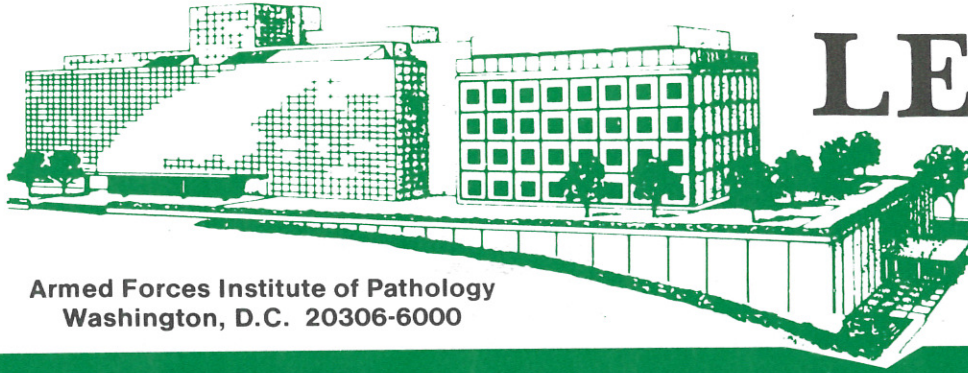


the AFIP LETTER



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

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APRIL

The Director's Message

1991 Annual Seminars Set for May 17-19 *Recent advances in pathology to be reviewed*

From May 17 to May 19, the Armed Forces Institute of Pathology and the American Registry of Pathology will cosponsor the 1991 Annual Seminars at The Crowne Plaza Holiday Inn, Rockville, MD. Note that the dates of Friday to Sunday were selected in response to numerous requests from previous participants. The seminars are designed for practicing pathologists and pathology residents and fellows, and enrollment is limited to 200. Along with providing a concentrated review of the diagnostic features of various areas of anatomic pathology, we will also cover the most recent investigations into new and/or controversial areas of pathology. Please contact the AFIP's Education Division at (301) 427-5208 for further information about course registration requirements.

Our staff members continue to assist the Department of Defense and the civilian pathology community in a variety of ways. Over the last number of months, the Office of the Armed Forces Medical Examiner (OAFME) staffed the mortuary at Dover Air Force Base, Delaware. Through the use of a new tissue-identifying technique

known as auto antibody profiling, our pathology staff was able to identify and reassociate fragmented remains.

Auto antibody profiling, which identifies antibodies in the blood, creates a band pattern that appears to be unique for each individual. Along with

June AFIP Letter.

During the recent United States and Canadian Academy of Pathology (USCAP) meeting in Chicago, over 30 AFIP staff members participated in various capacities. They presented invited

lectures, papers, posters, and chaired various panels. We are also pleased to announce that Dr. Kamal Ishak, Chairman of the Department of Hepatic and Gastrointestinal Pathology, received the F.K. Mostofi Distinguished Service Award at the meeting. The award is presented to a member of the USCAP who has rendered outstanding service to the IAP and its U.S.-Canadian Division (to be highlighted in the June Letter). Overall, it

was a successful week for the AFIP.



Lt Col Robert Becker, USAF, MC, at work in the AFIP's new digital image processing facility. See article on page 6.

DNA confirmation, which is as unique as a fingerprint in each person, we are now able to assist families of those killed in action by positively identifying remains. The recently-established Armed Forces DNA Identification Laboratory (AFDIL) at the AFIP will augment or modify the current identification techniques in the future. You will be hearing more about AFDIL in the

ROBERT F. KARNEI, JR.
CAPT, MC, USN
The Director

Marie Valdés-Dapena, M.D., Named 7th Annual Ash Lecturer

Marie Valdés-Dapena, M.D., has been named the 7th Annual James Earle Ash Lecturer. Dr. Dapena, Professor of Pathology and Pediatrics at the University of Miami, School of Medicine, will speak on "The Growth and Development of Pediatric Pathology: A Personal Perspective," on Wednesday, May 29 at 8:00 p.m. Over 325 health care professionals are expected to attend the lecture which will take place in the Sternberg Auditorium at the Walter Reed Army Institute of Research.

Established in 1985, the Ash Lecture honors Colonel James Earle Ash (1884-1986), medical pioneer and first Director of the Army Institute of Pathology (later to evolve into the AFIP). Lectures by distinguished physicians over the years have addressed medical and social issues of critical importance to both health care and lay communities.

The lecture follows a formal buffet reception in the National Museum of Health and Medicine of the AFIP.



AFIP Acquires Atomic Absorption Spectrophotometer

New technology assists pathology community

The AFIP's Department of Environmental and Toxicologic Pathology has acquired a new atomic absorption spectrophotometer, a state-of-the-art instrument which determines the concentrations of metals in tissue sam-

ples by measuring absorption at characteristic wavelengths of light. "We now have a highly sensitive instrument which is capable of handling more cases with better efficiency than the one it replaced," notes Dr. Victor Kalasinsky, Chief of the Environmental Toxicology Division. The spectrophotometer, which was installed on February 15, now gives the AFIP the flexibility to test a

wide range of elements in quantities as low as parts-per-billion (ppb).

