

National Council for Science and the Environment

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**Testimony of the
NATIONAL COUNCIL FOR SCIENCE AND THE ENVIRONMENT
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**Regarding the
NATIONAL SCIENCE FOUNDATION
FY 2007 Budget Request**

**To the
UNITED STATES SENATE
Committee on Appropriations
Subcommittee on Commerce, Justice, Science and Related Agencies
April 28, 2006**

Summary

The National Council for Science and the Environment (NCSE) urges Congress to appropriate at least \$6.02 billion for the National Science Foundation (NSF) in FY 2007, an increase of \$439 million or 7.9 percent relative to FY 2006. NCSE supports this increase in order to put NSF on the doubling track that is proposed in the President's American Competitiveness Initiative as well as a series of recent bills and reports. NCSE encourages Congress to support a faster rate of growth in order to implement previous recommendations of the National Science Board regarding the importance of expanding NSF's environmental research and education portfolio.

The United States leads the world in scientific discovery and innovation, but we should not take this leadership for granted. The long-term prosperity of the nation, our quality of life, as well as our national and homeland security require a strong and steady commitment of federal resources to science and technology. Environmental R&D is a critical component of the overall federal investment in research and development. Federal investments in environmental R&D must keep pace with the growing need to improve the scientific basis for environmental decisionmaking.

As a result of the recent reorganization of the Senate Appropriations Committee, the Subcommittee on Commerce, Justice, Science and Related Agencies now has broader jurisdiction over environmental research and education. NCSE commends the subcommittee for its past bipartisan leadership in support of science to improve environmental decisionmaking. The subcommittee has an historic opportunity to address pressing national challenges by appropriating strong and growing funding for environmental research and education at NSF, NOAA, and other science agencies under the subcommittee's expanded jurisdiction.

The National Council for Science and the Environment is dedicated to *improving the scientific basis for environmental decisionmaking*. We are supported by over 500 organizations, including universities, scientific societies, government associations, businesses and chambers of

commerce, and environmental and other civic organizations. NCSE promotes science and its essential role in decisionmaking but does not take positions on environmental issues themselves.

NSF Budget Request

The President's budget request would increase funding for the National Science Foundation by \$439 million or 7.9 percent to \$6.02 billion in fiscal year 2007. Even if Congress approves the President's request to increase the NSF budget by 7.9 percent in FY 2007, the NSF budget would still be slightly below the FY 2004 funding level in real dollars (after accounting for inflation). However, NSF funding for R&D (excluding education, training, and overhead costs) would reach a record level in real dollars after falling in FY 2005 and 2006.

The 7.7 percent increase proposed for NSF's Research and Related Activities account would benefit all scientific disciplines. NCSE urges Congress to encourage NSF to provide substantial increases in funding for all fields of science supported by the agency.

NSF's priority area in Biocomplexity in the Environment is being phased out, and FY 2007 is the final year of this highly successful initiative. NSF will continue to support interdisciplinary studies of this type within the structure of its regular programs. After FY 2007, this research portfolio will be referred to as Complexity in Environmental Systems. In FY 2007, funding for Biocomplexity in the Environment will decline to \$42.6 million, a cut of \$40.8 million or 48.9 percent compared to FY 2006. Three primary areas that will be supported in FY 2007 are Carbon and Water in Earth Systems; Dynamics of Coupled Natural and Human Systems; and Materials Use: Science, Engineering and Society. It is anticipated that these three areas will continue as independent programs in the future after the Biocomplexity in the Environment priority area ends in FY 2007, and NCSE encourages Congress to support this plan.

NSF's Major Research Equipment and Facilities Construction (MFEFC) account contains several projects that will advance the environmental sciences. The FY 2007 budget request contains \$12.0 million in the MREFC account for initial implementation of the National Ecological Observatory Network (NEON) and an additional \$11.9 million in other accounts for NEON concept and development activities. The budget request for NSF's Major Research Equipment and Facilities Construction account also contains \$27.4 million for EarthScope, \$42.9 million for the Scientific Ocean Drilling Vessel, and \$9.1 million for the South Pole Station Modernization project. Two new starts in the MREFC account are the Alaska Region Research Vessel (\$56.0 million) and the Ocean Observatories Initiative (\$13.5 million), both of which help fulfill the Administration's 2004 U.S. Ocean Action Plan, developed in response to the U.S. Commission on Ocean Policy. These projects have the potential to generate scientific breakthroughs and transform the environmental sciences. NCSE urges Congress to provide full funding for all of these initiatives.

