

SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES

\$213,760,000

The FY 2007 Budget Request for the Directorate for Social, Behavioral and Economic Sciences (SBE) is \$213.76 million, an increase of \$13.85 million, or 6.9 percent, over the FY 2006 Current Plan of \$199.91 million.

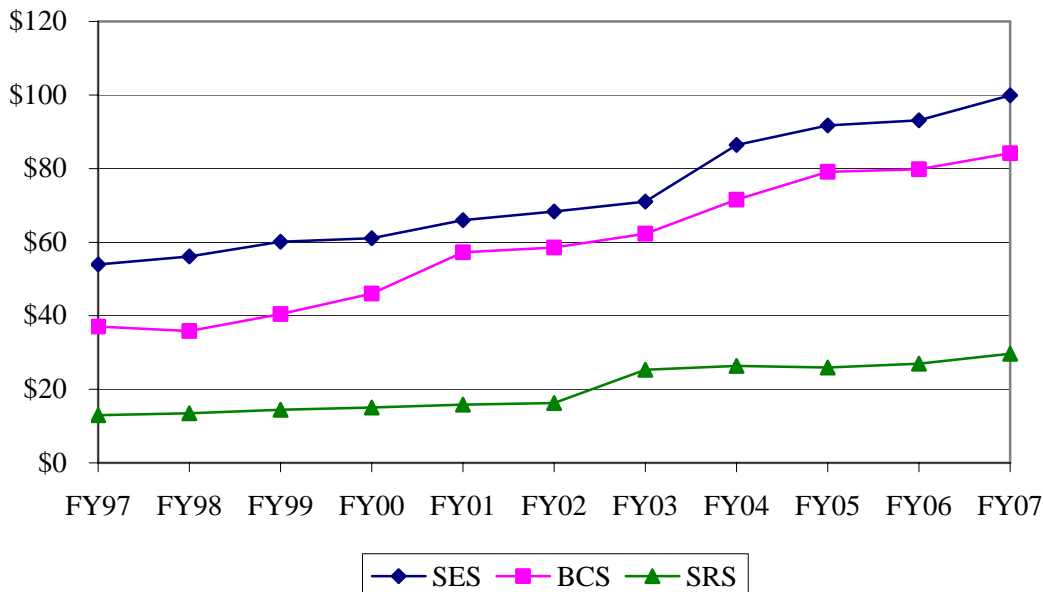
Social, Behavioral and Economic Sciences Funding (Dollars in Millions)

	FY 2005 Actual	FY 2006 Current Plan	FY 2007 Request	Change over FY 2006	
				Amount	Percent
Social and Economic Sciences	\$91.75	\$93.15	\$99.92	\$6.77	7.3%
Behavioral and Cognitive Sciences	79.13	79.77	84.13	4.36	5.5%
Science Resources Statistics	25.92	26.99	29.71	2.72	10.1%
Total, SBE	\$196.80	\$199.91	\$213.76	\$13.85	6.9%

Totals may not add due to rounding.

The Directorate for Social, Behavioral and Economic Sciences supports research, infrastructure, and education primarily through grants to investigators at universities and other institutions. The research it supports, over the past decades, 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 and indicators. SBE also supports the collection and dissemination of statistics on the science and engineering enterprise.

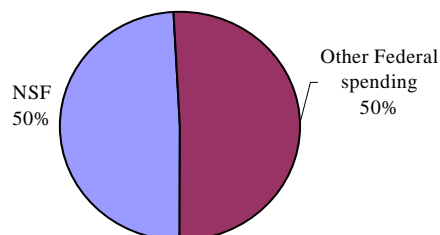
SBE Subactivity Funding (Dollars in Millions)



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 about half of federal support for basic research in the social sciences at U.S. academic institutions (reported by all federal agencies for FY 2003). In some fields, including anthropology, archaeology, political science, linguistics, non-medical sociology, and the social aspects of psychology, SBE 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)



