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LETTER

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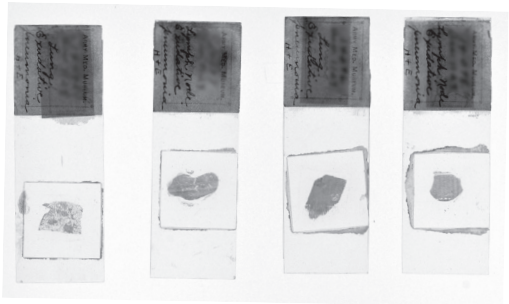
Breaking the genetic code: AFIP's Taubenberger unlocks mystery to 1918 Spanish flu

Findings play major role in H5N1 pandemic preparations

By Christopher C. Kelly
AFIP Public Affairs Director



MIS 05-102

A team of AFIP scientists led by Jeffery K. Taubenberger, MD, PhD, Chief, Department of Molecular Pathology, has successfully completed a decade-long quest to sequence the genetic code to the 1918 Spanish flu, furthering our understanding of why this lethal virus killed over 50 million people around the globe in less than one year. Their findings, "Characterization of the 1918 influenza virus polymerase genes," published in the October 6, 2005 issue of *Nature* (437, 889-893), come as world leaders press for extraordinary measures to prevent a new pandemic that could occur if the currently circulating H5N1 bird influenza becomes able to spread among humans. The AFIP team previously published the sequences of 5 of the 1918 virus's 8 gene segments.

In their latest paper, Taubenberger and his colleagues report the remaining 3 gene segments, the so-called polymerase genes, which allow the virus to replicate in host cells. These 3 genes make up over half the genetic code of the virus. The AFIP experts found that the 1918 virus was probably an entirely avian-like virus that adapted to function in humans, and identified a small number of amino acid changes in the polymerase proteins that may be crucial in the process of a bird-adapted influenza virus adapting to humans.

MIS 05-103

Glass slides from a 1918 Spanish flu case (top); Jeffery K. Taubenberger, MD, PhD.

Taubenberger's findings were used in a collaborative project by Dr. Terence Tumpey and colleagues at the National Center for Infectious Diseases, Centers for Disease Control and Prevention, to create an influenza virus containing all 8 gene segments. They used the reconstructed virus to infect mice and human lung cells; the virus replicated quickly, killed the mice in less than 3 days, and caused extensive damage to the human lung cells. (*Science*. 2005; 310, 77-80). "It's clear that the 1918 virus remains particularly lethal, and determining whether pandemic influenza virus strains can emerge via different pathways will affect the scope and focus of surveillance and prevention efforts," Taubenberger said.

Each year avian influenza viruses (known as Influenza A) cause outbreaks that infect millions and kill more than 30,000 people in the United States alone. Every 30 years, on average, new Type A flu strains appear in humans to which few people have immunity. These flu strains can cause a global outbreak, or pandemic, and the 20th century saw 3: the 1918 H1N1 virus ("Spanish" flu); the 1957 H2N2 virus ("Asian" flu), and the 1968 H3N2 virus ("Hong Kong" flu).

The worst such pandemic in known human history was the 1918 flu. In the 1957 and 1968 pandemics, human influenza viruses acquired 2 or 3 genes from an avian influenza virus, leading to a mixed or "reassorted" influenza virus that proved far

FLU, *to page 3*

Director's Message

The Value of AFIP's National Tissue Repository

AFIP is internationally recognized for its expertise in second-opinion consultations, and each year we receive over 40,000 difficult cases in need of a definitive diagnosis. A portion of each case, including glass slides, paraffin-embedded blocks and wet tissue specimens, is designated to be preserved in the Institute's National Tissue Repository. Located on the Walter Reed Army Medical Center's Forest Glen annex, the National Tissue Repository is the world's largest collection of pathology specimens, and a treasured resource for pathologists, other physicians, and scientists from around the world.

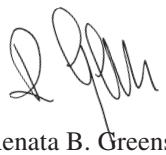
The Repository contains over 3 million cases accessioned since 1917, and includes over 50 million glass slides, 35 million paraffin-embedded blocks and 12 million wet tissue specimens. This provides our staff with the opportunity to conduct critical pathology research on rare or unusual cases not typically seen by practicing pathologists in military or civilian healthcare. As a result, in a typical year AFIP pathologists produce hundreds of journal articles, books and book chapters, and over 1,200 presentations.

In 2004 the Institute utilized this vast storehouse of pathology specimens to help produce 42 live courses, 5 conferences, 23 "Grand Rounds" videoteleconferences, and 7 virtual teleconferences. We trained not only pathologists, but clinicians, veterinary pathologists, radiologists, and military and civilian residents as well.

The Repository's resources also play a significant role in the electronic exchange of information. Our new online program, AskAFIP™, includes cases from the Repository that provide pathologists and other physicians with teaching resources at the point of care. Through our collaboration with the Information Manufacturing Corporation, we have converted paper records, photographic media and glass slides to digital files, and made available to our staff a search application that allows quick access to the newly digitized data.

It was the Repository that in 1995 provided the inspiration for Dr. Taubenberger's daring scientific achievement, and it is the Repository that today continues to serve as a unique resource in the study of the disease process.

May all of you have a happy holiday season and a safe and healthy New Year!



Renata B. Greenspan
COL, MC, USA
The Director

Atlas of Nontumor Pathology
Fascicle 4

Non-Neoplastic Kidney Diseases

Vivette D. D'Agati, MD, J. Charles Jennette, MD, Fred G. Silva, MD

American Registry of Pathology 2005

ISBN: 1-881041-96-4

721 pages • 1300+ illustrations • $165

The fourth fascicle of the Atlas of Nontumor Pathology is devoted to the highly significant area of kidney disease. It covers the major disease categories, including congenital and hereditary diseases, acquired diseases of the native kidney (primarily affecting glomerular, tubulointerstitial, and vascular components), as well as diseases of the renal allograft.

Kidney biopsies are most important in kidney transplantation, but are also critical in the diagnosis of many other areas of nephrology. Biopsies, first introduced in the 1950s as a standard procedure, have been developed to include a systematic integration of the clinical, serological, and radiographic findings with morphology as demonstrated by light microscopy, immunofluorescence microscopy, and transmission electron microscopy.

Nomenclature used is that preferred by practicing North American pathologists, and is consistent with the widely recognized International Nomenclature of Disease.

Drs. D'Agati, Jennette, and Silva have provided a one-volume concise, authoritative text that will be valuable to pathologists, nephrologists, and transplant surgeons.

Please see the order form on page 13.

Flu, ***from page 1***

less lethal. "Our findings show that in 1918, however, the virus was most likely entirely avian and adapted to function in humans," Taubenberger said. "And the amino acid changes were shared by some of the recent highly pathogenic avian H5N1 viruses that have circulated in Asia since 1997. The H5N1 strain is the focus of attention by health officials worldwide. Our findings suggest that H5N1 viruses might be acquiring the ability to adapt to humans, increasing their pandemic risk."

The story of Taubenberger's achievement is one of superb science and persistence, and reaffirms the value of AFIP's National Tissue Repository in studying the disease process. Eighty-seven years ago, in September 1918, thousands of US soldiers died as a result of the Spanish flu. Army pathologists assigned to military hospitals performed autopsies in hundreds of cases, and forwarded tissue specimens to the Army Medical Museum (precursor to the AFIP) for further study. Those tissue specimens are still maintained in the National Tissue Repository – a collection of over 4 million rare or unusual pathology cases sent to AFIP experts for diagnosis and research. AFIP's cases date back to the 1862 founding of the Army Medical Museum, with every case accessioned since 1917 available in an electronic database.

In 1995 Taubenberger and his colleagues sought to use the Repository to conduct state-of-the-art molecular diagnostics on decades-old archived tissue specimens. "I was extremely interested in finding unique or rare cases that were older and of potentially significant historic value," Taubenberger said. "In discussing the potential for molecular diagnostics applications, the 1918 Spanish flu emerged as the leading choice."

But how many cases were on file? Would they be useful? Taubenberger requested a database search and discovered over 120 cases in the archives; from these, 78 contained potentially useful lung tissue specimens. That's when the painstaking work began. "Flu virus replicates for only a few days, so we needed to find tissue samples from a victim who died within one week of the onset of symptoms in order to find the evidence we needed." Most cases yielded nothing, but one was promising: a 21-year-old private who died in September 1918 at Fort Jackson, South Carolina, 5 days after being infected.

