Phone List Page 11

the AFIP LETTER

med Forces Institute of Pathology
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AFIP Performance Questionnaire mailed in May

The postage-paid "performance questionnaire" was mailed to over 12,000 pathologists in the United States in May, according to AFIP Director Vernon W. Armbrustmacher, Col, USAF, MC. "It's very important for us to know how well the pathology community thinks we are doing," he notes.

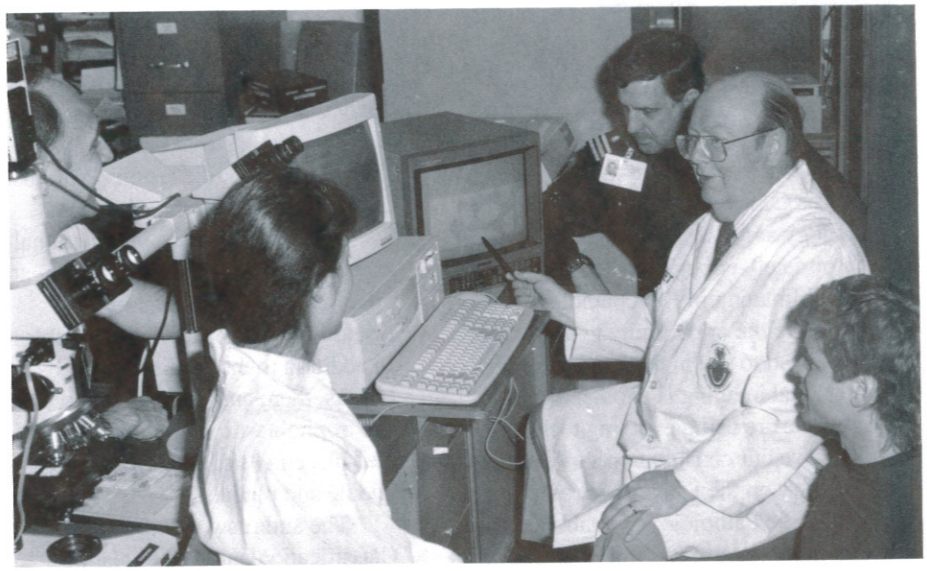
Included are questions on the frequency and types of cases most often sent, the diagnostic accuracy of our consultations, the wide variety of educational opportunities at the AFIP, and a number of other services which will be available in the future.

Included with the questionnaire is a postage-paid envelope for quick return. Your comments and suggestions will greatly help us to provide you with the finest in pathology consultation, education, and research.

IN THIS ISSUE . . .

Orthopedic Pathology Expands Activities

Metabolic bone evaluation program highlights initiatives



The Department of Orthopedic Pathology has endeavored to expand its consultative (diagnostic), educational, and collaborative research activities over the past decade, according to Department Chairman Donald E. Sweet, M.D. Neoplasms and tumorlike conditions continue to comprise about 65% of the department's consultative volume; however, developmental, metabolic, circulatory, inflammatory, mechanical, and posttraumatic disorders provide more than an occasional challenge.

The Department conducts two annual "Basic Science and Orthopedic Pathology" courses: a week-long course for pathologists and related specialists and a four-week course reserved for the uniformed services orthopedic surgery training programs. The Department also participates in numerous other ARP/AFIP, national, and international courses each year. Individual intra-departmental elective study can be arranged and is open to graduate students, postgraduate trainees, and related medical subspecialists interested in bone and joint disorders on a military-priority,

Continued on page 8

Dr. Donald E. Sweet (second from right) describes the new digital imaging system to the Orthopedic Pathology staff. From center: Dr. T.N. Vinh, Asst. Chairperson; LTC Joe Salinas, MC, USA; CDR Robert Wolov, MC, USNR; and Bill Lefkowitz, Office of the Headquarters Commandant.

A Note on the Ash Lecture and Evolving Technologies

May was a busy month for the Institute, including meetings with our Scientific Advisory Board and the American Registry of Pathology Board. The highlight was the Eighth Annual James Earle Ash Lecture on the evening of the 27th. This year's speaker was Peter H. Bartels, Ph.D., professor at the Optical Sciences Center and Department of Pathology at the University of Arizona. Appropriately enough, his topic was "Digital Imaging in Histopathology," and you'll have the opportunity to read about what he had to say in the August Letter.

Digital imaging is another example of how we are using evolving techniques to improve our consultation services. Our cover story on the Department of Orthopaedic Pathology's metabolic bone evaluation program is a fine example of how "day-to-day" pathology benefits from the use of sophisticated imaging and software programs. Future issues will highlight other departments and their involvement in new and exciting pathology work.

In related news, we are very excited about the implementation of PADSTARS, our new optical disk imaging technology used to store pathologic case files. This significant advancement allows our departments to almost simultaneously access cases and significantly reduces storage requirements. The end result is improved service to you, our customers. We've included a special feature story about this innovation on page 9.

Tumors of the Uterine Corpus and Gestational Trophoblastic Disease Atlas of Tumor Pathology:

Third Series, Fascicle 3

by Steven G. Silverberg, M.D., and Robert J. Kurman, M.D.
Armed Forces Institute of Pathology, Washington, DC, 1992
ISSN 0160-6344

This latest AFIP atlas reflects the progress made over the thirty years since the last fascicle on these topics appeared.

Both tumors and tumorlike lesions of the uterine corpus are dealt with extensively. In addition to thorough discussions of endometrial hyperplasias, carcinomas, and stromal and smooth muscle tumors, there are sections devoted to the mixed epithelial-nonepithelial tumors, rare lesions such as sex cordlike tumors, germ cell and neuroectodermal tumors, and the numerous tumorlike lesions that must be distinguished from neoplasms.

The morphologic and functional aspects of trophoblastic development are discussed before dealing with diseases of the gestational trophoblast. In addition to the well-recognized tumors, there are sections on placental site trophoblastic tumor and exaggerated placental site and placental site nodule and plaque.

The authors worked with the Classification and Nomenclature Committee of the International Society of Gynecological Pathologists. Therefore, their classification and nomenclature reflect more than just their own views and, in fact, will be the basis for the World Health Organization's forthcoming histological classification of tumors "blue book."

The clear, concise text is supplemented by valuable tables on subjects such as:

- the published criteria for the diagnosis of well-differentiated adenocarcinoma;
- the features of smooth muscle tumors of uncertain malignant potential;
- the diagnosis of endometrial stromal tumors;
- the pathologic and immunohistologic aspects of partial and complete hydatidiform mole;
- the clinical, pathologic, and immunohistologic features of placental site trophoblastic tumor and choriocarcinoma.

There are 290 pages, 18 tables, 5 color plates, and 365 black-and-white illustrations. The quality of both clinical and microscopic illustrations is outstanding. Gynecologists as well as pathologists will find it indispensable.

Our education horizons continue to expand across the country, highlighted by the page 3 feature on the "Essentials in Forensic Pathology" course to be held September 12–16 in Denver, CO. In the upcoming months AFIP will offer courses in San Antonio, TX, San Juan, PR, and New Orleans, LA, as we strengthen our ties to the national pathology community.

