SCIENCE POLICY

Incorporating WASHINGTON NEWS and policy news from around the world.

DHS Initiative Focuses on Nuclear Detection Materials

Speaking at a briefing hosted by the American Association for the Advancement of Science (AAAS), Penrose C. ("Parney") Albright, assistant secretary for science and technology in the Department of Homeland Security (DHS), acknowledged that a major issue for the agency has been its lack of a central focus when it comes to "truly apocalyptic" events such as a nuclear bomb or a widespread biological weapons attack. To address this, the Bush administration has launched the $227.3 million Domestic Nuclear Detection Initiative, with a strong focus on developing new materials for detection technologies.

The initiative marks a significant expansion of federal efforts to monitor the importing of radioactive materials and their movement around the country. The Office for Domestic Nuclear Detection would coordinate a growing but fragmented network of radiation detection equipment, administration officials said. More than 400 radiation monitors have been installed in the past two years at ports, border crossings, and post offices that handle international mail. But while detecting radiation in shipping containers or trucks is a simple matter, it is much harder to use that information to deduce the presence of a nuclear weapon or a dirty bomb, a device that contaminates a small area with radioactive material using a conventional explosive.

The program would include representatives from the Department of Energy, the Federal Bureau of Investigation, the State Department, and the Department of Defense. Specifically, the office would coordinate research into new detection technologies, improve training on how to use them, and help decide where to place them, administration officials said. It would also track any efforts to smuggle nuclear materials into the United States and set up a system for local authorities to transmit detection alarms instantly to federal response teams.

Homeland security is one of the few areas that will see substantial increases in the proposed FY 2006 federal budget, according to Albright, who provided an overview of the FY 2006 budget and future plans for research and development (R&D) within the DHS, which is the fastest-growing R&D sector in the federal budget. The FY 2006 budget request for the DHS Science and Technology Directorate (STD) is about $1.4 billion, a significant increase from three years ago, when the total budget was $640 million. Albright attributed this growth to the interest of Congress and the Bush admin-

https://doi.org/10.1557/mrs2005.111 Published online by Cambridge University Press

istration in science and technology as it applies to homeland security.

The largest portion of the STD budget is still the $362.3 million for biological countermeasures, a program that complements similar R&D programs in Health and Human Services, the National Institutes of Health, and the Center for Disease Control. Its focus is on surveillance and detection, specifically, the development of the next two generations of environmental monitoring systems. Another strong focal area is the chemical countermeasures program, budgeted at $102 million for FY 2006, with R&D focusing on the detection of chemical agents most likely to pose a realistic threat, both domestically and on the battlefield. The DHS is boosting R&D funding from $49 million to $110 million to counter the threat of shoulder-fired antiaircraft missiles and is adding $20 million in new funds to develop a low-volatility-agent warning system to guard against hard-to-detect chemical threats.

FY 2006 will also see the transfer of a $14.7 million explosives program from the Transportation Security Laboratory to the STD. To date, the R&D program has focused on developing improved aviation security, such as luggage inspection and passenger checkpoint screening. But that sector has largely matured. So the DHS will shift the program's focus from short-term, high-payoff detection R&D to a more long-range program with broad applicability—most notably, techniques for detecting vehicle-borne explosives.

Roughly 10% of the directorate's total budget goes to fundamental scientific research, with about 75–80% directed to applied research.

"There's a lot of low-hanging fruit out there, [technological] capability that already exists, either commercially or in laboratory prototypes," said Albright about the directorate's strategic focus in an economic climate where tough choices must be made. "It's very difficult to do a typical cost/benefit analysis. Our judgments are based on risk and whether we can make a useful technological contribution in that area." He added that the STD also looks at R&D being done by other agencies, to avoid duplicating efforts.

The day after the AAAS briefing, DHS secretary Michael Chertoff echoed Albright's comments when he testified before the House Appropriations Homeland Security Subcommittee on the FY 2006 budget and his plans to review the organization of the DHS.

