NSF Appropriations Hearing Focuses on Improving Education

On March 24, National Science Foundation (NSF) director Arden Bement made his final appearance before the House Commerce, Justice, Science Appropriations Subcommittee, chaired by Rep. Alan Mollohan (D-WV). Bement, who leaves NSF at the end of May, was there to defend NSF's FY 2011 budget proposal. The Subcommittee had earlier held a series of hearings on Science, Technology, Engineering and Mathematics (STEM) education. The Chairman made clear that the current hearing on the NSF budget would also focus on STEM education.

Bement defended NSF's proposed eight percent increase for FY 2011 noting it was part of the Administration's National Innovation Strategy (NIS). NSF's contribution to help foster the NIS, according to the director, includes boosting the number of Graduate Research Fellowships, heightening investment in the CAREER program to help young faculty, developing a program in Climate Change Education, and increasing support for the Advanced Technology Education program. He also described NSF's initiatives in Science, Engineering, and Education for Sustainability, in Cyberlearning Transforming Education, and the Networking and Information Technology Research and Development (NITRD) programs.

Though Mollohan commended NSF for its "breadth of activity," he and the other panel members present, Ranking Member Rep. Frank Wolf (R-VA) and Rep. Mike Honda (D-CA), wanted to talk about STEM education. The first issue was the small increase, 2.2 percent, proposed for NSF's Education and Human Resources directorate (EHR). As he has many times during his long tenure at NSF, Bement noted that the Foundation supports STEM education in the research directorates as well as EHR. These investments, he indicated, are highly leveraged across NSF and the rest of the
government, including close partnering with the Department of Education. Bement also stressed the importance of increasing research and evaluation of STEM education programs.

Before turning to education, Wolf pushed Bement hard on the challenges to the nation from other nations, particularly China. Bement acknowledged that the rest of the world was improving its commitment to research and development, yet he declared, the U.S. is “still dominant.” He resisted the chauvinistic route suggesting the growing importance of international cooperation in science. He strongly proclaimed “we must collaborate in order to compete.” Today's scientists, Bement explained, are “connected and networked;” sharing instrumentation and real-time data in research that often spans many nations. He extolled the build-up of NSF's international programs.

Wolf also admonished NSF for not producing a report requested in the FY 2010 appropriations bill that would indicate the "best practices" in STEM education. Honda also asked about his legislation to establish a full committee of the National Science and Technology Council to examine STEM education.

This then led to a broad discussion, prompted by the Chairman’s question about the importance of “inquiry-based” education and NSF’s role in increasing it at the K-12 level. Joan Ferrini-Mundy, Acting Assistant Director for EHR, came to the witness table to discuss NSF's increasing emphasis on making faculty aware of this approach, the research NSF supports on measuring its effectiveness, and the role of NSF programs such as the GK-12 Graduate Fellows and Math and Science Partnerships, both of which involve collaborations with university-based graduate students and faculty who understand the importance of involving students in their STEM learning. She also stressed the "strong research focus" in her directorate’s programs. One goal, she said, is to produce models that are scalable and which the Department of Education can then promulgate throughout the nation's school systems.

The Subcommittee members then raised the issue of "systemic initiatives" to improve STEM education. Not mentioned were the NSF programs in the 1990s, when EHR led by Luther Williams, supported systemic initiatives in state, urban, and rural school systems with mixed results. At one point Wolf suggested NSF should "take over" failing school systems. Bement noted NSF was in the "education research business," not trying to administer schools particularly in a system that remains locally-based. He also warned the Subcommittee not to undervalue the "creativity and innovation" of American students produced by our schools, while we obsess over the difficulties many of our students have on international tests. The key, Bement concluded, is to "make excellence in education more broadly available."

Mollohan admitted that this was a strange hearing since there were no questions related to NSF's Research and Related Activities account, other than some discussion about who was going to pay for ships NSF uses in the Antarctic, the Coast Guard or the Foundation. There were no questions related to NSF's proposal to consolidate its programs to broaden participation, which was a significant focus of Bement's appearance before the House Science and Technology Committee's Research and Science Education Subcommittee (see Update March 22, 2010). Aside from Rep. Jose Serrano's inquiry about NSF's support for the telescope at Arecibo, Puerto Rico, there were no questions regarding major equipment or instrumentation. Most of these topics will get covered in written questions from the Subcommittee.

