

## WASHINGTON NEWS

### FROM THE FEDERATION OF MATERIALS SOCIETIES

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#### **COMPETITIVENESS ON THE FAST TRACK**

Congressional and Administration backers of the President's American Competitiveness Initiative (ACI) and related proposals have been saying for months that this year is crucial to the future of significant investments in research and development and science and engineering education – that the President has gone out on a limb for funding in these areas in the face of political pressure to keep overall spending down and the momentum will be lost if significant legislation is not passed before the end of this session of Congress in December. In the Senate, hearings are continuing on several combinations of bills which have over two-thirds of the Senators as cosponsors. In the House, a burst of activity in May began a push to pass competitiveness bills before the Independence Day recess the first week in July.

#### **FOCUS IS ON HOUSE SCIENCE COMMITTEE**

The centerpiece of House action will be three bills introduced on May 11, based on recommendations for improving science, engineering, technology and math (STEM) education heard in several House Science Committee hearings earlier this year. The bills are sponsored by relatively unknown Reps. Joe Schwarz (R-MI) and Michael McCaul (R-TX) with Science Committee Chairman Sherwood Boehlert (R-NY), Co-Chairman Ralph Hall (R-TX), and the chairs of all the Science Subcommittees as original cosponsors. The plan is to marry the Republican bills with similar proposals by Science Committee ranking minority member Bart Gordon (D-TN) and other legislation coming out of the House Committee on Education and Labor. Collectively, the Science Committee bills would strengthen and expand existing K-12 and undergraduate education programs at the National Science Foundation and the Department of Energy, and would strengthen and expand programs at the two agencies that fund innovative research by new faculty.

The *Science and Mathematics Education for Competitiveness Act* (H.R.5358) by Rep. Schwarz would expand the Robert Noyce Teacher Scholarship Program, the Math and Science Partnership Program, and the Science, Technology, Engineering and Mathematics Talent Expansion Program (STEP) at NSF. It would ensure that funding for the Integrative Graduate Education and Research Traineeship (IGERT) program grows as NSF's budget increases, and would establish a program to fund NSF Centers for

Undergraduate Education in Science, Mathematics and Engineering to improve the quality of teaching and curricula in undergraduate classes in STEM fields. It also would authorize summer institutes for middle school teachers and other education programs through the national labs at DOE.

The *Early Career Research Act* (H.R.5356) by Rep. McCaul would ensure that NSF's program to help fund young faculty increases as the NSF budget grows by setting aside 3.5 percent of the agency's research funding for that purpose. NSF would provide grants of at least \$80,000 for up to five years to help researchers establish a lab and pursue high-risk research in emerging fields.

The *Research for Competitiveness Act* (H.R.5357), also by Rep. McCaul, would fund early career researchers but at the same time encourage them to seek funds from industry. Under the program, NSF and DOE would offer \$50,000 grants for up to five years, and make an additional \$50,000 available provided the researcher raises one-to-one matching funds from private industry for the proposed research. A similar program was in place at NSF in the 1980's.

## **DOE FUNDING ADVANCES IN THE HOUSE**

As the appropriations cycle begins in earnest, the House passed the Energy-Water appropriations bill which includes full funding for the Department of Energy components of the American Competitiveness Initiative proposed by President Bush. DOE Office of Science funding would increase to a total of \$4.132 billion. In addition, the bill supports the President's proposed Advanced Energy Initiative by increasing funding for a variety of clean energy technologies including biomass, hydrogen, solar, wind, and clean coal. The President commended the House and urged the Senate to follow suit, saying "This bill marks a critical first step toward realizing my American Competitiveness Initiative, ... working to keep our economy the most competitive in the world. This bill also will support my Advanced Energy Initiative and help make America more secure and less dependent on foreign sources of energy."