The SBE Directorate supports government-wide and cross-NSF priorities and initiatives through its ongoing funding of work related to homeland security, disaster recovery, education and learning, the health of the economy, networking and information technology, ecology, climate change, biotechnology, nanotechnology, and similar areas. Basic research improves our capacity to assess, prevent, respond to, and recover from terrorist activities and natural disasters. Topics of recently funded research include: brain activity associated with truth and deception; the influence of fear on perceptions and decision making; network modeling; rebuilding from disasters; and the effects of terrorist assaults and natural disasters on people removed from physical harm but emotionally engaged with those who have directly suffered. With major support from the SBE-managed Human and Social Dynamics priority area and SBE's core programs, NSF recently announced new Small Grants for Exploratory Research (SGER) awards to study the impact of Hurricane Katrina on people and social systems in the hard-hit Gulf Coast region. SGER awards are limited in size and support exploratory, high-risk research and have proven to be especially well-suited for rapid-response situations in which the need for timely response is crucial in order to capture time-sensitive and perishable data. SBE previously used SGERs effectively to field research teams in the aftermath of both the September 11th terrorist attacks and the 2004 Indian Ocean tsunami.

Other recently funded projects investigate the human dimensions of ecological issues such as climate change and the social and ethical issues that surround advances in nanotechnology. SBE also provides statistical data for critical analyses of 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.

SBE's Division of Science Resources Statistics (SRS) is the federal statistical agency responsible for the compilation and analysis of data on the science and engineering enterprise. SRS conducts, analyzes, and publishes survey results relating to research and development (R&D) funding and facilities, the science and engineering workforce, and workforce education. SRS also gathers information on the international science and engineering enterprise and uses available information to describe the U.S. role in a globalized economy. SRS activities and products provide critical benchmarking information on R&D, the S&E workforce, and the outputs of the S&E enterprise such as patents and scientific publications. SRS provides access to a variety of data on science and engineering through its website and online databases.

Findings from SRS studies have long helped shape the development of the Nation’s educational and science policy agendas.

Summary of Major Changes by Division (Dollars in Millions)

FY 2006 Current Plan, SBE.....	\$199.91
Social and Economic Sciences	+\$6.77
\$2.72 million in funding increases will support work connected with science metrics, \$1.75 million will maintain funding for the Innovation and Organizational Change (IOC) program, and \$2.30 million will provide additional support of core SES disciplines.	
Behavioral and Cognitive Sciences	+\$4.36
An increase of \$1.36 million will be used in concert with SRS and SES to foster the development of policy-relevant science metrics. The remaining \$3.0 million will be used to strengthen core disciplinary research, allowing an increase in funding rates.	
Science Resources Statistics	+\$2.72
Increased funding will support science metrics activities.	
Subtotal, Changes	+\$13.85
FY 2007 Request, SBE.....	\$213.76

Summary of Major Changes by Directorate-wide Investments (Dollars in Millions)

FY 2006 Current Plan, SBE.....	\$199.91
<u>Advancing the Frontier</u>	+\$10.26
SBE’s disciplinary and interdisciplinary research will increase by \$10.26 million to support frontier-setting social, behavioral, cognitive, and economic research. Of this increase: \$4.43 million will support the BCS and SES Divisional priorities, as highlighted in each division’s chapter; \$4.08 million supports Science Metrics activities in conjunction with the SRS Division’s increase of \$2.72 million; and \$1.75 million will maintain funding for the IOC program, formerly managed by another directorate. Within the core increase, \$500,000 will support emerging frontier collaboration with BIO to begin a new Biology and Society program.	
<u>Education, Workforce, and Broadening Participation</u>	+\$0.13
SBE will sustain investments in the integration of research and education through ADVANCE, CAREER, IGERT, GK-12, and REU (50 percent of all SBE’s REU site students are underrepresented minorities); graduate students dissertation research; and mid-career social science training in emerging technologies. In addition, SBE will enhance strategic institutional collaborations to broaden participation of underrepresented minorities in the SBE sciences. SBE will continue to support core research to increase fundamental understanding of education and workforce development (e.g., early science education and the science of learning; patterns of development in student’s educational and career choices; research on S&E climate, incentives and rewards, labor markets, and organizational variables in the workplace). The FY 2007 increase will strengthen these education and workforce efforts.	

Instrumentation and Infrastructure +\$3.34

Science Resources Statistics (SRS) funding increases by \$2.62 million. This increase will support research, models, and analyses related to Science Metrics, which require accurate, high quality information on all aspects of the R&D infrastructure and innovation in the U.S., the globalization of R&D, and the S&E workforce. An increase of \$720,000 will support fundamental research infrastructure, including major longitudinal and repeated cross-section surveys, and secure data enclaves, resources that are critical to understanding the causes of such phenomena as changing patterns of employment, political participation, attitude formation, and family structures.

