

Zerhouni Steps Down at NIH

Elias A. Zerhouni, MD, director of the National Institutes of Health (NIH), announced on September 24 his intention to resign at the end of October to pursue writing projects and other professional opportunities. A physician-scientist and world-renowned leader in radiology research, Zerhouni has served as NIH director since 2002. He led the agency through a challenging period that required innovative solutions to transform basic and clinical research into benefits for patients and their families. One of the hallmarks of his tenure has been the NIH Roadmap for Medical Research, launched in 2003. This effort brought together all of the 27 institutes and centers that make up the NIH to work together to fund compelling research initiatives that promise major effects in science.

Zerhouni also launched new programs, such as the Director's Pioneer Awards and New Innovator Awards, to encourage high-risk innovative research and focused especially on the need to support new investigators and foster their independence. He has worked to lower barriers between disciplines of science and encourage trans-NIH collaborations. He has also led a major reform of the translational and clinical research system in the United States and worked to improve public access to scientific information. These efforts, along with his continual advocacy for the public's investment in NIH, contributed to Congressional passage of the NIH Reform Act of 2006, which was seen as a sign of renewed confidence in NIH.

"I have had the privilege of leading one of the greatest institutions in the world for 6 and a half years," Zerhouni said. "NIH's strength comes from the extraordinary commitment and excellence of its people in serving a noble mission. It also comes from the nation's scientific community, whose discover-

ies alleviate the suffering of patients throughout the world. Over the past 6 years, we experienced a revolution in the biomedical sciences, and I feel fortunate to have been part of it. I will miss the NIH and all my colleagues, not only for their friendship and support through thick and thin but also for their essential role in the progress we made in advancing innovative research, fostering scientific collaboration, supporting young scientists, and enhancing basic, translational, and clinical research, despite great challenges."

"Elias has been a powerful voice for the medical research community as head of the NIH. His tenure has been marked by the spirit of collaboration, good management, and transformation. The Roadmap for Medical Research that he developed and implemented will benefit the health of this nation for many years to come," said Secretary of Health and Human Services Michael O. Leavitt. "His many achievements include promotion of genetic research, support for advances of biodefense research, and helping raise awareness of women's heart disease. I want to thank Elias for his leadership and wish him the best of luck as he begins this new chapter."

National Institutes of Health

JNM Full Text Available Earlier

SNM announced in September that all of the contents of *The Journal of Nuclear Medicine* (JNM) would now be freely available to the public 6 mo after publication. Nonsubscribers previously could not access this content until 12 mo after publication without paying a per-article fee. The journal's editorial board and the society's board of directors approved expediting open access to help disseminate new research and increase understanding and sound practice of nuclear medicine and molecular imaging. In addition, beginning with papers published in the January 2009

issue of JNM, the journal will be published in full color.

JNM was recently ranked second among 87 imaging publications by the Thomson Reuters Institute for Scientific Information's (ISI) *Journal Citations Report* in recognition of exceptional quality and influence as an academic and professional resource. This ranking directly reflects the degree to which a scientific journal is considered an essential and influential resource for clinicians, academics, and other researchers. ISI's "impact factor" is based to a significant extent on the number of times articles are cited in relation to the total number of articles published. Since 2006, JNM citations have grown nearly 10%.

"*The Journal of Nuclear Medicine* is leading the way in nuclear medicine and molecular imaging," said Heinrich R. Schelbert, MD, editor-in-chief of JNM. "It continues to attract a growing number of submissions from researchers at prestigious organizations throughout the United States and internationally. As a leading multidisciplinary, international scientific and professional society, one of SNM's primary goals is to promote access to critical and valuable information that helps shape the future of our field and provide patients with the best health care information possible."

SNM

New NIBIB Council Members

The National Institute of Biomedical Imaging and Bioengineering (NIBIB) announced on September 16 the appointment of 2 new members to its Advisory Council. The council serves as the principal advisory body to NIBIB, a component of the National Institutes of Health, and meets 3 times each year to provide recommendations on research priorities and opportunities in biomedical imaging, bioengineering, and research training. One new member is Philip O. Alderson, MD, a nuclear

medicine physician, diagnostic radiologist, and dean of the Saint Louis University School of Medicine (MO). He is a past president of the Academy for Radiology Research. Before joining Saint Louis University, he was chair of the department of radiology at Columbia–Presbyterian Medical Center and James Picker Professor of Radiology at the College of Physicians and Surgeons at Columbia University (both in New York, NY). While at Columbia, he championed the integration of bioengineering and radiology and promoted the rapidly developing field of molecular imaging. Alderson received his medical degree from Washington University in St. Louis. The second appointee is Cherri M. Pancake, PhD, a professor of electrical engineering and computer science and Intel faculty fellow at Oregon State University (Corvallis). She is a pioneer in applying ethnographic techniques to identify software usability problems in science and business communities. Members of the Advisory Council are drawn from the scientific communities, appointed for 4-y terms, and represent all areas within the institute's research mission.

