

SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES (SBE) \$259,550,000
+ \$5,300,000 / 2.1%

SBE Funding
(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	Percent
Social and Economic Sciences (SES)	\$95.68	\$97.18	\$100.25	\$3.07	3.2%
Behavioral and Cognitive Sciences (BCS)	91.11	92.69	95.43	2.74	3.0%
SBE Office of Multidisciplinary Activities (SMA)	25.10	28.23	29.11	0.88	3.1%
National Center for Science and Engineering Statistics (NCSES)	35.44	36.15	34.76	-1.39	-3.8%
Total, SBE	\$247.33	\$254.25	\$259.55	\$5.30	2.1%

Totals may not add due to rounding.

About SBE

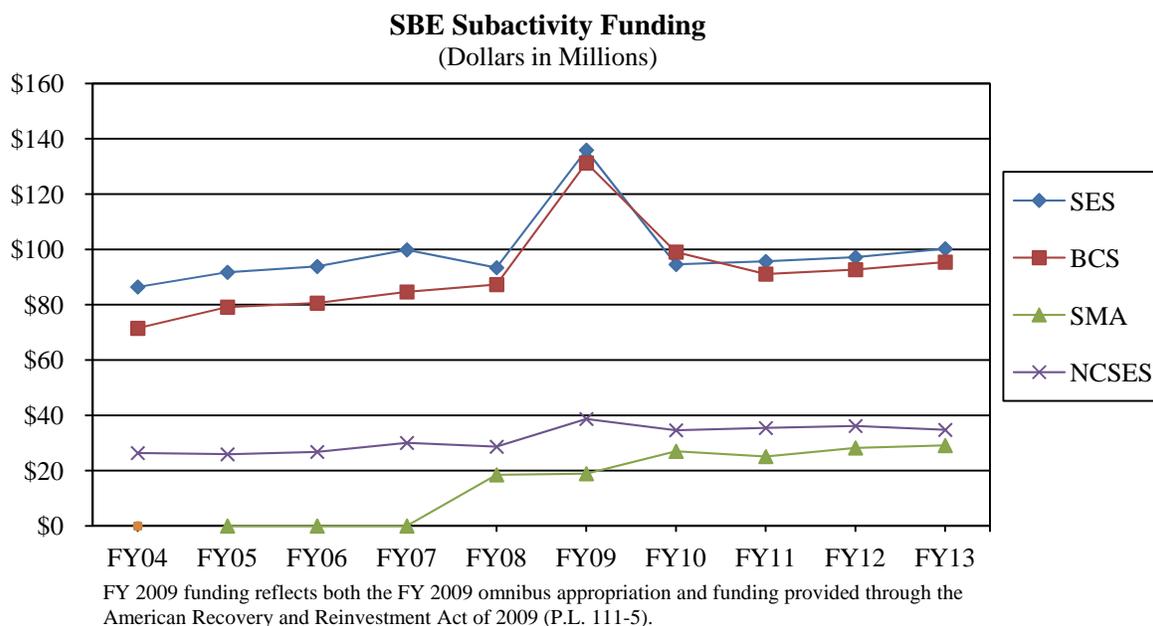
SBE’s mission is to promote the understanding of people and their lives by supporting research that reveals basic facets of human behavior; to encourage research that addresses important societal questions and problems; to work with other scientific disciplines to ensure that basic research and solutions to problems build upon the best multidisciplinary science; and to provide mission-critical statistical information about science and engineering (S&E) in the U.S. and the world through the National Center for Science and Engineering Statistics. SBE supports long-term research across a diverse range of sciences that includes economics, psychology, sociology, geography, neuroscience, anthropology, archaeology, statistics, linguistics, and political science. SBE combines these sciences in a dynamic suite of interdisciplinary activities that link these fields to each other and to other science and engineering fields. Thus, SBE is a significant partner in cross-directorate programs that connect the social and behavioral sciences to priority investments across the agency, including OneNSF investments.