Organizational Excellence +\$0.12

Funding for Organizational Excellence includes \$100,000 for Science Metric activities. These investments also provide support for Intergovernmental Personnel Act appointments and contractors performing administrative functions.

Subtotal, Changes +\$13.85

FY 2007 Request, SBE.....\$213.76

Science Metrics

Within the FY 2007 Request, \$6.80 million is allocated for Science Metrics. The goal is to reach a point where the Nation's public and private sectors are able to reliably evaluate returns received from past R&D investments and to forecast likely returns from future investments. SBE is beginning this initiative in FY 2006 by allocating \$2.60 million to develop the data, tools, and knowledge needed to foster a new science of science policy. SBE will conduct three workshops and fund new research on the dynamics of innovation at the individual and organizational level. Improving the science in this area will lead to new understandings of the individual and social dynamics that underlie successful innovation as well as to better understanding of the relationship between workforce training and returns on research investments. Understanding the dynamics of innovation is also important to developing valid metrics and to deciding on fruitful R&D investment policies.

Beginning in FY 2007, there will be two research aspects to SBE's long-term initiative in this area. The first focuses on data and involves the improvement and expansion of science metrics. Included here is research to better identify, characterize, and measure indicators of research investments and returns to these investments. Efforts in this area will include enhancing surveys the SRS Division now conducts to improve the comparability, scope, and availability of international data. Another goal is to reach out to the private sector as well as to academic researchers. In addition, this undertaking will be coordinated with efforts in other nations and international agencies addressing similar concerns and will enhance our understanding of the globalization of science and technology.

The second research aspect focuses on producing usable knowledge. Efforts in this area will include model building and the development of econometric and other statistical tools tailored to the problem of understanding innovation and returns to science investments. Qualitative and focused studies that bring tools and data together around such problems as understanding how innovation occurs and why some science investments pay off while others do not will also be supported. This integrated approach will aim at understanding and assessing both the factors that determine returns to R&D investments and the underpinnings and ramifications of innovation among individuals, organizations, and societies. Cross-national perspectives on both dimensions will be encouraged. Progress will, among other things, require

identifying the stages and feedback mechanisms that influence R&D directions, processes, products and outcomes, and their relationships to individual, economic, and social well-being. In order to develop necessary metrics and achieve complex understandings, SBE will coordinate activities across its divisions and seek collaborations with other NSF directorates as well as with potential users of the research results.

Science Metrics research will range from single investigator to focused multi-science awards. In addition to these research efforts, funds will be invested in community building, in motivating a generation of researchers, and in training them in the skills needed to support knowledge in this area. The long-term aim is to create a cadre of scholars who can provide science policy makers with the kinds of data, analyses, and advice that economists now provide for setting fiscal and monetary policy.

NSF-WIDE INVESTMENTS

In FY 2007, the SBE Directorate will support research and education efforts related to broad, Foundation-wide investments in a number of areas, including NSF’s multidisciplinary priority areas and the Administration’s interagency R&D priorities.

SBE NSF-wide Investments

(Dollars in Millions)

	FY 2005 Actual	FY 2006		Change over FY 2006	
		Current Plan	FY 2007 Request	Amount	Percent
Biocomplexity in the Environment	\$2.00	\$2.00	\$1.08	-\$0.92	-46.0%
Climate Change Science Program	15.48	15.48	15.48	-	-
Cyberinfrastructure	20.39	20.54	20.54	-	-
Human and Social Dynamics	30.90	31.40	31.40	-	-
International Polar Year	-	2.40	5.00	2.60	108.3%
Mathematical Sciences	1.50	1.50	0.75	-0.75	-50.0%
National Nanotechnology Initiative	1.57	1.56	1.67	0.11	7.1%
Networking and Information Technology R&D	12.47	12.47	12.47	-	-