"Our analysis of the threats and risks will drive the structure, operations, policies, and missions of the department, and not the other way around," Chertoff said. "We will not look at the threats and our mission through the prisms of the department's existing structures and functions. Instead, we will analyze the threats and define our mission holistically and exhaustively, then seek to adapt the department to meet those threats and execute that mission."

Despite the huge growth of the DHS over the past three years, the majority of homeland security R&D investment remains outside the agency, according to Kei Koizumi, director of R&D budget and policy programs for the AAAS, who was at the briefing. The total funding for homeland-security-related R&D, including that of programs in other departments, will jump 10.7% to $4.6 billion.

But tough choices are still on the horizon. The FY 2006 budget "puts the brakes" on defense as well as domestic spending; the former will only see modest increases, compared with large increases over the past three years to fund military actions in Iraq and Afghanistan, while the latter is being held flat for the third year in a row, according to Koizumi's preliminary analysis. This means that "there will be ferocious competition for resources if Congress agrees to hold the line on defense spending," he said, especially since the FY 2006 proposed budget does not include funding for the war in Iraq.

JENNIFER OULLETTE

EU Nanotechnology Delegation Visits New Zealand

A delegation of senior European Union (EU) nanotechnology officials and researchers attended the second international conference on advanced materials and nanotechnology (AMN-2) in Queenstown, New Zealand, in early February 2005. AMN-2 was organized by the MacDiarmid Institute of Advanced Materials and Nanotechnology, a New Zealand Centre of Research Excellence, with the objective of promoting international collaborations in the broad areas of advanced materials and nanotechnology. The institute's particular emphasis is on new and emerging technologies.

Ezio Andreta, director of industrial technologies at the European Commission's Directorate General for Research, led the EU delegation. The delegation presented a workshop to stimulate EU–New Zealand cooperation in the fields of nanotechnology, focusing in particular on materials research, nanobiotechnology, and nanomedicine. Delegates also took the opportunity to discuss specific collaboration opportunities with their New Zealand counterparts.

Renzo Tomellini, head of Unit Nanotechnology at DG Research, presented the commission's proposal for international dialogue to develop an "integrated and responsible undertaking regarding public investment in nanotechnology research" to representatives of the New Zealand government. He invited New Zealand to participate in an upcoming international meeting on the proposal.

The EU researchers in the delegation were Marie-Isabelle Baraton of the University of Limoges, France; Helmut Schmidt of the Leibniz-Institut für Neue Materialien, Germany; Kees Eijkel of MESA+ Institute for Nanotechnology at the University of Twente, the Netherlands; and Ian Bruce of the University of Kent, United Kingdom.

Key outcomes from the week in New Zealand include plans for the development of joint EU–New Zealand nanotechnology projects under the 6th and 7th Framework Programmes, New Zealand involvement in the EU-led international dialogue regarding nanotechnology research, and an increase in the opportunities for EU and New Zealand researchers to work in each others' laboratories. New Zealand actively encourages European nanotechnology and advanced materials researchers to apply for Marie Curie Fellowships that would support their work in New Zealand for 1–2 years.

The delegation's activities were paid for by the European Commission and the New Zealand Government.

https://doi.org/10.1557/mrs2005.111 Published online by Cambridge University Press

C.N.R. Rao Appointed as Chair of India's Science Advisory Council

C.N.R. Rao

C.N.R. Rao, the Linus Pauling Professor and honorary president of the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) in Bangalore, India, has been appointed to chair India's Science Advisory Council. Indian Prime Minister Manmohan Singh made the announcement during the inaugural address at the 92nd Indian Science Congress at Ahmedabad in January.

Singh said, "I look forward to the council's guidance in addressing the challenges facing Indian science that you may identify at this congress." The council advises the prime minister on strategies, policies, and programs for the use of science and technology as an essential input for all developmental processes.

