

NSF Director Testified before Subcommittee on Basic Research

On February 22, 1995, Neal Lane, director of the National Science Foundation (NSF), testified before the House Subcommittee on Basic Research in support of the NSF FY 1996 budget proposal requesting \$3.36 billion. In his testimony, Lane emphasized the three long-range goals of the NSF: world leadership, knowledge in service to society, and achieving excellence in education at all levels. He said that NSF supports "56 percent of the research in computer science conducted at...academic institutions, and 43 percent of the non-medical life science research." Lane said that current NSF-supported research "spans the fields of biotechnology, materials, and manufacturing."

Lane described the NSF's "balanced portfolio," which "includes individual investigators, small groups, Industry-University Cooperative Research Centers, Engineering Research Centers, Science and Technology Centers, Minority Research Centers of Excellence, and Long Term Ecological Research sites." Contributing to the "balanced portfolio" is NSF's seven strategic interdisciplinary areas: Advanced Materials and Processing research; Biotechnology research; Civil Infrastructure Systems research; Environment and Global Change research; High Performance Computing and Communications research; Manufacturing Science and Engineering research; and Science, Math, Engineering, and Technology Education. Lane said that the NSF used the interdisciplinary areas in order to identify and solve problems through supporting fundamental research and education.

Lane concluded his testimony by addressing how the Foundation evaluates its performance. In keeping with the President's Reinventing Government Initiative, the NSF set up pilot projects with which to test prototype performance measures.

In the Summary of the FY 1996 NSF Budget presented to the Subcommittee, \$2,454 million is requested for the Research and Related Activities (R&RA) Appropriation. This represents an increase of \$174 million, or 7.6%, over the FY 1995 budget. Of these funds, an 8.3% increase, totaling \$698.28 million, is directed to Mathematical and Physical Sciences Activity, which supports research in

mathematics, astronomy, physics, chemistry, and materials science. An increase of 7.7%, \$344.16 million for FY 1996, is designated to the Engineering Activity, under which the Small Business Innovation Research (SBIR) program is placed.

Under Education and Human Resources, NSF asked for \$102.50 million for support at the undergraduate level, which is a decrease of \$640,000 from FY 1995. A total of \$67.50 million is requested for support at the graduate level, unchanged from FY 1995.

The request for the Academic Research Infrastructure Activity decreased by 15.3%, for a total of \$100 million. These funds will be divided between facilities and instrumentation.

NSF-Sponsored Materials Chemistry Workshop Calls for Applications

The Third NSF-Sponsored Materials Chemistry Workshop is scheduled for October 19-22, 1995, in San Jose, California. The goal of the Workshop is to provide a forum to identify emerging technologies and promote a dialogue between industry, government, and academic scientists, and to identify important fundamental and technological problems. The presentations are to discuss work in progress, emphasizing unanswered questions and providing a vision of directions and opportunities in materials chemistry research. The deadline for applications is June 1, 1995. For more information, Seth Marder can be contacted: phone (818) 395-2829; fax (818) 449-4159.

NRC Report Recommended Changes in Bank Notes to Assist People with Impaired Vision

The National Research Council (NRC) issued a report in January 1995 in which recommendation was made to design new bank notes that would assist people who are visually-impaired or blind to distinguish the various bills. The report recommended using different sizes and colors for different bank note denominations, and printing numerals larger and in high-contrast type. The committee also recommended research on advanced devices to recognize the denomination and authenticate bank notes.

In order for the suggested new features

to be effective and durable, NRC urged research in materials science that would improve the currency base paper. The committee advocated research on a composite substrate that could resist abrasion for tactile purposes, and resist delamination for features involving holes or clipped edges. New substrate materials could also increase the ability to incorporate counterfeiting deterrents such as a magnetic thread.

The report encouraged further research and development on current banknote reading devices in order to make the devices cheaper and more accessible. Such research would be directed to advances in microelectronics, nanotechnology, molecular electronics, materials, photonic, and magnetics.

FY 1996 NSF Budget Requested Increase for Materials Research

The National Science Foundation (NSF) requested \$190.92 million for the materials research subactivity, which is an 8.9% increase over FY 1995. This budget request included \$88.97 million for individual investigators and small groups through the Materials Research Project Support Program, \$62.32 million for multi-investigator research through the Materials Research Science and Engineering Centers (MRSEC) Program, and \$39.63 million for the national user facilities, "including centers for synchrotron radiation, small-angle neutron scattering, high magnetic fields, and nano-fabrication technology."

Under the Materials Research Project Support Program, NSF stipulated research support on the "design and synthesis of materials with new and improved properties, nanoscience and engineering aimed at achieving atomic-level control of nanostructures that offer potential for new devices, the synthesis of biomimetic materials with properties found in biologically produced materials, and research on the development and understanding of 'smart' materials that react to changes in their environment." Funding requested for the MRSEC Program targeted university-industry-federal laboratory partnerships, and funding requested for the national user facilities aimed at upgrading the facilities along with providing researchers with instrumentation at the synchrotron facilities. □