

**Statement of
Dr. Rita R. Colwell
Director
National Science Foundation
Before the
Commerce, Science, and Transportation Committee
Subcommittee on Science, Technology, and Space
U.S. Senate
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Chairman Wyden, Senator Allen, and Members of the Subcommittee, thank you for providing this opportunity to discuss the President's budget request for the National Science Foundation.

America's present and future strength, prosperity and global preeminence depend directly on fundamental research. Every year, the Foundation's optimal use of limited public funds has relied on two conditions -- number one, ensuring that our research and education investments are aimed - and continuously re-aimed - at the frontiers of understanding. And number two, certifying that virtually every dollar goes to competitive merit-reviewed, and time-limited awards with clear criteria for success. NSF puts the greatest share of its resources where they will do the most good: in the nation's colleges and universities where, in addition to generating the truly new ideas that define the future, every dollar invested contributes to recruiting and training the next generation of researchers.

NSF has been proactive in implementing the President's Management Agenda, and we welcome -- and apply -- input from many sources to continuously improve the way we manage programs at NSF.

When these conditions are met, our nation gets the most intellectual and economic leverage from its research and education investments.

The National Science Foundation is requesting \$5.036 billion for FY2003, \$240 million or five percent more than the previous fiscal year. For the United States to stay on the leading edge of discovery and innovation, we cannot do less.

Before providing a few highlights of the budget, let me stress that the priority setting process at NSF results from continual consultation with the research community. New programs are added or enhanced only after seeking the combined expertise and

experience of the science and engineering community, the Director and Deputy, and the National Science Board.

Programs are initiated or enlarged based on considerations of their intellectual merit, broader impacts of the research, the importance to science and engineering, balance across fields and disciplines, and synergy with research in other agencies and nations. NSF coordinates its research with our sister research agencies both informally -- by program officers being actively informed of other agencies' programs -- and formally, through interagency agreements that spell out the various agency roles in research activities. Moreover, through our Committee of Visitors process there is continuous evaluation and feedback of information about how NSF programs are performing.

One of the highlights of the budget is a second installment of \$200 million for the national five-year, \$1 billion Math and Science Partnership Program. The program links local schools with colleges and universities to improve pre-K -12 math and science education, train teachers, and create innovative ways to raise the performance of all students and schools.

An investment of approximately \$37 million will increase annual stipends for graduate fellows to \$25,000 to attract more of the nation's most promising students to science and engineering.

The budget also includes funding for six priority areas, including \$221 million for nanotechnology research, \$286 million for information technology research, and \$60 million as part of a new priority area in mathematical and statistical sciences research that will ultimately advance interdisciplinary science and engineering. \$185 million is directed toward NSF's Learning for the 21st Century Workforce priority area -- including \$20 million to fund three to four new multi-disciplinary, multi-institutional Science of Learning Centers to enhance our understanding of how we learn, how the brain stores information, and how we can best use new information technology to promote learning.

We are also requesting \$10 million to seed a new priority area in the social, behavioral, and economic sciences to explore the complex interactions between new technology and society so that we can better anticipate and prepare for their consequences.

The budget requests \$79 million for research on biocomplexity in the environment. This builds upon past investments to study the remarkable and dynamic web of interrelationships that arise when living things at all levels interact with their environment. Research in two new areas this year -- microbial genome sequencing and ecology of

infectious diseases -- will help develop strategies to assess and manage the risks of infectious diseases, invasive species, and biological weapons.

I should add that as part of the Administration's new multi-agency Climate Change Research Initiative, we will implement a \$15 million research program to advance understanding in highly focused areas of climate science, to reduce uncertainty and facilitate policy decisions. Our budget also includes \$76 million for programs slated to be transferred to NSF from NOAA, EPA, and the USGS.

Although we did not seek these transfers, we take considerable pride in the fact that of the 26 Federal agencies judged by OMB in five key management areas, only the National Science Foundation received a green light. NSF is noted for its expertise and success in funding competitive research, and this was certainly a factor in this recognition. Sea Grant, which originated at NSF, is a valuable program; and should Congress and the Administration agree to such a shift, we would, of course, do our best to make it even more effective.

In large facilities, we will continue support for the next phase of construction of the Atacama Large Millimeter Array (ALMA). New construction projects in the FY2003 budget include two prototype sites of the National Ecological Observatory Network (NEON) at a cost of \$12 million to analyze data to detect abrupt changes or long-term trends in the environment. The budget also requests \$35 million for EarthScope to detect and investigate earthquakes, volcanic eruptions, and landslides on the North American continent.

The events following September 11 demonstrated our capacity to engage the research community in ways that are immediately responsive to national needs. We owe this flexibility to a highly trained scientific and engineering workforce capable of selecting the most interesting and challenging problems for their research. It is this flexibility, enabled by the merit review system, that makes ours a model of scientific support that is the envy of the world.

Mr. Chairman, if there are no objections, I would like to include a copy of the NSF budget summary as part of my testimony, and I would be pleased to respond to any questions that the committee may have.