Lastly, AFIP's Performance Questionnaire was sent in May. It contains a number of topics which are vital to us and comes at a time when we are undertaking new directions in pathology. Please take a few minutes to remark on our consultation and education services, along with a number of proposed future programs which may be of benefit to you. A convenient postage-paid envelope is included to enable a quick return.

Vernon Armbrustmacher

Vernon W. Armbrustmacher
Col, USAF, MC
The Director

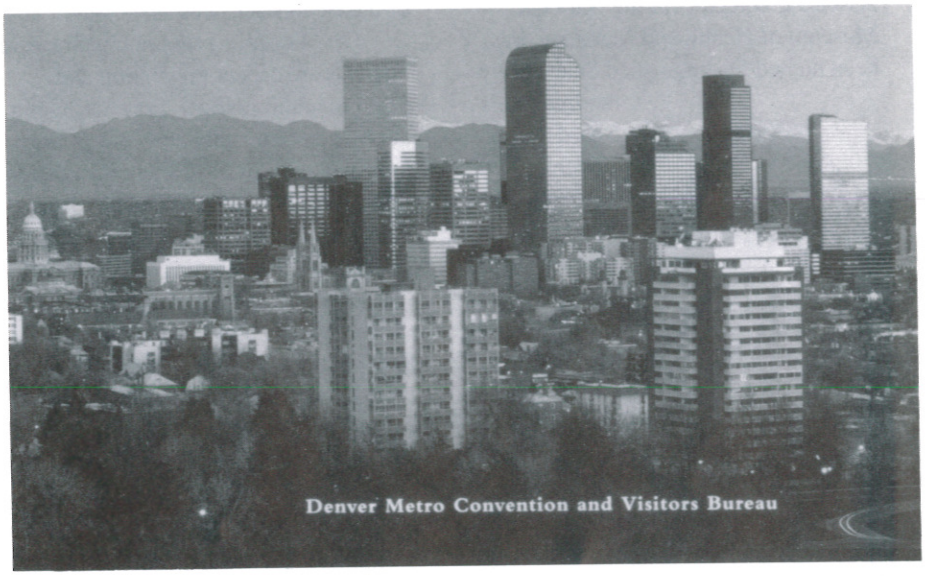
"Essentials In Forensic Pathology" Travels To Denver

September 12-16 course moves west

Denver, Colorado has been chosen as the site for AFIP's 1992 "Essentials in Forensic Pathology" course, to be held September 12-16 at the downtown Executive Tower Inn. Moving this course from Washington, DC, reflects the AFIP's commitment to be part of the national pathology community, according to Deputy Director, J. Thomas Stocker, COL, MC, USA. "We're very excited about bringing this course to Denver," he says, "because we'll have the opportunity to reach out to a significant military medical population in the Rocky Mountain region while using a faculty of experts from that same area. We've also been requested by the Association of Pathology Chairmen to bring a course such as this, which is crucial to all pathology residency programs, to this region of the country."

Guest faculty members include Thomas E. Henry, M.D., Coroner for the City and County of Denver; Ben Galloway, M.D., Deputy Coroner, Denver; and Chris Stacy, M.D., Regional Military Medical Examiner, Mountain States. According to COL Stocker, the course will also be of interest to investigators, FBI agents, and state or local police officers. "Our faculty also includes national experts from the FBI and several state and city medical examiner offices," he says. AFIP faculty will be led by Richard C. Froede, M.D., the Armed Forces Medical Examiner. Dr. Froede, who is serving as one of the course directors, will retire from the Institute at the end of September.

Denver's major airport hub should provide easy access from all regions of the U.S., and excellent hotel rates (including government rates for military personnel) have been arranged at the Executive Tower Inn. "The Denver location is only 20 minutes away from the foothills of the Rocky Mountains and only 90 minutes from Rocky Mountain National Park," notes COL Stocker.



"Participants may also want to take advantage of a number of downtown attractions, including the Denver Center for the Performing Arts, the Denver Art Museum, and the Denver Museum of Natural History," he says, "and can even experience the old and new West by arranging for a trip to casinos in the historic towns of Central City and Black Hawk."

Changes are also taking place in both the topics and locations for AFIP courses being held in the Washington, DC area. "Locations will now include new hotel sites in downtown Washington, DC, along with Bethesda, M.D., and Alexandria, VA," COL Stocker says. "We'll also be looking to hold courses in the Baltimore and Williamsburg regions. Contracts are being negotiated to provide the best locations and rates for participants to take advantage of the Washington, DC area."

Upcoming AFIP courses "on the road"

- Pathology of Radiation and Cancer Chemotherapy Drugs
  San Francisco, CA
  29-31 August 1992
- Essentials in Forensic Pathology
  Denver, CO
  12-16 September 1992
- Radiologic Pathologic Correlation
  Orlando, FL
  12-14 October 1992
- Hematopathology
  San Antonio, TX
  16-18 December 1992
- Infectious Disease and AIDS Pathology
  San Juan, PR
  (dates to be decided)
- 31st Annual Neuropathology Course
  New Orleans, LA
  17-22 January 1993
- Controversies and Recent Advances in Surgical Pathology
  Orlando, FL
  8-12 February 1993
- Hepatic Pathology
  San Diego, CA
  15-17 April 1993

Marc S. Micozzi, M.D., Ph.D., Named Distinguished Scientist

Marc S. Micozzi, M.D., Ph.D., AFIP's Associate Director for the National Museum of Health and Medicine, has been named Distinguished Scientist by the Institute's Board of Governors. According to AFIP Director Vernon W. Armbrustmacher, Col, USAF, MC, many of the activities associated with the Museum involve close cooperation between the Institute and the American Registry of Pathology. "Naming Dr. Micozzi as a distinguished scientist benefits both ARP and the AFIP during a time of tremendous growth and development for the Museum," he said.

Dr. Micozzi, 38, was also elected as founding president of the National Health Exhibit Consortium, an organization which brings together the American Medical Association, the Centers for Disease Control, and eight of the nation's most prestigious science museums to produce traveling health exhibits and educational programs for the public. He has been an adjunct professor of pathology at the Uniformed Services University of the Health Sciences since 1987.

Dr. Micozzi's two principal research interests are cancer prevention and forensic anthropology. Prior to joining the Museum in 1986, he was a senior investigator with the Cancer Prevention Studies Branch of the National Cancer Institute. In that capacity, he served as project leader of a series of USDA-NCI studies which focused on nutrition and cancer intervention trials in the People's Republic of China. Dr. Micozzi has coauthored two books on nutrition and cancer prevention. Earlier this year, he served as the program chairman of the annual meeting of the American Society for Preventive Oncology, which was cosponsored by the Museum. Dr. Micozzi has also focused his current research in paleopathology on the antiquity of cancer.

As an anthropologist, he has sought to provide a theoretical framework for understanding forensic anthropology. His recent publications include the book, *Postmortem Change in Human And Animal Remains: A Systematic Approach.* He is a fellow of the Society for Applied Anthropology, the American Anthropological Association, and the Human Biology Council. Dr. Micozzi has recently investigated the health of American presidents, and he has written about the autopsies of Abraham Lincoln and John F. Kennedy. An invited editorial on this subject appeared in the May issue of the *Journal of the American Medical Association.* His work has also appeared in the *New England Journal of Medicine, the American Journal of Public Health, the Journal of the National Cancer Institute,* and other journals.