National Institute of Biomedical Imaging and Bioengineering

NIDDK Issues Thyroid Fact Sheets

On September 24, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health, released 4 new fact sheets on hypothyroidism and hyperthyroidism for consumers and health care providers. Separate fact sheets focus on each of these conditions, including causes and symptoms, as well as diagnostic and treatment information (www.endocrine.niddk.nih.gov/pubs/Hyperthyroidism and www.endocrine.niddk.nih.gov/pubs/Hypothyroidism). The other fact sheets focus on Graves disease (www.endocrine.niddk.nih.gov/pubs/graves) and on pregnancy and thyroid disease (www.endocrine.niddk.nih.gov/pubs/pregnancy). All of the sheets include common questions and additional resources, and nuclear medi-

cine procedures are explained briefly and clearly. The sheets can be printed for distribution to patients and their families.

National Institute of Diabetes and Digestive and Kidney Diseases

NIH Funds Molecular Probe Centers

The funding of a network of 9 centers that will use high-tech screening methods to identify small molecules for use as probes to investigate the diverse functions of cells was announced on September 2 by the National Institutes of Health (NIH). The network, funded at approximately \$70 million annually over the 4-y production phase, is designed to increase the pace of development and use of chemical (small molecule) probes for exploring biologic processes and developing new therapies for disease. "This network marks a new era in academic and government research, as NIH-funded scientists will have access to the tools for rapidly screening hundreds of thousands of small molecules against many novel biological assays at lower costs than previously possible," said Elias A. Zerhouni, MD, NIH director. "The information generated by this network will be important to developing a greater understanding of biology and its complexity, while hopefully discovering novel approaches to therapies and prevention, especially for rare or neglected diseases."

The Molecular Libraries Probe Production Centers Network is the second phase of a program begun in 2004 as part of the Molecular Libraries and Imaging Initiative (<http://nihroadmap.nih.gov/molecularlibraries/>) under the NIH Roadmap for Medical Research. Using assays solicited by NIH from the research community, the network will screen a library of more than 300,000 small molecules maintained in the program's Molecular Libraries Small Molecule Repository (http://mlsmr.glpg.com/MLSMR_HomePage/). The repository is located in San Francisco at Biofocus DPI, a drug discovery research company. Data generated by the screening are available to the public

through PubChem (<http://pubchem.ncbi.nlm.nih.gov/>), a database created and managed by the National Library of Medicine.

The National Institute of Mental Health (NIMH) and the National Human Genome Research Institute (NHGRI) will coadminister the network on behalf of NIH. Program funding will transition out of the Roadmap in years 5 and 6. "Discoveries from genomics and proteomics have given us thousands of new proteins but little understanding of what many of them do in the cell," said Thomas R. Insel, MD, NIMH director. "This screening effort will identify small molecules that influence these newly discovered proteins, allowing us to understand how many of them function. And for proteins involved in disease states, today's small molecule could be tomorrow's medication."

"This collaborative effort will give academic and government researchers in the global research community robust chemical tools to understand the cellular mechanisms of disease and a much more vigorous way to identify useful biological targets," said NHGRI Acting Director Alan E. Guttmacher, MD.

Four institutions were funded as comprehensive centers: the Burnham Center for Chemical Genomics (La Jolla, CA), the Broad Institute Comprehensive Screening Center (Cambridge, MA), the NIH Chemical Genomics Center (Bethesda, MD), and the Comprehensive Center for Chemical Probe Discovery Optimization at Scripps (La Jolla, CA). Three institutions were funded as specialized screening centers: the Johns Hopkins Ion Channel Center (Baltimore, MD), the Southern Research Specialized Biocontainment Screening Center (Birmingham, AL), and the University of New Mexico Center for Molecular Discovery (Albuquerque, NM). The remaining 2 institutions were funded as specialized chemistry centers: the University of Kansas Specialized Chemistry Center (Lawrence, KS) and the Vanderbilt Specialized Chemistry Center for Accelerated Probe Development (Nashville, TN).

Additional information is available at www.genome.gov.

