

## Obama Administration Appoints Scientists with Reach in Materials Research

On April 27, during remarks at the National Academy of Sciences, President Barack Obama announced the President's Council of Advisors on Science and Technology (PCAST).

President Obama said, "This council represents leaders from many scientific disciplines who will bring a diversity of experience and views. I will charge PCAST with advising me about national strategies to nurture and sustain a culture of scientific innovation."

PCAST will be co-chaired by John Holdren, Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy; Eric Lander, Director of the Broad Institute of the Massachusetts Institute of Technology and Harvard University and one of the principal leaders of the Human Genome Project; and Harold Varmus, President and CEO of Memorial Sloan-Kettering Cancer Center, former head of the National Institutes of Health, and a Nobel laureate.

Among the members of PCAST are scientists with a materials research association. PCAST member **Chad Mirkin** is Professor of Materials Science and Engineering, Chemistry, and Medicine at Northwestern University, as well as director of Northwestern's International Institute of Nanotechnology. He is a leading expert on nanotechnology, including nanoscale manufacturing and applications to medicine. Awarded the Feynman Prize in Nanotechnology in 2002, he is one of the top-cited researchers in nanomedicine, as well as one of the most widely cited chemists. In 1999, Mirkin received the Materials Research Society's Outstanding Young Investigator Award for his "pioneering and leadership role in developing a new interdisciplinary field in which complex biological macromolecules are used to assemble inorganic nanoparticle building blocks into functional meso- and macroscopic structures."

**Shirley Ann Jackson**, the 18th president of Rensselaer Polytechnic Institute and former chair of the U.S. Nuclear Regulatory Commission (1995–1999), accepted an appointment to the council. She is the University Vice Chair of the U.S. Council on Competitiveness, a member of the National Academy of Engineering, fellow of the Academy of Arts and Sciences, and past president of the American Association for the Advancement of Science. From 1991 to 1995, she was a physics professor at Rutgers University while concurrently serving as a consultant in semiconductor

theory to AT&T Bell Laboratories. Prior to that, Jackson conducted research in theoretical physics, solid-state and quantum physics, and optical physics at AT&T Bell Laboratories in Murray Hill, New Jersey.

Former Associate Director for Science in the White House Office of Science and Technology Policy (1995–1997) **Ernest J. Moniz** joins PCAST. Moniz is a Professor of Physics and Engineering Systems, director of the Energy Initiative, and director of the Laboratory for Energy and the Environment at the Massachusetts Institute of Technology. His research centers on energy technology and policy, including the future of nuclear power, coal, natural gas, and solar energy in a low-carbon world. He has served as Under Secretary of the Department of Energy from 1997 to 2001.

Holdren said, "This PCAST is a group of exceptional caliber as well as diversity, covering a wide range of expertise and backgrounds across the relevant science, engineering and innovation fields and sectors. The President and I expect to make major use of this extraordinary group as we work to strengthen our country's capabilities in science and technology and bring them more effectively to bear on the national challenges we face."

The full membership of PCAST can be accessed at [www.ostp.gov/cs/pcast](http://www.ostp.gov/cs/pcast).

In addition to the appointments in PCAST, in mid-April the president nominated **William F. Brinkman** for director of the Office of Science in the Department of Energy. Brinkman is currently a Senior Research Physicist in the Physics Department at Princeton University. He retired as Vice President of Research from Bell Laboratories, Lucent Technologies, where his responsibilities included the direction of all research to enable the advancement of the technology underlying Lucent Technologies' products. Previous to this position he was Physical Sciences Research Vice President and Vice President of Research at Sandia National Laboratories in Albuquerque.

Brinkman is a member of the American Philosophical Society, National Academy of Sciences, and the American Academy of Arts and Sciences. He has served on a number of national committees, including chairmanship of the National Academy of Sciences Physics Survey and their Solid-State Sciences Committee.

Also in the Department of Energy (DOE), **Linda Horton** has been named director of the Materials Sciences and Engineering Division in the Office of Basic Energy Sciences (BES). The appointment became effective on April 26. Horton, well-known to the materials sciences community, has most recently been the director for the Center for Nanophase Materials Sciences (CNMS) at Oak Ridge National Laboratory, one of the five BES national user facilities for nanoscale science research. Under her leadership, the CNMS has grown from its opening in FY2006 to now house a strong interdisciplinary scientific program, which hosts a user community that reached over 400 users last year. Horton currently serves on the Board of Directors for the Materials Research Society and on the advisory committees for the Engineering and Physical Sciences Research Council (EPSRC) for Nanotechnology and for Energy in the United Kingdom. She was involved in a number of assessments and workshops for BES, other parts of DOE, and for other federal agencies. Most notably, she served as co-chair of the 2002 BES Advisory Committee workshop *Basic Research Needs to Assure a Secure Energy Future*, the first of the BES "Basic Research Needs" workshops. Harriet Kung, Associate Director of Science for Basic Energy Sciences at the DOE Office of Science made the announcement.

## Materials Businesses Benefit from U.S. Stimulus Bill

During an event held in March in Washington DC, "Investing in the Clean Energy Economy," President Barack Obama met with clean energy entrepreneurs, venture capitalists, and leaders of

### NIBIB Issues Call for Peer Reviewers

Foreseeing an extraordinarily high demand for peer reviewers to review grant applications in response to the initiatives from the American Recovery and Reinvestment Act (ARRA), the National Institute of Biomedical Imaging and BioEngineering (NIBIB) is soliciting volunteers from the extramural community willing to serve on NIBIB and National Institutes of Health peer review panels this summer and in the future. Applicants being reviewed by one peer review panel can participate as a reviewer on a different review panel. Candidates interested in serving should send their contact information, including full name with middle initial, degree(s), institutional affiliation(s), e-mail address, telephone number(s), keywords describing their area of expertise, and a copy of their curriculum vitae as an e-mail attachment to [nibibreviewer@mail.nih.gov](mailto:nibibreviewer@mail.nih.gov).

the research community to discuss his strategy for building a clean energy economy and creating the industries and jobs of the future.