In FY 2013, SBE continues to strategically transform its scientific direction. These changes build on NSF’s strategic plan, *Empowering the Nation Through Discovery and Innovation: NSF Strategic Plan for Fiscal Years 2011-2016*; and on SBE’s own SBE 2020 visioning activity, which led to a report entitled *Rebuilding the Mosaic*, which was published by NSF in November 2011. SBE proposes significant investments in many NSF areas of emphasis for FY 2013, such as: sustainability (via the Science, Engineering, and Education for Sustainability (SEES) investment); cyberinfrastructure (via the Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) investment); access to data for science teachers (via Expeditions in Education (E²) investments); national security (via the Comprehensive National Cybersecurity Initiative (CNCI)); international leadership through a variety of international partnerships; innovation (via the NSF Innovation-Corps (I-Corps)) investment and support to Enhancing Access to the Radio Spectrum (EARS)); and interdisciplinary research and training (via INSPIRE and full implementation of the SBE Transformed Portfolio, SBE 2020). These investments reflect both newly requested funds and a significant redeployment of resources previously committed to other areas.

The SBE portfolio also includes major surveys that provide broad-based infrastructure for the research community while providing policy makers with needed information. The National Center for Science and

Engineering Statistics (NCSES) is the designated federal statistical entity with responsibility for statistics about the S&E enterprise, and its data collections and analyses are important for evaluating overall U.S. competitiveness in science and engineering.

SBE provides 62 percent of the federal funding for basic research at academic institutions in the SBE sciences.



FY 2013 Summary by Division

- SES's FY 2013 request reflects its strong contribution to the unifying themes in the FY 2013 NSF Budget Request. This includes support for SEES, through investments in understanding energy use and decision making and the Sustainable Energy Pathways, SEES Fellows, Water Sustainability and Climate, and Sustainability Research Networks activities; support for Secure and Trustworthy Cyberspace (SaTC) through the Cyber Economic Incentives theme within CNCI; and support for CIF21 through community research networks and research on virtual organizations. SES will also maintain its commitment to existing programs and continue its support for surveys that provide unique insights into U.S. social, economic, and political life, while providing support for new research that has the potential to transform the social and economic sciences and contribute to effective policy development. SES will also enhance support for the CAREER program. SES will partner with the Directorate for Computer and Information Science and Engineering (CISE) in exploring the emerging interface between computer science and economics. To further transform SBE by increasing interdisciplinary research, training, and integration with other parts of NSF, SES will increase its investment in SBE 2020, creating more SBE Fellows. As part of a broadly interdisciplinary activity that spans SBE, to enhance interdisciplinary research and training, SES will increase teachers' access to science data through: support for the Expeditions in Education (E²) investment; expand its role in international activities with increased investments in the European Open Research Area (ORA) and Science Across Virtual Institutes (SAVI) programs; and continue support for an activity designed to understand the implications of a changing population shaped by aging and migration, and to develop new approaches to ensuring social well-being in this emerging population.