The new instrument assists the military by serving as the point of reference for DoD labs around the country, in addition to handling consultations from the civilian community. It also supports the Walter Reed Army Medical Center's Precious Metals Recovery Program by testing for the presence of silver in waste photographic fixer solutions.

"We can now look at trace concentrations of metals such as aluminum, mercury, silver, or arsenic, to determine a level of toxicity in a tissue," Dr. Kalasinsky notes, "and we can tell pathologists whether or not that metal

is present in a specific case."

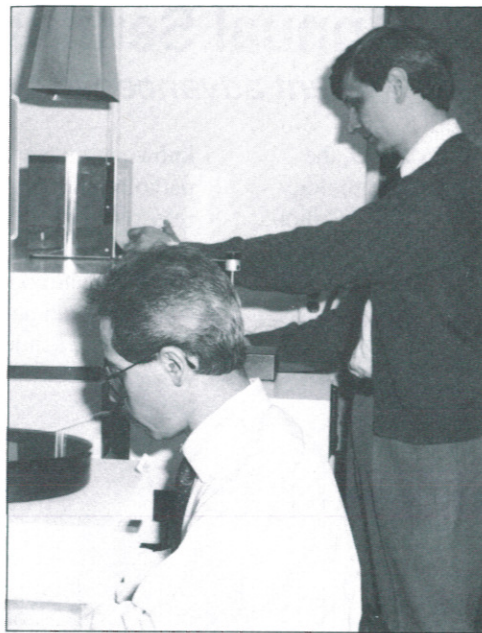
The AFIP is presently working with Children's Hospital in Washington, D.C., on a series of aluminum-related cases. "This is really a fine example of how we can assist the civilian pathol-

ogy community," Dr. Kalasinsky says. The technology is useful for diagnosing poisoning cases as well as guiding clinicians in treating patients with certain conditions where metal metabolism or accumulation are important factors.

The new spectrophotometer uses three accessories - an acetylene flame, a Zeeman furnace and a vapor hydride generator. "This is a

very efficient system," notes Dr. Jose Centeno, Staff Chemist, "because by having all three capabilities, we can now test a number of metals at various concentration levels in a short time." Dr. Centeno adds that the use of microwave technology to prepare tissue samples "has not only increased our level of efficiency, but also helps to keep the chemical state of the metals intact. We are able to keep contaminants out, which is a serious problem when testing as low as parts-per-billion."

Pathologists and clinicians with questions about metals testing can contact the Environmental Toxicology Division at (202) 576-2434 or Autovon 291-2434.



Drs. Kalasinsky (r) and Centeno working on the spectrophotometer system.

Profile

COL James S. Nelson, MC, USA, Chairman, Department of Neuropathology



COL James S. Nelson, MC, USA, was appointed Chairman of the Department of Neuropathology on 30 August 1990. His department

serves as a consultation source for diagnostic problems in neuropathology, and sponsors educational and research programs in the neurosciences.

COL Nelson has been in the Active Reserve of the Army for 18 years. His

assignments included Commander, 904th Medical Detachment, a one-year attachment to the Berlin Brigade MEDDAC, and service as an individual mobilization augmentee (IMA) in the Division of Pathology, Walter Reed Army Institute of Research, from 1981 to his appointment at AFIP.

The St. Louis, MO, native attended St. Louis University from 1950 to 1953, and received his M.D. from St. Louis University School of Medicine in 1957. His postgraduate medical education comprised residency training in anatomic and clinical pathology at St. Louis University Hospital, a neuropathology fellowship at Columbia University, a clinical neurology clerkship at the National Hospital for Nervous Diseases, London, England, and a two-year NIH sponsored Special Research Fellowship at Washington University School of Medicine, St. Louis, MO.

Academic and hospital appoint-

ments have included Director, Division of Neuropathology, Washington University School of Medicine; Clinical Professor of Neuropathology, University of Michigan Medical School; and, Head, Division of Neuropathology, Henry Ford Hospital, Detroit, MI. He currently holds an appointment as Professor of Pathology on the full time faculty of the Louisiana State University Medical Center in New Orleans.

COL Nelson has authored or coauthored 66 scientific articles, 15 chapters and 45 abstracts in the field of neuropathology.

Society memberships include the American Medical Association, American Association of Pathologists, International Society for Neurochemistry, Society of Medical Consultants to the Armed Forces, and the Association of Military Surgeons of the United States.

AFIP Happenings . . .

■ **Maj Allen Burke, USAF, MC,** and **Jorge Ribas, D.V.M.,** of the Department of Cardiovascular Pathology, received a grant for over \$417,000 from the U.S. Army Medical Research and Development Command to conduct HIV research. The title of their project is "Detection and clinicopathologic correlation of human immunodeficiency virus (HIV-1) nucleic acids and antigens in reticuloendothelial and central nervous system tissues, by immunohistochemistry, *in situ* hybridization, and polymerase chain reaction."

■ **Cynthia F. Wright, Ph.D.,** Molecular Biologist in the Department of Cellular Pathology, received a four year grant from the National Institutes of Health for over \$264,000 to conduct a research project in gene regulation. The

project is titled "Vaccinia Virus Late Transcription," and the objectives are to use vaccinia virus as a model to study transcriptional processes and to understand, at the molecular level, the regulation of the switch from early to late transcription in the life cycle of the virus.



