

SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES

\$198,790,000

The FY 2006 Budget Request for the Directorate for Social, Behavioral and Economic Sciences (SBE) is \$198.79 million, an increase of \$1.89 million, or 1.0 percent, over the FY 2005 Current Plan of \$196.90 million.

Social, Behavioral and Economic Sciences Funding

(Dollars in Millions)

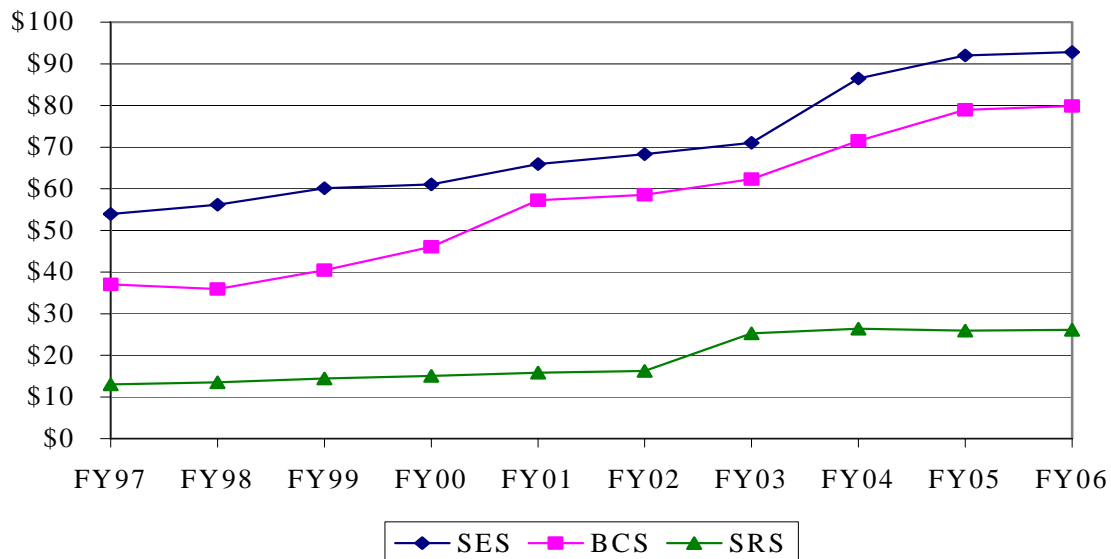
	FY 2005			Change over	
	FY 2004	Current	FY 2006	FY 2005	
	Actual	Plan	Request	Amount	Percent
Social and Economic Sciences (SES)	86.43	91.99	92.80	0.81	0.9%
Behavioral and Cognitive Sciences (BCS)	71.49	78.97	79.84	0.87	1.1%
Science Resources Statistics (SRS)	26.37	25.94	26.15	0.21	0.8%
Total, SBE	\$184.30	\$196.90	\$198.79	\$1.89	1.0%

Totals may not add due to rounding.

The Directorate for Social, Behavioral and Economics Sciences supports research, education, and infrastructure in the social, behavioral, cognitive, and economic sciences, primarily through grants to investigators at universities and other institutions. The research it supports has resulted in substantial advances in our understanding of human and social development, of how people behave, as individuals and as members of groups and other more formal organizations, and of key social and economic institutions. SBE also supports the collection and dissemination of statistics on the science and engineering enterprise.

SBE Subactivity Funding

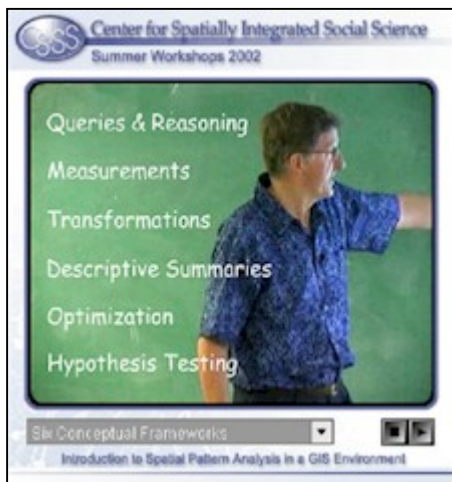
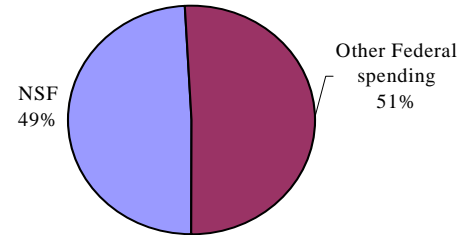
(Dollars in Millions)



RELEVANCE

SBE is a principal source of federal support for fundamental research on human cognition, behavior, social structures, and social interaction, as well as for research on the intellectual and social contexts that govern the development and use of science and technology. Overall, SBE accounts for 49 percent of federal support for basic research in the social sciences at U.S. academic institutions. In some fields, including anthropology, archaeology, political science, economics, sociology and the social aspects of psychology, it is the predominant or exclusive source of federal basic research support.