Utilizing PCR techniques, the team sequenced 9 fragments of viral RNA from the coding regions of 5 influenza genes found in the Fort Jackson case. The sequencing proved difficult, since over the years the viral RNA had broken down into minute pieces only nucleotides long. But the AFIP scientists persevered. They developed and applied special techniques to isolate the RNA in formalin-fixed, paraffin-embedded tissues. They then amplified the genes and obtained sequences that led to the initial genetic characterization of the flu *(Science*. 1997; 275: 1793).

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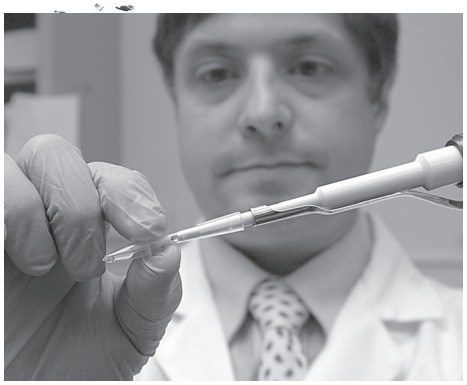


Dr. Taubenberger examines a radiograph of 1918 Spanish flu DNA (top) with colleague David Evers, PhD.

Working in the lab.
MIS 05-105

Within several months more useful genetic material was recovered, this time from the paraffin-embedded case of a 30-year-old private who died at Camp Upton, New York. Findings once again showed the identical sequence of the killer virus. Critics of the *Science* paper, however, expressed concern that formalin fixation of the archival cases could change the sequence and render modern findings inaccurate.

"We knew that finding the same sequence in frozen tissue—separate from those in our archives—would further validate our previous results and quell the criticism," Taubenberger pointed out. Such cases, however, were rare. But then a call came from a retired pathologist named Johan V. Hultin, who'd read the *Science* paper and had an extraordinary offer—and story to share.

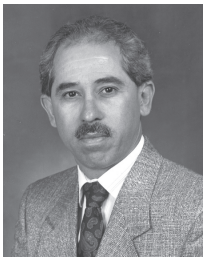
As a graduate student in microbiology in 1951 at the University of Iowa, Hultin participated in the excavation of a mass gravesite in Brevig Mission (now Teller Mission), Alaska, which had lost 85% of its population to the flu. Hultin successfully recovered numerous frozen tissue specimens from the gravesite, with the goal of finding live 1918 flu virus for use in developing a vaccine. Subsequent experiments showed that no live virus still existed, the project came to a halt, and Hultin embarked on a career in pathology.

Forty-six years later he called Taubenberger, told him the story of his 1951 Alaska adventure, and offered to fund his own small expedition back to Teller Mission to recover frozen tissue specimens. Taubenberger immediately agreed, and in early 1998 Hultin sent him lung tissue from an Inuit female victim of the 1918 flu. This became the third 1918 flu sample used to help break the code. "We noted immediately that the sequence from the Alaskan sample was the same as those of the 2 archival cases, and it confirmed the validity of our initial findings," Taubenberger said.

Eight years later, the final 3 gene segments were completed.

Jose A. Centeno, PhD, honored by Jackson State University

Dr. Jose A. Centeno, PhD, Senior Research Scientist and Chief, Division of Biophysical Toxicology, Department of Environmental and Infectious Disease Sciences, received the Jackson State University External Advisory Board Award in recognition of his contributions to the state of Mississippi's advancements for undergraduate and graduate students in the areas of environmental sciences, mathematics, engineering and technology. The award was presented on August 26, 2005 in Jackson, Mississippi.



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Dr. Centeno was also recently invited to organize, and serve as the International Invited Speaker at, the AFIP course entitled "Metals, Health and the Environment" held at Minufiya University, Sadat City, Egypt (September 2–28, 2005) and at Ankara University, Ankara, Turkey (September 29–October 1, 2005). These courses were organized in collaboration with the US Geological Survey and funded by a grant from the International Union of Geological Sciences (Program #454) and the International Medical Geology Association. At each course, Dr. Centeno presented 6 lectures dealing with various aspects of trace element and trace metals research, including environmental and human health, toxicology, risk assessment issues and modern chemical analytical techniques. These courses were attended by over 70 participants. Dr. Centeno also presented an invited lecture entitled "Mercury Poisoning: A Clinical and Toxicological Perspective" at the University of Alexandria, Egypt, School of Medicine on September 25, 2005.

Mortality Surveillance Division staff honored for combat helmet study

Two staff members from AFIP's Mortality Surveillance Division were recently honored for their contributions to a Department of the Army combat helmet study. Lisa Pearse, MAJ, MC, USA, chief of the division; and forensic nurse Joyce Williams, RN, MFSA, along with staff from a number of other Army agencies received the Dr. Wilbur B.Payne award for their combined contributions as members of the Vice Chief of Staff, Army Combat Helmet Study team.

The Payne award recognizes the highest quality of the Department of the Army Operations/Systems Analysis work. This year the Combat Helmet Study was selected for the large group award, which recognizes a team that provides an exceptional product. AFIP's members provided mortality input and analysis for the team study.

MIS 05-106

Lisa Pearse, MAJ, MC, USA, and Joyce Williams, RN, MFSA

MIS 05-107

Florabel G. Mullick, MD, ScD, SES, FACP, AFIP Principal Deputy Director and Chair, Department of Environmental and Infectious Disease Sciences (center front, left) and Jose A. Centeno, Senior Research Scientist and Chief, Division of Biophysical Toxicology, Department of Environmental and Infectious Disease Sciences (center front, right), participated in the International Workshop and Hemispheric Conference on Medical Geology from November 14-18, 2005 at the Museum and Center for Humanistic Studies, Universidad del Turabo, Gurabo, Puerto Rico. Over 50 scientists and other professionals took part.

MAJ Derron Alves receives inaugural Colonel William Inskeep Award

The Department of Veterinary Pathology is proud to announce that MAJ Derron "Tony" Alves is the first recipient of the newly established Colonel William Inskeep Award, which honors the legacy of COL Inskeep, who died in July 2005. COL Inskeep served as Chair of the Department of Veterinary Pathology from 1996 to 2003. The award will be presented annually to a graduating veterinary pathology resident who best exemplifies COL Inskeep's well-known selfless service, mentorship, and professionalism. COL Dale Dunn, current Chair of the Department of Veterinary Pathology, was delighted to present the inaugural award to MAJ Alves in the presence of Colonel Inskeep's widow, Betty Inskeep, who for many years has been a true friend of the AFIP and the many staff members and residents who have studied in the department over the past 2 decades.

As COL Dunn addressed the assembled audience, he said, "Major Alves, you have some very big shoes to fill. And we will continue to present this award every year, as long as we have a DoD Veterinary Pathology Residency Program, and as long as we have a worthy candidate."

MIS 05-108

MAJ Alves (left) and Betty Inskeep.

Maj. Val W. Finnell, USAF, MC, is board certified in medical management

The Certifying Commission in Medical Management (CCMM) recently designated Maj Val W. Finnell, USAF, MC, a Certified Physician Executive. Maj Finnell is a staff pathologist in the Department of Soft Tissue Pathology at the Armed Forces Institute of Pathology in Washington, DC.

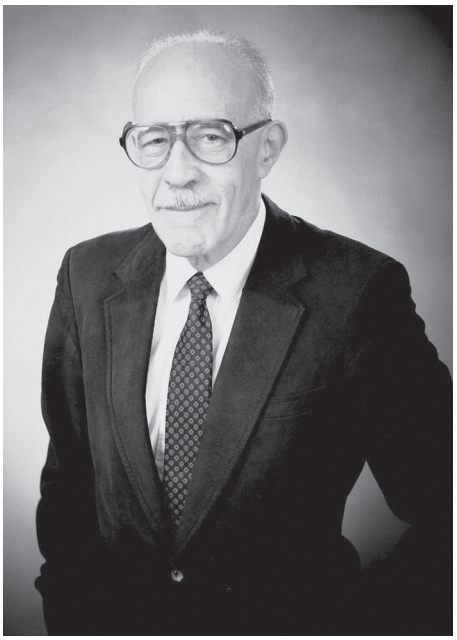
CCMM awarded Maj Finnell the status of Certified Physician Executive for educational achievements, demonstrated stature as a physician, and experience in the field of medical management.