- In FY 2013, BCS will be a major partner in NSF-wide interdisciplinary activities such as SEES, CIF21, E², EARS, neuroscience research, and CNCI. BCS will expand support for behavioral and cognitive research that informs our understanding of critical issues facing the Nation such as terrorism, pandemics, and sustainability. Increased SEES funding will support research with SBE-specific emphases, such as investments in understanding human behavior and decision making about energy use, interactions among natural and human systems, vulnerability and resilience, and participation in Sustainable Energy Pathways and Sustainability Research Networks. In its ongoing programs, BCS will operate in an interdisciplinary context; providing additional support for research on the complex ways people interact with climate and other natural systems; and research and methodological development on learning and adaptive systems. BCS support for CNCI will enable research on cognitive and behavioral aspects of threats to cybersecurity. Increased funding for the SBE 2020 activity will enable BCS to partner with other NSF directorates, increasing interdisciplinary research and training for behavioral and cognitive scientists. BCS will expand its role in international activities by participating in SAVI, ORA and other international partnerships, and will also support the Science of Learning Centers (SLC) program and the science of broadening participation. It will also continue investments in support of integrative interdisciplinary approaches to the understanding of human cultural and biological evolution over long time scales. BCS will also continue to support basic research that advances understanding of the brain, cognition, and behavior through various research mechanisms.
- SMA provides a focal point for programmatic activities that cut across NSF and SBE boundaries. In addition, SMA assists with seeding both multidisciplinary and interdisciplinary activities for the future. In FY 2013, SMA will play a critical role in the expansion of an interdisciplinary program as part of SBE 2020. SMA will provide overall management and support for the program with funding provided through the SES and BCS divisions. SMA will support interdisciplinary activities associated with CIF21; the Science of Science and Innovation Policy activity (SciSIP); the interagency STAR METRICS pilot project; and SEES, including Sustainable Energy Pathways and Sustainability Research Networks. SMA will participate in I-Corps, INSPIRE, and SaTC (through the Cyber Economic Incentives theme within CNCI, a multi-agency priority). SMA will also partner with the BCS and SES divisions in supporting research on understanding population change in the 21st century, a new SBE investment with emphasis on migration and aging and their impact on job creation and human development. SMA will continue to manage and support the agency-wide Science of Learning Centers (SLCs) program.
- The National Center for Science and Engineering Statistics (NCSES), formerly the Division of Science Resources Statistics (SRS), was established within the National Science Foundation by Section 505 of the America COMPETES Reauthorization Act of 2010 (P.L. 111-358). The Act not only provides a new name but also provides NCSES with the legislative mission to “...serve as the central Federal clearinghouse for the collection, interpretation, analysis, and dissemination of objective data on science, engineering, technology, and research and development.” For FY 2013, NCSES will accelerate efforts to rely more heavily on data from the National Survey of College Graduates, built from the American Community Survey, which will reduce overall survey costs while still continuing to meet the needs of policy makers, researchers, and the general public for data on the overall science and engineering workforce. NCSES will develop plans for a project to utilize federal agency administrative records to measure research and development activity and to explore new methods to enhance data collection, analysis and data sharing capabilities to better serve all its customers interested in the science and engineering enterprise.

Major Investments

SBE Major Investments

(Dollars in Millions)

Area of Investment	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over FY 2012 Estimate	
				Amount	Percent
CAREER	\$8.88	\$5.54	\$5.87	\$0.33	6.0%
CIF21	-	5.50	6.00	0.50	9.1%
CTE	1.01	1.00	1.00	-	-
CNCI	-	6.00	6.00	-	-
E ²	-	-	1.00	1.00	N/A
EARS	-	1.00	0.50	-0.50	-50.0%
I-Corps	0.05	0.50	0.50	-	-
INSPIRE	-	0.50	1.00	0.50	100.0%
SaTC	-	4.00	4.00	-	-
SEES	6.25	7.75	8.75	1.00	12.9%
Science of Learning Centers (SLC)	16.39	13.67	13.67	-	-
SciSIP	13.05	13.50	11.05	-2.45	-18.1%

Major investments may have funding overlap and thus should not be summed.

- **CAREER:** SBE supports CAREER (an increase of \$330,000 to a total of \$5.87 million) with awards to young investigators in social and behavioral sciences who exemplify the role of teacher-scholar through the integration of education and research. SBE estimates that it will make approximately 5 CAREER awards in FY 2013.
- **CIF21:** Support for this NSF-wide investment (\$6.0 million total, \$500,000 above the FY 2012 Estimate level) will support awards for data and cyberinfrastructure investments that create new opportunities for SBE researchers to understand human behavior and cognition and the effectiveness of virtual organizations in the context of the 21st century networked society. CIF21 is supported by three SBE divisions: SES, BCS, and SMA.
- **CTE:** SBE’s participation in Cyberlearning Transforming Education (CTE) remains at \$1.0 million in FY 2013 for research on the development of technologies for cyberlearning, and for studying the impact of technologies on learning.
- **Comprehensive National Cybersecurity Initiative (CNCI):** In partnership with CISE and the Office of Cyberinfrastructure (OCI), SBE will support multidisciplinary research in the science of cybersecurity, moving target defense, tailored trustworthy spaces, and cyber economic incentives. SBE’s investment in this national priority is maintained at \$6.0 million in FY 2013. SBE will devote resources to SaTC through support for the Cyber Economic Incentives theme within CNCI. In addition, SBE’s broad scientific base in the behavioral, social, and decision making sciences provides a wealth of opportunities to contribute to this national priority. SES, BCS, and SMA support CNCI.
- **Expeditions in Education (E²):** SBE’s investment (\$1.0 million) will make targeted research data available for educational uses and will give scientists better access to scientific data for learning and instructional purposes. This funding is provided through the budgets of SES and BCS.