Dr. Micozzi received both his M.D. and his Ph.D. degrees (biomedical anthropology and epidemiology) from the University of Pennsylvania, Philadelphia. He was a resident physician in anatomic pathology at the Ayer Clinical Laboratory of the Pennsylvania Hospital from 1980 to 1983. He served as associate medical examiner in Miami (Metropolitan Dade County) from 1983 to 1984. Dr. Micozzi has presented more than 50 scholarly papers at professional conferences and is the author of nearly 100 scientific articles.

Leslie H. Sobin, M.D., receives Presidential Rank Award

Dr. Leslie H. Sobin, AFIP's Associate Director for Scientific Publications and Chief of the Division of Gastrointestinal Pathology, has received the Meritorious Presidential Rank Award in the Senior Executive Service (SES). Dr. Sobin earned the honor for a variety of activities, among which are his efforts as head of the World Health Organization's Center for International Histological Classification of Tumors, in which he oversees a network of experts and the publication of work that is the international standard in tumor classification; his chairmanship of the Tumor, Nodes, Metastasis (TNM) Project of the International Union Against Cancer, the standard for measuring the extent of tumor spread; and his coediting of the Institute's Atlas of Tumor Pathology, the most prestigious series in its field.

Dr. Sobin was born in New York City, graduated from Union College, and received his M.D. (cum laude) from the State University of New York's College of Medicine at New York City in 1959. His pathology training was at the Cornell University Medical Center, where he rose to the rank of associate professor and still remains on the faculty.

Much of Dr. Sobin's career was with the World Health Organization. From 1965 to 1968, he was WHO professor of pathology at the University of Kabul. There, as chairman of the department, he authored textbooks of pathology and histology for the Afghan medical students, established a cancer registry, and published the first description of the distribution of cancer in Afghanistan.

From 1970 to 1981, Dr. Sobin served as pathologist with the World Health Organization in Geneva. In this position he was responsible for the International Histological Classification of Tumors. In 1981, Dr. Sobin joined the AFIP's Department of Gastrointestinal Pathology, where his main research efforts have concerned intestinal polyps

Continued on page 10

AFIP STAFF "IN THE NEWS"

■ **COL James S. Nelson, MC, USA**, Chairman, Department of Neuropathology, has been appointed as an advisory member of the Neuropathology Committee of the College of American Pathologists. He has also been appointed as a member of the Scientific Advisory Committee for the Brain Tumor Research Center at the Barrow Neurological Institute in Phoenix, Arizona. In March, Dr. Nelson served as a member of a Scientific Review Committee for the National Cancer Institute concerning the cooperative oncology group programs.

■ **Kenneth M. Earle, M.D.**, past Chairman of the Department of Neuropathology and former Executive Director of the American Registry of Pathology, received the 1991 F.K. Mostofi Distinguished Service Award at the 81st Annual U.S. and Canadian Academy of Pathology Meeting. Named in honor of Dr. F.K. Mostofi, Chairman of AFIP's Department of Genitourinary Pathology, the annual award is presented in recognition of outstanding service to the International Academy of Pathology and its U.S.-Canadian Division. Dr. Earle was also honored during the AFIP's 30th Annual Neuropathology Review at a dinner attended by course faculty, former trainees, and friends. Dr. Earle began the Review in 1962.

■ **Kamal Ishak, M.D., Ph.D.**, Chairman, Department of Hepatic and Gastrointestinal Pathology, and **Zachary Goodman, M.D., Ph.D.**, of the same department, are serving as associate investigators for a clinical trial to assess the efficacy of combination therapy for chronic hepatitis C infection. Hepatitis C is a disease for which no highly effective treatment now exists. The clinical trial is taking place at Fitzsimons Army Medical Center, Aurora, CO.

■ AFIP Director **Vernon W. Armbrustmacher, Col, USAF, MC**, has been elected to the U.S. and Canadian Academy of Pathology's governing council.

■ AFIP staff members played a prominent role at the 81st Annual Meeting of the U.S. and Canadian Academy of Pathology. Staff members presented 23 posters at poster sessions, proferred 11 papers, chaired 6 short courses, and participated in 5 specialty conferences.

■ **Jose A. Centeno, Ph.D.,** Department of Environmental and Toxicologic Pathology, chaired a practical workshop on Modern Spectroscopic, Spectrophotometric, and Crystallographic Methods at Cayey University College, Puerto Rico, 22-24 April 1992.

■ **Donald E. Sweet, M.D.**, Chairman, Department of Orthopedic Pathology, served as visiting professor at the Department of Pathology, Madigan Army Hospital, Tacoma, Washington, from 4-6 May 1992. His seminar topics included skeletal development, neoplasia, and arthropathies.

■ During his 7 April visit to the Institute, **LT GEN Gunter Desch**, Surgeon General of the German Armed Forces (left), and AFIP Director Vernon W. Armbrustmacher, Col, USAF, MC (right), exchanged mementos. General Desch received a special briefing and tour of the facility.

Father-Daughter Physicians Train at AFIP. Dr. Laura Seeff, who spent the month of April training in the Department of Hepatic and Gastrointestinal Pathology, is standing next to her father Dr. Leonard B. Seeff, Chief of the Hepatology and Gastroenterology Unit at the VA Medical Center, Washington, DC. Dr. Leonard B. Seeff was the first fellow in gastroenterology to be trained at the then Department of Hepatic Pathology in 1965. Flanking the two Doctors Seeff are Dr. Hyman Zimmerman (left), Distinguished Scientist Emeritus, and Dr. Kamal G. Ishak (right), Chairman, Department of Hepatic and Gastrointestinal Pathology. Dr. Leonard B. Seeff was Dr. Zimmerman's fellow in 1965.