Federal Support for Basic Research in the Social Sciences at Academic Institutions (excludes the Psychological Sciences)



Workshop in Spatial Social Science

The SBE Directorate supports government-wide and cross-agency priorities and initiatives through its ongoing funding activities including work with relevance for Homeland Security R&D, Networking and Information Technology R&D, ecology and climate change, and the societal implications of biotechnology, nanotechnology, and similar areas of scientific breakthroughs. Homeland Security R&D is supported through basic research activities that have applications for the assessment and prevention of and recovery from terrorist activities. Topics of recently funded research include: brain activity associated with truth and deception; network modeling; linking decision making, risk analysis, and engineering to create effective responses in crisis situations; and the effects of terrorism on those who suffer no physical harm but are vicariously connected to terrorist threats. Other recently supported research projects investigate the human dimensions of ecological issues like climate change

and the social and ethical issues that surround advances in nanotechnology. SBE also provides statistical data for critical analyses on the role of foreign citizens in the U.S. science and engineering workforce. In addition, SBE awards foster the development of new information technology systems and software, the sharing of data within and across disciplines, the development of new social research infrastructures, and education at all levels in the SBE sciences.

The Division of Science Resources Statistics (SRS) within SBE is the federal statistical agency responsible for the compilation and analysis of data on the science and engineering enterprise. Major components are surveys of the science and engineering workforce, the education of that workforce, and the nation's research and development portfolio. Results are used to assess the state of the nation's science and engineering workforce, its ability to compete globally, and the outlook for the nation's research capacity. Results also provide critical benchmarking information on facilities and cyberinfrastructure in the academic and biomedical communities. Findings from SRS studies have long helped shape the development of the nation's educational and science policy agendas.



This website is viewed on average more than 35,000 times a day by people in 75 countries.

Summary of Major Changes by Division

(Dollars in Millions)

SBE FY 2005 Current Plan.....\$196.90

Social and Economic Sciences +\$.81

Increased funding will be distributed among the following priorities: Building a more effective cyberinfrastructure for the social and economic sciences, augmenting the Human and Social Dynamics priority area, increasing the participation of underrepresented groups in social and economic sciences, supporting research exploring the social dimension of drug abuse and drug violence, and improving funding rates across all programs. Support for the National Consortium on Violence Research will sunset in FY 2005 and funding for the Interagency Education Research Initiative will continue to decrease, making resources available for priorities mentioned above.

Behavioral and Cognitive Sciences +\$.87

Increased funding is marked for the Human and Social Dynamics priority area. Other funds and reallocations will focus on research on human origins, documenting endangered languages, neural substrates of cognition, children's development, and fundamental human social processes as well as broadening the participation of underrepresented groups in the behavioral and cognitive sciences. Support for three of the Children's Research Initiative Centers will end in FY 2005 and funding for the Interagency Education Research Initiative will continue to decrease, making resources available for priorities mentioned above.

Science Resources Statistics +\$.21

Increased support will enhance survey redesign activities on SRS core surveys.

Subtotal, Changes +\$.89

SBE FY 2006 Request.....\$198.79

Summary of Major Changes by Directorate-Wide Investments

(Dollars in Millions)

SBE FY 2005 Current Plan\$196.90

Core Research +\$.247

Disciplinary and interdisciplinary research in the core social, behavioral, cognitive, and economic programs will increase to improve funding rates and seed new program initiatives.

Human and Social Dynamics Priority Area +\$.50

In its third full year, SBE will continue to increase funding of the Human and Social Dynamics priority area, reflecting the importance of this agency-wide initiative to transforming research and education in the social, economic, and behavioral sciences. Increased funding will allow more outstanding proposals to be funded. Total SBE funding of the priority area will be \$31.40 million in FY 2006.

Broadening Participation	+\$1.00
Increased funding will support directorate initiatives to encourage women and underrepresented minorities to enter graduate school programs, complete their advanced degrees, and pursue academic careers in the social, behavioral, and economic sciences.	
Science Resources Statistics Survey Redesign	+\$0.11
Increased support will enhance survey redesign activities on SRS core surveys.	
SBE Centers	-\$2.00
The National Center on Violence Research will terminate with FY 2005 funding (-\$1.0 million). Support for the Children’s Research Initiative Centers will decrease as three centers complete their five-year funding (-\$1.50 million) and there will be a new competition for one new CRI center (+\$500,000). Support for related activities will continue through core research programs.	
Interagency Education Research Initiative	-\$0.50
Support for the Interagency Education Research Initiative will decrease to allow for additional funding of research and education through core SBE programs.	
Organizational Excellence	+\$0.21
Funding for Organizational Excellence will increase to reflect a rise in administrative costs for activities necessary to achieve NSF’s mission and goals. These investments include support for Intergovernmental Personnel Act appointments and for contractors performing administrative functions.	
Subtotal, Changes	+\$1.89
SBE FY 2006 Request.....	\$198.79

PRIORITY AREAS

In FY 2006, SBE will continue to support research and education efforts related to broad, Foundation-wide priority areas in Biocomplexity in the Environment, Nanoscale Science and Engineering, Mathematical Sciences, and Human and Social Dynamics.

SBE Investments in NSF Priority Areas
(Dollars in Millions)

	FY 2004 Actual	FY 2005 Current Plan	FY 2006 Request	Change over FY 2005	
				Amount	Percent
Biocomplexity in the Environment	\$6.27	\$2.00	\$2.00	\$0.00	0.0%
Nanoscale Science and Engineering	\$2.59	\$1.56	\$1.56	\$0.00	0.0%
Mathematical Sciences	\$1.82	\$1.50	\$1.50	\$0.00	0.0%
Human and Social Dynamics	\$21.56	\$30.90	\$31.40	\$0.50	1.6%

Biocomplexity in the Environment: Support will continue at the FY 2005 level for research on the dynamics of coupled human and natural systems, international collaborations, and Materials Use: Science, Engineering, and Society, a competition led by the Directorate for Engineering with some support from SBE. Assistance also continues for activities associated with fundamental research to increase scientific understanding of social and behavioral processes associated with extreme and unpredictable events, and for the social and economic dimensions of materials use research.

