.

PRESENTATIONS

R Virmani:

1. January 2004: Maastricht, The Netherlands, 6th St-Gerlach Vascular Biology Workshop, "The pathology of the unstable plaque."
2. January 2004: Maastricht, The Netherlands, 6th St-Gerlach Vascular Biology Workshop, "Restenosis following coronary intervention."
3. January 2004: Miami Beach, Fla, International Symposium on Endovascular Therapy, "Drug eluting stents are not a panacea."
4. January 2004: Miami Beach, Fla, International Symposium on Endovascular Therapy, "Pathology of vulnerable plaque: what is it, and is it relevant to carotid artery disease?"
5. January 2004: Geneva, Switzerland, 10th International Local Drug Delivery and Cardiovascualr Course on Radiation and Molecular Strategies, "Stable versus non-stable plaques: view of the pathologist."
6. January 2004: Geneva, Switzerland, 10th International Local Drug Delivery and Cardiovascular Course on Radiation and Molecular Strategies, "Vasculo-pathological lesson in drug eluting stents: focus on the endothelium."
7. January 2004: Geneva, Switzerland, 10th International Local Drug Delivery and Cardiovascular Course on Radiation and Molecular Strategies, "DES lessons from experimental data and future perspectives."
8. January 2004: Geneva, Switzerland, 10th International Local Drug Delivery and Cardiovascular Course on Radiation and Molecular Strategies, "Vascular pathology: micro and macro angiopathy in diabetes. Similarities and differences to the non-diabetic."
9. February 2004: Chennai, India, Institute of Cardio-Vascular Diseases, Hospital Research Training, "Atherosclerosis."
10. February 2004: Chennai, India, Institute of Cardio-Vascular Diseases, Hospital Research Training, "New frontiers in cardiology and cardiac surgery with pathologist's overview."
11. February 2004: Chennai, India, Institute of Cardio-Vascular Diseases, Hospital Research Training, "Role of the pathologist."
12. March 2004: New Orleans, La, American College of Cardiology Scientific Session, Symposium 602: Vulnerable Plaque, "Anatomic insights."
13. March 2004: New Orleans, La, American College of Cardiology Scientific Session, Session 304, Can We Identify the Vulnerable Plaque In Vivo? "Phenotypic features and determinants of plaques vulnerable to rupture: a pathologist's perspective."
14. March 2004: New Orleans, La, American College of Cardiology Scientific Session, Joint Symposium 648: Association of Black Cardiologists/ACC, "Pathogenesis of atherosclerosis in diabetes."
15. March 2004: New Orleans, La, American College of Cardiology Scientific Session Symposium 660, "Salvaging ischemic myocardial damage."
16. March 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "The role of plaque hemorrhage in acute coronary syndromes."
17. April 2004: Cleveland, Ohio, Heart Center Grand Rounds, Department of Cardiovascular Medicine, The Cleveland Clinic Foundation, "Drug-eluting stents: pathologic aspects."
18. April 2004: New Orleans, La, 13th Annual Peripheral Angioplasty and All That Jazz, "Rationale for radiation: biology of restenosis."
19. April 2004: San Antonio, Tex, Cardiology Fiesta in San Antonio: Update on Cardiac Diagnostic and Therapeutic Techniques, "Pathology of ischemic heart disease. What they didn't tell you!"
20. April 2004: Seoul, Korea, 9th International Live Demonstration Course – Angioplasty Summit 2004, "The value of animal models in evaluating pathobiologic effects of drug-eluting stents: insights from past successes and failures."
21. April 2004: Seoul, Korea, 9th International Live Demonstration Course – Angioplasty Summit 2004, "Should we expect 'late catch-up' (late restenosis) after DES treatment . . . Is the genie already out of the bottle? You have simply postponed the inevitable!"

22. May 2004: Washington, DC, CRT 2004 – Complex Coronary and Peripheral Interventions, "The dark side of DES."
23. May 2004: Washington, DC, CRT 2004 – Regulatory Pathways for Medical Device Approvals: A Workshop with the FDA, "Pathology observations."
24. May 2004: Washington, DC, CRT 2004 – Vulnerable Plaque Summit, "Pathology components of the vulnerable plaque."
25. May 2004: Paris, France, EURO PCR 2004 – Glimpse into the Future: Vulnerable Plaque, "Erosion intraplaque haemorrhage. The other face of vulnerability."
26. May 2004: Paris, France, EURO PCR 2004 – TCT at Euro PCR, "A cross-section of US perspectives on drug-eluting stents – pathology considerations."
27. May 2004: Paris, France, EURO PCR 2004 – Symposium: A Non-Polymeric Paclitaxel Coated Stent: From Bench to Bedside, "Polymer versus non-polymer controversy."
28. June 2004: San Jose, Calif, Intervention 2004, "Plaque rupture."
29. June 2004: Orange County, Calif, Heart Disease in Women: Red Dress and Rainbow Dreams, "Once upon a time, there was a king and queen…Blocked coronary arteries and heart attacks in women, especially pre-menopausal women may have different pathologic substrate: lessons from post-mortem studies."
30. June 2004: Taormina, Italy, 2nd Vulnerable Plaque Meeting, VP Detection, Non-Invasive, "Pathological basis for imaging."
31. June 2004: Joao Pessoa, Brazil, 26th Brazilian Society of Interventional Cardiology, "Pathology of stable vs. unstable plaque."
32. June 2004: Joao Pessoa, Brazil, 26th Brazilian Society of Interventional Cardiology, "Pathology of drug-eluting stents."
33. June 2004: Hilton Head Island, SC, 13th Annual Advanced Cardiovascular Interventions Symposium, "Pathobiology of drug-eluting stents: Is the vessel wall happy?"
34. June 2004: New York, NY, 1st International Conference on Cell Therapy for Cardiovascular Disease, "Myocardial and coronary disease."
35. July 2004: Baltimore, Md, Grand Rounds, Division of Cardiology at Johns Hopkins Hospital, "Unstable atherosclerotic plaque in sudden coronary death."
36. July 2004: Park City, Utah, 7th Nuclear Cardiology Invitational Conference, "Pathology of unstable coronary plaques."
37. September 2004: Iowa City, Iowa, Cardiovascular Center Research Conference, University of Iowa College of Medicine, "Role of hemorrhage and thrombosis in the progression of coronary artery disease."
38. November 2004: New Orleans, La, American Heart Association Scientific Session, "Identifying targets for therapy: insights from histopathology."
39. November 2004: New Orleans, La, American Heart Association Scientific Session, "Pathophysiology of lesions promoting acute thrombosis – mechanisms of erosion."
40. November 2004: Lake Buena Vista, Fla, American College of Veterinary Pathologists Annual Meeting, "Pathology of cardiomyopathies in man."
41. November 2004: New York, NY, Vascular and Endovascular Issues, Techniques, Horizons (VEITH) Symposium, "Will drug eluting stents be all they are cracked up to be? Note of caution."
42. November 2004: New York, NY, Vascular and Endovascular Issues, Techniques, Horizons (VEITH) Symposium, "Drug eluting stents: what role might they have in treating lower limb ischemia and what are some of the concerns?"
43. November 2004: New York, NY, Columbia University, Atherosclerotic SCOR Seminar, "Role of hemorrhage and thrombosis in the progression of coronary artery disease."
44. November 2004: Toronto, Ont, Cardiac Innovations Day, "Drug eluting stents: should we be worried?"
45. November 2004: Toronto, Ont, Cardiac Innovations Day, "Plaque vulnerability: what is it and can we/should we identify it?"
46. November 2004: New York, NY, Columbia University, Cardiology Grand Rounds, "Drug eluting stents: pathologic aspects."
47. December 2004: Pisa, Italy, International Congress Pending Matters, "Stents and their role as carrier for antirestenosis drugs."
48. December 2004: Chicago, Ill, Trends in Vascular Sugergy, "Pathological study of endovascular devices including endografts and stents."
49. December 2004: Cambridge, UK, 1st European Vascular Genomics Network Conference, "Mechanism of plaque progression and thrombosis in stable and unstable lesions."

PUBLICATIONS

Journal Articles

1. Burke AP, Jarvelainen H, Kolodgie FD, Goel A, Wight TN, Virmani R. Superficial pseudoaneurysms: clinicopathologic aspects and involvement of extracellular matrix proteoglycans. *Mod Pathol*. 2004;17:482-488.
2. Burke AP, Kolodgie FD, Zieske A, Fowler DR, Weber DW, Varghese PJ, Farb A, Virmani R. Morphologic findings of coronary atherosclerotic plaques in diabetics. A postmortem study. *Arterioscler Thromb Vasc Biol*. 2004;24:1266-1271.
3. Burke AP, Kutys R, Fowler D, Virmani R. Multiple spontaneous coronary artery dissections in association with anomalous origin of right coronary and intramural coronary artery dysplasia. *Cardiovasc Pathol*. 2004;13:173-175.
4. Farb A, Kolodgie FD, Hwang J-Y, Burke AP, Tefera K, Weber DK, Wight TN, Virmani R. Extracellular matrix changes in stented human coronary arteries. *Circulation*. 2004;110:940-947.
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8. Kolodgie FD, Burke AP, Wight TN, Virmani R. The accumulation of specific types of proteoglycans in eroded plaques: a role in coronary thrombosis in the absence of rupture. *Curr Opin Lipidol*. 2004;15:575-582.
9. Kolodgie FD, Virmani R, Burke AP, Farb A, Weber DK, Kutys R, Finn AV, Gold HK. Pathologic assessment of the vulnerable human coronary plaque. *Heart*. 2004;90:1385-1391.
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11. Ruygrok PN, Farb A, Coverdale HA, Gibbs HC, Virmani R. Histology of in-stent restenosis in transplanted heart. *J Heart Lung Transplant*. 2004;23:143-146.
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16. Sousa JE, Costa MA, Farb A, Abizaid A, Sousa A, Seixas AC, da Silva LM, Feres F, Pinto I, Mattos LA, Virmani R. Images in cardiovascular medicine. Vascular healing 4 years after the implantation of sirolimus-eluting stent in humans: a histopathological examination. *Circulation*. 2004;110:e5-6.
17. Virmani R, Farb A, Guagliumi G, Kolodgie FD. Drug-eluting stents: caution and concerns for long-term outcome. *Coron Artery Dis*. 2004;15:313-318.
18. Virmani R, Guagliumi G, Farb A, Musumeci G, Grieco N, Motta T, Mihalcsik L, Tespili M, Valsecchi O, Kolodgie FD. Localized hypersensitivity and late coronary thrombosis secondary to a Sirolimus-eluting stent. Should we be cautious? *Circulation*. 2004;109:701-705.

19. Virmani R, Kolodgie FD, Farb A. Drug-eluting stents: are they really safe? *Am Heart Hosp J*. 2004;2:85-88.
20. Waksman R, Fournadjiev J, Baffour R, Pakala R, Hellinga D, Leborgne L, Yazdi H, Cheneau E, Wolfram R, Seabron R, Horton K, Kolodgie F, Virmani R, Rivera E. Transepicardial autologous bone marrow-derived mononuclear cell therapy in a porcine model of chronically infarcted myocardium. *Cardiovasc Radiat Med*. 2004;5:125-131.

Abstracts

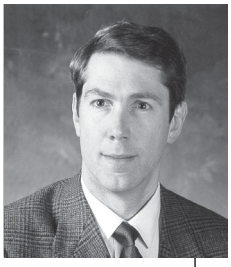
1. Creighton W, Burke AP, Virmani R. Identification of two novel mutations of cardiac ryanodine receptor (RYR2) gene in exercise-induced sudden deaths. *Circulation*. 2004;110:III-17.
2. Burke AP, Kolodgie FD, Kutys R, Virmani R. Multiple sites of luminal fibrin in sudden coronary death attributed to plaque rupture. *Circulation*. 2004;110:III-124.
3. Fischer JW, Steiz S, Johnson P, Burke AP, Kolodgie FD, Virmani R, Gaichelli CM, Wight TN. Decorin promotes aortic smooth muscle cell calcification and co-localizes to calcified regions in human atherosclerotic lesions. *Circulation*. 2004;110:III-213.
4. Segev A, Nili N, Qiang B, Wong AJ, Pasterkamp G, Pillarisetti S, Virmani R, Strauss BH. Stents coated with a perlecan-inducing compound significantly reduce intimal hyperplasia in a rabbit iliac in-stent restenosis model: novel insights into the diverse biological effects of Perlecan. *Circulation*. 2004;110:III-219.
5. Kolodgie FD, Burke AP, Taye A, Liu W, Sudhir K, Virmani R. Lipoprotein-associated phospholipase A2 is highly expressed in macrophages of coronary lesions prone to rupture. *Circulation*. 2004;110:III-246.
6. Ishii Y, Virmani R, Gaynor SL, Diodate MD, Goldman SM, Prechtel EJ, Kronengold RT, Damiano RJ. A novel bioengineered small caliber vascular graft incorportating Sirolimus. *Circulation*. 2004;110:III-753.
7. Wilensky RL, Schneiderman J, Weiss A, Samouha E, Golan E, Flugelman M, Rozenman Y, Virmani R. Vulnerable plaque diagnosis by a self-contained intravascular magnetic resonance imaging probe: proof of concept. *Eur Heart J*. 2004;25(suppl):99.
8. Vela D, Burke A, Naghavi M, Madjid M, Casscells W, Virmani R. Inflammation of periadventitial fat of human coronary arteries as a marker of plaque vulnerability: destablization from the outside in? *Eur Heart J*. 2004;25(suppl):152, 232.

Book Chapters

1. Virmani R, Burke AP, Kolodgie FD, Farb A. Histopathology of carotid stenosis: correlation between the types of plaque and the risks of neurological complications. In: Henry M, Ohki T, Polydorou A, Strigaris K, Kiskinis D, eds. *Angioplasty and Stenting of the Carotid and Supra-Aortic Trunks*. London: Martin Dunitz; 2004:7-16.
2. Virmani R, Burke A, Farb A, Kolodgie FD, Finn AV, Gold H. Pathology of the vulnerable plaque. In: Waksman R, Serruys PW, eds. *Handbook of the Vulnerable Plaque*. London: Martin Dunitz; 2004:33-48.
3. Farb A, Lindsay JP, Virmani R. Case 21: stent thrombosis soon after non-cardiac surgery. In: Rothman MT, ed. *Case Studies in Interventional Cardiology*. London: Martin Dunitz; 2004:111-117.
4. Burke AP, Virmani R. Pathology of myocardial ischemia, infarction, reperfusion, and sudden death. In: Fuster V, Alexander RW, O'Rourke RA, eds. *Hurst's The Heart*. 11th ed. New York, NY: McGraw-Hill; 2004:1223-1239.
5. Wight TN, Evanko S, Kolodgie F, Farb A, Virmani R. Hyaluronan in atherosclerosis and restenosis. In: Garg HG, Hales CA, eds. *Chemistry and Biology of Hyaluronan*. Elsevier: 2004;307-321.
6. Burke AP, Veinot JP, Loire R, Virmani R, Tazelaar H, Kamiya H, Araoz PA, Watanabe G. Tumours of the heart: introduction. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:251-253.
7. Burke AP, Tazelaar H, Patel CR, Virmani R, Geva T, Tornambene G, Radford DJ. Benign tumours with myocyte differentiation. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:254-259.
8. Burke AP, Tazelaar H, Butany JW, El-Demellawy D, Loire R, Geva T, Bonilla F, Galvin JR, Veinot JP, Virmani R, Kamiya H, Watanabe G, Grandmougin D, Horimoto M, Hiraga H. Cardiac sarcomas. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO*

Classification: Tumours of the Lung, Pleura, Thymus and Heart. Lyon, France: IARC Press; 2004:273-281.

9. Burke AP, Loire R, Virmani R. Pericardial tumours. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:285-288.



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

DEPARTMENT OF PULMONARY AND MEDIASTINAL PATHOLOGY

STAFF

Medical

William D. Travis, MD
Teri Franks, MD
Dennis L. Hayden, DO
Konstantin Shilo, MD

Scientific

Konstantin Shilo, MD, NIH/AFIP Pulmonary Pathology Fellowship Program
Haodong Xu, MD, NIH/AFIP Pulmonary Pathology Fellowship Program
Junya Fukuoka, MD, NCI/AFIP Fellow

Administrative

Tammie Winters, Administrative Officer
Kim Jones, Secretary

IMPACT

Our department is one of the world's foremost authorities on thoracic pathology. We provided key leadership in the recent 2002 ATS/ERS Classification of Idiopathic Interstitial Pneumonias and the 2004 WHO Classification of Tumours, *Pathology and Genetics: Tumours of the Lung, Pleura, Thymus and Heart,* published by the International Association for Research on Cancer in Lyon, France. Dr. Travis, as lead editor, also chaired the WHO meeting in Lyon, France, where lead authors for this book came together to compile and edit the manuscript. In 2003 a workshop sponsored by the American Thoracic Society on nonspecific interstitial pneumonia was completed in our department that will result in the defining criteria for this entity.

Our department played a key role in the diagnosis of acute eosinophilic pneumonia in several fatal cases that were part of the recent cluster of cases of severe respiratory illness observed in active duty military personnel in the Middle East war theater. Dr. Franks developed an AFIP Hot Topic on acute eosinophilic pneumonia that was distributed on the World Wide Web and served to provide up-to-date information for diagnosis to military physicians in the Middle East. We continue to monitor lung pathology in military personnel and their dependents, and are trying to obtain support from the Army Surgeon General and Department of Health Affairs for this work.

CONSULTATION

Approximately 60% of our consultation cases are tumors; 40% are non-neoplastic thoracic disorders. We provide state-of-the-art consultative work for pathologists worldwide in pulmonary, pleural, and mediastinal pathology. We are the only pathology consultants who work very closely with a world-class thoracic radiologist and pulmonologist in providing complete clinical-pathologic and radiologic consultation opinions. Our work is highly military relevant, as the international stature we have achieved in the civilian realm is brought to bear on all of our military consultations.

Our department made a minor change in diagnosis in 995 cases, a major change in diagnosis in 51 cases, and no change in the contributor diagnosis in 712 cases. We received 555 cases with no contributor diagnosis.

Cases	*Completed*
Military	321
Army (176)	
Navy (59)	
Air Force (86)	
Federal	763
VA (753)	
OFA (10)	
Civilian	1,302
Interdepartmental	776
Total	3,162

Clinical Appointments

WD Travis:

1. Consultant, Pulmonary Pathology, Laboratory of Pathology, National Cancer Institute, NIH.
2. Consultant, Pulmonary Pathology, Pathology and Pulmonary Branch, National Heart, Lung, and Blood Institute, NIH.

EDUCATION

Courses: Pulmonary pathology monthly conference for pulmonary medicine fellows, WRAMC, 2001-present, D Hayden.

Trainees: Our department is recognized as an international center for training in pulmonary pathology. Our resources provide a unique opportunity for fellowship training, which is a major priority of the department.

During 2004 we had one visitor from Japan. Numerous doctors did rotations in our department: 4 from Howard University, 1 from the San Diego Naval Hospital, 1 from Washington Hospital Center, 1 from the National Cancer Institute, 1 from the University of Wurzburg, 2 from WRAMC, 1 from USC, 1 from Georgetown University, 1 from Penn State, 1 from Berkshire, 1 from UCI, 1 from USUHS, and 1 from University of Birmingham.

Faculty Appointments

Adjunct Professor, Department of Pathology, Georgetown University School of Medicine, WD Travis.

Presentations

1. January 2004: Tacoma, Wash, Madigan Army Medical Center, "The ATS/ERS classification of idiopathic interstitial pneumonias," WD Travis.
2. January 2004: Tacoma, Wash, Madigan Army Medical Center, "Slide seminar on non-neoplastic lung disease," WD Travis.
3. February 2004: Taipei, Taiwan, Taiwan Pathology Society, "The 2004 WHO Classification of Lung Tumors," WD Travis.
4. February 2004: Taipei, Taiwan, Taiwan Pathology Society, "The 2004 WHO Classification of Neuroendocrine Lung Tumors," WD Travis.
5. February 2004: Taipei, Taiwan, Taiwan Pathology Society, "Surgical pathology of pleural tumors," WD Travis.
6. February 2004: Taipei, Taiwan, Taiwan Pathology Society, "Slide seminar on lung tumors," WD Travis.
7. February 2004: Albuquerque, NM, University of New Mexico, "The pulmonary pathology of the severe acute respiratory distress syndrome," WD Travis.
8. February 2004: Albuquerque, NM, University of New Mexico, "Slide seminar on non-neoplastic lung disease," WD Travis.
9. February 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Ask AFIP: consultation and education to the point of care," T Franks.

10. March 2004: Palm Springs, Calif, Society of Thoracic Radiology, "The new WHO Classification of Lung Cancer," WD Travis.
11. March 2004: Washington, DC, AFIP Weekly Professional Staff Conference "The A, B and C's of the mediastinum: current WHO Classification of Thymic Epithelial Neoplasia," K Shilo.
12. April 2004: Vancouver, BC, Vancouver General Hospital, Dr. Roberta R. Miller Memorial Lecture, "Pathology of lung adenocarcinoma, evolving concepts," WD Travis.
13. April 2004: Bethesda, Md, AFIP 14th Annual Anatomic Review Course, "Classification of lung tumors," D Hayden.
14. May 2004: Zurich, Switzerland, University Hospital, "Evolving concepts in the pathology of lung adenocarcinoma," WD Travis.
15. May 2004: Boston, Mass, Innovators in Lung Cancer, "Pathology of adenocarcinoma," WD Travis.
16. May 2004: Chicago, Ill, University of Chicago, "Dynamic integrated approach to idiopathic interstitial pneumonias," WD Travis.
17. May 2004: Chicago, Ill, Chicago Society of Pathologists, "Slide seminar," WD Travis.
18. May 2004: Orlando, Fla, Fleischner Society, 34th Annual Conference on Chest Diseases, "Pathology of airway lesions," WD Travis.
19. May 2004: Bethesda, Md, AFIP 14th Annual Anatomic Review Course, "Primary cysts and tumors of the mediastinum," T Franks.
20. May 2004: Bethesda, Md, AFIP 14th Annual Anatomic Review Course, "Pathology of the pleura," T Franks.
21. May 2004: Bethesda, Md, National Heart, Lung and Blood Institute/NIH, Working Group on Hypersensitivity Pneumonitis, Needs and Opportunities to Study Hypersensitivity Pneumonitis, "Hypersensitivity pneumonitis," T Franks.
22. June 2004: Phoenix, Ariz, American College of Chest Physicians, "WHO Classification of Lung Tumors, pulmonary pathology," WD Travis.
23. June 2004: Phoenix, Ariz, American College of Chest Physicians, "Non-small cell carcinomas, pulmonary pathology," WD Travis.
24. June 2004: Phoenix, Ariz, American College of Chest Physicians, "Small cell carcinoma and other neuroendocrine tumors, pulmonary pathology," WD Travis.
25. June 2004: Madrid, Spain, Iberian Pulmonary Pathology Club, "Surgical pathology of pleural tumors," WD Travis.
26. June 2004: Madrid, Spain, Iberian Pulmonary Pathology Club, "The 2004 WHO Classification of Lung Tumors," WD Travis.
27. June 2004: Madrid, Spain, Iberian Pulmonary Pathology Club, "Surgical pathology of the mediastinum," WD Travis.
28. June 2004: Washington, DC, AFIP Grand Rounds VTC, "Lung tumors: the WHO Classification," T Franks.
29. October 2004: Washington, DC, NMHM Docent Training Program, "The respiratory tract," T Franks.
30. September 2004: Glasgow, Scotland, European Respiratory Society, "Neuroendocrine tumors: a new concept: understanding the WHO 2004 Histopathologic Classification of Lung Tumours and its clinical utility," WD Travis.
31. September 2004: Iowa City, Iowa, 13th Annual Iowa Anatomic Pathology Course, "The interstitial pneumonias," WD Travis.
32. September 2004: Iowa City, Iowa, 13th Annual Iowa Anatomic Pathology Course, "Pleural biopsy interpretation," WD Travis.
33. September 2004: Iowa City, Iowa, 13th Annual Iowa Anatomic Pathology Course, "Surgical pathology of the mediastinum," WD Travis.
34. October 2004: Ann Arbor, Mich, University of Michigan, Update on Pulmonary and Critical Care Medicine, "Bronchiolitis, pathologic aspects," WD Travis.
35. October 2004: Brisbane, Australia, 5th Congress of the International Academy of Pathology, Lung Tumor Symposium, "Case presentation," WD Travis.

RESEARCH

Journal Articles

1. Abbott GF, Rosado de Christenson ML, Franks TJ, Frazier AA, Galvin JR. Pulmonary Langerhans' cell histiocytosis. *Radiographics*. 2004;24:821-841.

2. Akpinar-Elci M, Travis WD, Lynch DA, Kreiss K. Bronchiolitis obliterans syndrome in popcorn production plant workers. *Eur Respir J*. 2004;24:298-302.
3. Choi ES, Jakubzick C, Carpenter KJ, Kunkel SL, Evanoff H, Martinez FJ, Flaherty KR, Toews GB, Colby TV, Kazerooni EA, Gross BH, Travis WD, Hogaboam CM. Enhanced monocyte chemoattractant protein-3/CC chemokine ligand-7 in usual interstitial pneumonia. *Am J Respir Crit Care Med*. 2004;170:508-515.
4. Chong PY, Chui P, Ling AE, Franks TJ, Tai DY, Leo YS, Kaw GJ, Wansaicheong G, Chan KP, Ean Oon LL, Teo ES, Tan KB, Nakajima N, Sata T, Travis WD. Analysis of deaths during the severe acute respiratory syndrome (SARS) epidemic in Singapore: challenges in determining a SARS diagnosis. *Arch Pathol Lab Med*. 2004;128:195-204.
5. Devouassoux-Shisheboran M, de la Fouchardiere A, Thivolet-Bejui F, Sourisseau-Millan ML, Guerin JC, Travis WD. Endobronchial variant of sclerosing hemangioma of the lung: histological and cytological features on endobronchial material. *Mod Pathol*. 2004;17:252-257.
6. Flaherty KR, King TE, Raghu G, Lynch JP, Colby TV, Travis WD, Gross BH, Kazarooni EA, Toews GB, Long O, Murray S, Lama VN, Gay SE, Martinez FJ. Idiopathic interstitial pneumonia: what is the effect of a multidisciplinary approach to diagnosis? *Am J Respir Crit Care Med*. 2004;170:904-910.
7. Franks TJ, Galvin JR, Frazier AA. The impact and use of high-resolution computed tomography in diffuse lung disease. *Curr Diagn Pathol*. 2004;10:279-290.
8. Fukuoka J, Fujii T, Shih J, Dracheva T, Hewitt S, Travis WD, Jen J. Chromatin remodeling factors in non-small cell lung cancer, cellular location of BRM and coexpression with BRG1 are important prognostic indicators. *Clin Cancer Res*. 2004;10:4314-4324.
9. Gorham ED, Garland CF, Garland FC, Kaiser K, Travis WD, Centeno JA. Trends and occupational associations in incidence of hospitalized pulmonary sarcoidosis and other lung diseases in navy personnel: a 27-year historical prospective study, 1975-2001. *Chest*. 2004;126:1431-1438.
10. He P, Varticovski L, Bowman ED, Fukuoka J, Welsh JA, Miura K, Jen J, Gabrielson E, Brambilla E, Travis WD, Harris CC. Identification of carboxypeptidase E and gamma-glutamyl hydrolase as biomarkers for pulmonary neuroendocrine tumors by cDNA microarray. *Hum Pathol*. 2004:35:1196-1209.
11. Jakubzick C, Choi ES, Carpenter KJ, Kunkel SL, Evanoff H, Martinez FJ, Flaherty KR, Toews GB, Colby TV, Travis WD, Joshi BH, Puri RK, Hogaboam CM. Human pulmonary fibroblasts exhibit altered interleukin-4 and interleukin-13 receptor subunit expression in idiopathic interstitial pneumonia. *Am J Pathol*. 2004;164:1989-2001.
12. Jakubzick C, Choi ES, Kunkel SL, Evanoff H, Martinez FJ, Puri RK, Flaherty KR, Toews GB, Colby TV, Kazerooni EA, Gross BH, Travis WD, Hogaboam CM. Augmented pulmonary IL-4 and IL-13 receptor subunit expression in idiopathic interstitial pneumonia. *J Clin Pathol*. 2004;57:477-486.

Abstracts

1. Allen TC, Churg A, Colby TV, Cagle PT, Gibbs AR, Hammar SP, Corson J, Grimes M, Ordonez N, Roggli VL, Travis WD, Wick MR. Localized malignant mesothelioma (LMM): clinicopathologic review of 22 cases. *Mod Pathol*. 2004;17(Suppl 1):331A.
2. Fukuoka J, Franks TJ, Colby TV, Galvin JR, Flaherty K, Gochuico B, Toews G, Hayden D, Martinez FJ, Travis WD. Peribronchiolar metaplasia (PBM): a common incidental histologic lesion and a rare cause of interstitial lung disease (PBM-ILD). Clinicopathologic features of 17 cases. *Mod Pathol*. 2004;17(Suppl 1):336A.
3. Galvin JR, Franks TJ. Dyspneic cigarette smokers with near normal spirometry: the morphology and distribution of cystic spaces. Fleischner Society, Orlando, Fla, May 20-22, 2004.
4. Jakubzick C, Choi ES, Carpenter KJ, Kunkel SL, Evanoff H, Martinez FJ, Flaherty KR, Toews GB, Colby TV, Travis WD, Hogaboam CM. Enhanced CCL7 expression in usual interstitial pneumonia. *Am J Respir Crit Care Med*. 2004;169:A706.
5. Flaherty KR, King TE, Raghu G, Kazerooni EA, Gross BH, Travis WD, Colby TV, Lynch JP 3rd, Long Q, Murray S, Gay SE, Lama VN, Thannickal VJ, Toews GB, Martinez FJ. A confident clinical and radiographic diagnosis of usual interstitial pneumonia or nonspecific interstitial pneumonia is associated with a higher likelihood of finding histologic UIP or NSIP on biopsy. *Am J Respir Crit Care Med*. 2004;169:A706.
6. Flaherty KR, Long Q, Murray S, Travis WD, Colby TV, Lama V, Gay SE, Toews GB, Martinez FJ. Baseline quality of life is similar in patients with usual interstitial pneumo-

nia is similar compared to patients with nonspecific interstitial pneumonia. *Am J Respir Crit Care Med*. 2004;169:A778.
7. Selbs E, Chou WS, Abbondanzo SL, Sobin LH, Franks TJ, Travis WD. TTF-1 expression in the spectrum of neuroendocrine tumors from the lungs and gastrointestinal carcinoids. *Mod Pathol*. 2004;17(Suppl 1):343A.
8. Shilo K, Chu WS, Abbondanzo SL, Franks TJ, Travis WD. Diagnostic utility of Langerin (CD207) for histological diagnosis of pulmonary Langerhans cell histiocytosis. *Mod Pathol*. 2004;17(Suppl 1):344A.
9. Xu H, Franks TJ, Galvin JR, Travis WD. The impact of chest imaging on the pathologic diagnosis of pulmonary mediastinal and pleural disease. *Mod Pathol*. 2004;17(Suppl 1):345A.

Other Publications

Franks TJ, Galvin JR, et al. Acute eosinophilic pneumonia. July 2004. http://www.afip.org/Departments/hot-topics/pneumonia/index.html

Projects

1. Analysis of lung cancer using tissue microarray.
2. Lymphangioleiomyomatosis.
3. Localized fibrous tumor of the pleura.
4. Neuroendocrine tumors of the lung.
5. Immunohistochemical staining for p53, pdgf, and p16 antibodies in malignant mesotheliomas and atypical mesothelial hyperplasia.
6. Inflammatory pseudotumor of the lung: a clinicopathologic study of 75 cases.
7. Pulmonary sclerosing hemangioma.
8. Chronic fibrosing pleuritis, atypical mesothelial hyperplasia, and desmoplastic mesothelioma.
9. Molecular biology of lung cancer.
10. Histologic analysis and immunohistochemical staining profile of pleuropulmonary blastoma.
11. Use of immunohistochemistry in determination of primary sites for carcinoma presenting in the mediastinum and separation of thymoma from atypical thymoma and thymic carcinoma.
12. Correlation of pulmonary, mediastinal and pleural pathologic findings with radiologic studies.
13. Lung pathology of severe acute respiratory syndrome (SARS).
14. Bronchiolar fibrosis with peribronchiolar metaplasia.
15. ILD in military and veterans compared to civilian patients.

Collaborators

Military/Federal:

1. NIH/National Heart, Lung and Blood Institute: Lymphangioleiomyomatosis 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. University of Iowa: Interstitial lung disease.
10. University of Colorado: Interstitial lung disease.
11. Kyoto University, Kyoto, Japan: Interstitial lung disease.

PROFESSIONAL ACTIVITIES

Official Trips

1. May 2004, Working Group on Hypersensitivity Pneumonitis: Needs and Opportunities to Study Hypersensitivity Pneumonitis, National Heart, Lung and Blood Institute/NIH, Bethesda, Md, T Franks (NIH).
2. November 2004, Consensus Conference on Bronchioloalveolar Carcinoma, International Association for the Study of Lung Cancer, New York, NY, T Franks (NIH).

Editorial Boards

WD Travis:

1. *American Journal of Surgical Pathology*, 1990-present.
2. *Human Pathology*, 1999-present.
3. *Clinical Cancer Research*, Associate Editor, 1999-present.
4. *Lung Cancer*, 2000-present.
5. *Pathology International*, 2001-present.
6. Editorial Advisory Board, Fourth Series of the Atlas of Tumor Pathology.

T Franks:

1. Abstract Review Board, USCAP, 2004.
2. Editor and Co-Founder, AFIP Hot Topics Series (Web-based modules on emerging diseases), 2003-present.

Panels

WD Travis:

1. Chair, Pathology Panel, International Association for the Study of Lung Cancer
2. Member, US/Canadian Mesothelioma Reference Panel
3. Member, International Association for the Study of Lung Cancer/National Cancer Institute SPORE Pathology Working Group: Classification of Preinvasive Epithelial Abnormalities of Lung
4. Member, International Mesothelioma Panel
5. Co-Chair, American Thoracic Society Nonspecific Interstitial Pneumonia Working Group
6. International Association for the Study of Lung Cancer Staging Committee

DIRECTORATE OF FIELD OPERATIONS

Charles W. Pemble III
Col, USAF, DC
Director, Field Operations

BIOSURETY OFFICE

OFFICE OF THE ARMED FORCES MEDICAL EXAMINER

Charles W. Pemble III, Col, USAF, DC
Director, Field Operations
Date of Appointment — 28 January 2002

DIRECTORATE OF FIELD OPERATIONS

STAFF

Mark Vojtecky, Lt Col, USAF, MSC, Administrative Officer

IMPACT

The directorate provides:

- Staff coordination for operational readiness planning, mobilization, and training.
- Facilitates delivery of maximum medicolegal and forensic science support from the AFIP to US Army and DoD operations.
- Enhancement of the OAFME and supporting pathology processes that contribute to medicolegal investigations, environmental and infectious disease threat assessment, and implementation of field-focused support and assistance through the departments of Veterinary Pathology and Telepathology.

The directorate also ensures regulatory compliance with the Institute's Biosurety program in the use and transfer of biological select agents and toxins, in support of basic and applied biologic research projects.

OFFICE OF BIOSURETY

STAFF

Gary Comontofski, Biosurety Officer
Charles Pemble, Col, USAF, Responsible Official
Mary K. Klassen-Fischer, MD, Alternate Responsible Official

IMPACT

The Office of Biosurety is responsible to the Director of Field Operations for managing AFIP's Biosurety Program and ensuring all requirements are met, as established by DoD directives, Code of Federal Regulations, US Army Medical Command (MEDCOM), and the Army Biosurety Program. The Biosurety Program is also responsible for meeting CDC and USDA requirements for storage and use of all biological select agents and toxins (BSATs). The Office of Biosurety controls and monitors access to areas where BSATs are stored and used. While biological security is not new at the AFIP, the application of the Biosurety Program will help establish a safe, secure, and reliable working environment for assigned personnel and visitors, and will safeguard biological assets in support of AFIP's mission.

ACCOMPLISHMENTS

In 2004, the Office of Biosurety:

- Developed a Biosurety Plan and Standard Operating Procedures for the AFIP IAW with DoD directive 5210.ff, draft AR 50-X, and 7 CFR Part 331, 9 CFR Part 121, and 42 CFR Part 73.
- Oversaw the installation of a barcode inventory tracking system to monitor access and use of BSATs.
- Oversaw the installation of a robotic freezer system known as the AFIP Reference Collection (ARC) to house the Institute's entire reference collection of BSATs.
- Integrated the Biosurety Program into the Physical Security Committee, creating a Physical Security/ Biosurety Committee to advise and inform the Institute on issues of biosurety and safeguarding BSATs, and to continually monitor activities of the Biosurety Program for full compliance with all regulations and guidelines.
- Established the AFIP's Biological Personnel Reliability Program IAW AR 50-X to ensure that all personnel meet all reliability and security checks before accessing BSATs.
- Established AFIP's import/transfer permit program to ensure that AFIP meets all regulations and guidelines set forth by the USDA and the CDC for the import and transfer of BSATs.
- Passed a rigorous CDC inspection that led to granting of a Registration Certificate authorizing the receipt, transfer, storage, and use of BSATs as part of the AFIP Biosurety Program.
- Passed 2 CDC laboratory inspections for approval of 2 new laboratories: N4504 as a Biosafety Level 3 and S5311 as an Animal Biosafety Level 3.

Craig T. Mallak, CDR, MC, USN
Armed Forces Medical Examiner
Date of Appointment – 12 June 2002

ARMED FORCES MEDICAL EXAMINER SYSTEM (AFMES)

STAFF

Medical

Craig T. Mallak, CDR, MC, USN, Armed Forces Medical Examiner
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Brion C. Smith, COL, DC, USA, Chief Deputy Medical Examiner, DoD DNA Registry
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Lolita Lewis, PH3, USN, Forensic Photographer

Kimberly E. Meadows, HM2, USN, Photographer

IMPACT

The department 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 AFMES must establish positive identity by scientific means, determine the cause and manner of death, and certify the death. This responsibility normally applies to:

1. Members of the Armed Forces on active duty or on active duty for training.
2. Civilians, including dependents of military members, whose deaths come under exclusive federal jurisdiction.

The department reviews cases in consultation and conducts on-site medicolegal investigations, providing consultative as well as diagnostic services to the DoD and other federal and nonfederal agencies. When requested and approved by higher authority, these services may be extended to foreign governments.

2004 was the most challenging year in the history of the AFMES. Our staff's commitment to fully account for every military member who died while in service to their country required them to undertake almost 1,100 death investigations—more than the total number undertaken in a 5-year period in the mid 1990s. The AFMES continued to provide outstanding support to DoD and other federal agencies. During 2004, the autopsy examinations provided on missions and written consultations were invaluable in promoting real-time force protection, especially for troops deployed to Operation Iraqi Freedom. In addition, several autopsy examinations and consultations were of great value in promoting aviation safety and administration of justice. Noteworthy missions in 2004 included:

- Investigation of over 1,000 deaths from Operations Iraqi Freedom and Enduring Freedom.
- Over 20 deployments to Afghanistan and Iraq to investigate the deaths of enemy prisoners of war.
- Establishment of protocol for the investigation of deaths of enemy prisoners of war, approved by SECDEF.
- Receipt of a $3.9M grant from the Defense Advanced Research Program Agency (DARPA) to develop new imaging technologies as part of the Joint Combat Trauma Registry.
- Continued collection and evaluation of helmets and ballistic vests from fatalities, with feedback to the designers of protective equipment and combat vehicles, and combat units.

CONSULTATION

The AFMES accessioned 1,493 diagnostic consultation cases during 2004. 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 were military pathologists and other federal agencies such as the Department of Justice, the FBI, and the Department of Labor.

Cases	*Completed*
Military	186
Federal	49
Civilian	20
In-house	493
Interdepartmental	8
Total	756

Deployments

AFMES teams deployed on over 100 medicolegal missions. On-site scene investigations were conducted in all of these deployments. Medical examiners deployed to Dover Air Force Base more than 200 days in 2004 to account for and investigate the deaths of over 800 service members who died while serving in support of Operation Iraqi Freedom and Operation Enduring Freedom.

1. January 2004: Womack Army Regional Medical Center, Ft Bragg, NC, Suicide investigation, JL Caruso, BG Corrao.
2. January 2004: Whiteman AFB, Mo, Natural death, DT Nguyen, PA Kerr.

3. January 2004: Iraq, Death investigation, JL Caruso, L Lewis.
4. January 2004: Dover Port Mortuary, Death investigation, E Rouse.
5. January 2004: WRAMC, Suicide investigation, JJ Hodge, TD McCorkle.
6. January 2004: Dover Port Mortuary, Death investigation, LN Finelli.
7. January 2004: Dover Port Mortuary, Motor vehicle death investigation, E Rouse, JJ Hodge, R Veasey, PA Kerr, KE Meadows, TD McCorkle.
8. January 2004: Mortuary Facility, Baghdad, Iraq, Detainee death investigation, CAPT Knittle, BG Corrao.
9. January 2004: Dover Port Mortuary, Death investigation, LN Finelli, PA Kerr.
10. February 2004: Dover Port Mortuary, Death investigation, DT Nguyen, TD McCorkle.
11. February 2004: WJB Dorn VA Medical Center, Columbia, SC, Physical fitness test death, DT Nguyen, BC Smith, L Lewis.
12. February 2004: Lyster Army Hospital, Ft Rucker, Ala, Suicide investigation, JL Caruso, M Godwin.
13. February 2004: Dover Port Mortuary, Motor vehicle death investigation, JJ Hodge, R Veasey, KE Meadows.
14. February 2004: Dover Port Mortuary, Iraqi civilian death investigation, JJ Hodge.
15. February 2004: Reynolds Army Community Hospital, Ft Sill, Okla, Suicide investigation, JJ Hodge, PA Kerr.
16. February 2004: Martin Army Hospital, Ft Benning, Ga, Suicide investigation, JL Caruso, PA Kerr.
17. February 2004: BIAP Mortuary, Baghdad, Iraq, Iraqi civilian death investigation, LN Finelli, SSgt Page, KE Meadows.
18. February 2004: Dover Port Mortuary, E Rouse.
19. March 2004: Irwin Army Community Hospital, Ft Riley, Kan, JL Caruso, PA Kerr.
20. March 2004: Dover Port Mortuary, Motor vehicle accident death investigation, DT Nguyen, BG Corrao.
21. March 2004: Baghdad, Iraq, Death investigation, JL Caruso, PA Kerr.
22. March 2004: Palmetto Richland Hospital, Death investigation, Ft Jackson, SC, LN Finelli, M Godwin.
23. March 2004: Winn Army Community Hospital, Ft Stewart, Ga, Death investigation, LN Finelli, M Godwin.
24. March 2004: Naval Hospital, Charleston, SC, US Navy bus accident death investigation, JJ Hodge, JL Caruso, SSgt Page.
25. March 2004: Nellis AFB, Nev, Aircraft accident investigation, BC Smith, JJ Hodge, SD Adams, R Veasey, PA Kerr.
26. March 2004: Dahrawood, Afghanistan, Combat-related death investigation, E Rouse.
27. March 2004: WRAMC, Motor vehicle death investigation, LN Finelli, M Godwin.
28. March 2004: Andrews AFB, Md, Suicide death investigation, BC Smith.
29. April 2004: Dover Port Mortuary, Death investigation, CT Mallak.
30. April 2004: Polk AFB, La, Death investigation, DT Nguyen.
31. April 2004: Ft Stewart, Ga, Aircraft crash investigation, CDR Knittle, PA Kerr.
32. April 2004: Dover Port Mortuary, Death investigation, BC Smith, L Lewis.
33. April 2004: Eisenhower Army Medical Center, Ft Gordon, Ga, Suicide investigation, BC Smith, SSgt Page.
34. April 2004: Ft Rucker, Ala, Motor vehicle accident death investigation, JL Caruso, BG Corrao.
35. April 2004: WAMC, Ft Bragg, NC, Suicide investigation, BC Smith, L Lewis.
36. April 2004: NNMC, Death investigation (OIF), DT Nguyen, BG Corrao.
37. April 2004: Mosul, Iraq, Iraqi death investigation, E Rouse, M Godwin.
38. April 2004: Ft Bragg, NC, Helicopter crash investigation, JL Caruso, SSgt Page.
39. May 2004: Charleston, SC, Motor vehicle accident investigation, E Rouse, BG Corrao.
40. May 2004: Ft Polk, La, Infant death investigation, JL Caruso, PA Kerr.
41. May 2004: Dover Port Mortuary, Motor vehicle accident investigation, MAJ Harshbarger, PA Kerr.
42. May 2004: WRAMC, Death investigation, BC Smith.
43. May 2004: Dover Port Mortuary, Death investigation, LN Finelli, R Veasey.
44. May 2004: Iraq, EPW death, JJ Hodge, BG Corrao.