- **Enhancing Access to the Radio Spectrum (EARS):** In partnership with MPS, ENG, and CISE, SBE will provide \$500,000 (\$500,000 below the FY 2012 Estimate level) for the basic research that underlies EARS in FY 2013, especially research about market and non-market-based mechanisms for spectrum access, and opportunities for all Americans to benefit from current and future wireless-enabled goods and services.
- **I-Corps:** With a sustained investment of \$500,000, SBE will continue a multi-year effort to strengthen collaboration between social scientists and practitioners and improve social science students' understanding of innovation.
- **INSPIRE:** SBE support for this NSF priority is aligned with SBE Transformed Portfolio, SBE 2020. This support increases in FY 2013 (+\$500,000 to a total of \$1.0 million) to support interdisciplinary research and training.
- **SEES:** In FY 2013 SBE will continue its commitment to sustainability research by making significant investments across a variety of SEES activities, such as Water Sustainability and Climate (WSC), Coupled-Natural and Human Systems (CNH), Research Coordination Networks (RCN), SEES Fellows, Sustainability Research Networks (SRN), and Sustainable Energy Pathways (SEP). These investments further integrate the SBE sciences into research on energy and sustainability, while strengthening SBE's existing investments, and making new investments in decision making, coastal communities, and vulnerability and resilience. Funding increases by \$1.0 million (to a total of \$8.75 million) and is provided through the budgets of three SBE divisions; SES, BCS, and SMA.
- **Science of Learning Centers (SLC) program:** SBE will continue funding for the centers. In FY 2013, SBE's investment remains constant with the FY 2012 Estimate level, \$13.67 million.
- **Science of Science and Innovation Policy (SciSIP):** decreases in FY 2013 (-\$2.45 million to a total of \$11.05 million), as a result of SBE decreasing investments in disciplinary research programs across the directorate and a decrease to NCSSES' SciSIP related projects. SciSIP will continue to support research and data collections related to innovation and R&D spending. SciSIP is supported by two of four SBE divisions; NCSSES and SMA.

SBE Funding for Centers Programs and Facilities

SBE Funding for Centers Programs

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	FY 2012 Estimate Percent
Centers Programs Total	\$17.46	\$14.27	\$14.27	-	-
Nanoscale Science & Engineering Centers (SES & BCS)	1.07	0.60	0.60	-	-
Science of Learning Centers (SMA & BCS)	16.39	13.67	13.67	-	-

Totals may not add due to rounding.

For detailed information on individual centers, please see the NSF-Wide Investments chapter.

- Funding for the Nanoscale Science & Engineering Centers will continue at \$600,000 in FY 2013.
- The Science of Learning Centers (SLC) program funding remains constant with the FY 2012 Estimate level of \$13.67 million. Support includes annual increments to all six centers: the Center of Excellence for Learning in Education, Science, and Technology (CELEST); the Center for Learning in Informal and Formal Environments (LIFE); the Pittsburgh Science of Learning Center for Robust Learning (PSLC); the Spatial Intelligence and Learning Center (SILC); the Temporal Dynamics of Learning Center (TDLC); and the Visual Language and Visual Learning Center (VL2). Support is also included for SLC evaluation activities in FY 2013. Funding for Cohort 1 centers will end in FY 2014, and funding for Cohort 2 centers, approved for an additional five-year renewal by the National Science Board in February 2011, will end in FY 2015.