Nanoscale Science and Engineering: Within SBE's \$1.56 million total contribution, \$600,000 will support the Nanoscale Science and Engineering Center on Nanotechnology in Society, a multi-directorate center managed by SBE. The directorate will continue to fund research on the social and economic aspects of nanotechnology including research to ensure the responsible development of nanotechnology, work that explores how nanotechnology can enhance human performance, and research exploring public understanding of and engagement with nanoscale science, engineering, and technology.

Mathematical Sciences: Within this priority area, SBE is supporting collaborative teams consisting of social/behavioral and mathematical/statistical scientists who are working to develop new mathematical and statistical techniques to advance research in the social and behavioral sciences. SBE will also support innovative training activities.

Human and Social Dynamics: Support for the SBE-managed Human and Social Dynamics priority area will increase by \$500,000 for a total of \$31.40 million to support interdisciplinary approaches to understanding the complex dynamics within and among human and social systems and their environments, at scales ranging from the cellular to the global. Focal areas for this work are the dynamics of human behavior; agents of change; and decision making, risk, and uncertainty. This increase reflects a commitment to the excellent integrative science that is emerging through the Human and Social Dynamics competitions and the value of interdisciplinary collaboration in advancing not only the social, behavioral, and economic sciences, but also other scientific and national priorities.

QUALITY

SBE maximizes the quality of the R&D it supports through the use of a competitive, merit-based review process. In FY 2004, the last year for which complete data exist, 97 percent of research funds were allocated to projects that underwent external merit review.

To ensure the quality of its processes for handling proposals and recommending proposals for awards, SBE convenes Committees of Visitors, composed of expert external evaluators, to review each program every three years. These experts assess the integrity and efficiency of the proposal review process and provide a retrospective assessment of the results of NSF's SBE investments. The Division of Behavioral and Cognitive Sciences programs were reviewed in FY 2003. The Division of Social and Economic Sciences programs and the Division of Science Resources Statistics R&D data programs were reviewed in FY 2004.

The Directorate also receives advice from the Advisory Committee for Social, Behavioral, and Economic Sciences (SBEAC) on the missions, programs, and goals that can best serve the scientific community; the promotion of quality graduate and undergraduate education in the social, behavioral, and economic sciences; and priority investment areas for research. The SBEAC meets twice a year. Members represent a cross section of SBE-supported disciplines, with representatives from many different sub-disciplines within the field, including members from institutions and industry. The Committee includes women, members of under-represented minorities and people from all geographic regions.

PERFORMANCE

NSF's FY 2006 budget is aligned to reflect funding levels associated with the Foundation's four strategic outcome goals and the ten investment categories highlighted in the FY 2003-2008 Strategic Plan. These categories were designed as a mechanism to better enable assessment of program performance and to facilitate budget and performance integration.

**Social, Behavioral and Economic Sciences
By Strategic Outcome Goal and Investment Category**

(Dollars in Millions)

	FY 2004 Actual	FY 2005		Change over FY 2005	
		Current Plan	FY 2006 Request	Amount	Percent
<i>People</i>					
Individuals	10.54	8.59	8.59	-	-
Institutions	1.43	1.43	1.43	-	-
Collaborations	.42	0.0	1.00	1.00	-
	12.39	10.02	11.02	1.00	10.0%
<i>Ideas</i>					
Fundamental Science and Engineering	113.20	133.77	135.74	1.97	1.5%
Centers Programs	14.66	8.70	7.30	-1.40	-16.1%
Capability Enhancement	0.80	0.70	0.70	-	-
	128.66	143.17	143.74	0.57	0.4%
<i>Tools</i>					
Facilities	0.30	0.30	0.30	-	-
Infrastructure and Instrumentation	39.32	39.89	40.00	0.11	0.3%
Polar Tools, Facilities and Logistics	-	-	-	-	-
Federally-Funded R&D Centers	-	-	-	-	-
	39.62	40.19	40.30	0.11	0.3%
<i>Organizational Excellence</i>					
	3.63	3.52	3.73	0.21	6.0%
Total, SBE	\$184.30	\$196.90	\$198.79	\$1.89	1.0%

Totals may not add due to rounding.

SBE will continue its commitments to education, training, and increasing diversity within all of its Divisions. The FY 2006 budget will maintain award size and maintain commitments to multidisciplinary research activities, interagency partnerships, and international activities, as well as attention to broadening participation at all levels.

Recent Research Highlights



Dr. Steven Levitt

2003 John Bates Clark Medal Winner, PECASE: The Economics of Gangs. Steven Levitt of the University of Chicago received the prestigious John Bates Clark Medal from the American Economics Association in 2003 for his pioneering and influential empirical work on the economics of crime. The medal, bestowed every two years, recognizes the nation's most outstanding economist under 40. A Presidential Early Career Award for Scientists and Engineers (PECASE) in 2000 and earlier NSF grants supported Levitt's research. Levitt's work reveals that incarceration time policies have a greater impact on crime rates than previously thought. He explains the recent trend toward youth rather than adult crime as a response to differential incentives. He uses the introduction of sentence increases in California to produce

evidence in favor of "deterrence" theories of incarceration in contrast to "incapacitation" theories. In other studies, Levitt found that increasing police numbers reduces violent crime far more than property offenses; that auto owners who install hidden radio transmitter devices create social benefits of general deterrence that dwarf the private benefits they receive; and that even though the wages drug gang members typically receive from illegal activity are low, they are better than what members could expect to earn in the legal job market. Levitt's work and the singular honor he has received illustrate the value of investing in people through CAREER and PECASE awards.