45. May 2004: Marion County Coroner, Oaktown, Ind, LN Finelli, L Lewis, R Veasey.
46. May 2004: Baghdad, Death investigation, BC Smith, L Lewis.
47. June 2004: WRAMC, Death investigation, MAJ Liuzza, M Godwin.
48. June 2004: USS Detroit, NJ, Suicide investigation, JL Caruso.
49. June 2004: Whiteman AFB, Suicide death investigation, LN Finelli, BG Corrao.
50. June 2004: Ft Sill, Okla, Suicide death investigation, J Feig.
51. June 2004: Iraq, Death investigation, E Rouse, M Godwin.
52. June 2004: Ft Benning, Ga, Execution investigation, DT Nguyen, L Lewis.
53. June 2004: Dover Port Mortuary, Homicide investigation, MAJ Harshbarger.
54. June 2004: Winn Army Hospital, Ft Stewart, Ga, Helicopter crash investigation, JL Caruso, L Lewis.
55. June 2004: Sigonella, Italy, Death investigation, MAJ Campman, PA Kerr.
56. June 2004: Ft Knox, Ky, Infant death investigation, LN Finelli, M Godwin.
57. June 2004: Warner Robins AFB, Savannah, Ga, Suicide investigation, BC Smith, PA Kerr.
58. July 2004: Irwin Army Community Hospital, Ft Riley, Kan, Suicide investigation, SD Adams, PA Kerr.
59. July 2004: Ft Gordon, Ga, Suicide investigation, E Rouse, MAJ Harshbarger, SSgt Page.
60. July 2004: Charleston, SC, Motor vehicle accident investigation, MAJ Harshbarger, PA Kerr.
61. July 2004: Ft Benning, Ga, Drowning investigation, MAJ Harshbarger, PA Kerr.
62. July 2004: Germany, Motor vehicle accident, E Rouse.
63. July 2004: Little Rock, Ark, Suicide investigation, MAJ Harshbarger, PA Kerr.
64. July 2004: Naval Hospital Jacksonville, Fla, Accident investigation, SD Adams.
65. July 2004: US Naval Hospital, Yokosuka, Japan, Death investigation, JL Caruso.
66. July 2004: Robin AFB, Ga, Death investigation, MAJ Harshbarger, SSgt Page.
67. July 2004: Ft Sill, Okla, Drug overdose investigation, SD Adams, SSgt Page.
68. July 2004: Charleston, WV, Death investigation, JL Caruso, M Godwin.
69. July 2004: Dover Port Mortuary, Suicide investigation, E Rouse.
70. August 2004: Martin Army Community Hospital, Ft Benning, Ga, Suicide investigation, DT Nguyen, M Godwin.
71. August 2004: WRAMC, Homicide investigation, LN Finelli, M Godwin.
72. August 2004: Dover Port Mortuary, Aircraft accident investigation, SD Adams.
73. August 2004: Houston Medical Center, Warner Robins AFB, Ga, SD Adams.
74. August 2004: Baghdad, Iraq, Detainee death investigation, JL Caruso, BG Corrao.
75. September 2004: Camp Lejeune, NC, Motor vehicle accident investigation, CDR Monaghan, PA Kerr.
76. September 2004: WRAMC, Natural death investigation, BC Smith, L Lewis.
77. September 2004: WRAMC, Homicide investigation, LN Finelli, BG Corrao.
78. September 2004: Ft Benning, Ga, Motor vehicle accident investigation, BC Smith, BG Corrao.
79. September 2004: Naval Hospital, Camp Lejeune, NC, Suicide investigation, SL Robinson, M Godwin.
80. September 2004: WRAMC, Natural death investigation, BC Smith, M Godwin.
81. September 2004: Bagran, Afghanistan, Natural death investigation, E Rouse, SA Curran, BG Corrao.
82. October 2004: Baghdad, Iraq, EPW death investigation, LN Finelli, SSgt Page.
83. October 2004: Ft Polk, La, Suicide investigation, DT Nguyen, PA Kerr.
84. October 2004: Ft Bliss, Tex, Plane crash investigation, BC Smith.
85. October 2004: Iraq, Death investigation, JL Caruso, M Godwin.
86. October 2004: WRAMC, Natural death investigation, BC Smith.
87. November 2004: Augusta, Ga, Suicide investigation, SL Robinson, TD McCorkle.
88. November 2004: Ft Benning, Ga, Suspicious death investigation, J Feig.
89. November 2004: Nellis AFB, Nev, Suicide investigation, SD Adams.
90. November 2004: Jacksonville, Fla, Death investigation, SL Robinson.
91. November 2004: NNMC, Homicide investigation, BC Smith.
92. November 2004: NNMC, Death investigation, LN Finelli.
93. November 2004: NNMC, Homicide investigation, LN Finelli.
94. November 2004: NNMC, Death investigation, DT Nguyen.

95. November 2004: Dover Port Mortuary, Aircraft crash investigation, LN Finelli, J Feig, LCDR Luzi.
96. December 2004: Ft Stewart, Ga, Death investigation, SL Robinson, L Lewis.
97. December 2004: Ft Riley, Kan, Suicide investigation, J Feig.
98. December 2004: Ft Bragg, NC, Drowning investigation, BC Smith, L Lewis.
99. December 2004: San Diego, Calif, Hanging death investigation, MAJ Campman.
100. December 2004: Madigan Army Medical Center, Wash, Training death investigation, WC Rodriguez, JL Caruso.

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 significantly expanded our geographic scope. The RMEs and AMEs conducted 200 medicolegal investigations this year under the guidance of the AFMES, which 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.

Special Investigation Division of AFMES

The Special Investigation Division provides consultations to all military investigative and federal agencies, including the FBI, ATF, US Secret Service and the CIA. The division conducts casework involved with overseas terrorist bombings and identification of combat detainees. Forensic anthropologists were employed to evaluate and identify remains recovered in Iraq that might represent those of missing Gulf War Pilot Capt. Speicher or missing US personnel. Studies were conducted on the beheading victims, to provide forensic evidence linked to responsible terrorists. The OAFME Ballistic Research Range plays a major military-relevant role in testing and development of new-generation body armor and research related to battlefield ballistic injuries. The Morgue and Laboratory facilities under the Special Investigation Division underwent major renovations, including procurement and stocking of field operation equipment for fast launch capabilities and storage of autopsy tissues from Operation Iraqi Freedom and theater combat fatalities. Significant new laboratory equipment was purchased to assist in the examination of human remains and associated trace materials. The forensic skeletal teaching collections have increased, including many unique specimens.

EDUCATION

Courses: OAFME staff conducted the Basic Forensic Pathology course in November 2004, for 101 attendees.

Trainees

- One trainee completed the one-year Forensic Pathology Fellowship; another commenced the fellowship in October 2004.
- Five Military Criminal Investigative Organization (MCIO) agents completed the AFIP Fellowship Program while attaining their Master of Forensic Science degrees. These special agents go on to serve as forensic specialists and coordinators throughout the world.
- Three military services investigative agents started the AFIP Fellowship Program while attaining their Master of Forensic Science degrees.
- Eight medical students and 4 pathology residents completed rotational clerkships in forensic pathology for 4 weeks during 2004.
- OAFME had 5 visiting physicians (including the Iraqi Medical Examiner) visit to view the OAFME operation.

Faculty Appointments

1. George Washington University/AFIP Master of Forensic Sciences Program, Adjunct Faculty and Course Director, Principles of Forensic Pathology, ME Smith.
2. George Washington University, Adjunct Professor, Department of Forensic Sciences, WC Rodriguez.
3. Consulting Associate Professor, Department of Anesthesiology, Duke University Medical Center, Durham, NC, JL Caruso.

Presentations

1. October 2004: Bethesda, Md, USUHS, Society of Medical Consultants to the Armed Forces 2004 Annual Meeting, “Wartime forensic pathology,” CT Mallak.

2. March 2004: Dallas, Tex, Executive Leadership Symposium (USAF), "Postmortem: all that remains," SL Hanshaw.
3. November 2004: Denver, Colo, Association of Military Surgeons of the United States, "Honoring the dead, protecting the living," SL Hanshaw.
4. February 2004: Dallas, Tex, American Academy of Forensic Pathology, "The medicolegal investigation of diving fatalities," JL Caruso, M Bell.
5. May 2004: Sydney, Australia, Undersea and Hyperbaric Medical Society, "Weight belt release in recreational diving fatalities," JL Caruso, et al.
6. May 2004: Sydney, Australia, Undersea and Hyperbaric Medical Society, "Pediatric deaths in recreational diving fatalities," JL Caruso, et al.
7. October 2004: Panama City, Fla, Naval Diving and Salvage Command, "Clinical aspects and pathology of diving," JL Caruso.
8. November 2004: Pensacola, Fla, Naval Aviation Medical Institute, "Aviation pathology," JL Caruso.
9. December 2004: Silver Spring, Md, Naval Medical Research Command, "Drowning and diving deaths," JL Caruso.
10. November 2004: Burlington, Mass, 9th Annual New England Regional Trauma Conference, "Traumatic injuries of Operation Iraqi Freedom," LN Finelli.
11. November 2004: Burlington, Mass, 9th Annual New England Regional Trauma Conference, "Improvised explosive devices and their effect on OIF casualties," LN Finelli.

RESEARCH

The AFMES received a $3.9M grant from the Defense Advanced Research Program Office to develop the "Virtual Autopsy."

Journal Articles

Mallak CT. Doctors and torture. *N Engl J Med*. 2004;351:1571-1574.

Abstracts

Burt MJ, Finelli LF. Patterns of upper extremity defensive type injuries in homicidal sharp force assaults. 38th Annual National Association of Medical Examiners Meeting, Nashville, Tenn, 2004.

Other Publications

Staff, Annual Report on Diving Injuries and Fatalities, Divers Alert Network, Duke University Medical Center, Durham, NC, January 2004.

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.

Editorial Boards

American Journal of Forensic Medicine and Pathology, WC Rodriguez.

Journal of Forensic Sciences, WC Rodriguez.

Manuscripts Reviewed

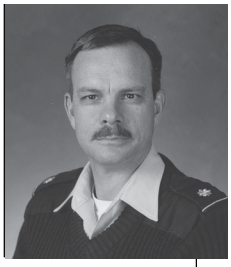
Members of the department reviewed articles for the *American Journal of Forensic Medicine*.

Appointments

- Two OAFME staff received appointments as Professorial Lecturers for George Washington University.
- One OAMFE staff member earned Submarine Medical Officer Qualification.
- OAFME staff testified as expert witnesses in several homicide trials and assault cases.

WC Rodriguez:

- Chief Forensic Anthropological Consultant, State of Maryland and the District of Columbia.
- Chief Consultant, FBI Forensic Science Training Unit, FBI Child Abduction and Serial Killer Unit.
- Co-Director, FBI yearly Evidence Response Team Field Course: Search and Recovery of Decomposed and Skeletonized Remains Evidence Response Team, FBI National Training Academy, Quantcio, Va.



Brion C. Smith, COL, DC, USA
Chief Deputy Medical Examiner
Director, Department of Defense DNA Registry

DEPARTMENT OF DEFENSE DNA REGISTRY
OFFICE OF THE ARMED FORCES MEDICAL EXAMINER
ARMED FORCES MEDICAL EXAMINER SYSTEM

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(D) Jenna D. Farsetta, BS, DNA Technician
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(A) Sean E. Patterson, BS, DNA Technician (ARP)
(A) Sarah B. Perry, BS, DNA Technician (ARP)
(A) Michelle F. Perella, BS, DNA Technician (ARP)
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Nuclear DNA and AFDIL[cs]

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(D) Deborah K. Haller, MS, AFDIL[cs], DNA Analyst III (ARP)
(D) Robert M. Fisher, MFS, AFDIL[cs], DNA Analyst II (ARP)

AFDIL Training Education and JFAADD

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Richon E. Tate, BS, DNA Analyst (ARP)
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Courtney L. Vito, BS, DNA QC Technician (ARP)
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AFDIL Research Section

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Armed Forces Repository of Specimen Samples for the Identification of Remains (AFRSSIR)

David Boyer, MFS, Director of Operations (GS)
Herbert Simms, Inventory Management Specialist (GS)
Tonya Summers, Admin Assistant (ARP)
Amanda Solares, Lead QC Technician (ARP)
Marie Reese, QC Technician (ARP)
Mariafe Vance, Sr Specimen Processor (ARP)
Gloria Lindmark, Sr Specimen Processor (ARP)
Arvin Solis, Sr Specimen Processor (ARP)
Diane Giampetroni, Sr Specimen Processor (ARP)
Ernie Costes, Specimen Processor (ARP)
Steven Thompson, Specimen Processor (ARP)
Michael Rhoades, Specimen Processor (ARP)
(A) Amanda Summers, Specimen Processor (ARP)
Rene Malones, Systems Administrator (FTI)
Al Lambert, Network Administrator (EDS)
Dat Nguyen, Network Administrator (EDS)
(D) Jackie Graham, BS, Repository Supervisor (ARP)
(D) George Galapon, Sr Specimen Processor (ARP)

IMPACT

The DoD DNA Registry is a division of the Armed Forces Medical Examiner System (AFMES) and an operational element of the AFIP. The Office of the Surgeon General (OTSG) provides Army Executive Agency. The Registry has 2 subordinate branches, the Armed Forces DNA Identification Laboratory (AFDIL) and the Armed Forces Repository of Specimen Samples for the Identification of Remains (AFRSSIR).

The DNA Registry is charged with the missions of DNA identification of human remains, information technology development, mass fatality management, and DNA reference specimen collection, archival, storage, and retrieval services for the DoD. In addition to routine AFMES casework, the Registry established a 3-person Outside Casework and Mass Fatality Contingency Section that was authorized to perform reimbursable casework for other federal and non-federal clients until they were required to support current **military operations** around the globe. This core mission is funded through the Defense Health Program (DHP). DHP funding levels have been flatlined over the last 4 fiscal years, resulting in a net decrement of approximately 12%, while the demand for DoD forensic DNA casework and reference card collections continues to grow annually, particularly in relation to Operations Enduring and Iraqi Freedom.

The Joint POW/MIA Accounting Command (JPAC) is a field-operating agency of the United States Pacific Command (PACOM). JPAC is the lead organization in the search, recovery, and identification of **US service members** missing from prior military conflicts. Although JPAC meets most mission requirements with internal assets (forensic anthropology, odontology, data analysis, recovery teams), it has become increasingly reliant upon the use of mitochondrial DNA (mtDNA). Year 2004 statistics showed that AFDIL mtDNA support is required for more than 70% of JPAC CIL casework. As the recognized world leader in this technology, AFDIL has provided this DNA support to JPAC since 1994, when the US Army G-1, the executive agency for JPAC's predecessor, the Central Identification Laboratory, Hawaii (CILHI), first requested it. The G-1 continues to fund AFDIL for the costs of these DNA services and a 5-year Memorandum of Agreement (MOA) between the US Army Office of the Surgeon General (OTSG) for AFIP, the Human Resources Command (HRC), and JPAC is expected to be signed in 2005, solidifying continuity of support. Funding for this ancillary support to JPAC has been inconsistent at times, but has generally increased over the last several years.

The DoD DNA Registry continued its support of the Service Casualty Offices (SCOs) and the Defense Prisoner of War Missing Personnel Office (DPMO) in support of family members of unaccounted service members from the US Civil War, World War I, World War II, Korea, and Vietnam.

During 2004, the Registry participated in family member updates located throughout the United States, addressing over 1,739 family members who attended these briefings at the following locations:

- January 2004: Nashville, Tenn
- February 2004: Los Angeles, Calif; Honolulu, Hawaii
- March 2004: Milwaukee, Wis
- April 2004: Annual Briefing to Korea/Cold War Families, Washington, DC
- June 2004: Annual Briefing to Vietnam War Families, Washington, DC
- July 2004: Oklahoma City, Okla
- August 2004: Denver, Colo
- September 2004: Hartford, Conn
- October 2004: Portland, Ore
- November 2004: Orlando, Fla

100% of our casework and research is directly **military relevant**. Non-DoD casework is performed only with specific authorization from OTSG and only on the basis of full reimbursement.

CONSULTATION (MACPATH)

Cases	Completed
Military	657
Army (641)	
Navy (5)	
Air Force (11)	
VA	5
Civilian	118
Other	1,075
Total	1,855

DEPARTMENT OF DEFENSE DNA REGISTRY OFFICE OF RESOURCE AND CONTRACT MANAGEMENT (ORCM)

The Office of Resource and Contract Management (ORCM) is composed of a core group of US government employees, responsible for all activities considered inherently governmental, including processing and procurement of all laboratory requests for reagents, laboratory supplies, equipment, maintenance services, facility management activities, travel requests, and processing, monitoring, and execution of MOAs. Other activities include HR functions, budget formulation, execution, monitoring and reporting, inventory and supply stock management, equipment inventory and accountability. Further activities include contracts management, including the increasingly critical contract for IT services.

Accomplishments

Managed all aspects of organizational support, including lease, utility, renovation, security, maintenance, etc.

Individual Contracts:

ARP Personnel Services	$6,900K
American Biomedical Group, Inc.	$ 37K
Medical Equipment Maintenance Co.	$ 51K
RASCo. Reagent Grade Water	$ 15K
Pipette Calibrations	$ 37K
Future Technologies, Inc.	$1,450K
Applied Biosystems, Inc. (ABI)	$ 75K
National Institutes of Health (Equipment Rental Program)	$ 486K
FITZCo DNA Collection Materials	$ 335K

Appropriations Management and Execution:

Defense Health Program (DHP)	$4,218K
Operations and Maintenance, Army (OMA)	$7,937K
Joint Federal Agency Anti-Terrorism DNA Database (JFAADD)	$1,500K

IMPAC Credit Card Program:

Appropriations	#Demands	#Line Items	Total
DHP	182	241	$ 615K
OMA	355	603	$1,123K

Routine Purchase Requests:

Appropriations	#Demands	#Line Items	Total
DHP	33	70	$1,696K
OMA	14	39	$ 925K
JFAADD	26	91	$ 605K

Laboratory Integrated Delivery System (LIDS):

Appropriations	#Demands	#Line Items	Total
DHP	41	103	$342K
OMA	23	98	$186K

- The ORCM administered and managed IT service contracts for software development, network support, database management, hardware maintenance, and bench-level desktop support.
- The ORCM directs the development, testing, and deployment of the DNA Registry Inventory Management Systems (DRIMS), which is a comprehensive module within the Laboratory Information Systems Application (LISA) operating system of the Laboratory Information Management System (LIMS). This program allows for the automated scheduling of laboratory replenishment, equipment failure notification, comprehensive manufacturer, supply, and distribution information collection, and other integrated inventory management functions. Automated order processing functions were added in 2004, allowing for the immediate electronic procurement of required supplies and services. Transition to paperless inventory management continues into 2005.
- The ORCM managed the DNA contract line item numbers (CLINs) of the Personnel Services contract with ARP. These CLINs represent approximately 100 administrative, managerial, scientific, and technical positions at the AFDIL and AFRSSIR.
- The ORCM manages the Joint Federal Agency Anti-Terrorism DNA Database (JFAADD) administrative requirements, which support the combined federal response to the continuing Global War on Terror (GWOT). This program support includes the procurement of personnel, supplies, space, equipment, and laboratory reagents for the processing of over 10,000 specimens expected per annum.

ARMED FORCES DNA IDENTIFICATION LABORATORY (AFDIL) MITOCHONDRIAL DNA SECTION

AFDIL is the world leader in the application of mitochondrial DNA (mtDNA) typing methods to samples recovered from ancient human remains. The main focus of the mtDNA Section of AFDIL is to provide analytical and research support to the Joint POW/MIA Accounting Command's Central Identification Laboratory (JPAC CIL). With 18 new staff members, 2004 proved to be another challenging year. Despite the training hurdles, the section was able to report 773 specimens for 2004, a 21% increase over 2003. In support of the Family Outreach Program, 581 family reference specimens (FRS) were reported for 2004. The mtDNA Section also assisted in the identification of 23 service members, and their laboratory work provided the genetic leads to dozens of other investigations.

AFDIL scientists traveled to various US cities to present the DNA portion of JPAC CIL identifications to fallen service member families.

Highlights of 2004 included collaborations with external agencies on special projects such as identifying the crew of the Confederate States Ship (CSS) Hunley and providing DNA analysis to assist in the identification of the Revolutionary War heroine Jane McCrea. An additional (the sixth) casework team was created, which has positively affected the organization by enabling the section to exceed the stated goal of 750 casework specimens. Furthermore, the ABI3100™ Genetic Analyzer, a high-throughput DNA sequencer, was validated to meet the increased goal of 800 bone and tooth specimens for 2005 and to further streamline sample processing.

Mitochondrial DNA analysis is increasingly becoming a critical component in the identification of US service members missing from previous military conflicts, and was required in over 70% of the identifications made by JPAC CIL. A typical case containing bone specimens may take years to complete. As an example, a World War II era case, originally submitted in 2002, ultimately had 66 bone specimens that were submitted to AFDIL over a 2-year period. Processing was completed in 2004 and the mtDNA typing services provided by AFDIL aided in the

identification of all 9 missing US service members. Without the direct support of the AFDIL, the remains of these individuals would not have been returned to their families.

By the close of 2004, AFDIL had processed over 7,400 FRS using mtDNA typing methods. Sequences obtained from the FRS are incorporated into a searchable database, allowing for comparison of the FRS sequences to sequences obtained from specimens submitted for testing by JPAC CIL. As the FRS sequence database grows, AFDIL can better serve the needs of JPAC CIL by forwarding information of possible name associations through "blind hits" of the sequences of specimens to the sequences contained in the FRS database. In 2004, the first of these blind hits occurred, leading to the identification of a US service member who had been missing from the conflict in Southeast Asia. Once JPAC CIL was notified of the blind hit, they were able to use dental records, video-superimposition, antemortem trauma (to bone specimens) data, and circumstantial evidence to conclude that the remains were, in fact, those of the missing US service member as indicated by the FRS database.

We expect that over time, the FRS database will become an invaluable tool in the identification of US service members missing from the Korean War, as many of the bone specimens recovered are from battlefield mass graves, where it is frequently unclear which missing individuals may be contained within.

AFDIL and JPAC CIL participated in numerous joint activities in 2004. The scientific exchange program with JPAC CIL remains active, viable, and very informative for both organizations. This program offers the opportunity for an AFDIL analyst to spend a week at JPAC CIL and to work side-by-side with their anthropologists, odontologists, and other scientific, technical, and administrative staff members. This effort strengthens the communication between AFDIL and JPAC CIL and enables discussions of priorities, validation projects, and future planning. As part of this exchange, AFDIL conducts proficiency testing for the JPAC CIL anthropologists and odontologists who cut biological materials for DNA testing and analysis. These proficiency tests help fulfill the American Society of Crime Laboratory Directors-Laboratory Accreditation Board (ASCLD-LAB), College of American Pathologists (CAP), the DoD DNA Oversight Committee, and other accreditation organizational requirements. Three JPAC CIL scientists were also able to visit AFDIL for personal interaction with the individual case managers. The Annual Joint AFDIL-JPAC CIL Symposium, sponsored by the DoD DNA Registry and held during the annual meeting of the American Academy of Forensic Sciences, continued the positive interaction between the 2 groups.

NUCLEAR DNA SECTION

In response to the continuing war in Iraq, teams of scientists were deployed to the Dover Port Mortuary to assist in collecting specimens for DNA analysis. In 2004, the AFMES section processed more than 1,700 samples that either led to or supported the identification of fallen service members in Afghanistan and Iraq. It was a year of transition for the AFMES section. Promega's PowerPlex 16 (a STR multiplex of 15 STRs and amelogenin, the sex determination marker) analysis on the 3100 Genetic Analyzer (capillary electrophoresis) was implemented into casework by the summer. At that time, only half of the section was trained in PowerPlex 16/3100 analysis. The remaining staff continued to process cases using Applied Biosystem's Profiler Plus kit (9 loci) on the 377 (slab gel format).

By November the entire AFMES section was performing casework via PowerPlex 16 on the 3100 Genetic Analyzer. The new kit and system introduced increased sensitivity, higher throughput and more discriminatory power. A Casework Administrator/Evidence Custodian was added to the nuclear section primarily to support the AFMES section.

This section is responsible for accessioning the large number of specimens submitted for analysis and generating final reports for the OAFME. As a result, scientists have been relieved of administrative functions to increase their capabilities in the laboratory. The nuclear section implemented a rotating on-call schedule for weekends to continue their quick responsiveness to the needs of the OAFME.

In 2004, the AFDIL Consultative Services Section (AFDIL^{CS} Section) gained the ability to process samples with PowerPlex 16 testing, which amplifies 16 STR loci (the 13 core CODIS loci, plus Penta D and Penta E and Amelogenin for sex determination in a single reaction) in addition to Y-STRs and mitochondrial DNA analysis.

In 2004, the AFDIL^{CS} Section received 20 new case submissions. Six cases were criminal and were submitted from agencies representing the US military. In 2004, 92 samples were processed for autosomal STRs, 2 samples for Y-STRs, and 14 samples for mtDNA analysis.

In 2004, the Joint Federal Agencies Anti-Terrorism DNA Database (JFAADD), AFDIL's high throughput database section, successfully processed more than 7,000 reference samples on automated extraction, amplification and analysis platforms yielding searchable short tandem repeat (STR) profiles. An STR high-throughput processing module was added to AFDIL's Laboratory Information System Applications (LISA HT) to track and manage processing of numerous samples. Likewise, the JFAADD evaluated True Allele, an expert STR system designed to automate review of the STR data. The combination of LISA HT and True Allele reduces the manpower required to process thousands of samples and minimizes human error.

AFDIL provided instruction for 2 semester offerings of the graduate Forensic Profiling course through The George Washington University. AFDIL also negotiated for the services of 3 no-cost interns from various universities, including the University of North Texas and Michigan State University.

In March 2004, AFDIL hosted 2 visiting scientists from Oman on behalf of the Department of State Diplomatic Security Service.

In May/June 2004, AFDIL sponsored the annual international training course, Extraction of DNA from Aged Skeletal Remains and Forensic Mitochondrial DNA Sequence Analysis, which was attended by individuals from Chile, Jordan, Lithuania, California, DC, and New York.

In 2004, the Validation Section merged with the Quality Control (QC) Section to generate the Validation/QC Section supervised by Timothy McMahon, PhD. The Validation/QC Section was redesigned to allow for a higher throughput of reagents in a shorter period of time. Even with the increase in workload for both the nuclear and mitochondrial sections, the Validation/QC section provided both sections with quality reagents—64 primer lots, 3 lots of mtDNA extraction reagents, 2 lots of nucDNA extraction reagents, 1,500 tubes of TaqGold, 4 lots of Powerplex 16 kits, 8 lots of Profiler Plus/Cofiler kits and 3 lots of Qiagen extraction reagents. At no time during 2004 did laboratory casework production halt due to the lack of reagents.

For the nuclear section, Promega's PowerPlex 16, and 3 3100 Genetic Analyzers were evaluated and implemented into routine nuclear casework. In addition, 6 Perkin Elmer 9700 thermacyclers were validated for PowerPlex 16 to keep up with the growing demands of nuclear casework and databasing. A second Qiagen 9604 BioRobot and 2 CAS-1200 PCR Liquid Handling systems that were previously validated for processing swabs were validated for processing bloodstain punches (Qiagen and Cas-1200) and organic swabs (CAS-1200). These new automated additions expanded the scope of the JFAADD project and decreased the number of manual processing hours.

For the mitochondrial section, several new primers that improved the amplification and sequencing efficiency of primer sets and mini-primer sets were developed. One new primer (R16410M19) aided in the identification of a missing service member by allowing the identification of the 16391 polymorphism. In addition, to help alleviate the demand on equipment due to the increase in mtDNA support staff, 14 Perkin Elmer 9700 thermalcyclers were validated for amplification and sequencing casework samples. Coupled with the thermalcycler validation was the validation of BigDye version 1.1, a new sequencing chemistry that replaced version 1.0 for use in processing mtDNA casework and database samples.

To further aid with mitochondrial databasing, AFDIL validated a second Qiagen 9604 BioRobot and 2 Corbett CAS-1200 PCR Liquid Handling systems. The CAS-1200 is a robotic system that increases specimen throughput by allowing for the reproducible amplification of up to 96 samples at a time. At the same time as the CAS-1200 validation, a second Qiagen 9604 BioRobot was validated for extraction purposes. These 2 robotic platforms and the previously validated TECAN will help AFDIL eliminate the Family Reference backlog.

Finally, the Applied Biosystems 3100 Genetic Analyzer, a 16 capillary electrophoresis apparatus capable of both DNA sequencing and fragment analysis was validated, along with a novel optimized sequencing strategy for processing mitochondrial casework samples. The institution of a common amount of sequencing template will help standardize results between analysts and alleviate the need for resequencing.

RESEARCH SECTION

2004 was a productive period for the AFDIL Research Section in its missions of technical development, genetic system characterization, genetic data analysis, and scientific communication. These activities support AFDIL's current and future capabilities in DNA analysis and human remains identification.

The Research Section is committed to keeping AFDIL at the forefront of DNA testing capabili-

ties in the face of rapidly developing technologies, and to addressing, with basic research, the most significant issues—as they relate to the AFDIL mission—that confront the forensic science community.

Research Projects

- Major activity focused on a 5-year $1.2M grant from the National Institute of Justice. This project has multiple phases: i) establishment of a high-throughput robotic sequencing system for the entire human mtDNA genome; ii) sequencing the entire mtDNA genome for many individuals matching common HV1/HV2 types for US Caucasian, African American, and Hispanic populations. Over 320 mtDNA genomes have been completed to date; iii) identification of entire mtDNA genome SNPs that permit increased forensic resolution; and iv) development of forensically useful SNP assays. Progress in the project was marked by 2 major publications indicating completion of the goals for Caucasians. The resulting SNP assays were tested and proven to be of high utility in AFDIL casework for identification of skeletal remains from previous conflicts. SNP panels are now being incorporated as validated forensic SOPs in AFDIL casework.
- A robotic, high-throughput mtDNA control region sequencing system was used to generate nearly 5,000 control region sequences for the establishment of 24 new population databases. AFDIL has by far the highest capacity of any laboratory for this important work, and these new global databases permit forensic mtDNA testing to be implemented in many new regions of the globe. This is increasingly important in relation to international law enforcement efforts and the Global War on Terrorism.
- A major course of research is underway to improve ancient DNA techniques for extremely difficult or unique cases. This has involved a new postdoctoral fellow, Odile Loreille, and the establishment of collaborations with some of the world's most prominent experts in these areas: Michael Hofreiter, Max Planc Institute; Matthew Collins, York University; Roger Woodgate, NIH; and Phillipp Holliger, MRC UK. Main activities include: i) validation of a demineralization extraction protocol developed by the Research Section that has been proven to increase yield of ancient DNA ~10-50 fold in many cases; ii) characterization of the extent and effect of DNA crosslinking in ancient DNA samples; and iii) evaluation and development of protocols for novel DNA polymerase that can read through or repair DNA damage during or prior to PCR.
- Protocols for low copy number amplification of nuclear DNA from degraded skeletal remains were developed and proven to have substantial application in AFDIL casework material. The AFDIL Research Section participated in a major international interlaboratory study (EDNAP/ENFSII) investigating low copy number protocols, and achieved the highest success of any of the participating laboratories in recovering authentic STR profiles from extremely degraded sources.
- The AFDIL research section entered into a high-profile debate within the greater scientific community regarding the authenticity of previous work on the identification of Tsar Nicholas II, with the effect of largely settling the issue and reconfirming that the science underlying the Romanov identification was of the highest caliber.
- Robotic high-throughput protocols were developed for nuclear STR and Y chromosomal testing, and several population databases were established for each of these systems.
- The research section continued to cultivate very productive collaborations with various outside laboratories, including the Institute of Legal Medicine, Innsbruck, Austria, National Institute of Standards and Technology (NIST), NIH, UK MRC (Medical Research Council), York University, Yale University, Aristotle University of Thessaloniki, and Max Planc Institute (Germany).

THE ARMED FORCES REPOSITORY OF SPECIMEN SAMPLES FOR THE IDENTIFICATION OF REMAINS (AFRSSIR)

- In 2004, the AFRSSIR accessioned 299,164 DNA reference specimens from 1,890 separate collection sites (Army: 699, Air Force: 367, Navy: 483, Marine Corps: 246, Coast Guard: 95). The Director of Repository Operations and Repository Supervisor conducted collection site

inspections at 21 facilities to provide information briefings and evaluate collection compliance. By the end of 2004, all basic training collection sites had converted their DNA collection process to staining the DNA specimen reference card in the presence of the donor.

- Accessioned DNA reference specimen inventory at the end of the year totaled 4,493,441.
- Total service members on file at the AFRSSIR represent about 96% of total military population. In the past year the repository processed 29 donor requests for destruction of donor DNA samples and 28 requests for release of specimens.
- The repository released 1,035 DNA specimens to AFDIL for human remains identification, 865 for identification of war casualties from Iraq and Afghanistan. There were 42 casualties (13 military and 29 civilians) who did not have a DNA specimen on file.
- The Director of Repository Operations conducted 5 presentations for audiences, with more than 500 attendees, regarding DNA Repository Operations, DNA Identification in Mass Fatality Incidents, and DNA Identification of Skeletal Remains.
- The Director of Repository Operations deployed to Kirksville, Mo, crash sight of the American Airlines Commuter Connection Flight #5966, to sample human remains for DNA identification by AFDIL.

PRESENTATIONS

1. January 2004: Washington, DC, AFIP Lecture Series, "Validation of Reliagene's Y-Plex 6 Kit."
2. January 2004: Nashville, Tenn, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
3. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "Increasing the efficiency of STR profiles through amplified product concentration."
4. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "The effect of formalin decontamination on STR analysis conducted on human remains submitted for identification."
5. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "Decontamination of human autopsy specimens by ^{60}Cobalt gamma-photon irradiation and human DNA identification by short tandem repeat analysis of irradiated tissues."
6. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "Optimization of Y-Plex6 for the identification of US service members."
7. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "Mitochondrial DNA at the Armed Forces DNA Identification Laboratory."
8. February 2004: Dallas, Tex, 56th Annual Meeting of the American Academy of Forensic Sciences, "The effect of formalin decontamination on STR analysis conducted on human remains submitted for identification" (Poster), DK Haller, SW Jones, DA Lee, TP McMahon, BC Smith, C Mallak.
9. February 2004: Los Angeles, Calif; Honolulu, Hawaii, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
10. March 2004: Wellington, NZ, 17th International Symposium on the Forensic Sciences: The Australian and New Zealand Forensic Science Society Biennial Conference, "Automated, high-throughput production of global mtDNA population databases," JA Irwin, RS Just, JE O'Callaghan, JL Saunier, TJ Parsons.
11. March 2004: Columbia, Mo, Missouri-Kansas-Illinois Forensic DNA Conference, "Forensic DNA processing at the Armed Forces DNA Identification Laboratory, specifically mitochondrial DNA (mtDNA)," SC Schroeder, SM Barritt, KB Murga, DA Lee, BC Smith, TP McMahon.
12. March 2004: Columbia, Mo, Missouri-Kansas-Illinois Forensic DNA Conference, "Interesting cases analyzed by the AFDIL," CR Steven.
13. March 2004: FMBIO Annual SMART Workshop, "Validation of Promega's PowerPlex 16 Kit on the ABI-3100," "General considerations for use of the CE in laboratory casework."
14. March 2004: San Diego, Calif, BODE Advanced DNA Technology Workshop, "The value of mtDNA within a closed population."
15. March 2004: Washington, DC, Georgetown University, "CS Lie: true life of a forensic scientist."

16. March 2004: Wellington, NZ, Australian and New Zealand Forensic Science Society Annual Meeting, "Automated, high-throughput production of global mtDNA population databases," J Irwin, R Just, J O'Callaghan, J Saunier, TJ Parsons.
17. March 2004: Milwaukee, Wis, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
18. April 2004: Wilmington, Del, Mid-Atlantic Association of Forensic Sciences, "High-throughput processing of oral swabs for nuclear DNA processing using PowerPlex 16" (Poster Presentation).
19. April 2004: Wilmington, Del, Mid-Atlantic Association of Forensic Sciences, "Increasing the efficiency of STR profiles through amplified product concentration."
20. April 2004: Wilmington, Del, Mid-Atlantic Association of Forensic Sciences, "AFDIL's investigation of the necessity to process all non-criminalistic casework controls and development of new amplification primers on a case specific basis," PG Jarman, SM Barritt, BC Smith, SC Schroder, TP McMahon.
21. April 2004: Wilmington, Del, Mid-Atlantic Association of Forensic Sciences, "The use of robotic equipment for high-throughput mtDNA sample processing," KL Maynard, RE Tate, SC Schroder, JA Irwin, TJ Parsons, SM Barritt, BC Smith, TP McMahon.
22. April 2004: Washington, DC, Annual US Government Briefings – Korea/Cold War Family Member Update, "DNA in the identification process."
23. May 2004: Rockville, Md, AFDIL Mitochondrial DNA Course, "Low copy number (LCN) STR typing on sources of highly degraded DNA," J Irwin.
24. June 2004: Isola Capo Rizzuto, Italy, Mediterranean Academy of Forensic Sciences (MAFS), "Research toward increasing the utility of mtDNA in forensic identifications," RS Just, JA Irwin, JE O'Callaghan, JL Saunier, MD Coble, PM Vallone, JM Butler, TJ Parsons.
25. June 2004: Washington, DC, NIJ Grantees Workshop, "Increasing forensic discrimination of mtDNA: SNP assays for polymorphisms outside of HV1/HV2," TJ Parsons.
26. June 2004: Calabria, Italy, Mediterranean Academy of Forensic Sciences Workshop, "Research toward increasing the utility of mtDNA in forensic identifications" (Invited Presentation), RS Just, JA Irwin, JE O'Callaghan, JL Saunier, MD Coble, PM Vallone, JM Butler, TJ Parsons.
27. June 2004: Washington, DC, Annual US Government Briefings – Vietnam War Family Member Update, "DNA in the identification process."
28. July 2004: Ft Edward, NY, The Scientific Investigation of Jane McCrea and Sarah McNeil, "Mitochondrial DNA analysis in the scientific investigation of Jane McCrea," CE Meyer.
29. July 2004: Brisbane, Australia, 7th International Conference on Ancient DNA and Associated Biomolecules, "Multiplex mtDNA SNP typing on degraded skeletal remains" (Poster), RS Just, CW Los, MD Leney, SM Barritt, TJ Parsons.
30. July 2004: Brisbane, Australia, 7th International Conference on Ancient DNA and Associated Biomolecules, "The case processing of the H.L. Hunley; extracting mtDNA from 140-year-old skeletal remains" (Poster), CM Ernst, JC Groover, CE Meyer, JS Raskin-Burns, SM Barritt, BC Smith.
31. July 2004: Brisbane, Australia, 7th International Conference on Ancient DNA and Associated Biomolecules, "The Romanov case: is acceptance of ancient DNA authenticity governed by sensible general guidelines, reproduction of results in qualified laboratories, and the specifics of the investigation—or by axiomatic dogma?" TJ Parsons, M Hofreiter, OM Loreille, SM Barritt, MJ Wadhams, RK Massie, E Hagelberg, P Gill.
32. July 2004: Brisbane, Australia, 7th International Conference on Ancient DNA and Associated Biomolecules, "Multiplex mtDNA SNP typing on degraded skeletal remains" (Poster), RS Just, CW Los, M Leney, SM Barritt, TJ Parsons.
33. August 2004: Denver, Colo, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
34. September 2004: Bethesda, Md, Applied Biosystems Human Identification Road Show, "Operation Iraqi Freedom: update."
35. September 2004: Pikesville, Md, Maryland Technology Seminar, "An introduction to mtDNA testing."
36. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Terror in the skies after the World Trade Towers: the identification and reassociation of remains from the Pentagon and Somerset plane crashes."
37. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Identification of human remains at the Tri-State Crematorium in Noble, Georgia."