■ **Shyh-Ching Lo, M.D., Ph.D.,** and **COL Douglas Wear, MC, USA,** Chairman of the Department of Infectious and Parasitic Diseases Pathology; and **Dennis Wong, Ph.D.,** and **Janet R. Benish, B.S.,** American Registry of Pathology, published research findings in *Science* on February 28, 1991. Their article was entitled "Enhancement of HIV-1

Cytocidal Effects in CD4 Lymphocytes by the AIDS-associated Mycoplasma." Their research indicates that the modification of the biological properties of the HIV-1 by coinfection with mycoplasma may be involved in the pathogenesis of AIDS.

Center for Advanced Medical Education Numbers

The Center for Advanced Medical Education (CAME) has moved to our Forest Glen, Maryland Annex. Please note the latest new telephone numbers when calling CAME for information. Main number: (301) 427-5231 or 5618
FAX: (301) 427-5001
AUTOVON: 291-5618

Profile

CAPT Paul Auclair, DC, USN, Chair, Department of Oral Pathology



CAPT Paul Auclair, DC, USN, is the Chair of the Department of Oral Pathology. His department serves as a consultation center for diseases

of the jaws, oral and oropharyngeal mucosa, and the salivary glands.

A graduate of the University of Maine, Orono, Maine, CAPT Auclair received a D.M.D. degree from Tufts University School of Dental Medicine. Postgraduate training included the Naval Dental School (first year oral pathology residency), the National Naval Medical Center (second year anatomic and clinical pathology), Indiana University (third and fourth years, M.S. degree), and the Armed Forces Institute of Pathology (fifth year).

CAPT Auclair has authored 8 articles and coauthored 17 articles and abstracts. He coedited *Pathology of the Salivary Glands*, W.B. Saunders, Philadelphia, 1991 (in press, Major Problems in Pathology series) and authored and coauthored 13 chapters in that text.

New Study Set Completed — "Common Lesions Found in Food Animals" Now Available

A new medical education study set, "Common Lesions Found in Food Animals," has been completed and is now available for loan. This set is composed of 100 microslides and a syllabus, and includes common diseases found in food animals. The syllabus contains a brief histopathologic description of each disease with emphasis on the salient diagnostic features. A list of useful references is also included in the syllabus.

The set was prepared by George Migaki, D.V.M., Karl A. Langheinrich, D.V.M., M.S., Patrick C. McCaskey, D.V.M., M.S., and John M. Pletcher, D.V.M., M.P.H., and was cosponsored by the Registry of Comparative Pathology, Armed Forces Institute of Pathology and the Pathology Section, Food Safety

and Inspection Service, U.S. Department of Agriculture, Athens, GA. This work was supported in part by PHS grant RR00301 from the Animal Resources Program, National Center for Research Resources, National Institutes of Health, U.S. Department of Health and Human Services, under the auspices of Universities Associated for Research and Education in Pathology, Inc.



Histotechnology Notes

Histochemical and Immunohistochemical Procedures

A number of histochemical, bleaching, and immunohistochemical procedures have been employed historically in the demonstration of melanin, with varying degrees of success. Histochemical procedures used include the Fontana-Masson and the Warthin-Starry pH 3.2. Immunohistochemical procedures include the S-100 protein and the HMB-45.

While all of the procedures mentioned are currently being used to demonstrate melanin, in our experience the Warthin-Starry pH 3.2 technique has proven more specific and consistent for melanin than the Fontana-Masson. Review of known melanoma and

amelanotic-melanoma cases which resulted in non-staining or decreased staining with the Fontana-Masson, stained intensely with the Warthin-Starry pH 3.2. It should also be noted that the HMB-45 has proven more specific for melanin than the S-100 protein.

Repository and Research Services

FY 90 Annual Research Progress Report Now Available

The AFIP FY90 Annual Research Progress Report was recently published. At the end of FY90, there were 203 active research protocols within the Institute. A limited number of copies of this report are available for distribution to interested individuals and organizations. To receive a copy, please send a written request to the Research Office, AFIP-RR, Washington, D.C. 20306-6000. Copies will be distributed as requests are received until the available supply is exhausted.

With every mailing of the AFIP Letter, a significant number are returned to us indicating that the civilian address has moved or is unknown. When this occurs, the individual is removed from our mailing list.

If you have moved to a new address and wish to continue receiving copies of the AFIP Letter, please inform the Research Office of your change (please include your mailing label!). Upon receipt, we will immediately update our civilian address file so you will not miss any issues. Back issues can be obtained by contacting the Public Affairs Office at AFIP-PA, Washington, DC, 20306-6000. Telephone (202) 576-0233.

Recently, while following up on unreturned paraffin blocks and slides on loan from the AFIP, we discovered that various items had been forwarded back to the original contributor or to a third party. Accepted and accessioned case material is the property of the AFIP and should not be forwarded to other parties without the express permission of the AFIP. This applies to all individuals and organizations involved in the loan program.