The hearing clearly indicated Congress' continued concern with the U.S. education system and what it produces. These issues are also clearly the focus of the reauthorization of two major pieces of legislation, the Elementary and Secondary Education Act (replacing No Child Left Behind) and the America COMPETES Act, which includes NSF. Both of these bills are beginning their legislative journeys with significant activities occurring in the next few months.

White House Names OSTP Associate Director for Science
On March 22, President Obama nominated Carl Wieman to become the Associate Director for Science at the Office of Science and Technology Policy (OSTP). Science is one of four divisions at OSTP. The others are: Energy and the Environment led by Shere Abbott; Technology headed by Aneesh Chopra, who also serves as the Chief Technology Officer for the Administration; and National Security and International Affairs, where Philip Coyle was nominated in October 2009 and has yet to win Senate confirmation. Wieman's nomination must also gain Senate approval.

Wieman currently divides his time between the University of British Columbia and the University of Colorado. At each institution, he serves as both the Director of Collaborative Science Education Initiatives aimed at achieving widespread improvement in undergraduate science education and as a Professor of Physics.

From 1984 through 2006, he was a Distinguished Professor of Physics and Presidential Teaching Scholar at the University of Colorado. While at the University of Colorado, he was a Fellow of JILA (a joint federal-university institute for interdisciplinary research in the physical sciences) and he served as the Chair of JILA from 1993-95.

Wieman has conducted extensive research in atomic and laser physics. His research has been recognized with numerous awards including sharing the Nobel Prize in Physics in 2001 for the creation of a new form of matter known as "Bose-Einstein condensation." Wieman has also worked extensively on research and innovations for improving science education; he was the founding Chair of the National Academy of Sciences Board on Science Education. He has received numerous awards, including the National Science Foundation's Distinguished Teaching Scholar Award (2001), the Carnegie Foundation's U.S. University Professor of the Year Award (2004), and the American Association of Physics Teachers' Oersted Medal (2007) for his work on science education.

Wieman received his B.S. in Physics from the Massachusetts Institute of Technology in 1973 and his Ph.D. from Stanford University in 1977.

Research and Evaluation in Health Care Reform Law

On March 23, 2010, President Barack Obama made history by signing the Patient Protection and Affordable Care Act (H.R. 3590) into law. The legislation passed by the Senate in December 2009 was accepted by the House of Representatives on March 21, 2010. The Senate and House each passed the Reconciliation Act of 2010 (H.R. 4892) that contained negotiated changes to the Senate bill as well as changes to the student loan programs.

The new health care law contains a numerous provisions that deal with research, evaluation, data collection and analysis, and health disparities. They include:

Patient-Centered Outcomes Research - H.R. 3590 establishes the Patient-Centered Outcomes Research Institute to identify priorities for, and establish, update, and carry out, a national comparative outcomes research project agenda. The bill provides for a peer review process for primary research. It prohibits the Institute from allowing the subsequent use of data from original research in work-for-hire contracts with individuals, entities, or instrumentalities that have a financial interest in the results, unless approved by the Institute under a data use agreement. The statute amends the Public Health Service Act to direct the Office of Communication and Knowledge Transfer at the Agency for Healthcare Research and Quality (AHRQ) to disseminate broadly the research findings published by the Institute and other government-funded research relevant to
comparative clinical effective research. It prohibits the Secretary from using evidence and findings from Institute research to make a determination regarding Medicare coverage unless such use is through an iterative and transparent process which includes public comment and considers the effect on subpopulations. The bill also amends the Internal Revenue Code to establish in the Treasury the Patient-Centered Outcomes Research Trust Fund. The Secretary is directed to make transfers to that Trust Fund from the Medicare Trust Funds. It imposes annual fees of $2 times the number of insured lives on each specified health insurance policy and on self-insured health plans. H.R. 3590 terminates the Federal Coordinating Council for Comparative Effectiveness Research upon enactment of this Act.