38. September 2004: Washington, DC, 35th International Congress on Military Medicine, "Accounting for our dead: humanitarian identification efforts using mtDNA," A Coute, SM Barritt, BC Smith.
39. September 2004: Baltimore, Md, Maryland DNA Technology Seminar, "Mitochondrial DNA testing," TL Johnson, CR Steven.
40. September 2004: Hartford, Conn, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
41. October 2004: Phoenix, Ariz, 15th International Symposium on Human Identification, "The development of a completely robotic high-throughput system for STR typing of moderately challenged oral swabs."
42. October 2004: Phoenix, Ariz, 15th International Symposium on Human Identification, "The use of reference DNA samples to establish DNA identification, confirmation and re-association of combat casualties during Operation Iraqi Freedom and beyond."
43. October 2004: Phoenix, Ariz, 15th International Symposium on Human Identification, "Unusual and/or problematic sequence variants in the mtDNA hypervariable region 1: a catalog and calling guidelines" (Poster), JE O'Callaghan, JA Irwin, SM Barritt, BC Smith, TJ Parsons.
44. October 2004: Phoenix, Ariz, 15th International Symposium on Human Identification, "Unusual and/or problematic sequence variants in the mtDNA hypervariable regions 2 and 3: a catalog and calling guidelines" (Poster), JE O'Callaghan, JA Irwin, SM Barritt, BC Smith, TJ Parsons.
45. October 2004: Washington, DC, George Washington University Bioinformatics Seminar, "Research efforts at the Armed Forces DNA Identification Laboratory to improve forensic DNA testing," JA Irwin.
46. October 2004: Portland, Ore, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."
47. November 2004: Sarasota, Fla, Applied Biosystems Service Engineers Meeting, "Operation Iraqi Freedom: update."
48. November 2004: Denver, Colo, "The use of DNA technology for identification, confirmation and re-association of casualties of Operation Iraqi Freedom and beyond."
49. November 2004: Taipei, Taiwan, Taipei Symposium on the Application of mtDNA Technology in Forensic Science, "Identification of SNPs in the mitochondrial genome in order to resolve common HV1/HV2 types in Caucasian populations," MD Coble, RS Just, JL Saunier, JE O'Callaghan, IH Letmanyi, CT Peterson, JA Irwin, PM Vallone, TJ Parsons.
50. November 2004: Taipei, Taiwan, Taipei Symposium on the Application of mtDNA Technology in Forensic Science, "Naming the dead: confronting the realities of rapid identification of degraded skeletal remains," SM Edson, JP Ross, MD Coble, TJ Parsons, SM Barritt.
51. November 2004: Kaohsiung, Taiwan, Kaohsiung Symposium on the Application of mtDNA Technology in Forensic Science, "Separation of individuals in mass disasters and other sets of commingled remains: acquisition and use of appropriate reference materials," SM Edson, SM Barritt-Ross, DA Lee.
52. November 2004: Taipei, Taiwan, Taipei Symposium on the Application of mtDNA Technology in Forensic Science, "Identification of SNPs in the mitochondrial genome to resolve common HVI/HVII types in Caucasian populations," MD Coble, RS Just, JL Saunier, JE O'Callaghan, IH Letmanyi, CT Peterson, JA Irwin, PM Vallone, JM Butler, TJ Parsons.
53. November 2004: Berlin, Germany, 4th International Y-User Workshop, "Haploid DNA markers in forensic genetics," "Weathering stormy seas: progress and challenges in forensic mtDNA applications," TJ Parsons.
54. November 2004: Innsbruck, Austria, University of Innsbruck, Institute of Legal Medicine, "Forensic DNA testing at the Armed Forces DNA Identification Laboratory," TJ Parsons.
55. November 2004: Orlando, Fla, Defense Prisoner of War Missing Personnel Office Monthly Family Update, "DNA in the identification process."

PUBLICATIONS

Journal Articles

1. Edson SM, Ross JP, Coble MD, Parsons TJ, Barritt SM. Naming the dead: confronting the realities of rapid identification of degraded skeletal remains. *Forensic Sci Rev*. 2004;1:63-90.

2. Coble MD, Just RS, O'Callaghan JE, Letmanyi IH, Peterson CT, Irwin JA, Parsons TJ. Single nucleotide polymorphisms over the entire mtDNA genome that increase the power of forensic testing in Caucasians. *Int J Legal Med*. 2004;118:137-146.
3. Willey P, Blanchard A, Holland TD, Scott DD. A case of mistaken identity: skeleton in Custer National Cemetery no longer believed to be Corporal Lell. *Greasy Grass*. 2004;20:16-21.
4. Just RS, Irwin J, O'Callaghan JE, Saunier JL, Coble MD, Vallone PM, Butler JM, Barritt SM, Parsons TJ. Toward increased utility of mtDNA in forensic identifications. *Forensic Sci Int*. 2004;146:147-149.
5. Vallone PM, Hamm RS, Coble MD, Butler JM, Parsons TJ. A multiplex allele specific primer extension assay for 11 forensically informative SNPs distributed throughout the mitochondrial genome. *Int J Legal Med*. 2004;118:147-157.
6. Brandstatter A, Peterson CT, Irwin JA, Mpoke S, Koech DK, Parson W, Parsons TJ. Mitochondrial DNA control region sequences from Nairobi (Kenya): inferring phylogenetic parameters for the establishment of a forensic database. *Int J Legal Med*. 2004;118:294-306.

AUDITS/INSPECTIONS

1. January 2004: AFIP Threat and Vulnerability Assessment (TRVA).
2. March 2004: American Society of Crime Lab Directors/Laboratory Accreditation Board (ASCLD/LAB) Re-accreditation.
3. April 2004: Potomac Region DNA Audit Group/QA Oversight Committee Inspection.
4. May 2004: DoD DNA Oversight Committee Audit.
5. June 2004: Defense Threat Reduction Agency (DTRA) Inspection.
6. October 2004: HQ Department of Army Security Inspection.
7. August 2004: College of American Pathologists (CAP) Inspection.

Aaron Jacobs, COL, MS, USA
Chief
Date of Appointment – 30 May 2000

DIVISION OF FORENSIC TOXICOLOGY
OFFICE OF THE ARMED FORCES MEDICAL EXAMINER

STAFF

Scientific

Aaron Jacobs, COL, MS, USA, Chief Deputy Medical Examiner, Forensic Toxicology
David Lesser, CDR, MSC, USN, Assistant Chief Deputy Medical Examiner, Forensic Toxicology
John Jemionek, PhD, Special Projects Officer
(A) Michael L. Smith, PhD, Expert Witness
Eric T. Shimomura, PhD, Chief, Postmortem/Human Performance Lab
Thomas Z. Bosy, LCDR, MSC, USN, Chief, DoD Drug Detection QA Laboratory
Buddha D. Paul, PhD, Chief, Drug Testing Research
Joseph Magluilo, Jr, Chief, Laboratory Operations
Katherine Abold, CPT, USAF, Quality Assurance
(A) Christopher Dunkley, LT, MSC, USNR, DoD Drug Detection QA Laboratory
Barry S. Levine, PhD, Toxicologist
Karoline K. Shannon, Deputy Chief, Laboratory Operations
Emilda Greenidge-Blake, TSgt, USAF, NCOIC, Forensic Toxicology Services
John Kohler, HM1, USN, Assistant NCOIC, Forensic Toxicology Services
Jason Sklerov, Analytical Toxicologist
Shawn Vorce, Analytical Toxicologist
Robert O. Hughes, MS, Analytical Toxicologist
Robert L. Jones, Analytical Toxicologist
Joseph W. Addison, Analytical Toxicologist
Adeyinka Babalola, Analytical Toxicologist
Dawn Cox, Analytical Toxicologist
Justin Holler, Analytical Toxicologist
William E. Mayo, Analytical Toxicologist
(A) Rebecca DeRienz, Analytical Toxicologist
(A) Pamela McDonough, Analytical Toxicologist
(A) Arianne Motter, Analytical Toxicologist
(A) Amber Rickard, Analytical Toxicologist
(A) Megan Manos, Analytical Toxicologist
(A) Venus Anglemeyer, SPC, USA, Laboratory Technician
(A) Joan Driver, PFC, USAF, Laboratory Technician
(A) Ngu Fon, HM3, USN, Laboratory Technician
Daniel Trinidad, TSgt, USN, Laboratory Technician
Stephen Bray, HM1, USN, Laboratory Technician
Ephraim Escobar, HM2, USN, Laboratory Technician
Shairose Lalani, MSgt, USAF, Laboratory Technician
Michael Malloy, HM2, USN, Laboratory Technician
Avri McKnight, SSgt, USAF, Laboratory Technician
(D) Leah Milliman, HM2, USN, Laboratory Technician

Administrative

Jonathon Shane, MSgt, USAF, Superintendent, Division of Forensic Toxicology
Teresa M. Schaefer, Information Specialist
Tara Short, Executive Assistant
Jaqueline O. Jordan, Secretary

IMPACT

Our scope of operations is immense, providing toxicological services to over 1,700 military, federal, state, local, and non-governmental agencies worldwide. Division personnel play a key role in establishing the relationship that toxicological agents play in military readiness in terms of illness, accident, or death.

The Division of Forensic Toxicology comprises 3 branches:

1. The Postmortem and Human Performance Testing Laboratory offers toxicological services for the OAFME, all Armed Forces air-, ground-, and sea-based mishap investigations, Armed Forces criminal investigations, Armed Forces fitness-for-duty investigations, and Armed Forces medicolegal determinations (eg, DUI). We have provided toxicological consultations to NASA following the space shuttle Columbia accident investigation, the CIA following the assault on a Moscow theater, and to hundreds of military and federal agencies during Operation Enduring Freedom and Operation Iraqi Freedom.
2. The DoD Drug Detection Quality Assurance Laboratory is integrally coupled with the DoD Drug Testing Program, providing laboratory certification procedures for 6 (1 Air Force, 2 Army, 3 Navy) DoD Drug Testing Laboratories through proficiency testing and laboratory inspections. Each year we prepare and send 25,000 open and blind proficiency specimens to military laboratories to ensure that results are reported with 100% accuracy. Continued laboratory certification for each Military Drug Testing Laboratory is maintained through vigorous quarterly inspections conducted by division personnel and civilian toxicologists. Department personnel contribute immeasurably to the continuing success of the DoD Drug Testing Program and the decline of drug use by military personnel. We do this by developing new procedures to analyze drugs (eg, LSD, THC, ketamine) at lower concentrations using cutting-edge technology, conducting prevalence testing for emerging drugs of abuse such as Ecstasy (MDMA), oxycodone, and benzodiazepines (eg, Valium), and providing expert witness testimony at military courts martial and federal court proceedings.
3. Forensic Toxicology Program Development and Education keeps our personnel, and the services that we provide to our customers, on the cutting edge of forensic toxicology through a dynamic continuing education program and program development initiatives tailored to meet the varied needs of our customers. For Operation Iraqi Freedom, we developed a method to provide evidence of exposure to chemical warfare agents, and the already broad scope of the toxicological agents that we can detect was further widened by developing methods to analyze for fentanyl (narcotic analgesic), psilocin (from ingesting mushroom), mescaline (from ingesting peyote), RDX (high-energy explosive), and hallucinogenic tryptamines.

CONSULTATION

We reported 8,667 cases in 2004. Average turnaround time was 5.4 days.

Type of Case		Source of Case	
Aircraft Incidents	2,416	USA	3,347
Air Fatalities	64	USAF	1,835
Criminal/Investigative	4,348	USN	2,597
Post Mortem	1,417	USMC	50
Quality Controls	348	USCG	9
Surveys	74	Civilian/Other	390
		QC/Surveys	439
Total	**8,667**	**Total**	**8,667**

Deployments

Military/Federal/Civilian Expert Testimony and Litigation Support

1. January 20-23, 2004: MacDill AFB, Expert Witness, J Jemionek.
2. February 9-13, 2004: Kirtland AFB, Expert Witness, J Jemionek.
3. February 19, 2004: US District Court, Alexandria, Va, Expert Witness, J Jemionek.
4. February 26, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
5. March 4, 2004: US District Court, Alexandria, Va, Expert Witness, J Jemionek.
6. March 8-12, 2004: Vandenberg AFB, Expert Witness, A Jacobs.
7. March 16-18, 2004: Pope AFB, Expert Witness, J Jemionek.
8. March 18, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
9. February 26, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
10. March 4, 2004: US District Court, Alexandria, Va, Expert Witness, J Jemionek.
11. March 12, 2004: US-District of Maryland, Expert Witness, B Levine.
12. April 22, 2004: US District Court, Alexandria, VA, Expert Witness, E Shimomura.
13. May 3-4, 2004: South Korea, Expert Witness, B Paul.
14. May 3-5, 2004: Lackland AFB, Expert Witness, J Jemionek.
15. May 6, 2004: Camp Lejeune, Expert Witness, E Shimomura.
16. May 7, 2004: US-District of Maryland, Expert Witness, B Levine.
17. May 12-13, 2004: Aviano Air Base, Italy, Expert Witness, B Paul.
18. May 17, 2004: US-District of Maryland, Expert Witness, B Levine.
19. May 18-21, 2004: Lackland AFB, Expert Witness, J Jemionek.
20. May 15-26, 2004: Bolling AFB, Expert Witness, B Paul.
21. June 7, 2004: US-District of Maryland, Expert Witness, B Levine.
22. June 14-17, 2004: Shaw AFB, Expert Witness, J Jemionek.
23. June 21-24, 2004: Pope AFB, Expert Witness, J Jemionek.
24. June 23-25, 2004: Great Lakes, Ill, Union Arbitration Hearing, D Lesser.
25. June 28-30, 2004: Cannon AFB, Expert Witness, J Jemionek.
26. July 5-8, 2004: Langley AFB, Expert Witness, J Jemionek.
27. July 6-8, 2004: Great Lakes, Ill, Union Arbitration Hearing, D Lesser.
28. July 12, 2004: US-District of Maryland, Expert Witness, B Levine.
29. July 13-16, 2004: Civilian Court, Los Angeles, Calif, Expert Witness, A Jacobs.
30. August 1-5, 2004: Camp Casey, Korea, Expert Witness, M Smith.
31. August 1-4, 2004: Naval Station, Norfolk, Va, Expert Witness, D Lesser.
32. August 16, 2004: US-District of Maryland, Expert Witness, B Levine.
33. August 16-18, 2004: NLSO San Diego, Calif, Expert Witness, B Paul.
34. August 22-25, 2004: Pope AFB, Expert Witness, J Jemionek.
35. August 30, 2004: US District Court, Alexandria, VA, Expert Witness, E Shimomura.
36. September 14-18, 2004: Nellis AFB, Expert Witness, A Jacobs.
37. September 15-16, 2004: Fort Hood, Expert Witness, M Smith.
38. September 21, 2004: US-District of Maryland, Expert Witness, B Levine.
39. September 23, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
40. September 23, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
41. September 27-30, 2004: Dyess AFB, Expert Witness, T Bosy.
42. September 29-30, 2004: Andrews AFB, Expert Witness, J Jemionek.
43. October 1, 2004: Dyess AFB, Expert Witness, T Bosy.
44. October 10-12, 2004: Langley AFB, Expert Witness, B Paul
45. October 4-8, 2004: Civilian Court, Los Angeles, Calif, Expert Witness, A Jacobs.
46. October 11-14, 2004: Davis Monthan AFB, Expert Witness, J Jemionek.
47. October 12-13, 2004: Langley AFB, Expert Witness, B Paul.
48. October 14, 2004: US District Court, Alexandria, Va, Expert Witness, E Shimomura.
49. October 17-20, 2004: Keesler AFB, Expert Witness, M Smith.
50. October 22, 2004: Bolling AFB, Expert Witness, B Paul.
51. November 1-5, 2004: NAS Jacksonville, Expert Witness, M Smith.
52. November 1-5, 2004: Pope AFB, Expert Witness, J Jemionek.
53. November 9-10, 2004: McCord AFB, Expert Witness, B Paul.
54. November 15, 2004: Langley AFB, Expert Witness, B Paul.
55. November 15-17, 2004: Nellis AFB, Expert Witness, M Smith.

56. November 16-19, 2004: Tyndall AFB, Expert Witness, M Smith.
57. November 16-18, 2004: MacDill AFB, Expert Witness, J Jemionek.
58. November 20-23, 2004: Cherry Point, NC, Expert Witness, M Smith.
59. November 29-30, 2004: Quantico MCB, Expert Witness, J Jemionek.
60. November 30, 2004: Sheppard AFB, Expert Witness, M Smith.
61. December 1, 2004: Quantico MCB, Expert Witness, J Jemionek.
62. December 1-3, 2004: Sheppard AFB, Expert Witness, M Smith.
63. December 1-3, 2004: Vandenberg AFB, Expert Witness, A Jacobs.
64. December 2-3, 2004: Luke AFB, Expert Witness, B Paul.
65. December 3, 2004: US-District of Maryland, Expert Witness, B Levine.
66. December 4-12, 2004: Ramstein AFB, Germany, Expert Witness, T Bosy.
67. December 6, 2004: US-District of Maryland, Expert Witness, B Levine.
68. December 6-9, 2004: Ft Irwin, Calif, Expert Witness, A Jacobs.
69. December 6-7, 2004: Ft Bragg, NC, Expert Witness, M Smith.
70. December 14, 2004: US Naval Reserves, Mayport, Fla, Expert Witness, B Paul.
71. December 21, 2004: Johnson AFB, Expert Witness, B Paul.
72. December 28-30, 2004: Shaw AFB, Expert Witness, A Jacobs.

DoD Quality Assurance Drug Laboratory Inspections

1. January 2004: Navy Drug Testing Laboratory, Jacksonville, Fla, QA Inspection, J Jemionek.
2. January 2004: Army Drug Testing Laboratory, Tripler, Hawaii, QA Inspection, D Lesser.
3. March 2004: Navy Drug Testing Laboratory, San Diego, Calif, QA Inspection, T Bosy.
4. April 2004: Navy Drug Testing Laboratory, Great Lakes, Ill, QA Inspection, J Jemionek, K Todorov.
5. April 2004: Army Drug Testing Laboratory, Ft Meade, Md, QA Inspection, T Bosy.
6. April 2004: AF Drug Testing Laboratory, Brooks City Base, Tex, QA Inspection, D Lesser.
7. May 2004: Navy Drug Testing Laboratory, Jacksonville, Fla, QA Inspection, T Bosy.
8. May 2004: Army Drug Testing Laboratory, Tripler, Hawaii, QA Inspection, J Jemionek.
9. July 2004: Navy Drug Testing Laboratory, San Diego, Calif, QA Inspection, J Jemionek.
10. July 2004: Navy Drug Testing Laboratory, Great Lakes, Ill, QA Inspection, D Lesser.
11. August 2004: Army Drug Testing Laboratory, Ft Meade, Md, QA Inspection, D Lesser, K Todorov.
12. September 2004: Army Drug Testing Laboratory, Tripler, Hawaii, QA Inspection, T Bosy.
13. September 2004: Navy Drug Testing Laboratory, Jacksonville, Fla, QA Inspection, D Lesser.
14. September 2004: AF Drug Testing Laboratory, Brooks City Base, Tex, QA Inspection, M Smith, J Jemionek.
15. November 2004: DoD QA Laboratory, Rockville, Md, QA Inspection.
16. November 2004: Navy Drug Testing Laboratory, San Diego, Calif, QA Inspection, D Lesser.
17. November 2004: Navy Drug Testing Laboratory, Great Lakes, Ill, QA Inspection, T Bosy.
18. December 2004: Army Drug Testing Laboratory, Ft Meade, Md, QA Inspection, A Jacobs.
19. December 2004: AF Drug Testing Laboratory, Brooks City Base, Tex, QA Inspection, D Lesser.

National/International Consultations

1. Central Intelligence Agency, B Paul, J Jemionek, A Jacobs, J Magluilo.
2. NASA, Space Shuttle Columbia, Division of Forensic Toxicology.
3. MacDill Air Force Base, Tampa, Fla, B Paul.
4. Criminalists, Kern County, Calif, B Paul.
5. Air Force Drug Testing Program Manager, Alexandria, Va, B Paul.
6. Naval Legal Service Office, Norfolk, Va, B Paul.
7. Brooks Air Force Base Drug Testing Laboratory, A Jacobs, J Jemionek, D Lesser.
8. Department of Justice, Border Patrol, San Diego, Calif, T Bosy.
9. Staff Judge Advocate, Ausbach, Germany, T Bosy.

EDUCATION

Faculty Appointments

Clinical Associate Professor, University of Maryland School of Medicine, Department of Pathology, B Levine.

Lectures

1. March 2004: Society of Toxicology, "Forensic toxicology," B Levine.
2. May 2004: Navy Alcohol/Drug Abuse Program Conference, "Drug testing," T Bosy.
3. May 2004: Harvard Associates for Police Science, "Use of toxicological information in the final diagnosis," B Levine.
4. June 2004: Denver, Colo, Navy Biochemistry Recruiting Seminar, "Role of biochemists in the Navy," T Bosy.
5. August 2004: Washington, DC, FBI Symposium, Society of Forensic Toxicology, "A rapid method for measuring antidepressants in postmortem blood using dual column liquid chromatography mass spectrometry," J Sklerov.
6. August 2004: Washington, DC, FBI Symposium, Society of Forensic Toxicology, "Screening methods," M Smith.
7. October 2004: Harvard Associates for Police Science, "Use of toxicological information in the final diagnosis," B Levine.
8. November 2004: University of Maryland, "Forensic toxicology I," B Levine.
9. December 2004: University of Maryland, "Forensic toxicology II," B Levine.

Presentations

1. January 2004: Rockville, Md, AFIP Seminar Series, "Quantitative analysis of foxy, a designer hallucinogenic tryptamine," S Vorce.
2. February 2004: Rockville, Md, AFIP Seminar Series, "THC and cocaine in commercially available food products," J Holler.
3. March 2004: Rockville, Md, AFIP Seminar Series, "Mushrooms: the good, the bad, and the ugly," J Jemionek.
4. April 2004: Rockville, Md, AFIP Seminar Series, "Smoking cocaine and drinking: a deadly mixture," B Paul.
5. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Armed Forces Institute of Pathology DoD Quality Assurance Lab status update," T Bosy.
6. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Comparison study of 1, 2, and 4 point calibrations on Hitachi modular analyzers," J Holler.
7. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Evaluation of the Microgenics DRI oxycodone assay," J Holler.
8. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Quantitative analysis of foxy, a designer hallucinogenic tryptamine," S Vorce, J Sklerov.
9. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Enantiomeric separation and quantitation of (±)-amphetamine, (±)-methamphetamine, (±)-MDA, (±)-MDMA, and (±)–MDEA in urine specimens by GC-EI-MS after derivatization with (R)-(-) or (S)-(+)-?-methoxy-?-(trifluoromethyl)phenylacetyl chloride (MTPA)," D Lesser.
10. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "A review of inhalant cases analyzed at the Division of Forensic Toxicology, AFIP: headspace-GC and GC-MS methodology and sample requirements," D Cox.
11. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "Specimen adulteration: where does DoD go from here?" D Lesser.
12. June 2004: San Diego, Calif, Tri-Service Drug Testing Laboratory Managers Meeting, "DNA testing of urine specimens," T Bosy.
13. August 2004: Rockville, Md, AFIP Seminar Series, "Samples screening techniques," M Smith.
14. December 2004: Rockville, Md, AFIP Seminar Series, "Passive exposure to marijuana (THC) and cocaine," D Lesser.

RESEARCH

Journal Articles

1. Gustafson RA, Kim I, Stout PR, Klette KL, George MP, Moolchan ET, Levine B, Huestis MA. Urine pharmacokinetics of 11-Nor-9 carboxy-D^9-tetrahydrocannabinol after controlled oral D^9-tetrahydrocannabinol administration. *J Anal Toxicol.* 2004;28:160-167.
2. Levine B, Green-Johnson D, Moore KA, Fowler D. Hydroxycarbazepine distribution in three postmortem cases. *J Anal Toxicol.* 2004;28:509-511.

3. Levine B, Moore KA, Aronica-Pollak P, Fowler D. Oxycodone intoxication in an infant: accidental or intentional exposure? *J Forensic Sci.* 2004;49:1358-1360.
4. Levine B, Titus JM, Moore KA, Fowler D. Use of prostate specific antigen in the identification of semen in postmortem cases. *Am J Forensic Med Pathol.* 2004;25:288-290.
5. Paul BD, Jemionek J, Lesser D, Jacobs A, Searles DA. Enantiomeric separation and quantitation of (±)-amphetamine, (±)-methamphetamine, (±)-MDA, (±)-MDMA, and (±)–MDEA in urine specimens by GC-EI-MS after derivatization with (R)-(-) or (S)-(+)-?-methoxy-?-(trifluoromethyl)phenylacetyl chloride (MTPA). *J Anal Toxicol.* 2004;28:449-455.
6. Vorce SP, Sklerov JH. A general screening and confirmation approach to the analysis of designer tryptamines and phenethylamines in blood and urine using GC-EI-MS and HPLC-electrospray-MS. *J Anal Toxicol.* 2004;28:407-410.
7. Holler JA, Bosy TA, Klette KL, Wiegand R, Jemionek J, Jacobs A. Comparison of Microgenics CEDIA heroin metabolite (6-AM) and the Roche Abuscreen ONLINE opiate immunoassays for the detection of heroin use in forensic urine samples. *J Anal Toxicol.* 2004;28:489-493.
8. Paul BD. Six spectroscopic methods for detection of oxidants in urine: implication in differentiation of normal and adulterated urine. *J Anal Toxicol.* 2004;28:599-608.

Projects

1. Clinical studies of various routes of administration of cocaine to human subjects and the development of methods to identify the cocaine metabolites.
2. Detection of amphetamine isomers in urine specimens.
3. Heroin metabolite (6-acetylmorphine) immunoassay reagent validation study.
4. Oxycontin (oxymorphone/oxycodone) prevalence study and immunoassay reagent evaluation.
5. Detection and quantitation of zolpidem and zolpidem metabolites.
6. Detection and quantitation of ethyl glucuronide.
7. Tizanidine overdose and distribution case study.
8. Blood cannabinoid concentration profiles in humans following controlled administration of cannabis. In collaboration with Intramural Research Program, National Institute on Drug Abuse, National Institutes of Health, Johns Hopkins Bayview Campus, Baltimore, Md.

PROFESSIONAL ACTIVITIES

Proficiency Exams

1. Ran the DoD Quality Assurance Open and Blind Drug Testing Proficiency Program worldwide, with a total of 88,235 quality control (QC) specimens sent and analyzed for 2004: 4,040 military open proficiency specimens, 15,552 military blind proficiency specimens, 642 civilian proficiency specimens, 24 special testing specimens, and 67,977 prevalence study specimens.
2. Participated in 7 external proficiency tests: AL-1 (volatiles), SO (oximetry), UDC (urine drug confirmation), UT (urine toxicology), FTC (blood forensic toxicology), T (toxicology), NHTSA (ethanol).
3. Performed in-house proficiency testing for analytes not included in external proficiency tests, including chloroquine, propranolol, and GHB.
4. Underwent 3 inspections: Greystone (4-5 Nov, 2004), College of American Pathology (16 Sep 2004), and American Board of Forensic Toxicology (27-28 Sep 2004). Greystone and ABFT were both on-site inspections, whereas CAP was a mid-cycle review.

Editorial Boards

1. *Journal of Analytical Toxicology*, B Levine.
2. *American Journal of Forensic Medicine and Pathology*, B Levine.

Manuscripts/Research Proposals Reviewed

1. *Journal of Analytical Toxicology* (7), B Levine.
2. *Forensic Science International* (3), B Levine.
3. *American Journal of Forensic Medicine and Pathology* (3), B Levine.
4. *Journal of Analytical Toxicology/The International Association of Forensic Toxicologists* (87), B Paul, D Lesser.
5. Defense Threat Reduction Agency, Joint Science and Technology Office for Chemical and Biological Defense, Medical Chemical and Biological Defense Division, Grant Review (~$8,000,000), D Lesser.

National Panels

1. Navy Medical Logistics Command Technical Evaluation Board, B Paul, D Lesser, J Jemionek.
2. DoD Biochemical Testing Advisory Board, A Jacobs (Chair), T Bosy, J Jemionek, D Lesser.
3. DoD Laboratory Certification Inspection Program, A Jacobs, D Lesser, J Jemionek, T Bosy, K Todorov, M Smith.
4. Drug Testing Advisory Board, Department of Health and Human Services, Rockville, Md, M Smith.

Awards

August 2004, FBI Symposium, Society of Forensic Toxicology, Young Scientist Award for development of "A General Screening and Confirmation Approach to the Analysis of Designer Tryptamines and Phenethylamines in Blood and Urine Using GC/EI-MS and HPLC/Electrospray-MS," S Vorce.

DIRECTORATE OF CLINICAL SCIENCES

Christopher R. Owner, PhD
Director, Clinical Services

ADVANCED MEDICAL EDUCATION (DME)
TELEMEDICINE AND DISTANCE LEARNING
MOLECULAR PATHOLOGY
SCIENTIFIC LABORATORIES
RADIOLOGIC PATHOLOGY
REPOSITORY & RESEARCH SERVICES
CENTER FOR SCIENTIFIC PUBLICATIONS
BIOPHYSICS

Christopher R. Owner, PhD
Chair
Date of Appointment — 4 August 1997

DEPARTMENT OF MEDICAL EDUCATION

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 Principal Deputy Director. The Oversight Committee for Continuing Medical Education oversees the department's activities.

STAFF—EDUCATIONAL DIVISION

Christopher R. Owner, PhD, Chair
Carlos H. Moran, Associate Director

Educational

Carl Williams, Educational Coordinator (Radiology)
Monte D. Grace, HM2, USN, Educational Coordinator (Radiology)
Manpreet Singh, Web Coordinator
Ricky H. Giles, Educational Coordinator (Pathology)
Mark L. Hovland, Educational Coordinator (Pathology)
Stephen W. Huntington, TSgt, USAF, Educational Coordinator (Pathology)
Virginia A. McMillan, Visual Information Specialist

Administrative

Lisa P. Holmes, Meeting Planner
René M. Sutton, Marketing Specialist
Kim L. Williams-Chasten, Office Manager

Staff in Support of Mission

Frank Roberts, Histopathology QA
Nicole Jenkins, Histopathology QA
Estelle Page, Histopathology QA

Audiovisual

Willie L. Jefferson, Jr., Audiovisual Supervisor
Joseph W. Frederick, Audiovisual Support Technician

Media Center

Harold I. White, SSgt, USAF, Study Set Coordinator

Ash Library

Prem Kalra, Library Consultant
Judith Paige, Library Technician
Daniel Mulholland, Library Technician

MIS Library

Thomas Gaskins, Archive Technician

IMPACT

The educational mission of the AFIP and ARP is to "carry out educational activities in partnership with government, academic, and private sector organizations and to develop and apply

expert information for the benefit of individuals and their health care professionals (*AFIP Strategic Plan, 1997*). Specifically, we support continuing medical education (CME) in pathology, radiology, and related medical disciplines by providing specialized information and advanced research and technology in the study of the pathophysiology of disease.

Scope

The courses we offer cover most of the subspecialties in pathology, including dentistry, veterinary, forensics, and environmental medicine. We use numerous approaches to determine how these courses will be structured and what information to include. First and foremost is the material we glean from our secondary consult service. The AFIP receives over 55,000 cases annually, many of which are difficult diagnostic cases that become resources for our educational activities. We obtain these data from the Institute's Pathology Information System (PIMS). Numerous strategies are employed to assess the needs of participants in AFIP's CME activities. This ongoing "dialogue" with the community of pathologists shapes the information selected for our workshops and didactic programs, to accurately reflect the informational needs of military and civilian physicians. 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 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 our outstanding course evaluations.

Audience

Our primary audience includes military and civilian pathologists, radiologists, and related subspecialty clinicians in the United States, Canada, and around the world. Secondary audiences include physicians in other specialties, health professionals, and interested ancillary medical support systems.

PROFESSIONAL ACTIVITIES

In 2004, the AFIP and ARP offered 42 live courses, 5 regularly scheduled conferences, 23 Ground Rounds VTCs, 7 virtual conferences, and 5 DVD copies to 7,459 pathologists, clinicians, legal medicine professionals, veterinary pathologists, radiologists, dentists, forensic anthropologists, military and civilian residents, and professionals in related disciplines.

Training

The department is responsible for coordinating all training visits to the AFIP and for ensuring that all DoD guidelines and regulations are adhered to. The Training Office serves as liaison between the AFIP and the Office of the Army Surgeon General and/or the US Department of State, as appropriate. The Training Office is responsible for ensuring that all training initiatives comply with governing regulations and maintain compliance with approved international or applicable affiliation agreements.

In addition to the educational resources 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. Specialized departments also participate in a variety of staff conferences. We offer one-on-one instruction with staff pathologists and the opportunity to participate in AFIP activities, providing an optimal training environment.

The Training Office processed approximately 250 foreign and domestic requests to attend DOME and radiology courses, and coordinated approximately 235 interdepartmental training sessions, earning the Institute over $50,000 in training-fee reimbursables.

Marketing

In 2004, we conducted marketing activities on behalf of 21 seminars and workshops, targeting anatomic and clinical pathologists and radiologists in practice or serving in residencies. In addition to designing and mailing 94,550 brochures, we placed numerous advertisements in journals and newsletters and on websites. The AFIP's website provides detailed course information and online registration. In 2004, approximately 31% (ranging from 13% to 46%) of our registrants came through the Internet. Our increased use of email guarantees that course information is disseminated to targeted individuals in a timely and more cost-effective manner. As a result, course attendance has gone up by 20%.

We are continuing to develop and promote our Medical Education Fund to help defray some of the costs associated with conducting our programs. The fund seeks grants and exhibitors to help defray the cost of preparing syllabi, producing brochures, and marketing existing courses. We have enlisted support from the Jackson Foundation and the T.R.U.E. Research Foundation

to help us raise funds from the commercial sector.

Deployments

RM Sutton:

1. January 2004, Washington, DC, TRICARE Annual Meeting, staffing of AFIP exhibit.
2. March 2004, Vancouver, BC, US/Canadian Academy of Pathology, staffing of AFIP exibit.
3. May 2004, San Antonio, Tex, Association of the United States Army (AUSA) Conference 2004, designed, produced, and manned AFIP exhibit.
4. August 2004, Albuquerque, NM, Force Health Protection Conference, staffing of AFIP exibit and public affairs and marketing training.
5. September 2004, International Congress of Military Medicine, staffed AFIP exibit.
6. October 2004, Washington, DC, AUSA Conference 2004.
7. November 2004, Denver, Colo, Association of Military Surgeons of the United States Annual Meeting, staffed AFIP exhibit.

AUDIOVISUAL DIVISION

In 2004, the Audiovisual Division supported more than 20 CME courses in the Washington metropolitan area (except courses held at the National Library of Medicine's Lister Hill Auditorium and the National Transportation Safety Board, Ashburn, Va). Other AFIP-sponsored activities supported were: Weekly Professional Staff Conferences (38), HIPAA training sessions requiring Web connectivity (10), Transition Senate meetings conducted by Col Fein (10), Callender-Binford Lectures (12), retirement and promotion ceremonies (8), a number of in-house workshops for various departments, an ACTUR Conference/Workshop in Portland, Oregon, and the AFIP Spanish Course in San Juan, PR.

In addition, we supported a number of functions for WRAMC, including:

1. Medical Management of Chemical and Biological Casualty Courses (3)
2. Medical Emergency Ionizing Radiation Courses (3)
3. Military training for the troops (WRAMC) (4)

In 2004, 2 LCD projectors were replaced in Dart and Owens auditoriums as a major funded Medcase project.

1. PROPERTY VALUE
   a. $220,385.19
   b. 113 items listed on handreceipt
2. AUDIOVISUAL PROPOSED BUDGET
   a. Equipment (new and replacement) $18,900.00
   b. Supplies $1,200.00
   c. Maintenance/repair $3,300.00
   Total $23,400.00
3. A/V OPERATOR SUPPORT REQUESTS
   a. In-house 375
   b. CME courses 24
   c. WRAMC 45
   d. Outside organizations 2
4. A/V EQUIPMENT LOAN REQUESTS
   a. In-house 295
   b. CME courses 24
   c. WRAMC 49
   d. WRAIR 1
5. AUDIOVISUAL EQUIPMENT ON INDEFINITE LOAN
   a. In-house 9
   b. WRAMC 5

MEDIA CENTER

1. Public Services
   a. Sets used by AFIP personnel 5
   b. Interlibrary loans
      Federal 79
      Nonfederal 354

c. Ready reference
Media Center 40
Phone calls 560

2. Technical Services
a. New sets acquired
Veterinary Department 17
b. Loans to civilians $12,079.73

ASH LIBRARY

Ash Library subscribes to 318 printed journals. We also provide access to approximately 200 online journals to users via their PCs. Our book collection of 4,189 titles has been upgraded with recent acquisitions, some of which were recommended by our users. Ash Library also subscribes to ProQuest Health and Medical Database, which contains 1,613 medical and scientific journals, most of them having full text. This database provides users with easy access to an upgraded and updated collection, processes interlibrary loan requests within 24 hours, and sends journal articles to requesters via email in a pdf format.

2004 Accomplishments:

- Completed the move from fourth to first floor in the newly renovated Cafeteria area. Integrated journal holdings into 2 logical sequences and posted list of journals shelved in each aisle so that users will be able to find journal issues easily.
- Since more and more publishers are discontinuing free online access to journals, we started online subscriptions for heavily used journals through Ovid and OCLC.
- To avoid delay associated with mail delivery, we started scanning and emailing journal articles to Rockville.
- Completed 3 DTIC searches requested by researchers.
- Composed an alphabetical master list of all Ash Library journal titles for transition to the Cafeteria area.

Interlibrary Loans

Ash Library processed 1,296 loan requests and loaned 35 titles to other libraries during 2004.

Ash Library Statistics

a. Circulation
Checked out: 152
Checked in: 178
Renewed: 115

b. Interlibrary Loans
Borrowed: 1,296
Loaned: 35

c. Acquisitions
Book titles received: 113
Serial titles deleted: 9
Serial titles added: 2

d. Collections
Total book titles: 4,189
Current print journal titles: 318
Online journals available: 1,813

DEPARTMENTAL TRAINING

	Federal Attendees	Non Federal Attendees	International Attendees	Training Days International	Units
Armed Forces Medical Examiner	3	0	1	20	1,960
Cardiovascular Path	1	4	0	0	1,160
Cellular Pathology	7	1	1	24	1,536
Center for Advanced Pathology	0	0	0	0	0
Dermatopathology	17	35	1	5	12,200
Environmental & Toxicologic Pathology	3	0	0	0	280
GU Pathology & Nephropathology	7	9	1	21	3,160
Gynecologic & Breast Pathology	8	9	1	19	2,624
Hematopathology	4	0	0	0	2,168
Hepatic & Gastrointestinal Pathology	6	9	1	9	1,768
Infectious Dis, AIDS & Microbiology	0	1	0	0	1,008
Neuropathology & Ophthalmic Pathology	8	15	2	20	5,800
Oral Pathology	1	2	0	0	360
Orthopedic Pathology	2	8	1	19	2,416
Otolaryngic Pathology	0	0	1	14	112
Pulmonary & Mediastinal Pathology	7	13	1	20	4,456
Radiologic Pathology	1	1	0	0	1,184
Scientific Laboratories	0	0	0	0	0
Soft Tissue Pathology	8	8	1	14	1,984
Telepathology	3	0	0	0	352
Veterinary Pathology	10	11	1	2	6,584
SUBTOTAL	96	126	13	187	51,112
TOTAL			**235**	**6,392**	**51,112**

LONG COURSES

	Military Attendees	Civilian Attendees	# of Credits/ Units Offered	Total # of Credits Awarded
Anatomic Pathology	24	70	70	6,580
Basic Sciences ENT	16	12	95	2,660
Neuropathology	4	7	147	1,617
Neuropathology	4	3	147	1,029
Orthopedic Pathology	0	0	0	0
Radiologic Pathology	13	245	0	57,792 u
Radiologic Pathology	8	255	0	63,120 u
Radiologic Pathology	8	246	0	60,960 u
Radiologic Pathology	4	117	0	43,440 u
Radiologic Pathology	11	249	0	60,320 u
SUBTOTAL	92	1,204		
TOTAL		**1,296**		**11,886**

SHORT COURSES

	Military Attendees	Civilian Attendees	# of Credits/ Units Offered	Total # of Credits Awarded
General Neuropathology	0	0	0	0
Developmental and Genetic Disorders	0	1	22	22
Tumors of the Central Nervous System	6	2	24	192
Neurodegenerative Diseases	0	1	12	12
19th Washington Neuroradiology Course	2	74	15.50	1,178
42nd Annual Neuropathology Review	19	133	31	4,712
Neuromuscular Diseases	0	1	22	22
Pathology in the Management of Otorhinolaryngology – Head and Neck Patients	0	5	22.50	112.5
Infectious Diseases of the CNS	0	0	0	0
40th Annual Forensic Identification	57	66	40	4,920
(Dentistry) & Emerging Technologies				
Histopathology Seminars	16	42	24.5	1,421
Update on Renal Biopsies in Medical Renal Diseases	4	29	24	792
Abdominal Imaging Course	3	10	31	403
Patologia Quirurgica Conferencias de Actualizacion y Taller	1	69	20	1,400
17th Annual Forensic Anthropology	20	40	33	1,980
13th Descriptive Veterinary Pathology	15	73	38	3,344
General Neuropathology	1	1	24	24
38th Annual Urological Pathology and Radiology Course	11	42	48.50	2,570
Neurodegenerative Diseases	2	0	12	24
Developmental and Genetic Disorders	2	1	22	66
Infectious Diseases of the CNS	1	1	12	12
Neuroradiology	5	27	36	1,152
Musculosketal Radiology	5	8	37	481
Tumors of the Central Nervous System	0	3	24	72
15th Annual GI Surgical Path &	19	82	21	2,121
Endoscopic Biopsies of the GI Tract				
Vascular Diseases & Trauma	0	3	16	48
25th Annual Hepatopathology: The Interpretation of Liver Biopsies	16	50	31	2,046
Diseases of Muscle	1	3	22	88
33nd Annual Orthopedic Pathology	24	33	43	2,451
Ophthalmic Pathology for Ophthalmologists	18	90	37	3,996
Surgical Oral & Maxillofacial Pathology	2	27	22.50	652.6
Clinical Oral & Maxillofacial Pathology	4	17	7.50	157.5
Basic Forensic Pathology	19	83	38	3,876
Subtotal	**273**	**1,017**	**813**	**40,347.6**
TOTAL		**1,290**		

VIDEOTELECONFERENCES

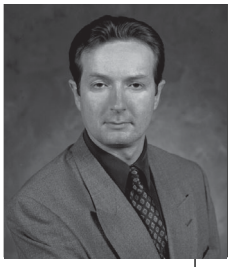
	Federal Attendees	Non Federal & International	Credits/Units
Sudden Cardiac Death	30	0	30
Lymphomas	49	0	49
Renal Tumors	26	0	26
Guide to AFMES	30	0	30
Troubleshooting Histology	21	0	21
Tumors of the Testis	37	0	37
Mushroom Toxicity: The Good, The Bad & The Ugly	20	0	20
Problematic Melanocytic Lesions of the Skin	32	0	32
The Placenta Run Amok: GI Trophoblastic Disease & Related Lesions	21	0	21
Pathology of Lung Tumors	25	0	25
Nodular Lesions of the Kidney: Differential Diagnosis	10	0	10
Telemedicine Projects	0	0	0
Stromal Lesions of Uterus/Ovaries	8	0	8
US Military Cancer Institute	16	0	16
Benign Lesions (Oral Path)	45	0	45
Pitfalls in ENT Part 1	0	0	0
Pitfalls in ENT Part 2	0	0	0
Blood Banking	84	0	84
Internet-Accessible DoD Directory of Public Health Laboratory Services	6	0	6
Pseudosarcomatous Lesions	12	0	12
SART	25	0	25
Fatty Liver Disease	11	0	11
Astrocytic Neoplasms	35	0	35
Total	**543**	**0**	**543**

YEAR-ROUND TRAINING/EDUCATION

	Total Attendees	Credits Offered	Credits/Units Awarded
Legal Medicine Open File	2,844	5	14,220
RTPA Web Conference	570	36	20,520
Weekly Professional Staff Conference	262	1	262
Histopathology Quality Assessment Program	552	17	9,894
Virtual Gastrointestinal Endoscopic Biopsy	15	10	150
Online Urologic Pathology Series	26	10	260
Callender-Binford	12	8	12,056
Total	**4,281**	**87**	**57,362**

TOTAL NUMBER OF ATTENDEES/CREDITS/UNITS

	Attendees	Credits/Units	C/U Awarded
GRAND TOTALS	**7,410**	**1,902**	**110,138.6**



Bruce H. Williams, DVM, DACVP
Chair
Date of Appointment —1 October 1997

DEPARTMENT OF TELEMEDICINE

STAFF

Medical

Bruce H. Williams, DVM, DACVP
Ann M. Nelson, MD

Administrative

Daniel R. Butler, HMC, USN, Systems Administrator
Roderick F. Herring, Senior Technical Support Services Specialist
David Draley, Web Developer
George P. Bessey, YN3, USN, Support Services Specialist
Michele B. Richman, Supervisory Online Publisher/Editor
Manpreet Singh, Online Editor
Bonnie L. Casey, Online Editor
Karma DaCosta, Digital Imaging Specialist
Tom Abrials, Programmer
Stephanie Matulich, Department Administrator

IMPACT

The telemedicine program provides pathology consultation in near- or real-time, impacting at point of care and making significant contributions to patient care. The AFIP's electronic consultation program is the largest of its kind in the world, and the most efficient in terms of case turnaround time and scope of services provided.