- **Biocomplexity in the Environment** support decreases by \$920,000, to a total of \$1.08 million, consistent with the planned phase down of this initiative. These funds will support research on the socioeconomic, cultural, and geographic dimensions of interactions between people and the natural environment, with a special focus on the dynamics of coupled natural and human systems.
- **Climate Change Science Program (CCSP)** support remains level with the FY 2006 Current Plan at \$15.48 million. SBE’s CCSP investments focus on the “Human Contributions and Responses” that study how people (individually, in groups, or through organizations) interact with natural environmental systems. In SBE, the SES Division supports projects that focus on decision making under uncertainty associated with climate change. The SES and BCS Divisions support CCSP-related research on the environment, the economy, and disasters.
- **Cyberinfrastructure (CI)** support remains at \$20.54 million, level with the FY 2006 Current Plan. Substantial investments will be made in major social and behavioral science data collections and will address issues such as confidentiality protections and means for securing worldwide, user-friendly

access. Breakthrough technologies, large-scale data capture research in progress, and the capacities of high performance computing will enable SBE sciences to grapple with and model complexity in ways that were heretofore impossible. Added investments will prepare scientists and educators to use, design, develop, and support cyberinfrastructure with the needs of the SBE sciences in mind.

- Support for the SBE-managed **Human and Social Dynamics** priority area totals \$31.40 million, unchanged from the FY 2006 Current Plan. Almost every major challenge this country faces, ranging from climate change to terrorism to the need for an educated workforce, has at its core important human and social dynamics. HSD builds upon unprecedented opportunities for fruitful synergies across the social and behavioral sciences and other fields of sciences and engineering, by supporting multidisciplinary approaches to understanding the complex dynamics within and among human and social systems and their environments, at scales ranging from cellular to global and from nanoseconds to millennia. HSD aims to increase our ability to anticipate the complex consequences of change; to understand the cognitive and social structures that create and define change; and to help people and organizations manage profound or rapid change.
- SBE plans to participate in **International Polar Year (IPY)** activities through collaboration with the Office of Polar Programs and two programs it manages – Life in the Cold and Dark and Study of Environmental Arctic Change at a level of \$5.0 million. SBE will support interdisciplinary research on human adaptation and change within polar environments that focuses on human/environment interactions from a range of perspectives, including physical anthropology and cognitive neuroscience, sociology and geo-political relations and economics, as well as science and technology studies. Human adaptations reflected in Native languages and cultures will be documented to create useful social databases. Furthermore, social and economic aspects of nutrition, mental-well being, and infectious diseases will also be examined. In addition, through its "gold-standard" General Social Survey, SBE will provide a survey vehicle for IPY specific questions, including questions that address how Americans' knowledge of the Polar regions is impacted by the attention given these regions during the IPY.
- **Mathematical Sciences** support decreases by \$750,000, to a total of \$750,000, consistent with the planned phase down of this initiative. These funds will support 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 also will support innovative training activities.
- **National Nanotechnology Initiative (NNI)** support increases by \$110,000, for a total of \$1.67 million. SBE's support for NNI investments enables research and educational activities that focus on issues of nanotechnology R&D and societal consequences, on both a domestic and global scale. The increase will enable continuing interdisciplinary participation in NSF-wide nanotechnology areas.
- **Networking and Information Technology R&D (NITRD)** support remains level with the FY 2006 Current Plan at \$12.47 million. SBE's major investments in NITRD will continue to support (1) the social, economic, and workforce aspects of Information Technology (IT), focusing on the nature and dynamics of IT impacts on technical and social systems; and (2) human-computer interaction and information management to increase the benefit of computer technologies to scientists as well as non-science users.

QUALITY

SBE maximizes the quality of R&D it supports through the use of a competitive, merit-based review process. In FY 2005 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 (COV) 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 directorate also receives advice from the Advisory Committee for the Social, Behavioral and Economic Sciences (SBEAC) on the missions, programs, and goals that 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 and its Chair regularly consults with the SBE Assistant Director. Members represent a cross section of supported disciplines, with representatives from many sub-disciplines and members from academic institutions and industry. SBEAC includes women, underrepresented groups, and people from all geographic regions.

