Materials Research Highlighted in NSF 2008 Budget Request

Materials research will play an important role in keeping the United States competitive, according to the fiscal year 2008 budget request of the National Science Foundation (NSF). Citing the importance of keeping the country's status as a world leader in discovery and innovation, NSF director Arden L. Bement, Jr., included the development of novel materials able to push computing tools beyond Moore's law and exploration of how nanoparticles and materials interact with their environment among the most important goals of the next few years.

In his budget presentation, Bement cited a number of factors that influenced funding requests for 2008. The resulting priorities all directly align with NSF's strategic plan for fiscal years 2006–2011, "Investing in America's Future." They include, but are not limited to, the ability of discovery research poised for innovation to keep the country competitive, the need for more advanced cyber tools, and the promise of nanotechnology—especially in regard to manufacturing, medicine, and next-generation computing.

The FY 2008 budget request by NSF includes a 6.8% increase above the budget request for 2007, for a total request of $6.43 billion. This money is spread across all of NSF, but there is an above-average percentage increase in the Mathematical and Physical Sciences Directorate (MPS), with a requested increase of 8.9%, or $1.15 billion, over the FY 2007 request. Within MPS, the Division of Materials Research would receive an increase of $25.14 million (see Table I). This is the largest monetary increase among all MPS divisions and the second largest percentage increase.

Table I. FY 2008 Budget Request for NSF Mathematical and Physical Sciences Directorate
(Dollars in Millions)

Division	FY 2007 Request	FY 2008 Request	Increase Amount ($)	Increase Amount (%)
Astronomical Sciences	$ 215.11	$ 232.97	$ 17.86	8.3%
Chemistry	$ 191.10	$ 210.54	$ 19.44	10.2%
Materials Research	$ 257.45	$ 282.59	$ 25.14	9.8%
Mathematical Sciences	$ 205.74	$ 223.47	$ 17.73	8.6%
Physics	$ 248.50	$ 269.06	$ 20.56	8.3%
Multidisciplinary Activities	$ 32.40	$ 34.37	$ 1.97	6.1%

The most fertile ground for new discoveries, said Bement, often lies on the boundary between different fields of research. NSF is committed to keeping all of its divisions healthy and strong and encouraging collaboration, he said. One example of this is the new Cyber-Enabled Discovery and Innovation project (CDI), an NSF investment reaching into the physical sciences, engineering, and across the Foundation in general.

According to Bement, CDI "aims to explore radically new concepts, approaches, and tools at the intersection of computational and physics or biological worlds" in order to address problems poised by massive data flows and complex systems. The FY 2008 budget request includes a $52 million allotment for the program, $10 million of which would go to the Division of Materials Research for the development of novel materials that could revolutionize computational and communications techniques and push advances in computing beyond Moore's law. The CDI is expected to grow at a rate of about $50 million per year.

Another collaborative effort between MPS and other directorates within NSF, as well as other agencies, is the National Nanotechnology Initiative. This initiative explores physical sciences at the nanoscale level, with the hope of bringing their promising applications in communications, energy, and medicine into the near future. In FY 2008, NSF plans to increase its investment in the initiative by nearly $17 million, for a total investment of $390 million.

In addition to specific research projects such as these, budget increases within the Division of Materials Research would also support research and education partnerships aimed at broadening participation in materials research, international collaborations, and current and future instrumentation and user facilities.

NSF's investments "aim to improve the quality of people's lives and keep the nation safe and growing," according to Bement. He said, "In nearly every field of science and engineering, we are moving toward new knowledge that will help us resolve some of society's most stubborn problems in energy, security, health, and the environment."

This budget request is in line with President Bush's American Competitiveness Initiative, which aims to increase U.S. competitiveness by doubling NSF funding over the next 10 years, among other efforts. The United States needs "bold efforts at the most demanding levels of creative enterprises" in order to provide solutions to many of the concerns facing society and to stay internationally competitive, according to Bement. And, as illustrated by many of the projects highlighted in the budget request, reaching theses goals relies on discovery and innovation in materials.

KENDRA RAND

ESF Announces Upcoming Deadlines

The European Science Foundation (ESF) announces application and proposal deadlines.

ESF is co-organizing the World Conference on Research Integrity with the U.S. Office of Research Integrity. The conference will be held September 16–19, 2007 in Lisbon, Portugal. Attendance will be limited and by invitation to ensure geographical and experience balances. A maximum of 350 places will be available. The application deadline is **April 27, 2007**.

Each year, ESF supports approximately 50 Exploratory Workshops across all scientific domains. The awards are intended for small, interactive, and output-oriented discussion meetings of a maximum of 30 participants and up to a maximum value of €15,000. Awards are for workshops to be held in the calendar year 2008. The proposal deadline is **April 27, 2007**.