National Strategy to Improve Health Care Quality - The bill amends the Public Health Service Act and directs the Secretary to establish a National Strategy for Quality Improvement in health care services, patient health outcomes, and population health, taking into consideration certain limitations on the use of comparative effectiveness data. The President is directed to convene an Interagency Working Group on Health Care Quality. The Secretary is further directed, “at least triennially, to identify gaps where no quality measures exist as well as existing quality measures that need improvement, updating, or expansion, consistent with the national strategy for use in federal health programs.” The Secretary is also directed to award grants, contracts, and intergovernmental agreements to eligible entities for purposes of developing, improving, updating, or expanding quality measures. The Department of Health and Human Services (HHS) is also required to: 1) establish an overall strategic framework to carry out the public reporting of performance information; and 2) collect and aggregate consistent data on quality and resource use measures from information systems used to support health care delivery systems. The Secretary is authorized to award grants for such purpose.

Health Care Quality Improvements - The law amends the Public Health Service Act to direct the Center for Quality Improvement and Patient Safety of the AHRQ to conduct or support activities for best practices in the delivery of health care services and support research on the development of tools to facilitate adoption of best practices that improve the quality, safety, and efficiency of health care delivery services. It authorizes appropriations for FY2010-FY2014.

Minority Health - H.R. 3590 designates the National Center on Minority Health and Health Disparities in the National Institutes of Health as the National Institute on Minority Health and Health Disparities. NCMHD Centers of Excellence are eligible to receive endowments. The NCMHD Director is required to plan, coordinate, and review and evaluate research and other activities conducted or supported by the NIH institutes and centers. The bill also transfers the Office of Minority Health to the Office of the Secretary of HHS and authorizes appropriations for FY2011-FY2016. It further establishes individual Offices of Minority Health within HHS.

Women's Health - H.R. 3590 establishes an Office on Women's Health within the Office of the Secretary, the Office of the Director of the Centers for Disease Control and Prevention (CDC), the Office of the AHRQ Director, the Office of the Administrator of HRSA, and the Office of the Commissioner of the Food and Drug Administration. It also authorizes appropriations for FY2010-FY2014 for all such Offices on Women's Health. The bill also contain a provision amending section 486(a) of the Public Health Services Act to require that the director of the NIH Office of Research on Women's Health (ORWH) report to the Director of NIH. Further, the new statute prohibits the termination, reorganization or any transfer of powers or duties of the HHS women's health office unless approved by an act of Congress.

Prevention of Chronic Disease and Improving Public Health - HR. 3590 requires the President to: (1) establish the National Prevention, Health Promotion and Public Health Council; (2) establish the Advisory Group on Prevention, Health Promotion, and Integrative and Public Health; and (3) appoint the Surgeon General as Chairperson of the Council in order to develop a national prevention, health promotion, and public health strategy. The bill requires the Secretary and the Comptroller General to conduct periodic reviews and evaluations of every federal disease prevention and health promotion initiative, program, and agency.
Preventive Services Task Force - H.R. 3590 requires the Director of AHRQ to convene the Preventive Services Task Force to review scientific evidence related to the effectiveness, appropriateness, and cost-effectiveness of clinical preventive services for the purpose of developing recommendations for the health care community. Current law allows the convening of the Task Force.

Community Preventive Services Task Force - The bill requires the Director of CDC to convene an independent Community Preventive Services Task Force to review scientific evidence related to the effectiveness, appropriateness, and cost-effectiveness of community preventive interventions for the purpose of developing recommendations for individuals and organizations delivering populations-based services and other policy makers. The Secretary is also required to provide for the planning and implementation of a national public-private partnership for a prevention and health promotion outreach and education campaign to raise public awareness of health improvement across the life span.

National Science-Based Media Campaign On Health Promotion And Disease Prevention - The bill requires the Secretary, acting through the Director of CDC, to: (1) establish and implement a national science-based media campaign on health promotion and disease prevention; and (2) enter into a contract for the development and operation of a federal website personalized prevention plan tool.