Religion, Politics, and Community in Egypt, Iran and Jordan. It is today not news that we must better understand the beliefs and attitudes of people living in Islamic societies. Mansoor Moaddel, working with social scientists from Egypt, Iran and Jordan, surveyed attitudes toward religion, political liberalism and other issues in these countries. The survey found that while citizens of all three countries are highly religious, there is considerable variation in value orientations, associated in unexpected ways with variations in the political contexts and religious orientations of the ruling regimes. Iranians, despite living under a religious regime for more than two



decades, appear to be less religious and more nationalistic than either Egyptians or Jordanians, who live under secular regimes. Iranians also have more liberal attitudes toward marriage and women working outside the home than the respondents from the other two countries and prefer smaller family sizes. Furthermore, Iranians tend to be less concerned with Western cultural invasion than the citizens of the other two countries. This study, particularly

the somewhat surprising contrasts between Iranian communities and those in Egypt and Jordan, cautions us against thinking that a regime's religiosity or relationship to the United States mirrors the attitudes of its people toward religion and western values.

Discovering the Brain Mechanisms that Cause False Memories. The ease with which people's memories can so easily be distorted is disconcerting. False memories are relevant to serious issues ranging from the validity of eyewitness testimony to recovered repressed memories. Careful investigation of an event through repeated questioning, which may inadvertently suggest a certain outcome or contain misinformation, can significantly affect the memory of the event. Thus, understanding the neural processes involved in false memories is extremely important. This study by Yoko Okado and Craig Stark at Johns Hopkins University demonstrates how significant a role the initial encoding of a memory plays in the false memory process, and how memories from multiple events can be easily integrated into what people believe is a memory for a single event. Further, the study helps show how this process works in the brain, and how the neural processing of true and false memories is similar. This multi-disciplinary research combines methods from psychology, forensic psychology, and cognitive neuroscience. It is innovative in making use of brain imaging (fMRI) to study a highly controversial and important question.

Analysis of Material Remains. Through the analysis of material remains, archaeologists can trace the movement of objects and the ideas which they embody. It is, however, extremely difficult to determine whether observed material patterns result from the flow of ideas or of people themselves.



Douglas Price and James Burton and collaborators at the University of Wisconsin have developed and refined a technique, which can solve this dilemma. The bedrock in individual geographical regions can differ significantly in its isotope ratio and these differences are reflected in food. Thus, because teeth form relatively early in the human lifespan and their enamel is not replaced, their strontium isotope ratio bears a signal related to the geology of childhood geography. In contrast, bone is replaced over the lifetime and reflects later residence history. Measurement of strontium isotope ratios in mammalian tooth and bone can determine regional biological signals – this is an extremely

powerful and broadly applicable technique. For example, through analysis of their skeletons one can determine which Icelandic Vikings were born on that island and which, in contrast, retain a childhood Scandinavian isotopic tooth signal.

Reducing Racial Prejudice in Children. Prejudice continues to create barriers for the learning and development of children from all racial and ethnic groups. An international and interdisciplinary team of social and developmental psychologists, led by Sheri Levy of SUNY at Stony Brook, has examined the role of teachers in communicating one of three types of theoretically derived anti-bias messages to school children. First, the colorblind theory suggests that racial prejudice results from an overemphasis on racial differences; thus, children would benefit from ignoring or minimizing race differences. Second, multicultural theory suggests that racial



prejudice results from a lack of knowledge about the contributions of different racial and cultural groups; thus, children should benefit from focusing on race and the positive contributions of different racial groups. Third, antiracism theory suggests that racial prejudice results from a lack of knowledge of the history and pernicious effects of racism; thus, children should benefit from learning about the harms racial prejudice has caused. To examine this, white elementary school age children (ages 6 to 11) received a history lesson about Jackie Robinson and Babe Ruth, with the lessons varying to reflect just one of the three messages. Children who were given the antiracism message showed significantly less biased attitudes toward African Americans and developed empathy for African American victims of racial hostility. These findings suggest that teachers can be effective communicators of antibias messages and that antibias messages can easily be incorporated into social studies or history lessons, to effectively reduce prejudice in our nation's youth.



Implementation of the Redesign of the Research Facilities Survey. The National Science Foundation, with support from the National Institutes of Health, completed an extensive redesign of the congressionally mandated Survey of Science and Engineering Research Facilities. The redesign focused on all aspects of the survey, including population coverage, survey content, and survey questionnaire layout and design, as well as development of a web instrument. The result is the collection of more

extensive, valid, and reliable information on the status of research facilities at universities and biomedical research organizations, by major field of science and engineering. This information includes the present

and planned amount of space available for conducting research, the amount of construction, repair, and renovation of space, and the amount of funds expended on construction, repair, and renovation of research space. In addition to the improvements in the traditional ‘bricks and mortar’ section of the survey, there also is a new survey section that measures computing and networking capacity. New measures allow NSF to document cyberinfrastructure availability and the capacity of facilities to conduct research.