Accomplishments in 2004

- The department continued to partner with the WRAMC Department of Pathology, in the management of the Army Telepathology Program (ATP). The ATP is responsible for deployment and operation of 26 dynamic-robotic microscopes at Army MTFs around the world. This technology enables AFIP consultants to operate microscopes at remote sites, allowing the visualization of any field on the slide at any magnification. Real-time systems allow for increased concordance between diagnoses rendered on electronic and traditional consultations. Our staff is responsible for all phases of installation, maintenance, and service of these systems, as well as providing full consultative services and training to users.
- The Department of Telemedicine was renamed the Department of Telemedicine and Distance Learning and was given the additional full-time mission of handling the Institute's distance education. The AFIP currently provides a variety of distance learning opportunities to military and civilian participants through the Internet and via videoteleconferences (VTCs). During 2004, the initial stages of programming for "Ask AFIP™" have been a priority. "Ask AFIP™," which premieres in the summer of 2005, will link the various knowledge bases and collections of case materials and authoritative resources published by AFIP staff (including the 3rd and 4th Series of AFIP/ARP Tumor and Non-Tumor Fascicles) to provide an innovative "just-in-time" educational experience to pathologists, radiologists, and related specialists in the military and civilian medical communities.
- The department completed its conversion of 3 of the AFIP's renowned glass slide conferences (the Vet Path Wednesday Slide Conference, the Histopathology Quality Assessment

Program, and the Registry of Oral and Maxillofacial Pathology), as well as study sets from several AFIP courses (Anatomic Pathology and Genitourinary Pathology). In addition to cutting costs associated with these conferences by over 80%, the new format also streamlines the provision of CME through an account-based section of the website called "Online Pathology Services." In 2005, the HQAP and ROMP conferences will be available exclusively online to participants.

- Members of the department and other staff pathologists at the AFIP partnered with individuals from Image Management Corporation, the National Institute for Science and Technology, and the University of Pittsburgh Medical Center to form a consortium to address the continued problem of image quality in the capture and display of histologic imagery. The CHIIRS (Consortium for Histologic Imagery Interpretability Rating Scales) Image Quality Calculator is a simple, publicly available applet (through the AFIP website) which allows pathologists or histologists of any skill level to objectively grade the quality of a digital histologic image. This rating is based on the 4 most important criteria impacting image quality: overall resolution, focus, illumination, and specimen preparation. The scale ranges from 0 to 10; however, ratings of over 8.0 are reserved for images exceeding today's more commonly used image resolutions (3072 x 2048 pixels or less), which are commonly referred to as virtual slides. A more advanced version of this calculator, which addresses these issues, as well as more complex problems associated with improper microscope/camera operation, will be made available in 2005.

CONSULTATION

Cases	*Completed*
Military	268
Federal	
VA	30
Civilian	128
Total	426

Overall cases increased by 21% over 2003. Average turnaround time for 2004 cases was 2.9 hours, down 0.9% from 2003. These numbers represent a continued focus on militarily relevant missions and improved overall cost-containment for the telemedicine mission. Military cases increased 39% over the previous year, with a primary contribution from the ATP.

EDUCATION

Courses: Department personnel participated in a total of 8 courses.

Online Services: The department provided updates or original design to 22 AFIP websites, provided extensive content to 4 AFIP websites, and e-commerce functionality to 3 AFIP websites. Fourteen editions of the AFIP 3rd and 4th Series of the Tumor and Non-tumor Fascicles were made available to online subscribers of the AFIP's Online Pathology Services.

Presentations

1. March 2004: Herndon, Va, NOVA, "Basic care and diseases of the domestic ferret," BH Williams.
2. April 2004: Washington, DC, Gross Morbid Anatomy of Diseases of Animals, "Macroscopic description in veterinary pathology," BH Williams.
3. April 2004: Las Vegas, Nev, International Ferret Congress, "Emerging infectious diseases in pet ferrets," BH Williams.
4. June 2004: Washington, DC, "Macroscopic and microscopic description in veterinary pathology," BH Williams.
5. June 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "What's new in telemedicine?" BH Williams.
6. September 2004: Washington, DC, AFIP Weekly Professional Staff Conference, "Distance learning at the AFIP," AM Nelson.
7. September 2004: Washington, DC, International Conference on Military Medicine, "The AFIP distance learning activity," AM Nelson.
8. September 2004: Washington, DC, International Conference on Military Medicine, "Telemedicine at the AFIP," BH Williams.
9. October 2004: Brisbane, Australia, International Academy of Pathology Congress,

"Telemedicine symposium – AFIP telemedicine, the future is now," BH Williams.
10. October 2004: Brisbane, Australia, Annual Meeting of the Australian Society of Veterinary Pathology, "Digital imaging," "Pathology of the domestic ferret," BH Williams.
11. November 2004: Orlando, Fla, American College of Veterinary Pathology Annual Meeting, "Pathology of the domestic ferret," "Symposium on digital photography," BH Williams.

RESEARCH

Journal Articles

1. Weinstein RS, Descour MR, Liang C, Barker G, Scott KM, Richter L, Krupinski EA, Bhattacharyya AK, Davis JR, Graham AR, Rennels M, Russum WC, Goodall JF, Zhou P, Olszak AG, Williams BH, Wyant JC, Bartels PH. An array microscope for ultrarapid virtual slide processing and telepathology. Design, fabrication, and validation study. *Hum Pathol*. 2004;35:1303-1314.
2. Jeong W, Noh D, Kwon OD, Williams BH, Park SC, Lee M, Do S, Chung J, Lee G, Yun H, Jeong KS. Calcinosis circumscripta on lingual muscles and dermis in a dog. *J Vet Med Sci*. 2004;66:433-435.

Telemedicine Exhibits

1. USCAP Meeting, Washington DC, March 2004.
2. Association of Military Surgeons of the United States, Denver, Colo, 2004.

Projects: One active research protocol was conducted in the department, Telepathology Consultation at the AFIP, which has resulted in 5 articles on telepathology and digital imaging, and is currently providing raw data for a sixth.

Collaborators

Military/Federal:

1. Department of Pathology, WRAMC: Feasibility study of real-time pathology consultation.
2. NASA: Feasibility study of virtual slides in aerospace research.
3. USUHS: Feasibility of virtual slide study sets in undergraduate education.
4. USUHS: Ferrets as an animal model of E coli-induced hemolytic-uremic syndrome.
5. NCI: Familial testicular cancer: a virtual consensus conference.

Civilian:

1. ARP: Online Fascicles of Tumor Pathology.
2. American Telemedicine Association: Telemedicine Special Interest Working Group.
3. Illumea Corporation: Feasibility study of real-time pathology consultation.
4. Aperio Inc: Feasibility study of virtual slide scanning in consultative practice.
5. Image Management Corporation: Ask AFIP™.
6. Image Management Corporation: Consortium for Histologic Imagery Interpretability Ratings Scales.

International:

1. UICC-TPCC Collaboration Center, Berlin, Germany: WHO second opinion electronic consultation.
2. Danish Veterinary Institute, Aarhus Denmark: Immunophenotyping of ferret lymphoma.

Interdepartmental:

1. AMS: Image-enabled reporting (integration with PIMS).
2. AMS: Online accessioning.
3. Department of Genitourinary Pathology: Familial testicular neoplasia.
4. Department of Medical Education: Virtual slide usage in distributed learning.

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, US/Canadian Academy of Pathology, DR Butler, AM Nelson.
2. October 2004, International Academy of Pathology, BH Williams, DR Butler, AM Nelson.

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

DEPARTMENT OF MOLECULAR PATHOLOGY

STAFF

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

Jeffery K. Taubenberger, MD, PhD, Staff Pathologist
Sabrina M. Campbell, HM1, USN, Medical Technologist
(D) Jessica Dement, BS, ARP, Medical Technologist
Thomas G. Fanning, PhD, Principal Investigator
(D) Raina Lourens, BS, ARP, Research Biologist
(D) Thomas Janczewski, BS, ARP, Research Biologist
(A) Gerry Jin, MS, ARP, Research Biologist
Daisy Johnson, SGT, USA, Medical Technologist
Amy E. Krafft, PhD, MT (ASCP), Medical Technologist
Jack H. Lichy, MD, PhD, Staff Pathologist
Sherman McCall, LTC, MC, USA, Staff Pathologist
Pin-Yu Perera, PhD, ARP, Research Biologist
Jean Przybocki, BS, Medical Technologist
(D) Ann H. Reid, MA, Research Biologist
Zong-Mei Sheng, MD, PhD, ARP, Research Biologist
Mark M. Tsai, MS, Research Biologist
Ruxie Wang, PhD, ARP, Research Biologist

IMPACT

The department performs 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 also collaborate with other CAP departments by performing research using molecular techniques.

In 2004:

- DNA Core sequencing laboratory: A Hubbs generated DNA sequences from 8,000 samples.
- S McCall served as a PROFIS pathologist augmentee to the 520th Theater Army Medical Lab.
- S McCall served as a Certification Instructor, Advanced Trauma Life Support, American College of Surgeons (by invitation only), Ft Sam Houston, Tex.
- S McCall's article, "A higher form of killing" (in press in the Proceedings of the United States Naval Institute, February 2005), has been assigned as required reading at the US Military Academy, West Point, Law of War for Commanders (Law 474) course.
- JK Taubenberger was named a finalist in the Frank Brown Berry Prize in Federal Medicine.

CONSULTATION

Cases	*Completed*
Military	14,780
Federal	1
VA	15
Civilian	27
Interdepartmental	325
Total	15,148

The Molecular Diagnostics Laboratory received 15,148 cases in consultation in 2004 (a 306% increase from 2003). Of these, 98% were primary molecular genetic consults from the **US military**. The remaining cases were received from 18 CAP departments and from direct consults from other institutions. On average, 1.1 different tests were requested per case. This resulted in 16,213 separate molecular pathology assays completed in 2004.

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) EWS/FLI-1, t(11;22) EWS/WT1; 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, adenovirus, hepatitis C virus, morbilliviruses (human measles virus, canine distemper virus, dolphin morbillivirus, porpoise morbillivirus), *Pneumocystis carinii*, *Toxoplasma gondii*, *varicella zoster virus*.
4. Genetic tests: Hemochromatosis, factor V (Leiden) and prothrombin mutation assays, cystic fibrosis mutation screening.
5. Mitochondrial gene mutations: This panel of tests includes assays for the following point mutations, listed with their associated disease entities: 8344G (MERRF); 8356C (MERRF); 3243G (MELAS); 3271C or del (MELAS); 8993G or C (NARP); 11778A (LHON); 15257A (LHON); 3460A (LHON); and 14484C (LHON). In addition, a genomic Southern blot is performed to detect mitochondrial deletions associated with Kearns-Sayre syndrome.

Dr. Lichy, Dr. McCall, and Dr. Taubenberger participated in sign-out of molecular genetic and surgical pathology cases.

EDUCATION

Courses: Department staff participated in 1 non-AFIP course and 1 AFIP course in 2004.

Trainees: Department staff trained 11 individuals for a total of 220 training days.

Category	*No.*	*Training days*
Pathology residents	9	180
Students	2	40
Total	11	220

Pathology residents from the combined Walter Reed/Bethesda residency program received one-month rotations in molecular genetic pathology. Dr. Taubenberger mentored 2 summer students on a research project.

Faculty Appointments

1. Howard University Medical School, Washington, DC, Departments of Pathology and Genetics, Adjunct Faculty, JH Lichy.
2. Howard University Medical School, Washington, DC, Department of Pathology, Adjunct Faculty, JK Taubenberger.
3. Virginia Commonwealth University, Medical College of Virginia, Richmond, Va, Department of Anatomy, Adjunct Faculty, JK Taubenberger.
4. National Cancer Institute, Bethesda, Md, Laboratory of Pathology, Consultant, JK

Taubenberger.
5. USUHS, Assistant Adjunct Professor of Pathology, S McCall.

Presentations

1. January 2004: New York, NY, Aaron Diamond AIDS Research Center/Rockefeller University, "Characterization of the 1918 'Spanish' influenza and lessons for the future," JK Taubenberger.
2. February 2004: New York, NY, Department of Microbiology, Mt. Sinai School of Medicine, "Update on the 1918 influenza," JK Taubenberger.
3. February 2004: New York, NY, Rockefeller University, DARPA-Sponsored Advisory Conference on Genetically Engineered Viruses, "The 1918 'Spanish' influenza," JK Taubenberger.
4. February 2004: Bethesda, Md, USUHS, "Molecular diagnostics in clinical medicine," JH Lichy.
5. February 2004: Washington, DC, HHS Secretary's Advisory Panel on Influenza Vaccines, "The 1918 influenza virus," JK Taubenberger.
6. March 2004: Atlanta, Ga, International Conference on Emerging Infectious Diseases, "Update on the 1918 influenza virus," JK Taubenberger.
7. March 2004: Atlanta, Ga, International Conference on Emerging Infectious Diseases, "Evaluation of RT-PCR testing for influenza A/B on ambient temperature specimens," A Hawksworth, L Daum, J Conolly, J Gaydos, K Russell, S McCall, JK Taubenberger, GW Bush, AE Krafft.
8. March 2004: Galveston, Tex, University of Texas Medical Branch, Robert Shope Memorial Meeting on Emerging Infectious Diseases, "Update on the 1918 influenza virus," JK Taubenberger.
9. March 2004: San Francisco, Calif, US/Japan Respiratory Viral Meeting, "Update on the 1918 influenza virus," JK Taubenberger.
10. March 2004: San Francisco, Calif, US/Russia Influenza Meeting, "Update on the 1918 influenza virus," JK Taubenberger.
11. March 2004: Rockville, Md, Training Course in Genetic Counseling to Military Genetic Counselors and Nurses, "Laboratory aspects of genetic testing, AFIP," JH Lichy.
12. April 2004: Rockville, Md, University of Maryland University College, Epidemiology of Emerging Infectious Diseases Course, "Epidemiology of influenza," AE Krafft.
13. May 2004: Manassas, Va, George Mason University, "Characterization of the 1918 'Spanish' influenza and lessons for the future," JK Taubenberger.
14. May 2004: Bethesda, Md, AFIP Annual Review of Anatomic Pathology, "Molecular pathology of neoplasia," JH Lichy.
15. May 2004: Bethesda, Md, AFIP Annual Review of Anatomic Pathology, "Molecular pathology of infectious diseases," JH Lichy.
16. May 2004: Rockville, Md, Training Course in Genetic Counseling to Military Genetic Counselors and Nurses, "Laboratory aspects of genetic testing, AFIP," JH Lichy.
17. June 2004: Baltimore, Md, Johns Hopkins University, "Molecular pathology: past, present, and future," JH Lichy.
18. June 2004: Washington, DC, National Academy of Sciences, Institute of Medicine Forum on Microbiology – Pandemic Influenza Meeting, "Chasing the elusive virus: preparing for the future by examining the past," JK Taubenberger.
19. August 2004: Baltimore, Md, Association of Medical Laboratory Immunologists Annual Meeting, "The 1918 'Spanish' influenza virus," JK Taubenberger.
20. August 2004: Denali, Alaska, Denali Biomedical Research Workshop, "Characterization of the 1918 'Spanish' influenza and lessons for the future," JK Taubenberger.
21. September 2004: Washington, DC, 16th Annual International Genome Sequence and Analysis Conference, "Chasing the elusive virus: preparing for the future by examining the past," JK Taubenberger.
22. October 2004: Bethesda, Md, NIH Influenza Interest Group Meeting, "Characterizing the 1918 influenza virus," JK Taubenberger.
23. November 2004: Rockville, Md, Institute for Genomic Research, "Influenza genomics: the 1918 influenza and planning for the future," JK Taubenberger.

RESEARCH

Journal Articles

1. Bijwaard KE, Lichy JH. Determination of cyclin d1 expression by quantitative real-time, reverse-transcriptase polymerase chain reaction. *Methods Mol Med*. 2004;97:277-295.

2. De Marchis L, Cropp C, Sheng ZM, Bargo S, Callahan R. Candidate target genes for loss of heterozygosity on human chromosome 17q21. *Br J Cancer*. 2004;90:2384-2389.
3. Kash JC, Basler CF, Garcia-Sastre A, Carter V, Billharz R, Swayne DE, Przygodzki RM, Taubenberger JK, Katze MG, Tumpey TM. The global host immune response: contribution of hemagglutinin and neuraminidase genes from the 1918 Spanish influenza to viral pathogenesis. *J Virol*. 2004;78:9499-9511.
4. Reid AH, Fanning TG, Taubenberger JK. Evidence of an absence: analysis of the 1918 influenza virus suggests that some of its genes may have come from a currently unknown host. *Nat Rev Microbiol*. 2004;2:909-914.
5. Reid AH, Fanning TG, Janczewski TA, Lourens R, Taubenberger JK. Novel origin of the 1918 pandemic influenza virus nucleoprotein gene segment. *J Virol*. 2004;78:12462-12470.
6. Stevens J, Corper AL, Basler CF, Taubenberger JK, Palese P, Wilson IA. Structure of human H1 hemagglutinin precursor from the extinct 1918 influenza virus. *Science*. 2004;303:1866-1870. Epub 2004 Feb 5.
7. Taubenberger JK, Reid AH, Fanning TG. Revealing a killer flu virus. *Sci Am*. 2004;292:62-71.
8. Tumpey TM, García-Sastre A, Taubenberger JK, Palese P, Swayne DE, Basler CF. Pathogenicity and immunogenicity of influenza viruses with genes from the 1918 pandemic virus. *Proc Natl Acad Sci U S A*. 2004;101:3166-3171. Epub 2004 Feb 12.
9. Wu X, Zhu D, Jiang X, Okagaki P, Mearow K, Zhu G, McCall S, Banaudha K, Lipsky RH, Marini AM. AMPA protects cultured neurons against glutamate excitotoxicity through a phosphatidylinositol 3-kinase-dependent activation in extracellular signal-regulated kinase to upregulate BDNF gene expression. *J Neurochem*. 2004;90:807-818.

Abstracts

1. Krafft A, Przybocki J, Dement J, Campbell S, Johnson D, Lichy J. Time-motion analysis of six CFTR mutation systems. 2004 Association for Molecular Pathology Meeting, November 11-13, Los Angeles, Calif.
2. Osuna M, Gratwick K, Freed N, Krafft A, Hawksworth A, Metzgar D, Russell K. Evaluation of a PCR-based methodology for detection of influenza and adenovirus from ambient temperature specimens. 7th Annual Force Health Protection Conference, August 9-12, Albuquerque, NM.
3. Wang R, Izon DJ, Taubenberger JK. Three Notch signal receptor genes (Notch 1, 2, 3) are developmentally regulated in CD4(-)CD8(-) double negative thymocytes. 44th Annual American Society for Cell Biology Meeting, Washington, DC, December 2004.

Projects: Department staff were principal investigators on 8 AFIP research protocols, open as of December 31, 2004:

1. Comparison of 3 ST5 gene products in tumors, Q Liang.
2. Experimental measurements of blast trauma, S McCall.
3. Human ST5 gene in signal tranduction and carcinogenesis, JH Lichy.
4. Identification of influenza strains by molecular genetic techniques, JK Taubenberger.
5. Identification of the source of the 1918 influenza A strain by RT-PCR, JK Taubenberger.
6. Monitoring the response to cancer vaccines, JH Lichy.
7. Serial analysis of gene expression (SAGE), Z-M Sheng.
8. Serial analysis of gene expression, JK Taubenberger.

Non-AFIP Research Funds Received

1. The human ST5 gene in signal transduction and cancer, $127,000, NIH.
2. Inducible siRNA vectors for analyzing signal transduction in breast cancer cells, $75,000 USARMDC.
3. Genetic characterization of the 1918 “Spanish” influenza virus, $175,000, NIH.
4. Viral and host cDNA libraries from 1918 influenza cases, $222,640, NIH.

Collaborators

Military/Federal:

1. Tony Beugelsdijk, PhD, Los Alamos National Laboratory, Los Alamos, NM.
2. Nancy Cox, PhD, CDC, Atlanta, Ga.
3. Joseph Esposito, PhD, CDC, Atlanta, Ga.
4. David Gillespie, MD, Department of Cardiovascular Surgery, WRAMC, Washington, DC.
5. J. Silvio Gutkind, PhD, NIH, Bethesda, Md.
6. Kevin Holmes, PhD, National Institute of Allergy and Infectious Diseases, NIH, Bethesda, Md.

7. Peter Jahrling, PhD, USAMRIID, Ft Detrick, Md.
8. Ann Marini, MD, PhD, Department of Neurology, USUHS, Bethesda, Md.
9. Constance T. Noguchi, PhD, Laboratory of Chemical Biology, NIH, Bethesda, Md.
10. George Peoples, MD, Department of Surgery, WRAMC, Washington, DC.
11. Steve Rick, PhD, NCI, Frederick, Md.
12. David Swayne, DVM, PhD, US Department of Agriculture, Athens, Ga.
13. Sherif Zaki, MD, CDC, Atlanta, Ga.

Civilian:

1. David Izon, PhD, University of Pennsylvania, Philadelphia, Penn.
2. Darlene Ketten, PhD, Woods Hole Oceanographic Institute, Woods Hole, Mass.
3. Kenneth W. Kinzler, MD, Johns Hopkins Oncology Center, Molecular Genetics Laboratory, Baltimore, Md.
4. Scott Layne, MD, University of California at Los Angeles.
5. Sherry Li, MD, Department of Pathology, Columbia University College of Physicians and Surgeons, New York, NY.
6. Peter Palese, PhD, Department of Microbiology, Mt. Sinai School of Medicine, New York, NY.
7. Susan Ropp, PhD, South Dakota State University, Brookings, SD.
8. Adolfo Garcia-Sastre, PhD, Department of Microbiology, Mt. Sinai School of Medicine, New York, NY.
9. Xio Shu, PhD, University of South Carolina Medical School.
10. Richard Slemons, DVM, PhD, Department of Pathology, Ohio State University School of Veterinary Medicine, Columbus, Ohio.

International:

1. Ian Brown, PhD, Weybridge Veterinary Laboratories Agency, Weybridge, Addlestone, UK.
2. Tomayoshi Hayashi, MD, PhD, Department of Pathology, Nagasaki University Hospital, Nagasaki, Japan.
3. Stephan Krus, MD, PhD, Department of Pathology, Warsaw Medical Academy, Warsaw, Poland.
4. John Oxford, PhD, London Hospital, London, UK.
5. Roman Pykalo, MD, PhD, Department of Pathology, Warsaw Medical Academy, Warsaw, Poland.

Interdepartmental:

1. Department of Cardiovascular Pathology: Research on role of infectious agents in atherosclerotic plaques and cardiomyopathies.
2. Department of Hematopathology: Molecular genetic changes in lymphomas.
3. Department of Hepatic and Gastrointestinal Pathology, Division of Hepatic Pathology: Ras in vascular liver tumors, analysis of gene rearrangement status in inflammatory liver disease.
4. Department of Pulmonary and Mediastinal Pathology: Molecular genetic changes in lung tumors.
5. Department of Soft Tissue Pathology: KIT mutations in gastrointestinal tumors, and evaluation of t(X;18) translocations in synovial sarcomas.
6. Department of Veterinary Pathology: Molecular characterization of marine mammal morbilliviruses and papillomaviruses.

PROFESSIONAL ACTIVITIES

1. Science Fair Judge - Young Investigator Award Judge, 2004 Association for Molecular Pathology Meeting, Los Angeles, Calif, AE Krafft.
2. Initial Biology Reader, Siemens Westinghouse Competition 2004 Math, Science, Technology, Princeton, NJ, AE Krafft.
3. Biochemistry Chair, Northern Virginia Science and Engineering Regional Fair, Arlington, Va, AE Krafft.
4. Botany Team Leader, Yorktown High School Science Fair, Arlington, Va.
5. Consulting Pathologist, Laboratory of Pathology, National Cancer Institute, NIH, JK Taubenberger.
6. Member, Scientific Review Committee of US Military Cancer Institute, USUHS, JH Lichy.

7. Tri-Service Genetics Consolidation Committee, JH Lichy.
8. Scientific Review, US/Israel Binational Agricultural Research and Development Fund, AE Krafft.

Official Trips

1. November 2004, Association of Molecular Pathology Annual Meeting, Los Angeles, Calif, JH Lichy, AE Krafft.
2. December 2004, American Society of Cell Biology Meeting, Washington, DC, R Wang.

Manuscripts Reviewed

1. *American Journal of Pathology* (4)
2. *Cancer* (4)
3. *Cancer Research* (4)
4. *International Journal of Cancer* (1)
5. *Biotechniques* (1)
6. *Journal of Virology* (5)
7. *New England Journal of Medicine* (1)
8. *Oncogene* (1)
9. *Science* (3)
10. *Virology* (3)
11. *Clinical Chemistry* (1)
12. *Journal of Molecular Diagnostics* (4)
13. *Molecular Diagnosis (1)*

Glenn D. Sandberg, LTC, MC, USA
Chair
Date of Appointment — October 2001

DEPARTMENT OF SCIENTIFIC LABORATORIES

STAFF

Professional/Scientific

Glenn D. Sandberg, LTC, MC, USA,
ChairWei-Sing Chu, MD, PhD, Chief, Immunohistochemistry

Administrative/Technical

Arnicia E. Downing, Chief, Scientific Labs
Efrain Perez-Rosario, Chief, Electron Microscopy Lab

IMPACT

The Department of Scientific Laboratories provides technical, consultative, and scientific services to the AFIP, 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 and designed to ensure the highest medical and investigative science.

The department comprises 14 divisions:

1. Acquisitions Lab
2. Grossing Lab
3. Microtomy Lab
4. Special Stains Lab
5. General Immunohistochemistry Lab
6. Special Immunohistochemistry Lab
7. Hematopathology Lab
8. Genitourinary Lab
9. Neuromuscular Lab
10. Controls Lab
11. Electron Microscopy Lab
12. Tri-Service School of Histotechnology
13. Research and Development Lab
14. Glassware

Deployments: All military histotechnologists rotated on a routine basis to the Dover Port Mortuary in support of the OAFME's operational missions.

Arnicia E. Downing
Laboratory Chief
Date of Appointment — 23 September 1991

HISTOPATHOLOGY LABORATORIES

STAFF

Rosanna Bailey, DAC, Histopathology Technician
George Barbour, HM1, Histopathology Technician
Betty Beal, VAMC, Histopathology Technician
Mildred Benton, ARP, Histopathology TechnicianFreda Blake, VA, Histopathology Technician
(D) Todd Brown, SGT, USA, Histopathology Technician
Robert Calvo, HM2, USN, Histopathology Technician
Mel Castro, DAC, Histopathology Technician
(D) Timothy Davidson, USAF, Histopathology Technician
Mary Dyson, ARP, Histopathology Technician
(D) Monte Grace, HM2, Histopathology Technician
Zahaitu Harvey, ARP, Histopathology Technician
Francine Hincherick, DAC, Histopathology Technician
Shirley V. Horton, ARP, Histopathology Technician
Brian Johnson, SSgt, USAF, Histopathology Technician
Ingrid Jones, DAC, Histopathology Technician
Clementine Kelson, ARP, Histopathology Technician
Wanda King, ARP, Histopathology Technician
Langston Lim, ARP, Histopathology Technician
Charles Lattany, SSgt, Superintendent, Tri-Service School
Wilbur Maravilla, ARP, Histopathology Technician
Alejandro Morales, HM1, Histopathology Technician
Debra A. McElroy, DAC, Quality Assurance Supervisor
Warren McNeil, DAC, Histopathology Technician
Myra Miller, DAC, Histopathology Technician
Barbara Norfleet, DAC, Histopathology Technician
Oliver Onyebuchykwu, ARP, Histopathology Technician
Verna Pinkett, DAC, Histopathology Technician
Michael Proctor, DAC, Histopathology Technician
Juanita Rogers, ARP, Histopathology Technicia
Joseph Rosamont, VA, Histopathology Technician
Blair Slaughter, ARP, Histopathology Technician
Blondell Smith, DAC, Histopathology Technician
(D) Paul Smith, ARP, Histopathology Technician
(D) Michael Taylor, USAF, Histopathology Technician
Stacey Tamer, ARP, Histopathology Technician
Michael Vick, HM2, USN, Histopathology Technician
Julia Wilson, DAC, Program Director
Robert Wilson, DAC, Histopathology Technician
Raheema Al-Baqi, VA, Acquisitions Supervisor
(A) Nawere Haque, ARP, Data Entry Technician
(A) Rick Figueroa, SSgt, USAF, Histopathology Technician
(A) Quentin Nick, SPC, USA, Histopathology Technician
(A) Linda Savoff, SSgt, USAF, Histopathology Technician
(A) Rafael Tirado, SRA, USAF, Histopathology Technician
(A) Richard Stapp, PVT, USA, Histopathology Technician
(A) Kelli Davidson, ARP, Histopathology Technician

(A) Tameka Newford, HM2, USN, Histopathology Technician
(A) Sylvia Cordero, SRA, USAF, Histopathology Technician
(A) John Stokes, SGT, USA, Histopathology Technician
Artie Walker, SPC, USA, Histopathology Technician
Min-Qi Wei, ARP, Histopathology Technician
Lin Xi, ARP, Histopathology Technician
Frank Avallone, DAC, Histopathology Technician
Rex Hartzoge, DAC, Histopathology Technician
Ives Valenzuela, DAC, Histopathology Technician
Muhammed Waheed, ARP, Histopathology Technician
Elizabeth Harvell, ARP, Glassware Technician

IMPACT

The Histopathology Laboratories provide histotechnical support and expertise to the pathology departments of the AFIP, and training in histotechniques to visiting professionals and technologists. To insure that the laboratories are capable of fully meeting their mission, every aspect of laboratory operations is inspected by CAP representatives.

In 2004, 21,558 cases consisting of 30,064 work orders were completed, requiring the following procedures and special stains:

Blocks cut	89,076
Slides cut	268,510
H&E stains	73,275
Special stains	30,126
Unstained	100,772
Immunostained	64,337
Orthopedic plastics	34
Slide repairs	87
Decals	340
X-rays	57

EDUCATION

Presentations and Courses

- Histopathology Seminar: 58 attendees. This course serves as a review for histotechnologists preparing to take the ASCP certification examination. Topics covered in the course include techniques for the proper preparation of renal biopsies and troubleshooting procedures in special stains, immunohistochemistry, tissue processing, and microtomy.
- Laboratory staff presented 60 didactic hours to participants in the Tri-Service School of Histotechnology course.
- Several staff members lectured at state and regional professional meetings.
- Division staff made presentations at Weekly Professional Staff Conferences.

Training: Departmental staff provided visiting pathologists and technologists with over 1,200 hours of training in a variety of laboratory techniques, including eye histotechnology, special staining methods for infectious organisms, and Warthin-Starry procedures for melanin and bacteria. Orientation and advanced training were provided to 6 civilians and 25 incoming military personnel.

RESEARCH

Online Publication

Chu WS, Furusato B, Wong K, Sesterhenn I, Mostofi F, Wei MQ, Zhu Z, Abbondanzo S, Liang Q. Ultrasound-accelerated formalin fixation of tissue improves morphology, antigen and mRNA preservation. *Mod Pathol*. 2004; Dec 17:Epub ahead of print.

Projects

Our laboratories provided technical support for all approved research projects. Cost estimates are now prepared based on CAP's workload unit costs, which include technician time, materials, and equipment.

In 2004, 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.

Charles Lattany III, SSgt, USAF
Course Superintendent
Date of Appointment – September 1996

Julia Wilson, BS, HT (ASCP)
Program Director
Date of Appointment – March 1997

TRI-SERVICE SCHOOL OF HISTOTECHNOLOGY

STAFF

George Barbour, HM1, USNLPOIC of Student Training
Ingrid Jones, BS, BA Instructor

IMPACT

The Tri-Service School of Histotechnology is the only military histopathology training program. It provides formal training to military and civilian students in the technical operations of anatomic pathology, as applied to the histopathology laboratory and postmortem procedures.

The histology school convened 2 classes in 2004, both consisting of 180 training days. Training includes instruction in the theory and application of histotechnology and practical training in fixation, processing, embedding, microtomy, and staining of tissue specimens, microscopic tissue identification and assistance in postmortem examination. Practical training includes clinical rotations in a variety of AFIP and affiliated military laboratories.

The course is administered by the Department of Scientific Laboratories, and is coordinated through the School of Health Care Science at Sheppard AFB, Texas, and the Naval School of Health Sciences at the National Naval Medical Center, Bethesda, Md. Affiliates also include the Department of Anatomic Pathology, WRAMC; the Department of Anatomic Pathology, NNMC; and the Department of Anatomic Pathology, Malcolm Grow Medical Center, Andrews AFB.

The Tri-Service School of Histotechnology is accredited by the National Accrediting Agency of Clinical Laboratory Sciences (NAACLS). NAACLS is sponsored by the American Society of Clinical Pathology (ASCP) and the American Society for Clinical Laboratory Science. The National Society of Histotechnology is a participant of NAACLS.

Graduates of the Tri-Service School of Histotechnology are awarded certificates and AFSC 4T032 (Air Force) and NEC 8503 (Navy) classification codes. Army members are also trained, but there is currently no histotechnician career field classification. Graduates are eligible to apply to take the ASCP, HT certification examination.

Workload Completed

Blocks	1,598
H&Es	1,715
Specials	124
Unstained	479
Immuno	156
Total slides	2,331
Controls	1,033

EDUCATION

Presentations

1. March 2004: Washington, DC, AFIP Monthly VTC, "Histology troubleshooting," CA Lattany.
2. March-April 2004: Bethesda, Md, Annual Histopathology Seminar presentations, J Wilson (Course Director), CA Lattany.

Students Trained in 2004

Navy 6
Air Force 18
Civilian ..... …4

ELECTRON MICROSCOPY LABORATORY

Efrain Perez-Rosario
Chief
Date of Appointment – August 1991

IMPACT

The EM lab provides technical and scientific services to the departments of the AFIP, supporting the professional staff in consultation, research, and education using advanced technology in transmission electron microscopy (TEM).

We have 2 high-resolution (ZEISS-10A) electron microscopes, one of which is equipped with a state-of-the-art digital photography system.

Transmission Electron Microscopy

Work orders completed 491
Total blocks cut 2,169
Total grids cut 2,474
Total pre and post slides cut 2,169
Total prints made 9,276
Total microscope usage ..... 80.5 hrs

IMMUNOHISTOCHEMISTRY LABORATORY

Wei-Sing Chu, MD, PhD
Chie
fDate of Appointment — September 2003

STAFF

Administrative/Technical

Rosanna Bailey, DAC, Supervisor, General Immunohistochemistry
Wanda King, ARP, Supervisor, Special Immunohistochemistry
Min Qi, ARP, Supervisor, Hematopathology
Frank Avallone, DAC, Histopathology Technician

IMPACT

We provide 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.

Work Load Completed

General Immunohistochemistry
- Cases 6,135
- Work orders 7,357
- Slides stained 11,828

Special Immunohistochemistry
- Cases 1,552
- Work orders 1,673
- Slides stained 2,726

Hematopathology Laboratory
- Cases 3,604
- Work orders 4,328
- Slides stained 19,177

Genitourinary Laboratory
- Cases 2,844
- Work orders 3,157
- Slides stained 2,044

NEUROMUSCULAR LABORATORY

Valenzuela Ives
Supervisor
Date of Appointment — January 2003

Workload Completed

- Cases 493
- Work orders 715
- Frozen specimens 436
- Formalin-fixed specimens 441
- Slides stained 6,739
- Glutaraldehyde-fixed specimens 463
- EM blocks embedded 3,527
- EM blocks cut 962

ACQUISITIONS LABORATORY

Raheema Al-Baqi
Supervisor
Date of Appointment — January 2003

Workload Completed

- Work orders 30,064

GROSSING LABORATORY

Warren McNeil
Supervisor
Date of Appointment — January 2003

Workload Completed

Wet tissue specimens processed 8,188

GLASSWARE

Elizabeth Harvell
Supervisor
Date of Appointment — January 2003

Workload Completed

Glassware items processed 67,200

Kelly K. Koeller, CAPT, MC, USN
Chair
Date of Appointment — 8 January 2001

DEPARTMENT OF RADIOLOGIC PATHOLOGY

STAFF

Medical

(A) Lynn K. Arcara, MD, Junior Scientist, Musculoskeletal Radiology, ARP
Geoffrey A. Agrons, MD, Chief, Pediatric Radiology, Contract Employee
Aletta A. Frazier, MD, Physician Medical Illustrator, ARP
Jeffrey R. Galvin, MD, Chief, Pulmonary and Mediastinal Radiology, ARP
Leonard M. Glassman, MD, FACR, Chief, Mammography, MOU-Washington Radiology Associates, PC
Kelly K. Koeller, CAPT, MC, USN, FACR, Chair and Chief, Neuroradiology
Angela D. Levy, LTC, MC, USA, Associate Chair and Chief, Gastrointestinal Radiology
(D) John F. Carroll, MD, Junior Scientist, Musculoskeletal Radiology, ARP
Mark D. Murphey, MD, Chief, Musculoskeletal Radiology, ARP
(A,D) Thomas L. Pope Jr, MD, FACR, Distinguished Scientist, ARP
Paula J. Woodward, MD, Chief, Genitourinary Radiology, ARP

Administrative

(D) Lewis S. Davis, HM1 (FMF) USN, NCOIC, Weekend Course Coordinator
Adahlia M. Glover, Case Manager, ARP
(A) Monte Grace, HM2 (FMF), USN, NCOIC, 6-Week Course
Donald F. Hatley, HM1 (FMF), USN, NCOIC, Administrative Support
Sharon Holquin, Archivist, ARP
Jessica Holquin, Digitization Specialist, ARP
Ingrid Jenkins, Administrative Assistant, ARP
Kathy M. Rahimly, Case Manager, ARP, Part-time
Anika Torruella, Editorial Assistant, ARP
Alethia B. West, Case Management Supervisor, ARP
Carl D. Williams, 6-Week Course Coordinator and Categorical Course Coordinator, ARP
Ben Yohannes, Systems Manager, Contract Employee

IMPACT

In 2004, department staff made significant contributions to the education of military and civilian radiology residents and radiologists worldwide, utilizing radiologic-pathologic correlation, and to a wide range of military activities affiliated with the AFIP.

- The department's world-renowned educational program, the 6-week radiologic-pathologic correlation course, was held 5 times with nearly 1,200 radiology residents in attendance. Diagnostic radiology residents from all 190 US residency programs participated in this didactic educational program. With no substantial federal assistance, this financially independent course is the sole source for all of the department's non-military salaries, equipment, and expenditures, and generated revenues of nearly $2M.
- The course provided over 1,200 new cases to the nearly 37,000 cases held in the department's archives of radiologic-pathologic correlation. This valuable and unique

repository is the basis for all of the research conducted by our faculty, leading to 15 peer-reviewed articles and more than 700 lectures presented in numerous radiological science symposia.

- The third edition of the 6-week course's syllabus was released for public sale in July 2004 and represented a major expansion of this text, with captions for all figures and fully developed references for all lectures. The book was enthusiastically received and, complemented by the release of the department's first electronic newsletter, *The RadPath Luminary*, effected a 3-fold increase in sales and revenue compared to prior editions.
- In November, the department achieved a breakthrough in electronic education with the introduction of a Web-based educational program that complements the instruction provided in the 6-week course. This on-line program, "Ask RadPath," combines case material and text information on specific cases acquired in the 6-week course with an interactive platform that allows efficient and timely review of a wide variety of topics as well as self-assessment for the user. Representatives from all of the major radiological societies and program directors nationwide applauded the achievement of this long-sought and hard-won milestone for the department.
- The department's military contingent led implementation and integration of the first widespread use of computed tomographic (CT) studies in the evaluation of fallen service members and other remains at the Dover Air Force Base Mortuary (DAFBM). Direct evaluation of imaging studies in other cases emanating from the OAFME was also provided by the department's military and civilian radiologists. In December, installation of an essential imaging workstation took place in the department and will allow the transmission of CT and digital radiologic images from DAFBM to department staff located at the AFIP.

CONSULTATION

The department conducts only intramural radiologic consultation. In 2004, consultation was provided on 1,202 class cases (contributed by residents attending the Radiologic Pathology Correlation Courses) and 284 cases submitted by various AFIP pathology departments.

Military members of the department provided radiologic consultation in conjunction with activities at DAFBM:

1. Monthly administrative meeting for installation of CT scanner (May to December), AD Levy.
2. Operation Iraqi Freedom, Virtual CT Autopsy Project (5 sessions), AD Levy, KK Koeller.

EDUCATION

AFIP Radiologic Pathology Courses

- 6-Week Radiologic Pathology Course: 5 courses in 2004 were attended by 1,170 radiology residents (45 federal, 1,125 nonfederal). Approximately 137 man-days of training were provided. The course remains subscribed nearly 2 years in advance and is attended by virtually all civilian and military residents from every US diagnostic radiology residency program. One hundred ninety-four residents from other countries also attended. The Radiologic Pathology Course is also offered to radiologists who have completed their training. A complete list of lectures provided by department staff is in the section on Presentations.
- 1-week categorical courses (held within the 6-Week Radiologic Pathology Course): A total of 3 courses (Abdominal Imaging, Neuroradiology, and Musculoskeletal Radiology) offered 93 CME credit hours and were attended by 61 health professionals, who earned a total of 1,877 CME credit hours.

Course	*Enrollment*	*CME credit hours*
Abdominal Imaging	12	364
Neuroradiology	33	1,001
Musculoskeletal Radiology	16	512

- Weekend courses: One course was provided. A total of 71 health professionals attended for a total of 142 attendee-days and 15.5 hours of CME credit.

Course	*Enrollment*	*CME credit hours*
Neuroradiology-Washington	71	1,101

AFIP Courses in Collaboration with Foreign Radiological Societies

The department provided the curriculum and faculty for 3 international short courses held in Spain, Austria, and Portugal, sponsored by the radiological societies in these locales, in association with the AFIP and the ARP. Members of the department were also featured in specific sections within the course curricula of several major international radiological symposia in Brazil, Japan, France, and Canada. 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 it is expected that these will continue on an annual basis. A complete list of lectures provided by department staff is in the section on Presentations.