Oral Health - H.R. 3590 requires the HHS Secretary, acting through the Director of CDC, to carry out oral health activities, including: (1) establishing a national public education campaign that is focused on oral health care prevention and education; (2) awarding demonstration grants for research-based dental caries disease management activities; (3) awarding grants for the development of school-based dental sealant programs; and (4) entering into cooperative agreements with state, territorial, and Indian tribes or tribal organizations for oral health data collection and interpretation, a delivery system for oral health, and science-based programs to improve oral health. The Secretary is also required to: (1) update and improve the Pregnancy Risk Assessment Monitoring System as it relates to oral health care; (2) develop oral health care components for inclusion in the National Health and Nutrition Examination Survey; and (3) ensure that AHRQ's Medical Expenditures Panel Survey includes the verification of dental utilization, expenditure, and coverage findings through conduct of a look-back analysis.

Creating Healthier Communities - The new statute requires the Secretary, acting through the Director of CDC, to award grants to state and local governmental agencies and community-based organizations for the implementation, evaluation, and dissemination of evidence-based community preventive health activities in order to reduce chronic disease rates, prevent the development of secondary conditions, address health disparities, and develop a stronger evidence base of effective prevention programming. The Secretary is also required to: (1) conduct an evaluation of community-based prevention and wellness programs and develop a plan for promoting healthy lifestyles and chronic disease self-management for Medicare beneficiaries; and (2) evaluate community prevention and wellness programs that have demonstrated potential to help Medicare beneficiaries reduce their risk of disease, disability, and injury by making healthy lifestyle choices.

Data Collection - H.R. 3590 requires the Secretary, acting through the Director of CDC, to provide funding for research in the area of public health services and systems. It requires the Secretary to ensure that any federally conducted or supported health care or public health program, activity, or survey collects and reports specified demographic data regarding health disparities. The Secretary, acting through the National Coordinator for Health Information Technology, is required to develop: (1) national standards for the management of data collected; and (2) interoperability and security systems for data management. The Director of CDC is required to: (1) provide employers with technical assistance, consultation, tools, and other resources in evaluating employer-based wellness programs; and (2) build evaluation capacity among workplace staff by training employers on how to evaluate such wellness programs and ensuring that evaluation resources, technical assistance, and consultation are available.
IOM Pain Study - The bill requires the Secretary to: (1) enter into an agreement with the Institute of Medicine (IOM) to convene a Conference on Pain, the purposes of which shall include the recognition of pain as a significant public health problem in the United States; and (2) establish the Interagency Pain Research Coordinating Committee.

Health and Wellness - H.R. 3590 requires the Secretary to evaluate programs to determine whether existing federal health and wellness initiatives are effective in achieving their stated goals.

Cures Acceleration Network Act of 2009 - H.R. 3590 amends the Public Health Service Act to require the Secretary, acting through the NIH Director, to implement the Cures Acceleration Network under which grants and contracts will be awarded to accelerate the development of high need cures. The bill defines “high need cure” as a drug, biological product, or device: (1) that is a priority to diagnose, mitigate, prevent, or treat harm from any disease or condition; and (2) for which the incentives of the commercial market are unlikely to result in its adequate or timely development. It also establishes a Cures Acceleration Network Review Board.

Network of Health-Advancing National Centers of Excellence for Depression Act of 2009 or the ENHANCED Act of 2009 - H.R 3590 requires the Secretary, acting through the Administrator of the Substance Abuse and Mental Health Services Administration, to: (1) award grants to establish national centers of excellence for depression; and (2) designate one such center as a coordinating center. Requires the coordinating center to establish and maintain a national, publicly available database to improve prevention programs, evidence-based interventions, and disease management programs for depressive disorders using data collected from the national centers.

Heart Disease - The bill authorizes the Director of the National Heart, Lung, and Blood Institute to expand, intensify, and coordinate research and related Institute activities on congenital heart disease.

New Bills Introduced to Foster Independence of Census Bureau


The bipartisan legislation hopes to improve Census management challenges which reportedly arise from the fact the Census operates on a constitutionally mandated ten-year cycle while Presidential administrations which oversee management of the Census operate on a four-year cycle. The bills aims to strengthen Congressional oversight of the Census to help prevent operational problems that have emerged on the eve of the censuses in 1980, 1990, 2000 and 2010, in part from a lack of steady leadership and management due to changes in Presidential administrations.