The CPE designation, used in signatory, indicates that a physician has achieved superior levels of professional excellence and management education, while also demonstrating effective knowledge and leadership skills. The CCMM currently lists more than 700 Certified Physician Executives.

The CCMM is a not-for-profit corporation chartered by the American College of Physician Executives (ACPE) to establish and maintain the high standards required for physician executive certification. The ACPE is the nation's largest organization of physicians in health care leadership. The ACPE is recognized by the American Medical Association as the specialty society representing physicians in management and holds a seat in the AMA House of Delegates.

In Memoriam

Frank B. Johnson, MD, SES Expert in Chemical Pathology 1919-2005



MIS 05-109

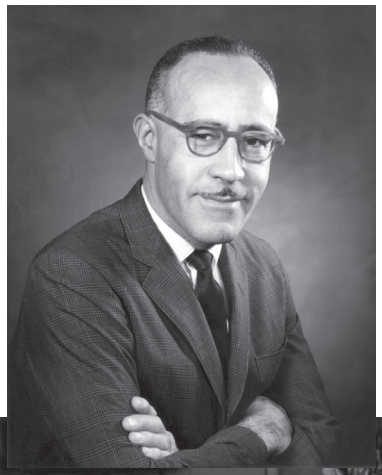
Frank B. Johnson, MD, SES, an expert in chemical pathology who was the first African-American pathologist appointed to the Senior Executive Service, died of natural causes at his home in Washington, DC on September 3, 2005. He was 86. As a boy, this native Washingtonian often spent time in the Army Medical Museum (precursor to the AFIP), where he was inspired to pursue a career in health and medicine. He later served as curator of the museum during a career at AFIP that spanned over 50 years and included innumerable achievements.

His expertise in histochemistry and chemical pathology led to comprehensive research projects involving the identification of substances in tissue sections. In 1954 he coauthored a paper published in *Medicine* entitled "Chronic idiopathic jaundice with unidentified pigment in liver cells," a condition known forever after as Dubin-Johnson syndrome. He served as Chair, Department of Chemical Pathology and as Registrar of the Former Prisoners of War Registry, and in 2001 helped identify specific components of the anthrax found in the letter sent to Senator Thomas Daschle.

Frank Bacchus Johnson was born in Washington, DC on February 1, 1919. As a child he developed a natural interest in chemistry, and as a student at Dunbar High School often spent time at the Library of Congress reading on the subject. Following graduation in 1936, Dr. Johnson attended the University of Michigan, where he majored in chemistry.

In 1940, he enrolled at Howard University School of Medicine and earned a commission as a first lieutenant in the Army Medical Corps upon graduation in 1944. Dr. Johnson entered the military during an era of segregation and was subsequently discharged. That same year he accepted a rotating internship at the Jersey City Medical Center in Jersey City, New Jersey, and in 1945 became a resident in pathology, also at Jersey City.

He returned to Washington and became acting director of laboratories at Howard University College of Medicine and Freedmen's Hospital from 1946 to 1948. During those years Dr. Johnson occasionally brought cases to the Army Medical Museum's director, COL James Earle Ash, and it was through his advice that Dr. Johnson applied for and received an Atomic Energy Commission postdoctoral fellowship in medical science at the University of Chicago. At Chicago, Dr.



MIS 05-110

Frank Johnson, MD, (second from left) with Nelson Irey, MD (l), Elson Helwig, MD (r), and H. Jason Norris, MD (standing), in this 1980's era photograph.

MIS 05-111

Working in the laboratory circa 1954.

MIS 05-112

Johnson became a research associate and professor in anatomy, and extensively researched the use of radioactive isotopes in the study of protein metabolism. "I was using chemical methods and taking advantage of the Atomic Energy Commission fellowship to study chemical problems," he said in a 1990 oral history.

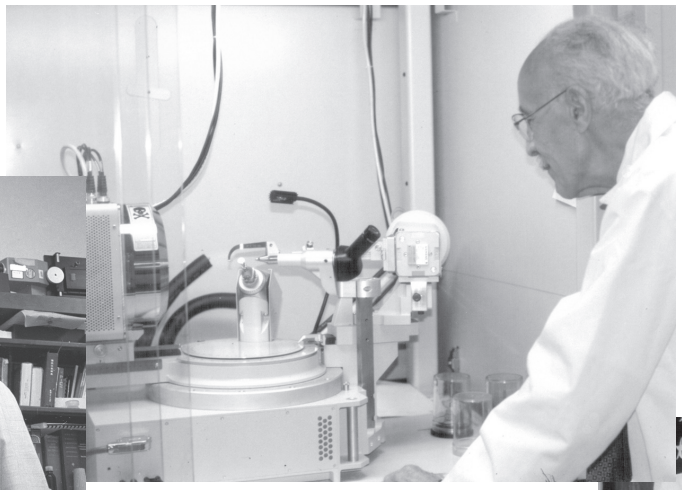
It was at Chicago that he first encountered the discipline of chemical pathology, the field that would become his lifelong specialization. He also began to apply cutting-edge histochemistry techniques to the study of tissues. In 1952, with integration of the services a reality and the Korean War under way, Dr. Johnson re-entered the Army with the rank of captain and was assigned to the AFIP as Chief, Laboratories Methods Section. In 1954 he became Chief, Histochemistry Branch (later Division), a position he held for 20 years. "I was in the 'Old Red Brick' (site of the Army Medical Museum in downtown Washington, DC). I had a laboratory on the third floor, and I had everything I needed to work with in terms of equipment and so forth. I thought it was a wonderful opportunity," he recalled.

During that time the new AFIP building was under construction on the Walter Reed Army Medical Center installation, and Dr. Johnson played a key role in acquiring a state-of-the-art electron microscope and ultracentrifuge for use in the evolving field of pathology. Electron microscopy became a prime tool for Dr. Johnson in the study of the disease process and x-ray diffraction studies.

During his AFIP career, Dr. Johnson served as a pathologist-specialist for the Department of Medicine and Surgery, Veterans Administration, Central Laboratory of Anatomy and Research (1954-1969), and Chief, Basic Sciences Division (1960-1974). In 1974 he became Chair, Department of Chemical Pathology, and from 1990 until his retirement in 2004 served as Chief, Division of Chemical Pathology, Department of Environmental and Toxicologic Pathology.

He authored or coauthored 117 scientific publications, lectured, and served on the faculty at several universities. He is survived by his wife, Gloria Hixson Johnson, his son Frank B. Johnson, Jr., MD, daughter-in-law Angela M. Messersmith and grand-daughter Alexandra Maria Messersmith.

MIS 05-113



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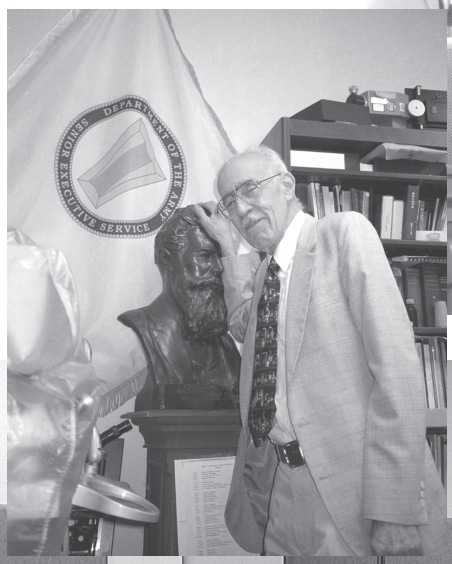
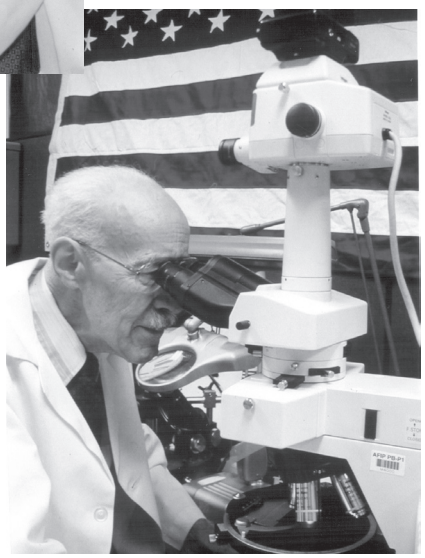


Far left: Dr. Johnson pictured in front of his Senior Executive Service flag and the bust of one of his favorite scientists, the physicist William Konrad Roentgen.