National Institutes of Health

Ultrasound Contrast Society Formed

A new international and cross-disciplinary professional society, the International Contrast Ultrasound Society (ICUS), was launched in Chicago, IL, on September 26 at a conference on Advances in Contrast Ultrasound: Enhanced Atherosclerotic Imaging and Intervention. The new society will be devoted to overcoming challenges in the field of contrast ultrasound and increasing its role in improving patient care worldwide. The creation of the society was a result of a controversial decision by the U.S. Food and Drug Administration (FDA) to impose limitations on the use of contrast ultrasound. This decision was largely reversed in May after opposition from contrast ultrasound experts, who marshaled scientific data on the life-saving potential of improved contrast ultrasound diagnoses. The collaborative effort to respond to the FDA provided the initial impetus to form an organization focused on contrast ultrasound.

The group's initial press release noted that although contrast ultrasound agents are available in more than 70 countries, only 4 such agents are available for approved indications. "There is growing interest worldwide in expanding the approved uses of contrast ultrasound, not just for imaging the heart, but also for diagnosing abnormalities of the liver, carotid arteries, gastrointestinal system, kidneys, and other organ systems throughout the body," said Steven Feinstein, MD, copresident of ICUS and director of echocardiography at Rush University Medical Center (Chicago, IL). Barry Goldberg, MD, copresident of ICUS and past president of the American Institute of Ultrasound in Medicine and the World Federation of Ultrasound in Medicine and Biology, added that the organization will provide a forum for cross-specialty communication and collaboration among contrast ultrasound professionals worldwide: "Collabora-

tion and inclusiveness are key to the growth of the field and, ultimately, will significantly improve patient care."

Founding ICUS board members include contrast ultrasound experts from North America, Europe, Asia, and Latin America. ICUS plans to sponsor a newsletter, educational outreach to government regulatory agencies, and professional education for physicians and sonographers. ICUS also will provide leadership in contrast ultrasound research and development. The organization Web site is at www.contrastultrasoundsociety.org.

International Contrast Ultrasound Society

Nanotechnology a Focus for National Medals

In a ceremony in the East Room at the White House on the morning of September 29, President George W. Bush awarded National Medals of Science and National Medals of Technology to a group of 8 individuals recognized as leading researchers, inventors, and innovators. Detailed information on each awardee's scientific research, released through the White House, suggested that nanotechnology and nanomedicine are gaining recognition as fundamental to the advancement of a range of scientific endeavors. The laureates included:

Fay Ajzenberg-Selove, PhD (University of Pennsylvania, Philadelphia) was recognized for her pioneering contributions in nuclear physics that have advanced research into many applications, including energy generation from fusion, dating of artifacts, and nuclear medicine; her passion for teaching; and outstanding service to her profession. Ajzenberg-Selove is the author of *Nuclear Spectroscopy and Energy Levels of Nuclei*.

Mostafa El-Sayed, PhD (Georgia Institute of Technology; Atlanta, GA), was praised for his seminal contributions to understanding of the electronic and optical properties of nanomaterials and their applications in nanocatalysis and nanomedicine; his humanitarian efforts in promoting the exchange of

ideas; and his role in developing the scientific leadership of tomorrow. His lab is known for the development of the gold nanorod technology, and major foci currently are on the optical and chemical properties of noble metal nanoparticles and their applications in nanocatalysis, nanophotonics, and nanomedicine. The El-Sayed group has also been involved in the development of new techniques such as magnetophoto selection, picosecond Raman spectroscopy, and phosphorescence microwave double resonance spectroscopy.

Leonard Kleinrock, PhD (University of California, Los Angeles), was honored for his fundamental contributions to the mathematical theory of modern data networks and for the functional specification of packet switching, which is the foundation of Internet technology.

Robert Lefkowitz, PhD (Duke University, Durham, NC), was recognized for his discovery of the 7 transmembrane receptors, deemed the largest, most versatile, and most therapeutically accessible receptor signaling system, and for describing the general mechanism of their regulation, influencing all fields of medical practice. He is best known for his work with G protein-coupled receptors, and his research program is concerned with the molecular properties and regulatory mechanisms that control the function of plasma membrane receptors for hormones and drugs under normal and pathologic circumstances.

Bert W. O'Malley, MD (Baylor College of Medicine; Houston, TX), was praised for his pioneering work on the molecular mechanisms of steroid hormone action and hormone receptors and coactivators, which has added significantly to knowledge of steroid hormones in normal development and in diseases, including cancer. His laboratory group researches fundamental mechanisms for regulation of eukaryotic gene expression. Their early work defined the primary molecular endocrine pathway by which steroid hormones act in target cells.

