Summary of NSF Accounts

Research and Related Activities

The Research and Related Activities (R&RA) account supports activities that enable the U.S. to provide leadership and promote progress across the expanding frontiers of scientific and engineering research and education. These activities support areas of inquiry critical to long-term U.S. economic strength, security, and quality of life. Research activities spur new knowledge, ideas, tools and approaches that open doors to understanding and solving problems and offer increased opportunities for economic growth. Moreover, as students work alongside senior staff performing research activities, there is a natural integration of research and education as students acquire the skills necessary to perform world class research and become members of the next generation's workforce of scientists and engineers. NSF investments in R&RA reflect the Foundation's three strategic goals: Ideas, People and Tools.

The FY 2001 Request for R&RA totals $3.54 billion, a 19.7 percent increase over FY 2000. In FY 2001, support is provided for NSF initiatives in Information Technology Research, Nanoscale Science and Engineering, Biocomplexity in the Environment, and 21st Century Workforce. NSF will also emphasize increasing the average size and duration of awards. Within R&RA:

- The **Biological Sciences** (BIO) Activity provides support for research to advance understanding of the underlying principles and mechanisms governing life. Research ranges from the study of the structure and dynamics of biological molecules, such as proteins and nucleic acids, through cells, organs and organisms, to studies of populations and ecosystems. It encompasses processes that are internal to the organism as well as those that are external, and includes temporal frameworks ranging from measurements in real time through individual life spans, to the full scope of evolutionary time. The FY 2001 Request for BIO totals $511.14 million, a 23.3 percent increase over FY 2000. BIO will continue to support fundamental academic research on biodiversity, environmental biology, and plant biology, including providing leadership for the Multinational Coordinated *Arabidopsis* Genome Project.

- The **Computer and Information Science and Engineering** (CISE) Activity supports research on the theory and foundations of computing, system software

and computer system design, human-computer interaction, as well as prototyping, testing and development of cutting-edge computing and communications systems to address complex research problems. CISE also provides the advanced computing and networking capabilities needed by academic researchers for cutting-edge research in all science and engineering fields. The FY 2001 request for CISE totals $529.10 million, a 36.2 percent increase over FY 2000, including $190.0 million as part of NSF's Information Technology Research initiative.

- The **Engineering** (ENG) Activity seeks to enhance the quality of life and national prosperity by investing in research and education activities that spur new technological innovations and create new products and services and more productive enterprises. ENG also makes critical investments in facilities, networks, and people to assure diversity and quality in the nation's infrastructure for engineering education and research. The FY 2001 Request for ENG totals $456.50 million, a 19.6 percent increase over FY 2000. ENG will support research in areas including information technology, nanotechnology, biotechnology, and microelectronics. Funds are included to meet the mandated level for the Foundation-wide Small Business Innovation Research (SBIR) program.

- The **Geosciences** (GEO) Activity supports research in the atmospheric, earth, and ocean sciences. Basic research in the geosciences advances our scientific knowledge of the Earth and advances our ability to predict natural phenomena of economic and human significance, such as climate change, earthquakes, weather, fish-stock fluctuations, and disruptive events in the solar-terrestrial environment. The FY 2001 Request of $583.0 million, a 19.5 percent increase over FY 2000, will support the operation and enhancement of national user facilities as well as fundamental research across the geosciences, including emphases on the U.S. Weather Research Program and National Space Weather Program; the U.S. Global Change Research Program; and research on the key physical, chemical and geologic cycles within the Earth System.

- The **Mathematical and Physical Sciences** (MPS) Activity supports research and education in astronomical sciences, chemistry, materials research, mathematical sciences and physics. Major equipment and instrumentation such as telescopes, particle accelerators, synchrontron light sources and neutron facilities are provided to support the needs of individual investigators. The FY 2001 Request of $881.16 million, a 16.3 percent increase over FY 2000, will support fundamental research, state-of-the-art instrumentation, facilities, groups and centers, and the education and training of the future workforce, including bringing scientific discovery to the public.

- The **Social, Behavioral and Economic Sciences** (SBE) Activity supports research to build fundamental scientific knowledge about human characteristics and behavior. SBE also supports the Foundation's international activities, providing U.S. scientists and engineers with access to centers of excellence in science and engineering research and education throughout the world. To improve understanding of the science and engineering enterprise, SBE provides informational tools for tracking the human and institutional resources that make up the nation's science and engineering infrastructure. The FY 2001 Request includes $175.14 million for SBE, a 19.8 percent increase over FY 2000.