"Even as we are working diligently to ensure that the 2010 Census will be as successful as possible, it is important to start looking ahead to the 2020 Census," said Sen. Carper. "Clearly, there are lessons that we have learned from previous Censuses that can be used to modernize the Census Bureau and improve and enhance our efforts in the 2020 Census and beyond. This legislation will implement some key changes that will make the Census more accountable, less partisan, less costly and ultimately more effective.”

The legislation is timed for consideration just as the country is in the midst of returning their
current census forms drawing attention to the fact that just over two years ago, there were serious last-minute census design changes which threatened a successful, cost-efficient 2010 Census.

Maloney observed that "The current census seems to be on a path to success, but just a few years ago it was threatened with failure-- and only last minute changes and corresponding major spending saved it." She added, "Some would say that having a press conference about the 2020 census before the 2010 census is done is jumping the gun, but now is precisely the time when we need to start making sure that the 2020 census does not experience the drama that each of the last four censuses from 1980 to today have experienced. The career professionals at Census know what needs to be done, but Congress must act now so that we can save money and maintain accuracy and ensure that we have a no-drama 2020 Census."

COSSA joined several other organizations and seven former Census directors in support of the bill. The legislative proposal includes the following provisions:

· Gives the Director the independence to report directly to the Secretary of Commerce without being required to report through any other official at the Commerce Department. (In the 2009 legislation Maloney called for making the Bureau an independent agency outside of Commerce.)

· Makes the Director of the Census Bureau a presidential term appointment of five years, with the 10-year decennial cycle split into two, five-year phases - planning and operational, creating continuity across administrations.

· Increases the independence of the Director by allowing the Director to submit recommendations or testimony to Congress that represents his or her own views and not necessarily the views of the administration, and prohibits the Director from being required to testify on census issues that he or she does not agree with. (This would subvert the long-established clearance process role for the Office of Management and Budget.)

· Requires that the Census Director provide copies of budget requests to Congress, at the time the Director submits a budget request to the Commerce Secretary to be included in the President's budget request, prior to the Commerce Department's budget submission to OMB, increasing transparency and oversight. (Congress is always asking for this and witnesses at budget hearings are usually reluctant to reveal this information.)

· Provides the Director authority over all personnel and activities in the exercise of all powers and duties of the Bureau and mandates that all Census personnel report only to the Director.

· Bestows on the Director the authority to establish, alter or discontinue such organizational units within the Bureau as he/she may consider necessary or appropriate as well as the authority to establish advisory committees to provide advice with respect to any function of the Director.

· Grants the Director, in consultation with the Secretary, the authority to prescribe rules and regulations to carry out the function of the Director.

· Confers on the Director the authority to delegate authority to act and render decisions as the Director deems necessary.

· Gives the Director the authority to the authority to appoint a Deputy Director who serves at the Director's pleasure and is a member of the Senior Executive Service and to utilize personnel from other federal agencies in carrying out the functions of the Bureau.

· Requires the Director to submit to Congress a comprehensive annual report on the next decennial census, with a description of the Bureau's performance standards and a risk-assessment of each significant decennial operation.
The Senate bill has been referred to the Senate Committee on Homeland Security and Government Affairs, chaired by Sen. Joseph Lieberman (I-CT), under which Carper's Subcommittee sits. The House bill has been referred to the House Committee on Oversight and Government Reform, chaired by Rep. Edolphus Towns (D-NY).

**NSF Expands Activity on Climate, Energy, and Sustainability**

One of the major initiatives in the National Science Foundation's (NSF) proposed FY 2011 budget is Science, Engineering and Education for Sustainability (SEES). On March 10, 2010 NSF issued a Dear Colleague letter announcing expanding support for climate research by issuing five new cross-directorate solicitations: Water Sustainability and Climate (WSC) (NSF 10-524); Ocean Acidification (OA) (NSF 10-530); Climate Change Education Partnership (CCEP) (NSF 10-542); Decadal and Regional Climate Prediction Using Earth System Models (EaSM) (NSF 10-554); and Dimensions of Biodiversity (NSF 10-548).