Charles P. Slichter, PhD (University of Illinois at Urbana-Champaign),

was honored for establishing nuclear MR as a powerful tool to reveal the fundamental molecular properties of liquids and solids.

Andrew J. Viterbi, PhD (University of California, San Diego), was recognized for his development of the maximum-likelihood algorithm for convolutional coding (known as the Viterbi algorithm) and for his contributions to Code Division Multiple Access wireless technology, which transformed the theory and practice of digital communications.

David Wineland, PhD (National Institute of Standards and Technology; Boulder, CO), was honored for his leadership in developing the science of laser cooling and manipulation of ions, with applications in precise measurements and standards, quantum computing, and fundamental tests of quantum mechanics; his impact on the international scientific community through the training of scientists; and his outstanding publications.

National Science Foundation

Repaying Loans Through Research

In a press release on September 9, the National Institutes of Health reminded the scientific community of its extramural Loan Repayment Programs (LRPs) with an awareness-raising campaign slogan that “You do the research. NIH will repay your student loans.” The LRPs repay up to \$35,000 of educational loan debt annually for individuals who commit to conducting at least 2 y of qualified biomedical or behavioral research at a nonprofit institution of their choice. The annual application cycle for the 5 extramural LRPs (Clinical Research, Pediatric Research, Health Disparities Research, Contraception and Infertility Research, and Clinical Research for Individuals from Disadvantaged Backgrounds) began on September 1 and will continue until December 1.

“The purpose of these programs is to recruit and retain highly qualified health professionals as scientific investigators,” explained Norka Ruiz Bravo, PhD, NIH deputy director for extramural

research. “Expanding the pool of researchers is critical to the health of our nation, and the LRPs play an important role in researcher retention.” Participants receive loan repayment benefits and tax offsets, which serve as a means of helping them remain in the scientific workforce. Each year, approximately 1,600 research scientists benefit from the more than \$70 million NIH invests in their careers through extramural LRPs. On average, approximately 40% of all new LRP applications are funded.

Applicants often learn about the LRPs from colleagues, faculty, and mentors, and many applicants report that having a mentor was an important factor in developing a successful application. To qualify for the LRPs, applicants must possess a doctoral-level degree (except for the Contraception and Infertility Research LRP); devote at least 20 h/wk to research funded by a domestic nonprofit organization or federal, state, or local government entity; have educational loan debt equal to or exceeding 20% of their institutional base salary; and be a U.S. citizen, national, or permanent resident. More information and applications are available at www.lrp.nih.gov.

National Institutes of Health

New ACMUI Appointments

The Nuclear Regulatory Commission (NRC) announced on September 10 the appointment of Steven R. Mattmuller and Debbie B. Gilley as new board members on the Advisory Committee on the Medical Uses of Isotopes (ACMUI). The ACMUI was established in 1958 and advises the NRC on policy and technical issues related to regulation of the medical use of radioactive material. Mattmuller is the chief nuclear pharmacist at Kettering Medical Center (OH) and has been serving as the nuclear pharmacist representative on the ACMUI. He is the chair-elect of the Nuclear Pharmacy Practice Section of the Academy of Pharmacy Practice and Management of the American Pharmacists Association. Gilley has been serving as the state government representative on the ACMUI. She is an environmental manager for Florida’s Bureau of Radi-

ation Control. She is a past chair of the Conference of Radiation Control Program Directors and is a consultant to the International Atomic Energy Agency.

Nuclear Regulatory Commission

Science.gov 5.0

Science.gov 5.0, the latest version of Science.gov, was launched on September 15, allowing users to search additional collections of valuable science resources, more easily target searches, and find links to information on a variety of science topics. The site is a free, integrated single-search gateway to reliable science and technology information from 17 organizations within 13 federal science agencies. The site improves on the previous version (Science.gov 4.0) by offering 7 new databases and portals that give researchers access to more than 200 million pages of scientific information. Among the new resources are thousands of patents resulting from U.S. Department of Energy (DOE) research and development, millions of electronic scientific documents from around the world (known as e-prints), and comprehensive and peer-reviewed toxicology data for thousands of chemicals as well as more than 3 million references to worldwide literature on the adverse effects of chemicals on living organisms. New information also includes a digital archive of biomedical and life sciences journal literature and cancer-related information for all audiences, including support and treatment resources for patients, comprehensive descriptions of research programs and clinical trials, and funding opportunities for researchers. Another key feature of Science.gov 5.0 is a “clustering” tool that helps target searches by grouping results by subtopics or dates.