Implementation of the Redesign of the SESTAT Surveys. The National Science Foundation conducts three surveys of the science and engineering workforce, which collectively provide data for the Scientists and Engineers Statistical Data System (SESTAT). The three surveys are the National Survey of College Graduates (NSCG), the National Survey of Recent College Graduates (NSRCG), and the Survey of Doctorate Recipients (SDR). Following a two-year review of the goals, content, and design of the three surveys, which was accomplished through a series of workshops and meetings with SESTAT stakeholders, surveys were updated to meet the expanding needs of the public, researchers, and science policy community. Improvements to the surveys included (a) revisions to sample designs, to ensure high-quality data that meet analytical goals; (b) a review and update of content to meet new needs; and (c) field testing to validate changes and to make instruments more respondent-friendly. Two of the surveys (NSRCG and SDR) began wide-scale implementation of a web mode. Investment in this methodology allows respondents additional opportunities to answer questions and improves data quality.

Other Performance Indicators

The tables below show the number of people benefiting from SBE funding, trends in award size and duration, number of awards, and funding rates.

Number of People Involved in SBE Activities

	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate
Senior Researchers	2,325	2,484	2,508
Other Professionals	403	431	435
Postdoctorates	188	201	203
Graduate Students	1,320	1,410	1,424
Undergraduate Students	604	645	652
K-12 Teachers	0	10	10
Total Number of People	4,840	5,181	5,232

SBE Funding Profile

	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate
Statistics for Competitive Awards:			
Number	939	1,003	1,013
Funding Rate	20%	22%	22%
Statistics for Research Grants:			
Number of Research Grants	597	637	642
Funding Rate	16%	17%	18%
Median Annualized Award Size	\$78,000	\$78,000	\$78,000
Average Annualized Award Size	\$90,413	\$90,413	\$90,413
Average Award Duration, in years	2.4	2.4	2.4

SOCIAL AND ECONOMIC SCIENCES

\$92,800,000

The FY 2006 Budget Request for the Division of Social and Economic Sciences (SES) is \$92.80 million, an increase of \$810,000, or 0.9 percent, over the FY 2005 Current Plan of \$91.99 million.

Social and Economic Sciences Funding

(Dollars in Millions)

	FY 2005			Change over	
	FY 2004	Current	FY 2006	FY 2005	
	Actual	Plan	Request	Amount	Percent
Social and Economic Sciences	\$86.43	\$91.99	\$92.80	\$0.81	0.9%
Major Components:					
Research and Education Grants	80.91	85.99	87.80	1.81	2.1%
Centers Programs					
Decision Making Under Uncertainty Centers	4.52	5.00	5.00	0.00	0.0%
National Center for Violence Research	1.00	1.00	0.00	-1.00	-100.0%

Totals may not add due to rounding.

About SES:

The Division of Social and Economic Sciences supports research and related activities aimed at better understanding, both nationally and internationally, political, economic, and social systems and how individuals and organizations function within them. It also supports research and other activities related to risk assessment and decision making by individuals and groups; the nature and development of the various sciences and technologies and their implications for society; methods and statistics applicable across the social, economic, and behavioral sciences; scholarly career development; and broadening participation in the social, behavioral, and economic sciences. Its programs include the classic disciplines of economics, political science, and sociology and such vibrant interdisciplinary fields as decision making and risk, law and social science, and science and technology studies. In many of its program areas, SES is the major if not the only federal funding source of basic social science research as well as an invaluable investor in fundamental data resources and methodological advancement.

About 72 percent of Division funding is available for new awards and activities. The remaining 28 percent funds awards made in previous years.

The SES portfolio has two major modes of support: research and education grants and centers.

- SES research and education grants range in scope from small supplements that allow undergraduates to participate in funded research to multi-million dollar survey grants that provide data used by thousands of researchers and that inform both business and governmental decisions. For example, major activities include:
 - Supporting “gold standard” longitudinal and repeated cross-section surveys, including the Panel Study of Income Dynamics, the American National Election Studies, and the General Social Survey.
 - Supporting, with the Census Bureau, the Research Data Centers.
 - Supporting workshops on topics ranging from Education and Training in the Social, Behavioral and Economic Sciences to Understanding Global Tensions, with a focus on the Middle East.

- Supporting the National Consortium on Violence Research.
- Supporting leading interdisciplinary experimental laboratories in political science (Rice), economics (Cal. Tech., Harvard, South Carolina, Virginia) and decision science (Virginia Tech), including projects with emphasis on the use of experimental methods in the classroom (South Carolina, Virginia).
- Coordinating the Ethics Education in Science and Engineering Program and supporting, with other NSF Directorates, the Online Ethics Center for Engineering and Science.
- Five interdisciplinary centers study decision making under uncertainty (DMUU) in relation to climate change:
 - Arizona State University's Decision Center for a Desert City uses Phoenix as a laboratory to study adaptation strategies, with particular attention to water management in an arid climate.
 - Carnegie Mellon University's Climate Decision Making Center focuses on how to deal with unavoidable uncertainties, including cost and policy decision implications.
 - Columbia University's Center for the Study of Individual and Group Decision Making Under Climate Uncertainty focuses on integrating psychological insights with those from other social sciences to develop tools to help people better understand the impacts of climate change and their response options.
 - The University of Colorado-Boulder's Science Policy Assessment and Research on Climate (SPARC) team examines decision makers' expectations about what science can deliver, whether policy makers can use available information, and what future information might be useful to them.
 - The Rand Corporation research team conducts fundamental research on different characterizations of uncertainty and develops quantitative tools to deal with robust decision making.