These solicitations are intended to support innovative research and education that will advance the capability and capacity to understand and predict changes to Earth's natural and human-dominated systems, to assess the vulnerability and resilience of these systems to change, and to foster workforce development and scientific literacy in these areas. These advances will strengthen the scientific knowledge base for policy decisions at regional and national levels.

Building on recommendations in the August 2009 National Science Board Report, *Building a Sustainable Energy Future* and the IPCC *Fourth Assessment Report: Climate Change 2007*, NSF has requested funds in FY 2011 to further expand research support in this area through new and existing programs focused on Science, Engineering and Education for Sustainability (SEES).

SEES proposes to address challenges in climate and energy research and education using a systemic approach to understanding, predicting, and reacting to change in the linked natural, social, and built environment through: short and long term observations enabled by a new generation of experimental and observational networks; data analysis, modeling, simulation and intelligent decision-making facilitated by advanced computation; research at the energy-environment-society nexus; innovative strategies for energy production, distribution and use; study of societal factors such as vulnerability and resilience, and sensitivity to regional change; and building of research and education partnerships, both nationally and internationally. The portfolio of SEES will also help develop the workforce required for future economic, energy and environmental sustainability.

Information on NSF's climate research activities as well as plans for SEES is available at: [www.nsf.gov/sees](http://www.nsf.gov/sees).

**NIGMS Director Berg Briefs Congress On The Impact of Basic Research**

COSSA, in conjunction with the Ad Hoc Group for Medical Research, the Congressional Biomedical Research Caucus and 14 other organizations, co-sponsored a March 5th congressional briefing featuring National Institute of General Medical Sciences’ (NIGMS) director Jeremy Berg. Berg's topic was “Investing in Discovery: The Impact of Basic Research and the Role of the National Institute of General Medical Sciences.” Berg focused his remarks on the importance and impact of basic research and emphasized three themes: biology is deeply unified at the molecular and cellular levels; fundamental processes underlie our understanding of health and disease and lay the foundation for medical advances; and the role of individuals, particularly scientists relatively early
in their careers, in making these discoveries.

The briefing was the latest in a series sponsored by the Ad Hoc Group designed to explain how the nation's investment in the National Institutes of Health (NIH) is leading to scientific discoveries designed to enhance the health and well-being of the American people.

Berg, along with National Institute on Aging Director Richard Hodes, co-chair NIH's Basic Behavioral and Social Science Opportunity Network (OppNet). The project is a trans-NIH initiative designed to expand NIH’s support of basic behavioral and social sciences research (b-BSSR). Basic-BSSR studies mechanisms and processes that influence behavior at the individual, group, community and population level. Research results lead to new approaches for reducing risky behaviors and improving the adoption of healthy practices (See Update, January 11, 2010).

Berg's slide presentation is available on COSSA's website. COSSA is a member of the Ad Hoc Group and its Deputy Director is a member of the Group's Steering Committee.

Members of House Express Support for Large NIH Increase

On March 17, 99 members of the House of Representatives sent a letter to Labor, Health, and Human Services Subcommittee Chair, Rep. David Obey (D-WI) and Ranking Member Rep. Todd Tiahrt (R-KS) urging their "continued support for NIH funding." The members emphasized that continued support for the agency "is essential to sustain advances in science and the economic impacts of research it funds." They "respectfully request a funding increase of at least 7 percent for the National Institutes of Health (NIH) compared to the Fiscal Year 2010 baseline level."

The letter, initiated by Reps. Edward Markey (D-MA), Janice Schakowsky (D-IL), Rush Holt (D-N.J.), Susan Davis (D-CA), Joe Courtney (D-CT), and Jackie Speier (D-CA), observes that "over the past several years, funding for NIH has not kept pace with the costs of conducting biomedical research. As a result, promising research has not been funded, clinical trials have been delayed or terminated, jobs have been lost, and talented young investigators have turned to other careers."