SBE Funding for Facilities

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	FY 2012 Estimate Percent
Facilities (Total)	\$0.40	\$0.40	\$0.40	-	-
National Nanotechnology Infrastructure Network (SES)	0.40	0.40	0.40	-	-

Totals may not add due to rounding.

For detailed information on individual facilities, please see the Facilities chapter.

SBE will continue to support the National Nanotechnology Infrastructure Network (NNIN) at a level of \$400,000 in FY 2013.

Summary and Funding Profile

SBE supports investment in core research and education as well as research infrastructure.

In FY 2013, the number of research grant proposals is expected to increase by 100 compared to the FY 2012 Estimate level. SBE expects to award approximately 590 research grants in FY 2013. Average

annualized award size will increase by \$1,000 and duration will be held constant at the FY 2012 Estimate level.

In FY 2013, funding for the centers accounts for 5.5 percent of SBE's Request. Center funding remains constant with the FY 2012 Estimate level with the SLC program supporting six centers and support to the Centers for Nanotechnology in Society.

SBE Funding Profile

	FY 2011 Actual Estimate	FY 2012 Estimate	FY 2013 Estimate
Statistics for Competitive Awards:			
Number of Proposals	5,111	5,300	5,500
Number of New Awards	997	1,190	1,220
Funding Rate	20%	22%	22%
Statistics for Research Grants:			
Number of Research Grant Proposals	3,539	3,600	3,700
Number of Research Grants	555	570	590
Funding Rate	16%	16%	16%
Median Annualized Award Size	\$99,351	\$100,351	\$101,351
Average Annualized Award Size	\$113,229	\$115,429	\$116,429
Average Award Duration, in years	2.6	2.6	2.6

Program Monitoring and Assessment

The Performance chapter provides details regarding the periodic reviews of programs and portfolios of programs by external Committees of Visitors and Directorate Advisory Committees. Please see this chapter for additional information.

Committees of Visitors (COV):

- In FY 2012, one COV convened on December 15-16, 2012 and reviewed programs under the Office of Multidisciplinary Activities (SMA): Research Experiences for Undergraduates (REU) Sites, SBE Minority Postdoctoral Research Fellowships (MPRF), and the Science of Science and Innovation Policy (SciSIP). The SMA COV recommends SBE management review the current placement of the multidisciplinary programs in the directorate, as well as the question of how many submissions a year are appropriate. The COV also recommends taking actions to broaden participation and increase capacity for research related to the Science of Science and Innovation Policy (SciSIP) program. The SMA COV will present their report to the SBE Advisory Committee on May 17-18, 2012.
- A COV to review the BCS division will convene on October 10-12, 2012.
- A COV to review the SES division will convene late in FY 2013.
- All SBE divisions are responding to and implementing recommendations from recent COVs.

Workshops and Reports:

- A recent report by the SBE directorate, *Rebuilding the Mosaic; Fostering Research in Social, Behavioral, and Economic Sciences at the National Science Foundation in the Next Decade* (issued November, 2011), sets forth a next generation model of research that is collaborative, data-intensive,

and multi- or interdisciplinary. Based on 252 white papers from more than 500 individuals, together with consultation with professional associations and societies and campus visits, the report explores the programmatic implications of this model of research for the directorate's programs and has been influential in setting priorities and framing discussions within the directorate, across the Foundation, and with other public and private agencies and organizations. Key areas of interest are interdisciplinary training and support for graduate students and young faculty; programs to foster interdisciplinary investigations; and efforts, within the directorate and in cooperation with OCI and other entities, to catalyze research communities around new data and computational infrastructures.