In addition to quadrupling the amount of searchable content and enhancing the search technology, Science.gov 5.0 now provides links to related EurekAlert! Science News and Wikipedia and offers the capability to download research results into personal files or citation software. Science.gov is hosted by the Office of Scientific and Technical Information (OSTI) within the DOE Office of Science. Science.gov is also supported

by contributing members of the Science.gov Alliance, including the Departments of Agriculture, Commerce, Defense, Education, Health and Human Services, and the Interior; the Environmental Protection Agency; the Government Printing Office; the Library of Congress; the National Aeronautics and Space Administration; and the National Science Foundation.

U.S. Department of Energy

Alton R. Sharpe, Jr., MD

Alton R. Sharpe, Jr., MD, an early nuclear medicine practitioner who was instrumental in founding the nuclear medicine lab at McGuire Veterans Affairs Medical Center and the Division of Nuclear Medicine at the Virginia Commonwealth University (VCU) Medical Center (both in Richmond), died on August 14. He was 79 y old.

A native of Richmond, Sharpe graduated from the University of Richmond and the Medical College of Virginia (MCV; later VCU). While at MCV, he

learned about radioactive iodine treatment in a class taught by Richard Kirkland, MD. Sharpe graduated from MCV in 1953 and entered the Navy. He served as the officer-in-charge of the nuclear medicine laboratory at the Portsmouth (VA) Naval Hospital from 1958 to 1960. After service at McGuire in the 1960s, he joined the MCV faculty in 1967. After chairing the nuclear medicine division for a number of years, he retired from VCU in 1992 to open a private practice. He retired fully in 2004. He was a fellow of the American College of Physicians and a diplomate of the American Board of Internal Medicine and the American Board of Nuclear Medicine.

Richmond Times-Dispatch

NEMA's Small Animal PET Performance Metrics

The National Electrical Manufacturers Association (NEMA) announced on September 30 the release of *Perfor-*

mance Measurements for Small Animal Positron Emission Tomographs (NU 4-2008). According to Stefan Siegel, PhD, a member of the NEMA Animal PET Standard Task Force that prepared this document, "These specifications represent a subset of measurements that characterize the performance of positron emission tomographs when performing imaging tasks encountered at small animal imaging facilities. A concerted effort has been made to develop a standard that is independent of camera design and that is applicable across a wide range of camera models and geometries, while establishing a reliable baseline of system performance in typical imaging conditions."

The contents and scope of NEMA NU 4-2008 may be viewed by visiting NEMA's Web site at www.nema.org/stds/nu4.cfm, and both hard copy and electronic downloads are available for a fee.

National Electrical Manufacturers Association

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collimator design, and evaluated the trade-offs between spatial resolution and sensitivity. He also played key roles in creating the University of Chicago's PET facility, helping to build one of the first PET scanners in the Midwest in 1981. In addition, he led the initiative to establish the University of Chicago Medical Center's first MR imaging facility, the Goldblatt MRI Center, in 1985.

A prolific researcher and author, Beck published nearly 250 scientific papers, lectured at imaging conferences all over the world, and served on national and international committees in the field, including those of the SNM and the International Atomic Energy Agency. After retirement in 1998, he continued to make theoretical contributions, including nationally published perspectives on defining the scope and unique intellectual agenda of the imaging sciences.

Beck won several awards for his work. In 1991 he received the Aebersold Award for outstanding achievement from SNM and the Computerworld Smithsonian Nominee Award for visionary use of information technology in the field of imaging science. In 1996 he received the Medical Imaging Scientist Award from the Institute of Electrical and Electronics Engineers. In 2006, the University of Chicago awarded him the Paul C. Hodges

Alumni Society Excellence Award. He was also respected as a teacher and mentor. Beck taught the physics of nuclear medicine course at the University of Chicago for 30 y and helped to establish the graduate program in medical physics. He designed an imaging exhibit that opened in 1993 at the Museum of Science and Industry in Chicago and went on to be named the best museum science exhibit in the United States that year.

"His vision and passion for nuclear medicine and imaging science have inspired our own lifelong commitment to research in these areas," Chen said. "He taught and led by example, and he set a fine one, always thinking about others before worrying about himself."

The 2008 Chicago Nuclear Medicine Forum, held in Chicago on September 25 and 26, commemorated more than 50 y of landmark nuclear medicine research and development at the University of Chicago since the Argonne Cancer Research Hospital was established in 1953. The forum was held in conjunction with a memorial for Beck and was held in honor of the pioneering contributions of Harper, Beck, Lathrop, and their colleagues. This meeting was the first in a series of similar symposia now being planned as an annual event.

University of Chicago