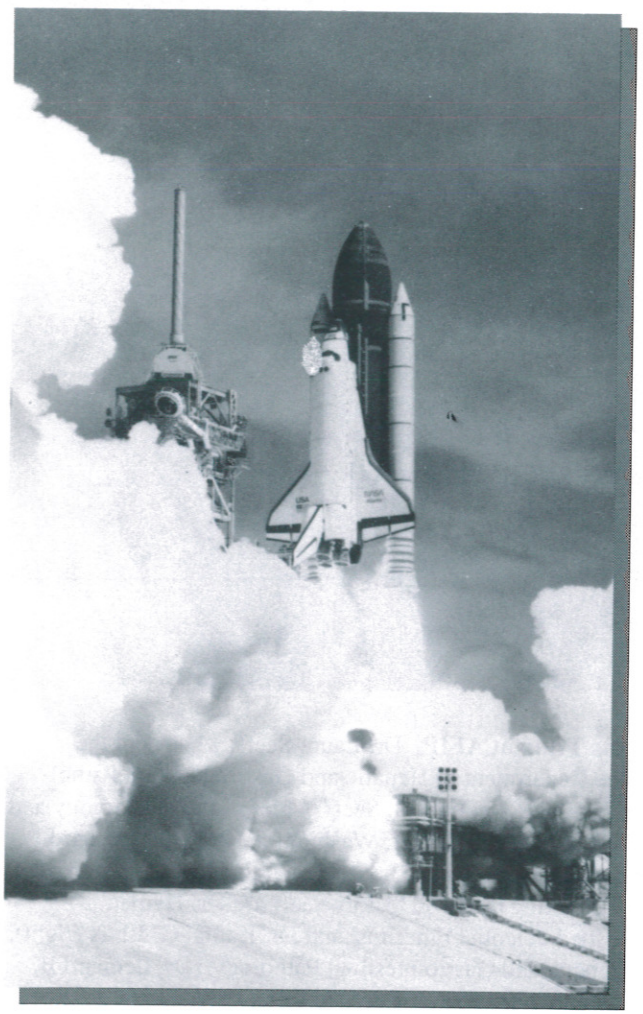
AFIP Cells Studied in Space

Institute collaborates on space shuttle experiment

The top-rated military life sciences research project for the space shuttle is a cell culture system designed to study the rapid degradation of the immune system, muscle, and bone in space. These studies may yield important information for treating combat injuries, muscular dystrophy, bone failure, and immune disorders.

The Space Tissue Loss Model, designed by scientists from the Walter Reed Army Institute of Research (WRAIR) and the National Aeronautics and Space Administration (NASA) with support from AFIP, is self-contained in an automated, triple-sealed compartment designed by WRAIR and the US Army Biomedical Research and Development Laboratory (USABRDL). It was placed in a mid-deck payload locker on the shuttle flight which lifted off on 24 March 1992.

Cultures of rat heart muscle cells, primary isolates, cell line rat bone cells, and human leukocytes were perfused with growth media and an airlike mix of 20 percent oxygen, 5 percent carbon dioxide, and 75 percent nitrogen. Cell vitality and physical environment inside the compartment were continuously monitored and communicated to astronauts on a display module.



A space shuttle at lift-off. (NASA photo)

The alteration of muscle function and structural integrity during space flight has been well documented. Shifts in metabolic pathways to support contraction, various structural changes, and up to 20 percent of weakening of muscle performance have been observed. Muscle cell studies on the shuttle attempted to delineate the major pathways, describe the control mechanisms, and identify the cellular level signaling and activating mechanisms associated with weakening of muscle performance and structural changes. Benchmark data for future reference will be derived from a detailed description of the biochemical, physiological, and structural detail changes taking place in muscle cells in space.

"The primary purpose of the mission was to test and validate the hardware, which we succeeded in doing," says Major Loraine H. Anderson, USAF, BSC, Associate Chief, Division of Altitude and Hyperbaric Physiology. "Preliminary observations indicate that space flight did have a detrimental effect on the cells. Although the cells remained viable and proliferated, other cell functions were apparently impaired. The bone cells failed to deposit mineral matrix although all other aspects of cellular morphology appeared normal. The leukocytes failed to differentiate upon stimulation, but the fusion of the muscle cells to form myotubes appeared to proceed normally."

Investigators expect to apply knowledge gained about the bone loss phenomenon to future space exploration as well as to earth-bound treatments for bone diseases. They also hope to validate earth-bound models for bone loss study such as extended periods of inactivity.

Studies of the effects of space flight on lymphocytes suggest the possibility of immune system collapse in astronauts, resulting in the potential for life-threatening infection caused by normally nonpathogenic organisms (as occurs in immune suppression therapy or HIV infection). Immune system compromise occurs frequently after battlefield trauma. Investigators hope to advance the understanding of immune system changes by studying the effects of weightlessness on lymphocytes and endothelial cells.

The Space Tissue Loss Model compartment was fully prepared by life sciences support personnel before installation on the shuttle. In orbit, the shuttle crew pushed a button to establish a time mark, monitored the display module periodically, and pushed the same time-mark button as they prepared to return to earth. Ground personnel recovered the compartment and prepared it for shipping back to the laboratory for analysis.

In future flights (manifested for October, and December-scheduled

Continued on page 7

Levine, Moser honored for achievements by Society of Armed Forces Medical Laboratory Scientists

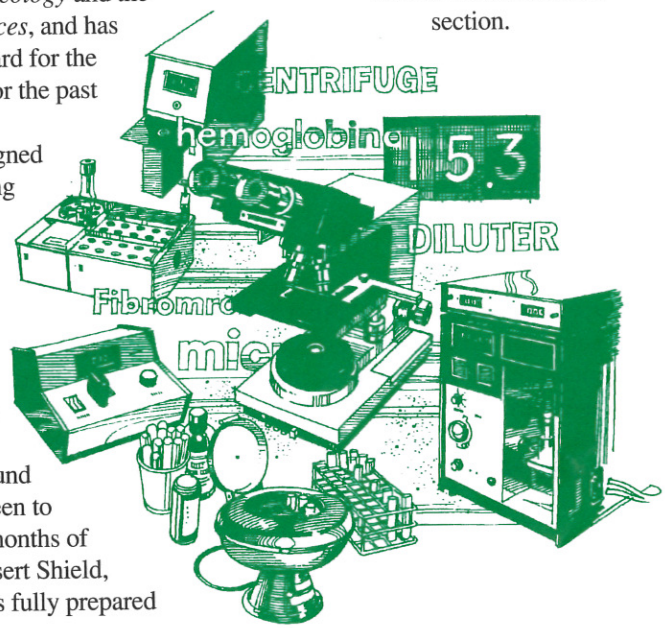
Barry Levine, PhD, DAC, director of the forensic toxicology laboratory, and TSgt Kenneth W. Moser, USAF, forensic toxicology laboratory superintendent, Office of the Armed Forces Medical Examiner, have been named by the Society of Armed Forces Medical Laboratory Scientists (SAFMLS) as the outstanding research and development scientist and enlisted service member for 1991. They were honored at the Society's annual meeting in San Antonio, Texas, on 15 April 1992.

Dr. Levine has produced a large number of nationally recognized research publications in his role as director of the forensic toxicology laboratory. He successfully conducted a research plan that focused on investigations of drug-induced deaths, the stability of drugs in biological fluids, and development of new instrumental techniques in toxicology. Dr. Levine's research findings on barbiturates are considered to be the hallmark work on this drug by the forensic toxicology community.

His recent methods studies validated five new drug assays using fluorescence polarization immunoassay, radioimmunoassay, enzyme-multiplied immunoassay, and gas chromatography/mass spectrometry. Two of these new methods are already being actively used by DoD laboratories for assessing drug use and drug overdoses. He is a reviewer for the *Journal of Analytical Toxicology* and the *Journal of Forensic Sciences*, and has served on the editorial board for the *Yearbook in Toxicology* for the past three years.

TSgt Moser was assigned as NCOIC, Drug Screening Branch, Division of Forensic Toxicology, in August 1989. While there, he revised the SOP and laboratory logs, automated the ethanol analysis, and reorganized work flow. His efforts resulted in a case turnaround time decrease from fourteen to three days. Within two months of the start of Operation Desert Shield, TSgt Moser's section was fully prepared to receive samples from 200-250 casualties per day.