SES Priorities for FY 2006:

- Build a more effective cyberinfrastructure (1) by increasing support for major social science surveys to counter lower response rates, improve quality, and take advantage of new technologies, and (2) through methodological planning and other investments aimed at improving or bringing online a wide range of cybertechnologies with the potential to transform social research. Supported activities allow scientists to take the “social pulse” of the nation. Not only does this advance basic science, but it also provides information regularly used by governmental policy makers at all levels and has become increasingly important in understanding the complex relationship between social location and health outcomes.
- Support the Human and Social Dynamics priority area to allow research on a scale that cannot be achieved through standard SES grants and to promote broadly interdisciplinary research that can foster major breakthroughs in understanding social change, organizational action, and decision making and risk.
- Increase support for core programs to improve funding rates. Support for programmatic research not only advances fundamental science but also supports work on issues of immediate relevance to national priorities, ranging from curbing interpersonal violence, to discovering terrorist networks, to effectively communicating risks of earthquakes and tsunamis.
- Focus new support to promote the development of rigorous qualitative research, particularly in conjunction with sophisticated quantitative analyses. Not all information can be captured in quantitative form. Qualitative research has made important contributions to richer understandings of such social behaviors as job performance, gang violence, and classroom education. New technologies

that allow the more rigorous analysis of qualitative data and the blending of qualitative and quantitative data must be exploited.

- Maintain or enhance efforts to better understand organizations, including the initiation of an organizational survey and the establishment of widely accessible organizational databases. Organizations mediate most social activities and drive the economy, but they are understudied relative to individuals. Publicly available archival data that is often widely scattered could be brought together and made generally accessible, and new survey-based information is needed. Other organizational data are considered proprietary or otherwise held confidential. Social scientists need ways of accessing these data while guaranteeing organizational confidentiality.
- Increase investments in education for the social and economic sciences, particularly with respect to underrepresented segments of the population. Rigorous training in sophisticated quantitative methodologies and the use of computer programs and other cybertools is increasingly essential in social science scholarship. Building these essential skills can be and has been enhanced by special training or mid-career retraining programs. Broadening participation is also essential. Doing so increases the diversity of investigators which feeds directly into the portfolio of problems explored within a discipline and, in some cases, affects the ability of investigators to access and interpret data.

Changes from FY 2005:

- Increase core social and economic sciences research programs by \$1.30 million to improve funding rates across these areas and seed initiatives. A portion of this increase may support a jointly funded research activity with the National Institute on Drug Abuse exploring the social dimensions of drug abuse and drug violence.
- Add \$250,000 to the Human and Social Dynamics priority area for a total of \$15.70 million to support an additional number of outstanding proposals addressing the dynamics of human change over several time scales. This follows an increase in FY 2005.
- Contribute \$450,000 to broadening participation by supporting NSF efforts to encourage underrepresented groups to enter graduate programs in one of the social or economic sciences and to complete advanced degrees or to launch academic careers in these disciplines.
- Reallocate \$1.0 million from the National Consortium on Violence Research Center (NCOVR) upon expiration of its grant in FY 2005. The Center received one renewal and is ineligible for another.
- Decrease funding for the Interagency Education Research Initiative (IERI) by \$250,000 for a total of \$250,000.

BEHAVIORAL AND COGNITIVE SCIENCES

\$79,840,000

The FY 2006 Budget Request for the Division of Behavioral and Cognitive Sciences (BCS) is \$79.84 million, an increase of \$870,000, or 1.1 percent, over the FY 2005 Current Plan of \$78.97 million.

Behavioral and Cognitive Sciences Funding

(Dollars in Millions)

	FY 2005			Change over	
	FY 2004	Current	FY 2006	FY 2005	
	Actual	Plan	Request	Amount	Percent
Behavioral and Cognitive Sciences	\$71.49	\$78.97	\$79.84	\$0.87	1.1%
Major Components:					
Research and Education Grants	63.99	76.47	78.34	1.87	2.4%
Centers Programs					
Children's Research Initiative Center	2.50	2.50	1.50	-1.00	-40.0%
Decision Making Under Uncertainty Centers	5.00	0.00	0.00	0.00	0.0%

Totals may not add due to rounding.

About BCS:

The Division of Behavioral and Cognitive Sciences supports research and related activities that advance fundamental understanding in the behavioral, cognitive, anthropological, and geographic sciences. The Division seeks to develop and advance scientific knowledge and methods focusing on human cognition and behavior, including perception, social behavior, language, and learning as well as across levels from neural through individual, family, and group levels. The Division supports research and related activities that focus on human variation at the scales of society, culture, and biology, and how these variations and patterns develop over time. It supports efforts to increase basic understanding and capabilities to explore geographic distributions and interactions of human, physical, and biotic systems on the Earth's surface. Through a convergence of new technologies and theoretical developments, behavioral and cognitive scientists are exploring new areas of inquiry and innovatively addressing longstanding questions. Strong core disciplinary programs are complemented by capitalizing on increased ability to support collaborative and interdisciplinary projects to advance knowledge and build capacity across multiple fields.

About 65 percent of Division funding is available for new awards and activities. The remaining 35 percent funds awards made in previous years.

The BCS portfolio has two major modes of support: research and education grants and centers.

- BCS research and education grants range in scope from individual-investigator awards for research based at the investigator's home institution to larger group projects that span multiple disciplines and institutions. For example, major activities include:
 - Integrating qualitative and quantitative analyses to understand cultures.
 - Understanding fundamental human processes, including language, cognition, perception and social interaction, in relation to adult and childhood developmental processes.
 - Using a geographic framework for understanding social, political, and economic transformations.
 - Using non-linear models to understand dynamics of human behavior on time scales from the instantaneous to the millennial.

