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policy news from around the world.*

Rita Colwell Retires from NSF

The National Science Foundation (NSF) has announced the retirement of Director Rita R. Colwell, effective February 21, 2004, as she assumes the position of chair of Canon U.S. Life Sciences Inc.

"I am extremely grateful to have had the opportunity to lead NSF through two administrations and major transformational changes," Colwell said. "During the past five and a half years, our budget has increased by 68%, our merit review system has been recognized throughout government as the gold standard for responsible use of public funds, and our programs have helped U.S. science and engineering evolve into the flexible, robust, and diverse endeavors that they must become to keep America preeminent at the frontier of research and education."

Among the highlights of her tenure, Colwell championed increases in grant size, which rose from an annual average of \$90,000 in 1998 to \$142,000 at present, and promoted innovative collaborations across traditional disciplines such as nanoscale science and engineering, bio-complexity in the environment, bioinformatics, and information technology.

In addition, she initiated programs to increase NSF's investment in mathematics and integrate mathematics with the life and social sciences, urged and obtained substantial increases in graduate student stipends, and called for expanded opportunities for minorities and women in the U.S. science and engineering communities. She also created a

program to place promising science and engineering graduate students directly in K-12 classrooms.

Department of Homeland Security Highlights S&T Achievements and Priorities

The U.S. Department of Homeland Security (DHS) has announced that since its inauguration a year ago, it has achieved many operational and policy objectives and is poised to build upon that foundation in the coming year with new key homeland security initiatives.

Among the achievements last year in regard to science and technology was the establishment of the Homeland Security Center of Excellence at the University of Southern California, to foster the development of new technologies and research. Furthermore, the department launched the Homeland Security Scholars and Fellows initiative. The inaugural class of 100 students is dedicated to pursuing new technologies for national security.

Among the department's priorities this year is to support both public and private research efforts to aggressively develop new scientific tools and technologies. DHS is developing a new capability for detecting the presence of nuclear materials in shipping containers and vehicles. This capability identifies the presence of these materials shielded by lead or steel that might otherwise evade more conventional sensor detection. This new capability will then allow the department to probe questionable objects with a beam of radiation

designed to provide information on materials unique to nuclear weapons. DHS is also engaged in developing the next generation of biological and chemical detectors to produce a more sensitive device less subject to producing false positives.

Through the Homeland Security Advanced Research Projects Agency (HSARPA), DHS will engage both small and large businesses to assist in filling technology gaps quickly. HSARPA recently entered contract negotiations with 66 small businesses nationwide to pursue research capabilities to protect the country.

Last February, DHS announced the members of the Science and Technology Advisory Committee. Gen. Larry D. Welch, who was most recently a senior fellow of the Institute for Defense Analyses, is chair of the committee. Among the members are Alice P. Gast, a chemical engineer who is vice president for research and associate provost of the Massachusetts Institute of Technology (MIT) and the MIT Robert T. Haslam Professor of Chemical Engineering. Prior to moving to MIT, Gast spent 16 years as a professor of chemical engineering at Stanford University and at the Synchrotron Radiation Laboratory. Advisory Committee member William Happer of Princeton University specializes in modern optics, and optical and radiofrequency spectroscopy of atoms and molecules. Prior to his current position, Happer served as the director of the Office of Energy Research at the Department of Energy and director of Columbia University's Radiation Laboratory. Member Reginald I. Vachon is chair of Direct Measurements Inc., a developer and supplier of optical strain and fatigue gauges for stress determination. Vachon serves as the president of the American Society of Mechanical Engineers International. Further information on all of the committee members and on the department's priorities this year can be accessed at www.dhs.gov.

Ministry of Science and Technology Highlights 2003 Achievements in India

The Indian Ministry of Science and Technology has announced a review of the achievements made in science and technology (S&T) since the Science Policy of 2003 was released at the Bangalore Science Congress in January last year. The government boosted S&T when it chose to increase research and development (R&D) investment from ~0.8% to 2% of gross national product (GNP) by the end of 2006. The National Innovation Foundation was established to encourage grassroots innovators in an effort to promote basic science.

Upcoming EC Events in Renewable Energy

The European Commission (EC) announced several upcoming events in *RENEWS*, the Renewable Energy Newsletter.

The 13th Sustainable Energy Marie Curie Research Training Fellowship Conference will be held April 17-20, 2004, in Cork, Ireland. The conference theme is Sustainable Energy Systems. For more information, access Web site www.ucc.ie/ucc/research/hmrc/SWERF/index.htm.

The World Council for Renewable Energy will hold the Second World Renewable Energy Forum: Renewing Civilization by Renewable Energy, May 29-31, 2004, in Bonn, Germany. The agenda will build on the process launched in Johannesburg for the global development of renewable energy. For more information, access www.world-renewable-energy-forum.org/.

The 19th European Photovoltaic Solar Energy Conference and Exhibition will be held June 7-11, 2004, in Paris, France, to combine scientific and technological issues from various viewpoints: research and development, industry, utilities, politics, architecture, and end-use. For details, access www.photovoltaic-conference.com/.