- **Polar Programs**, which include the U.S. Polar Research Programs and U.S. Antarctic Logistical Support Activities, support multi-disciplinary research in Arctic and Antarctic regions. These geographic frontiers – premier natural laboratories – are the areas predicted to be first affected by global change. They are vital to understanding past, present, and future responses of Earth systems to natural and man-made changes. Polar Programs support provides unique research opportunities ranging from studies of the earth, ice and oceans to research in atmospheric sciences and astronomy. In FY 2001, Polar Programs increases to $285.41 million, 12.8 percent over FY 2000. Increases are provided for integrated interdisciplinary studies of the Arctic system as well as for

research on Antarctic ice sheets and oceans. Support is also provided to sustain the science facilities and operations that make Arctic and Antarctic research possible, with FY 2001 emphases including increased access to both regions through improvements in weather forecasting systems and air navigation systems.

- **Integrative Activities** (IA) supports emerging cross-disciplinary research and education efforts and major research instrumentation, and provides support for the Science and Technology Policy Institute. The FY 2001 Request of $119.23 million for IA, a decrease of $10.0 million from FY 2000, includes $50.0 million for major research instrumentation, $32.0 million for the Opportunity Fund, and $20.0 million in continued support of Science and Technology Centers.

Education and Human Resources

The FY 2001 Request for Education and Human Resources (EHR) is $729.01 million, an increase of 5.5 percent over FY 2000. In addition, $31.0 million will be provided in FY 2001 from H-1B Nonimmigrant Petitioner Fees. EHR supports a cohesive and comprehensive set of activities which encompass every level of education and every region of the country. EHR also plays a leadership role in the Foundation's 21st Century Workforce initiative by virtue of its extensive programming in education and human resource development. Highlights within EHR include:

- Centers for Learning and Teaching which address comprehensive, long-term approaches to learning and teaching by strengthening the content knowledge of the diverse science and mathematics teaching corps and developing the next generation of experts to guide the development of instructional materials, classroom and large-scale assessments, education research, and informal education

- The Graduate Teaching Fellows in K-12 Education program allows K-12 teachers to utilize graduate and advanced undergraduate students as science and mathematics resources for their classrooms. These Fellows will assist teachers in the science and mathematics content of their teaching, demonstrate key science and mathematics concepts, and gain necessary pedagogical skills.

- The Scholarships for Service program will award scholarships for the study of information security in return for a commitment to work for a specified time for the federal government.

- The Tribal Colleges program will provide awards to enhance the quality of SMET instructional and community outreach programs through curricular reform and enhancement, faculty development, research and other out-of-classroom educational experiences for students, upgrading of scientific instrumentation, and improvement of research infrastructure.

In FY 2001, H-1B Nonimmigrant Petitioner fees for NSF are projected to be $31.0 million for the following activities: Computer Science, Engineering, and Mathematics Scholarships; Grants for Mathematics, Engineering, or Science Enrichment Courses; and Systemic Reform Activities.

Major Research Equipment

The FY 2001 Request for Major Research Equipment (MRE) is $138.54 million, an increase of $45.04 million, or 48.2 percent over FY 2000. The Major Research Equipment account provides funding for the construction and acquisition of major research facilities that provide unique capabilities at the cutting edge of science and engineering. Operations and maintenance costs of the facilities are provided through R&RA.

In FY 2001, funding for seven projects is requested through the Major Research Equipment account: EarthScope:USArray and SAFOD, the Large Hadron Collider (LHC), the Millimeter Array (MMA), the National Ecological Observatory Network (NEON), the Network for Earthquake Engineering Simulation (NEES), the modernization of the South Pole Station, and Terascale Computer Systems.

Salaries and Expenses

The FY 2001 Request for Salaries and Expenses (S&E) is $157.89 million, an increase of 6.0 percent over FY 2000. The Salaries and Expenses appropriation provides funds for staff salaries and benefits, and general operating expenses necessary to manage and administer the NSF. The requested level supports 1,150 full-time equivalents (FTEs), provides for current administrative services, and enhances the agency's investment in information technology to increase productivity.

Office of Inspector General

The Office of Inspector General (OIG) was established to promote economy, efficiency, and effectiveness in administering the Foundation's programs; to detect and prevent fraud, waste, or abuse within NSF or by individuals that request or receive NSF funding; and to identify and resolve cases of misconduct in science. The FY 2001 Request for OIG is $6.28 million, an increase of 15.2 percent over FY 2000. The requested level supports 50 FTEs.