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MIS 05-116

At a group sign-out in 2003 with department Chair Florabel G. Mullick, MD, SES (center) and colleagues.

Veterinary histopathology conference one of many valuable tools available to residents at the AFIP

By LTC Duane A. Belote, VC, USA
Chief, Consultation & Training Division
AFIP Department of Veterinary Pathology

The Department of Veterinary Pathology's Wednesday Slide Conference (WSC) is undoubtedly the world's largest, best known, and most respected veterinary histopathology conference. Having recently finished its 52nd year, it is also the oldest. Presently the conference features 25 conferences of 4 cases each that are presented on most Wednesdays between September and May of each academic year. The cases are submitted from and redistributed to veterinary pathologists in 135 diagnostic and research laboratories supporting universities, the pharmaceutical industry, zoos, and state and national governments throughout the world.

The conference is well respected for many reasons. It is an unmatched and valuable resource to develop and maintain diagnostic skills and to hone descriptive techniques that are needed to pass certifying exams by the American College of Veterinary Pathologists and its European counterpart. Accordingly, priority for participation is given to the largest institutes and those that have resident training programs. In addition to being a source for slide sets encompassing classic, rare, and recently published histologically diagnosable diseases and conditions, conference results provide high-quality histomorphologic descriptions and reviews of each lesion's cause, pathogenesis, disease correlates in other species, including humans, and differential diagnoses. The results are a joint effort of the conference coordinator—who is a second-year resident—the staff, and the conference moderator.

The variety of moderators is almost as diverse as the slides presented. Military and civilian veterinary pathologists working in the greater Washington, DC, metropolitan area moderate most of the conferences. However, approximately 10 conferences are devoted to a particular organ system or species. The department is privileged to have long-standing relationships with many renowned veterinary pathologists with recognized expertise in a system or species. In addition to moderating the WSC, they usually also provide the residents and staff with a review of additional interesting cases, and present a seminar focused on their area of expertise.

Dr. Brian Summers, a professor at Cornell University's College of Veterinary Medicine and the first author of *Veterinary Neuropathology*, the only textbook specifically devoted to the subject, recently served as WSC moderator. During his visit to the AFIP he provided the department's residents a wet-lab demonstration on brain dissection. Although they had all dissected brains before, it was a special privilege to have a world-renowned specialist walk them through the process and help them learn anatomic landmarks that must be used to optimize sampling for certain conditions.

The training opportunities made available to AFIP veterinary pathology residents are unequaled, and the WSC is a major portion of their didactic training. To further the availability and positive impact of the WSC on worldwide veterinary pathology education, conference results from 1994 are available for free on the department's Web page (http://www.afip.org/vetpath/index.html). For individuals working at institutes that are too small to participate in the conference, the Veterinary Pathology and Medical Education departments at AFIP began providing online subscription access to virtual slides in 2003. With the addition of virtual slides to the WSC format, the resultant product essentially served as a template for AskAFIP™.

For more information on the WSC, visit http://www.afip.org/vetpath/WSC/WSCdescr.html.

MIS 05-117

Dr. Brian Summers, a world-renowned veterinary neuropathologist from Cornell University's College of Veterinary Medicine, has served as a moderator for the AFIP Department of Veterinary Pathology's Wednesday Slide Conferences for several years.

Museum receives World War I-era facial reconstruction lantern slides

By Steven Solomon,
NMHM Public Affairs Officer

The AFIP's National Museum of Health and Medicine has received nearly 200 lantern slides from the family of a World War I-era US Army dentist who gathered them while serving in France and the United States. They graphically depict patients who received facial reconstruction surgery.

Dr. Archibald Louis Miller, a graduate of George Washington College who joined the Army as a lieutenant in May 1917, was promoted to major in early 1918 and sent to Base Hospital No. 6 in France. While overseas he was assigned to the Maxillo Facial Services of the American Expeditionary Force.

MIS 05-069

After about a year he was given orders to return to the United States for duty and was told by his commanding officer, "It affords me great pleasure to announce that your services … have been excellent throughout. You have met all the conditions that presented and have successfully accomplished everything that could reasonably be expected of anyone under like conditions."

Miller was promoted to lieutenant colonel in 1920. He died of spinal meningitis in 1929 at the age of 46.

The collection passed from Miller to his daughter, Evelyn Louise Miller Peterson. After her death in 2003 her 3 surviving sons decided that, because their grandfather had served at Walter Reed Hospital, they would donate the collection to the National Museum of Health and Medicine, because today it is located at Walter Reed Army Medical Center.

"It is comforting to know the collection will be kept safe and may be useful to others in some way," said Stuart C. Peterson of Taneytown, Maryland on behalf of his brothers, Elton M. and Robert B. "Thank you for helping to make our endeavor complete."

Sometimes called the "father of film," the magic lantern was invented in Europe in the 1650s. Images were painted onto glass and projected using candle or lantern light onto walls, cloth or other surfaces. Later, lantern slides were made by taking a photograph and printing the image onto transparent glass, which would then be sandwiched together with another piece of glass to protect the emulsion. In the late 19th century, lantern slides began being used for educational purposes, and were commonly used to illustrate lectures.

The donation was handled by Michael Rhode, chief archivist, and Tabitha Oglesby, assistant archivist of the Otis Historical Archives, which holds manuscripts, documents, archives, films, prints, slides, paintings, photographs, illustrations, and institutional records related to health and medicine. Material includes the records of the Army Medical Museum and the Armed Forces Institute of Pathology, but all material is not necessarily institutionally related.

There is a small reference library with journals and monographs. The archival collections consist of more than 400 collections that are about 3,000 linear feet and if laid end-to-end would stretch for over a mile. Of this, there are about 1,000 films and about 300,000 photographs in all media dating from the 1850s.The collections are strongest in the late 19th and early 20th centuries. For more about the Otis Historical Archives, go to www.nmhm.washingtondc.museum/collections/archives/archives.html.

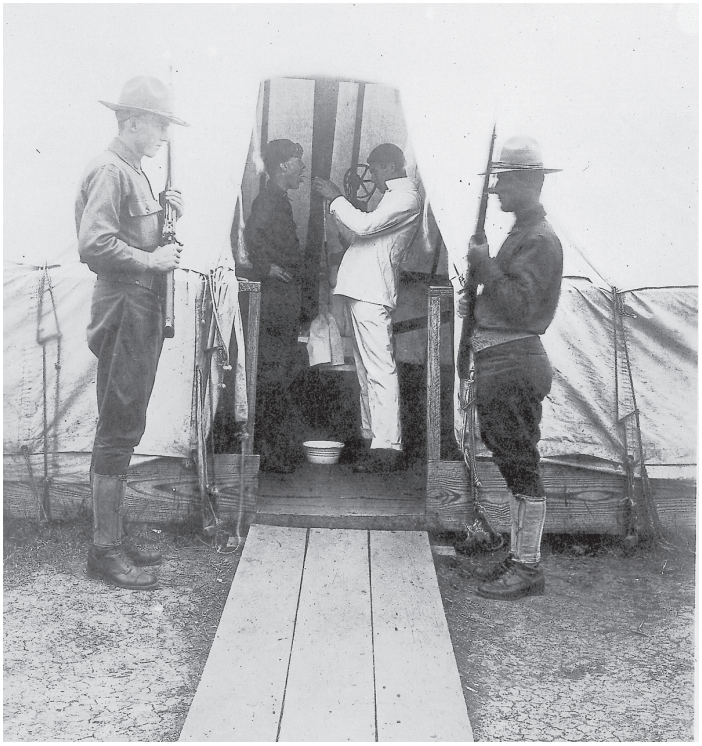
MIS 05-068

A portrait (left) of Dr. Archibald Louis Miller, a World War I-era US Army dentist who collected facial reconstruction slides while serving in France and the United States.