PERFORMANCE

NSF's FY 2007 budget is aligned to reflect funding levels associated with the Foundation's four strategic outcome goals and ten investment categories highlighted in the FY 2003-2008 Strategic Plan. These were designed 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 2005	FY 2006	FY 2007	Change over	
	Actual	Current Plan	Request	FY 2006 Amount	FY 2006 Percent
<i>Ideas</i>					
Fundamental Science and Engineering	\$141.20	\$143.79	\$154.04	\$10.25	7.1%
Centers Programs	-	0.59	0.60	0.01	1.7%
Capability Enhancement	-	-	-	-	N/A
	141.20	144.38	154.64	10.26	7.1%
<i>Tools</i>					
Facilities	0.30	0.30	0.30	-	-
Infrastructure and Instrumentation	41.17	40.66	44.00	3.34	8.2%
Polar Tools, Facilities and Logistics	-	-	-	-	N/A
Federally-Funded R&D Centers	-	-	-	-	N/A
	41.47	40.96	44.30	3.34	8.2%
<i>People</i>					
Individuals	10.66	8.49	8.59	0.10	1.2%
Institutions	1.44	1.41	1.43	0.02	1.4%
Collaborations	-	0.99	1.00	0.01	1.0%
	12.10	10.89	11.02	0.13	1.2%
<i>Organizational Excellence</i>					
	2.04	3.68	3.80	0.12	3.3%
Total, SBE	\$196.80	\$199.91	\$213.76	\$13.85	6.9%

Totals may not add due to rounding.

Other Performance Indicators

The tables below show the estimated 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 2005	FY 2006	FY 2007
	Estimate	Estimate	Estimate
Senior Researchers	2,484	2,508	2,666
Other Professionals	431	435	465
Postdoctorates	201	203	215
Graduate Students	1,410	1,424	1,515
Undergraduate Students	645	652	693
K-12 Teachers	10	10	11
Total Number of People	5,181	5,232	5,565

SBE Funding Profile

	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate
Statistics for Competitive Awards:			
Number	1,006	1,013	1,050
Funding Rate	25%	25%	25%
Statistics for Research Grants:			
Number of Research Grants	649	642	680
Funding Rate	21%	21%	22%
Median Annualized Award Size	\$84,050	\$84,050	\$84,100
Average Annualized Award Size	\$109,762	\$109,800	\$110,000
Average Award Duration, in years	2.4	2.4	2.5

Recent Research Highlights

► **Documenting Endangered Languages:** Aware that roughly half of the 7,000 languages spoken worldwide could die out in a generation, NSF-funded researchers are struggling to document them before they are lost forever.



Beyond the endangered languages' historical value, capturing and studying them is scientifically important for two reasons: to preserve the way languages encode cultural information and to understand the human mind through language variation. To achieve these goals, NSF is collaborating with the National Endowment for the Humanities on the Documenting Endangered Languages project, which incorporates a full range of sophisticated computing tools – including recording techniques that reveal the movement of muscles around the

mouth as sounds are made and electronic resources that allow researchers to store and analyze digital images, sound files, and texts. In addition, the project has supported NSF's efforts to broaden participation in science by making four awards to tribal organizations or tribal members in 2005. (Managed by BCS).

► **Gold Standard Surveys:** Prominent among SBE's major research investments are three “gold standard” surveys — the American National Election Studies (ANES), the Panel Study of Income Dynamics (PSID), and the General Social Survey (GSS) — that have collectively figured in more than 10,000 books, articles and doctoral dissertations. Insights and surprises abound.

In a recent analysis of three decades of data collected by ANES, for example, scholars have found scant evidence of deep divisions among the American public on economic and social issues. Quite the opposite: divisions among states and counties have actually shrunk over the past 100 years. Meanwhile, much the same conclusions have emerged from studies of societal change using GSS data. Not only do most changes in social attitudes turn out to be slow, steady, and cumulative, but Americans are generally becoming more and more alike in their attitudes — even when they belong to groups that are supposedly at odds with one another.

For its part, the PSID reveals that even over short periods, households are *not* locked into a particular place in the country's wealth spectrum, but are economically quite mobile. These and other PSID data have implications for bankruptcy policy, understanding the use of credit card debt, and the like. (Managed by SES with support from SRS).

► **Human and Social Dynamics – Disaster**

Research: Recognizing the importance of collecting ephemeral data, SBE has developed a quick response capability using Small Grants for Exploratory Research (SGER). This capacity, initially tested by the events of September 11, 2001, has proved invaluable in supporting research on the impact of the Indian Ocean tsunami in December 2004 and Hurricane Katrina in September 2005. NSF HSD and other SBE SGER grants, totaling more than \$3.0 million, currently support more than 25 research teams studying the human and social dimensions of Hurricane Katrina.