The EC is also planning to launch the Renewable Energy and Finance Forum later this year—no date has yet been announced. The objective of this forum is to bring together scientists, companies, entrepreneurs, venture capitalists, investors, policymakers, and institutions to enhance the access of companies working in the renewable energy industry to provide financial institutions and private investors with investment opportunities, to provide technical and managerial support to entrepreneurs, and to disseminate recent research findings.

In the area of technology, technology business incubators (TBIs) have been set up in and around academic and research institutions to catalyze the growth of technology-based startup units. The TBIs offer professional services during the startup phase of the tenant companies (incubatees) for their sustenance and growth. Furthermore, the Nanomaterials Science and Technology Initiative has been launched to promote research and development in this area of science.

More information on the ministry's activities can be accessed at <http://pib.nic.in/>.

CAS Sets Basic Research Priorities for Mid- and Long-Term Development

Fourteen research focuses and six research orientations were defined for basic research in the mid- and long-term development plan of the Chinese Academy of Sciences (CAS), announced by CAS Vice President Bai Chunli last January. The definition of these priorities, Bai said, was aimed to meet the demands for China's socioeconomic advancement and national security.

Among the 14 key research and development areas are nanomaterials, nano-devices, and new functional materials with special structures. Included in the six research orientations for basic research are room-temperature superconductors, nanoscience, and molecular devices.

CAS identifies these areas as key points of strategic importance in the basic disciplines for the coming 5–15 years.

European Technology Partnership to Move toward Hydrogen Economy

European Commission President Romano Prodi launched the European Hydrogen and Fuel Cell Technology Platform on January 20 at its first assembly in Brussels. The platform has the task of drafting a blueprint for easing the European Union's transition from a fossil fuel-based economy to one based on hydrogen. The platform's advisory council includes key players in the European hydrogen sector. "At the current pace,

European Science Foundation Call for Proposals

The European Science Foundation (ESF) is offering in 2005 a limited number of awards for exploratory workshops to allow leading European scientists to meet to explore novel ideas at the European level with the aim of spearheading new areas of research. The physical and engineering sciences is among the disciplines being supported. The aim of an exploratory workshop is to initiate the exchange of knowledge and experiences between researchers from across Europe in an emerging area of research, help establish new collaborative links between different disciplines, and test innovative ideas and develop potential collaborative research projects. **The deadline for receipt of proposals is May 1, 2004.** For details, access <http://www.esf.org/workshops>.

Europe's oil import dependency is set to grow from around 50% today to 70% or more in 2025. Current trends are clearly unsustainable. We have to act now in order to change them," said Prodi. "Europe needs more research, larger demonstration and deployment projects, and regulations and standards appropriate to the future hydrogen economy. These efforts will be successful only if national and European resources, both public and private, are pulled together in a coordinated way."

The creation of the European Hydrogen and Fuel Cell Technology Platform is sponsored by Prodi, along with EC vice president and Energy and Transport Commissioner Loyola de Palacio and Research Commissioner Philippe Busquin.

The European Union has been supporting fuel-cell research since 1989, and the growing importance of this field is reflected in the substantial increase in financial support for fuel-cell research, from €8 million in the 1988–1992 program, to an expected €300 million allocation to hydrogen and fuel-cell research within the 6th Research Framework Programme (FP6, 2002–2006), according to EUROPA, the European Commission's press center. Two more calls for proposals are expected in this area before 2006.

Proceedings about the platform from the meeting in Brussels can be accessed at <http://forum.europa.eu.int/Public/irc/rtd/eurhydrofuelcellplat/library>. The objectives, scope, operational structure, and timelines of the platform are set out in the document posted at Web site http://europa.eu.int/comm/research/energy/nn/nn_rt_htp1_en.html.

China, U.S., Russia Kick Off Global Research Network

China, the United States, and Russia began on January 12 a global network for scientific research, the first of its kind in the North Hemisphere, connecting major scientific centers such as Chicago, Moscow, and Beijing. Experts with the Chinese Academy of Sciences (CAS), the Chinese sponsor of the trilateral project, said the Global Ring Network for Advanced Applications Development (Gloriad) is expected to be an important platform for research for the Next-Generation Internet (NGI).

Qian Hualin, chief coordinator of Gloriad, said that the new links enable research institutes in the three countries to communicate with each other and share scientific data, which might stimulate new advancement in basic research.

Gloriad is proposed as a 10 Gbit/s optical network covering the Northern Hemisphere. The ring begins in Chicago at the Starlight facility (funded by the U.S. National Science Foundation), crosses the Atlantic Ocean to the Netherlight facility in Amsterdam, continues to Moscow and the Russian city of Novosibirsk, goes on to Beijing and Hong Kong, and then crosses the Pacific Ocean to complete the circuit in Chicago.

"It could be used for transmitting scientific data at high speed, which might not be imagined on commercial networks," said Qian, who introduced the Internet into China in 1989 and helped realize the Chinese network infrastructure in 1994.

Gloriad was developed from the U.S.–Russian program known as NaukaNet, which provides Russian scientists access to the NGI in the United States. In reciprocity, U.S. researchers could also be linked to high-performance Internet service in Russia.

The CAS views Gloriad as a vital step toward a Chinese NGI, called the E-Science project, which is scheduled for 2006. □

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www.mrs.org/pa/