WHO Gallbladder and Biliary Tract Tumor Classification Published

The World Health Organization's Collaborating Center for the International Histological Classification of Tumors is located at the AFIP. It is responsible for organizing and coordinating the second edition of the WHO "Blue Books." This series, whose first edition was issued between 1967 and 1981, aims at standardizing the definitions, nomenclature and classification of tumors.

About 20 working groups of pathologists in a variety of countries are now reviewing and updating the first edition of the classification. New volumes of the second edition are expected over the next several years. Liaison with the AFIP's Atlas of Tumor Pathology is maintained so that the WHO recommendations are made available to Atlas authors.

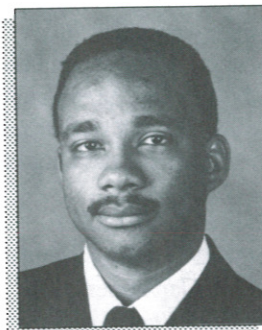
The first of the WHO revisions, **Histological Typing of Thyroid Tumors**, appeared in 1988; the second, **Histological Typing of Intestinal Tumors**, in 1989; and, the third, **Histological Typing of Esophageal and Gastric Tumors**, in 1990.

The fourth, **Histological Typing of Tumors of the Gallbladder and Extrahepatic Bile Ducts**, has just been published. Coauthored by Dr. J. Albores-Saavedra, Dr. D.E. Henson and Dr. L.H. Sobin, this edition is more comprehensive and detailed than the previous one. Advances in our understanding of dysplasia, endocrine tumors, various avenues of differentiation among the carcinomas and the recognition of a variety of tumor-like lesions have resulted in over three times as many entities in the present classification than in the earlier one.

The book contains 80 photomicrographs and can be ordered from the publisher, Springer-Verlag (phone 1-800-SPRINGER). A set of 80 color slides is available from the American Registry of Pathology (202-576-2978).

Profile

ENS Donovan Lawrence, Medical Computer Services Officer



Ensign Donovan Lawrence, MSC, USNR, is a newly assigned Medical Computer Services Officer within the Automation Management Services (AMS).

ENS Lawrence will oversee Local Area Network (LAN) development and implementation within AFIP. Other duties include analysis, design, development and maintenance of multiuser applications and systems.

Originally from Kingston, Jamaica, ENS Lawrence adopted Fort Lauderdale, Florida as his home. He earned his B.S. in Information Systems Management from the University of Maryland in 1990, and holds an Associates Degree in Health Care Management from the Community College of the Air Force.

ENS Lawrence enlisted in the Air Force in 1979 with subsequent assignments at Keesler Medical Center in Mississippi, Misawa Air Base Hospital, Japan, and Williams AFB Hospital, Arizona.

From 1987 to 1989, he served as NCOIC of Biostatistics at Headquarters Air Force Systems Command Surgeon General's Office, Andrews Air Force Base.

From 1989 to 1990, he served as the Air Force Medical Expense and Performance Reporting System (MEPRS) Program Manager, Air Force Surgeon General's Office, Bolling Air Force Base, Washington, D.C.

ENS Lawrence is married and has two children, Oska and Natasha.

Digital Image Processing Facility in Operation

Cellular Pathology program supports AFIP activities

A new digital image processing facility, designed to develop computer-assisted techniques for anatomic pathology, has been established at the AFIP. The techniques in use, which include image processing and rendering, quantitative analysis, and computer-assisted image interpretation, will benefit pathologists everywhere.

"This is highly unusual," says program director Lt Col Robert Becker, USAF, MC, of the Department of Cellular Pathology. "Very few sites worldwide do digital imaging processing for pathology with the kind of facility we are dedicating to it."

According to Dr. Becker, pathology imaging has lagged behind that of radiology (e.g., MRI and CAT scans), because the bright field microscope provides only "2-D" images, and because the complexity of pathology images makes adequate digital acquisition and automated processing very difficult. "Our facility will allow us to develop techniques to help overcome these problems," he says.

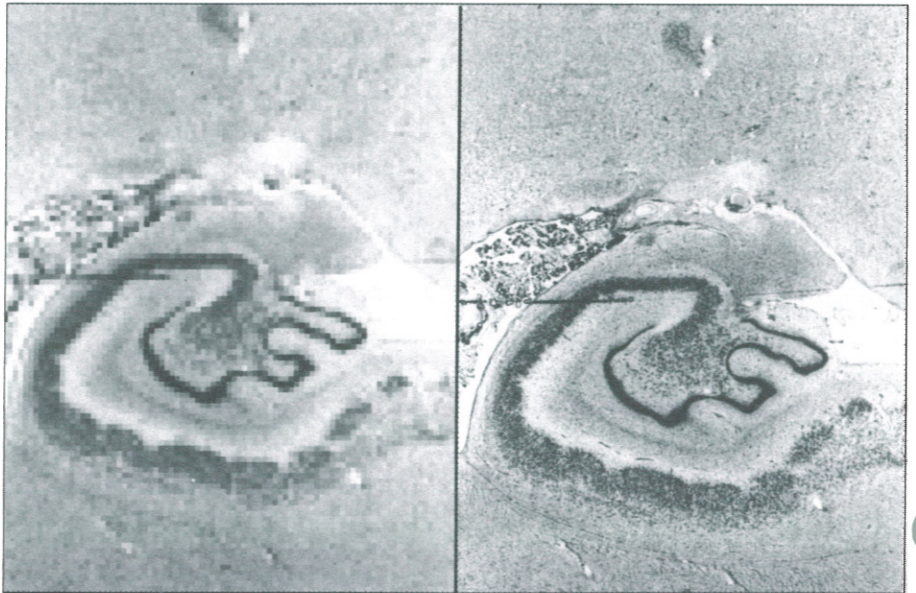
Coupled with new methods of microscopy, image processing will allow "3-D" rendering of tissues and will lend greater precision and reproducibility to the interpretation of tissue features (e.g., nuclear shape and antigen expression), and will help