Courses in Collaboration with Other AFIP Departments

Department staff provided lectures in courses hosted by Neuropathology and Genitourinary Pathology.

Trainees: Junior Scientists begin a one-year post-residency in graduate medical education in selected subspecialty areas of radiology. The department provided this training to 2 radiologists in the musculoskeletal radiology section under the direction of the section chief, MD Murphey, in 2004. John F. Carroll, MD completed his Junior Scientist year in June 2004 and Lynn K. Arcara, MD, began her Junior Scientist year in July 2004. In addition, research assistants may collaborate on specific projects with the department's medical staff. Dr. Jordi Rimola, a fourth-year radiology resident sponsored by Fundación XIII Congresso Internacional de Radiologia and Sociedad Espanola de Radiologia (SERAM) in Spain, collaborated with AD Levy, section chief of Gastrointestinal Radiology, on selected projects.

Faculty Appointments

GA Agrons:
Clinical Assistant Professor of Radiology, University of Pennsylvania School of Medicine, Philadelphia, Penn.

AA Frazier:
Clinical Assistant Professor, Department of Radiology, University of Maryland Medical System.

JR Galvin:
Clinical Professor with tenure, Departments of Radiology and Internal Medicine, University of Maryland Medical System.

LM Glassman:
Clinical Professor, Department of Radiology, George Washington University School of Medicine.

Clinical Professor, Department of Radiology, Georgetown University School of Medicine.

KK Koeller:
Associate Professor of Radiology and Radiological Sciences, USUHS.

AD Levy:
Department of Radiology, WRAMC.

Associate Professor of Radiology and Radiological Sciences, USUHS.

MD Murphey:
Associate Professor, Radiology and Radiological Sciences, USUHS.

Clinical Professor, Department of Radiology, University of Maryland School of Medicine.

PJ Woodward:
Clinical Associate Professor of Radiology, University of Maryland School of Medicine.

Adjunct Professor of Radiology, Adjunct Assistant Professor of Obstetrics and Gynecology, University of Utah School of Medicine.

Presentations

Department staff provided 701 presentations during 2004, with 515 occurring within the department's 6-week radiologic pathologic correlation course and 55 in support of other courses produced by the department. Faculty members participated as visiting professors for 11 different academic institutions (39 lectures), made 17 contributions to 3 courses hosted by

other AFIP departments, and delivered 109 presentations in other venues.

The following lectures were provided by Department of Radiologic Pathology staff in the 6-week Radiologic Pathology Course held 5 times in 2004:

GA Agrons:
- Acute Gastrointestinal Disorders in Neonates
- Acute Gastrointestinal Disorders in Infants and Children
- Adrenal Tumors of Childhood
- Congenital Diseases of the Thorax
- Pediatric Cystic Renal Diseases
- Radiologic Aspects of Cystic Fibrosis
- Renal Tumors of Infancy and Early Childhood
- Lung Disease in Neonates: Radiologic-Pathologic Correlation
- Urinary Tract Infection in Children

AA Frazier:
- Pulmonary Metastases
- Pulmonary Hypertension

JR Galvin:
- Airways Disease: The Movement from Anatomic to Physiologic Assessment (Part I)
- Airways Disease: The Movement from Anatomic to Physiologic Assessment (Part II)
- Angiitis and Granulomatosis
- Approach to Diffuse Lung Disease: Sarcoidosis
- Bronchogenic Carcinoma: Radiologic-Pathologic Correlation
- Diagnosis of Pulmonary Embolism
- Fungal Disease in the Thorax: Opportunistic and Primary Pathogens
- Idiopathic Interstitial Pneumonias
- Inhalational Lung Disease (Asbestosis and Silicosis)
- Pulmonary Complications of Bone Marrow Transplant
- Pulmonary Lymphoid Disorders
- Tuberculosis
- Seminars in Chest Radiology (2)

LM Glassman:
- Breast Pathology: What the Radiologist Needs to Know
- Classic Breast Lesions
- Ductal Carcinoma in Situ (DCIS)

KK Koeller:
- Cerebral Intraventricular Neoplasms
- Cerebral Ischemia
- Congenital CNS Anomalies
- Congenital Cystic Neck Masses
- Demyelinating Diseases
- Head Trauma
- Infrahyoid Neck
- Neuroimaging Manifestations in the Immunocompromised Patient
- Orbit I: Globe and Conal Lesions
- Orbit II: Intraconal and Extraconal Lesions
- Suprahyoid Neck
- Temporal Bone I: Anatomy and Congenital Lesions
- Temporal Bone II: Infection and Neoplasms
- Uncommon Neuroepithelial Neoplasms
- Seminars in Neuroradiology (4)

AD Levy:
- Abdominal Non-Hodgkin Lymphoma
- Anorectal Imaging
- Appendicitis and Beyond
- Benign Biliary Disease
- Colorectal Carcinoma
- Diffuse Liver Disease
- Gallbladder and Biliary Neoplasms
- Gastric Malignancies
- Hepatic Infections

- Hepatic Neoplasms
- Mesenteric Masses and Cysts
- Pancreatic Neoplasms
- Small Intestinal Neoplasms
- Seminars in Gastrointestinal Radiology (6)

MD Murphey:
- Alphabet Soup: Cystic Lesions of Bone
- Cartilaginous Lesions of Bone I
- Cartilaginous Lesions of Bone II
- Fibrous Lesions of the Musculoskeletal System I
- Fibrous Lesions of the Musculoskeletal System II
- Juxta-articular Musculoskeletal Masses I
- Juxta-articular Musculoskeletal Masses II
- Musculoskeletal Angiomatous Lesions
- Musculoskeletal Infections I
- Musculoskeletal Infections II
- Musculoskeletal Manifestations of Chronic Renal Insufficiency
- Musculoskeletal Neoplasm: Fundamental Concepts I
- Musculoskeletal Neoplasm: Fundamental Concepts II
- Osseous Lesions of Bone I
- Osseous Lesions of Bone II
- Paget Disease
- Radiologic Assessment of Joint Replacement
- Seminars in Musculoskeletal Radiology (4)

TL Pope Jr:
- Generalized Musculoskeletal Disorders
- Imaging of the Musculoskeletal Manifestations of Hematologic Disorders
- Osseous Musculoskeletal Stress Injuries

PJ Woodward:
- Fetal CNS Malformations
- Fetal Anomalies I
- Fetal Anomalies II
- First Trimester Ultrasound
- Radiologic Evaluation of the Scrotum I
- Radiologic Evaluation of the Scrotum II
- Renal Neoplasms: Approach to Benign Renal Masses
- Renal Neoplasms: Approach to Malignant Renal Masses
- Retroperitoneum
- Urinary Tract Trauma
- Uterine Disorder I
- Uterine Disorder II
- Seminars in Genitourinary Radiology (3)

Department of Radiologic Pathology Courses

1. February 2004: Bethesda, Md, 19th Annual Washington Neuroradiology Review Course, "Posterior fossa neoplasms," KK Koeller.
2. February 2004: Bethesda, Md, 19th Annual Washington Neuroradiology Review Course, "Neuroimaging manifestations in the immunocompromised patient," KK Koeller.
3. February 2004: Bethesda, Md, 19th Annual Washington Neuroradiology Review Course, "Unknown case review," KK Koeller.
4. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "An approach to diffuse lung disease: sarcoidosis," JR Galvin.
5. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "The idiopathic interstitial pneumonias," JR Galvin.
6. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Airways disease," JR Galvin.
7. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e

Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "MR imaging of the shoulder: rotator cuff," TL Pope Jr.

8. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Sports injuries of the spine and pelvis," TL Pope Jr.
9. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "MR imaging of the knee: menisci and cartilage," TL Pope Jr.
10. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "MR imaging of the knee: ligaments," TL Pope Jr.
11. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Imaging of hematologic diseases," TL Pope Jr.
12. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Adrenal tumors of childhood," GA Agrons.
13. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Liver tumors of childhood," GA Agrons.
14. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Bowel obstruction in neonates," GA Agrons.
15. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Renal tumors of infancy and early childhood," GA Agrons.
16. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Cystic renal disorders of childhood," GA Agrons.
17. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Inhalational lung disease: asbestosis and silicosis," JR Galvin.
18. June 2004: Ponta Delgada, Azores, Portugal, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, "Pulmonary hypertension and infarction," JR Galvin.
19. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "An approach to diffuse lung disease: sarcoidosis," JR Galvin.
20. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "The idiopathic interstitial pneumonias," JR Galvin.
21. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Airways disease," JR Galvin.
22. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "MR imaging of the glenohumeral joint: impingement," TL Pope Jr.
23. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "MR imaging of the glenohumeral joint: instability," TL Pope Jr.
24. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Imaging of musculoskeletal stress injuries," TL Pope Jr.
25. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Adrenal tumors of childhood," GA Agrons.
26. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Liver tumors of childhood," GA Agrons.
27. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Bowel obstruction in neonates," GA Agrons.
28. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Neurosonography of premature and term neonates," GA Agrons.
29. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Renal tumors of infancy and early childhood," GA Agrons.
30. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Cystic renal disorders of childhood," GA Agrons.
31. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches

Fortbildungsseminar, "MR imaging of the knee: menisci and cartilage," TL Pope Jr.
32. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "MR imaging knee ligaments," TL Pope Jr.
33. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Imaging of hematologic disease," TL Pope Jr.
34. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Inhalational lung disease: asbestosis and silicosis," JR Galvin.
35. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Pulmonary lymphoid lesions," JR Galvin.
36. June 2004: Vienna, Austria, Österreichische Röntgengesellschaft-AFIP, 11th Radiologisches Fortbildungsseminar, "Pulmonary hypertension and infarction," JR Galvin.
37. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "An approach to diffuse lung disease: sarcoidosis," JR Galvin.
38. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "The idiopathic interstitial pneumonias," JR Galvin.
39. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Airways disease," JR Galvin.
40. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "MR imaging of the glenohumeral joint: impingement," TL Pope Jr.
41. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "MR imaging of the glenohumeral joint: instability," TL Pope Jr.
42. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Imaging of musculoskeletal stress injuries," TL Pope Jr.
43. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Adrenal tumors of childhood," GA Agrons.
44. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Liver tumors of childhood," GA Agrons.
45. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Bowel obstruction in neonates," GA Agrons.
46. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Mesenchymal neoplasms of the gastrointestinal tract," AM Quiles.
47. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Renal tumors of infancy and early childhood," GA Agrons.
48. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Cystic renal disorders of childhood," GA Agrons.
49. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "MR imaging of the knee: menisci and cartilage," TL Pope Jr.
50. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "MR imaging knee ligaments," TL Pope Jr.
51. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Imaging of hematologic disease," TL Pope Jr.
52. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Inhalational lung disease: asbestosis and silicosis," JR Galvin.
53. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Pulmonary lymphoid lesions," JR Galvin.
54. June 2004: Madrid, Spain, Fundación Espanola de Radiología-AFIP, XV Curso Internacional de Correlación Radio-Patológica, "Pulmonary hypertension and infarction," JR Galvin.

Other AFIP Courses

1. March 2004: Washington, DC, 42nd Annual Basic Science Course in Otolaryngology Head and Neck Surgery, USUHS, "Imaging of the suprahyoid neck," KK Koeller.
2. March 2004: Washington, DC, 42nd Annual Basic Science Course in Otolaryngology Head

and Neck Surgery, USUHS, "Imaging of the infrahyoid neck," KK Koeller.
3. March 2004: Washington, DC, 42nd Annual Basic Science Course in Otolaryngology Head and Neck Surgery, USUHS, "Congenital cystic neck masses," KK Koeller.
4. March 2004: Washington, DC, 42nd Annual Basic Science Course in Otolaryngology Head and Neck Surgery, USUHS, "Temporal bone: anatomy and congenital lesions," KK Koeller.
5. March 2004: Washington, DC, 42nd Annual Basic Science Course in Otolaryngology Head and Neck Surgery, USUHS, "Temporal bone: infections and neoplasms," KK Koeller.
6. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Radiologic techniques," PJ Woodward.
7. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Approach to renal masses I and II," PJ Woodward.
8. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Retroperitoneum," PJ Woodward.
9. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Scrotum," PJ Woodward.
10. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Pediatric GU abnormalities I and II," PJ Woodward.
11. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Urothelium," PJ Woodward.
12. July 2004: Bethesda, Md, 38th Annual Urological Pathology Course, "Radiology case review I and II," PJ Woodward.
13. September 2004: Washington, DC, AFIP, 33rd Annual Course and Tutorial - Orthopedic Pathology, "Fundamental concepts of musculoskeletal neoplasm: radiographs," MD Murphey.
14. September 2004: Washington, DC, AFIP, 33rd Annual Course and Tutorial - Orthopedic Pathology, "Fundamental concepts of musculoskeletal neoplasm: CT and MRI," MD Murphey.

Visiting Professorships

1. January 2004: Salt Lake City, Utah, University of Utah School of Medicine, "Radiology unknowns," PJ Woodward.
2. February 2004: Honolulu, Hawaii, University of Hawaii, Obstetrical Grand Rounds, "AIUM guidelines," PJ Woodward.
3. March 2004: University of Pennsylvania Medical Center and Phoenixville Hospital, "Lung disease in preterm neonates," GA Agrons.
4. April 2004: Albuquerque, NM, University of New Mexico, "First trimester ultrasound," "Fetal CNS malformations," "Fetal anomalies," PJ Woodward.
5. May 2004: New York, NY, New York Roentgen Ray Society Meeting and Visiting Professor at Beth Israel Medical Center, "Enchondroma vs chondrosarcoma: fact and fiction," "Imaging of soft tissue tumors: a systematic approach," "Unknown cases," MD Murphey.
6. May 2004: Philadelphia, Penn, Drexel University College of Medicine-Hahnemann Hospital, "Imaging of the suprahyoid neck," "Neuroimaging manifestations in the immunocompromised patient," "Unknown case review," KK Koeller.
7. May 2004: Livingston, NJ, Visiting Professor at St. Barnabas Medical Center, "Imaging of cervical spine trauma," "Imaging of bone tumors: a systematic approach," "Board review," MD Murphey.
8. August 2004: Salt Lake City, Utah, University of Utah School of Medicine, "Barium 101," PJ Woodward.
9. September 2004: Honolulu, Hawaii, Tripler Army Medical Center, Department of Radiology, "Tumors of the gallbladder and biliary tract," "Gallbladder and biliary unknown cases," "Hepatic masses," "Liver unknown cases," "Mesenteric anatomy," "Mesenteric masses and cysts unknown cases," "Pancreatic neoplasms," "Pancreas unknown cases," "Small bowel neoplasms," "Small bowel unknown cases," AD Levy.
10. October 2004: Denver, Colo, University of Colorado, "OB pearls and cases," PJ Woodward.
11. October 2004: Denver, Colo, Colorado Radiologic Society, "Retroperitoneum," "Staging of GYN malignancies," PJ Woodward.

Other Non-AFIP Courses/Presentations

1. January 2004: Baltimore, Md, Lung Disease Research Symposium, University of Maryland Medical Center, "Smoking-related interstitial lung disease," JR Galvin.

2. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Introduction to bone tumors," MD Murphey.
3. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Benign cartilaginous tumors," MD Murphey.
4. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Chondrosarcoma," MD Murphey.
5. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Neurogenic lesions," MD Murphey.
6. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Benign fibrous lesions," MD Murphey.
7. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Musculoskeletal infections," MD Murphey.
8. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Angiomatous lesions," MD Murphey.
9. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Paget disease," MD Murphey.
10. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Malignant fibrous lesions," MD Murphey.
11. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Lymphoma and metastatic disease," MD Murphey.
12. February 2004: Naples, Fla, The International Institute for Continuing Medical Education, Inc.'s Course Bone and Soft Tissue Tumors, "Review of unknown cases," MD Murphey.
13. February 2004: Memphis, Tenn, Saint Jude Children's Research Hospital, "Medulloblastoma and its imaging mimics," KK Koeller.
14. March 2004: Tucson, Ariz, Society of Skeletal Radiology 27th Annual Meeting, "Imaging of hibernoma," MD Murphey, MJ Kransdorf, JJ Choi, JJ Jelinek, HT Temple, JF Carroll.
15. March 2004: Tucson, Ariz, Society of Skeletal Radiology 27th Annual Meeting, "Epitrochlear lymphadenopathy in cat scratch disease," JF Carroll, MD Murphey, EA Walker, DJ Flemming, TG Sanders, MJ Kransdorf.
16. March 2004: Tucson, Ariz, Society of Skeletal Radiology 27th Annual Meeting, "Imaging features of juxtacortical chondrosarcoma," EA Walker, MD Murphey, AJ Wilson, FH Gannon, JF Carroll.
17. March 2004: Scottsdale, Ariz, Society of Gastrointestinal Radiology 33rd Annual Postgraduate Course and Scientific Assembly and Annual Meeting, "Gastrointestinal stromal tumors," AD Levy.
18. March 2004: Scottsdale, Ariz, Society of Gastrointestinal Radiology 33rd Annual Postgraduate Course and Scientific Assembly and Annual Meeting, "Unknown case panel," AD Levy, PJ Woodward.
19. March 2004: Scottsdale, Ariz, Society of Gastrointestinal Radiology 33rd Annual Postgraduate Course and Scientific Assembly and Annual Meeting, "Imaging of the biliary tract," AD Levy.
20. March 2004: San Juan, PR, University of Puerto Rico School of Medicine, "Imaging of bone tumors: a systematic approach," MD Murphey.
21. March 2004: San Juan, PR, University of Puerto Rico School of Medicine, "Imaging of arthritis approach and inflammatory disease," MD Murphey.
22. March 2004: San Juan, PR, University of Puerto Rico School of Medicine, "Common cartilaginous lesions of bone," MD Murphey.
23. March-April 004: Davos, Switzerland, 36th International Diagnostic Course, "White matter disease," KK Koeller.
24. April 2004: Bethesda, Md, Army Medical Department Problem Oriented Radiology Course, USUHS, "Temporal bone: infections and neoplasms," KK Koeller.
25. April 2004: Bethesda, Md, Army Medical Department Problem Oriented Radiology Course, USUHS, "Imaging of arthritis I: approach and inflammatory disease," MD Murphey.
26. April 2004: Bethesda, Md, Army Medical Department Problem Oriented Radiology Course, USUHS, "Imaging of arthritis II: osteoarthritis, crystal disease and neuropathic," MD Murphey.
27. April 2004: Bethesda, Md, Army Medical Department Problem Oriented Radiology Course, USUHS, "Scrotal US," PJ Woodward.
28. April 2004: Bethesda, Md, Army Medical Department Problem Oriented Radiology Course,

USUHS, "GU trauma," PJ Woodward.

29. April 2004: Washington, DC, International Institute for Continuing Medical Education Course Musculoskeletal Imaging, "MRI of muscle abnormalities," MD Murphey.
30. April 2004: Washington, DC, International Institute for Continuing Medical Education Course Musculoskeletal Imaging, "Imaging of musculoskeletal infection," MD Murphey.
31. April 2004: Washington, DC, International Institute for Continuing Medical Education Course Musculoskeletal Imaging, "Radiologic assessment of total joint replacements," MD Murphey.
32. April 2004: Washington, DC, International Institute for Continuing Medical Education Course Musculoskeletal Imaging, "Radiologic assessment of bone tumors: a systematic approach," MD Murphey.
33. April 2004: Washington, DC, International Institute for Continuing Medical Education Course Musculoskeletal Imaging, "Radiologic assessment of soft tissue tumors: a systematic approach," MD Murphey.
34. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Osseous stress injuries part 1," TL Pope Jr.
35. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Osseous stress injuries part 2," TL Pope Jr.
36. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Imaging of hematologic disorders," TL Pope Jr.
37. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "MR imaging of the ankle part 1," TL Pope Jr.
38. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "MR imaging of the ankle part 2," TL Pope Jr.
39. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Musculoskeletal unknown case seminar," TL Pope Jr.
40. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Cerebellar neoplasms," KK Koeller.
41. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Supratentorial cerebral neoplasms," KK Koeller.
42. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Intraventricular neoplasms," KK Koeller.
43. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Neuroimaging manifestations in the immunocompromised patient," KK Koeller.
44. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Congenital cystic neck masses," KK Koeller.
45. April 2004: Sao Paulo, Brazil, 34th Jornada Paulista de Radiologia, "Unknown case seminar," KK Koeller.
46. April 2004: Baltimore, Md, Maryland Thoracic Society 44th Annual Meeting, "The idiopathic interstitial pneumonias," JR Galvin.
47. May 2004: Miami Beach, Fla, American Roentgen Ray Society 104th Annual Meeting, "Lung disease in neonates: radiologic-pathologic correlation," GA Agrons.
48. May 2004: Miami Beach, Fla, American Roentgen Ray Society 104th Annual Meeting, "Epitrochlear lymphadenopathy in cat scratch disease," JF Carroll, MD Murphey, EA Walker, DJ Flemming, TG Sanders, MJ Kransdorf.
49. May 2004: Miami Beach, Fla, American Roentgen Ray Society 104th Annual Meeting, "Angiomatoid fibrous histiocytoma: radiologic-pathologic correlation," JF Carroll, MD Murphey, JC Fanburg-Smith, SJ Martinez, EA Walker.
50. May 2004: Miami Beach, Fla, American Roentgen Ray Society 104th Annual Meeting, "Musculoskeletal MRI: muscle imaging," MD Murphey.
51. May 2004: Miami Beach, Fla, American Roentgen Ray Society 104th Annual Meeting, "Pulmonary hypertension and valvular heart disease," AA Frazier, D Strollo.
52. June 2004: Montreal, Quebec, 23rd International Congress of Radiology, "Cerebral intraventricular neoplasms," KK Koeller.
53. June 2004: Montreal, Quebec, 23rd International Congress of Radiology, "Imaging of arthritis: approach and inflammatory disease," MD Murphey.
54. June 2004: Montreal, Quebec, 23rd International Congress of Radiology, "Imaging of soft tissue tumors: a systematic approach," MD Murphey.
55. June 2004: Montreal, Quebec, 23rd International Congress of Radiology, "Retroperitoneum," PJ Woodward.

56. June 2004: Montreal, Quebec, 23rd International Congress of Radiology, "Staging of GYN malignancies," PJ Woodward.
57. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Temporal bone: anatomy and congenital lesions," KK Koeller.
58. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Temporal bone: inflammatory and neoplastic diseases," KK Koeller.
59. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Neoplasms of the spinal cord and filum terminale," KK Koeller.
60. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Orbit: globe and conal lesions," KK Koeller.
61. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Orbit: intraconal and extraconal lesions," KK Koeller.
62. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Common musculoskeletal infections," MD Murphey.
63. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Cervical spine trauma," MD Murphey.
64. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Imaging of stress fractures," MD Murphey.
65. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "Imaging of soft tissue tumors: a systematic approach," MD Murphey.
66. July 2004: Santa Fe, NM, The International Institute for Continuing Medical Education, Inc. Course Brains and Bones in the High Desert, "MR imaging of muscle abnormalities," MD Murphey.
67. July 2004: Kobe, Japan, Japanese College of Radiology Mid-Summer Annual Seminar, "Gastrointestinal stromal tumors," AD Levy.
68. August 2004: Kobe, Japan, Japanese College of Radiology Mid-Summer Annual Seminar "Mesenteric cysts and masses: a case-based approach," AD Levy.
69. August 2004: Charleston, SC, Medical University of South Carolina, "Orbit: globe and conal lesions," KK Koeller.
70. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Head trauma," KK Koeller.
71. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Acquired white matter diseases," KK Koeller.
72. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "The idiopathic interstitial pneumonias," JR Galvin.
73. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Posterior fossa neoplasms," KK Koeller.
74. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Airways disease," JR Galvin.
75. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Pulmonary hypertension," JR Galvin.
76. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Imaging of breast calcifications," LM Glassman.
77. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Breast pathology for the radiologist," LM Glassman.
78. October 2004: Paris, France, 52nd Journées Françaises de Radiologie, "Breast abnormalities in young women," LM Glassman.
79. October 2004: Saint Julian, Malta, International Skeletal Society 2004 Meeting, "Case 18: clear cell sarcoma," JC Fanburg-Smith, MD Murphey.
80. October 2004: Saint Julian, Malta, International Skeletal Society 2004 Meeting, "Case 20: desmoplastic fibroblastoma," MD Murphey, JC Fanburg-Smith.
81. October 2004: Saint Julian, Malta, International Skeletal Society 2004 Meeting, Refresher Course, "Session XIV: chordoma, vascular lesions, and histiocytoses," MD Murphey, LE

Wold.

82. October 2004: Saint Julian, Malta, International Skeletal Society 2004 Meeting, Refresher Course, "Soft tissue masses: how often are images diagnostic and when?" MD Murphey.
83. October 2004: San Antonio, Tex, American College of Rheumatology, "Imaging of arthritis," MD Murphey.
84. October 2004: Milwaukee, Wis, Medical College of Wisconsin, Department of Radiology, "Tuberculosis: radiologic-pathologic correlation," JR Galvin.
85. October 2004: Milwaukee, Wis, Medical College of Wisconsin, Department of Radiology, The Annual Scanlon Society Lecture, "The idiopathic interstitial pneumonias: radiologic-pathologic correlation," JR Galvin.
86. October 2004: Washington, DC, CME Course: Pediatric Imaging, "Lung disease in preterm neonates," GA Agrons.
87. November 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Refresher Course, "The esophagus: from inside to out," "Esophageal neoplasms," AD Levy.
88. November 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Refresher Course, "Spine imaging: non-degenerative disease," "Spinal cord neoplasms and their mimics," KK Koeller.
89. November 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, "Case-based review of neuroradiology: spine," DA Yousem, AO Ortiz, KK Koeller.
90. November 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, "Nonspecific interstitial pneumonias (NSIP): CT appearance," DA Lynch, WD Travis, JR Galvin, DM Hansell, TE King Jr, G Hunninghake, et al.
91. December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Refresher Course, "Women's imaging," "Endometriosis," PJ Woodward.
92. December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, "The radiologist and the Internet: continuous learning while you work: hands-on workshop," MP D'Aleassandro, JJ Choi, JR Galvin.
93. December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Special Focus Session, "Ischemia from head to toe," KK Koeller, JR Galvin, AD Levy, GA Agrons, PJ Woodward, MD Murphey.
94. December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Refresher Course, "Musculoskeletal imaging," "General concepts and imaging principles," MD Murphey.
95. December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, Refresher Course, "Emerging acute lung diseases," JR Galvin, LH Ketai, T Franquet.
96. December 2004: Lake Buena Vista, Fla, National Diagnostic Imaging Symposium: World Class Radiology, "Supratentorial cerebral neoplasms," KK Koeller.
97. December 2004: Lake Buena Vista, Fla, National Diagnostic Imaging Symposium: World Class Radiology, "Superficial cerebral neoplasms," KK Koeller.

Scientific Exhibits

1. November-December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, "Ovarian sex cord-stromal tumors from the AFIP: imaging features with radiologic-pathologic correlation," RM Abbott, AA Chudgar, PJ Woodward.
2. November-December 2004: Chicago, Ill, 90th Scientific Assembly and Annual Meeting of the Radiologic Society of North America, "Cardiac valves: imaging with multi-slice CT angiography," M Manning, CS White, AA Frazier, K Read, J Gammie. Awarded Certificate of Merit.

Departmental Conferences: 669 departmental conferences were conducted during 2004.

Intramural

Gastrointestinal Radiology

1 (2 hours) per month, Gastrointestinal Pathology Conference
1 (1 hour) per month, Hepatic Pathology Conference
6 (1.5 hour) per year, Endocrine Pathology Conference

2 (2 hours) per year, Hematopathology Conference

Genitourinary Radiology
2 (2 hours) per month, Genitourinary Pathology Conference
1 (1.5 hour) per month, Endocrine Pathology Conference

Mammography
6 (1 hour) per year, Gynecologic and Breast 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 hour) per month, Neuropathology Conference
6 (1 hour) per year, Otolaryngic Pathology–Oral Maxillofacial Pathology Conference

Pediatric Radiology
1 (1 hour) per year, Pediatric Genitourinary 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

Gastrointestinal Radiology
2 (1 hour) per month, Department of Radiology and Radiological Sciences (MS-4 Radiology), .. USUHS
1 (1 hour) per month, Department of Gastroenterology, WRAMC
1 (1 hour) per year, Department of Pathology (MS-2 Pathology), USUHS
1 (1 hour) per year, Department of Radiology and Radiological Sciences (MS-2 Radiology), ... USUHS
1 (1 hour) per year, Department of Anatomy (MS-1 Anatomy), USUHS
Genitourinary Radiology
1 (1 hour) per year, Department of Radiology and Radiological Sciences (MS-2 Radiology), ... USUHS

Musculoskeletal Radiology
2 (1.5 hours) conferences per month, Orthopedic Resident Conference, WRAMC
4 (1 hour) conferences per month, Rheumatology Conference, WRAMC
1 (1 hour) conference per month, Rheumatology Conference, NIH
1 (1 hour) conference per month, Rheumatology Conference, Washington Hospital Center
1 (1 hour) conference per month, Radiology Resident Conference, University of Maryland ..... Medical Center
4 (1 hour) conferences per month, Orthopedic Oncology/Radiology/Pathology Conference, ... Sinai Medical Center, Baltimore, Md
10 (1 hour) conferences per year, Sports Medicine and Arthroscopy Conference, NNMC
Pulmonary Radiology
1 (2 hours) per week, Pulmonary Medicine Conference, WRAMC

Seminars (171)

Gastrointestinal Radiology
26 (1 hour) per year, Department of Radiology, USUHS
2 (1 hour) per year, Department of Radiology, WRAMC
5 (1 hour) per year, Department of Gastroenterology, WRAMC

Genitourinary Radiology
1 (1 hour) per month, Urology Fellow Conference, University of Maryland Medical Center
1 (1 hour) per month, Internal Medicine Fellow Conference, University of Maryland Medical . Center
1 (1 hour) per year, Radiology Department, WRAMC
4 (1 hour) per month, Resident Conference, University of Maryland Medical Center
4 (1 hour) per month, Fellow Conference, University of Maryland Medical Center
20 (1 hour) per year, Resident Conference, University of Utah

Musculoskeletal Radiology
2 (1 hour) per year, Radiology Department, WRAMC

8 (1 hour) per year, USUHS

Neuroradiology
1 (1 hour) per year, WRAMC

Pediatric Radiology
1 (1 hour) per year, WRAMC

Pulmonary and Mediastinal Radiology
5 (1 hour) per year, University of Maryland Medical Center

RESEARCH

Journal Articles

1. Abbott GF, Rosado de Christenson ML, Franks TJ, Frazier AA, Galvin JR. From the archives of the AFIP: pulmonary Langerhans cell histiocytosis. *Radiographics*. 2004;24:821-841.
2. Abbott RM, Levy AD, Aguilera NS, Gorospe L, Thompson WM. From the archives of the AFIP: primary vascular neoplasms of the spleen: radiologic-pathologic correlation. *Radiographics*. 2004;24:1137-1163.
3. Beaman FD, Bancroft LW, Peterson JJ, Kransdorf MJ, Murphey MD, Menke DM. Imaging characteristics of cherubism. *AJR Am J Roentgenol*. 2004;182:1051-1054.
4. Franks TJ, Galvin JR, Frazier AA. The use and impact of high resolution CT in diffuse lung disease. *Curr Diagn Pathol*. 2004;10:279-290.
5. Koeller KK, Rushing EJ. From the archives of the AFIP: pilocytic astrocytoma: radiologic-pathologic correlation. *Radiographics*. 2004;24:1693-1708.
6. Levy AD, Abbott RA, Abbondanzo SL. Littoral cell angioma of the spleen: CT features with clinicopathologic comparison. *Radiology*. 2004;230:485-490.
7. Levy AD, Hobbs CM. From the archives of the AFIP: Meckel's diverticulum: radiologic features with pathologic correlation. *Radiographics*. 2004;24:565-587.
8. Levy AD, Cantisani V, Miettinen M. Abdominal lymphangiomas: imaging features with pathologic correlation. *AJR Am J Roentgenol*. 2004;182:1485-1491.
9. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH. Gastrointestinal stromal tumors occurring in patients with neurofibromatosis: imaging features with clinicopathologic correlation. *AJR Am J Roentgenol*. 2004;183:1629-1636.
10. Murphey MD, Carroll JF, Flemming DJ, Pope TL, Gannon FH, Kransdorf MJ. From the archives of the AFIP: benign musculoskeletal lipomatous lesions. *Radiographics*. 2004;24:1433-1466.
11. Murphey MD, Jelinek JS, Temple HT, Flemming DJ, Gannon FH. Imaging of periosteal osteosarcoma: radiologic-pathologic comparison. *Radiology*. 2004;233:129-138.
12. Thali-Schwab CM, Woodward PJ, Wagner BJ. Computed tomographic appearance of urachal adenocarcinomas: review of 25 cases. *Eur Radiol*. 2004;15:79-84.
13. Woodward PJ, Hosseinzadeh K, Saenger JS. From the archives of the AFIP: radiologic staging of ovarian carcinoma with pathologic correlation. *Radiographics*. 2004;24:225-246.
14. Woodward PJ. Case 70. *Radiology*. 2004;230:227-228.
15. Woodward PJ. Case 70: seminoma in an undescended testis. *Radiology*. 2004;231:388-392.

Abstracts

1. Carroll JF, Murphey MD, Walker EA, Flemming DJ, Sanders TG, Kransdorf MJ. Epitrochlear lymphadenopathy in cat scratch disease. *AJR Am J Roentgenol*. 2004;182(S):71.
2. Carroll JF, Murphey MD, Fanburg-Smith JC, Martinez SJ, Walker EA. Angiomatoid fibrous histiocytoma: radiologic-pathologic correlation. *AJR Am J Roentgenol*. 2004;181(S):73.
3. Fukuoka J, Franks TJ, Colby TV, Galvin JR, et al. Peribronchiolar metaplasia, a commonly incidental histologic lesion and a rare cause of interstitial lung disease: clinical-pathological features of 17 cases. USCAP 2004.
4. Galvin JR. The idiopathic interstitial pneumonias. *J Radiologie*. 2004;85:1188.
5. Galvin JR. Airways disease. *J Radiologie*. 2004;85:1204.
6. Galvin JR. The imaging spectrum of pulmonary hypertenstion. *J Radiologie*. 2004;85:1211.
7. Galvin JR, Franks TJ. Dyspneic cigarette smokers with near normal spirometry: the morphology and distribution of cystic spaces. Fleischner Society Annual Meeting, May 2004.
8. Glassman LM. Imaging of breast calcifications. *J Radiologie*. 2004;85:1196.
9. Glassman LM. Breast pathology for the radiologist. *J Radiologie*. 2004;85:1208.

10. Glassman LM. Breast abnormalities in young women. *J Radiologie*. 2004;85:1216.
11. Koeller KK. Head trauma. *J Radiologie*. 2004;85:1183.
12. Koeller KK. Acquired white matter diseases. *J Radiologie*. 2004;85:1192.
13. Koeller KK. Posterior fossa neoplasms. *J Radiologie*. 2004;85:1199.
14. Tatli S, Mortele KJ, Levy AD, Glickman JN, Ros PR, Banks PA, Silverman SG. CT and MR imaging features of pure acinar cell carcinoma of the pancreas in adults. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting, June 2004.
15. Walker EA, Murphey MD, Wilson AJ, Gannon FH, Carroll JF. Imaging features of dedifferentiated chondrosarcoma. Program of the International Skeletal Society 2004 Meeting. *Skel Rad*. 2004;(S)11.
16. Xu H, Franks TJ, Galvin JR, Travis WD. The impact of chest imaging on the pathological diagnosis of pulmonary, mediastinal, and pleural disease. USCAP 2004.

Book Chapters

1. Burke AP, Tazelaar H, Gomez-Roman JJ, Loire R, Chopra P, Tomsova M, Veinot JP, Dijkhuizen D, Basson CT, Rami-Porta R, Maiers E, Edwards AE, Walter P, Galvin JR, Tsukamoto S, Grandmougin D, Araoz PA. Benign tumours of pleuripotent mesenchyma. In: Travis WD, Brambilla E, Müller-Hermelink HK, Harris CC, eds. *Pathology and Genetics: Tumours of the Lung, Pleura, Thymus, and Heart. World Health Organization Classification of Tumours*. Lyon, France: IARC Press; 2004:260-265.
2. Burke AP, Tazelaar H, Butany JW, El-Demellawy D, Loire R, Geva T, Bonilla F, Galvin JR, Veinot JP, Virmani R, Kamiya H, Watanabe G, Grandmougin D, Horimoto M, Hiraga H. Cardiac sarcomas. In: Travis WD, Brambilla E, Müller-Hermelink HK, Harris CC, eds. *Pathology and Genetics: Tumours of the Lung, Pleura, Thymus, and Heart. World Health Organization Classification of Tumours*. Lyon, France: IARC Press; 2004:273-281.
3. Koeller KK. Neoplasms of the posterior fossa. In: Ros PR, Gourtsoyiannis NC, eds. *Radiologic Pathologic Correlations*. Berlin: Springer-Verlag; 2004:69-85.
4. Levy AD. Neoplastic and non-neoplastic diseases of the stomach. In: Ros PR, Gourtsoyiannis NC, eds. *Radiologic Pathologic Correlations*. Berlin: Springer-Verlag; 2004:237-251.
5. Levy AD, Rohrmann CA Jr. Diseases of the gallbladder and bile ducts. In: Ros PR, Gourtsoyiannis NC, eds. *Radiologic Pathologic Correlations*. Berlin: Springer-Verlag; 2004:509-532.
6. Murphey MD, Kransdorf MJ. Soft tissue tumors. In: Ros PR, Gourtsoyiannis NC, eds. *Radiologic Pathologic Correlations*. Berlin: Springer-Verlag; 2004:743-754.

Books

1. Koeller KK, Levy AD, Woodward PJ, Galvin JR, Murphey MD, Agrons GA, eds. *Radiologic Pathology 2004-2005*. 3rd ed. Washington, DC: ARP; 2004.
2. Osborn AG, Birdwell RL, Dalinka MK, Gardiner GA, Groskin SA, Levy AD, Maynard CD, Oestreich AE, eds. *Yearbook of Diagnostic Radiology 2004*. Philadelphia, Penn: Mosby; 2004.

Electronic Publications

1. Franks TJ, Galvin JR, Travis WD, Draley D, Schorr A, Marco P, Burgess JR. Acute Eosinophilic Pneumonia. http://www.afip.org/hot-topics/pneumonia/index.html. Released July 15, 2004.
2. Koeller KK, Galvin JR, Levy AD, Woodward PJ, Agrons GA, Murphey MD. Malignant Neoplasia: A Primer of Primaries. Radiological Society of North America Web Publication and CD-ROM, 2004 (RSP 978).
3. Koeller KK, Levy AD, Frazier AA, Galvin JR, Glassman LR, Murphey MD, Woodward PJ. Ask RadPath, Web-based teaching module in radiology; http://www.radpath/org/askradpath.html. Released November 28, 2004.
4. "RadPath Luminary," quarterly electronic department newsletter. First issue, September 2004.

Editorials/Invited Commentary

1. Levy AD. Focal nodular hyperplasia: a spectrum of findings at state-of-the-art MR imaging, ultrasound, CT and pathology. *Radiographics*. 2004;24:18-19.
2. Levy AD. Intraductal papillary mucinous tumor of the bile ducts, *Radiographics*. 2004;24:66-67.

Special Reports

Koeller KK. Arthur T. Rosenfield, MD: Armed Forces Institute of Pathology 2004-2005, Distinguished Scientist. *Radiology*. 2004;232:114.

Projects

Investigative

1. Levy AD, Ros PR: Magnetic resonance imaging of solid and pseudopapillary neoplasms of the pancreas.
2. Levy AD, Abbondanzo SL, Abbott RM: Littoral cell angioma of the spleen: imaging features with clinical and pathologic correlation.
3. Levy AD, Remotti HE, Thompson WM, Sobin LE, Miettenen M: Gastrointestinal stromal tumors: radiologic-pathologic correlation.
4. Levy AD, Quiles A, Dow N, Miettinen M, Sobin LH: Gastrointestinal schwannomas.
5. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH: Gastrointestinal stromal tumors occurring in patients with neurofibromatosis.
6. Thompson WM, Kende AI, Levy AD: Gastrointestinal lipomas.
7. Thompson WM, Levy AD, Aguilar NS: Splenic angiosarcoma.

Educational

1. Koeller KK: Neoplasms of the posterior fossa.
2. Koeller KK, Rushing EJ: Oligodendroglioma: radiologic-pathologic correlation.
3. Koeller KK, Rushing EJ: Pilocytic astrocytoma: radiologic-pathologic correlation.
4. Levy AD, Abbott RM, Aguilar NS: Imaging of vascular neoplasms of the spleen.
5. Levy AD, Cantisani V, Miettinen M: Abdominal lymphangiomas.
6. Levy AD, Hobbs C: Meckel's diverticulum.
7. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH: Abdominal manifesta tions of neurofibromatosis.
8. Woodward PJ: Ovarian sex cord–stromal tumors from the AFIP: imaging features with radiologic-pathologic correlation.
9. Woodward PJ, Koeller KK: Fetal tumors.