Mike Rhode, the museum's chief archivist, shows slides of facial reconstruction during WWI to the family of the donor.

"Closing in on a Killer: Scientists Unlock Clues to the Spanish Influenza Virus"

A 1997 temporary exhibit at the AFIP's National Museum of Health and Medicine on the 1918 influenza pandemic and efforts by AFIP pathologist Dr. Jeffrey Taubenberger to recreate the genetic structure of the 1918 influenza virus are featured in a new virtual exhibit on the museum's website at www.nmhm.washingtondc.museum. Today, Dr. Taubenberger's work on 1862 influenza is made possible through his use of the AFIP's Tissue Repository, the largest and most comprehensive tissue repository in the world, which includes cases dating back to 1917 and more than 3 million medical cases, in the hope that the knowledge gained could help prevent or defend against another deadly pandemic.



"Spraying the throat as preventive treatment against influenza at Love Field in Texas" is one of many 1918 influenza pandemic images in the collections of the Otis Historical Archives at the National Museum of Health and Medicine, and is accessible online on the museum's website.

MIS 05-118

Local news radio interviews author at museum book signing

By Courtney MacGregor
NMHM Public Affairs Specialist

The AFIP's National Museum of Health and Medicine hosted a lecture and book-signing by author Michael Sledge, who discussed his book, *Soldier Dead*. The book examines why recovering the remains of US service members is important and also provides an analysis of the processes of recovery, identification, return, burial, and remembrance of the dead. The book addresses the handling of the fallen soldier, how it has evolved over time, and how these changes have advanced technology and capabilities and affected the shifting attitudes of the public, government, and military.

The lecture and book-signing was promoted in *The Washington Post* prior to the event in an article that featured an interview with Sledge. The event was covered by a reporter from WTOP-AM news radio, who taped the presentation and interviewed Sledge afterward for her audience. Copies of the book are available for sale in the museum's gift shop.

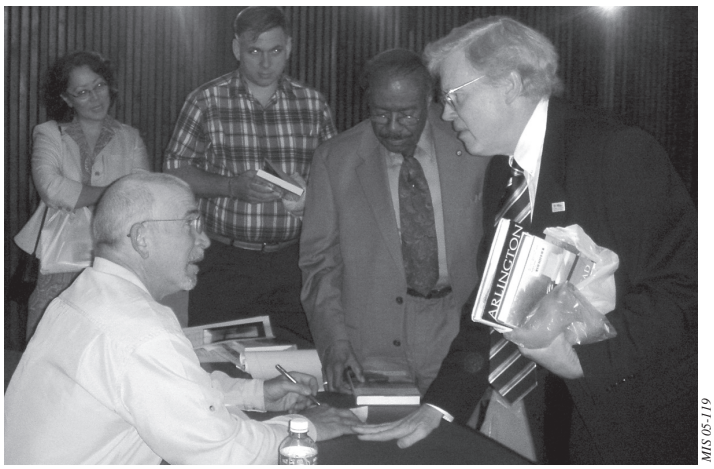
Sledge spoke for an hour on his reasons for writing the book and how it is organized. He discussed each chapter, highlighting important facts and stories. He noted the great service that soldiers provide to the nation and the courage that is shown when soldiers are enlisting. "When you join the military," Sledge said, "you sign your name in blood. Literally." The DNA Repository of the Office of the Armed Forces Medical Examiner takes and maintains a sample of blood from all soldiers, should there be only remains left with which to identify a body.

The title, *Soldier Dead*, is a Civil War phrase, Sledge explained, that was often placed at the top of a list of men who had died in battle. The term was replaced in the 1930s with "war dead," to refer to casualties. Sledge explained that "soldier dead is more personal and real," which is why he chose it for the title of his book.

The lecture was attended by many military personnel who were connected to the topic in many ways— families, medical examiners and soldiers were able to ask Sledge directly about his feelings on when families should be notified of a soldier's death, what rights the media and the country have concerning fallen soldiers and how repatriation should be handled by the Office of the Armed Forces Medical Examiner.

Sledge answered questions and entertained comments for about 30 minutes before sitting down to sign copies of his book. He felt that it was "important to write personal messages that will further convey the strength of the book's contents and will thank the readers for their support."

Author Michael Sledge signs copies of his book and discusses it with the audience after his lecture.



MIS 05-119

Marilyn J. Siegel, MD, Distinguished Scientist, Department of Radiologic Pathology

Marilyn J. Siegel, MD, will serve as Distinguished Scientist in the Department of Radiologic Pathology at the Armed Forces Institute of Pathology (AFIP) from January 1, 2006, to June 30, 2006. Dr. Siegel is a professor of radiology and pediatrics at the Washington University School of Medicine in St Louis, Mo. Her principal areas of interest and expertise are pediatric radiology; cross-sectional imaging, especially with regard to pediatric solid neoplasms; adolescent diabetes and obesity; and cardiovascular imaging in both children and adults.

MIS 05-120

Dr. Siegel earned her MD degree from the State University of New York (SUNY) Downstate Medical Center School of Medicine (Brooklyn, NY) in 1969. She completed a pediatric internship in 1970 at the Montefiore Medical Center in the Bronx, NY, and a residency in pediatrics at the Cardinal Glennon Memorial Hospital of St Louis University School of Medicine in 1972. After completing a fellowship in pediatric oncology in 1973 at the University of Washington in Seattle, she leveraged her extensive clinical experience to chart a new course as a resident in diagnostic radiology in 1974 at the Edward Mallinckrodt Institute of Radiology of Washington University School of Medicine.

Since completing her residency in 1977, Dr. Siegel has held staff appointments at the Barnes–Jewish Hospital and Children's Hospital of St Louis, rising to the rank of professor in 1989. She attained a fellowship in the American College of Radiology in 1989 and twice has been recognized for superior resident teaching.

Dr Siegel is the author or coauthor of 154 original scientific publications, 87 invited and review articles, 12 books, and 40 book chapters in the radiologic literature and has delivered over 120 presentations. She is active in numerous national and international societies, including the American College of Radiology, the American Roentgen Ray Society, and the Society of Computed Body Tomography and Magnetic Resonance, for which she served as president in 2000–2001.

Dr Siegel is editor of the Radiology Casebook Section of the *Journal of Perinatology*, and has served on the editorial boards of *Radiology* and the ACR Professional Self-evaluation Program. Her participation as Distinguished Scientist will enhance the AFIP's educational programs and help fulfill the mission of the Department of Radiologic Pathology.

Ellen Chung, LTC, MC, USA Department of Radiologic Pathology

Ellen Chung, LTC, MC, USA has been appointed chief of pediatrics, Department of Radiologic Pathology. A native of Washington, DC, Dr. Chung graduated Phi Beta Kappa from Georgetown University in 1986, and in 1990 received her MD degree from the Georgetown University School of Medicine. She served an internship and residency in radiology at the Tripler Army Medical Center, Honolulu, Hawaii, from 1990 to 1995.

MIS 05-121

From 1995 to 2001, LTC Chung served on the interventional radiology staff at Walter Reed Army Medical Center (WRAMC), Washington, DC. A fellowship in pediatric radiology followed at Children's Hospital, Boston, Massachusetts. From 2003 to 2005 she served on the pediatric radiology staff at WRAMC.

LTC Chung is board certified by the American Board of Radiology and is a member of numerous radiology societies, including the Society for Pediatric Radiology, the Radiological Society of North America, and the American Roentgen Ray Society.

Among her awards and honors are the WRAMC Resident Teaching Award, 1996, 1998, 2004; the Army Medical Department's Radiology Resident Research Award, 1994; and the Janet M. Glasgow Memorial Achievement Citation, 1990.

She has coauthored several publications in the field, and serves on the Department of Radiologic Pathology's faculty.

AFIP civilian case billing policies

The purpose of this notice is to provide our contributors with information regarding billing and collections issues regularly experienced at the AFIP.