utilize features such as nuclear DNA content which are poorly assessed visually.

"There is also a potential for educational work," notes Dr. Becker. "The system can store and manipulate a huge

Specific research projects and intended applications include:

- Tumor prognostic indicators from morphometry, densitometry of nuclei, and analysis of tissue architecture (using individual fields and tiled images).



New image processing system allows high resolution rendering (right) of small areas in the image of an entire cerebral hemisphere. Image at left is a similar rendering at resolution available from most image acquisition systems.

amount of image data. We would like one day to acquire and distribute digital images for educational use worldwide. Our system is well-suited to help put together a "package" for pathologists."

- 3-D rendering of organoid structures such as renal glomeruli and lymphoid follicles.
- Quantitative immunohistochemistry and molecular probe analysis.
- 3-D rendering of whole organs (e.g. brain) from physical sections.
- Chromosome recognition using image analysis and neural networks.

The hardware in use at the facility includes a SUN 4/390 Server hosting a Pixar II image computer (with 6 gigabyte parallel transfer disk), a computer driven Vanox microscope, and a high resolution Videk CCD camera. The custom-developed laboratory also has two additional workstations connected by LAN.

Collaborators include workers from other AFIP departments, from NIH and FDA.

Reflections, continued from page 7

spend thousands of dollars and hours annually on books, journals and courses with little documentable increase in their knowledge base. Courses need to be redesigned; inexpensive take-home audiovisual material needs to be developed. The challenge of the future is to develop evaluation instruments, both for the course and for home study, to insure a real increase (or at least no decrease) in the ever expanding

knowledge base. Then the fear of recertification would lose the present caveats of being voluntary, with non cognitive evaluations, and encouraged strongly only for the emerging pathologists.



Reflections on Electronic Media

Donald West King

BACKGROUND: In the 1940's and 1950's medical students learned pathology from lectures by a professor with no syllabus, a book (often Anderson or Boyd), a microscope and 300 glass slides. In the 1960's, 70's and 80's they used texts by Robbins and later Rubin; extensive syllabi had grown to 500 pages with references such as EM and diagrams. Audiovisual multimedia centers exploded all over the country; with them came experimentation in programmed texts, computer assisted instruction and the algorithms of artificial intelligence. A cry for no lectures, small discussion groups and problem-oriented cases (often autopsies) stimulated programs at New Mexico, McMaster, Harvard and other schools.

RECENT EVENTS: At the meeting of the Association of Pathology Chairmen

in July, 1990, D. Alonso (Cornell), R. Trelstad (Rutgers) and B. Nathwani (USC) presented beautifully integrated computerized programs for medical students and resident teaching. Others working in this field include P. Jones (Arkansas), A. Woods (NLM), P. Stensoars (Utah, now at Cornell) and T. Kent (Iowa). The hardware - IBM PC and MAC II - is relatively inexpensive and getting cheaper by the year.

The software - Hypertext, complete with authoring or animation- is decipherable by most. The programs include complete texts (Cotran), exam questions, CPC's and diagnostic criteria. Competition continues between digital equipment, which offers higher quality, retouch ability, larger computers, extensive display monitors and large storage discs, and analog equipment (video discs), requiring more costly manufacturing by professionals

and lower resolution, but which offers an initial lower cost and larger storage capacity (100,000 images per disc on both sides). Standardization remains a major problem, although the market size is too small for many flowers to flourish. (Above courtesy DA, RT and BN).

Software program development, although semi-automated, still requires thousands of hours, with rewards only for angels: such work guarantees no increased compensation, few accelerated promotions, and only partial recognition for the herculean efforts required for successful programs.

COMMENT: A dedicated, experienced personal tutor is still the model experience. Still, as a supplement for medical students and residents, the computer video approach is the best I've seen. But the major education problem in pathology is not medical school or residency education - it is in continuing education. Pathologists