In separate action, the House overwhelmingly passed the H-Prize Act of 2006, which would establish a national prize competition to encourage the development of breakthrough technologies that would enable a hydrogen economy. The H-Prize, modeled after the Ansari X Prize which spurred the first privately funded suborbital human spaceflight last year, would offer prizes in three categories: Technological Advancements (four prizes of up to \$1 million awarded biennially in the categories of hydrogen production, storage, distribution and utilization); Prototypes (one prize of up to \$4 million awarded biennially that forces working hydrogen vehicle prototypes to meet ambitious performance goals); and Transformational Technologies (one grand prize consisting of a \$10 million cash award, funded in whole or in part by federal contribution). Calling hydrogen "the Holy Grail of transportation fuels," House Science Committee Chairman Sherwood Boehlert (R-NY) said that "prizes are a logical way to get as many people

working on hydrogen in as many ways as possible. This is a useful supplement to our ongoing DOE research and development programs.” Immediately after House passage, an H-prize bill was introduced in the Senate.

## **ENERGY SECURITY IS FOCUS IN SENATE**

Saying that “to be effective in responding to our current energy crisis, we must be focused, we must be realistic, and we must be bipartisan,” Senators Jeff Bingaman (D-NM), Joe Lieberman (D-CT), Evan Bayh (D-IN), Norm Coleman (R-MN) and Lincoln Chafee (R-RI) have introduced the Enhanced Energy Security Act of 2006. The bill includes initiatives to speed the development of new vehicle technologies such as plug-in hybrids and the use of light weight materials in vehicles; expand DOE loan guarantees and competitive grants to automakers and parts manufacturers to convert existing plants or to build new facilities for manufacturing fuel-efficient vehicles and vehicle components; provide funding for alternative fueling stations, and incentives for the production of cellulosic ethanol.

## **INDUSTRY FUNDING OF CAMPUS RESEARCH CONTINUES TO DECLINE**

Industry support of science and engineering research and development on college campuses fell in FY 2004 for the third year in a row, according to a new National Science Foundation survey. While private investment fell 2.6 percent that year, federal government investment rose 10.7 percent. Industry’s share of academic R&D support in FY 2004 equaled its share in FY 1983. According to the NSF survey, corporations continue to fund the bulk of R&D in the U.S. – mostly in their own laboratories. But on campuses, the federal government underwrote 64 percent of the research and development projects during the survey year, investing the most in biological and medical sciences. The report is available at <http://www.nsf.gov/statistics/infbrief/nsf06315/>

## **“DEEMED EXPORTS” TO BE STUDIED BEFORE REVISION OF REGULATIONS**

Responding to concerns raised by universities, national labs, industries, the National Academies and key members of Congress, the Department of Commerce has pulled back from implementing controversial regulations on “deemed exports” recommended last year by its Inspector General. In the meantime, it will establish a Deemed Export Advisory Committee to evaluate current policies and to recommend further steps.

The controversy arose when, almost exactly a year ago, the Commerce Department issued an advanced notice of proposed rulemaking which essentially would have required U.S. universities and federal laboratories to file a deemed export license if a foreign national uses any piece of equipment that falls under the Commerce Control Listing even in the

conduct of fundamental research. “Our principal concern with your proposed rulemaking is the negative impact it could have on the ability of universities to attract the best and brightest foreign nationals in basic research, and thus, its potential negative impact on the quality or quantity of basic research produced by universities,” wrote Senators Lamar Alexander (R-TN) and Jeff Bingaman (D-NM). The Presidents of the National Academies said, “We believe the rule changes that are being recommended...will serve to weaken both national security and the economic competitiveness of the United States. The impact will likely be to dramatically hinder American scientific, engineering and health care research and innovation, factors that have been so vital to our quality of life.”

Reacting to the news of establishment of the Advisory Committee, the Association of American Universities pointed out that the original recommendations, which it said amounted to hanging a “Top International Talent not Welcome” sign on university laboratories, would have been counter to President Bush’s declared priority on keeping universities’ ability to attract the best talent from abroad.