- The AFIP civilian consultation program operates on a fee-for-service basis. There are no prepayment discounts offered. AFIP does not pay Federal Express or other delivery charges for cases submitted.
- Currently, the AFIP does not bill Medicare or other insurance companies. (Please do not send patient insurance information.) If the patient has Medicare and is requesting the second opinion, the contributor should ask the patient to sign a Medicare Billing Waiver. The second opinion may be denied by Medicare as the AFIP is not a participating provider.
- The minimum amount we bill for a referral consultation is currently $171.10 (CPT code 88321).
- Retainer accounts can be established with the AFIP Business Office. The minimum retainer amount is $5,000, or at least 25 consultative case referrals per fiscal year.
- The AFIP will bill the contributor listed on the AFIP Form 288-R (Contributor Consultation Request Form). Contributors must ensure that this address is current and valid for billing purposes. The fax number provided by the contributor on the AFIP Form 288-R is the number used to fax a copy of the final report.
- If someone other than the contributor listed on the AFIP Form 288-R is responsible for payment, i.e., patient's physician, referral laboratory, or the patient, the billing address and phone number for that person or entity must be provided on the AFIP Form 288-R (Comments and Requests section) or attached to it.
- Our business is with the contributor. Patients or other entities will only be billed if they themselves have requested that the consultation be sent specifically to AFIP for a second opinion. The contributor should ask the requestor for payment in advance, a minimum of $171.10, and send this with the case, along with written documentation of the responsible party's request for the second opinion.
- If an alternate billing address is not provided at the time of case submission, the contributor will be billed.

All checks should be made payable to the Armed Forces Institute of Pathology (AFIP). Payment should be remitted to the following address:

Armed Forces Institute of Pathology, 6825 16th Street, NW, Bldg 54, Room G013, Washington, DC 20306-6000.

All billing inquiries should be directed to the AFIP Business Office at 202-782-1841 or an email can be sent to Businessoffice@afip.osd.mil.

We would like to ask our contributors to rate our consultation service by completing an on-line survey at http://www.afip.org/consult/survey.html.

AMERICAN REGISTRY OF PATHOLOGY PUBLICATIONS

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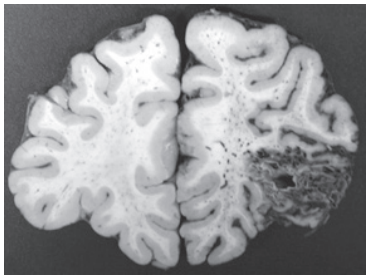
44th Annual Basic Science Course Otolaryngology Head and Neck Surgery
13 February–2 March 2006
Delano Hall
Walter Reed Army Medical Center
Washington, DC

16th Annual Anatomic Pathology Course
20–26 March 2006
Doubletree Hotel
Rockville, Maryland

Update on Renal Biopsies in Medical Renal Diseases
1– 3 April 2006
Hyatt Regency Bethesda Hotel
Bethesda, Maryland

19th Annual Forensic Anthropology
12–16 June 2006
National Transportation Safety Board Academy
Ashburn, Virginia

Ophthalmic Pathology for Ophthalmologists
18–22 September 2006
Doubletree Hotel
Rockville, Maryland



44TH Annual Dr. Kenneth M. Early Memorial NEUROPATHOLOGY Review

20–24 February 2006
Hyatt Regency Bethesda Hotel
Bethesda, Maryland

Kenneth M. Earle, MD, former Chair, Department of Neuropathology, initiated a course designed to prepare pathologists, neurologists and neurosurgeons for specialty board certification. The 5-day course will provide a comprehensive review of neuropathology for individuals interested in the neurosciences and pathology.

❑ **YES!** I am interested in registering for this course.
❑ Please send me more information about the following course: _____

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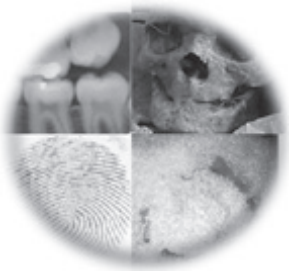

42nd Annual Forensic Dental Identification and Emerging Technologies

20–24 March 2006
Hyatt Regency Bethesda Hotel
Bethesda, Maryland

The primary focus of the course is to expose the experienced forensic scientist, and to introduce the novice, to state-of-the-art techniques for forensic endeavors, with an emphasis on mass disaster and dental identification. The laboratory session integrates digital radiology, photographic capture and computer database with a mock mass disaster identification exercise. Other laboratories include bitemark analysis, skeletal anthropology, and radiographic age assessment.

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SEXUAL ASSAULT RESPONSE TEAM TRAINING PROGRAM

3–7 April 2006
Doubletree Hotel
Rockville, Maryland

This program is designed for health care personnel (officer, enlisted, and civilian) desiring education and training in performing sexual assault examinations. In addition, chaplains, investigators, law enforcement, mental health care workers, sexual assault victim advocates, and persons from other disciplines who wish to have an increased understanding of the sexual assault examination, and to provide a multidisciplinary approach to sexual assault care and the medicolegal process may attend.

❑ **YES!** I am interested in registering for this course.
❑ Please send me more information about the following course: _____

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2006 Continuing Medical Education Courses

21st Annual WASHINGTON NEURORADIOLOGY COURSE

- February 18–19, 2006
- Hyatt Regency, Bethesda, Maryland

This 2-day weekend course is designed to offer radiologists, neurologists, neurosurgeons, and pathologists a basic review and update of selected neuroradiology topics. Important radiologic-pathologic concepts will be illustrated by magnetic resonance imaging, computed tomography, and conventional studies. Faculty from the AFIP are supplemented by nationally recognized guest speakers. A series of unknown cases will be discussed at the end of each session.

The course objective is to illustrate basic concepts in neuroradiology using radiologic pathologic correlation to enhance practitioner knowledge and skills.

For more information, contact course coordinator HM2 Monte Grace. Telephone numbers, email, and website located in the green box below.

44th Annual Dr. Kenneth M. Earle Memorial NEUROPATHOLOGY REVIEW

- February 20–24, 2006
- Hyatt Regency Bethesda, Bethesda, Maryland

Kenneth M. Earle, MD, former chair, Department of Neuropathology, initiated a course designed to prepare pathologists, neurologists and neurosurgeons for specialty board certification. This is the 44th iteration, which is dedicated to his memory. The 5-day course will provide a comprehensive review of neuropathology for individuals interested in the neurosciences and pathology. Lectures will be illustrated by gross and microscopic photographs using PowerPoint presentations and will be supplemented by a course syllabus. Participants in this course will benefit by gaining:

- Enhanced knowledge of the pathology and recent developments in the pathophysiology of common and unique disorders of the central and peripheral nervous systems and skeletal muscle.
- Familiarization with recently recognized pathologic processes related to the central and peripheral nervous systems and skeletal muscle.
- Improved understanding of basic histopathologic, histochemical, immunohistochemical, and ultrastructural features of disorders of the central and peripheral nervous systems and skeletal muscle.
- Insight into clinical, radiologic and pathologic correlations, and prognostic factors of central nervous system lesions.

For more information, contact course coordinator Mr. Ricky Giles. Telephone numbers, email, and website located in the green box on this page.

44th Annual Basic Science Course OTOLARYNGOLOGY HEAD AND NECK SURGERY

- February 13—March 2, 2006
- Delano Hall, Walter Reed Army Medical Center, Washington, DC

(2 Sections)

(1) Pathology in the Management of Otorhinolaryngology/ Head and Neck Patients

- February 13–16, 2006
- Delano Hall, Walter Reed Army Medical Center, Washington, DC

This 4-day course is an intensive and comprehensive review of pathology, with emphasis on the principles of clinical-pathologic correlation. It is composed of lectures, case seminars, and microscope sessions. The faculty includes current and former members of the departments of Endocrine and Otorhinolaryngic/Head-Neck Pathology, Oral and Maxillofacial Pathology, and Radiologic Pathology at the AFIP. Lectures highlight the pathologic findings of a broad range of diseases from all areas of the head and neck (including thyroid gland and parathyroid glands), correlated specifically with the radiographic features that may be unique to the entities discussed. All aspects of pathology, including frozen sections, immunohistochemical studies, electron microscopy, and molecular techniques, will be discussed. Teaching files (electronic or glass slides) of cases related to all aspects of diagnostic pathology will be available for use by residents. Interactive clinical, radiology and pathology seminars will be held each afternoon based on the participants' submissions.