His section maintained this state of readiness, including a new rapid processing, testing, and sample storage protocol until Operation Desert Storm ended. In August 1991, TSgt Moser was promoted to laboratory superintendent and is doing an exceptional job of managing division personnel, a $1.5 million budget, a $1 million property book, logistical support, and the administration section.



SPACE from page 6.

launches), experiments will be replicated to validate the results. In addition, experiments are planned to more closely examine changes occuring within the cells.

Renu Virmani, M.D., Chairperson, Department of Cardiovascular Pathology, collaborated on the project. Other personnel assisting from the Department of Scientific Laboratories included SSgt Bernard Wilson, USAF, NCOIC, Laboratory Research; Sgt Ericka J. Otis, Laboratory Technician; H. Marie Jenkins, Acting Branch Chief, Scanning Electron Microscopy Laboratory, and Efrain Perez-Rosario, Branch Chief, Transmission Electron Microscopy Laboratory.

(Most of this feature appeared in the February 1992 USAMRDC News)

COL Yehezkel Caine (left), Surgeon General, Israel Air Force, received a briefing from Major Victor Weedn, MC, USA, Chief, Armed Forces DNA Identification Laboratory, during COL Caine's 19 May visit to the Institute.

Repository and Research Services

AFIP Manual 40-40, Contributors' Manual, has recently been revised and is available for distribution to interested individuals and organizations. This manual contains useful information concerning the case submission process for both military and other federal and civilian contributors. Automatic distribution of this manual is being made by the Institute to all military medical facilities. All other interested parties may request a copy by writing to the Research Office, Armed Forces Institute of Pathology, Washington, D.C. 20306-6000, or phoning this office at (202) 576-2884.

In addition to the above manual, the AFIP FY91 Annual Research Progress Report was recently published. This report contains both progress and final reports on approximately 215 projects that were actually being pursued at the Institute during FY91. It also contains comments on our research mission from the Director, AFIP, and for the first time, a concise summary of the Institute's research effort. A limited number of copies of this report are available for public distribution. Other research-related medical facilities, organizations, or associations desiring a copy of this report may request one by contacting the AFIP Research Office as described above. Due to the limited number of reports available, we will not be able to accept requests from individual researchers or pathologists for the entire report, but will make available copies of the summary if there is sufficient interest.

SWEET from page 1.

space-available basis. "From a research perspective, our staff is especially interested in osteonecrosis, mechanical and stress-related disorders, arthropathies, and reactions to implant and prosthetic devices," he notes.

Typically perceived as difficult, orthopedic pathology need not remain an intimidating subject. If one excludes needle aspirations or curetted specimens, a pathologist's gross impressions and provisional diagnoses are only rarely significantly modified by unanticipated light-microscopic findings. This is particularly true for bone and joint disorders, where the gross pathologic diagnostic approach is greatly facilitated by the long-recognized advantage reflected in orthopedic pathology's most precious "silver stain," the x-ray. "Indeed, it's the radiographic imaging studies which so often reliably resolve the differential diagnosis and determine appropriate treatment," Dr. Sweet points out.

Pathology, the study of disease, implies sufficient demonstrable alteration in tissue structure (morphology) and/or function (physiology) such that it exceeds the range of normal anatomic and physiologic variation. As the inseparable link between structure and function at the clinical, macroscopic, ultrastructural, and molecular levels has become increasingly apparent, the traditional interpretative skills of the anatomic pathologist are evermore important in guiding advancing technology.

Against this background, the Orthopedic Pathology Department wishes to announce a significant upgrade in its histomorphometric analysis capability, especially as it relates to metabolic bone evaluation for osteoporosis, osteomalacia, and hyperparathyroidism. Until the recent acquisition and programing of a highly sophisticated software package, in conjunction with a color frame-grabbing digital imaging system, the AFIP's metabolic bone biopsy evaluations consisted of qualitative assessment and a limited number of time-consuming, laborious quantitative measurements. The new system allows for an almost fully automated histomorphometric (quantitative) analysis, including cortical and trabecular bone volumes, % porosity, mean cortical and trabecular thickness, % mineralized and unmineralized bone (osteoid) volume, and complete surface quality and activity assessment as a % of total surface area.

Dr. Sweet reminds us that reliable evaluation for osteomalacia and appositional bone growth rates requires double tetracycline-labelled undecalcified sections. Tetracycline is actively incorporated into the mineralization front of newly formed osteoid/bone, and its fluorescent properties allow qualitative and quantitative assessment of the mineralization process. The following "tetracycline" labelling schedule is but one of many:

1. Oxytetracycline (fluoresces greenish), 250 mg, tid, for 3 days (days 1-3).
2. 12 days off tetracycline (days 4-15).
3. Demeclocycline (fluoresces yellow-orange), 300 mg, bid, for 3 days (days 16-18).
4. 3 days off tetracycline (days 19-21).
5. Biopsy on day 22.

The department prefers an iliac crest bone biopsy, 1.5 inches inferior and 1.5 inches posterior to the anterior iliac spine. The specimen should be a through-and-through biopsy including both cortices and >5 mm in diameter. A wedge biopsy or large Jamshidi biopsy (anterior or posterior iliac crest) with cortex are acceptable alternatives. While prolonged formalin exposure may leach tetracycline out of a specimen, "a disputed observation," brief (1-2 hours) fixation in formalin will apparently not hurt. Irrespective, storage and mailing should be in 70%-95% ethanol.

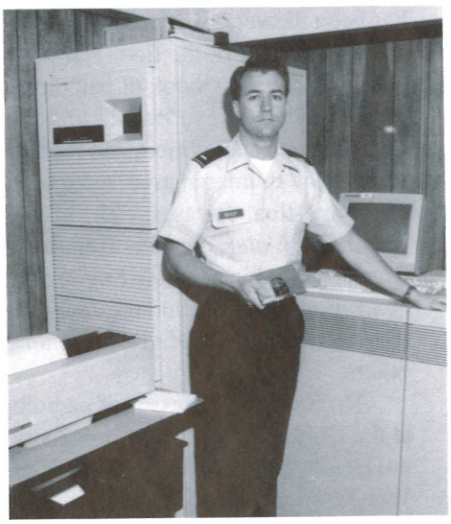
Inquiries can be directed to Dr. Sweet, Department of Orthopedic Pathology, AFIP-CPB, Washington, DC, 20306-6000, or phone (202) 576-2932.

Optical disk imaging technology now used to store records

From left; Louise Matthews, lead medical record technician, and Ada Lofton, Supervisor, perform quality control on records that have been scanned.

The AFIP significantly improved its management of over 2.35 million pathologic case files when it implemented the Pathology Document Storage and Retrieval System (PADSTARS) in March 1992. As a result, all paper-based documents will now be stored on 5 1/4-inch optical media, significantly reducing storage requirements and allowing for almost simultaneous access within seconds to over 150 potential users.

The AFIP has been studying optical disk storage technology for the past ten years as an alternative to microfiche, according to Major Annette Anderson, USAF, MSC, Administrator, Department of Repository and Research Services. "In the late 1970's the Institute halted all microfilming of case files due to dissatisfaction with the medium. At that time, however, optical disk technology was prohibitively expensive and had not yet gained wide acceptance. As a result, we went back to storing records in their paper form."