- Creating platforms for annotating and archiving textual, audio, and video language samples, as well as accessing the material for analyses.
 - Understanding human biological variation, human adaptation, and human ontology.
 - Providing fundamental understanding of human social behavior, including attitude formation and change, social cognition, and personality processes.
 - Facilitating research that advances the understanding of the complexity in human-environmental interactions.
- BCS Centers will include two Children's Research Initiative Centers funded in previous years as well as one new Center.
 - The *Center for Research on Culture, Development and Education* (New York University) conducts research designed to identify pathways to success for all children, with a particular emphasis on children from diverse backgrounds. The scientific mission is to use an integrative conceptual framework, cross-disciplinary collaborations, and multiple methods to link children's early experiences with their academic engagement and performance.
 - The *Center for the Analysis of Pathways from Childhood to Adulthood* (University of Michigan) focuses on analyzing the longitudinal, interactive impact of contextual and personal factors on how children move successfully into adulthood. Innovative interdisciplinary research, using several already existing national and international databases, is addressing fundamental questions about sensitive developmental periods, contexts, discontinuities, and cross-generational similarities. (\$500,000 in FY 2006)

BCS Priorities for FY 2006:

Initiatives within Behavioral and Cognitive Sciences include special competitions for investigating human and social dynamics, for documenting endangered languages, and for learning about human origins. Opportunities for advances in cognitive and behavioral sciences are recognized to be afforded by advances in cyberinfrastructure. New methods are transforming how we understand the links between behavior, cognition, and their biological substrates. These advances are strengthening the core programs and their relations to each other.

- The BCS Division plays an active role in the Human and Social Dynamics priority area, which supports larger-scale, interdisciplinary research on human action and development, as well as organizational, cultural, and societal adaptation and change. The Division is especially involved in promoting research on the dynamics of human behavior and on anthropological and geographic facets of human and social change.
- Documenting Endangered Languages is a joint undertaking of the National Science Foundation, the National Endowment for the Humanities, and the Smithsonian Institution. This competition supports projects that develop and advance knowledge concerning endangered human languages. Made urgent by the imminent death of an estimated half of the 6,000-7,000 currently used human languages, which are evidence of the information design capacities of the human brain, this effort aims also to exploit advances in information technology. Funding will support fieldwork and other activities relevant to recording, documenting, and archiving endangered languages, including the preparation of lexicons, grammars, text samples, and databases.
- The Human Origins competition aims to enhance basic knowledge about the complex biological, physical, and behavioral interrelationships that led to the development of the human species, and that are responsible for both the shared and variable features that characterize living human populations. This competition recognizes that understanding of the processes and pathways of human evolution

requires the integration of research across a wide range of disciplines. Because projects examine human origins from multiple perspectives and across both time and space, larger-scale, longer-duration projects are supported.

- Integrating development of cyberinfrastructure with advances in the fundamental understanding of the complexity of human behavior addresses critical national needs. Investments harness advances in processing power, storage capacity, input options, analyses of complexity and networking for the understanding of human behavior.
- Behavioral and cognitive sciences are being transformed by new research methods that can be used to investigate the links between behavior and its biological bases. Cognitive neuroscience is partnering with other social and behavioral sciences to understand, for example, the brain mechanisms underlining social and economic decision making.
- Core disciplinary research is strongly supported both to advance fundamental understanding and to serve as foundational work for critical national issues, including disaster response, national security, and the promotion of individual well-being.
- Behavioral and Cognitive Sciences is strongly committed to broadening participation in the scientific community, particularly by approaches focused at institutions and collaborations among institutions.

Changes from FY 2005:

- Increase by \$1.27 million core research in behavioral and cognitive sciences to enable additional research on human origins, documenting endangered languages, the neural substrates of cognition, children's development, and fundamental human social processes.
- Add \$250,000 to the Human and Social Dynamics priority area for a total of \$15.70 million to support an additional number of outstanding proposals addressing the dynamics of human change over several time scales. This follows an increase in FY 2005.
- Increase by \$450,000 research-related activities focusing on human diversity, including those designed to more effectively broaden participation of underrepresented groups in behavioral and cognitive science activities.
- Reduce by \$1.0 million support for the Children's Research Initiative (CRI) Centers, reflecting the completion of funding for the first cohort of three centers and competition for funding of one new center.
- Reduce by \$250,000 support for the Interagency Education Research Initiative (IERI) to a total of \$250,000, thus making funds available for greater investments in other core activities.

SCIENCE RESOURCES STATISTICS

\$26,150,000

The FY 2006 Request for the Division of Science Resources Statistics (SRS) is \$26.15 million, an increase of \$210,000 or 0.8 percent, over the FY 2005 Current Plan of \$25.94 million.

Science Resources Statistics Funding

(Dollars in Millions)

	FY 2005			Change over	
	FY 2004	Current	FY 2006	FY 2005	
	Actual	Plan	Request	Amount	Percent
Science Resources Statistics	\$26.37	\$25.94	\$26.15	\$0.21	0.8%

About SRS:

The legislative mandate for the Division of Science Resources Statistics as stated in the National Science Foundation Act of 1950, as amended, is "...to provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources and to provide a source of information for policy formulation by other agencies of the federal Government..." To meet this mandate, SRS provides policymakers, researchers, and other decision makers with high quality data and analysis for making informed decisions about the nation’s science, engineering, and technology enterprise. The work of SRS involves survey development, methodological and quality improvement research, data collection, analysis, information compilation, dissemination, web development and customer service to meet the statistical and analytical demands of a diverse user community, as well as preparation of the congressionally mandated *Science and Engineering Indicators* and *Women, Minorities and Persons With Disabilities in Science and Engineering* biennial reports.