The members stressed the contributions of the recent increases in funding in 2009 and 2010 from the American Recovery and Reinvestment Act toward "regaining the lost potential of the last several years and rebuilding our nation's economy." Pointing out that the advocacy community, "which includes scientists, universities, and patient groups, among others recommend funding the NIH at a level of $35 billion," the 99 signatories of the letter, are seeking an 'increase of at least 7 percent, with some of use believing that the appropriate funding increase should be as much as 12 percent. This level of funding is essential to sustain the advances in science and the economic impacts of the NIH-funded research," they write.

NSF Seeks Proposals From Teams to Intergrate Cyberinfrastructure Research and Education

The National Science Foundation (NSF) has instituted a CI (cyberinfrastructure)-TEAM program to support projects that position the national science and engineering community to engage in integrated research and education activities promoting, leveraging and utilizing CI systems, tools and services. For definitions and characterizations of CI, see the National Science Foundation's Cyberinfrastructure Vision for 21st Century Discovery, available at http://www.nsf.gov/pubs/2007/nsf0728/index.jsp. For earlier visions, see the Report of the Blue-Ribbon Advisory Panel on Cyberinfrastructure, available at: http://www.nsf.gov/od/oci/reports/toc.jsp.
According to the solicitation, new information, communication, and computational technologies have had profound impacts on the practice of science and engineering. The systems, tools, and services emerging from these new technologies are linked to create a comprehensive cyberinfrastructure. This enables individuals, groups, and organizations to advance research and education in ways that revolutionize who can participate, what they can do, and how they do it. Sustaining this revolution across all areas of science and engineering requires the formation of a workforce with the knowledge and skills needed to design and deploy as well as adopt and apply these cyber-based systems, tools and services over the long-term. The opportunity for such preparation should be available at all stages of formal and informal education, training and professional development, and must be extended to all interested individuals and communities.

The CI-TEAM awards will: 1) Prepare current and future generations of scientists, engineers, and educators to design and develop as well as adopt and deploy, cyber-based tools and environments for research and learning, both formal and informal; and 2) Expand and enhance participation in cyberinfrastructure science and engineering activities of diverse groups of people and organizations, with particular emphasis on the inclusion of traditionally underrepresented individuals, institutions, especially Historically Black Colleges and Universities (HBCUs) and Minority Serving Institutions (MSIs), and communities, as both creators and users of cyberinfrastructure.

This solicitation seeks three types of project proposals. The Demonstration Project is exploratory in nature and may be somewhat limited in scope and scale. Demonstration Projects should have the potential to serve as exemplars to effective larger-scale implementation and diffusion activities in the future. The Implementation Project is generally larger in scope or scale and draws on prior experience with the activities or the teams proposed. The Diffusion Project engages broad national audiences with research results, resources, models, and/or technologies. NSF expects Implementation and Diffusion Projects to deliver sustainable learning and workforce development activities that complement ongoing Foundation investments in cyberinfrastructure.

All CI-TEAM projects should broaden and diversify the population of individuals and institutions participating in cyberinfrastructure activities specifically and, thereby, science and engineering more generally. Thus, all three types of projects should consist of collaborations with expertise in multiple disciplines and involve partnerships that support integrated research and learning among diverse organizations including, as appropriate, academic institutions of higher learning, primary and secondary schools, government, industry, professional societies, other not-for-profit organizations, and international partners.

Other key features of CI-TEAM projects involve a commitment to: leveraging existing or current development efforts in cyberinfrastructure technologies; open software standards and open educational resources; the integration of research and learning; institutional partnerships; and strategic implementation, management, and evaluation plans.

NSF expects to support six to seven Demonstration Projects at up to $250,000 total each and three to six Implementation or Diffusion Projects at up to $1,000,000 total each. The full proposal deadline is April 27, 2010.

For more information contact: Susan Winter, OD/OCI, telephone: (703) 292-8276, email: swinter@nsf.gov or Cheryl L. Eavey, SBE/SES, telephone: (703) 292-7269, email: ceavey@nsf.gov; or Kellina Craig-Henderson, SBE/BCS, telephone: (703) 292-7023, email: khenders@nsf.gov or Vincent R. Brown, SBE/BCS, telephone: (703) 292-7305, email: vrbrown@nsf.gov.

Learning Seeks Applicants

The National Science Foundation’s (NSF) Graduate STEM Fellows in K-12 education provides funding for graduate students in NSF-supported science, technology, engineering, and mathematics (STEM) disciplines to bring their leading research practice and findings into K-12 learning settings.

