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### **U.S. House of Representatives Introduces Bill to Double DOE Funding Levels by FY07**

Among the last-minute items of business conducted in the U.S. House of Representatives before breaking for its summer vacation was the introduction of legislation that seeks to set the Department of Energy's (DOE's) Office of Science on a course to double its budget over the next four years. The bill would also create a new undersecretary position to centralize DOE's basic and applied research programs. Following a July 25 hearing, the new bill, called the Department of Energy Office of Science Authorization Act (H.R. 5270), was formally introduced and referred to the House Science Committee for further consideration.

One major provision of H.R. 5270 is to address DOE's antiquated management structure by creating a new undersecretary of energy research and science with authority over all civilian science research programs that support activities at DOE national laboratories and U.S. research universities.

"An undersecretary, properly credentialed in science or engineering, would be better able to integrate DOE's basic and applied research programs, provide the vital visibility for DOE's science enterprise, and allow the existing undersecretary to concentrate on DOE's important environmental management mission," said Michael Lubell, director of the American Physical Society's (APS's) Office of Public Affairs. Lubell's office helped initiate the effort to introduce this legislation and worked closely with the office of one of the bill's co-sponsors, Rep. Judy Biggert (R-Ill.), and representatives from other scientific societies to develop the bill's language.

Of predominant interest to the scientific community are the bill's provisions for funding increases through FY06 that would essentially set DOE on the path toward doubling its budget. Such substantial increases are necessary, according to Kate Bannan, chair of the Energy Sciences Coalition (ESC), a broad-based group of organizations representing scientists, engineers, and mathematicians in universities, industry, and national laboratories who are committed to supporting and advancing the scientific research programs of DOE and, in particular, the DOE Office of Science. Bannan said that the budget for the Office of Science remains at 1990 levels, in terms of constant dollars, while federal investment in medical and life sciences has more than tripled over the last 30 years.

"Unfortunately, the Office of Science doesn't have a very high profile, and as a result, it often doesn't receive the same kind of attention as other agencies, particularly in a time of tight budgets," she said. As a percentage of the gross domestic product, the federal research and development (R&D) investment for the department is at its lowest point in 40 years.

Yet the office "funds some amazing work," Bannan said, "and I think it is one of the best-kept secrets of the federal R&D portfolio." With an FY02 budget of close to \$3.3 billion, the Office of Science is the principal sponsor of scientific facilities in the United States and the leading federal agency in terms of support for the physical sciences, including the materials and chemical sciences. It played a key role in supporting the Human Genome Project and is a major participant in the National Nanotechnology Initiative, with plans to construct five new Nanoscale Science Research Centers, beginning with the proposed construction of the Center for Nanophase Materials Science at Oak Ridge National Laboratory in FY03, co-located with the Spallation Neutron Source currently under construction at that site.

According to the bill, the stagnant budget has forced the Office of Science to reduce the number of research grants awarded and cut back operations at a number of major research facilities at a time when the demand for beam time at the facilities is higher than ever. The office currently funds only ~10% of the unsolicited, peer-reviewed proposals it receives annually, compared with the 33% that receive funding from the National Science Foundation.

"The consequences have rippled through the entire research enterprise," Jerome Friedman, a professor of physics at the Massachusetts Institute of Technology, testified during the July 25 hearing. "Reductions in the operating and construction budgets for DOE facilities have put extraordinary strains on the R&D enterprise that reach far beyond the department's own research programs." He said that x-ray light sources, accelerators, and reactors serve users from all areas of science and technology, playing a particularly vital role in high-energy and nuclear physics, biomedicine, and materials science. Funding increases are also vital for the construction of new user facilities such as the Linear Coherent Light Source, the International Thermonuclear Experimental Reactor, the Rare Isotope Accelerator, and upgrades to the Continuous Electron Beam Accelerator Facility. The new legislation points out that, to

date, much of this construction has been postponed because of lack of funding.

Furthermore, according to Friedman, reductions in university support have prompted students to seek other careers, causing the country to become increasingly reliant on an uncertain flow of non-U.S.-born scientists. DOE predicts that within 10 years, 50% of its managers will be eligible for retirement, so the stage is set for a significant workforce shortage.

Additional funding is also needed for new initiatives within the Office of Science, most notably the development of nanoscience centers. Nobel Laureate Richard Smalley of Rice University testified at the hearing that he believes nanotechnology holds the answer to a new, nonpolluting energy technology, among other advances, and thus investment in such new centers is critical for progress in this area.

"I support...[the current budget request for the Office of Science]...and realize that in the current financial times, it is probably the most one can hope for," Smalley said. "But I believe it is far too little, and far disproportionate to the magnitude of the problem."

JENNIFER OUELLETTE

### **Academy of Finland and National Natural Science Foundation of China Fund Materials Project**

The Academy of Finland and the National Natural Science Foundation of China (NSFC) announced on July 19 the funding of four cooperative projects. Among them is an initiative called Materials for Electrochemical Sensors: Synthesis and Characterization of Well-Defined Membrane and Application of the Sensors, headed by Ari Ivaska of Åbo Akademi University. During a meeting in early June, the two organizations agreed to expand their collaboration by launching an entire research program for cooperative projects in 2004.