Electronic

1. Franks TJ, Galvin JR, Nelson AM, Williams B, Owner C: Ask AFIP, multidisciplinary teaching database. http://www.askafip.org.html
2. Koeller KK, Levy AD: Ask RadPath, Web-based radiology teaching module. http://www.radpath.org/askradpath.html

Collaborators

Military/Federal:

1. Department of Radiology and Radiological Sciences, USUHS
2. Robert M. Abbott, Lt Col, USAFR, MC, University of Maryland Medical Systems, Baltimore, Md
3. Donald J. Fleming, CAPT, MC, USN, NNMC, Bethesda, Md
4. H. Theodore Harcke, COL, MC, USNG, E.I. duPont Hospital for Children, Wilmington, Del
5. Laura Modzelewski, LT, MC, USN, NNMC, Bethesda, Md

Civilian:

1. American College of Radiology
2. American Osteopathic College of Radiology
3. American Roentgen Ray Society
4. Association of University Radiologists
5. Association of Program Directors in Radiology
6. Department of Radiology, University of Maryland Medical Center
7. Radiological Society of North America
8. Koenraad J. Mortele, MD, Brigham and Women's Hospital, Boston, Mass
9. Nandini Patel, MD, Washington Hospital Center, Washington, DC
10. Charles A. Rohrmann Jr, MD, University of Washington, Seattle, Wash
11. Pablo R. Ros, MD, MPH, Brigham and Women's Hospital, Boston, Mass
12. William M. Thompson, MD, Duke University, Durham, NC

International:

1. Curso de Correlação Anatomo-Radiologica, Lisbon, Portugal
2. Fundación XIII Congreso Internacional de Radiologica, Madrid, Spain
3. Japanese College of Radiology, Kobe, Japan
4. Jornada Paulista de Radiologica, Sao Paulo, Brazil
5. Journées Françaises de Radiologie, Paris, France
6. Österreichische Röntgengesellschaft, Vienna, Austria
7. Vito Cantisani, MD, University "La Sapienza," Rome, Italy
8. Ana Quiles, MD, Parc Tauli Hospital, Barcelona, Spain
9. Jordi Rimola, MD, Parc Tauli Hospital, Barcelona, Spain
10. Cornelia M. Thali-Schwab, MD, Bern, Switzerland

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, Society of Skeletal Radiology 2004, Tucson, Ariz, MD Murphey (ARP).
2. March 2004, 33rd Annual Society of Gastrointestinal Radiology Annual Meeting, AD Levy (AFIP), PJ Woodward (ARP).
3. April 2004, Army Medical Department Problem Oriented Radiology Course, USUHS, Bethesda, Md, KK Koeller, AD Levy, MD Murphey, PJ Woodward.
4. April 2004, Jornada Paulista de Radiologia, Sao Paulo, Brazil, KK Koeller, TL Pope Jr (ARP).
5. May 2004, American Roentgen Ray Society 104th Annual Meeting, Miami Beach, Fla, AA Frazier, MD Murphey (ARP).
6. June 2004, American Board of Radiology Oral Examination, Louisville, Ky, PJ Woodward (ARP).
7. June 2004, American Society of Neuroradiology, Seattle, Wash, KK Koeller (AFIP).
8. June 2004, Sociedade Portuguesa de Radiologia e Medicina Nuclear (SPRMN)-AFIP IX Curso de Correlação Anátomo Radiológica, Ponta Delgada, Azores, Portugal, GA Agrons, JR Galvin, TL Pope Jr (ARP).
9. June 2004, Österreichische Röntgengesellschaft-AFIP 11th Radiologisches Fortbildungsseminar, Vienna, Austria, GA Agrons, JR Galvin, TL Pope Jr (ARP).
10. June 2004, Fundación Espanola de Radiología-AFIP XV Curso Internacional de Correlación Radio-Patológica, Madrid, Spain, GA Agrons, JR Galvin, TL Pope Jr (ARP).
11. June 2004, 23rd International Congress of Radiology, Montreal, Quebec, KK Koeller, MD Murphey, PJ Woodward (ARP).
12. July-August 2004, Japanese College of Radiology Mid-Summer Annual Seminar, Kobe, Japan, AD Levy (ARP).
13. October 2004, International Skeletal Society 2004 Meeting, Saint Julian, Malta, MD Murphey (ARP).
14. October 2004, Journées Françaises de Radiologie, Paris, France, JR Galvin, LM Glassman, KK Koeller (ARP).
15. November 2004, International Association for the Study of Lung Cancer Consensus Conference on Bronchioloalveolar Carcinoma, New York, NY, JR Galvin (ARP).
16. November-December 2004, 90th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Ill, GA Agrons (ARP), AA Frazier (ARP), JR Galvin (ARP), DF Hatley Jr (AFIP), J Holquin (ARP), KK Koeller (AFIP), AD Levy (AFIP), MD Murphey (ARP), PJ Woodward (ARP), CD Williams (ARP).

Editorial Boards

1. Associate Editor, *FOCUS*, newsletter of American Association of Women in Radiology, AA Frazier.
2. Deputy Editor, *Radiographics,* JR Galvin.
3. Associate Editor, Education Center Materials, Radiological Society of North America, JR Galvin.
4. Editorial Board, *Radiographics,* KK Koeller.
5. Editor, American College of Radiology CD-ROM Learning Disk, Neuroradiology, 2nd ed, KK Koeller.
6. Associate Editor, *Yearbook of Diagnostic Radiology,* AD Levy.
7. Editorial Board, *Skeletal Radiology,* MD Murphey.
8. Editorial Board, *Radiographics,* PJ Woodward.

Manuscripts Reviewed: Department staff reviewed articles for the following professional journals in 2004:

1. *Radiographics*
2. *American Journal of Roentgenology*
3. *Radiology*
4. *American Journal of Neuroradiology*
5. *Journal of Computer Assisted Tomography*
6. *Skeletal Radiology*
7. *Cancer*
8. *Journal of Magnetic Resonance*
9. *Ultrasound in Obstetrics and Gynecology*
10. Medpix Medical Imaging Database, http://rad.usuhs.mil/medpix/radpix.html

Honors

1. Certificate of Merit, Scientific Exhibit: "Cardiac Valves: Imaging with Multi-Slice CT Angiography," 90th Scientific Assembly and Annual Meeting of the Radiological Society of North America, AA Frazier.
2. Annual Scanlon Lecture, Department of Radiology, Medical College of Wisconsin, JR Galvin.
3. Fellowship, American College of Radiology, KK Koeller.
4. Selected for Society of Gastrointestinal Radiology Visiting Professor for 2005, funded by EZ-M Corporation, AD Levy.

Francis Gannon, MD
Chair
Date of Appointment — 1 November 2001

Annette R. Anderson, MS, RHIA
Associate Chair
Date of Appointment — 14 November 1994

DEPARTMENT OF REPOSITORY AND RESEARCH SERVICES

MISSION

The Department of Repository and Research Services provides administrative support to the Center for Advanced Pathology's objectives in consultation, education, and research. The department's main functions are:

1. Maintaining the AFIP Repository, consisting of over 2.9 million case files and associated paraffin blocks, microscopic glass slides, and formalin-fixed tissue specimens.
2. Receiving and accessioning case materials and responding to contributors' requests for information on the status of cases submitted.
3. Receipting for all express and courier mail and 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 using the SNOMED coding system.
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 ensure case record completeness, the integrity of the research database, and the accurate tracking of case materials.
9. Generating and mailing invoices for civilian billable cases using appropriate CPT codes while ensuring all services and tests rendered are accurately and completely accounted for in PIMS.
10. Coordinating research protocol administrative requirements including review, approval, and monitoring of research activities by the various Institute research-related committees, including the Institutional Review Board (IRB), the Institutional Animal Care and Use Committee (IACUC), and the Research Committee.
11. Publishing the Institute annual research progress report, periodically updating other research-related publications, and preparing reports as required for outside monitoring agencies.
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 budgetary monitoring and policy guidance for the DoD Automated Central Tumor Registry (ACTUR), the DoD Central Cancer Registry, and hosting the annual DoD Cancer Registrars Training Conference.
15. Providing management support, policy guidance, and quality assurance monitoring for the Institute's digital imaging contract task orders concerning document conversion.

OFFICE OF THE CHAIR

Dr. Francis Gannon is a credentialed pathologist with the Department of Orthopedic Pathology. All data pertaining to his consultative, educational, and research efforts during 2004 are reported with that department's annual report.

The following is a report on programs and initiatives that impact more than one division or are special programs managed out of the Office of the Chair.

Digital Imaging Effort: This year the Institute's digital imaging initiative entered its third year with Information Manufacturing Corporation (IMC). This year saw the remainder of the Base Closure records on file at the AFIP imaged. Prior to this year, only paper records within the Main Repository were imaged. This year, an effort began to also image the various types of photographic media contained within many of the Main Repository records. The conversion of the Department of Legal Medicine claims files continued as in the previous contract, while a new task order for the imaging of the Andrews AFB Tumor Registry files was begun and completed. A pilot study to look at the Medical Illustration Services archival photographic material was also initiated. The number of case folders currently converted and available for electronic retrieval under each of the separate task orders is as follows:

AFIP Main Accessioned Repository 355,446
Legal Medicine Claims Files 18,571
Andrews AFB Cancer Registry 2,703
Base Realignment and Closure Records 2,582,354

DoD Cancer Registry Program: Substantial progress was made this year in improving the quality and completeness of DoD Cancer Registry Program data:

- A very successful annual training conference for DoD Tumor Registrars was held in Portland, Oregon in April 2004. The theme was "Following the Trail to Quality." Presentations were made by the DoD Central Registry staff and were well received.
- The DoD Central Registry staff had a very busy year reviewing all the data from the years 1998 through 2001 and forwarding identified discrepancies to the various medical facilities for correction and upload into ACTUR. All corrections for the year 1998 have been received and the consolidation process has begun. In addition, the software was converted to the NAACCR 10 version layout. Corrections continue to come in for the other years being reviewed, with only a few medical facilities yet to submit. The review of 2002 data has begun and the identified discrepancies are in the process of being sent to each facility. Significant improvements in quality have already been realized for the 1998 data, which will be available to researchers in 2005.
- The new survival analysis capability within the ACTUR system was released at the annual conference. This new functional capability enhances the facility registrar's ability to produce annual reports and provide more detailed analysis to investigators.

Rock Terrace School Partnership Program: The Institute's long-standing relationship with Rock Terrace High School continued in 2004 with the renewal of their Memorandum of Understanding with the AFIP. Approximately 15 students worked at the Institute as volunteer student aides and paid part-time workers. Most of the students worked in the Materials Repository Division and the Records Repository Division. The students continued their labor-intensive project of inventorying the case folders within the Records Repository and updating the PIMS locator system with the information. They also assisted in breaking down bulk return of slides into appropriate groupings for eventual acknowledgement and filing, while the more experienced students actually filed slides. This year the students also increased their capacity to shred patient-identifiable documents and they continued assisting in accounting for production statistics under the digital imaging contract. A major new project undertaken by the students this year was the folding and mailing of the invoices generated under the Civilian Consultation Program.

HIPAA Implementation: With the phased implementation of both annual HIPAA Refresher and Security Training this year, additional help was obtained to monitor compliance by Institute personnel with these mandatory training requirements. In an effort to improve training completion rates, a series of very successful refresher and security briefings were initiated and

were well-attended. Posters were placed at strategic locations throughout the Institute and the Military Health System Notice of Privacy Practices was posted in the Institute's front lobby.

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), and Institutional Animal Care and Use Committee (IACUC).
4. Performing annual protocol reviews, conducting semiannual laboratory animal facility inspections, drafting 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.

STAFF

Annette R. Anderson, MS, RHIA, Associate Chair
Chonté Long, Secretary

ACTIVITIES

The year 2004 ended with a total of 195 active in-house projects, extramural grants, research contracts, and agreements. This is a 27.5% decrease from the previous year and continues the downward trend in the number of active projects over the past several years as resources and staff became tighter and greater emphasis placed on military relevance in research activities. In addition, a large number of researchers who had multiple projects open either died or left the Institute during the year.

Institutional Animal Care and Use Committee (IACUC): The committee met formally 8 times in 2004 and reviewed 10 new protocols, as well as a number of amendments, the same number as the previous year. The IACUC also revamped its annual review process this year, establishing more formal review and feedback mechanisms. Due to the continued renovations taking place on the 5th floor, capacity has been a concern. Significant problems developed with surgical suite capability. These were addressed by the Institute identifying some temporary new space within the recently renovated BSL-3 spaces that had not yet gone hot to conduct procedures until the animal lab surgical suite renovation was completed. Semiannual facility inspections were conducted in March and September and the DoD Report to Congress was successfully submitted for 2003. The renewal of the Institute's animal assurance on file with the Office of Laboratory Animal Welfare (OLAW) was also received.

Institutional Review Board (IRB): The Board met formally 5 times in 2004. It reviewed and approved a total of 30 new protocols in a combination of expedited, full, and exempted reviews. This is a slight increase from the previous year. In addition, the IRB also established policies and procedures for conducting review and approval of requests for the establishment of registries. The IRB also continued to serve in a dual capacity as the HIPAA Privacy Board, reviewed all HIPAA policies and procedures being developed at the Institute, and stayed abreast of the HIPAA implementation progress in conjunction with the HIPAA Compliance Committee.

Research Committee: The committee met 5 times in 2004. During the year it reviewed 43 new protocols under a combination of expedited review and full review approval procedures. This is a slight increase from the previous year. One of the 5 meetings was a special meeting to discuss development of protocol submission procedures and review criteria for a new AFIP/ARP

Joint Grant Program. Under this program, funding would be provided by AFIP/ARP to researchers who submitted protocols that had the potential for future outside funding or that had significant military merit. A new form was developed specifically for these types of protocol submissions.

During 2004, the entire protocol review and submission process was streamlined and revamped. Many of the forms were revised to include these new procedures and criteria and to increase accountability of funding estimates and reimbursement mechanisms. The AFIP Investigator Guide was also extensively revised to reflect these changes and distributed with a 1 November 2004 publication date.

Myra A. Moxley
Chief, Case Materials Accountability Division
Date of Appointment — 12 October 1993

CASE MATERIALS ACCOUNTABILITY DIVISION

MISSION

The Case Materials Accountability Division (CMAD) is responsible for the accurate receipt and accessioning of all pathology cases submitted for consultation, education, and research. Cases are submitted from the DoD and other federal agencies, including the Department of Veterans Affairs, and from civilian pathologists all over the United States and the world. Cases received with discrepancies, such as mismatched paperwork and materials or missing items, are held and the contributor is called for verification. All discrepancies must be resolved or explained before the case can be processed. The division is also responsible for the receipt of all express and courier mail by the Institute during duty hours and it runs a messenger service that picks up and delivers pathologic case materials and packages throughout the Institute several times daily.

STAFF

Jacqueline Martinez, Triage Manager (ARP)
Rosetta Jackson, Supervisory Medical Records Technician, Gillette CMAD
Gloria Countiss, Lead Medical Records Technician
Norma Garey, Lead Medical Records Technician
Adrian Bingham, Lead Medical Records Technician
Geraldine Key-Lovett, Medical Records Technician
Velda Jones, Medical Records Technician
Constance Balthrop, Medical Records Technician, Gillette
Travis Jones, Medical Records Technician
Andrienne Kates, Medical Records Technician
Samira Price, Medical Records Technician (ARP)
Donnita Hodges, Medical Records Technician (ARP)
Tiloria Brooks-White, Medical Records Technician
Latarsha Fisher, Medical Records Technician (Anteon))
Tasheena Greenfield, Medical Records Technician (Anteon)
Ramona James, Medical Records Technician (Anteon)
Marveta Haynie, Medical Records Technician (Anteon)
Stephen Banda, Accessions Clerk
Joel Ryerson, Accessions Clerk
Eric Curry, Messenger (ARP)

Timothy Herring, Messenger (ARP)

ACTIVITIES

The combined division's workload statistics for 2004, compared to 2003, are as follows:

Workload Factor	*2004*	*2003*
Cases Accessioned	59,636	57,854
Federal Accessions	41,774	32,866
Civilian Accessions	17,862	23,125

During 2004 the division experienced a significant turnover of its contract personnel, including a complete turnover of its case delivery personnel, posing a large training burden. In addition, the case volume processed actually increased by approximately 3%.

In October 2004 the Cytology Service was discontinued. Division personnel had to more carefully screen cases to ensure that some pathologic material was included before cases could be accepted. Division personnel also had to return all cases not accepted for accessioning or that the departments decided to have deaccessioned.

Mercedes E. Russell
Chief
Date of Appointment — 2 October 1995

RECORDS REPOSITORY DIVISION

MISSION

The Records Repository Division consists of 2 branches, the Records Archives Branch (including the Medical Information Release Office) and the Pathology Data Branch. Both branches work closely together and many of the personnel have been cross-trained in each other's functions.

Record Archives Branch

1. Receives, stores, maintains, and retrieves all forms (microfiche, optical disk, paper) of pathologic case files.
2. Conducts inventory verification, appropriately identifies sequences, and performs initial document preparation functions such as ordering and de-duplicating the records prior to their being transferred the digital imaging contractor.
3. Matches Legal Medicine Claims files with the applicable accessioned record, verifies patient data in PIMS or accessions the case as required.
4. Performs quality assurance review on document images and passes or fails the images as applicable.
5. Retrieves previously accessioned case folders in response to the accessioning of a new case sequence on the same patient.
6. Returns original x-rays to contributors.
7. Processes all requests for release of information from the pathologic case files.
8. Processes all requests for loan or return of submitted pathologic materials (slides, paraffin blocks, or wet tissue specimens).
9. Tracks submission of all Department of Veterans Affairs claims cases.
10. Rotates into the Triage function as assigned.
11. Assists in receiving and accessioning Radiology class cases and Environmental Pathology Registry cases (KUW, POW, and Agent Orange).
12. Maintains Institute Special Handling file and performs annual inventory and screening of held records.

13. Assists in record location audits and in looking for missing or misplaced records.

Pathology Data Branch

1. Abstracts, codes, and classifies final diagnoses of accessioned cases according to SNOMED International.
2. Retrieves demographic and diagnostic data from the research database to assist Institute staff members in their research and teaching endeavors.
3. Obtains patient follow-up information in support of approved clinicopathologic correlation or descriptive pathology studies.
4. Contacts contributing pathologists, hospitals, tumor registrars, patients, military records centers, and clinicians to obtain complete information.
5. Prepares search requests to forward to the National Death Index (NDI) to include NDI Plus, at the request of investigators.
6. Rotates into the Triage function as assigned.
7. Assists in receiving and accessioning Radiology class cases and Environmental Pathology Registry cases (KUW, POW, and Agent Orange).
8. Generates invoices on civilian cases using applicable CPT codes; ensures all patient and contributor demographic data is accurate and that all laboratory tests ordered in PIMS are accounted for through the billing or no bill memo functions.

RECORD ARCHIVES BRANCH/MEDICAL INFORMATION RELEASE OFFICE

STAFF

Louise Matthews, Lead Medical Records Technician
Eva D. Duncan, Medical Information Release Specialist
Shirley Shields, Medical Records Technician
Raymond Riley, Medical Records Technician
Lenora Vaughn, Medical Records Technician
Pamela Poteat, Medical Records Technician
Serita Hewitt, Medical Records Technician
Glenda Taylor, Medical Records Technician (ARP)
William Moore, Quality Assurance Technician (Anteon)
Mary Coleman, Quality Assurance Technician (Anteon)
Delreka Nelson, Quality Assurance Technician (Anteon)
Lolita Johnson, Quality Assurance Technician (Anteon)

ACTIVITIES

The division's workload statistics for 2004 compared to 2003 are as follows:

Workload Factor	*2004*	*2003*
Folder/Materials Actions Received	74,174	78,600
Retrieval/Sent Actions	11,590	12,932
Information Release Requests	2,685	1,867

This year, the number of information release requests increased substantially. Many of them involved contributors requesting return of their materials after the case had been accessioned and finalized. Additionally, the Records Repository experienced a huge influx of older records with the departure of some of the Institute's major researchers. The backlog of sorting and filing that the turn-ins created will not be cleared up until early 2005.

This year Records Repository personnel assumed even more responsibility for preparing records for imaging and quality assurance review of scanned images. A large turnover of contract personnel assisting in this project occurred toward the end of the year, creating a

large training burden for the government staff for the new year.

PATHOLOGY DATA BRANCH

STAFF

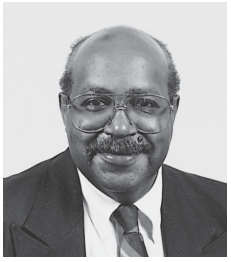
Toni Dickens, Lead Medical Records Technician
Janice Powell, Medical Records Technician
Terry Lloyd, Medical Records Technician
Tammie Miles, Medical Records Technician
Jacqueline Pinnix, Medical Records Technician
Elaine Tabernilla, Medical Records Technician (VA)
Frances Wise, Medical Records Technician (VA)
Andre Thornton, Data Quality Technician (ARP)

ACTIVITIES

The Pathology Data Branch's workload for 2004, compared with 2003, is as follows:

Workload Factor	*2004*	*2003*
Cases Uploaded	45,064	53,464
Data Retrievals	162	171
Invoices Generated (Since 1 Oct 2004)	3,275	N/A

During 2004, the Pathology Data Branch took on the civilian invoice generation function without any additional personnel or resources. During the period 5 January through 30 September 2004, they generated billing worksheets for the ARP Billing Office. During this time, branch personnel identified many problems with the billing software, as well as with the staff following current practice guidelines as they pertained to the creation of the final consult letter. As a result, numerous changes and upgrades to the billing software were made and the practice guidelines revised. On 1 October 2004, the branch took over responsibility for actually producing and mailing the invoices. As a result, the coding backlog increased during 2004. However, by the end of the year it had started to go down as most of the problems in the billing software were resolved, with the billing function taking up less of each technicians time than previously.



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-resealing laboratory is maintained for use in processing formalin-fixed tissue for storage and for tissue resealing and maintenance

functions. 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 two 15,000 square foot warehouses located on the Forest Glenn Annex in Silver Spring, Maryland.

STAFF

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
Willie Lovett, Materials Handler
Larry Middleton, Materials Handler
James C. Stinney, Materials Handler
Audrey E. Tinker, Materials Handler
Marvin L. Alston, Materials Handler/Driver
Kendrick Summers, Materials Handler
John McClenny, Materials Handler
Douglas Underwood, Materials Handler
Ronnie Payne, Materials Handler (ARP)
Tyrone Connie, Materials Handler (ARP)
James Nelson, Materials Handler (Anteon)
Della Owens, Materials Handler (Anteon)
Calvin Tillman, Materials Handler (Anteon)
Brian Salewski, Materials Handler Clerk (Rock Terrace)

ACTIVITIES

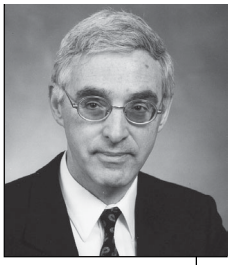
The division's workload statistics for 2004, compared to 2003, are as follows:

Workload Factor	*2004*	*2003*
Cases received for file	78,426	98,077
Cases forwarded	11,236	9,128

The Materials Repository was inundated this year with a large volume of materials being returned to the Repository by researchers who departed the Institute. This large volume of slides, blocks, and tissues will not be fully processed and filed back into the Repository until several months into 2005.

During 2004, repository personnel continued to assist in the oversight of the digital imaging contract inspecting and verifying a random 1% of the base closure materials inventory results, and certifying shipments of records for imaging to the various IMC imaging facilities in West Virginia.

As part of the Repository Modernization Contract this year, all 4 of the microscopic glass slide robotic inserter/extractor (IE) devices were replaced. In addition, part of the high-density shelving in Bldg 510 was removed to make room for new Vertical Lift Module (VLM) equipment that was needed to facilitate expansion of the slide repository. All these items are currently undergoing final testing and fine tuning prior to government acceptance.



Leslie H. Sobin, MD, SES
Director
Date of Appointment — 20 September 1987

CENTER FOR SCIENTIFIC PUBLICATIONS

STAFF

Leslie H. Sobin, MD, SES, Director
Frances W. Card, Visual Information Specialist
Bonnie L. Casey, Scientific Editor, ARP
James C. Eastep, DVM, MS, Computer Aided Instruction Consultant, ARP (part-time)
Junko Monroe, Multimedia Production Technician, ARP
Linda A. Murakata, CDR, MC, USNR, Associate Editor (part-time)
Michele Richman, Editor/Multimedia Production Technician, ARP
(D) Kenneth Stringfellow, Scanning Technician

IMPACT

The Center for Scientific Publications:

- oversees editorial and publishing issues of Institute-wide interest,
- reviews proposals for AFIP-generated publications,
- provides editorial review of manuscripts,
- oversees the processing and transmitting of manuscripts to publishers,
- maintains the Institute's publications records and archives,
- collects book reviews of AFIP publications,
- reviews requests for permission to reprint published materials,
- edits, designs, and produces the Annual Report, the Annual Research Progress Report, the Institute's non-serial publications, the *AFIP Letter*, informational brochures, and catalogs,
- prepares 4-color and halftone scanned images for the Institute's non-serial publications, generating digitized images for production and archiving,
- provides expert review and consultation for the AFIP/ARP Atlases of Tumor and Nontumor Pathology,
- designs, coordinates, and produces CD-ROMs of Institute publications, and provides user support,
- 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 UICC's TNM Classification and oversees publication of the revised editions.

The Center for Scientific Publications produced, in collaboration with ARP, an atlas of pathology on tumors of the kidney, bladder, and related urinary structures and an atlas of nontumor placental pathology. The worldwide distribution of these 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.

Work on the fourth series of tumor atlases and on the nontumor atlas series continues.

There has been close collaboration with the International Agency for Research on Cancer to

develop the WHO Classification of Tumors series: Pathology and Genetics of Tumors and the International Classification of Diseases for Oncology (ICD-O). Work continues with the UICC on tumor classification and staging (TNM system) and the interaction of staging with nonanatomic prognostic factors.

PROFESSIONAL ACTIVITIES

Official Trips

May 2004, Geneva, Switzerland, TNM Prognostic Factors Project Meeting, International Union Against Cancer, LH Sobin (UICC).

Committees

1. Chair, Committee on Graduate Medical Education, AFIP, LH Sobin.
2. Chair, TNM Prognostic Factors Project of the UICC, LH Sobin.
3. Member, WHO Expert Advisory Panel on Cancer, LH Sobin.
4. Member, AFIP Institutional Review Board, F Card.
5. Member, Library Use Committee, J Eastep.

Editorships

LH Sobin:

1. Associate Editor, AFIP Atlas of Tumor Pathology, 4th Series
2. Associate Editor, AFIP/ARP Atlas of Nontumor Pathology
3. Series Coeditor, WHO Classification of Tumors: Pathology and Genetics of Tumors

Award

Dr. Sobin received the UICC's 2004 Award for Excellence in Global Cancer Control for his work on the TNM Classification of Malignant Tumors.

AFIP Staff Publications (LIST ON PAGE 255)

Professional journals	180
Books and chapters	46
Abstracts	135
Other publications	22

AFIP/ARP Publications Distributed

Sold fiscal year 2004

Series IV Tumor Fascicles	5,899
Series III Tumor Fascicles	3,507
Non-Tumor Fascicles	3,838
Other publications	2,227
CD-ROMs	918

Publications Distributed to 450 Military Pathologists

1. Atlas of Tumor Pathology Series 4, Number 1, *Tumors of the Kidney, Bladder, and Related Urinary Structures*.
2. Atlas of Nontumor Pathology, Number 3, *Placental Pathology*.

AFIP/ARP Books Published

1. Murphy WM, Grignon DJ, Perlman EJ. *Tumors of the Kidney, Bladder, and Related Urinary Structures*. Washington, DC: American Registry of Pathology, Armed Forces Institute of Pathology; 2004. Series 4, Fascicle 1, AFIP Atlas of Tumor of Pathology. ISBN: 1-881041-88-3.
2. Kraus FT, Redline RW, Gersell DJ, Nelson DM, Dicke JM. *Placental Pathology*. Washington, DC: American Registry of Pathology, Armed Forces Institute of Pathology; 2004. Fascicle 3, AFIP Atlas of Nontumor of Pathology. ISBN: 1-881041-89-1.
3. Meuten DJ, Everitt J, Inskeep W, Jacobs RM, Peletiero M, Thompson KG. *WHO Histological Classification of Tumors of the Urinary System of Domestic Animals*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2004. Second Series, Volume XI, WHO International Histological Classification of Tumors of Domestic Animals. ISBN: 1881041-90-3

Other Publications

Armed Forces Institute of Pathology Annual Report 2003. Washington, DC: Armed Forces Institute of Pathology; 2004.

Web-Based Publications

1. McEvoy PL, Neafie RC, Klassen-Fisher MK, Nelson AM, Casey BL, Draley D, Aronson N, Wortmann G, Polhemus M. *Cutaneous Leishmaniasis*. http://www.afip.org/Departments/infectious/lm/index.html
2. Nelson AM, Williams B, Draley D, Singh M. *Monkeypox*. http://www.afip.org/Departments/infectious/mp/index.html

AFIP Atlas of Tumor Pathology, Series IV

Tumors of the Kidney, Bladder and Related Urinary Structures

AFIP Atlas of Nontumor Pathology

1. Non-Neoplastic Disorders of the Lower Respiratory Tract
2. Placental Pathology

AFIP Atlas of Tumor Pathology, Series III

1. Tumors of the Uterine Corpus and Gestational Trophoblastic Diseases
2. Tumors of the Cervix, Vagina, and Vulva
3. Tumors of the Thyroid Gland
4. Tumors of the Parathyroid Gland
5. Tumors of the Mammary Gland
6. Tumors of the Bones and Joints
7. Tumors of the Bone Marrow
8. Tumors of the Serosal Membranes
9. Tumors of the Mediastinum
10. Tumors of the Central Nervous System
11. Tumors of the Eye and Ocular Adnexa
12. Tumors of the Lower Respiratory Tract

Jeffrey T. Mason, PhD
Chair
Date of Appointment — 1 May 2004

DEPARTMENT OF BIOPHYSICS

STAFF

Scientific

Jeffrey T. Mason, PhD, Chair
Kimberlee Potter, PhD, Director, AFIP MRI Facility
Vladimir K. Rait, PhD, Research Associate
Lixin Xu, MD, PhD, Research Associate
Robert E. Cunningham, MS, Biologist and Histopathologist
Ingrid Chesnick, BS, Technician

IMPACT

Biotoxin Detection

We are developing simple field-deployable assay systems for detecting biological toxins with high specificity and at sensitivity levels approaching 100 molecules. During the past year we have optimized an assay called immunoliposome polymerase chain reaction (ILPCR) for the detection of biological toxins in fluids. Using this assay we can detect cholera toxin in deionized water with a detection threshold and accuracy (95% confidence limit) of 5 ± 2 molecules. In addition, we can detect cholera toxin in human urine (43 ± 12 molecules) and farm run-off (173 ± 112 molecules). We have also developed an ILPCR assay for botulinum neurotoxin type A in deionized water (12 ± 5 molecules). These assays are 3 orders of magnitude more sensitive than current assays for cholera or botulinum toxins. This research is critical to homeland security, the protection of **military personnel** in combat or peacekeeping operations, and the forensic analysis of terrorist incidents. A patent application for our assay method was prepared and has been approved by USAMRAA for submission to the US Patent and Trademark Office. This work is funded by a grant from the Peer Reviewed Medical Research Program (PRMRP) supplement to the US Army Medical Research and Materiel Command (USAMRMC).

Chemistry of Formalin Fixation

We are developing methods to reverse the effects of formalin fixation on proteins and RNA so that these molecules can be recovered from formalin-fixed paraffin-embedded tissues for retrospective proteomic and genomic analyses. If successful, this research could dramatically improve our ability to diagnose and treat numerous diseases. These methods are also highly relevant to the evaluation of formaldehyde-treated pathology specimens obtained from **military casualties** that have been exposed to infectious or toxic biowarfare agents. During the past year we have demonstrated for the first time that protein immunoreactivity and function can be recovered from proteins treated with formaldehyde by chemically reversing formaldehyde cross-linkages. Two papers describing this work were published in *Laboratory Investigation* and were accompanied by a favorable commentary. We have also demonstrated that exposure to ethanol during tissue histology results in the conversion of RNA-formaldehyde adducts into covalent modifications that are likely to interfere in subsequent attempts to amplify the RNA by RT-PCR. This work is funded by a grant from the National Cancer Institute (NCI). A 3-year grant to continue this work was funded by the NCI during 2004.

Studies of Bone Development and Tissue-Engineered Bone Implants

Traumatic bone injury and bone disease constitute the majority of medical cases of active duty personnel, costing the **military** millions of dollars and thousands of lost man-hours per year. We are actively involved in using magnetic resonance microscopy (MRM) to develop and evaluate tissue-engineered bone implants for reconstructive bone surgery and to evaluate bone disease. We employ MRM as a noninvasive high-resolution imaging modality to assess bone repair, bone and cartilage growth, and the infiltration of bone matrix into various scaffold materials. The goal of this work is to develop tissue-engineered bone implants for repair of injured or diseased bone and to compare the effectiveness of these constructs against more traditional strategies involving bone grafts. The results of this research will have a significant impact on the medical treatment and rehabilitation of active duty **military personnel**. This work is being funded by a grant from the National Institutes of Health (NIH). A 4-year grant to continue this work was funded by the NIH during 2004.

Other Military-Relevant Research

We are employing MRM in an ongoing project in collaboration with Dr. Darlene Ketten of the Woods Hole Oceanographic Institute and Harvard Medical School to image the membranous labyrinths of the human cochlea. These studies have the goal of understanding hearing loss in traumatic ear injuries and optimizing the development and placement of cochlear implants in restoring auditory function. We are also employing MRM for wound pattern analysis in skin and eyes for applications in forensic medicine. An externally funded collaborative research project with the Department of Genitourinary Pathology to image prostatic carcinoma by MRM was initiated during 2004. Finally, an externally funded project with TopSpin, Inc. to image atherosclerotic plaques in human ex vivo arterial vessels was established. TopSpin is developing NMR catheter probes for the clinical in vivo localization of vulnerable plaque in human patients.

CONSULTATION

The AFIP MRI Facility provides MRM imaging services to the AFIP and other **military** and civilian **collaborators**. MRM techniques in cardiovascular, pediatric, forensic, otologic, orthopedic, genitourinary, and ophthalmic pathology have been developed for analysis of cases for research and diagnostic applications. We are also the sole source for JC virus testing for the Institute. There were no changes to contributor diagnoses.

Cases	*Completed*
Interdepartmental	33
Total	33

EDUCATION

Courses: Our staff participated in one non-AFIP course in 2004.

Trainees: Ingrid Chesnick, summer intern, 3 months.

Presentations

1. February 2004: Washington, DC, US Army Telemedicine and Advanced Technology Research Center, "Advanced technologies for the detection of biological toxins and chemical warfare agents," JT Mason.
2. April 2004: San Juan, PR, Peer-Reviewed Medical Research Forum, "High sensitivity detection of biological toxins," JT Mason.
3. July 2004: San Diego, Calif, International Congress of Histochemistry and Cytochemistry, "Mechanisms of formaldehyde fixation and antigen retrieval," JT Mason.
4. September 2004: Washington, DC, International Congress on Military Medicine, Medical Preparedness, and Crisis Response, "High sensitivity detection of biological toxin," JT Mason.
5. October 2004: Calgary, Alberta, University of Calgary, "Magnetic resonance microscopy of mineralization," K Potter.

RESEARCH

Journal Articles

1. Rait VK, O'Leary TJ, Mason JT. Modeling formalin fixation and antigen retrieval with bovine pancreatic ribonuclease A. I. Structural and functional alterations. *Lab Invest.* 2004;84:292-299.

2. Rait VK, Xu L, O'Leary TJ, Mason JT. Modeling formalin fixation and antigen retrieval with bovine pancreatic ribonuclease A. II. Interrelationship of cross-linking, immunoreactivity, and heat treatment. *Lab Invest.* 2004;84:300-306.
3. O'Leary TJ, Mason, JT. A molecular mechanism of formalin fixation and antigen retrieval. *Am J Clin Pathol.* 2004;122:154-155.
4. Thali M, Dirnhofer R, Becker RL, Oliver W, Potter K. Is "virtual histology" the next step after the "virtual autopsy"? Magnetic resonance microscopy in forensic medicine. *Magn Reson Imaging*. 2004;22:1131-1138.
5. Potter K. Standard guide for assessing microstructure of polymeric scaffolds for use in tissue engineered medical products. *National Institute of Standards and Technology*. 2004;ASTMF24:50-54.
6. Washburn N, Weir M, Anderson P, Potter K. Non-invasive characterization of bone formation in polymeric scaffolds by proton magnetic resonance microscopy and X-ray microtomography. *J Biomed Mater Res.* 2004;67A:738-747.

Abstracts

1. Mason JT, Rait VK, O'Leary TJ. The effect of formaldehyde treatment on the conformational, dynamic, and thermotropic properties of bovine serum albumin. *Biophys J.* 2004;247:2610.
2. Mason JT, Xu L, Sheng ZM, O'Leary TJ. High-sensitivity detection of biological toxins. *Peer-Reviewed Medical Research Forum Proceedings*. 2004;1:30.
3. Mason JT, Batenjany MM, Levin IW, O'Leary TJ. The Raman terminal deformation mode as a probe of bilayer structure. *Biophys J.* 2004;247:1983.
4. Potter K, Avallone F, Eidelman N. Spatial mapping of collagen deposition in bone cultures by magnetic resonance and FTIR micro-imaging. *8th International Conference on the Chemistry and Biology of Mineralized Tissues*. 2004;8:138.
5. Potter K, Todorov T, Centeno JA, Small J. Manganese-enhanced magnetic resonance microscopy of mineralization. *8th International Conference on the Chemistry and Biology of Mineralized Tissues*. 2004;8:139.
6. Furusato B, Potter K, Becker RL, Sesterhenn IA, Davis CJ. Prostatic carcinoma detection in radial prostatectomies by magnetic resonance microscopy and light microscopy. *US and Canadian Academy of Pathology*. 2004;84:154A.

Projects

1. Formalin fixation and recovery of RNA and protein.
2. A field-deployable ultra-sensitive assay system for biological toxins using immunoliposome-DNA amplification hybrids.
3. Nuclear microarrays for quantitative high-throughput molecular screening of tissue specimens.
4. Correlation of NMR measurable parameters.
5. Mapping retinal hemorrhages with magnetic resonance microscopy.
6. NMR microscopy of metastatic disease.

Collaborators

Interdepartmental:

1. Robert E Becker, Genitourinary Pathology, AFIP.
2. Isabell Sesterhenn, Genitourinary Pathology, AFIP.
3. Renu Virmani, Cardiovascular Pathology, AFIP.
4. Ian McLean, Ophthalmic Pathology, AFIP.

Civilian:

1. Naomi Eidelman, American Dental Association, Gaithersburg, Md.
2. Darlene Ketten, Harvard Medical School, Boston, Mass.
3. Michael M. Batenjany, Novagen, Madison, Wis.
4. William Landis, Northwestern Ohio Universities College of Medicine, Rootstown, Ohio.
5. Newell Washburn, National Institutes of Standards and Technologies, Gaithersburg, Md.
6. Paul Anderson, Queen Mary College, University of London, England.
7. Michael Thali, Institute for Forensic Medicine, University of Bern, Switzerland.
8. Anthony Guiseppi-Eli, Virginia Commonwealth University, Richmond, Va.

9. Thomas Johnson, Department of Preventative Medicine, USUHS, Bethesda, Md.
10. William Oliver, Georgia Bureau of Investigation, Trion, Ga.

PROFESSIONAL ACTIVITIES

Official Trips

1. March 2004, NIH, Special reviewer for microscopic imaging study section, Bethesda, Md, K Potter.
2. March 2004, NIH, Special reviewer for bioengineering partnership study section, Bethesda, Md, K Potter.
3. September 2004, NIH, DoD representative to the Advisory Council of the National Institute of General Medical Sciences, Bethesda, Md, JT Mason.
4. October 2004, Virtopsy Foundation Board of Switzerland, Science Advisory Board, Bern, Switzerland, K Potter.

Manuscripts Reviewed

JT Mason:

1. *Biochimica et Biophysica Acta*
2. *Biophysical Journal*
3. *Chemistry and Physics of Lipids*
4. *Journal of Membrane Biology*
5. Appointed to the Editorial Advisory Board, *Molecular Membrane Biology*

K Potter:

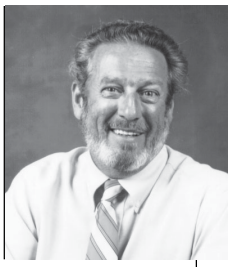
1. *Journal of Magnetic Resonance and Neuroimaging*
2. *Biotechnology Progress*
3. *Journal of Microscopic Imaging*

OFFICE OF QUALITY AND COMPLIANCE

Thomas R. Himes
CAPT, MC, USN
Director, Office of Quality and Compliance

Safety Management

Office of Quality Assurance



Ronald H. Suter
Director, Safety, Occupational Health, and Environmental Management
Date of Appointment — 6 March 1994

OFFICE OF SAFETY MANAGEMENT

STAFF

Ronald H. Suter, Director, Safety, Occupational Health, and Environmental Management
Brenda L. Smith, BioSafety and Occupational Health Manager

IMPACT

The Office of Safety Management was established in March 1994 to develop and manage a safety program for the AFIP, as outlined in Army Regulation 385-10, *Department of the Army Safety Program*. Our office monitors guidelines set forth by the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and the College of American Pathologists (CAP). We serve as AFIP liaison with US Army Medical Command (MEDCOM) Safety Office and coordinate with the WRAMC departments of Safety, Occupational Health, Industrial Hygiene, Health Physics, Public Works, and Fire Department. We also serve on many safety-related committees, investigate all on-the-job injuries, and maintain a reference library of EPA, OSHA, DoD, and local safety-related publications. In keeping with the DoD goal of pollution prevention, we operate 5 distillation units, which recycle alcohol, xylene, and formalin back into AFIP laboratories, at considerable savings to the Institute.

ACTIVITIES

The Office of Safety Management:

- Is represented on the following committees: AFIP Safety Committee; AFIP Biosafety Committee; AFIP BioSurety 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.
- Has sole responsibility for disposal of all AFIP's hazardous waste to the WRAMC Hazardous Waste Bunker and making numerous entries in the Hazardous Substance Management System (HSMS), a computerized tracking system mandated by DoD that tracks hazardous substances from vendor to disposal.
- Presents all annual training required by OSHA (Hazardous Communication, Bloodborne Pathogens, Fire Extinguisher Training) to the AFIP staff.
- Has been tasked with a significant new mission: the Waste Management Program. This includes the solvent distillation of xylene, alcohol, and formalin; management of regulated medical waste; monitoring of hazardous chemical waste; and monitoring of silver recovery. AFIP's current recycling equipment has proven to be very cost-efficient. In 2003 the Office of Safety Management recycled 265 gallons of alcohol, 300 gallons of xylene, and 250 gallons of formalin for a savings in purchase and disposal of $28,489.00. Not only is the Office of Safety Management recycling these chemicals for AFIP's use, but we now recycle for some WRAMC activities.

Ms. Brenda Smith, the BSL-3 Safety Manager, has sole responsibility for safety issues and concerns for 6 BioSafety Level 3 (BSL-3) laboratories.

Frank J. Roberts
Quality Assurance Coordinator
Date of Appointment — 19 January 1993

OFFICE OF QUALITY ASSURANCE

STAFF

Frank J. Roberts, Quality Assurance Coordinator
Nicole Jenkins, Health System Specialist
Estella Page, Office Automation Clerk

ROLE AND FUNCTION

The Office of Quality Assurance oversees the Institute's quality assurance, risk management, and the 5 residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) (Dermatopathology, Forensic Pathology, Hematopathology, Neuropathology, and Selected Pathology (Pulmonary Pathology)). To accomplish this mission, the office:

- Monitors Institute compliance with the DoD's Clinical Laboratory Improvement Program, College of American Pathologists (CAP) and ACGME accreditation requirements, and the Department of the Army and the AFIP quality assurance and graduate medical education regulations.
- Serves as AFIP liaison with the VA Diagnostic Services quality assurance staff.
- Manages the AFIP/Military/VA Histopathology Quality Assessment Program (HQAP) and the Systematic External Review of Surgical Cases (SERS) program.
- Manages and coordinates the AFIP American Red Cross Volunteer Program and represents the AFIP on WRAMC's American Red Cross Advisory Council.
- Manages the Brazil External Peer Review program.
- Maintains a reference library containing publications from CAP, National Committee for Clinical Laboratory Standards, and Occupational Safety and Health Administration (OSHA) standards.
- Manages the Medical Surveillance and Respirator Protection programs for ARP contract employees.

ACTIVITIES

- Prepared the ACGME Institutional Review Document and coordinated the successful ACGME Institutional Review (1 April 2003). AFIP received a Favorable Decision with a 5-year accreditation. The next Institutional Review will be April 2008.
- Coordinated preparation of the AFIP's CAP reaccreditation packet and the October CAP inspection. This was the most successful inspection since CAP began accrediting the AFIP.
- Mailed AFIP/ARP Atlas of Tumor Pathology fascicle number 32, *Tumors of the Intestines*, to military pathologists.
- Annually review and update as needed AFIP Regulation 40-8, V*eterans Affairs Pathology Review Program,* AFIP Regulation 40-64, *Occupational Health 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, annually review and update 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 OSHA.