According to NSF, through collaborations with other graduate fellows and faculty from STEM disciplines, teachers and students in K-12 environments, and community partners, graduate students can gain a deeper understanding of their own research and place it within a societal and global context. The GK-12 program provides an opportunity for graduate students to acquire value-added skills, such as communicating STEM subjects to technical and non-technical audiences, leadership, team building, and teaching while enriching STEM learning and instruction in K-12 settings. This unique experience will add value to the training of U.S. graduate students and will energize and prepare the students for a broad range of STEM careers in a competitive globalized marketplace. Furthermore, the GK-12 program provides institutions of higher education with an opportunity to transform the conventional graduate education by infusing and sustaining GK-12 like activities in their graduate programs.

The expected outcomes include:

1) For graduate fellows: Enhanced understanding of their own research subject area, and its societal and global contexts; improved communication skills of STEM subjects with technical and non-technical audiences, leadership, team building, and teaching capabilities.

2) For K-12 education: Professional development opportunities for teachers in both STEM content and pedagogy; and enhanced learning and STEM career interest for students.

3) For institutions of higher education: Transformation of graduate programs; strengthened and sustained partnerships with local school districts, industry, non-profit sector, etc.; and enhanced institutional impact of graduate education to society.

The number of awards will vary depending upon the scope of projects and availability of funds. NSF anticipates approximately 20-25 new awards will be made, depending upon the quality of proposals and availability of funds. The size for the new projects will be for up to $600,000 per year for 5 years. If proposed, additional funding up to a total of $100,000 PER AWARD may also be provided for GK-12 projects that include international activities. These activities should be designed to significantly enhance the research and training experiences of the Fellows. The anticipated funding amount in FY 2010 is $15 million.

Letters of intent are due on April 20, 2010, with the full proposal’s due on June 3, 2010. For further information contact: Sonia Ortega, telephone: (703) 292-8697, fax: (703) 292-9048, email: sortega@nsf.gov or Ping Ge;(703) 292-8697, fax: (703) 292-9048, email: pge@nsf.gov.


NSF Solicitation for Ethics Resource Center

The National Science Foundation (NSF) seeks grant proposals to establish an Ethics in Science, Mathematics, and Engineering Online Resource Center. NSF will fund one award to support a multidisciplinary team of researchers who will create an online center that develops, compiles, and maintains resources related to ethics in science, mathematics, and engineering. The research team’s focus will be to gather existing information, generate new knowledge, and create interactive tools that will help scientists and engineers incorporate ethical issues and reasoning into their pedagogy and research. The online resource center should be creative, comprehensive,
accessible, and constantly evolving. Thus, it should incorporate strategies and techniques to keep
the Ethics in Science, Mathematics, and Engineering center relevant and up to date. According to
NSF, “Engineering, mathematics, and science refers to all of the fields that NSF supports; this
includes the social sciences.”

The audiences for the center, according to NSF include: instructors who want to incorporate an
ethics module into classes; administrators and/or instructors who seek to access scholarly
evaluation of ethics curricula; undergraduate and graduate students who seek to understand ethical
issues in science, mathematics, and engineering; practicing scientists and engineers who seek to
explore ethical reasoning and issues as they arise in research; researchers who create original
scholarship on ethics in science, mathematics, and/or engineering.

Letter of Intent Deadline Date: April 30, 2010; Full Proposal Deadline Date: June 3, 2010.
One award will be made. The award duration is five years. The anticipated funding amount is up
to $5,000,000, pending availability of funds.


Fulbright Scholar Competition Seeks Applicants

The Core Fulbright Scholar competition for 2011-2012 is now open. Over 800 grants are available
for teaching, conducting research, or combining both in more than 125 countries around the globe.
The deadline is August 2. For information on Fulbright Scholar Awards, consult www.iie.org/cies.
Request information at scholars@iie.org.

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The Consortium of Social Science Associations (COSSA) is an advocacy organization promoting attention to and federal support for the social and behavioral sciences. **UPDATE** is published 22 times per year. ISSN 0749-4394.

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