### **U.K. Technology Research Program to Fund Partnerships**

On July 26, U.K. Science Minister Lord Sainsbury invited companies to bid for a £20 million research program, called LINK, to develop new technologies. The program will fund partnerships among industry, universities, and other research organizations in new basic technologies that can be commercially developed. Technologies will be developed in areas including sensors and imaging; microsystems; data storage; nanotechnology; modeling and simulation; smart technologies; photonics, imaging, and displays; power electronics; and superconductivity.

An initial call for project proposals is now open. Outline proposals will be accepted until November 7, 2002. Further information about the program and the call for proposals can be obtained on the program Web site at URL [www.basistechnologies.gov.uk](http://www.basistechnologies.gov.uk).

### U.K. Launches "Powering Future Vehicles" Strategy

The Powering Future Vehicles strategy, unveiled by the U.K. Department for Transport on July 31, aims to promote new vehicle technologies and fuels. It sets out targets to ensure that by 2012, 10% of new cars sold in the United Kingdom and 600 or more of the buses coming into operation each year will be low-carbon vehicles.

"Low-carbon" vehicles, as defined in the strategy, emit  $\leq 100$  g of carbon dioxide/km. This compares to the typical new car, which emits  $\sim 178$  g of carbon dioxide. Low-carbon buses are defined as emitting 30% below current average carbon emissions. The Powering Future Vehicles strategy strengthens measures already in place to counter climate change by reducing emissions of carbon dioxide from transportation.

The United Kingdom has a legally binding commitment under the U.N.'s Kyoto Protocol to reduce greenhouse-gas emissions by 12.5% by 2008–2012 against 1990 levels, as well as a domestic goal of reducing CO<sub>2</sub> emissions by 20% by 2010.

Launching the strategy, Transport Minister David Jamieson said, "Road transport is responsible for 22% of the U.K. greenhouse-gas emissions. We must tackle this."

To help take the strategy forward, the government is backing a Low-Carbon Vehicle Partnership that will involve the vehicle and fuel industries and consumer, environmental, and other stakeholders to promote the development and production of "greener" vehicles. A joint ministerial Low-Carbon Group will oversee the progress of the strategy and report to Parliament annually.

### South African National Research Foundation Board Appointed

Ben Ngubane, the minister of arts, culture, science, and technology of the Republic of South Africa, has announced the appointment of the new board of the

National Research Foundation (NRF), as approved by the Cabinet. The board's three-year term started in July.

Daya Reddy, Dean of Science at the University of Cape Town, is the new NRF board chair. Reddy is a fellow of the Royal Society of South Africa, a fellow of the University of Cape Town, and a member of the Academy of South Africa.

Among the new members of the board are Phuti Ngoepe, director of the Materials Modelling Centre at the University of the North; Bill Cooper, chief executive officer of Dorbyl Ltd. and past president of the Steel and Engineering Industries Federation of South Africa; Connie Mogale, vice chancellor and principal of Technikon Witwatersrand; and Bridgette Radebe, executive chair of Mmakau Mining Pty Ltd.

### Denmark Assumes EU Presidency, Danish Minister becomes Chair of EUREKA

At the ministerial conference of the European research organization EUREKA on June 28 in Thessaloniki, Greece, Akis Tsohatzopoulos, Greek Minister for Research, passed on the office of chair for the coming year to Helge Sander, Danish Minister for Science, Technology, and Innovation. EUREKA is a pan-European network for market-oriented industrial research and development.

Mr. Sander said that a core target during the Danish chairmanship of EUREKA is to enhance the quality of its research projects and make the organization an integral part of the vision for the European Research Area, in interaction with the European Union's Sixth Framework Programme for research and technological development.

Denmark also currently holds the presidency of the EU Council, from July 1 to December 31, 2002. The EU Presidency rotates every six months among the Member States.

### Swiss Research Funding Agency Calls for Higher Government Investment in Research

On August 1, the Swiss funding agency for the support of scientific research (SNF) announced the publication of its action plan for 2004–2007 in which it proposes a range of new instru-

ments and reforms and calls upon the government and Parliament to invest more in research.

The action plan was drafted following advice from an international group of experts. Public funding has declined over the past 10 years, and the same period has seen massive investment by Switzerland's competitors, according to the SNF. The organization is therefore calling for an 80% increase in funding by 2007.

Particularly hard hit has been independent basic research, the organization said. Whereas requests for funding have risen 42% over the past 10 years, awards have only increased by 17%.

In addition to increased support for independent basic research and development, the SNF proposes more support for high-risk research and moves to make scientific careers more attractive, including higher salaries for researchers and higher funding amounts for research grants.

### Scientist Abdul Kalam Assumes Presidency of India

A.P.J. Abdul Kalam was sworn in as president of the Republic of India on July 25, replacing K.R. Narayanan, who completed a five-year term. An eminent aeronautical engineer, Kalam contributed to the development of India's first satellite launch vehicle, SLV III; was the architect of the Indian Guided Missile development program; led the successful nuclear experiments; and envisioned a road map for realizing "Developed India" within 20 years. Kalam said that he believes technology can be used as a tool for national development.

### Malaysia Agrees to Ratify Kyoto Protocol

On June 21, the Malaysian Cabinet decided to ratify the U.N.'s Kyoto Protocol, an international treaty against global warming. The protocol, adopted in 1997, aims to reduce greenhouse-gas emissions that contribute to global warming. Malaysia, though not required under the treaty to cut back on its emissions, expects to benefit by being able to receive assistance for developing less-polluting technologies. The 15 European Union countries and Japan ratified the protocol earlier in June. □

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