1LT Joseph Healey, MS, USA, AMS Deputy Chief, in front of the new optical jukebox. 1LT Healey holds a 5 1/4" optical media disk used to store paper records.

In 1990, storage of the paper-based records once again became a problem. Older records not on microfiche had deteriorated, and most were stored in hundreds of filing cabinets. Human error became a factor as records were shifted, filed, or retrieved. In addition, maintaining accountability of original case files on loan within the Institute was becoming a problem of increasing concern.

As a result, the AFIP once again looked into optical disk imaging technology. "After several impressive demonstrations on the current state of the technology by various vendors, the AFIP PADSTARS Committee put out a contract in early 1991 for procurement of an optical disk-based imaging system capable of imaging 4,000 documents a day and storing up to 12 million images," notes 1LT Joseph Healey, USA, Deputy Chief, Automated Management Services. Other major requirements included the ability to scan paper sizes between 3 x 5 inches and 8 1/2 by 14 inches; magnify and rotate images; retrieve the first image to any PADSTARS workstation located within the Institute within 20 seconds of the request; provide for centralized printing and faxing of requested images; develop a user-friendly window environment; allow the users to create individual file groups of records for quick retrieval, and have adjustable scan resolution and image quality control.

In September 1991, a five-year contract potentially worth over $4.5 million was awarded to Diversified Technical Consultants (DTC). AFIP acceptance and actual imaging of case folders began in late March.

The system as currently configured consists of three scanning workstations, two print stations, two quality control/retrieval stations, and one FAX station located in the Records Repository; an optical jukebox capable of holding 100 gigabytes of data, a print station, and database, image, and network servers are located in Automated Management Services; and 16 retrieval stations located in potential high-use areas throughout the Institute.

Once the system was functional and user training had been completed, Records Repository Division personnel began imaging all case folders beginning with accession number 2.3 million. These records are approximately 18 months old and were chosen because they are generally complete and on file in the Records Repository. "We hope to make inroads on the imaging of our large backlog of paper-based files," notes Major Anderson.

Users seem to be very pleased with the quality of images and ease of retrieval. In fact, many departments have contacted the Records Repository in an effort to have groups of their stored records scanned into the system to promote ease of retrieval and reduce departmental storage space requirements.

Future expansion plans for the system will depend on available financial resources to hire additional personnel to speed-up the scanning rate. We are also in the process of redesigning our entire Records Repository Division work area to

Continued on page 10.

Study sets available for cancer therapy and military preparedness

As a response to the Kuwait invasion and associated threat of chemical weapons, the Department of Environmental and Toxicologic Pathology has prepared two new study sets on "Histopathology of Cancer Chemotherapy Drugs and Chemical Warfare Agents." A glass microscope slide version is available from the Education Division, (202) 576-2979, and a 35-mm projection slide version is available from the American Registry of Pathology, (202) 576-2833. Both sets provide examples of phosgene, mustard, and chemotherapy drug injuries.

These sets complement three previous departmental study sets on "Radiation Pathology," "Radiation Pathology Part II" (glass slide), and "Pathological Effects of Radiation" (35-mm slide), which show examples of acute radiation injury of interest to military physicians and examples of late effects of radiation of interest to radiotherapists and clinical oncologists. For further information call David Busch, PhD, MD, at (202) 576-0265, or write to the Department of Environmental and Toxicologic Pathology, AFIP-CPV, Washington, DC 20306-6000.

"Transgenic Animal Models in Biomedical Research" available from Registry of Comparative Pathology

Proceedings of the symposium "Transgenic Animal Models in Biomedical Research," held 4-5 November 1991 at the National Institutes of Health, are now available free of charge from the Registry of Comparative Pathology. Requests should be addressed to the Registry of Comparative Pathology, AFIP-CPU-C, Washington, DC 20306-6000. Telephone requests can be made to the registry at (202) 576-2452.

Comparative Pathology Bulletin available

The Registry of Comparative Pathology's quarterly newsletter, "Comparative Pathology Bulletin," is available for an annual subscription fee of $10. The bulletin highlights new animal models of human disease as well as special research features, "mystery cases," announcements of educational courses and publications, and other news items. Subscriptions are payable to UAREP, Inc., and can be mailed to the Registry of Comparative Pathology, Armed Forces Institute of Pathology, Washington, DC 20306-6000.

Since 1966, the Registry of Comparative Pathology has informed the international medical community on the usefulness and availability of new animal models of human diseases. More than 380 animal models have been well described, covering a diverse range of disease conditions from leprosy to muscular dystrophy. Most of the animal models represent spontaneous disease conditions; however, many transgenic animals are also featured.

PADSTARS from page 9.

maximize workflow efficiently and to improve system ergonomics for the employees.

Led by Major Anderson and 1LT Healey, the successful implementation of PADSTARS was a significant achievement involving many personnel within the Institute working under an integrated team concept towards a common goal. As a result of this approach, the system was procured and implemented on time with minimal disruption in normal workflow and ready acceptance by users. We are looking forward to further expansion of the system and the access, retrieval, and storage benefits it will bring.

Histotechnology Notes

Pay attention to your mounting media for slides that are cleared in xylene. If your mounting media resin is dissolved in toluene and your slides are mounted from xylene, there is a tendency for air bubbles to form under the coverslips. These are evident microscopically under low-power magnification, and they have the appearance of water being trapped under the coverslip. This problem can be avoided by making sure that your mounting media resin is dissolved in xylene.

SOBIN from page 4

and carcinoid tumors.

The dominant theme in Dr. Sobin's career has been international standardization in pathology. In addition to his work as head of the WHO Collaborating Center for International Histological Classification of Tumors and the TNM Classification, he was oncology editor for the *International Dictionary of Medicine and Biology* and served on the committee that formulated the ICD-O (International Classification of Diseases for Oncology), the system used by SNOMED and others for coding tumors.

Another theme in Dr. Sobin's career has been the versification of pathology. He is the author of the first (and probably only) textbook of pathology in rhyme, *A Pathology Primer - in verse,* now in its second edition, and more recently of an imaginative series on gastrointestinal diseases, *Tales of the Ampulla of Vater*, chapters from which have appeared in the *New England Journal of Medicine* and the *Journal of the Royal Society of Medicine*, among others.

Dr. Sobin is professor of pathology at the Uniformed Services University of the Health Sciences and a member of the WHO Expert Advisory Panel on Cancer. He is married to Margareta Ahlstrom of Stockholm, Sweden. They have one daughter, Annika.