continued on page 6

NMHM Lincoln Project Attracts International Attention

Proposed DNA cloning receives network coverage

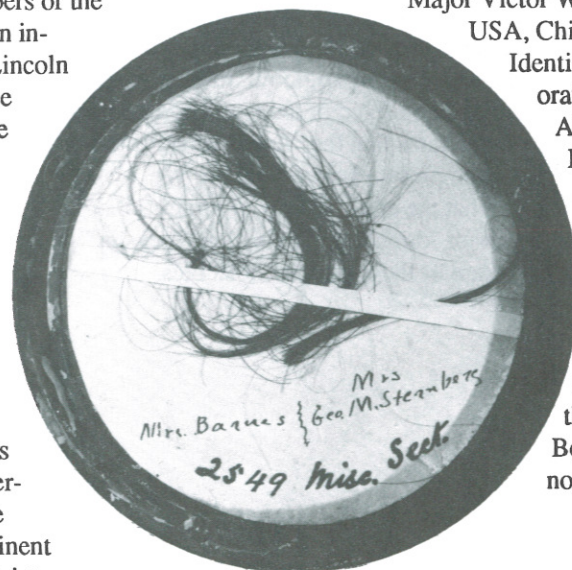
On February 9, 1991, the AFIP's National Museum of Health and Medicine announced that it would study a proposal by Dr. Darwin Prockop of the Jefferson Medical College which would involve the possible cloning of Abraham Lincoln's DNA. In the wake of the announcement, the Museum received interview requests from over 35 news organizations around the world. Dr. Marc Micozzi, an Associate Director of the AFIP and the Museum's Director, was interviewed by "The CBS Evening News," "Good Morning America," the British Broadcasting Corporation, the

Australian Broadcasting Corporation, American Medical News, the Voice of America, and local radio stations from Pittsburgh to Salt Lake City.

Staff members of the AFIP have been involved in the Lincoln project from the beginning. The committee, which is funded by the AMA, is chaired by Dr. Victor McKusick, Professor of Medical Genetics, Johns Hopkins University, who is the nation's preeminent medical geneticist. Among the

members of the Lincoln Panel who will review Dr. Prockop's proposal are Dr. Tim O'Leary, Chairman of AFIP's Department of Cellular Pathology, and Major Victor Weedn, MC, USA, Chief of the DNA

Identification Laboratory at the AFIP. While the Lincoln Panel will make a recommendation concerning this project, the final decision will be made by the AFIP's Board of Governors.



Pieces of Lincoln's hair, from which DNA cloning may take place

Tubo-Ovarian Abscess Caused by *Streptococcus Pneumoniae*

Ted L. Hadfield, PhD, Ronald Neafie, MS, and Leo O. Lanoie, MD

A 46-year old black woman underwent exploratory surgery for evaluation of a tender mass in her abdomen. During the exploratory surgery, bilateral tubo-ovarian abscesses ruptured. Specimens from both tubes and from the wall of the abscesses contained bacteria seen on the Brown-Hopps tissue gram stain. The bacteria were gram-positive, lancet-shaped diplococci characteristic of *Streptococcus pneumoniae*. Immunoperoxidase stains confirmed the identification of the organism as *S pneumoniae*.

Hum Pathol 21:1288-1289.

Effects of Formaldehyde Fixation on Protein Secondary Structure: A Calorimetric and Infrared Spectroscopic Investigation.

Jeffrey T. Mason and Timothy O'Leary

We investigated the effects of formaldehyde fixation on the secondary structure of isolated proteins (bovine serum albumin, ribonuclease A, and hemoglobin) using high-sensitivity differential scanning calorimetry and Fourier transform infrared spectroscopy. Whereas thermograms obtained by scanning calorimetry on unfixed purified proteins demonstrated denaturation transitions in the 70-90°C temperature range, the thermograms showed no denaturation transitions in this temperature range when the proteins have been placed in formaldehyde solutions. Thus, fixation destroyed the denaturation of bovine serum albumin, ribonuclease A, and hemoglobin. Infrared spectra obtained on the unfixed and fixed proteins were essentially identical. This demonstrates that the "fixed" proteins retain the secondary structure present before fixation. We therefore, conclude that the cross-linking of proteins that occurs in the process of formaldehyde fixation "locks in" the secondary structure of these protein molecules.

J Histochem Cytochem. 1991;39:225-229.

Myolipoma of Soft Tissue

Jeanne M. Meis, M.D., and Franz M. Enzinger, M.D.

Nine cases of a previously undescribed benign soft tissue tumor are reported. They were composed of variable amounts of benign smooth muscle and mature adipose tissue. Patient ages ranged from 28 to 73 years. One was located in the subcutaneous adipose tissue, one in the rectus sheath of the anterior abdominal wall, two within the abdominal cavity and attached to the abdominal wall, two in the inguinal region, and three in the retroperitoneum. Sizes varied between 3.5 and 26 cm and averaged 16 cm in the greatest dimension. Two of the retroperitoneal tumors were incidental findings during other operative procedures. The remaining seven cases were clinically palpable masses. Eight of the nine lesions were originally diagnosed as benign, and another (retroperitoneal) was diagnosed as well-differentiated liposarcoma. Five of the tumors were at least partially encapsulated. In three of the cases, a nonlipomatous component was grossly recognized. Although the benign nature of this lesion is usually recognized in superficial locations, deeply situated tumors are more likely to be confused with a well-differentiated liposarcoma.

Am J Surg Pathol 1991;15(2):121-125.

Radiology and the New TNM Classification of Tumors: The Future

Leslie H. Sobin, M.D., and Pablo R. Ros, M.D.