Roadways in New Orleans flooded by Hurricane Katrina. Aug. 29, 2005. Credit: Petty Officer 2nd Class Kyle Niemi, U.S. Coast Guard

Although it is too soon for Katrina or tsunami related research to have yielded more than preliminary results, there are results from rapid response research following 9/11. For example, University of California-Irvine principal investigator Roxane Cohen Silver led a team of researchers who had collected mental and physical health data from an internet panel of U.S. residents outside New York City before 9/11. With SGER support, the team was able to re-survey the panel two months and six months after 9/11, to determine their responses to the event. The study revealed that symptoms of posttraumatic stress remained six months afterwards, although the symptoms had diminished from 17 percent (after two months) to six percent of the population. (SBE manages the HSD priority area).

► **Scientific Leaders:** North Carolina State University psychologist Pamela Martin's work on how social institutions influence behavior has led to the creation of a new after-school science education initiative for economically depressed communities.



Dr. Pamela Martin

With a Minority Post-Doctoral Fellowship in Developmental and Social Psychology from NSF, Martin's research addresses how churches and parents shape adolescents' racial identity. Her findings, with follow-up support from an NSF infrastructure "Starter" research grant, have resulted in The Southeast Raleigh Mathematics and Science Initiative: a partnership between NCSU, community organizations, and schools designed to deliver inquiry-based science and mathematics after-school programs to economically depressed communities. Preliminary results show that students' social skills and homework completion improved after involvement in the program, and the final grade assessments were uniformly and extremely positive for all students.

In May 2005, New York University sociologist Dalton Conley received the National Science Foundation's Alan T. Waterman Award, a prize given by NSF to the country's outstanding young scientist. Conley is the first sociologist and only the second social scientist to receive this award in its thirty-year history.

Conley was recognized for groundbreaking work elucidating some of the most complex features of human and social relationships. He is the author of a series of books and articles that rigorously explore social and personal inequality. Aided by an NSF CAREER award, Conley produced *The Pecking Order: Which Siblings Succeed and Why* (Pantheon Books), a groundbreaking book exploring how income, gender, health, and birth order in families result in "a tangled web" of inequalities that create a family's own pecking order. His research also demonstrates how certain social and economic conditions (e.g., levels of family wealth) are the basis of persistent differences in key areas of life, ranging from educational successes to the likelihood of relying on welfare.



Dr. Dalton Conley

SOCIAL AND ECONOMIC SCIENCES

\$99,920,000

The FY 2007 Request for the Division of Social and Economics Sciences (SES) is \$99.92 million, an increase of \$6.77 million, or 7.3 percent, over the FY 2006 Current Plan of \$93.15 million.

Social and Economic Sciences Funding

(Dollars in Millions)

	FY 2006			Change over	
	FY 2005	Current	FY 2007	FY 2006	
	Actual	Plan	Request	Amount	Percent
Social and Economic Sciences	\$91.75	\$93.15	\$99.92	\$6.77	7.3%
Major Components:					
Research and Education Projects	\$91.75	\$93.15	\$99.92	\$6.77	7.3%

Totals may not add due to rounding.

About SES:

The Division of Social and Economic Sciences supports research and related activities aimed at a better understanding, both nationally and internationally, of 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 73 percent of division funding is available for new awards and activities. The remaining 27 percent funds awards made in previous years.

The SES portfolio’s major mode of support is research and education grants, including large-scale grants to support major infrastructure and focused interdisciplinary research teams. 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.

SES HSD grants support large-scale interdisciplinary research teams that are exploring different aspects of decision making under uncertainty (DMUU) in relation to climate change.

SES coordinates the Ethics Education in Science and Engineering Program and supports, with other NSF directorates, the Online Ethics Center for Engineering and Science.

SES provides core support for national resource “gold standard” surveys, including the *Panel Study of Income Dynamics*, the *American National Election Studies*, and the *General Social Survey*.