- Provide senior staff members statistical data on case accessioning, management, and trends as requested.
- Manage an external peer review program with the Brazilian Society of Pathology State of Sao Paulo. On a bimonthly basis, 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.
- Four HQAP cases are assembled and mailed quarterly to all military and VA medical centers/hospitals reviewing surgical cases. Last year 582 military (176) and VA (406) pathologists were awarded 9,312 hours of CME credit for participation in the program.
- SERS: The chief of the Pathology and Laboratory Medicine Service at each VA Medical Center that performs surgical and cytology examinations selects and forwards to AFIP 3 significant surgical pathology cases every other month for a total of 18 cases per year. The cases are reviewed by AFIP, with comments on significant features. Quarterly, our office provides the VA Chief Consultant for Diagnostic Services Strategic Health Group a report on participating VA medical centers. During 2003, 106 facilities submitted 1,775 cases to the SERS program.
- Manage the AFIP's American Red Cross Volunteer Program. During 2003, 17 volunteers donated over 6,710 hours.
- Manage a comprehensive medical surveillance and respirator protection program for ARP employees.
- Ms. Estella Page serves as the timekeeper/liaison for the 17 VA employees assigned to the AFIP.

OFFICIAL TRIPS

1. Washington, DC, FDA, Good Laboratory Practices Workshop, N Jenkins, F Roberts.
2. Leesburg, Va, Centralized Credentials Quality Assurance System Workshop, N Jenkins.

GRADUATE MEDICAL EDUCATION COMMITTEE

The GMEC meets at least quarterly and maintains written minutes documenting its activities and fulfillment of its responsibilities.

MEMBERSHIP

Donald E. Sweet, MD, SES, Chair
George P. Lupton, MD, Program Director, Dermatopathology Residency Program
CDR Craig T. Mallak, Program Director, Forensic Pathology Residency Program
Susan Abbondanzo, MD, Program Director, Hematopathology Residency Program
COL Hernando Mena, Program Director, Neuropathology Residency Program
William D. Travis, MD, Program Director, Pulmonary Pathology Residency Program
Nadine S. Aguilera, MD, Hematopathology
Scott D. Humble, MD, Resident/Fellow Representative (academic year 04)
Carla Penner, DDS, Resident/Fellow Representative (academic year 03)
Tabitha Viner, DVM, Resident/Fellow Representative (academic year 03)
Nicole L. Jenkins, Office of Quality Assurance
Frank J. Roberts, DIO/Secretary
Tammie Winters, Pulmonary Pathology
Danny L. Urquhart, ARP

MISSION

Graduate medical education at the AFIP is the cornerstone of the mission of education, research, and consultation. The AFIP acknowledges an absolute correlation between quality graduate medical education, clinical excellence, and scientific development. The AFIP is committed to assisting and expanding its GME programs and ensuring an environment conducive to teaching and higher learning. The program directors and their professional staff accept responsibility for the fellows' professional and personal development, and continually seek to improve their own knowledge and skills. Together, the administration, program directors, and participating fellows strive to enhance their professional ability and sustain an environment that nurtures innovation, creativity, and teamwork.

ACGME-ACCREDITED PROGRAMS

The AFIP serves a sponsoring institution for 5 pathology subspecialty programs:

1. Dermatopathology
2. Forensic Pathology
3. Hematopathology
4. Neuropathology,
5. Selective Pathology (Pulmonary Pathology)

ACTIVITIES

Institutional Review

AFIP received its Institutional Review on April 1, 2003 and the result was presented to the ACGME Institutional Review Committee. AFIP received a Favorable Decision with a 5-year accreditation.

Dermatopathology Residency Review Committee Site Visit

The Dermatopathology Residency Program received its Residency Review Committee site visit on January 16, 2003 and the results were presented to the Residency Review Committee for Dermatopathology. Dermatopathology received a 3-year Continued Full Accreditation.

Forensic Pathology Residency Review Committee Site Visit

The Forensic Pathology Residency Program received its Residency Review Committee site visit on November 20, 2003 and the results should be presented to the Residency Review Committee for Forensic Pathology spring 2004 meeting. We anticipate that the program will receive a finding of Continued Full Accreditation.

Resident Supervision

The GMEC assures that each of AFIP's subspecialty residency programs provides appropriate supervision of its residents in accordance with ACGME's institutional and program requirements. This is done through the internal review process, reviewing each program's letter of accreditation, reviewing program goals and objectives, resident exit surveys conducted by the GMEC at the end of each academic year, and discussion at GMEC meetings.

Resident Responsibilities

Resident responsibilities are written into each resident's training agreement as well as each program's goals and objectivities. These documents are reviewed annually and updated as needed.

Resident Evaluation

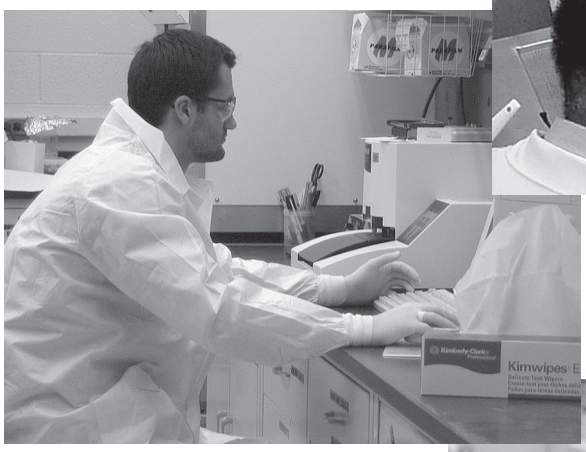
Residents are usually evaluated after each rotation. At a minimum, each resident is evaluated every 6 months. Residents are also regularly assessed in each of the 6 general competencies (patient care, medical knowledge, practice-based learning, interpersonal and communication skills, professionalism, and system-based practice).

ACGME DUTY HOUR REQUIREMENTS

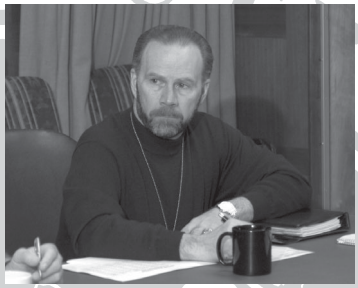
The AFIP, as required by the ACGME, has implemented the new duty hour requirements in our 5 subspecialty programs. Each program director and resident was provided a copy of the new ACGME duty hour requirements, and AFIP Regulation 351-2, *Policies and Procedures for the Administration of Graduate Medical Education*, has been updated to reflect the new duty hour requirements. The GMEC assesses program compliance with the duty hour requirements through program letters of accreditation, internal reviews, and discussions at GMEC meetings.

GENERAL COMPETENCIES

General competencies have been introduced into all AFIP residency programs' curricula. The programs are currently at various stages in the teaching and evaluation of these competencies. The GMEC is working with program directors to ensure that the general competencies are fully implemented in all our programs. The general competencies are an open item at our GMEC meetings, and internal reviews cover the program's implementation and evaluation of the general competencies.


Kimwipes

DIRECTORATE OF ADMINISTRATIVE SERVICES



Paul Bluteau
Director, Administrative Services

founded as ARMY MEDICAL MUSEUM 1862

Human Resources

Business Office

Resources Management

Logistics

Information Management

Paul E. Bluteau
Director, Administrative Services
Date of Appointment — 23 January 2001
Deputy Director, Strategic Planning, 7 July 1999 - 22 January 2001

Director of Administrative Services ..... Paul Bluteau
Administrative Analyst ..... Cheryl Colbert
Business Office ..... Mike F. Nola, PhD
Human Resources ..... James Staiger, MD
Personnel Management Division ..... Wendy Baker
Military Personnel Division ..... Victor E. Inniss, II, LTJG, MSC, USNR
Civilian Personnel Division ..... Vaughany M. Casey

Resources Management ..... Kevin P. Monahan
Financial Division ..... Katie L. Askew

Logistics Department ..... Lonnie Winley
Materiel Acquisition Division ..... Lisa Wilson, CPT, MS, USA
Facilities & Service ..... Cornelius L. Reeder
Facilities Maintenance Branch ..... Allen Harris
Environmental Services ..... Gary Brown
Property Management Division ..... CPT Johnson
Property Branch ..... Rudolph Wynn
Medical Maintenance Branch ..... McDaniel
Logistics Support Division ..... Charles Harris
HSMS Branch ..... Christopher Jordan
Receiving & Distribution Division ..... Diedra Carey
Security Division & Reception Desk ..... Scott G. Gagnon

Information Management ..... Franklin D. Rowland, LTC, MS, USA
Automation Management Service ..... Vacant
Developers ..... Guy Peay
User Support ..... Edwana Jones
Network Support/Tel ..... David A. Hackney
Photography ..... Vacant
Records Forms Management ..... Bonnie Short
Digital Imaging Center ..... Douglas Landry
Exhibits Production ..... Larry Claiborne

NATIONAL MUSEUM OF HEALTH AND MEDICINE

Adrianne Noe, PhD
Director
National Museum of Health and Medicine

Adrianne Noe, PhD
Director
Date of Appointment—September 1995

NATIONAL MUSEUM OF HEALTH AND MEDICINE, AFIP

MISSION AND ACTIVITIES

The NMHM promotes the 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 to edit record to make databases available for the Internet, which allow the collection to be more accessible to researchers. We cultivate ties with professional medical societies and with the DoD 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 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 NMHM, AFIP, as a DoD asset and 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.

OFFICE OF THE DIRECTOR

STAFF

Adrianne Noe, PhD, Director
Donna R. White, Administrator
Steven Solomon, Public Affairs
(D) Susan Martin, Public Affairs Assistant
Theresa Butler, Staff Assistant
(A) Melba Stewart, Special Events and Facilities
Shelly Currie, Visitor Services Representative
(A) Von Keith Brooks, Visitor Services Representative
(A) Andre Upshur, Visitor Services Representative

The Office of the Director oversees the general activities and governance of all aspects of the Museum and provides policy, technical, and scientific direction. It 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 contract with the coverage of AFIP's NMHM. The administrative support staff continues to improve the quality of support provided to the departments of the Museum. This administrative group provides a variety of management services essential to the operation of the Museum in the areas of budgeting, manpower/personnel, contract administration, and organizational management. The office provides general supervision of the Office of Public Affairs, the Department of Programs and Exhibitions, and the Department of Collections and Research. The office communicates and coordinates with the ARP (PL94-361) and numerous public and private organizations for institutional development. The Director of the NMHM is a member of the AFIP Executive Committee and an Associate Director of the AFIP.

Activities

Activities for 2004 are fully described in other elements of this report. However, a few bear particular notice. Two major exhibitions were opened—one highlighting the works of the renowned artist Laura Ferguson, entitled "The Visible Skeleton Series," and the second, a display of unique images from Alexander Tsiaras's book *Architecture and Design of Man and Woman—The Human Body Revealed*. Both received critical acclaim and were drawn at least in part from holdings at the Museum. The latter exhibit made use of emerging imaging technologies such as magnetic resonance microscopy, a technique the very development of which was funded by the NIH and which relied upon access to Museum holdings. The "Battlefield Surgery" exhibition was expanded with the support of activities at WRAMC, and original contributions of cartoonist and commentator Garry Trudeau. The Museum again offered the successful Forensic Anatomy Workshop through the AFIP's education department. Collecting has been particularly strong in the areas of **military medicine**, with the initiation of systematic programs to assemble and provide access to works representing the efforts of the Frank Berry Prize winners—an effort made possible through collaboration with the offices of *U.S. Medicine* and the prize winners themselves.

The **military medical** historical strengths of the staff are widely recognized. Two staff members traveled to assess historic medical materials in Seoul at the request of the US Army. At the request of DoD officials, the Museum began a collaboration with the Russian Military Medical Museum of the Defense Ministry of the Russian Federation and its Archives of Military Medical Documents. This collaboration helps to facilitate the mutual MIA program. Also at US Air Force request, a staff member has been named to a panel to assess the roles and plans for unique and historically important artifacts and archives. Staff members were also guests of the organizers of the internationally recognized TEDMED meetings in October. This group brings together **military**, industrial, and academic **leaders** in medical technology development; the Museum's role was to bring an array of artifacts for the participants to discuss and to make an extended platform presentation. This afforded an opportunity to illustrate how older devices, many of which have passed from common memory, now hold great potential again for use as surgical instruments in emerging robotic environments. Finally, the Museum's collaborations with other **military elements** and with the AFIP are expanding, all to the betterment of our visitors and the hundreds of scholars, researchers, and clinicians who use the Museum's resources.

Gift Shop

The Gift Shop continues to thrive and offer a variety of merchandise to visitors of all ages and educational interests. The Gift Shop contributes to the advance marketing efforts of the Museum and Institute, extends the effectiveness of the Museum's programs and exhibitions by selling objects related to Museum activities, and generates revenue. Each object has a distinct connection with the Museum's mission and/or exhibits are on display.

Facilities and Special Events

The NMHM's facilities and special events staff, in conjunction with the AFIP Directorate of Logistics, support and offer consultation to the NMHM in the following areas: physical security, storage movement, maintenance, repair and accountability of materials, housekeeping, exhibit upkeep and maintenance, waste collection and disposal, notification to the Provost Marshal of visitors attending special events and media filming. This notification is a part of the installation's ongoing security process. This department serves as a liaison with the AFIP Office of Safety Management. It also maintains an inventory of all hazardous chemicals located within the NMHM. The department also serves as a member of many safety-related committees and also investigates all facilities safety issues concerning staff and visitors.

The Facilities Department assisted in disassembling temporary exhibits, including the National

History Day Program exhibits, repaired and painted exhibit space for new exhibits, including Conception to Birth, Architecture and Design of Man and Woman, The Visible Skeleton Series, Battlefield Surgery 101, and Research Matters: a GI Journey.

Staff members provided support to the AFIP, WRAMC and the surrounding community by hosting and scheduling annual events such as Ash Lecture and WRAMC continuing education courses such as Medical Effects of Ionization Radiation, Medical Management of Chemical and Biological Casualties, and Emergency Medical Technician training. In 2004, the event staff coordinated logistical support for 12 events that had a combined attendance of 2,359 people. The event staff also provided logistical assistance for NMHM-sponsored events such as monthly health fairs, docent meetings, training sessions and other educational programs.

Standard operating procedures for Museum meetings and receptions were provided to the event planners and/or points of contact for events. The office staffs and secures each event with Visitor Service Representatives. We also offer each event planner and/or point of contact a list of specialty caterers familiar with the policies and procedures of the NMHM. The Special Events Branch also assisted with the audio-visual needs of instructors, guest speakers, and event presenters.

Public Affairs

During 2004, 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**. There are various community organizations in the area, and the museum maintains relationships and cultivates ties with as many area grassroots and cultural-based organizations as possible in order to better position itself as a significant historical, community, and cultural attraction.

The Museum remained an active member of Cultural Tourism DC, a grassroots, non-profit coalition of more than 140 arts, heritage, cultural, and community organizations throughout Washington, DC that works with a wide array of partners in the public and private sectors to make all of Washington, DC a world-class destination for cultural tourism. Through the CTDC, 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 CTDC, such as collaborative marketing materials, a joint product-licensing program, and a neighborhood heritage trail tour along the Georgia Avenue corridor.

In addition to membership in the DC Convention and Visitors Association, the District of Columbia Chamber of Commerce, and the Washington, DC Convention and Tourism Corporation, the Museum also increased its reach by joining the Conference and Visitors Bureau of Montgomery County, Maryland. The Museum is located just a few blocks from Silver Spring, Md, which attracts nearly 2 million visitors annually.

The Museum remained a designated site on the Civil War Discovery Trail, which was named 1 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 cost to the Museum. The Museum also responded throughout the year to hundreds of requests for information or assistance received by e-mail, telephone, and mail from the general public.

Marketing

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.

Specially promoted within the internal WRAMC and AFIP community as well as to the public were the monthly health fairs held at the Museum, including Glaucoma Awareness Month, National Heart Month, National Kidney Month, Dental Hygiene Month, and American Diabetes Month.

A special effort was made during 2004 to promote "The Human Body Revealed," an exhibit based on a book by Alexander Tsiaras that examines human anatomy for both the scientific and lay communities. Described by the editor as "a glorious, unparalleled view of the human body," there was significant coverage of the opening of the exhibit and release of the book, including a 1,282-word review on the front page of *The Washington Post*'s health section that included 13 images. The story was distributed to other newspapers and reprinted across the country in newspapers such as *The Philadelphia Inquirer, Atlanta Journal-Constitution, Sarasota*

Herald-Tribune, Anchorage Daily News, Pittsburgh Tribune-Review, and more than a dozen others.

Media

The Museum produced and distributed one or more news releases a month for the media in 2004, resulting in measurable media exposure. More than 500 stories and newsbrief items were printed in 2004, in publications with a combined circulation of more than 50 million. This coverage appeared in local, national, and international publications, as well as on TV and radio stations, the most notable being articles in *The Washington Post, The Baltimore Sun, The Boston Globe, The New York Times, The Lancet* as well as a feature article distributed by the Associated Press.

In 2004 Museum staff met with and/or were interviewed by media representatives for stories or documentaries on:

Canadian Broadcast Corporation
CBS-TV "NCIS"
CNN Medical
CNN-NewsNight
Discovery Science Channel
History Channel
National Geographic
National Public Radio
Nippon TV
PBS/Nova
Prologue Films
USA Network
WETA-TV (Arlington, Va)
WPDH-FM (Poughkeepsie, NY)
WPIX-TV (New York)

Newsletter

Circulation of the Museum's newsletter, *Flesh and Bones*, increased slightly in 2004. In addition to being distributed internally to the departments of the AFIP, the newsletter was mailed to the Museum's mailing list, which includes the media, schools, libraries, and visitors who have signed up to receive information by mail. It contains articles that are researched and written by Museum staff about new exhibits, special programs, recently acquired artifacts, loans to other museums, etc.

Website

The Public Affairs Office was principally involved in expanding content on the Museum's website to include information about new exhibits, such as "Laura Ferguson: The Visible Skeleton Series" and "The Human Body Revealed." In addition, the Museum posted information about accomplishments of the staff called Staff on the Go. The Museum also continued to pursue opportunities to be added to other museum and tourism websites.

According to the traffic report provided by Web Trends, the website is averaging more than 8,700 hits daily, and in 2004 had more than 400,000 unique visitors who spent nearly 9 minutes during each visit to the site.

The Museum ensures accurate and timely information is provided to online website information resources, and is currently linked from 975 other sites.

PUBLIC PROGRAMS AND EXHIBITIONS

The division directs and coordinates operational and interpretive components of the Museum, including administration, exhibitions, public programs, educational tours, facilities use, and related activities. Division staff work 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

(D) James Carey Crane, Exhibits Manager
Janet Melson Burns, MA, Public Programs Coordinator
(A) Andrea K. Schierkolk, BA, Tour Program Manager

Docents

Sal Battiata, MD; Ed Beeman, MD; Catherine Bonomo, BS; Edward Byrdy, BS Ph; James DePersis; Marjorie Hughes, MD; Regina Hunt, MEE; Marianne Jessee-Solfronk; MS, LaVerne Madancy; MA, Kay McMahon, BS; Richard Mulvaney, MD; Colleen Pettis, MA, MS; Anne Pollin; Anthony Rondello; Enid Rosen, BS; Shen Sung, MD, Stephen Schiaffino, PhD; Carolyn Whittenberg, MSN.

Volunteers

Gloria Feeney worked with the Historical Collections staff, Michael Mendelson, AA, S, worked with the Public Programs staff, and Steven Schiaffino, PhD, worked with the Neuroanatomical Collections staff.

Public Programs

Programming presented in January in conjunction with the exhibit, "Battlefield Surgery 101: From the Civil War to Vietnam" and military medicine, included a 2-day screening of the film "Nurse Edith Cavell." Jim Connor, PhD, Assistant Director for Collections, provided introductions both days of the screenings. His discussions included a description of the political climate that existed between Germany, Belgium, and other European countries regarding this war; some history of the state of military medicine and medicine in general during this time; and primarily, the role that Edith Cavell played in the war and her legacy. The 1939 film, directed by Herbert Wilcox and nominated for an Academy Award for Best Original Score, starred Anna Neagle, Edna May Oliver and George Sanders.

In April, in conjunction with the exhibit "Battlefield Surgery 101" and military medicine, the museum presented the 1942 film "Dive Bomber" in 2 parts. Adrianne Noe, PhD, Museum Director, provided introductions to the film and a commentary on aviation medicine during World War II. The film, which stars Errol Flynn and Ralph Bellamy, focuses on the medical and logistical challenges faced by naval aviators during World War II.

"Images of the Less-Than-Perfect Body," a program held in conjunction with the exhibition "Laura Ferguson: The Visible Skeleton Series," was presented in June with co-sponsorship of the National Coalition Against Censorship (NCAC). The program was included in the 4-day 2004 International VSA Arts Festival and focused on how the "less-than-perfect" body is portrayed in art. In addition to the artist, panelists included Alice Dreger, PhD, medical historian and author of the recently published *One of Us: Conjoined Twins and the Future of Normal*, who talked about the use of imagery of unusual anatomies in the medical context, and Svetlana Mintcheva, director of the Arts Advocacy Project for the NCAC, who discussed the shifting sociocultural attitudes to the body in art. Other disabled artists working with self-portraiture also participated. Adrianne Noe, PhD, Museum Director, served as moderator.

In October, "Body Image and Spinal Deformity: A Patient/Doctor Dialogue," a program in conjunction with the museum's art exhibition, "Laura Ferguson: The Visible Skeleton Series," was presented. This special program, cosponsored by the National Scoliosis Foundation, provided a forum for patient/doctor dialogue on issues of body image and the visual impact of spinal deformity. The artist, Laura Ferguson, and David W. Polly, Jr, MD, formerly chief of orthopedic surgery at WRAMC and currently chief of spine service and professor of orthopaedic surgery at the University of Minnesota, were the participating panelists. Adrianne Noe, PhD, moderated.

Also in October, the museum presented "Learning About Forensics II: A Hands-On Experience," a day-long program that revealed how forensic science plays an important part in the investigation and prosecution of crime in today's society, as it is used to determine the identity of human remains and provide clues to the cause and manner of death. This was a 2-part program. The first part consisted of "Forensics Mystery" workshops that allowed children and adults to participate in hands-on activities designed to gain a better understanding of forensic science. Participants closely examined replicated skeletal remains, dental evidence, and fingerprints to determine to whom, among the list of missing persons, these remains belonged. The second part of the program featured a short lecture by Lenore Barbian, PhD, assistant curator of the Museum's anatomical collection. She provided background information needed to understand the focus of four lab stations where forensic scientists provided actual hands-on activities that participants would take part in. At the stations, Marilyn London, MA, a forensic consultant to Rhode Island's Office of the Medical Examiners and a lecturer in the Department of Anthropology at the University of Maryland, explored the issue of race assessment; Brian Spatola, MA, former mortuary supervisor for the Washington, DC Office of the Chief Medical Examiner and a member of the Federal Disaster Mortuary Operational Response Team (Region III) who currently works at the Smithsonian Institution's Museum Support Center, demon-

strated how to distinguish forensic remains from nonforensic/nonhuman remains; Allison Willcox, MA, a biological anthropologist and a doctoral candidate at the University of Pennsylvania, addressed forensic taphonomy, the study of the processes that affect the decomposition, dispersal, and burial of human remains; and Dr. Barbian discussed pathology and trauma.

Program Collaborations

The NMHM collaborated for a fourth year with Dana Alliance for Brain Initiatives, WRAMC's Head Trauma Department, and the NIH in a 6-day celebration of Brain Awareness Week 2004 in March. Students from Washington, DC, Maryland and Virginia had the opportunity to participate in lectures, activities and opportunities to interact with local neuroscientists. Students also got to see, touch and learn all about the human brain. Neuroscientists, medical professionals and technicians, and educators from NIH, Georgetown University, Howard University, and WRAMC Department of Head Trauma partnered with NMHM and Dana to present lectures and hands-on activities for elementary, middle and high school students.

Catherine Sasek, PhD, of the National Institute on Drug Abuse (NIDA) of NIH; Denise Pintello, PhD of NIDA of NIH; Christine Covis, PhD of NIDA of NIH; David Thomas, PhD of NIDA of NIH; Gaya Jeyarasasingam, PhD of NIDA of NIH; Dennis A. Twombly, PhD of National Institute on Alcohol Abuse and Alcoholism (NIAAA) of NIH; Roger Sorenson, PhD, of NIAAA of NIH; Vishnu Purohit of NIAAA of NIH; Ricardo Brown, PhD, of NIAAA of NIH; Donald R. Vereen, Jr., PhD, of NIAAA; Richard K. Nakamura, PhD, of the National Institute of Mental Health (NIMH) of NIH; Allison Bennett of NIMH of NIH; Shari Thomas of NIMH of NIH; Lauren Shore of NIMH of NIH; Mike McManus of NIMH of NIH; Andrea Sawczuk, DDS, PhD, of the National Institute of Neurological Disorders and Stroke (NINDS) of NIH; Margo Warren of NINDS of NIH; Nancy Hart of NINDS of NIH; Kebreten F. Manaye, MD of Howard University (HU); Gregory B. Stanton, PhD, of HU; Yousef Tizabi, PhD of HU; Vera Campbell, PhD of HU; Warren Lux, MD, of Walter Reed Army Medical Center (WRAMC) Defense and Veterans Brain Injury Center (DVBIC); Lisa Moy Martin of WRAMC's DVBIC; Alice Marie Stevens of WRAMC's DVBIC; Kelly Gourdin of WRAMC's DVBIC; Karen Graham of Charles Dana Alliance for Brain Initiatives; and Archie Fobbs, curator of the Neuroanatomical Collection provided lectures, hands-on activities and technical demonstrations that highlight various brain functions or disturbances. Over 600 students participated in this 6-day program.

This was the fourth year that the Museum collaborated with Health Pact, Inc, a local non-profit company that assists community organizations by securing medical personnel, community groups, and medical supplies to perform certain medical screenings at health fairs, to present National Health Awareness Kickoff. This is a series of programs held the first Saturday of each month to acknowledge and explore certain health awareness issues. Medical professionals provided in-depth information on the selected health issue of the month and provided free health screenings for Museum visitors interested in the state of their health. This program continues to be an important part of the Museum's ongoing programs.

The Museum partnered with the Prevention of Blindness Society of the Metropolitan Area to provide free glaucoma screenings and distribute information about the disease in January; the Washington, DC chapter of the Chi Eta Phi Sorority in June to present Back to Sleep Campaign, a program designed to educate the public about the prevalence of Sudden Infant Death Syndrome (SIDS) in African American communities; and WRAMC Eye Clinic to present the film, "Current Techniques in Phacoemulsification," a video showing the surgical removal of cataracts in August.

Teacher Workshop/Open House

In November local area teachers and educators learned how museum visits and resources can complement classroom curricula in a special preview of the Museum. Educators were given opportunities to see how the Museum could be used as a facility for their students to learn about the critical connection between daily lifestyle choices, health, and illness, while exploring human anatomy and physiology, as well as to witness what their students would gain from the Museum's guided tours. Dr. Adrianne Noe, PhD, museum director, Lenore Barbian, PhD, curator of the Anatomical Collections, Elizabeth Lockett, imaging specialist and manager of the Human Developmental Anatomical Center and Alan Hawk, BA, manager of the Historical Collections, discussed ways that the Museum's collections may be used to help teachers address curriculum requirements in the classroom.

Ongoing Programs

The Museum continued to offer guided tours on the weekend to walk-in visitors on the

second and fourth Saturday of each month.

Tour/Docent Program

In addition to the general tour, which introduces visitors to the highlights of the exhibition galleries, the following Curriculum Connection tours were offered during 2004: "Human Body, Human Being" and "To Bind up the Nation's Wounds: Medicine During the Civil War." The "Forensics Mystery" workshops continue to be popular hands-on activities for students, families and adults.

Docents, Museum staff, and AFIP staff benefited from educational presentations made at monthly docent meetings. Michael Rhode, chief archivist, provided a Behind-the-Scenes tour of the Otis Hammond Archives and discussed the development of the new exhibit, "Battlefield Surgery 101" in January. (Because of inclement weather no programs were presented in February.) In March Lenore Barbian, PhD, presented a Behind-the-Scenes tour of the Anatomical Collection and discussed plans for opening the exhibit, "Visible Skeleton." Alan Hawk, manger of the Historical Collection, provided a Behind-the-Scenes tour of this collection in April. In September, Andrea Schierkolk, BA, and Janet Melson Burns, MA, administrated Health Insurance Privacy and Portability Act (HIPPA) training for Museum docents as required by AFIP. Lucious Hires, WRAMC EEO Office, presented the workshop "Dealing with Diverse Audiences" in October. In December Toby Horn, PhD, Carnegie Academy of for Science Education, Carnegie Institute of Washington, provided a lecture on "Human Embryology and Its Relation to Other Animals," in conjunction with the exhibit "From a Single Cell."

Recruitment and training of new volunteers for the docent program began in 2004. Andrea Schierkolk began the docent training program in October. Speakers included Adrianne Noe, PhD, director of NMHM, who discussed "The History and Purpose of NMHM" and its relationship with the AFIP and the future; Steven Solomon, public affairs officer, provided a special VIP tour of the NMHM; Alan Hawk, manager of the Museum's Historical Collection presented a Behind-the-Scenes tour; Archie Fobbs, curator of the Museum's Neuroanatomical Collection, lectured on "The Functions of the Brain"; Theresa Conologue, MD, dermapathology resident at WRAMC, discussed "The Skin"; Charles Davis, COL, USA (Ret), Genitourinary Pathology of AFIP, discussed "The Urinary System"; and Teri J. Franks, MD, Associate Chair of the Department of Pulmonary and Mediastinal Pathology of AFIP, lectured on "The Respiratory System". The new docents in training were Flora Aronson, BS; Solomon E. Barr, MD; Catherine D. Harrison, MS; Patricia A Jones, RN, BSN, MS; Brenda Kiessling, MD; Pamela Kincheloe, RN, BSN, JD; Lewis Larson, BSEE; Vincent Petrella, MD; Marjorie D. Shaw, PhD; and Sabra Woolley, PhD.

DEPARTMENT OF COLLECTIONS

STAFF

(D) Jim T.H. Connor, PhD, Assistant Director for Collections
Lenore Barbian, PhD, Assistant Curator, Anatomical Collections
(D) Paul Sledzik, MS, Curator, Anatomical Collections
Alan Hawk, BA, Collections Manager, Historical Collections
Donna Quist, BA, Assistant Collections Manager, Historical Collections
Michael Rhode, MA Archivist, Otis Historical Archives
Tabitha Oglesby, Assistant Archivist, Otis Historical Archives
(A) Thomas Gaskins, Archives Technician, Otis Historical Archives
Michael Simons, Registrar
Archibald J. Fobbs, Collections Manager, Neuroanatomical Collections
(D) Surinder Sandhu, PhD, Technician, Neuroanatomical Collections
(A) Freddie Pruitt, Technician, Neuroanatomical Collections

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 of collections.

Anatomical Collections

Anatomical Collections collects and preserves human and nonhuman medical, pathological,

and anatomical specimens and associated materials documenting normal anatomy and the response to disease and injury. Staff also provide curatorial support for the exhibition program, completing in 2004 "The Visible Skeleton Series" and "The Human Body Revealed."

Native American Graves Protection and Repatriation Act Compliance

The Museum was chosen by the National Park Service to participate in a pilot database of culturally unaffiliated human remains and associated funerary objects. All inventories of culturally unaffiliated human remains were updated and submitted to NPS in March 2004 in compliance with the pilot project.

Media Coverage

1. February 2004: Associated Press, "Documentary puts stake in vampire folklore," L Walsh, PS Sledzik.
2. May 2004: National Geographic, "Skeleton Crew" segment on the Hardin cemetery flood, PS Sledzik.
3. July 2004: Granada Media, "Battlefield Detectives" segment on the battle of Antietam, L Barbian.
4. July 2004: WPDH-101.FM, "Carlson and McKenzie Show" segment on the NMHM, L Barbian.
5. July 2004: CNN Medical, segment on the presidential collection specimens, L Barbian.
6. December 2004: National Public Radio, "All Things Considered" segment on "Hidden Treasures," L Barbian.

Other Activities

- Staff addressed 69 research inquiries and provided numerous lectures and presentations to school groups at the Museum and in the DC metropolitan area.
- Paul Sledzik continued his involvement as a member of the board of directors of the Ellis Kerley Forensic Sciences Foundation and as a consultant to the National Center for Missing and Exploited Children. He also served as program chair and secretary for the Physical Anthropology section of the American Academy of Forensic Sciences.
- Lenore Barbian served as administrative officer and Forensic Sciences III squad leader for DMORT Region III. She also served as assistant moderator for a session at the American Academy of Forensic Sciences annual meeting.

Historical Collections

Historical Collections acquires and preserves 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 US Armed Services, Public Health Service, and federal government as it relates to the above themes. The collection is made available for the education of medical professionals, DoD personnel, historians and the public through exhibits in the museum, loans to other institutions and individualized study.

Historical Collections acquired 197 artifacts, including a prototype microwave fluid warmer developed by the USAISR, an OHMEDA Model 885A Military Field Anesthesia Machine, ABI-Prism 3700 DNA analyzer, a RCA EMU-4 electron Microscope (last production Electron Microscope by RCA), an apparatus developed at USAISR to test the efficiency of wound irrigation syringes in the 1990s, a matchbox-sized birthing kit distributed to African midwives by the African Medical and Research Foundation (AMREF-USA) and a Body Cavity Motion Picture Camera used at AFIP in the 1950s.

The collection continues to actively collect artifacts that document the medical accomplishments of the Global War on Terrorism. 2004 acquisitions include prosthetic feet and foam stumps from the Orthotic Prosthesis Laboratory of WRAMC, protective eyewear of the type used by soldiers in Operation Iraqi Freedom, and resuscitation instruments used for Tactical Combat Casualty Care from the 31st Combat Support Hospital in Balad, Iraq. Department staff continue to consult with medical staff in theatre to ensure that the material culture of military medicine is preserved for future generations to study and learn from.

Historical Collections databases currently include 17,388 records. In 2004, 631 artifacts were electronically cataloged in the historical database. Much of the 2004 collections management activity was related to upgrading and standardizing data for the Museum-wide database. As a result, the Historical Collections is the first dataset to go live on KE EMu. The new database will make the holdings of Historical Collections more widely available to the research community.

Historical Collections staff curated an exhibit about Walter Reed that opened in July 2004 in support of the annual meeting of the Walter Reed Society.

Consultation/Public Support

Historical Collections responded to over 100 queries about the history of military medicine and general history of medicine from civilian and military researchers. Many such requests were form military units, many others were from within AFIP.

Historical Collections received one request for information from the Mescalero Apache tribe regarding a medicine bundle in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). Department staff provided images of the medicine bundle and copies of the file to all Apache tribes.

Historical Collections staff coordinated with Naval Historical Center to arrange an oral history from museum visitor Jordan Garrett, a survivor of the Japanese prisoner of war camp at Batavia, Burma that was depicted in the book *Bridge Over the River Kwai*. Mr. Garrett was visiting the Museum to see an artificial limb made at the prison camp, currently on exhibit in Battlefield Surgery 101.

In June 2004, Alan Hawk and Adrianne Noe were guests of the 18th MEDCOM, US Army Forces Korea (USFK), Seoul, Republic of Korea. They evaluated a collection of 57 artifacts documenting traditional Korean medicine donated by Choon Won Kim, MD, PhD, medical consultant with the USFK. After examining the artifacts, staff made recommendations on the appropriate care and display of artifacts, as well as identifying conservators in Korea to restore artifacts needing conservation and vendors of museum quality display cases for the collection in the new hospital building. The preservation and display of this collection will help the help Korean-American relations by fostering awareness among American troops about Korean culture, as well as enhancing the relationship between members of the Korean medical community and the US Army Medical Department.

Otis Historical Archives

The Medical Illustration Service Library, its space and its staff were transferred to the Museum and placed under the Archives in November. Thomas Gaskins is reviewing parts of the collection and making recommendations of photographs that may be of interest for Archives patrons. Plans are being developed, in conjunction with the IMC scanning project, to make the collection more usable and more current. Gaskins identified and wrote a finding aid for 12 boxes of Museum and Medical Arts Service (MAMAS) photographs taken during WWII in Europe and Asia.

Substantial requests for information were handled, frequently regarding sensitive topics. The Vorwald Collection continues to be used for research for asbestosis lawsuits in spite of being open to the public for nearly 2 decades. Interest in the 1918 influenza epidemic has not yet peaked, and many requests were received to use images from the Archives, all of which are viewable on the website to facilitate research. The images were used in particular for the cover of John Barry's book *The Great Influenza* and by the *New York Times Magazine* and the *Journal of the American Medical Association*. After a meeting with Dr. Budko, head of Russia's Military Medical Museum in St. Petersburg, the Archives has begun sending them surplus or duplicate books through the DoD's US-Russia Joint Committee on POW/MIAs. A book chapter on the Medical Museum in the nineteenth century is in preparation for an edited volume. Michael Rhode was requested to submit his presentation on the medical and surgical history of war of the rebellion to the *Journal of the History of Medicine and Allied Sciences* and is working on preparing it for publication. A tour was given to the University of Maryland's library school students in April.

Computerized cataloguing on the collection level has continued in the shelf inventory. Cataloguing for the General Medical Products Information Collection, medical ephemera, new contributed photographs, audiovisual collection, AFIP historical files and others was done. Implementation of a comprehensive computer catalogue for the entire Museum continued with data from the archives being turned over to KE Software for conversion to their EMU database. Substantial requests for information were handled, frequently regarding sensitive topics. Under my supervision, Oglesby processed the Bahr electron microscopy collection due to an arrangement with EMSA to become the repository for electron microscopy records. She completed the finding aid to the collection as well. New material acquired included 2 original "Doonesbury" comic strips on BD's traumatic amputation in Iraq donated by Garry Trudeau, Dailey psychological testing collection, Downing WWII correspondence, and Miller WWI facial reconstruction photographs. Dr. Beverly Pritchett, commander of the 28th Combat Support Hospital in Iraq, donated digital photographs of her hospital. Dr.

Ishak's office records, consisting largely of his reprint collection, were transferred by the Hepatic Pathology Department; a few of his books that were not in the National Library of Medicine were forwarded to them. Museum records from staff members were added to the archives.

Research and historical material, mostly on military medicine, was provided to the OTSG's Borden Institute as well as American College of Emergency Physicians, Awareness Publishing, Cooperstown Graduate Program in Museum Studies, Cream Productions, DeNicola Design Inc., Film Syndicate, Greystone Television, Hale and Dorr LLP, Harvard University, Heritage House Publishing Co., Johns Hopkins University's Bloomberg School of Public Health, Indiana University's Dept. of History of Art, KZ Associates, Kansas Museum of History, LSU School of Medicine-Shreveport, Lierac Productions, NJ Association for Biomedical Research, National Library of Medicine (including material for their forensic medicine exhibition), National Inventors Hall of Fame, Oxford University, Portland Historical Society, Regional Vaccine Healthcare Center, Smithsonian Magazine, Stryker Trauma, University of Arizona, University of Leicester, University of Minnesota,Yale University, and WGBH-TV, Boston. The National Museum of American History requested hundreds of Civil War photographs for their new exhibit "The Price of Freedom: Americans at War." National Geographic looked through Civil War photographs and chose one for their April 2005 map. Large portions of the Steggerda Collection were photographed by Cold Spring Harbor Laboratory's Dolan DNA Learning Center for use in their eugenics image archive website at http://www.eugenicsarchive.org/eugenics/. The significant Archives presence including the Guide to the Collections of the Museum on the website remains the main way researchers begin to use the archives, and several finding aids were added to the website. More archival collections were listed in the Library of Congress' National Union Catalogue of Manuscript Collections (NUCMC), ensuring wider researcher use of the collections. The collaborative exhibit and publication with the Borden Center on the history of surgery, Battlefield Medicine 101, opened in late November 2003 with the publication, paid for completely by the Borden Center, finished in December, and distributed in January 2004. An electronic AFIP Calendar, using pictures from the exhibit, is being worked on at the time of this writing.

Rhode served on the AFIP's Institutional Review Board and HIPPA committees as well as Museum committee's including the Admin group, the collections committee and the database committee. Oglesby was on pregnancy leave from September, and gave birth to Lauren Nortey on September 24, 2004. She returned to work after Christmas.

Public Affairs Reports

1. Barnes, Jennette. Interview for "1918 flu epidemic weighed on South Coast" for *Standard-Times*, October 17.
2. Lalasz, Robert. Interview for "One Man's Cache: Everybody wanted Boris Rabkin to get rid of his 50 years' worth of physician's detritus. But when a museum took some of it, Rabkin was left with just regrets," *Washington City Paper*, April 23.

Neuroanatomical Collections

The Neuroanatomical Collections staff encourages the use of its resources by all qualified members of the research community as part of its role within the AFIP and the NMHM. This division collects and preserves valuable artifacts of neuroanatomy, and strives to become the premier repository in the United States for collections focusing on neuroanatomy in the embryo, the adult human, as well as other selected species. Continued stimulation of new hypothesis-driven research is a top priority.

Collaborating Researchers

1. John I. Johnson, PhD, Department of Anatomy, Michigan State University
2. Wally I. Welker, PhD, Department of Physiology, University of Wisconsin-Madison
3. John Allman, PhD, Hixon Professor of Neurobiology, Division of Biology, California Institute of Technology
4. Kebreten Manaye, MD, Department of Physiology and Physics, Howard University College of Medicine
5. Kondi Wong, MD, Department of Neuropathology, AFIP

Neuroanatomical Holdings

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 Publos Anatomical Collection
Denny Brown Neuromuscular Collection
Starr Collection
William Cruce Collection
Harrison Collection

Website

Under the auspices of a continuing National Science Foundation grant, the University of Wisconsin-Madison and Michigan State University, and NMHM collections staff implement and manage a nationally recognized neuroanatomy website. The information presented reflects the departmental assets and the larger mission of the museum. Collection inquiries via the website increased 50 percent. Requests for collection images, scheduled visits to the collections division and to the Museum have all increased as a result of the website. The website receives about 105 hits per day and educators report that the website is a useful curriculum development resource for science projects and for answering structural and functional questions about the brain. The general public is able to gain access to information about the brain.

The website widely publicizes images and information about the existence, contents, and value of the brain collections. Via the internet, information about sectioned brain specimens at the 3 partnering institutions will be presented and promoted electronically on our Brain Collection home page http://www.brainmuseum.org, with additional information on ancillary sites (http://www.manateebrain.org; http://www.brains.rad.msu.edu (the Michigan State portal); and http://turing.commtechlab.msu.edu/default.htm (the database site)). All sites are interlinked. The visual presentations that staff have already made on the internet, and that are about to expand, have encouraged interest in comparative neuroanatomy and facilitated an enhanced understanding about the nervous system in a wide audience.