The latest edition of the TNM classification of tumors reflects advances in radiologic imaging such as computed tomography, magnetic resonance imaging, and endosonography. These modalities have increased the significance of clinical staging by enabling staging to be performed earlier. Thus, therapeutic decisions can be made before rather than during surgery. This review highlights important changes in the new TNM classification, relates them to imaging modalities, and emphasizes the role of the radiologist in clinical staging.

Radiology 1990;176:1-4.

Postgraduate Short Courses in Continuing Education

Academic Year 1990-91

Course Title	Scheduled Dates	Application Deadline	Tuition	Military, DoD, VA & PHS Fee
Forensic Dentistry	15-19 Apr 91	18 Mar 91	\$350	\$35
Comparative Pathology	22-24 Apr 91	25 Mar 91	\$200	\$25
Microbial Adaptation to Oxidant Stress	27 Apr 91	29 Mar 91	\$85	\$45
Melanocytic Lesions of the Skin	1-3 May 91	3 Apr 91	\$350	\$75
Hematopathology	7-10 May 91	9 Apr 91	\$500	\$75
Annual AFIP Seminar in Pathology	17-19 May 91	17 Apr 91	\$350	\$45
Pathology of Congenital Heart Disease	20-24 May 91	20 Apr 91	\$250	\$0
Pathology of Radiation & Cancer Therapy	2-4 Jun 91	2 May 91	\$390	\$125
Exfoliative & Fine Needle Aspiration Cytology	10-14 Jun 91	10 May 91	\$450	\$30
#Seminar & Workshop in Histopathology Techniques	17-20 Jun 91	17 May 91	\$200	\$20
#Forensic Anthropology	24-28 Jun 91	24 May 91	\$450	\$75

Reflects change in course dates

Course Descriptions

Forensic Dentistry

Course consists of lectures, panel discussions, illustrative situations and student participation in laboratory exercise involving identification of human remains by dental means. Aspects of forensic dentistry include nature and sources of the law, recording and use of dental data in human identification and criminal detection procedures, professional conduct and liability of dentists, and legislation affecting the federal dental services will be covered.

Enrollment limited to 150. Approximately 36 CME credit hours.

Comparative Pathology

Course for scientists interested in comparative pathologic aspects of disease in animals and man is specifically designed to bring attention to disease processes in animals in which a similar entity occurs in humans. Differences and similarities of lesions as well as biological behavior of specific entities will be discussed. Pathologic entities cover a wide variety of species, including man, and will be compared by organ system and to specific cause.

Enrollment limited to 90. Approximately 23 credit hours.

Microbial Adaptation to Oxidant Stress

Day-long symposium examines the mechanisms employed by microorganisms to avoid the harmful effects of oxidative stress. Resistance to oxidant stress is critical for microbial survival and pathogenesis. Oxygen radicals generated by phagocytic cells may kill microorganisms by damaging membranes, generating toxic lesions in DNA molecules, and by inactivating microbial antioxidant enzymes. Microbial adaptation to oxidant stress includes induction of antioxidant enzymes and activation of DNA repair systems.

Enrollment limited to 100. Approximately 6 CME credit hours.

Melanocytic Lesions of the Skin

This course will cover benign and malignant cutaneous melanocytic lesions, and histologic criteria to differentiate these lesions will be emphasized. Known and unknown microscopic slides will be available for review with formal discussion of the unknown cases. Separate lectures will be presented on the clinical appearance of melanoma, and recent advances in the medical therapy of malignant melanoma.

Enrollment limited to 150. Approximately 20 CME credit hours.

Hematopathology

An in-depth review of diagnostic pathology (including immunopathology and molecular biology) of the lymph nodes. Selected topics in hematopathology and pathology of the spleen, and a workshop on lymph node pathology will be included.

Enrollment limited to 150. Approximately 33 CME credit hours.

Annual AFIP Seminar in Pathology

Conference provides concentrated review of the diagnostic features in areas of anatomic pathology (skin, CNS, gastrointestinal tract, etc.) along with the most recent investigations into new and/or controversial areas of pathology. A series of presentations on topical issues will be followed by half-day seminars con-

sisting of didactic presentations alone, presentations combined with microscopic slide cases or slide seminar cases, and slide seminar cases entirely, and are presented by various departments of the AFIP. Microscopes will be provided for study.

Enrollment limited to 200. Approximately 17 CME credit hours.

Pathology of Congenital Heart Disease

Designed for fellows, residents, and board eligible candidates in cardiology, cardiothoracic surgery, pathology, and radiology. Lectures on the gross and microscopic pathology of the major forms of congenital heart and aortic disease and demonstrations with gross and microscopic preparations and select videotapes. Ample time for interaction between faculty and attendees.

Enrollment limited to 15. Course offered Feb., May, Aug. and Dec. each year. When applying, please specify when you wish to attend. Approximately 30 CME credit hours.

Pathology of Radiation & Cancer Therapy

Course will address the morphologic effects of radiation on human tissues and related subjects and will be of special interest to pathologists examining irradiated tissue from radiation therapy patients, residents desiring board review of radiation pathology, and persons assisting in medical management of acute radiation injury incidents.

Enrollment limited to 250. Approximately 20 CME credit hours.