Along with his position at JNCASR, Rao is distinguished visiting professor in the Materials Research Laboratory at the University of California, Santa Barbara (UCSB), chair of the International Advisory Board of the International Center for Materials Research at UCSB, and president of the Third World Academy of Sciences.

The prime minister first announced his commitment to establishing the Science Advisory Council last fall. During that speech, which followed an awards ceremony on September 13, 2004, announcing the Shanti Swaroop Bhatnagar Awards and CSIR's first Diamond Jubilee Technology Award, Singh reaffirmed the government's commitment to basic science, applied science, and the promotion of excellence. He said that the government is committed to rebuilding the science base in the universities; promoting public–private partnerships; increasing funding for frontier areas of scientific research; ensuring autonomy, accountability, and de-bureaucratization of science and technology (S&T) institutions; restructuring S&T support systems; and creating career opportunities and the potential for retaining talent in the S&T sector.

He said, "In my view, where there is good science, good applications follow. It is fundamental chemistry that gave us catalysts, polymers, semiconductors, and nanomaterials. It is good biology that gave us the green revolution and the hepatitis vaccines. Therefore, I wish to set at rest today the debate about what our priority should be, basic or applied science….We need to have both basic and applied knowledge, and the ability to utilize them to the best advantage of our national effort."

The prime minister mentioned a study by the Rand Corporation that ranked India as a "scientifically proficient" nation, one classification beneath the top "scientifically advanced" nations. He quoted Jawaharlal Nehru, who said 51 years ago, "Whatever the sphere of life we examine, we find we cannot live without science. That is why we have determined that our country should progress in science. We should produce high-class scientists. We require them in thousands." Singh continued, "It is clear that Nehru's dream of 'scientists by the thousands' must be realized if we are to become a scientifically advanced nation. What will make India so? More funding and less restrictions."

Recently, the Science and Development Network (www.scidev.net) reported the council's plan to establish the National Science and Engineering Research Foundation, which would function autonomously, free from bureaucracy and run by scientists.

Euroscience Open Forum 2006 Launches Call for Proposals

The 2nd Euroscience Open Forum (ESOF) will take place July 15–19, 2006 in Munich, Germany. Scientists, journalists, and experts in politics, industry, and research can now submit proposals for scientific sessions and outreach activities online at www.esof2006.org until June 15, 2005. ESOF is a pan-European scientific meeting staged to provide an interdisciplinary forum for open dialogue, debate, and discussion as well as showcase European achievements across the scientific spectrum. ESOF assists policy makers in consulting relevant scientists on issues affecting society, including the governance of science.

To stimulate submissions, 18 broad themes have been selected. These themes highlight current developments in research and science policy. Themes include:

- *Science Policy in Europe and Beyond*—Would Einstein get funded today? How do we recognize scientific quality beyond the impact factor? What is the payback from science? Does scientific mobility enhance output? Where do we find the scientific excellence for a competitive Europe? Do strategic approaches lead to scientific innovation? Does Open Access open minds?
- *Nanosciences and Nanotechnology*—Building up versus scaling down, where does quantum mechanics intrude? Nanotubes and pea pods, are they just pretty? New devices and new materials, what are the promises of nanoscience? Metallofullerenes, confined atoms, and DNA chips, are they the future of computing? Does self-assembly explain the origin of life?;
- *Environment, Energy, and Resources*—Is human development compatible with sustainability? How accurate are the models? Can technology and/or policy repair the damage? How complete is our understanding about the web of life? What is the value of biodiversity? Is there green energy for transportation?

ESOF2006 will be jointly held with the Wissenschaftssommer (German national science week) in Munich. The Wissenschaftssommer is organized annually by Wissenschaft im Dialog, an initiative of the Stifterverband für die Deutsche Wissenschaft and other German science-funding organizations. □

https://doi.org/10.1557/mrs2005.111 Published online by Cambridge University Press