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Industry and Science Communities Urge Full Funding for NIST Labs in FY05

Since the release of the fiscal year 2005 budget proposal of the president's administration, industry and science leaders have been urging the House Science Committee and Appropriations Committee to approve in full the requested funding for the National Institute of Standards and Technology (NIST). During a hearing of the Subcommittee on Environment, Technology, and Standards within the Science Committee, on April 28, 2004, a panel of industry witnesses represented the semiconductor, nanotechnology, and biometrics industries, extolling the many vital roles NIST's laboratories play in supporting the U.S. economy and security.

According to the House Committee on Science, the FY04 appropriation for NIST's laboratories was \$338.6 million, a cut of 5.2% (\$20 million) from the FY03 appropriation. This appropriation was also \$49 million below the president's request. As a result, NIST has been forced to curtail planned research and standards development projects across the entire breadth of its activities and lay off as many as 100 scientists, according to the committee.

However, according to the committee, the administration's FY05 request will increase NIST's budget by \$84 million, or 25%, and includes funding for a number of initiatives critical to the success of high-tech industries.

"This request, if funded, will go a long way toward restoring the cuts of fiscal year 2004, and I support this effort 100 percent," said Subcommittee Chair Vernon Ehlers (R-Mich.).

Daryl Hatano, vice president of public policy at the Semiconductor Industry Association, told the subcommittee that NIST's budget has prevented it from adequately meeting the challenges resulting from significant advances in the semiconductor industry.

"NIST's level of effort has not kept pace with needs brought on by technology advances," he said. Hatano testified that since 1995, NIST's investment in semiconductor research has increased only 15%, while industry spending has increased by 145% over the same time period. Explaining the significance of this lack of investment, he said, "NIST's lithography equipment can etch patterns with a feature size of 1 micron, while the current industry standard is approaching 0.13 microns (or 130 nanometers), and sub-100-nanometer devices are coming soon."

Thomas Cellucci, president and chief operating officer at the Zyvex Corp., a

nanotechnology company located in Richardson, Texas, testified on the role of NIST in the emergence of nanotechnology as a major sector of the economy.

"Right now, one of the key issues facing the nanotechnology arena is the need for standards for nanoscale materials and tools. The NIST labs provide the accuracy, reliability, and international recognition for the measurements and measurement-related operations that make up approximately three percent of the U.S. gross domestic product... They are helping the private sector create more high-quality, high-paying jobs," said Cellucci.

In an earlier hearing before the Appropriations Committee's Subcommittee on Commerce, State, and Justice, on March 30, 2004, Science Committee Chair Sherwood Boehlert (R-N.Y.) and Ehlers also urged full funding for NIST's intramural laboratories, as called for in the budget request.

Boehlert said, "As a result of this year's budget cuts, NIST will have to lay off as many as 100 scientists. Not a good signal for a laboratory that includes among its employees Nobel Prize winners. We need to reverse this trend now. So what I'm asking you—begging you—to do is to approve the president's request of \$422.8 million for NIST's intramural labs. The president's request may look like a large percentage increase—more than 20 percent—but it is literally the bare minimum NIST needs to get by. The proposed increase is only enough to restore the cuts that Congress made last year."

Ehlers, in his testimony, supported Boehlert's statement. "Almost every federal agency and type of industry you can think of uses the standards, measurements, and certification services that NIST labs provide," Ehlers said.

Furthermore, in their written testimonies, Ehlers and Boehlert asked for funding of NIST's Advanced Technology Program (ATP) at \$178 million and its Manufacturing Extension Partnerships (MEPs) at \$106 million for FY05.

"NIST is the only U.S. government agency chartered to help U.S. business," said Deborah Grubbe, corporate director of safety and health at DuPont, in her testimony before the Subcommittee on Environment, Technology, and Standards in April. "It is essential that we, as leaders in the U.S. scientific and technical community, recognize NIST as a key to our nation's innovation engine." Grubbe is also a member of the NIST Visiting Committee on Advanced Technology, an advisory committee established by the National Institute of Standards and Technology Act.

U.S. National Academies Provide Free Scientific Information to Developing Nations

On April 5, 2004, the U.S. National Academies announced its free online access in more than 100 developing countries to the reports of the Academies, as well as to journal articles from the *Proceedings of the National Academy of Sciences (PNAS)*. The goal is to help developing countries tackle challenges, such as economic transition, with enhanced scientific knowledge.

This National Academies initiative stems from heightened interest among scientists around the world in the institution's work and in scientific and technical information in general. The U.S. National Academy of Sciences is a member of the InterAcademy Panel (IAP), a worldwide network of 90 science academies that counsel governments and citizens on major global issues such as sustainable development and infectious disease. The IAP has identified equitable access to scientific information and bridging the "digital divide" as major priorities. And it designated April as the time to begin setting and implementing national science agendas that were recommended in a major report issued by the IAP's InterAcademy Council in February at the United Nations. The report, *Inventing a Better Future: A Strategy for Building Worldwide Capacities in Science and Technology*, is available online at Web site www.interacademycouncil.net/streport.

"Elevating global science and technology capacity is critical because of a growing gap between industrialized nations and the developing world in the formation and use of new technologies," said Bruce Alberts, president of the U.S. National Academy of Sciences.

Goverdhan Mehta—co-chair of the InterAcademy Council, president-elect of the International Council for Science, and former president of the Indian National Science Academy—considers this outreach effort to be invaluable. "Developing nations in particular cannot afford to be without access to credible, independent scientific and technological information," he said.

Among the nations eligible for free online access are Brazil, India, Jordan, Mexico, Nigeria, the Philippines, Romania, and South Africa. The full list can be obtained at Web site www.nap.edu/info/faq_dc_pdf.html.