Although the course may be beneficial at any stage of training, residents should attend in their 2nd, 3rd, or 4th year of training (PGY3-5). Participating otolaryngologists have the option of attending their session separately. Participants should have at least some experience with the wide variety of diseases encountered in an up-to-date otorhinolaryngology department.

For more information, contact course coordinator TSgt Stephen Huntington. Telephone numbers, email, and website are in the green box at left.

(2) CLINICAL SCIENCE IN OTOLARYNGOLOGY

- February 18–March 3, 2006
- Delano Hall, Walter Reed Army Medical Center, Washington, DC

This 2-week didactic course will cover a broad range of topics in the field of otorhinolaryngology/head and neck surgery. Basic concepts from anatomy and pathophysiology will be reviewed in reference to clinical correlations and practical application. A wide range of world-renowned specialists will give lectures in their fields of expertise. Medical and surgical management of a variety of common clinical states will be addressed. Participants in this course will benefit by learning to:

DME

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Armed Forces Institute of Pathology
14th Street & Alaska Avenue, NW
Washington, DC 20306-6000

FOR MORE INFORMATION CONTACT:
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URL: http://www.afip.org

- Understand and describe the anatomic and physiologic basis for common otolaryngologic disorders in adults and children.
- Relate medical and surgical management principles for these disorders.

For more information, contact course coordinator TSgt Stephen Huntington. Telephone numbers, email, and website are in the green box on page 17.

42nd Annual FORENSIC DENTAL IDENTIFICATION AND EMERGING TECHNOLOGIES (Lectures and Mini Workshops)

- March 20–24, 2006
- Hyatt Regency Hotel, Bethesda, Maryland

This 5-day course includes both lectures and participatory workshops. The focus of the course is to expose the experienced forensic scientist, and to introduce the novice, to state-of-the-art techniques used for forensic endeavors. There will be speakers from diverse organizations such as the Federal Bureau of Investigation, US Army, National Museum of Health and Medicine, and various universities across the nation. The laboratory sessions incorporate digital radiology and photographic capture and computer databases, with a mock mass disaster identification exercise. Other laboratories include bitemark analysis, skeletal anthropology, and radiographic age assessment.

The primary emphasis of the course is forensic odontology; however, overviews of allied disciplines are provided to complete the attendees' knowledge base. At the completion of the course, participants should be able to perform forensic dental identification of human remains. They should be able to participate in and be a valuable asset to an identification team. Furthermore, they will gain an awareness of the myriad agencies and scientific disciplines in the arena of forensics.

For more information contact course coordinator Mr. Mark Hovland. Telephone numbers, email, and website located in the green box on page 17.

16th Annual ANATOMIC PATHOLOGY COURSE

- March 20–26, 2006
- Doubletree Hotel, Rockville, Maryland

This one-week intensive review of anatomic pathology is invaluable for pathology residents preparing for board examinations, in addition to providing practicing pathologists an updated review. There will also be internationally recognized lecturers in all fields of anatomic pathology. Participants will gain these benefits:

- New slides added to slide review material.
- Exceptional revised course syllabi.
- 55 hours of lectures.
- 20 hours of microscope time.
- 75 AMA or AOA category 1 credits.
- Computer access to slides for one year following course.
- New topics added, including adnexal tumors, and an additional lecture on the breast.
- The only anatomic course with exceptional slides to self-review, microscopes provided.
- A unique opportunity to review classic anatomic pathology slides and test oneself on the diagnosis.

For more information, contact course coordinator Mr. Ricky Giles. Telephone numbers, email, and website located in the green box on page 17.

MICROSCOPE WORKSHOP UPDATE ON RENAL BIOPSIES IN MEDICAL RENAL DISEASES

- April 1–3, 2006
- Hyatt Regency Hotel, Bethesda, Maryland

This is a 3-day course designed to review the pathology of medical renal diseases. The course should interest pathologists and nephrologists who evaluate kidney biopsies in their practice, as well as physicians, residents and fellows interested in renal pathology, and for preparation in their specialty board examination. The course format includes didactic lecture covering clinical and pathologic aspects of nephrology and nephropathology, followed by laboratory sessions in the afternoons. By attending this course, the participant should be able to describe in detail the clinicopathologic aspects of common and major medical renal diseases, and the role of renal biopsies in their evaluation.

For more information, contact course coordinator TSgt. Stephen Huntington. Telephone numbers, email, and website are in the green box on page 17.

SEXUAL ASSAULT RESPONSE TEAM TRAINING PROGRAM (Open to Civilians & Military)

- April 3–7, 2006
- Doubletree Hotel, Rockville, Maryland

This program is designed for health care personnel (officer, enlisted and civilian) desiring education and training in performing sexual assault examinations. In addition, chaplains, investigators, law enforcement, mental health care workers, sexual assault victim advocates, and other disciplines, both military and civilian, who wish to have an increased understanding of the sexual assault examination, and to provide a multidisciplinary approach to sexual assault care and the medicolegal process may attend. This course uses hands-on laboratory sessions to introduce sexual assault forensic examination techniques, forensic photography, documentation and physical evidence collection. Lectures provide medicolegal insight on identifying and preserving the biological, psychological and social health of the survivor of sexual assault or abuse.

This program satisfies the International Association of Forensic Nurses (IAFN) national standard requirements for the didactic component of the Sexual Assault Nurse Examiner (SANE) certification process. A separate clinical preceptorship must be completed in conjunction with the didactic portion in order to sit for the SANE certification exam. Requirements for the clinical preceptorship will be covered in the program.

For more information, contact course coordinator Mr. Ricky Giles. Telephone numbers, email, and website located in the green box on page 17.

RTPA Toxicologic Histopathology Web Slide Conference 2006

The Registry of Toxicologic Pathology for Animals (RTPA) is sponsoring this online conference series that allows over 600 toxicologic pathologists, residents, and graduate students worldwide an anonymous forum for the exchange of information concerning toxicologic pathology research and related issues. This conference is held entirely on the internet. During 2006, there will be 9 conference sessions. Each session will focus on 4 thought-provoking cases submitted by participating organizations. A moderator responds to questions and facilitates the discussion. The dates of the sessions are:

January 2–13	April 3-14	September 4–15
February 6-17	May 1-12	October 2–13
March 6-17	June 5-16	November 6–17

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Abstracts of Recent Publications by AFIP Staff

Characterization of the 1918 influenza virus polymerase genes

Taubenberger JK, Reid AH, Lourens RM, Wang R, Jin G, Fanning TG

The influenza A viral heterotrimeric polymerase complex (PA, PB1, PB2) is known to be involved in many aspects of viral replication and to interact with host factors, thereby having a role in host specificity. The polymerase protein sequences from the 1918 human influenza virus differ from avian consensus sequences at only a small number of amino acids, consistent with the hypothesis that they were derived from an avian source shortly before the pandemic. However, when compared to avian sequences, the nucleotide sequences of the 1918 polymerase genes have more synonymous differences than expected, suggesting evolutionary distance from known avian strains. Here we present sequence and phylogenetic analyses of the complete genome of the 1918 influenza virus, and propose that the 1918 virus was not a reassortant virus (like those of the 1957 and 1968 pandemics), but more likely an entirely avian-like virus that adapted to humans. These data support prior phylogenetic studies suggesting that the 1918 virus was derived from an avian source. A total of 10 amino acid changes in the polymerase proteins consistently differentiate the 1918 and subsequent human influenza virus sequences from avian virus sequences. Notably, a number of the same changes have been found in recently circulating, highly pathogenic H5N1 viruses that have caused illness and death in humans and are feared to be the precursors of a new influenza pandemic. The sequence changes identified here may be important in the adaptation of influenza viruses to humans.

Nature. 2005;437(7060):889-893.