Optimism about current proposals to double the NSF budget in ten years is tempered by the failure of a recent attempt to double the NSF budget in five years. The National Science Authorization Act of 2002, which was passed by Congress and signed into law by President Bush, called for a doubling of the NSF budget from FY 2002 to FY 2007. The annual

appropriations bills have fallen far short of the doubling path specified in the NSF Authorization Act. The FY 2007 budget request for NSF is nearly \$4 billion below the level authorized in the last doubling initiative. However, the current doubling initiative has been given a high priority in the President's budget request. NCSE urges Congress to appropriate the funds necessary to achieve this goal.

Expanding NSF's Environmental Research and Education Portfolio

The National Science Foundation plays a crucial role in supporting environmental R&D. Environmental research often requires knowledge and discoveries that reach across disciplinary and institutional boundaries. NSF recognizes this and encourages multidisciplinary environmental activities across the entire agency, as well as with other federal agencies. NSF has established a "virtual directorate" for Environmental Research and Education (ERE). Through this virtual directorate, NSF coordinates the environmental research and education activities supported by all the directorates and programs.

Although the National Science Board said environmental research and education should be one of NSF's "highest priorities" (see below), the growth of the ERE budget has lagged behind the growth of the overall NSF budget in recent years. Given that the National Science Board has identified environmental research and education as one of the agency's highest priorities, funding for the ERE portfolio should grow at least as rapidly as the total NSF budget. In order to achieve the \$1.6 billion funding level recommended by the National Science Board, NCSE supports rapid growth in NSF's Environmental Research and Education portfolio over the next several years.

National Science Board Report on Environmental Science and Engineering

The National Council for Science and the Environment encourages Congress to support full and effective implementation of the 2000 National Science Board (NSB) report, *Environmental Science and Engineering for the 21st Century: The Role of the National Science Foundation*, within the context of doubling the NSF budget.

The National Science Board report sets out an ambitious set of recommendations that could dramatically improve the scientific basis for environmental decisionmaking. The first keystone recommendation is as follows:

Environmental research, education, and scientific assessment should be one of NSF's highest priorities. The current environmental portfolio represents an expenditure of approximately \$600 million per year. In view of the overwhelming importance of, and exciting opportunities for, progress in the environmental arena, and because existing resources are fully and appropriately utilized, new funding will be required. We recommend that support for environmental research, education, and scientific assessment at NSF be increased by an additional \$1 billion, phased in over the next 5 years, to reach an annual expenditure of approximately \$1.6 billion.

The report says that the National Science Board expects NSF to develop budget requests that are consistent with this recommendation. At first, growth in the Environmental Research and Education budget reflected its priority status: from FY 1999 to 2001, the ERE account grew more rapidly than the overall NSF budget. However, the ERE growth rate has trailed the total NSF growth rate since that time. From FY 2002 to FY 2005, the ERE budget grew by approximately 13 percent while the total NSF budget grew by 20 percent. The lagging growth of the Environmental Research and Education budget relative to the total NSF budget in recent years raises serious concerns about its status as one of NSF's "highest priorities."

The National Science Board envisioned a 167 percent increase in funding for the ERE portfolio, from approximately \$600 million to \$1.6 billion, within the context of a doubling of the total NSF budget over five years. The doubling did not materialize over the past five years, but we urge Congress to support implementation of the NSB recommendation as the NSF begins a new doubling initiative. If the Environmental Research and Education portfolio is one of NSF's highest priorities, then the growth rate of the ERE budget should not lag behind the growth rate of the total NSF budget.

The National Science Foundation has taken many steps to implement the recommendations of the NSB. Full implementation of the NSB report will require strong support from Congress and a significant increase in funding for NSF's portfolio of environmental science, engineering and education.