Following the 2006 Call for European Collaborative Research (EUROCORES) Themes, six programs have now been launched. Two of these are in the remit of the Standing Committee for the Physical and Engineering Sciences: European QUAntum StandARds and Metrology (EuroQUASAR), with a proposal deadline of **May 11, 2007**; and Friction and Adhesion in Nanomechanical Systems (FANAS), with a proposal deadline of **June 4, 2007**. In addition, ESF is now inviting proposals for new EUROCORES programs, with a deadline of **June 1, 2007.** The purpose of EUROCORES is to help researchers in different European countries to develop collaboration and scientific synergy in topics of European and global importance, with an emphasis on leading-edge science in a global context.

For more information on these and other ESF activities, access www.esf.org.

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Bush Administration Continues Commitment to ACI

The Office of Science and Technology Policy (OSTP) issued a statement on February 5, 2007 announcing President Bush's continued commitment to the American Competitiveness Initiative (ACI).

According to OSTP, the president's initiative, reflected in his fiscal year 2008 budget request, will maintain the United States' innovative and competitive economy by encouraging more aggressive investment by businesses through a permanent enhanced research and development (R&D) tax credit ($3.2 billion in FY 2008 and $117 billion over 10 years), greatly increasing and prioritizing federal support for vital research (a $764 million increase in FY 2008 for ACI research agencies), and improving math and science education (a $365 million increase in FY 2008 at the Department of Education).

The president is proposing a 7.2% increase ($764 million) in FY 2008 for basic research at the National Science Foundation, the Department of Energy's Office of Science, and the Department of Commerce's National Institute of Standards and Technology laboratories, in accord with the ACI doubling commitment (see Table I).

In addition, OSTP announced that the president is engaged in efforts on other fronts to strengthen the country's competitiveness. The administration will continue to work to ensure a fully funded and efficient system of protection for intellectual property resulting from public- and private-sector investments in research, OSTP said. The administration also announced that it will continue to support a business environment that stimulates and encourages entrepreneurship through free and flexible labor, capital, and product markets that rapidly diffuse new productive technologies.

During the previous year, the administration saw some progress regarding his initiative. In February 2006, the president signed into law the Deficit Reduction Act, which created Academic Competitiveness Grants and National SMART Grants to provide additional need-based aid for first- and second-year college students who complete a rigorous high school curriculum and for third- and fourth-year college students who choose to major in the fields of math, science, engineering, or critical foreign languages.

The Academic Competitiveness Council (ACC) was also established in the Deficit Reduction Act to assess the effectiveness of the federal science, technology, engineering, and mathematics education investment.

In December, the president signed into law a retroactive two-year extension and enhancement of the R&D tax credit through the end of 2007. OSTP said that the administration will continue working toward making the enhanced credit permanent in order to increase incentives for businesses to invest in R&D over the long term.

President Bush said he looks forward to working with the 110th Congress to fully achieve his vision for competitiveness.

Table I. President Bush's American Competitiveness Initiative Research Commitment
(Dollars in Millions)

ACI Basic Research Agencies	FY 2007 Budget Request	FY 2008 Budget Request	Increase Amount ($)	Increase Amount (%)
National Research Foundation	$6020	$6429	$409	6.8%
Department of Energy Office of Science	$4102	$4398	$296	7.2%
National Institute of Standards and Technology Core	$568	$594	$26	4.6%

India-EU Ministerial Science Conference Held in New Delhi

The India-European Union (EU) Ministerial Science Conference commenced in New Delhi on February 7–8, 2007, with India's Minister for Science & Technology and Earth Sciences, Kapil Sibal, calling upon the delegates to join hands to provide a Knowledge Grid for addressing issues of global concern. Inaugurating the event, he emphasized that a strong science and knowledge base forms as a major prerequisite for competitiveness and that enhancing sustainable socio-economic development and tackling global issues concerning health, environment, and energy can only be done through international science and technology (S&T) collaboration.

Sibal was joined by Janez Potočnik, Research Commissioner of the European Commission; Annette Schavan, German Minister of Education and Research; and 37 delegates from 20 EU Member States.

Setting out the agenda for the conference, Sibal said the questions to be addressed are the main economic and societal challenges that India and the EU are confronted with and the role S&T play in addressing them. The goal of the conference was to further strengthen India-EU S&T cooperation. Sibal said the India-EU partnership can be a stepping stone for the EU to access markets and for India to access technologies.

Referring to the recent report of the United Nations' Inter-Governmental Panel on Climatic Change, Sibal said the problem of the environment is both urgent and imminent and climate change is an area in which India and the EU can cooperate not only for the benefit of the two subcontinents but humankind. He said India is open to hosting a major international initiative in this regard.

During the course of the conference, the ministers recognized the current "windows of opportunity" for a significant increase in the breadth and depth of EU-India S&T cooperation; these include the recent Indian announcement of a significant increase in public investments in research and in science education as well as the launch of the EU's 7th Framework Program for Research and Technology Development (2007–2013).

They also highlighted the importance of human resources in S&T and of increasing the mobility of researchers between the EU and India.

The conference also acknowledged the importance of an EU-India Strategic Workshop series on some key areas such as climate change, clean energy, and drug development including pre-clinical trials. □

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