Conservation

Fluid-preserved tissue conservation for the Yakovlev-Haleem Collection and the Welker Comparative Neuroanatomy Collection continues. Conservation procedures are performed on a regular basis and fluids are changed as needed. In an effort to improve the conservation efforts the fluid preserved tissue of the Yakovlev-Haleem Collection has been transferred to the Museum's off site storage facility in Gaithersburg, Maryland.

The Blackburn-Neumann Collection fluid preserved tissue evaluation and conservation effort has been completed. As a result, the condition of the tissue, the type and condition of the fluid, and condition of the containers were improved. This information has been used to develop statement of work and a standard operating procedure for implementation of a complete conservation reconditioning of all fluid preserved tissue specimens in the collection. Paper documents of the Blackburn-Neumann Collections were moved from the Department of Neuropathology and safely housed in map cases in the Otis Historical Archives. The Yakovlev-Haleem library continues to be rehoused, with ongoing evaluation for conservation needs.

Collection staff are currently identifying conservation needs and examining Welker Comparative Neuroanatomy Collection slides, along with all other collection slides. This information will be used to continue to develop and implement a conservation plan.

Equipment

A new server has been added to handle file transport process applications, image acquisition, data storage, brain specimen reconstruction and digital graphic imaging. This equipment is available to researchers and student interns. Four new graphic user interface capture work stations have been obtained via extramural support, so that project efforts can be managed more effectively.

Activities

Researchers visiting the Neuroanatomical Collections increased by 50% over 2003, for a total of 230 individuals. Many visiting researchers obtained collection information via the internet before arranging an actual visit, as did other investigators and representatives of neuroscience organizations. The National Science Foundation continues to recognize the collaboration between the NMHM/AFIP, the University of Wisconsin-Madison, and Michigan State University as one of its model projects and has continued and increased the funding for NMHM and these collaborators. Student visits have also increased markedly.

Manuel Casanova, MD, Professor of Psychiatry and Neurology, VA Medical Center, Augusta, Georgia and Daniel Buxhoeveden, MD, Assistant Professor, Medical College of Georgia, are using the collection in quantitative comparative morphology of cell columns in humans and nonhuman primate brains. The goal of this project is to compare 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, Emory University, Atlanta, Ga, collaborates with neuroanatomy staff and human developmental staff on "Magnetic Resonance Imaging (MRI) of Dolphin, Porpoise, and Whale Brains." The outcome will be the production of an electronic brain atlas for the Internet with 3-D models. The atlas is designed for both education and research.

Neuroanatomical Collections staff and Kondi Wong, MD, an former AFIP neuropathologist, continued work on an Alzheimer's project to reconstruct and quantitatively analyze Alzheimer's cases and normal cases from the Yakovlev-Haleem Collection.

John Allman, PhD, Division of Biology, Caltech University, Pasadena, Calif, and his staff have conducted research on developing spindle cells and their correspondence to fetal development and adult mental illness. Also in the beginning stages is an algorithmic mapping of the human and other mammalian brains.

The Neuroanatomical Collections staff were instrumental in providing educational experiences for students from many local public and private school programs. The Howard County Technology Magnet Applications and Research Laboratory Program has partnered with Neuroanatomical Collections and the Human Developmental Anatomy Center to promote internships for high school students of Howard County. This relationship provides research opportunities for students attending the county's technical magnet programs at Long Reach and Paint Branch High schools in Columbia, and River Hill High School in Clarksville, Maryland.

Yakovlev-Haleem Collection Library usage increased by 20%. The major source of the increase was students taking the AFIP Neuropathology Review Course, AFIP Department of Neuropathology staff members, and visiting researchers.

Outreach

The Museum, the Dana Alliance for Brain Initiatives, and the NIH collaborated again on an annual Brain Awareness program. Students from Virginia, Maryland, and the District of Columbia were invited to hear featured speakers from NIH and to participate in interactive demonstrations. They also viewed artifacts from the Museum's brain collections. A total of 1,200 students attended the 5-day program.

Extensive alphanumeric data from museum collection specimens are also used worldwide via Internet presentation. Interns gain experience with this technique in which data and images from Museum collection specimens are made available for use in education at all levels. This is done via the Internet or via physical diskettes.

Magnetic resonance scans, which provide volumetrically and spatially accurate data about the internal architecture of brains of rare or difficult-to-process species of animals, are included in the collections. The spatial data can be analyzed in 3-D models. In an NSF-funded initiative, student interns use the scans to generate such models.

Tours

The Neuroanatomy Center hosted approximately 100 tours during 2004. Sevel student interns worked in the collections during the year:

1. Vikas Patel, University of Maryland Baltimore County, Md
2. Roxanna Montaya, River Hill High School, Columbia, Md
3. Christopher Ewing, River Hill High School, Columbia, Md
4. Jessica Reitz, Paint Branch High School, Silver Spring, Md
5. Matthew Skelly, Paint Branch High School, Silver Spring, Md
6. Jonathan Wiegle, Paint Branch High School, Silver Spring, Md
7. Melissa Smolls, Science and Engineering Program, George Washington University

HUMAN DEVELOPMENTAL ANATOMY CENTER

STAFF

William F. Discher, Imaging Specialist
Elizabeth C. Lockett, Imaging Specialist/Collections Manager
Adrianne Noe, PhD, Director
(D) Kumudini Mayur, Imaging Scientist

The Human Developmental Anatomy Center's role 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 for education by appointment and via website. Continued stimulation of new hypothesis-driven research is a top priority. The NIH National Institute for Child Health and Human Development provides extramural support for some activities and staffing of the Center.

The Center hosted numerous meetings and activities, including a major workshop for biology teachers to help facilitate developmental anatomy teaching skills, an activity sponsored by the Carnegie Institute of Washington and the Society for Developmental Biology.

Collaborators in research and education projects (including those using the neuroanatomical collections) include USUHS, WRAMC, the NIH Nuclear Magnetic Research Center, the National Library of Medicine, Louisiana State University Health Sciences Center in New Orleans, La, the Carnegie Institute of Washington, the Society for Developmental Biology, Anatomical Travelogue, Inc, New York, NY, and the Johns Hopkins University School of Medicine, Center of Magnetic Resonance Microimaging, in Baltimore, Md.

The Center provided internship opportunities for 3 students.

EDUCATION

- In March 2004, Paul Sledzik and Lenore Barbian served as laboratory instructors for the forensic anthropology component of the Forensic Identification and Emerging Technologies course sponsored by the Department of Oral and Maxillofacial Pathology.
- The staff of the Anatomical Collections conducted the 17th Annual Forensic Anthropology Course at the National Transportation Safety Board Academy in Ashburn, Va for 60 participants.

PRESENTATIONS

1. February 2004: Dallas, Tex, American Academy of Forensic Sciences, "Cranial healing following trauma," L Barbian, PS Sledzik.
2. March 2004: Atlanta, Ga, 3rd Annual Family Assistance Foundation Symposium, "Accidents vs terrorist events: suffering caused by intent to harm," PS Sledzik.
3. March 2004: Washington, DC, AFIP, "Cranial healing following trauma," L Barbian.
4. March 2004: Washington, DC, AFIP, "Fifteen years of forensic anthropology short courses at the National Museum of Health and Medicine/AFIP," P Sledzik.
5. May 2004: Washington, DC, Edgewood Terrace Historical Society, "The Medical Department of the Imperial Japanese Army," AJ Hawk.
6. May 2004: Madison, Wis, American Association for the History of Medicine, "'The extent of these materials is simply enormous': the creation and publication of *The Medical & Surgical History of the War of the Rebellion* from 1862 to 1888," M Rhode.
7. June 2004: Moraga, Calif, American Association of Clinical Anatomy Annual Meeting, "How to develop a successful mentoring program with limited funds," E Lockett.
8. August 2004: Halifax, Nova Scotia, 5th British-North American Meeting of the BSHS, CSHPS, and HSS, The United States Army Medical Museum as international scientific resource," JTH Connor, M Rhode.
9. October 2004: Washington, DC, NMHM/AFIP, "Learning about forensics II," L Barbian.
10. October 2004: Charleston, SC, TEDMED Conference, "The National Museum of Health and Medicine and the Armed Forces Institute of Pathology," M Simons, A Noe.
11. November 2004: Washington, DC, Surratt House Museum tour of NMHM, "Civil War medicine," L Barbian.
12. December 2004: Washington, DC, Smithsonian Resident Associate Program, "Civil War medicine," L Barbian.

RESEARCH

Journal Articles

Barbian L, Sledzik PS. Cranial healing following trauma. *Proc Am Acad Forensic Sci*. 2004;10:312-313.

Other Publications

Hawk A. Review of Matthew Kaufman, The Regius Chair of Military Surgery in the University of Edinburgh, *H-War, H-Net Reviews*, November 2004. http://www.h-net.org/reviews/showrev.cgi?path=299831101229704

PROFESSIONAL ACTIVITIES

Official Trips

1. February 2004, American Academy of Forensic Sciences Annual Meeting, Dallas, Tex, L Barbian, PS Sledzik (ARP).
2. March 2004, National Disaster Medical System Conference, Dallas, Tex, L Barbian (DMORT Region III).
3. April 2004, Medical Museums Association Annual Meeting, Madison, Wis, AJ Hawk (AFIP).
4. May 2004, American Association for the History of Medicine Annual Conference, Madison, Wis, M Rhode, AJ Hawk (AFIP).
5. June 2004, 18th MEDCOM, US Army Forces Korea (USFK), Seoul, Republic of Korea, AJ Hawk, A Noe (18th MEDCOM).
6. July 2004, US Army Center of Military History 2004 Conference of Army Historians, Arlington, Va, AJ Hawk (AFIP).
7. September 2004, Native American Graves Protection and Repatriation Act Review Committee Meeting, Washington, DC, L Barbian (AFIP).

AMERICAN REGISTRY OF PATHOLOGY

William A. Gardner Jr, MD
Executive Director
Date of Appointment — 1 August 2002

AMERICAN REGISTRY OF PATHOLOGY

The ARP provides support to the AFIP, the DoD, and pathology training programs. Part of this support includes sponsoring outstanding lecture series. In 2004, Dr. J. McDonald presented the Robert Stowell Lecture, titled "Pathology on the Trip to Mars." The Ash Lecture was presented by Dr. William Winkenwerder Jr, Assistant Secretary of Defense for Health Affairs.

ARP has provided Callender-Binford Fellows for the departments of Neuropathology, Gyn/Breast Pathology, Hepatic Pathology, Environmental Pathology, and Radiologic Pathology. Also this year, 30 Donald West King Fellows received a month of training in 26 subspecialty areas. In addition to year-long single subspecialty fellowships, next year we will offer 2 more broadly based fellowships in which a resident may select 3- or 4-month training periods in either 4 or 3 departments, respectively.

This year, ARP cosponsored with the International Registry of Pathology (IRP)(a 501C3 organization chartered in Maryland and not associated with the AFIP) a highly successful symposium on drug-induced vasculitis. Attendees from 8 countries heard presentations by Dr. Lester M. Crawford, Acting Commissioner of the FDA.

ARP continues to provide personnel to AFIP, including most of the staff of AFDIL and the OAFME.

2004 CUMULATIVE PUBLICATIONS LIST

2004 CUMULATIVE PUBLICATIONS LIST

Discounting duplicate listings for multiple authors, in 2004, the medical and scientific staff of the AFIP published approximately 180 articles in professional journals and 135 abstracts. They contributed 24 chapters to published books, and were authors or editors of 22 published books and fascicles. Miscellaneous publications included approximately 7 course syllabuses, 6 newsletter issues, and 9 websites or epubs. Details of these publications appear below. Authors are listed alphabetically within departments, divisions, offices, etc, which are also listed alphabetically.

ARMED FORCES MEDICAL EXAMINER, OFFICE OF

Journal Article

Mallak CT. Doctors and torture. *N Engl J Med*. 2004;351:1571-1574.

Abstract

Burt MJ, Finelli LF. Patterns of upper extremity defensive type injuries in homicidal sharp force assaults. 38th Annual National Association of Medical Examiners Meeting, Nashville, Tenn, 2004.

Other Publications

Staff, Annual Report on Diving Injuries and Fatalities, Divers Alert Network, Duke University Medical Center, Durham, NC, January 2004.

BIOPHYSICAL TOXICOLOGY, DIVISION OF

Journal Articles

1. Centeno JA, Finkelman RB, Olle S. Medical geology: an emerging discipline. *Pathol Int.* 2004;54(Suppl 1):S128-S130.
2. Gorham ED, Garland CF, Garland FC, Kaiser K, Travis WD, Centeno JA. Trends and occupational associations in incidence of hospitalized pulmonary sarcoidosis and other lung diseases in Navy personnel. *Chest*. 2004;126:1-8.
3. Tchounwou PB, Centeno JA, Patlolla AK. Arsenic toxicity, mutagenesis and carcinogenesis: a health risk assessment and management approach. *Mol Cell Biochem*. 2004;255:47-55.

Abstracts

1. Tchounwou PB, Centeno JA, Patlolla AK. Health risk assessment and management of arsenic toxicity and carcinogenesis. *Metal Ions Biol Med*. 2004;8:14-18.
2. Tchounwou PB, Patlolla AK, Centeno JA. Serum aminotransferases as biomarkers of arsenic-induced hepatotoxicity in Sprague-Dawley rats. *Metal Ions Biol Med*. 2004;8:284-288.

Book Chapters

1. Centeno JA, Mullick FG, Ishak KG, Franks TJ, Burke AP, et al. Environmental pathology. In: Selinus O, Alloway B, Centeno JA, et al, eds. *Essentials of Medical Geology: Impacts of the Natural Environment on Public Health*. Elsevier-Academic Press; 2004:563-594.
2. Centeno JA, Todorov TI, Pestaner JP, Mullick FG. Histochemical and microprobe analysis in medical geology. In: Selinus O, Alloway B, Centeno JA, et al, eds. *Essentials of Medical Geology: Impacts of the Natural Environment on Public Health*. Elsevier-Academic Press; 2004:725-736.

BIOPHYSICS, DEPARTMENT OF

Journal Articles

1. O'Leary TJ, Mason, JT. A molecular mechanism of formalin fixation and antigen retrieval. *Am J Clin Pathol*. 2004;122:154-155.
2. Potter K. Standard guide for assessing microstructure of polymeric scaffolds for use in tissue engineered medical products. *National Institute of Standards and Technology*. 2004;ASTMF24:50-54.
3. Rait VK, O'Leary TJ, Mason JT. Modeling formalin fixation and antigen retrieval with bovine pancreatic ribonuclease A. I. Structural and functional alterations. *Lab Invest.* 2004;84:292-299.
4. Rait VK, Xu L, O'Leary TJ, Mason JT. Modeling formalin fixation and antigen retrieval with bovine pancreatic

ribonuclease A. II. Interrelationship of cross-linking, immunoreactivity, and heat treatment. *Lab Invest.* 2004;84:300-306.
5. Thali M, Dirnhofer R, Becker RL, Oliver W, Potter K. Is "virtual histology" the next step after the "virtual autopsy"? Magnetic resonance microscopy in forensic medicine. *Magn Reson Imaging*. 2004;22:1131-1138.
6. Washburn N, Weir M, Anderson P, Potter K. Non-invasive characterization of bone formation in polymeric scaffolds by proton magnetic resonance microscopy and X-ray microtomography. *J Biomed Mater Res*. 2004;67A:738-747.

Abstracts

1. Furusato B, Potter K, Becker RL, Sesterhenn IA, Davis CJ. Prostatic carcinoma detection in radial prostatectomies by magnetic resonance microscopy and light microscopy. *US/Canadian Academy of Pathology*. 2004;84:154A.
2. Mason JT, Batenjany MM, Levin IW, O'Leary TJ. The Raman terminal deformation mode as a probe of bilayer structure. *Biophys J*. 2004;247:1983.
3. Mason JT, Rait VK, O'Leary TJ. The effect of formaldehyde treatment on the conformational, dynamic, and thermotropic properties of bovine serum albumin. *Biophys J*. 2004;247:2610.
4. Mason JT, Xu L, Sheng ZM, O'Leary TJ. High-sensitivity detection of biological toxins. *Peer-Reviewed Medical Research Forum Proceedings*. 2004;1:30.
5. Potter K, Avallone F, Eidelman N. Spatial mapping of collagen deposition in bone cultures by magnetic resonance and FTIR micro-imaging. *8th International Conference on the Chemistry and Biology of Mineralized Tissues*. 2004;8:138.
6. Potter K, Todorov T, Centeno JA, Small J. Manganese-enhanced magnetic resonance microscopy of mineralization. *8th International Conference on the Chemistry and Biology of Mineralized Tissues*. 2004;8:139.

CARDIOVASCULAR PATHOLOGY, DEPARTMENT OF

Journal Articles

1. Burke AP, Jarvelainen H, Kolodgie FD, Goel A, Wight TN, Virmani R. Superficial pseudoaneurysms: clinicopathologic aspects and involvement of extracellular matrix proteoglycans. *Mod Pathol*. 2004;17:482-488.
2. Burke AP, Kolodgie FD, Zieske A, Fowler DR, Weber DW, Varghese PJ, Farb A, Virmani R. Morphologic findings of coronary atherosclerotic plaques in diabetics. A postmortem study. *Arterioscler Thromb Vasc Biol*. 2004;24:1266-1271.
3. Burke AP, Kutys R, Fowler D, Virmani R. Multiple spontaneous coronary artery dissections in association with anomalous origin of right coronary and intramural coronary artery dysplasia. *Cardiovasc Pathol*. 2004;13:173-175.
4. Farb A, Kolodgie FD, Hwang J-Y, Burke AP, Tefera K, Weber DK, Wight TN, Virmani R. Extracellular matrix changes in stented human coronary arteries. *Circulation*. 2004;110:940-947.
5. Fischer JW, Steitz SA, Johnson PY, Burke A, Kolodgie F, Virmani R, Giachelli C, Wight TN. Decorin promotes aortic smooth muscle cell calcification and colocalizes to calcified regions in human atherosclerotic lesions. *Arterioscler Thromb Vasc Biol*. 2004;24:2391-2396. Epub 2004 Oct 7.
6. Ikeno F, Abizaid A, Suzuki T, Rezaee M, Patterson GR, Yeung AC, Virmani R, Sousa JE, Carter AJ. Initial experience with the novel 6 Fr-compatible system for debulking de novo coronary arterial lesions. *Catheter Cardiovasc Interv*. 2004;62:308-317.
7. Johnson LL, Schofield LM, Weber DK, Kolodgie F, Virmani R, Khaw BA. Uptake of 111In-Z2D3 on SPECT imaging in a swine model of coronary stent restenosis correlated with cell proliferation. *J Nucl Med*. 2004;45:294-299.
8. Kolodgie FD, Burke AP, Wight TN, Virmani R. The accumulation of specific types of proteoglycans in eroded plaques: a role in coronary thrombosis in the absence of rupture. *Curr Opin Lipidol*. 2004;15:575-582.
9. Kolodgie FD, Virmani R, Burke AP, Farb A, Weber DK, Kutys R, Finn AV, Gold HK. Pathologic assessment of the vulnerable human coronary plaque. *Heart*. 2004;90:1385-1391.
10. Rubenstein MH, Finn AV, Leinbach RC, Hollenbach S, Aretz HT, Virmani R, Gold HK. Short-term intravenous eptifibatide infusion combined with reduced dose recombinant tissue plasminogen activator inhibits platelet recruitment at sites of coronary artery injury. *J Am Coll Cardiol*. 2004;43:287-294.
11. Ruygrok PN, Farb A, Coverdale HA, Gibbs HC, Virmani R. Histology of in-stent restenosis in transplanted heart. *J Heart Lung Transplant*. 2004;23:143-146.
12. Schaar JA, Muller JE, Falk E, Virmani R, Fuster V, Serruys PW, Colombo A, Stefanadis C, Casscells SW, Moreno PR, Maseri A, van der Steen AF. Terminology for high-risk and vulnerable coronary artery plaques. *Eur Heart J*. 2004;24:1-6.
13. Schwartz RS, Chronos NA, Virmani R. Preclinical restenosis models and drug-eluting stents: still important, still much to learn. *J Am Coll Cardiol*. 2004;44:1373-1385.

14. Schwartz RS, Edelman ER, Carter A, Chronos NA, Rogers C, Robinson KA, Waksman R, Machan L, Weinberger J, Wilensky RL, Goode JL, Hottenstein OD, Zuckerman BD, Virmani R. Preclinical evaluation of drug-eluting stents for peripheral applications: recommendations from an expert consensus group. *Circulation*. 2004;110:2498-2505.
15. Serruys PW, Ormiston JA, Sianos G, Sousa JE, Grube E, den Heijer P, de Feyter P, Buszman P, Schomig A, Marco J, Polonski L, Thuesen L, Zeiher AM, Bett JH, Suttorp MJ, Glogar HD, Pitney M, Wilkins GT, Whitbourn R, Veldhof S, Miquel K, Johnson R, Coleman L, Virmani R; ACTION investigators. Actinomycin-eluting stent for coronary revascularization: a randomized feasibility and safety study: the ACTION trial. *J Am Coll Cardiol*. 2004;44:1363-1367.
16. Sousa JE, Costa MA, Farb A, Abizaid A, Sousa A, Seixas AC, da Silva LM, Feres F, Pinto I, Mattos LA, Virmani R. Images in cardiovascular medicine. Vascular healing 4 years after the implantation of sirolimus-eluting stent in humans: a histopathological examination. *Circulation*. 2004;110:e5-6.
17. Virmani R, Farb A, Guagliumi G, Kolodgie FD. Drug-eluting stents: caution and concerns for long-term outcome. *Coron Artery Dis*. 2004;15:313-318.
18. Virmani R, Guagliumi G, Farb A, Musumeci G, Grieco N, Motta T, Mihalcsik L, Tespili M, Valsecchi O, Kolodgie FD. Localized hypersensitivity and late coronary thrombosis secondary to a Sirolimus-eluting stent. Should we be cautious? *Circulation*. 2004;109:701-705.
19. Virmani R, Kolodgie FD, Farb A. Drug-eluting stents: are they really safe? *Am Heart Hosp J*. 2004;2:85-88.
20. Waksman R, Fournadjiev J, Baffour R, Pakala R, Hellinga D, Leborgne L, Yazdi H, Cheneau E, Wolfram R, Seabron R, Horton K, Kolodgie F, Virmani R, Rivera E. Transepicardial autologous bone marrow-derived mononuclear cell therapy in a porcine model of chronically infarcted myocardium. *Cardiovasc Radiat Med*. 2004;5:125-131.

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1. Burke AP, Kolodgie FD, Kutys R, Virmani R. Multiple sites of luminal fibrin in sudden coronary death attributed to plaque rupture. *Circulation*. 2004;110:III-124.
2. Creighton W, Burke AP, Virmani R. Identification of two novel mutations of cardiac ryanodine receptor (RYR2) gene in exercise-induced sudden deaths. *Circulation*. 2004;110:III-17.
3. Fischer JW, Steiz S, Johnson P, Burke AP, Kolodgie FD, Virmani R, Gaichelli CM, Wight TN. Decorin promotes aortic smooth muscle cell calcification and co-localizes to calcified regions in human atherosclerotic lesions. *Circulation*. 2004;110:III-213.
4. Ishii Y, Virmani R, Gaynor SL, Diodate MD, Goldman SM, Prechtel EJ, Kronengold RT, Damiano RJ. A novel bioengineered small caliber vascular graft incorportating Sirolimus. *Circulation*. 2004;110:III-753.
5. Kolodgie FD, Burke AP, Taye A, Liu W, Sudhir K, Virmani R. Lipoprotein-associated phospholipase A2 is highly expressed in macrophages of coronary lesions prone to rupture. *Circulation*. 2004;110:III-246.
6. Segev A, Nili N, Qiang B, Wong AJ, Pasterkamp G, Pillarisetti S, Virmani R, Strauss BH. Stents coated with a perlecan-inducing compound significantly reduce intimal hyperplasia in a rabbit iliac in-stent restenosis model: novel insights into the diverse biological effects of Perlecan. *Circulation*. 2004;110:III-219.
7. Vela D, Burke A, Naghavi M, Madjid M, Casscells W, Virmani R. Inflammation of peri-adventitial fat of human coronary arteries as a marker of plaque vulnerability: destablization from the outside in? *Eur Heart J*. 2004;25(suppl):152, 232.
8. Wilensky RL, Schneiderman J, Weiss A, Samouha E, Golan E, Flugelman M, Rozenman Y, Virmani R. Vulnerable plaque diagnosis by a self-contained intravascular magnetic resonance imaging probe: proof of concept. *Eur Heart J*. 2004;25(suppl):99.

Book Chapters

1. Burke AP, Loire R, Virmani R. Pericardial tumours. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:285-288.
2. Burke AP, Tazelaar H, Butany JW, El-Demellawy D, Loire R, Geva T, Bonilla F, Galvin JR, Veinot JP, Virmani R, Kamiya H, Watanabe G, Grandmougin D, Horimoto M, Hiraga H. Cardiac sarcomas. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:273-281.
3. Burke AP, Tazelaar H, Patel CR, Virmani R, Geva T, Tornambene G, Radford DJ. Benign tumours with myocyte differentiation. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:254-259.
4. Burke AP, Veinot JP, Loire R, Virmani R, Tazelaar H, Kamiya H, Araoz PA, Watanabe G. Tumours of the heart: introduction. In: Travis WD, Brambilla E, Muller-Hermelink HK, Harris CC, eds. *WHO Classification: Tumours of the Lung, Pleura, Thymus and Heart*. Lyon, France: IARC Press; 2004:251-253.
5. Burke AP, Virmani R. Pathology of myocardial ischemia, infarction, reperfusion, and sudden death. In: Fuster V, Alexander RW, O'Rourke RA, eds. *Hurst's The Heart*. 11th ed. New York, NY: McGraw-Hill; 2004:1223-1239.
6. Farb A, Lindsay JP, Virmani R. Case 21: stent thrombosis soon after non-cardiac surgery. In: Rothman MT, ed.

Case Studies in Interventional Cardiology. London: Martin Dunitz; 2004:111-117.

7. Virmani R, Burke A, Farb A, Kolodgie FD, Finn AV, Gold H. Pathology of the vulnerable plaque. In: Waksman R, Serruys PW, eds. *Handbook of the Vulnerable Plaque*. London: Martin Dunitz; 2004:33-48.
8. Virmani R, Burke AP, Kolodgie FD, Farb A. Histopathology of carotid stenosis: correlation between the types of plaque and the risks of neurological complications. In: Henry M, Ohki T, Polydorou A, Strigaris K, Kiskinis D, eds. *Angioplasty and Stenting of the Carotid and Supra-Aortic Trunks.* London: Martin Dunitz; 2004:7-16.
9. Wight TN, Evanko S, Kolodgie F, Farb A, Virmani R. Hyaluronan in atherosclerosis and restenosis. In: Garg HG, Hales CA, eds. *Chemistry and Biology of Hyaluronan*. Elsevier: 2004;307-321.

CLINICAL LABORATORY MEDICINE, CENTER FOR

1. Green DT. BOMO Lab Break Out CD: a compendium of laboratory management topics and issues. Self-published.
2. Roncarti DM. Consultant's Corner, Society of Armed Forces Medical Laboratory Scientists Newsletter. *Society Scope.* 2004;7:1.
3. Roncarti DM. Consultant's Corner, Society of Armed Forces Medical Laboratory Scientists Newsletter. *Society Scope.* 2004;7:3.

DERMATOPATHOLOGY, DEPARTMENT OF

Journal Articles

1. Fetsch JF, Davis CJ, Hallman JR, Chung LS, Lupton GP, Sesterhenn IA. Lymphedematous fibroepithelial polyps of the glans penis and prepuce: a clinicopathologic study of 7 cases demonstrating strong association with condom catheter use. *Hum Pathol*. 2004;35:190-195.
2. Nandedkar MA, Patterson RH, Bridgeman-Shah S, Rush WL, Tomaszewski M-M. A large friable tumor overlying the left side of the mandible. *Arch Dermatol*. 2004;140:609-610.
3. Sperling LC, Tomaszewski M-M, Thomas DA. Viral-associated trichodysplasia in patients who are immunocompromised. *J Am Acad Dermatol*. 2004;50:318-322.

DOD DNA REGISTRY

Journal Articles

1. Brandstatter A, Peterson CT, Irwin JA, Mpoke S, Koech DK, Parson W, Parsons TJ. Mitochondrial DNA control region sequences from Nairobi (Kenya): inferring phylogenetic parameters for the establishment of a forensic database. *Int J Legal Med*. 2004;118:294-306.
2. Coble MD, Just RS, O'Callaghan JE, Letmanyi IH, Peterson CT, Irwin JA, Parsons TJ. Single nucleotide polymorphisms over the entire mtDNA genome that increase the power of forensic testing in Caucasians. *Int J Legal Med*. 2004;118:137-146.
3. Edson SM, Ross JP, Coble MD, Parsons TJ, Barritt SM. Naming the dead: confronting the realities of rapid identification of degraded skeletal remains. *Forensic Sci Rev*. 2004;1:63-90.
4. Just RS, Irwin J, O'Callaghan JE, Saunier JL, Coble MD, Vallone PM, Butler JM, Barritt SM, Parsons TJ. Toward increased utility of mtDNA in forensic identifications. *Forensic Sci Int*. 2004;146:147-149.
5. Vallone PM, Hamm RS, Coble MD, Butler JM, Parsons TJ. A multiplex allele specific primer extension assay for 11 forensically informative SNPs distributed throughout the mitochondrial genome. *Int J Legal Med*. 2004;118:147-157.
6. Willey P, Blanchard A, Holland TD, Scott DD. A case of mistaken identity: skeleton in Custer National Cemetery no longer believed to be Corporal Lell. *Greasy Grass*. 2004;20:16-21.

ENDOCRINE AND OTORHINOLARYNGIC/HEAD-NECK PATHOLOGY, DEPARTMENT OF

Journal Articles

1. Fetsch JF, Laskin WB, Michal M, Remotti F, Heffner D, Ellis G, Furlong M, Miettinen M. Ectopic hamartomatous thymoma: a clinicopathologic and immunohistochemical analysis of 21 cases with data supporting reclassification as a branchial anlage mixed tumor. *Am J Surg Pathol*. 2004;28:1360-1370.
2. Heffner DK. Allergic fungal sinusitis is a histopathologic diagnosis; paranasal mucocele is not. *Ann Diagn Pathol*. 2004;8:316-323.
3. Heffner DK. Benign postoperative spindle cell nodule of the urinary bladder? Don't think so. *Ann Diagn Pathol*. 2004;8:108-l14.
4. Heffner DK. Brain in the middle ear or nasal cavity: heterotopia or encephalocele? *Ann Diagn Pathol*. 2004;8:252-257.

Abstract

Elsheikh TM, Asa SL, Chan JK, DeLellis RA, Heffess CS, Livolsi V, Wenig BM. Inter-observer variation among

experts in diagnosis of follicular variant of papillary carcinoma. *Mod Pathol.* 2004;17:422A

Book Chapters

1. Thompson LD, Heffess CS. Diseases of the pituitary gland. Non-neoplastic lesions. Benign neoplasms. Malignant neoplasms. In: *Foundations in Diagnostic Pathology Series*. Elsevier: 2004.
2. Thompson LD, Heffess CS. Pancreas. In: Sternberg SS, ed. *Diagnostic Surgical Pathology*. 4th ed. New York: Raven Press; 2004.
3. Wenig BM, Heffess CS. Inflammatory and infectious diseases of the pancreas. In: Odze R, Goldblum J, Crawford J, eds. *Surgical Pathology of the Gastrointestinal Tract, Liver, Biliary Tract and Pancreas*. 1st ed. Philadelphia: WB Saunders; 2004.
4. Wenig BW, Heffess CS. Thyroid gland: embryology, anatomy and histology. Classification of non-neoplastic lesions of the thyroid gland. Benign thyroid neoplasms. Malignant thyroid neoplasms. Parathyroid gland: embryology, anatomy and histology. Classification of non-neoplastic lesions. Neoplasms of the parathyroid glands: benign and malignant. In: *Atlas of Head and Neck Pathology*. Elsevier: 2004

ENVIRONMENTAL PATHOLOGY, DIVISION OF

Abstract

Specht CS, Lewin-Smith MR, Murakata LA, Mena H, Kalasinsky VF, Moroz AL, Mullick FG. Muscle biopsy findings in Gulf War veterans. *J Neuropathol Exp Neurol*. 2004;63:533.

ENVIRONMENTAL TOXICOLOGY, DIVISION OF

Journal Article

Cordero SC, Goodhue WW, Splichal EM, Kalasinsky VF. A fatality due to ingestion of hydrofluoric acid. *J Anal Toxicol*. 2004;28:211-213.

Abstracts

1. Cordero SC, Charak JR, Luong TT, Meakim K. Examination of medicinal preparations in clinical and forensic cases. 55th Pittsburgh Conference on Analytical Chemistry and Spectroscopy, March 7-12, 2004, Chicago, Ill.
2. Kalasinsky K, Kalasinsky V. The role of infrared and Raman imaging in biological warfare detection. Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies, October 3-7, 2004, Portland, Ore.
3. Kalasinsky VF, Lewin-Smith MR, Maggio KL, Murakata LA, Mullick FG. Characterization of foreign materials from wound sites of US military personnel deployed in Operation Iraqi Freedom. Terrorism and Trauma: A Transatlantic Perspective, September 20-22, 2004, Baltimore, Md.
4. Kalasinsky VF, Lewis EN. Near infrared imaging of biological tissue: correlation with infrared and Raman point detection. National Meeting of the American Chemical Society; August 22-26, 2004, Philadelphia, Penn.
5. Kalasinsky VF, Luong TT, Charak JR, Tristan JO, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible DoD Directory of Public Health Laboratory Services. Society of Armed Forces Medical Laboratory Scientists, February 23-26, 2004, Boston, Mass.
6. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible Directory of DoD Public Health Laboratory Services. Force Health Protection Conference, August 6-12, 2004, Albuquerque, NM.
7. Kalasinsky VF, Tristan JO, Luong TT, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. An Internet-accessible Directory of DoD Public Health Laboratory Services. 35th International Congress on Military Medicine, September 12-17, 2004, Washington, DC.
8. Kalasinsky VF, Tristan JO, Luong TT, Pizzolato KM, Gaydos JC, MacIntosh VH, Malone JL, Mullick FG. Applications of an Internet-accessible DoD Directory of Public Health Laboratory Services. 44th Interscience Conference on Antimicrobial Agents and Chemotherapy, October 30-November 2, 2004, Washington, DC.
9. Luong TT, Tristan JO, Charak JR, Kalasinsky VF, Mullick FG, Gaydos JC, MacIntosh VH, Malone JL. Development of a virtual DoD Directory of Public Health Laboratory Services. International Conference on Emerging Infections and Diseases, February 29-March 3, 2004, Atlanta, Ga.

FORENSIC TOXICOLOGY, DIVISION OF

Journal Articles

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2. Holler JA, Bosy TA, Klette KL, Wiegand R, Jemionek J, Jacobs A. Comparison of Microgenics CEDIA heroin metabolite (6-AM) and the Roche Abuscreen ONLINE opiate immunoassays for the detection of heroin use in forensic urine samples. *J Anal Toxicol*. 2004;28:489-493.
3. Levine B, Green-Johnson D, Moore KA, Fowler D. Hydroxycarbazepine distribution in three postmortem cases.

J Anal Toxicol. 2004;28:509-511.
4. Levine B, Moore KA, Aronica-Pollak P, Fowler D. Oxycodone intoxication in an infant: accidental or intentional exposure? *J Forensic Sci*. 2004;49:1358-1360.
5. Levine B, Titus JM, Moore KA, Fowler D. Use of prostate specific antigen in the identification of semen in postmortem cases. *Am J Forensic Med Pathol*. 2004;25:288-290.
6. Paul BD. Six spectroscopic methods for detection of oxidants in urine: implication in differentiation of normal and adulterated urine. *J Anal Toxicol*. 2004;28:599-608.
7. Paul BD, Jemionek J, Lesser D, Jacobs A, Searles DA. Enantiomeric separation and quantitation of (±)-amphetamine, (±)-methamphetamine, (±)-MDA, (±)-MDMA, and (±)–MDEA in urine specimens by GC-EI-MS after derivatization with (R)-(-) or (S)-(+)-?-methoxy-?-(trifluoromethyl)phenylacetyl chloride (MTPA). *J Anal Toxicol*. 2004;28:449-455.
8. Vorce SP, Sklerov JH. A general screening and confirmation approach to the analysis of designer tryptamines and phenethylamines in blood and urine using GC-EI-MS and HPLC-electrospray-MS. *J Anal Toxicol*. 2004;28:407-410.

GASTROINTESTINAL PATHOLOGY, DIVISION OF

Journal Articles

1. Gospodarowicz MK, Miller D, Groome PA, Greene FL, Logan P, Sobin LH. The process for continuous improvement of the TNM classification. *Cancer*. 2004;100:1-5.
2. Grand DJ, Sobin LH, Fishman EK. Enteric duplication cyst of the pancreas: CT findings. *Crit Rev Comput Tomogr*. 2004;45:105-110.
3. Hobbs CM. Anal gland carcinoma. *Pathol Case Rev*. 2004;9:147-149.
4. Hobbs CM, Burch DM, Sobin LH. Elastosis and elastofibromatous change in the gastrointestinal tract: a clinicopathologic study of thirteen cases and a review of the literature. *Am J Clin Pathol*. 2004;122:232-237.
5. Levy AD, Hobbs CM. From the archives of the AFIP. Meckel diverticulum: radiologic features with pathologic correlation. *Radiographics*. 2004;24:565-587.
6. Levy AD, Patel N, Abbott RM, Dow N, Miettinen M, Sobin LH. Gastrointestinal stromal tumors occurring in patients with neurofibromatosis: imaging features with clinicopathologic correlation. *AJR Am J Roentgenol*. 2004;183;1629-1636.
7. Lissowska J, Gail MH, Pee D, Groves FD, Sobin LH, Nasierowska-Guttmejer A, Sygnowska E, Zatonski W, Blot WJ, Chow W-H. Diet and stomach cancer risk in Warsaw, Poland. *Nutr Cancer*. 2004;48:149-159.
8. Sobin LH. TNM: 6 new rules [letter]. *Bull R Coll Pathol*. 2004;128:779-780.
9. Uy GB, Kaw LL, Punzalan CK, Querol RI, Koustova EV, Bowyer MW, Hobbs CM, Sobin LH, Wherry DC. Clinical and molecular biologic characteristics of early-onset versus late-onset colorectal carcinoma in Filipinos. *World J Surg*. 2004;28:117-123.

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Chu WS, Furusato B, Wong K, Sesterhenn IA, Mostofi FK, Wei MQ, Zhu Z, Abbondanzo SL, Liang Q. Ultrasound-accelerated formalin fixation of tissue improves morphology, antigen and mRNA preservation. *Mod Pathol*. 2004, epub.

SCIENTIFIC PUBLICATIONS, CENTER FOR

AFIP/ARP Books Published

1. Kraus FT, Redline RW, Gersell DJ, Nelson DM, Dicke JM. *Placental Pathology*. Washington, DC: American Registry of Pathology, Armed Forces Institute of Pathology; 2004. Fascicle 3, AFIP Atlas of Nontumor of

Pathology. ISBN: 1-881041-89-1.
2. Meuten DJ, Everitt J, Inskeep W, Jacobs RM, Peletiero M, Thompson KG. *WHO Histological Classification of Tumors of the Urinary System of Domestic Animals*. Washington, DC: Armed Forces Institute of Pathology, American Registry of Pathology; 2004. Second Series, Volume XI, WHO International Histological Classification of Tumors of Domestic Animals. ISBN: 1881041-90-3
3. Murphy WM, Grignon DJ, Perlman EJ. *Tumors of the Kidney, Bladder, and Related Urinary Structures*. Washington, DC: American Registry of Pathology, Armed Forces Institute of Pathology; 2004. Series 4, Fascicle 1, AFIP Atlas of Tumor of Pathology. ISBN: 1-881041-88-3.

Other Publications

Armed Forces Institute of Pathology Annual Report 2003. Washington, DC: Armed Forces Institute of Pathology; 2004.

Web-Based Publications

1. McEvoy PL, Neafie RC, Klassen-Fisher MK, Nelson AM, Casey BL, Draley D, Aronson N, Wortmann G, Polhemus M. *Cutaneous Leishmaniasis*. http://www.afip.org/Departments/infectious/lm/index.html
2. Nelson AM, Williams B, Draley D, Singh M. *Monkeypox*. http://www.afip.org/Departments/infectious/mp/index.html

AFIP Atlas of Tumor Pathology, Series IV

Tumors of the Kidney, Bladder and Related Urinary Structures

AFIP Atlas of Nontumor Pathology

1. Non-Neoplastic Disorders of the Lower Respiratory Tract
2. Placental Pathology

AFIP Atlas of Tumor Pathology, Series III

1. Tumors of the Bones and Joints
2. Tumors of the Bone Marrow
3. Tumors of the Central Nervous System
4. Tumors of the Cervix, Vagina, and Vulva
5. Tumors of the Eye and Ocular Adnexa
6. Tumors of the Lower Respiratory Tract
7. Tumors of the Mammary Gland
8. Tumors of the Mediastinum
9. Tumors of the Parathyroid Gland
10. Tumors of the Serosal Membranes
11. Tumors of the Thyroid Gland
12. Tumors of the Uterine Corpus and Gestational Trophoblastic Diseases

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Journal Articles

1. Fanburg-Smith JC, Miettinen M, Folpe AL, Weiss SW, Childers EL. Lingual alveolar soft part sarcoma: 14 cases. Novel clinical and morphological observations. *Histopathology*. 2004;45:526-537.
2. Fetsch JF, Davis CJ Jr, Hallman JR, Chung LS, Lupton GP, Sesterhenn IA. Lymphedematous fibroepithelial polyps of the glans penis and prepuce: clinicopathologic study of 7 cases demonstrating a strong association with chronic condom catheter use. *Hum Pathol*. 2004;35:190-195.
3. Fetsch JF, Davis CJ Jr, Miettinen M, Sesterhenn IA. Leiomyosarcoma of the penis: a clinicopathologic study of 14 cases with review of the literature and discussion of the differential diagnosis. *Am J Surg Pathol*. 2004;28:115-125.
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1. Davis CJ, Woodward PJ, Dehner LP, Jones MA, Srigley JR, Sesterhenn IA, Gerald WL, Miettinen M, Fetsch JF. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, eds. World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs. Lyon, France: IARC Press; 2004:267-276.
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TELEMEDICINE, DEPARTMENT OF

Journal Articles

1. Jeong W, Noh D, Kwon OD, Williams BH, Park SC, Lee M, Do S, Chung J, Lee G, Yun H, Jeong KS. Calcinosis circumscripta on lingual muscles and dermis in a dog. *J Vet Med Sci.* 2004;66:433-435.
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4. Lehman RA Jr, Kuklo TR, Freedman BA, Cowart JR, Mense MG, Riew KD. The effect of alendronate sodium on spinal fusion: a rabbit model. *Spine J*. 2004;4:36-43.
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7. Stanton JB, Brown CC, Poet S, Lipscomb TP, Saliki J, Frasca S Jr. Retrospective differentiation of canine distemper virus and phocine distemper virus in phocids. *J Wildl Dis*. 2004;40:53-59.
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