The President's 10-year budget plan proposes almost \$75 billion to make the Research and Experimentation Tax Credit permanent, stimulating private-sector investment in R&D, and keeping the U.S. economy at the cutting-edge of 21st century technologies, according to the administration.

According to the White House, studies have shown that every dollar of tax benefit stimulates as much as an additional dollar of private R&D spending in the short run and two dollars in the long run. Two-thirds of benefits of the credit are attributable to salaries of U.S. workers performing U.S.-based research, and the credit stimulates R&D spending by more than 11,000 small, medium, and large firms, the White House said.

### U.S. Department of Energy Announces Completion of National Ignition Facility

The U.S. Department of Energy (DOE) announced in March that the National Nuclear Security Administration (NNSA) has certified the completion of the National Ignition Facility (NIF), housed at the DOE Lawrence Livermore National Laboratory. The National Ignition Facility is expected to allow scientists to achieve fusion ignition in the laboratory, obtaining more energy from the target than is provided by the laser. The completion of NIF opens the door to scientific advancement and discovery with the goals to enhance U.S. national security, help break U.S. dependence on foreign oil, and to lead to new breakthroughs in materials science and many other scientific disciplines, according to DOE.

"NIF will be a cornerstone of a critical national security mission, ensuring the continuing reliability of the U.S. nuclear stockpile without underground nuclear testing, while also providing a path to explore the frontiers of basic science, and potential technologies for energy independence," said NNSA Administrator Thomas D'Agostino.

NIF is a critical part of NNSA's mission of maintaining the safety and reliability of nuclear deterrent without conducting

nuclear testing. With NIF, scientists will be able to evaluate key scientific assumptions in current computer models, obtain previously unavailable data on how materials behave at temperatures and pressures like those in the center of a star, and help validate NNSA's supercomputer simulations by comparing code predictions against observations from laboratory experiments.

Because of its groundbreaking advance in technology, NIF also has the potential to produce breakthroughs in fields beyond national security. It may help advance fusion energy technology, which could be an element of making the United States energy independent, according to DOE.

The stadium-sized NIF is capable of focusing all of its 192 individual beams into a spot about one-half millimeter in diameter at the center of its 10-meter diameter target chamber.

According to DOE, NIF has already produced historic scientific advances. Earlier in March, NIF became the first fusion laser to break the megajoule barrier by delivering 1.1 million joules of ultraviolet energy to the center of its target chamber—more than 25 times more energy than the previous record-holder.

More information about the National Ignition Facility is available online at <https://lasers.llnl.gov>.

### National Natural Science Foundation of China and Chinese Academy of Sciences Create Joint Fund

On February 17, the National Natural Science Foundation of China (NSFC) and the Chinese Academy of Sciences (CAS) signed an agreement on the NSFC-CAS Joint Fund for Research Based on Large-Scale Scientific Facilities. The Joint Fund will be implemented on the basis of such scientific facilities as Beijing Electron Positron Collider (BEPC), Beijing Synchrotron Radiation Facility, Heavy Ion Research Facility in Lanzhou Cooler Storage Ring (HIRFL-CSR), Shanghai Synchrotron Radiation Facility, and Hefei Synchrotron Radiation Facility.

All universities and research institutions in China are welcome to apply for the Joint Fund by focusing on three areas of research: (1) research based on platform facilities, such as synchrotron radiation facilities and heavy ion sources, with spe-

cial emphasis on interdisciplinary research; (2) research based on specialized facilities, such as high energy physics research on the basis of BEPC and Beijing Spectrometer and nuclear physics research on the basis of HIRFL-CSR; and (3) experimental technology and methods for the enhancement of research capability of large-scale scientific facilities, developmental research on mini-type specialized equipment, and research on key technologies, such as synchrotron radiation, data analysis platform, radiation protection, probing technology, fast electronic technology, and accelerator technology.

Main research topics cover scientific issues at the forefront of materials science (i.e., physics, chemistry, and materials science), information science, key issues in biological science (i.e., biophysics and medical science), key issues in environmental and resources science, interdisciplinary scientific issues, diagnostic technology, manufacturing, improvement and development of mini-type specialized experimental equipment, and methods and research on data acquisition, processing, and storage technology and on key technologies as previously listed.

During the signing ceremony in Beijing, Chen Yiyu, president of NSFC, said the Joint Fund is established to support researchers from universities and research institutions to effectively carry out their work on the national research platforms already built up by CAS on the basis of its large-scale scientific facilities. The Joint Fund will play an active role in promoting the construction and sharing of large-scale scientific facilities, breaking the fragmented, isolated, duplicated and scattered pattern of scientific research facilities and activities in China, enhancing the integration of resources, and strengthening the scientific research interactions among different research institutions on the one hand and that between research institutions and universities on the other hand, Chen said.

Bai Chunli, executive vice president of CAS, said the establishment of the Joint Fund is both a significant event in the scientific community in China and a strategic move jointly adopted by NSFC and CAS in the hope of accelerating basic research in China through the hand-in-glove cooperation between each other. □



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