Number of People Involved in SBE Activities

	FY 2011	FY 2012	FY 2013
	Actual	Estimate	Estimate
	Estimate	Estimate	Estimate
Senior Researchers	3,042	3,100	3,130
Other Professionals	674	680	685
Postdoctorates	333	340	345
Graduate Students	2,236	2,275	2,295
Undergraduate Students	789	805	815
Total Number of People	7,074	7,200	7,270

DIVISION OF SOCIAL AND ECONOMIC SCIENCES (SES)

\$100,250,000
+\$3,070,000 / 3.2%

SES Funding

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	Percent
Total, SES	\$95.68	\$97.18	\$100.25	\$3.07	3.2%
Research	83.92	87.83	90.90	3.07	3.5%
<i>CAREER</i>	2.44	2.82	3.05	0.23	8.2%
<i>Centers Funding (total)</i>	0.89	0.42	0.42	-	-
<i>Nanoscale Science & Engineering Centers</i>	0.89	0.42	0.42	-	-
Education	6.19	3.79	3.79	-	-
Infrastructure	5.57	5.56	5.56	-	-
<i>Nat'l Nanotechnology Infrastructure</i>	0.40	0.40	0.40	-	-
<i>Network(NNIN)</i>					
<i>Research Resources</i>	5.17	5.16	5.16	-	-

Totals may not add due to rounding.

SES supports research and related activities, conducted within the U.S. and globally, that improve our understanding of economic, political, and social institutions and how individuals and organizations behave within them. SES also supports activities investigating risk assessment and decision-making by individuals and groups; the nature and development of science and technology and their impact on 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 discipline-based programs include sociology, economics, and political science, while interdisciplinary programs support fields such as decision-making and risk; methods, measurement and statistics; science of organizations; law and social science; and science and technology studies. In many of its programs, SES is the major, if not only, source of federal funding for fundamental research, making important investments in the data resources and methodological advances that produce transformative research.

SES also coordinates the Ethics Education in Science and Engineering program, supporting (with other NSF directorates) the Online Ethics Center for Engineering and Science, and manages the Centers for Nanotechnology in Society. SES is a participant in a number of Nanoscale Science and Engineering Centers and the National Nanotechnology Infrastructure Network (NNIN). In addition, SES plays a major role in managing the Decision Making Under Uncertainty collaborative projects.

In general, 58 percent of the total SES portfolio is available for new research grants. The remaining 42 percent funds continuing grants made in previous years.

FY 2013 Summary

All funding decreases/increases represent change over the FY 2012 Estimate. In the FY 2013 Request there is a general reduction for core programs to provide resources for enhancement and implementation of other programs related to directorate priorities.

Research

Overall, support for SES disciplinary and interdisciplinary research increases (+\$3.07 million to a total of \$90.90 million). Disciplinary research funding was redeployed to establish or increase funding for new NSF and SBE priorities.

- Increased support (+\$6.0 million to a total of \$7.60 million) for SBE 2020 to support interdisciplinary research, training, and integration opportunities for social scientists. Increasing funding in this investment will require a reduction in core disciplinary research programs.
- CAREER funding in FY 2013 increases by \$230,000, to a total of \$3.05 million. This investment is consistent with SES's emphasis on supporting early career researchers.
- An increase of \$2.0 million will expand SBE's international leadership role through participation in SAVI, the European Open Research Area program, and other international partnerships.
- SES continues its investments in ethics in science via an equivalent \$400,000 investment in the Ethics Education in Science and Engineering (EASE) cross-directorate program.
- Support for CIF21 continues in FY 2013. Of particular interest to SES is how researchers can enhance the effectiveness of virtual organizations. Support of \$2.90 million (an increase of \$250,000) will support planning awards for future data and cyberinfrastructure investments that create new opportunities for SBE researchers to understand human behavior and cognition and the effectiveness of virtual organizations in the context of the 21st century networked society.
- Increased funding (+\$700,000, to a total of \$4.35 million) for SEES will support research in expanded SEES activities through SBE-specific emphases, such as investments in understanding energy use and in decision making, coastal communities, and vulnerability and resilience, through the enhancement of existing programs and new solicitations; funding will also support Sustainable Energy Pathways, Sustainability Research Networks, RCN-SEES, SEES Fellows, and Water Sustainability and Climate.
- Continued support of \$2.0 million for SaTC (level with the FY 2012 Estimate) through support for the Cyber Economic Incentives theme within CNCI; ; additional continued support of \$1.0 million for multidisciplinary research in three other CNCI themes; The Science of Cybersecurity, Moving Target Defense, and Tailored Trustworthy Spaces.
- \$500,000 supports the Expedition in Education (E²) investment (to a total of \$500,000), enabling SBE scientists to make targeted research data available for educational uses and give scientists better access to substantive science data.
- \$250,000 (a decrease of \$250,000 from the FY 2012 Estimate) supports the Enhancing Access to the Radio Spectrum (EARS) program, a partnership with NSF's Directorates for Engineering, Mathematical and Physical Sciences, and Computer and Information Science and Engineering. EARS addresses the need for research on new and innovative ways to use the spectrum more efficiently.
- Continued support of \$1.50 million for research on understanding population change in the 21st century, an SBE interdisciplinary investment with emphasis on migration and aging and their impact on job creation.