Palmar-plantar fibromatosis in children and preadolescents: a clinicopathologic study of 56 cases with newly recognized demographics and extended follow-up information

Fetsch JF, Laskin WB, Miettinen M

Palmar-plantar fibromatosis, the most common type of fibromatosis, is well recognized in the adult population, but many clinicians and pathologists are unfamiliar with the fact that children may also be affected by this process. This report describes the clinicopathologic findings in 56 cases of palmar-plantar fibromatosis in children and preadolescents. Our study group included 19 males and 37 females, ranging from 2 to 12 years of age at the time of their first surgical procedure (median age, 9 years). The patients typically presented with solitary, lobular or multilobular masses in the 0.5- to 2.5-cm size range. The preoperative duration of the lesions ranged from 1 month to 6 years, with 1 patient purportedly having clinical evidence of disease since birth. All but two of the initial lesions occurred on the plantar aspect of the feet, typically in the region of the arch. Only 2 patients presented with palmar disease. The tumors were usually painless, except when pressure was applied. Seven patients had a history of trauma, sometimes involving a foreign body. One patient presented with concurrent disease involving both feet, and 12 additional patients subsequently developed palmar-plantar fibromatosis in another extremity, knuckle pads on the hands, or had other clinical findings linked to this disease. A family history was available for 25 patients, and 11 individuals had relatives with palmar-plantar fibromatosis, and 4 others had relatives with a history that was either suspicious for palmar-plantar disease or positive for other disorders associated with this disease. Histologically, the tumors involved aponeurosis and commonly formed discontinuous, moderately cellular, nodular masses composed of spindled cells with intervening collagen. Mitotic counts for 79 separately submitted tumor specimens ranged from 0 to 31 mitotic figures per 25 wide-field high power fields (mean mitotic count, 3.4 mitotic figures per 25 wide-field high power fields). Eight tumors had > or =10 mitoses per 25 wide-field high power fields. All patients were initially managed by local excision, and in most cases, histologic examination showed tumor extending to the tissue edge. Thirty-two of 38 patients (84.2%) with clinical follow-up, ranging from 4 months to 33 years (mean, 14 years 9 months; median, 16 years 1 month), had one (n = 16) or more (n = 16) local recurrence of their fibromatosis.

Am J Surg Pathol. 2005;29(8):1095-1105.

Mycoplasma penetrans infections and seroconversion in patients with AIDS: identification of major mycoplasmal antigens targeted by host antibody response

Lo SC, Wang RY, Grandinetti T, Zou N, Hayes MM, Shih JW, Wear DJ

We examined Mycoplasma penetrans-specific antibodies in sera of 5 male homosexual AIDS patients from whom M. penetrans was isolated during the disease process. No consistent immune reaction pattern could be recognized in Western blot using whole cell proteins. Serum samples obtained prior to M. penetrans isolation reacted with a number of M. penetrans proteins, most likely due to nonspecific cross-reactions. Further analysis revealed that patients produced prominent antibody reaction to lipid-associated membrane proteins (LAMPs) of M. penetrans at the time of mycoplasma isolation, which could not be observed in serum samples obtained prior to M. penetrans isolation. The positive antibody reaction was mainly directed against 2 major LAMPs of M. penetrans with molecular mass of 35 and 38 kDa and produced a distinctive pattern of positive immunoreaction bands. Our observation suggested that, compared with whole mycoplasmal proteins, LAMPs were more specific target antigens in serological assays for M. penetrans infection.

FEMS Immunol Med Microbiol. 2005;44(3):277-282.

From the archives of the AFIP: imaging of musculoskeletal liposarcoma with radiologic-pathologic correlation

Murphey MD, Arcara LK, Fanburg-Smith J

Liposarcoma is the second most common type of soft-tissue sarcoma, accounting for 10%-35% of these lesions. The World Health Organization has categorized soft-tissue liposarcomas into 5 distinct histologic subtypes: well differentiated, dedifferentiated, myxoid, pleomorphic, and mixed type. Well-differentiated liposarcomas frequently demonstrate a diagnostic appearance on computed tomographic (CT) or magnetic resonance (MR) images, with a largely lipomatous mass (>75% of the lesion) and nonlipomatous components in thick septa or focal nodules. The CT or MR imaging finding of a nodular dominant focus (>1 cm in size) of nonlipomatous tissue in a well-differentiated liposarcoma suggests dedifferentiated liposarcoma, and biopsy should be directed at the nonadipose component. The high water content of myxoid liposarcoma seen at pathologic analysis and constituting the majority of the lesion is reflected at sonography, CT, and MR imaging. However, the detection of a small amount of adipose tissue in the septa or as small nodular foci superimposed on the background of myxoid tissue allows prospective diagnosis in 78%-95% of myxoid liposarcomas. Pleomorphic liposarcomas are high-grade sarcomatous lesions and typically appear as heterogeneous soft-tissue masses, although small amounts of fat are seen on MR images in 62%-75% of cases, findings that suggest the diagnosis. Mixed-type liposarcomas have features representing a combination of the other subtypes. Primary liposarcoma of bone is exceedingly rare and usually demonstrates aggressive nonspecific features, although fat may be seen. Understanding and recognition of the spectrum of appearances of the various types of musculoskeletal liposarcoma, which reflect their underlying pathologic characteristics, improves radiologic assessment and is vital for optimal patient management.

Radiographics. 2005;25(5):1371-1395.

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1. Abbott GF, Rosado-de-Christenson ML, Frazier AA, Franks TJ, Pugatch RD, Galvin JR. From the archives of the AFIP: lymphangioleiomyomatosis: radiologic-pathologic correlation. *Radiographics*. 2005 May-Jun;25(3):803-828.
2. Agrons GA, Courtney SE, Stocker JT, Markowitz RI. From the archives of the AFIP: lung disease in premature neonates: radiologic-pathologic correlation. *Radiographics*. 2005 Jul-Aug;25(4):1047-1073.
3. Chu WS, Furusato B, Wong K, Sesterhenn IA, Mostofi FK, Wei MQ, Zhu Z, Abbondanzo SL, Liang Q. Ultrasound-accelerated formalin fixation of tissue improves morphology, antigen and mRNA preservation. *Mod Pathol*. 2005 Jun;18(6):850-863.
4. Fetsch JF, Laskin WB, Miettinen M. Palmar-plantar fibromatosis in children and preadolescents: a clinicopathologic study of 56 cases with newly recognized demographics and extended follow-up information. *Am J Surg Pathol.* 2005 Aug;29(8):1095-105.
5. Gray MA. Clinical use of serum prostate-specific antigen: a review. *Clin Lab*. 2005;51(3-4):127-133.
6. Jones SW, Dobson ME, Francesconi SC, Schoske R, Crawford R. DNA assays for detection, identification, and individualization of select agent microorganisms. *Croat Med J*. 2005 Aug;46(4):522-529.
7. Krafft AE, Lichy JH. Time-motion analysis of 6 cystic fibrosis mutation detection systems. *Clin Chem*. 2005 Jul;51(7):1116-1122. Epub 2005 Apr 28.
8. Levy AD, Taylor LD, Abbott RM, Sobin LH. Duodenal carcinoids: imaging features with clinical-pathologic comparison. *Radiology*. 2005 Oct 19. [Epub ahead of print]
9. Lo SC, Wang RY, Grandinetti T, Zou N, Hayes MM, Shih JW, Wear DJ. Mycoplasma penetrans infections and seroconversion in patients with AIDS: identification of major mycoplasmal antigens targeted by host antibody response. *FEMS Immunol Med Microbiol.* 2005 Jun 1;44(3):277-282.
10. Man YG, Shen T, Zhao Y, Amy Sang QX. Focal prostate basal cell layer disruptions and leukocyte infiltration are correlated events: a potential mechanism for basal cell layer disruptions and tumor invasion. *Cancer Detect Prev.* 2005;29(2):161-169.
11. Miettinen M, Lasota J. KIT (CD117): a review of expression in normal and neoplastic tissues, and mutations and their clinicopathologic correlation. *Appl Immunohistochem Mol Morphol*. 2005 Sep;13(3):205-220.
12. Riudavets, Mena H, Bouffard JP, Sandberg G, Rushing EJ. Relationship between radiation injury and Alzheimer-related neurodegenerative changes. Clin Neuropathol. 2005 Sep-Oct;24(5):236-8.
13. Saturday GA, Lasota J, Frost D, Brasky KB, Hubbard G, Miettinen M. KIT-positive gastrointestinal stromal tumor in a 22-year-old male chimpanzee (Pan troglodites). *Vet Pathol.* 2005 May;42(3):362-365.
14. Taubenberger JK, Reid AH, Lourens RM, Wang R, Jin G, Fanning TG. Characterization of the 1918 influenza virus polymerase genes. *Nature*. 2005 Oct 6;437(7060):889-893.