EU Launches Steel Technology Platform

In Brussels, on March 12, 2004, European Research Commissioner Philippe Busquin and Guy Dollé, CEO of

the steel company Arcelor and president of EUROFER [European Confederation of Iron and Steel Industries], jointly launched the European Steel Technology Platform. This high-level group comprises the main representatives of the European steel industry. They presented a document aimed at developing a strategic research agenda to provide a long-term vision and roadmap for the European Union's (EU) steel industry to 2030. The platform brings together key European stakeholders and research institutes in the steel sector, including manufacturers, research organizations, trade unions, universities, and EU and national regulators. The platform's aim is to help the sector meet the challenges of the global marketplace, changing supply and demand patterns, environmental objectives, and the streamlining of EU and national legislation and regulation in this field. In addition, with EU enlargement, the need for extensive restructuring of the steel industries is even more pressing.

The platform will help identify ways to boost research and innovation and to develop new and cleaner processing methods such as reducing CO₂ emissions. It will foster links between industry and academia to develop the qualifications and skills necessary in this fast-moving sector. It will also advise on how best to fine-tune and coordinate available instruments and resources—including EU programs—to make the most of access to capital, scientific excellence, and technological expertise.

"Steel represents a key sector for Europe," said Busquin. "...[M]ore research and investment are necessary to remain competitive and face the challenges of globalization and sustainable development. Thanks to a long track record of excellence in scientific cooperation, innovation, and networking, and the support of EU steel research, the sector is ready to face these challenges."

The industry now aims to maintain its position as a world leader through the implementation of a sustainable development policy that will meet society's needs and ensure its continued competitiveness. In over 40 years, the EU steel industry has reduced its CO₂ emissions by 60% and energy consumption by 50%, but this CO₂ level still represents 6% of total EU CO₂ emissions.

Research is a key factor in ensuring that the steel industry maintains its global leadership in an increasingly competitive world while meeting society's needs, according to the European Commission

(EC). An increased effort in the area of research and development is therefore crucial, the EC said. The issues of work safety and availability of skilled workers must also be addressed in parallel with these activities. The €1.6 billion legacy of the European Coal and Steel Community, which produces the revenues of the Research Fund for Coal and Steel (RFCS), provides financial support for research activities within the steel and coal sectors. Around 73% of RFCS funding goes to steel research.

In 2004, the Commission sought to support coordinated projects (€20 million for the 6th Framework Programme and €5 million for the RFCS) in order to reduce CO₂ and greenhouse gas emissions in steel production. On top of that, funding opportunities for research in the steel sector are available through the EU's €20 billion 6th Framework Programme for Research (FP6, 2003–2006), which has several thematic priorities relevant for steel research including new materials, new production processes, and energy.

S&T Minister and Deputy Minister Appointed in South Africa

The president of the Republic of South Africa, Thabo Mbeki, announced on April 28, 2004, the appointment of a new minister for science and technology, Mosibudi Mangena, and deputy minister, Derek Hanekom, a member of Parliament. Mangena, who is also the president for the political party Azapo, had served as the deputy minister for education since 2001. Formerly, Arts, Culture, Science and Technology were combined in one department. Arts and Culture now forms a separate department with its own minister, Pallo Jordan.

U.S., Brazil Announce Agreement on Hydrogen Energy Research

During a meeting in South America, U.S. Secretary of Energy Spencer Abraham and Brazilian Mines and Energy Minister Rousseff announced on April 19, 2004, a collaborative effort to advance hydrogen sector research, development, and deployment activities, both bilaterally and multilaterally.

"We look forward to working closely with our Brazilian partners as we leverage our efforts to pursue the promise of hydrogen energy," Abraham said. "I have every confidence that, through such collaboration, we will indeed transform this world from one overly dependent on fossil fuels to one powered in large part

by clean and abundant hydrogen."

The effort is to be launched by establishing a joint team of U.S. and Brazilian officials and experts to develop a hydrogen energy technology roadmap for Brazil. This roadmap is to consider possible pathways for future hydrogen production, storage, transfer, end-use technologies, safety codes and standards, and outreach/communication efforts.

The United States and Brazil are two of the founding members of the International Partnership for the Hydrogen Economy (IPHE). On November 20, 2003, Abraham and representatives from Australia, Brazil, Canada, China, the European Commission, France, Germany, Iceland, India, Italy, Japan, Korea, Norway, Russia, and the United Kingdom signed an agreement formally establishing the IPHE as an international mechanism to coordinate hydrogen research and technology development.

China Launches Project for Developing Porous Catalysts

The Chinese Academy of Sciences (CAS) announced on April 15, 2004, the initial meeting for a basic research project on novel-structured, high-performance, porous catalytic materials, held in Northeast China's Dalian City. Under the joint organization of CAS and the China Petroleum and Chemical Corp. (Sinopec), the project is supported by the National Basic Priorities Programs ("973" Program).

With an objective of advancing the technological level of the petroleum chemistry and creating a niche for China's studies of high-performance analytic materials in the international community, the research will focus on new porous catalysts with new structure and high performance so as to renovate the manufacturing process of such chemicals as ethylene, propylene, paraxylene, propylene oxide, and chiral drugs.

Chile, Denmark to Collaborate in Climate Change

The March 23, 2004, issue of *Chile News*, produced by Chile's International Press Department, has reported that Chile and Denmark have signed a memorandum of understanding in the area of climate change. The agreement will permit the implementation of projects to reduce greenhouse gas emissions, as well as promote the development of cooperative efforts and the transfer of clean technologies. □

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