

Moreover, the House bill would provide DOE with \$16.4 billion worth of additional loan guarantees to help the private sector finance renewable energy, energy efficiency, and grid modernization projects.

The House measure also calls for a 50% increase at NSF, from its current \$6 billion to \$9 billion. Most of the new money—\$2.5 billion—is proposed for NSF's competitively awarded grants to academic researchers. The new spending will fund 3000 more "highly rated" grants that will create jobs for 12 750 scientists and graduate students, according to the report that accompanies the bill. But \$300 million is reserved for competitively awarded grants to help universities acquire major research instrumentation, and \$200 million is set aside to pay for a fraction of the estimated \$2.6 billion backlog of needed repairs and renovations at university research facilities. An additional \$400 million is proposed for NSF's major research equipment and facilities to accelerate construction of large projects such as telescopes.

Considerably smaller yet significant increases are in store for NASA, including \$400 million for its basic science programs and a \$150 million add-on to the aeronautics research program. NIST would see its budget rise from \$600 million to \$1.1 billion, including \$300 million for a grant program initiated last year for the construction of university research facilities.

House speaker Nancy Pelosi (D-CA) has promised to have a bill approved by the full House by mid-February. The Senate is expected to consider similar legislation, though no counterpart to the massive House bill had appeared by press time.

Energy back in style

"From an energy policy perspective, this is about as exciting as the 1970s," said a staffer at the Senate Committee on Energy and Natural Resources, referring to the spike in federal funding for alternative energy research in response to that decade's two oil shocks. Spending fell back sharply as soon as oil prices sank, and energy R&D, in inflation-adjusted terms, hasn't neared those levels since. Now, as the 111th Congress gets under way, lawmakers have cleared their calendars to take part in the effort to rescue the US economy.

The chairmen of the House and Senate committees that oversee energy research have said they will push for the creation of a new office at DOE that they believe will accelerate the commercialization of innovative energy tech-

nologies. Modeled after the successful Defense Advanced Research Projects Agency, ARPA-E would fund high-risk technologies that could help the US to reduce its dependence on oil imports while lowering greenhouse gas emissions. In the House, Representative Bart Gordon (D-TN), returning for a second term as chairman of the Committee on Science and Technology, told reporters that ARPA-E would invest in energy

technologies the private sector can't afford to touch. Though it was authorized by a law signed by George W. Bush in 2007, the former president ignored the ARPA-E provision. A House-passed appropriations bill for FY 2009 includes \$15 million for the new office, but the Senate counterpart has none.

The new entity was one of the recommendations of the influential National Research Council report *Rising*

As citizen scientists, students tackle societal problems

Expand outreach on the nature of science, critical thinking, and the scientific method. Investigate and promote policy opportunities for undergraduates and recent graduates. Those were among the top proposals to emerge last month for the Society of Physics Students (SPS), following the fifth Quadrennial Congress of its honor society, Sigma Pi Sigma ($\Sigma\Pi\Sigma$). The congress was held at Fermilab in Batavia, Illinois, last 7–9 November.

The students weren't kidding around. Centered on the theme of "Scientific Citizenship: Connecting Physics and Society," the 2½-day event was packed with plenary talks, breakout groups, tours, meals, and endless networking opportunities for the 600 or so attendees. Among the topics presented and discussed were energy efficiency, the political process, diversity, and creationism. "The 14-hour days were long, and a little exhausting," reflects Krystle Williams, a graduate student in biophysics at the University of Rochester. "But when I think about how much I got to experience during the congress it was definitely worth it."

Rounding out the top four recommendations—out of more than a dozen—were that SPS encourage scientific citizenship at the local level and that SPS educate its members about existing resources in the American Institute of Physics, its member societies, and other organizations.

"Attendance far exceeded expectations, both ours and Fermilab's," said Gary White, director of both $\Sigma\Pi\Sigma$ and SPS and associate director of education at AIP, which manages both of those organizations (and publishes *PHYSICS TODAY*). Part of the draw was undoubtedly the chance to get an up-close look at the accelerator facility, including the main injector and the D-Zero and CDF detectors. Shown here in front of two magnetic focusing horns in the MINOS neutrino experiment building are (l–r) Ben Carlson of Grove City College in Pennsylvania, Mark Stahl from Wittenberg University in Ohio, Denise Wood from Iowa State University, and Williams.

Addressing the next generation, Rice University's Neal Lane, former science adviser to president Bill Clinton, commended the enthusiasm he saw for scientific citizenship:

I feel that my generation has made some progress but still has left you a world with many problems. Still, . . . when I meet young people like yourselves, I find—at least compared to me when I was your age—that (1) you are very aware of what's going on in the world; (2) you have access to the technology (we did at least give you that) that keeps you informed and also that can help solve many of the world's problems; (3) you find it natural to study and work with people from many different backgrounds, born in all parts of the world, having different values from your own; (4) you understand that the US [must] lead by good example and in partnership with other nations; and (5) you really care about what happens not only to this country but to other people around the world. For these and other reasons, I am optimistic that you will succeed where we have failed.

Stephen G. Benka