CENTER FOR ADVANCED PATHOLOGY TELEPHONE LISTING JUNE, 1992

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Nephropathology	576-2891	291-2891
Urogenital Research	576-2962	291-2962
Urologic Pathology	576-2962	291-2962
GYN/Breast Pathology	576-2981	291-2981
Hematologic/Lymphatic Pathology	576-2986/2128	291-2986/2128
Hepatic and Gastrointestinal Pathology	576-2951/2975	291-2951/2975
Gastrointestinal Pathology	576-2871/72	291-2871/72
Neuropathology	576-2928/29	291-2928/29
Neuromuscular Pathology	576-2928/29	291-2928/29
Yakovlev Collection	576-2692	
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OAFME - Medicolegal Investigator	576-3232	291-3232
OAFME - Toxicology	576-2910/82	291-2210/82
AFDIL Lab	576-2482/2485	
Ophthalmic Pathology	576-2955/56	291-2955/56
Orthopedic Pathology	576-2932/33	291-2932/33
Soft Tissue Pathology	576-2158/2968	291-2158/2968
Cardiovascular Pathology	576-2806/2857	291-2806/2957
Cellular Pathology	576-2915/2964	291-0230
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Environmental & Toxicologic Pathology	576-2434/35	291-2434/35
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Chemical Pathology Division	576-2976	291-2976
Environmental Toxicology Division.	576-0265	291-0265
Environmental Pathology Division.	576-0265	291-265
Infectious & Parasitic Diseases Pathology	576-2213	291-2213
AIDS Pathology Division	576-2838	291-2838
Geographic Pathology	576-2213	291-2213
Microbiology Division	576-2993	291-2993
Molecular Division	576-2182	
Legal Medicine	301-427-5323/5176	291-5176/5323
Oral Pathology	576-2679	291-2679
Otolaryngic Pathology	576-2366/67	291-2366/67
Endocrine Pathology	576-2974	291-2974
Pediatric Pathology	576-2947/2950	291-2947/2950
Pulmonary/Mediastinal Pathology	576-2870/2957	291-2870/2957
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Diagnostic Radiologic Pathology	576-2162	291-2162
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Alt & HBO Physiology Division	576-2868	291-2868
Laboratories Administration	576-2935	
Tri-Service Histopathology School	576-2636	291-2636
Veterinary Pathology	576-2601/2453	291-2601/2453
Comparative Pathology	576-2452	291-2452
Lab Animal Medicine	576-2972	291-2972

Abstracts

Drug-Induced Cholestasis in the Perfused Rat Liver and Its Reversal byTauroursodeoxycholate: An Ultrastructural Study(43328)

C. O. Abernathy, H. J. Zimmerman, K. G. Ishak, R. Utilli, and J. Gillespie

Chlorpromazine at a concentration of 250 μ*M* and estradiol-17 β-D-glucuronide at 17.5 μ*M* on infusion led to a sharp reduction in bile flow by the *in vitro* perfused rat liver. This was accompanied by fragmentation and a loss of canalicular microvilli, dilatation of canaliculi, and thickening of pericanalicular ectoplasm. Less prominent were the smooth endoplasmic reticulum dilatation, lysosomal lamination, and the appearance of amorphous bile in hepatocyte cytoplasm. The bile flow and electron microscopy appearance were restored to normal by infusion of tauroursodeoxycholate in a concentration of 5 μmol/min for the estradiol-17 β-D-glucuronide-induced cholestasis and 1.5 μmol/min for the chlorpromazine-induced cholestasis. Changes in ultrastructure paralleled changes in bile flow. These observations demonstrate the feasibility of electron microscopy studies on the perfused liver and the rapidity with which cholestatic changes appear.

Proc Soc Exp Biol Med. 1992;199:54-58.

Mucoepidermoid Carcinoma of Intraoral Salivary Glands: Evaluation and Application of Grading Criteria in 143 Cases

Paul L. Auclair, DMD, MS, Robert K. Goode, DMD, and Gary L. Ellis, DDS

The histopathologic criteria most useful for grading of mucoepidermoid carcinomas are controversial. To identify those histologic features most important in the grading of intraoral mucoepidermoid carcinomas, 143 cases of this disease with clinicopathologic correlations were studied. Twelve histopathologic features of each tumor and their clinical presentation were correlated with patient outcome. Seven patients died of disease, 5 had regional metastases only, 10 had recurrences only, and 121 had no additional problems. Clinical features suggesting aggressive behavior were short duration, presence of clinical symptoms, and location of tumor in the tongue and floor of the mouth. The histopathologic features that indicated high-grade behavior were an intracystic component of less than 20%, four or more mitotic figures per ten high-power fields, neural invasion, necrosis, and cellular anaplasia. The simultaneous assessment of these features showed improved prognostic correlation over individual parameters. A quantitative grading system was devised using these features. Tumors with a point score of 0 to 4 were considered low grade, and none of 122 patients with scores in this range died of their tumor, although 9 had recurrences only and 3 had regional metastases. Point scores of 7 or above indicated highly aggressive behavior. Six of ten patients with these high scores died of tumor. Most of these six patients had recurrences and regional metastases, and all had distant metastases. Two other patients had regional metastases only. Scores of 5 to 6 were considered intermediate between low-grade and high-grade scores because only 1 of 13 patients with these scores died of disease. Three of the five patients with regional metastasis had low-grade tumors, indicating the inability of the grading system to identify them. Nonetheless, with an average follow-up on these patients of 10 years after treatment of the metastasis, no patient had additional problems. The relative objectivity of our proposed grading system for intraoral mucoepidermoid carcinomas may help achieve more accurate and consistent grading of these rare tumors.

Cancer 1992;69:2021-2030.

Peutz-Jeghers Syndrome

James L. Buck, CDR, MC, USNR, Roger K Harned, MD, Joel E. Lichtenstein, MD, and Leslie H. Sobin, MD

The Peutz-Jeghers polyp is an unusual type of hamartomatous polyp; its characteristic feature is a smooth muscle core arising from the muscularis mucosae and extending into the polyp. Peutz-Jeghers polyps vary in size and shape; are found in the stomach, small bowel, and colon; and are usually multiple. Peutz-Jeghers syndrome is an inherited condition that often remains undiagnosed until after the polyps are identified, despite mucocutaneous pigmented lesions on the lips and mouth of children or young adults. In the past, standard therapy involved removal of the polyps that produced intussusception, but now endoscopic removal of all polyps is recommended. The polyps are not premalignant, but a definite association exists between Peutz-Jeghers syndrome and gastrointestinal carcinoma. Evidence shows that the syndrome is associated with an increased risk of extra-intestinal malignancy, especially carcinomas of the pancreas, breast, and reproductive organs.

Radiographics. 1992;12:365-378.

Tamoxifen prevents induction of hepatic neoplasia by zeranol, an estrogenic food contaminant

John E. Coe, Kamal G. Ishak, Jerrold M. Ward, Mary J. Ross

Zeranol (α-zearalanol) is a β-resorcylic acid lactone (RAL) that has estrogen activity. It is synthesized by molds and is difficult to avoid in human food products. We tested the ability of this mycoestrogen to damage the liver of the Armenian hamster, a rodent that is especially sensitive to hepatotoxic effects of exogenous estrogens. Zeranol induced acute hepatotoxicity and, subsequently, hepatic carcinogenesis; both effects were blocked by tamoxifen, suggesting estrogen receptor mediation. Because zeranol is acting alone as a primary initiator of hepatic neoplasms, this model provides an unusual opportunity to study the pathogenesis of estrogen initiated tumorigenesis.

Proc Natl Acad Sci USA. 1992;89:1085-1089.