SES infrastructure awards support leading interdisciplinary experimental laboratories in political science (Rice), economics (Cal. Tech., Harvard, South Carolina, Virginia) and decision science (Virginia Tech), including projects that bring experimental methods into the classroom (South Carolina, Virginia) and TESS (Time-sharing Experiments for the Social Sciences), which facilitates, for scientists across the country, research that seeks to use the internet as a virtual laboratory for conducting survey experiments (Pennsylvania, Michigan).

SES Priorities for FY 2007:

- Build a more effective **cyberinfrastructure** (1) by maintaining recently increased support for major social science surveys to counter lower response rates, improve quality, and take advantage of new technologies, (2) by supporting efforts to make supercomputing resources more accessible and more useful to social and economic scientists, and (3) through methodological planning and other investments aimed at improving or bringing online a wide range of cybertechnologies with the potential to transform social research.
- Work to build a **science of science policy** and better science metrics through research in and across core programs.
- 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 and the scale of supported research.
- Continue to promote the development of rigorous qualitative research, particularly in conjunction with sophisticated quantitative analyses.
- Strengthen the **Innovation and Organizational Change** program to allow it to continue to effectively support rigorous social science research that promotes the creation of reliable evidence-based understandings of innovation in and the efficient operation of business firms, governmental organizations and non-governmental organizations.
- Invest in **education** for the social and economic sciences, particularly with respect to underrepresented groups.

Changes from FY 2006:

Support for the SES Division increases by \$6.77 million. The increase includes:

- \$2.72 million to be spent in concert with allocations by SRS and BCS to foster the development of policy-relevant science metrics.
- \$1.75 million will be used to maintain funding for the Innovation and Organizational Change program, formerly co-supported by another directorate, which draws on sociological, social psychological, economic, and other perspectives to understand how business, educational and other organizations innovate and change in competitive environments.
- \$1.65 million will be allocated to strengthen core disciplinary research.
- \$650,000 will support Research Resources in recognition of the continually increasing costs of creating and maintaining data collections and anticipated research resource costs associated with the effort to develop improved science metrics.

BEHAVIORAL AND COGNITIVE SCIENCES

\$84,130,000

The FY 2007 Budget Request for the Division of Behavioral and Cognitive Sciences (BCS) is \$84.13 million, an increase of \$4.36 million, or 5.5 percent, over the FY 2006 Current Plan of \$79.77 million.

Behavioral and Cognitive Sciences Funding
(Dollars in Millions)

	FY 2006			Change over	
	FY 2005	Current	FY 2007	FY 2006	
	Actual	Plan	Request	Amount	Percent
Behavioral and Cognitive Sciences	\$79.13	\$79.77	\$84.13	\$4.36	5.5%
Major Components:					
Research and Education Projects	\$79.13	\$79.77	\$84.13	\$4.36	5.5%

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 programs are complemented by active involvement in competitions that support collaborative and interdisciplinary projects to advance knowledge and build capacity across multiple fields.

About 72 percent of division funding is available for new awards and activities. The remaining 28 percent funds awards made in previous years. The BCS portfolio primarily supports research and education grants ranging 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. 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 understanding of the complexity in human-environmental interactions.

Within BCS, the core disciplinary program, "Children's Research Initiative/Developmental and Learning Sciences," will include larger scale investments in "Integrative Research Activities for Developmental Science" (IRADS) that will increase understanding of cognitive, linguistic, social, cultural, and biological processes related to child and adolescent development and learning. Through support of basic research, the behavioral and cognitive sciences are informing understanding of disasters such as Katrina, threats such as Avian flu, and chronic and emerging health issues such as obesity.

BCS Priorities for FY 2007:

Initiatives within Behavioral and Cognitive Sciences include special competitions for investigating human and social dynamics, for documenting endangered languages, for understanding child learning, and for studying human origins. Cyberinfrastructure investments will continue to provide significant opportunities for breakthroughs in cognitive and behavioral sciences. 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.