The funding portfolio for SRS includes ongoing, cyclical surveys, reports, and projects accomplished primarily through contracts and also a few standard grants. Funding is provided annually; SRS makes limited use of multi-year commitments. In FY 2005 only \$120,000 of the budget is committed from prior years for continuing obligations. In FY 2006 SRS will:

- Continue to conduct surveys and analytic activities that produce information for carrying out NSF’s statutory mandate, for meeting NSF strategic goals and for developing *Science and Engineering Indicators* and *Women, Minorities and Persons with Disabilities in Science and Engineering*. In FY 2006, SRS will continue activities designed to improve the relevance and quality of the data it collects and the information it disseminates. Such activities will lead to further needed quality improvements and additions to current activities in subsequent years.
- Continue to improve the *Survey of Graduate Students and Postdoctorates in Science and Engineering* with ongoing implementation of redesigned efforts on a flow basis after significant pilot and testing activities.
- Support a module of the *General Social Survey* to obtain high quality information on public understanding and knowledge of science and technology. This effort is one of a series initiated by SRS beginning in FY 2004 to significantly improve the quality of information obtained on public understanding of science which is used in the *Science and Engineering Indicators* report.
- Continue collection and dissemination of breakthrough data collections on the characteristics of cyberinfrastructure in the nation’s academic and biomedical facilities. First time ever data was

collected in FY 2004 and published in FY 2005. The pace of change with respect to cyberinfrastructure is so rapid that the survey instrument will have to be updated prior to each fielding.

- Maintain continuous improvement in the relevance and quality of all its products. Priorities for FY 2006 are implementing the results of prior methodological, analytical and planning activities directed toward improving the quality, relevance, timeliness, and accessibility of all SRS products, including implementing both redesigns and improvements to the major components of the ongoing suite of SRS statistical surveys and continuing the exploration of the feasibility of new information collection efforts initiated in prior years.
- Continue efforts to enhance its capabilities to understand the science and engineering enterprise in Asia.

SRS Priorities for FY 2006:

As the office responsible for the primary data set on the U.S. scientific and engineering workforce, SRS will:

- Continue to disseminate the 2003 cycle of data collections for the redesigned *National Survey of College Graduates*, *National Survey of Recent College Graduates*, and the *Survey of Doctorate Recipients*. Data from the three surveys comprise the Scientists and Engineers Statistical Data System (SESTAT). Dissemination of data from the 2003 surveys will begin in FY 2005 and continue in FY 2006 through detailed analyses, statistical reports, and ongoing products on the SRS website. A component of the analysis will be reporting on the major methodological activities undertaken by SRS to improve the response rates and quality of these surveys. In FY 2006, SRS will commence the 2006 cycle of the SESTAT suite of surveys. Incorporated into this cycle will be a number of methodological improvements based on experiments and experience in the 2003 cycle.
- Develop feasibility and potential pilot activities on two new projects begun in FY 2004 with continued development in FY 2005. One is an activity to gather information about individuals in postdoctorate positions, including individuals with foreign doctorates. The second is a program examining how to obtain information on research instrumentation, as mandated by the NSF Authorization Act of 2002.
- Continue research and methodological activities begun in FY 2005 to improve the relevance and quality of data collected on the conduct of research and development (R&D). SRS is engaged in a long-term effort to devise collection instruments that more accurately measure the economic output of R&D than is presently captured in the Industry Research and Development Expenditures Survey. Activities include: methodological research on how best to capture R&D activities in the service sector, the role of innovation, new forms of conducting R&D, and the globalization of R&D. In FY 2005, the National Academy of Sciences completed a major review of the SRS R&D surveys portfolio. In FY 2006, SRS will initiate plans to address and prioritize some report recommendations
- Continue activities examining the present taxonomies in place for describing fields of study/science. SRS is leading a cross-agency effort to update the 1978 OMB Directive No. 16 - Standard Classification of Fields of Science and Engineering. Of major concern are developing

crosswalks between existing taxonomies and any potential new taxonomy, developing methods to better include cross-disciplinary and multi-disciplinary fields.

- Complete the final draft of the *2006 Science and Engineering Indicators* report. The report will include an enhanced State chapter and a restructured Public Attitudes chapter.

Changes from FY 2005:

- Funding increases by \$110,000 to a total of \$26.15 million to enhance survey redesign activities on SRS core surveys.
- Funding for activities to broaden participation is set at \$100,000. SRS directly supports grants for research on the development of science and technology (including workforce) indicators and survey methodology. SRS also provides support to the grants programs of the Association for Institutional Research (AIR) and the American Educational Research Association (AERA). Both of these programs support detailed analysis of data and participation in the science and engineering workforce. In addition SRS supports, jointly with the National Center for Education Statistics, the AIR Database Institute that instructs educational researchers from a broad spectrum of institutions, including minority serving institutions, on how to use SRS data for program evaluation and internal planning. The two grants programs encourage the development of new researchers with expertise in the analysis of science and engineering education and workforce issues, with particular attention to encouraging participation by students and researchers from underrepresented minority groups.