Postgraduate Short Courses in Continuing Education
Academic Year 1992

Course Title	Scheduled Dates	Location
Forensic Anthropology	22–26 June 92	Uniformed Services University of the Health Sciences, Bethesda, MD
Histopathology Techniques	3–7 August 92	AFIP, Washington, DC
Pathology of Laboratory Animals	10–14 August 92	Holiday Inn, Bethesda, MD
Pathology of Congenital Heart Disease	17–21 August 92	AFIP, Washington, DC
Radiation & Cancer Chemotherapy Injury: Basic Principles of Etiology, Treatment & Diagnosis	29–31 August 92	University of California, San Francisco, CA
Anatomy, Histology, and Electron Microscopy of the Eye, Orbit, and Ocular Adnexa	29–31 August 92	Leavey Conference Center, Georgetown University, Washington, DC
Ophthalmic Pathology for Ophthalmologists	31 Aug – 4 Sept 92	Leavey Conference Center, Georgetown University, Washington, DC
Seminar in Pulmonary Diagnosis	1–4 September 92	Hyatt Regency, Bethesda, MD
Hepatic Pathology	9–11 September 92	Holiday Inn, Bethesda, MD
Conference on Quantitative Histopathology	9–13 September 92	Holiday Inn Crowne Plaza, Rockville, MD
Abdominal Imaging Review	12–13 September 92	Hyatt Regency, Bethesda, MD
Essentials in Forensic Pathology	12–16 September 92	Executive Tower Inn, Denver, CO
Pulmonary Radiology	19–20 September 92	Washington Marriott, Washington, DC
Radiologic Pathologic Correlation	12–14 October 92	Orlando, FL
Placental Pathology	22–24 October 92	Holiday Inn, Bethesda, MD
Future Technologies for DNA Typing	26–27 October 92	Hyatt Regency, Bethesda, MD
Oral Pathology	26–30 October 92	Hyatt Regency, Bethesda, MD
Perspectives in Scuba Diving Safety	14–15 November 92	AFIP, Washington, DC
Update of Identification Methods	16–20 November 92	Old Town Holiday Inn, Alexandria, VA
Hematopathology	16–18 December 92	Marriott RiverCenter, San Antonio, TX

For course descriptions and tuition information contact the Education Division at 301-427-5231.

Instructions for Filling Out Application Form for AFIP Courses

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Request the desired training through your military training channels to the Security Assistance Office of the U.S. Mission in your country.

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American Registry of Pathology and Armed Forces Institute of Pathology

SERIES III, FASCICLE 3

Tumors of the Uterine Corpus and Gestational Trophoblastic Disease

Steven G. Silverberg, M.D. and Robert J. Kurman, M.D.

This latest addition to the AFIP Atlas of Tumor Pathology reflects the progress made over the thirty years since the last fascicle on these topics appeared. This 290 page volume has 18 tables, 5 color plates, and 365 black and white illustrations.

Both tumors and tumor-like lesions of the uterine corpus are dealt with extensively. In addition to thorough discussions of endometrial hyperplasias, carcinomas, stromal and smooth muscle tumors, there are sections devoted to the mixed epithelial-nonepithelial tumors, rare lesions such as sex cord-like tumors, germ cell, neuroectodermal tumors, and the numerous tumor-like lesions that must be distinguished from neoplasms.

The clear, concise text is supplemented by valuable tables on subjects such as:

- the published criteria for the diagnosis of well differentiated adenocarcinoma;
- the features of smooth muscle tumors of uncertain malignant potential;
- the diagnosis of endometrial stromal tumors;
- the pathologic and immunohistologic aspects of partial and complete hydatidiform mole;
- the clinical, pathologic, and immunohistologic features of placental site trophoblastic tumor and choriocarcinoma.

Gynecologists as well as pathologists will find this volume indispensable.

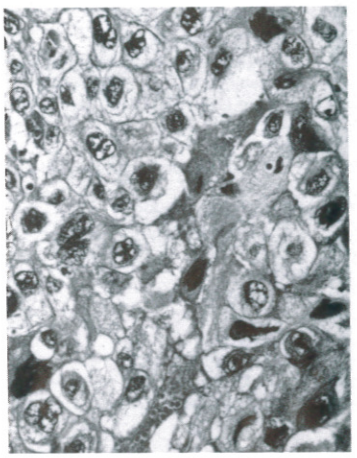

Fig. 302. Complete Hydatidiform Mole. High magnification of a complete mole shows intermediate trophoblastic cells with vacuolated cytoplasm, clearly defined cell membranes, and marked nuclear pleomorphism.

PUBLICATIONS ORDER FORM

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1. Abernathy CO, Zimmerman HJ, Ishak KG, Utili R, Gillespie J. Drug-induced cholestasis in the perfused rat liver and its reversal by tauroursodeoxycholate: an ultrastructural study. *Proc Soc Exp Biol Med*. 1992;199:54-58.
2. Auclair PL, Goode RK, Ellis GL. Mucoepidermoid carcinoma of intraoral salivary glands: evaluation and application of grading criteria in 143 cases. *Cancer*. 1992;69:2021-2030.
3. Buck JL, Harned RK, Lichtenstein JE, Sobin LH. Peutz-Jeghers syndrome. *Radiographics*. 1992;12:365-378.
4. Coe JE, Ishak KG, Ward JM, Ross MJ. Tamoxifen prevents induction of hepatic neoplasia by zeranol, an estrogenic food contaminant. *Proc Natl Acad Sci USA*. 1992;89:1085-1089.
5. Kransdorf MJ, Meis JM, Jelinek JS. Myositis ossificans: MR appearance with radiologic-pathologic correlation. *AJR Am J Roentgenol*. 1991;157:1243-1248.
6. Meis JM, Enzinger FM. Proliferative fasciitis and myositis of childhood. *Am J Surg Pathol*. 1992;16:364-372.
7. Meyer CA, Kransdorf MJ, Moser RP Jr, Jelinek JS. Case report 716: soft-tissue metastasis in synovial sarcoma. *Skeletal Radiol*. 1992;21:128-131.
8. Montgomery EA, Meis JM, Frizzera G. Rosai-Dorfman disease of soft tissue. *Am J Surg Pathol*. 1992;16:122-129.
9. Mostofi FK, Sesterhenn IA, Davis CJ Jr. Prostatic carcinoma: problems in the interpretation of prostatic biopsies. *Hum Pathol*. 1992;23:223-241.
10. Popek EJ. Case 5: granulomatous villitis due to Toxoplasma gondii. *Pediatr Pathol*. 1992;12:281-288.
11. Rosado-de-Christenson ML, Galobardes J, Moran CA. Thymoma: radiologic-pathologic correlation. *Radiographics*. 1992;12:151-168.
12. Rosado-de-Christenson ML, Stocker JT. Congenital cystic adenomatoid malformation. *Radiographics*. 1992;11:865-886.
13. Sabina RL, Fishbein WN, Pezeshkpour G, Clarke PRH, Holmes EW. Molecular analysis of the myoadenylate deaminase deficiences. *Neurology*. 1992;42:170-179.
14. Specht CS, Varga JH, Jalali MM, Edelstein JP. Orbitocranial wooden foreign body diagnosed by magnetic resonance imaging. Dry wood can be isodense with air and orbital fat by computed tomography. *Surv Ophthalmol*. 1992;36:341-344.