Exfoliative & Fine Needle Aspiration Cytology

Course presents diagnostic exfoliative and fine needle aspiration cytology through lectures and microscopic workshop sessions. Topics covered include benign and malignant criteria for all body sites; female genital tract; respiratory, urinary, and gastrointestinal tracts; body cavity effusions; cerebrospinal fluids; breast; thyroid; salivary glands; lymph nodes; prostate; liver and pancreas. Infectious agents accompanying inflammatory cell changes, and cervical intraepithelial lesions will be discussed.

Enrollment limited to 70. Approximately 35 CME credit hours.

Seminar & Workshop in Histopathology Techniques

Four-day program consists of lecture sessions covering a variety of topics in histotechnology, and workshops providing discussions of the selected methodologies, hands-on experience in performing these procedures, and a comprehensive discussion of the results. Upon completion the participants should be able to perform a wide variety of fixation, processing, embedding, sectioning, and staining techniques on standard and non-standard tissue specimens.

Enrollment limited to 30. Approximately 21 CME credit hours.

Forensic Anthropology

Overview course of basic principles of forensic anthropology consists of series of lectures covering various topics in the field, followed by lab sessions emphasizing hands-on analysis of skeletal remains. Prior knowledge of physical anthropology is not assumed.

Enrollment limited to 35. Approximately 33 CME credit hours.

Instructions for Filling Out Application Form for AFIP Courses

1. **Course Fee:** Checks for all courses are to be made payable to the American Registry of Pathology (ARP). To safeguard your course space, we strongly encourage advance fee payment when application form is submitted, but not later than the Application Priority Deadline (does not apply to non U.S. citizens).
2. **Application Priority Deadline:** Fifty percent of the course spaces are reserved for federal applicants and 50% for non-federal applicants until the Application Priority Deadline Date. After that date applications will be considered on a first-received, first-accepted basis.
3. **Federal Personnel Please Note:** To insure a space will be held for you, submit an application for each course you desire to attend directly to the Education Division, AFIP. Do this regardless of any funding action.
4. **Accreditation:** The Armed Forces Institute of Pathology is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.
5. **Registration Procedures for International Applicants:**

Civilians:

Mail letter of application to:
 Chief, Program Resources Branch
 E/VCP
 United States Information Agency
 301 4th Street, S. W.
 Washington, D.C. 20547
 Telephone: (202) 619-5228
 FAX: (202) 619-4655

Letter of application should include:

1. Title of Course
2. Inclusive dates of course
3. Your present position
4. Your home and office mailing address
5. Your date and place of birth
6. Your country of citizenship
7. Your financial arrangements for stay at this course (U.S. Government cannot be responsible for any expenses incurred while you are in the U.S.)

With letter of application, attach a copy of course application form, a check drawn on a U.S. bank or International Money Order, payable to the American Registry of Pathology, in U.S. dollars in the amount required.

Military:

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

International Applicants Employed by an Agency of the U.S. Government

Attach to letter of application (see above) a letter certifying employment from your servicing personnel office and mail to:
 International Training Program Manager,
 U.S. Army Health Professional Support Agency
 Attn: SGPS-EDI, Room 595
 5109 Leesburg Pike
 Falls Church, VA 22041-3258
 Telephone: (703) 756-8273
 FAX: (703) 756-0243

Residents and fellows deduct 25% of Course Fee

Friends of AFIP deduct 10% of Course Fee

APPLICATION FORM - AFIP COURSES

Course Title & Dates _____

Name (Last, First, MI) _____

Mailing Address _____

City, State, Zip _____

Phone _____ Specialty _____ Board Status: Certified Eligible

Citizenship _____ Resident/Fellow Friend of AFIP Membership # _____

Military/Federal Civilian Employees (Only): Rank/Civilian Grade _____

Service Agency: _____

Corps: MC, DC, NC, VC, Biomedical/Allied Science

Payment Enclosed: (Payable in U.S. dollars only) Tuition \$ _____ DoD, VA, and PHS Fee \$ _____

Method of Payment: Check/Money Order MasterCard Visa

Card Number _____ Expiration Date _____

Name as it appears on card _____

Signature _____

Make All Payments to: AMERICAN REGISTRY OF PATHOLOGY

Mail To: Armed Forces Institute of Pathology
 Education Division
 Washington, D.C. 20306-6000
 Telephone: (301) 427-5231/5618
 AUTOVON: 291-5618 FAX: 301-427-5001

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1. Hadfield TL, Neafie R, Lanoie, LO. Tubo-ovarian abscess caused by *Streptococcus pneumoniae*. **Hum Pathol.** 1990;21:1288-1289.
2. Mason JT, O'Leary TJ. Effects of formaldehyde fixation on protein secondary structure: a calorimetric and infrared spectroscopic investigation. **J Histochem Cytochem.** 1991;39:225-229.
3. Meis JM, Enzinger FM. Myolipoma of soft tissue. **Am J Surg Pathol.** 1991;15:121-125.
4. Migaki G, Sawa TR, Dubey JR. Fatal disseminated toxoplasmosis in a spinner dolphin (*Stenella longirostris*). **Vet Pathol.** 1990;27:463-464.
5. Sobin LH, Ros PR. Radiology and the new TNM classification of tumors; the future. **Radiology.** 1990;176:1-4.

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