- Support the **Human and Social Dynamics priority area** by funding large-scale, transformative interdisciplinary research on human action and development, as well as organizational, cultural, and societal adaptation and change.
- Advance fundamental knowledge of endangered human languages through the joint NSF-National Endowment for the Humanities-Smithsonian Institution initiative, **Documenting Endangered Languages**, including support for research on endangered Arctic languages during the **International Polar Year**.
- Increase 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, through the **Human Origins** activity.
- Integrate the development of **cyberinfrastructure** with advances in the fundamental understanding of the complexity of human behavior to address critical national needs.
- Enable the transformation of behavioral and cognitive sciences by supporting new research methods to investigate the **links between behavior and its biological bases**.
- Inform critical national security efforts, such as countering **improvised explosive devices**, through collaboration with the Directorate for Engineering.
- Support core research to increase fundamental understanding of **broadening participation** in the scientific community and support training activities focused on individuals, institutions, and collaborations.
- Contribute to understanding **science and engineering innovation** as an internal individual process through supporting cognitive science and cognitive neuroscience research.

Changes from FY 2006:

Support for the BCS Division increases by \$4.36 million. This includes:

- \$1.36 million to be spent in concert with allocations by SRS and SES to foster development of policy-relevant science metrics.
- The remaining \$3.0 million will be allocated to strengthen core disciplinary research, allowing the funding of additional proposals for an increase in success rate.

SCIENCE RESOURCES STATISTICS**\$29,710,000**

The FY 2007 Request for the Division of Science Resources Statistics (SRS) is \$29.71 million, an increase of \$2.72 million, or 10.1 percent, over the FY 2006 Current Plan of \$26.99 million.

Science Resources Statistics Funding

(Dollars in Millions)

	FY 2006			Change over	
	FY 2005	Current	FY 2007	FY 2006	
	Actual	Plan	Request	Amount	Percent
Science Resources Statistics	\$25.92	\$26.99	\$29.71	\$2.72	10.1%

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 2007 SRS will:

- Continue to conduct surveys and engage in 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 2007, 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 quality improvements and additions to current activities in subsequent years.
- Improve the *Survey of Graduate Students and Postdoctorates in Science and Engineering* with initial implementation of redesigned components of the survey after significant pilot and testing activities.
- Continue support and analysis of a module on the *General Social Survey*, which is a "gold standard cross-sectional survey" supported by the SES Division, 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 the public understanding of science that 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 were collected in FY 2004 and similar data with an updated questionnaire were collected in FY 2006.
- Maintain continuous improvement in the relevance and quality of all its products. Priorities for FY 2007 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 redesigns and improvements to major components of current SRS surveys and continuing to explore the feasibility of new information collection efforts initiated in prior years.

- Enhance and expand existing on-line systems for user access to SRS data.
- Continue efforts to enhance information on S&E in Asia and the globalization of the S&E enterprise.

SRS Priorities for FY 2007:

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

- Conclude the 2006 cycle of data collections for the *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 2006 surveys will begin in FY 2008. A number of methodological improvements based on experiments and experience in the 2003 cycle were implemented in 2006.
- Develop and implement pilot activities to gather information about individuals in postdoctorate positions, including individuals with foreign doctorates.
- 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.
- 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 and developing methods to better include cross-disciplinary and multi-disciplinary fields.
- Plan and develop a draft of the *2008 Science and Engineering Indicators* report. Complete and release the *2007 Women, Minorities and Persons with Disabilities in Science and Engineering* report, including updates to the web version of the report as new data become available.
- Work with the Census Bureau and Office of Management and Budget to add a field of degree item to the *American Community Survey* to facilitate sampling for the National Survey of College Graduates in the next decade and enhance analysis of the occupations and income of those with S&E degrees.

Changes from FY 2006:

- Funding increases of \$2.72 million to a total of \$29.71 million for work connected with science metrics. SRS will significantly expand its efforts to redesign and enhance its data collections on the research infrastructure and the education and careers of the S&E workforce to ensure that the data collected begin to reflect the innovation process, the globalization of R&D and the increasingly collaborative and interdisciplinary nature of science and engineering.
- SRS will expand its long-term efforts to devise collection instruments that more accurately measure the economic output of R&D than presently captured in the Survey of Industrial Research and Development. 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, the role of research collaboratives, and the globalization of R&D. These activities will be informed by the findings of the 2005 National Academy of Sciences review of SRS R&D surveys and by outreach activities.
- In FY 2007, SRS will begin implementing an integrated strategy directed toward gathering comprehensive data on postdocs.
- SRS will devote funding to enhance the SRS website and on-line databases to support a broad spectrum of user input workshops, test beds, and model building exercises.