Education

- FY 2013 support for ADVANCE (\$790,000), IGERT (\$2.50 million), and REU supplements (\$500,000) will remain at the FY 2012 Estimate level.

Infrastructure

- FY 2013 support for NNIN (\$400,000) and Research Resources activities (\$5.16 million) will remain at the FY 2012 Estimate level. Funding supports multi-million dollar survey awards such as the American National Election Studies (ANES), the Panel Study of Income Dynamics (PSID), and the General Social Survey (GSS). These surveys are national resources for research, teaching, and decision-making and have become models for similar undertakings in other fields.

DIVISION OF BEHAVIORAL AND COGNITIVE SCIENCE (BCS) **\$95,430,000**
+\$2,740,000 / 3.0%

BCS Funding
(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	Percent
Total, BCS	\$91.11	\$92.69	\$95.43	\$2.74	3.0%
Research	85.75	89.73	92.47	2.74	3.1%
<i>CAREER</i>	5.72	2.72	2.82	0.10	3.7%
<i>Centers Funding (total)</i>	4.88	5.78	5.78	-	-
<i>Nanoscale Science & Engineering Centers</i>	0.18	0.18	0.18	-	-
<i>Science of Learning Centers</i>	4.70	5.60	5.60	-	-
Education	5.32	2.92	2.92	-	-
Infrastructure	0.04	0.04	0.04	-	-
<i>Research Resources</i>	0.04	0.04	0.04	-	-

Totals may not add due to rounding.

BCS supports research and related activities that advance fundamental understanding in the behavioral, cognitive, anthropological, and geographic sciences. Strong core programs are complemented by active involvement in competitions that support collaborative and cross-disciplinary projects. The division seeks to advance scientific knowledge and methods focusing on human cognition and behavior, including perception, thought processes, language, learning, and social behavior across neural, individual, family, and group levels. BCS also supports activities focusing on human variation at the scales of society, culture, and biology, and how these variations and related patterns develop and change across time and space. The division aims to increase basic understanding of geographic distributions and relationships as well as the capabilities to explore them, with an emphasis on interactions among human and natural systems on the Earth's surface. BCS research is helping us prepare for and mitigate the effects of natural and human-initiated disasters, predict and address how people respond to stressors, improve methods for effective learning, enhance the quality of social interaction, and respond to issues such as globalization, terrorism, and climate change. BCS investments in SEES advance our understanding of sustainability, and contribute to energy research.

In general, 51 percent of the BCS portfolio is available for new research grants. The remaining 49 percent funds continuing grants made in previous years.

FY 2013 Summary

All funding decreases/increases represent change over the FY 2012 Estimate. In the FY 2013 Request there is a general reduction for core programs to provide resources for enhancement and implementation of other programs related to directorate priorities.

Research

Overall, support for BCS disciplinary and interdisciplinary research increases (+\$2.74 million to a total of \$92.47 million). Disciplinary research funding was redeployed to establish or increase funding for new NSF and SBE priorities.

- Increased support (+\$4.0 million, to a total of \$6.40 million) for SBE 2020 to support interdisciplinary research, training, and integration opportunities for behavioral and cognitive scientists. Increasing funding in this investment will require a reduction in core disciplinary research programs.
- CAREER funding will increase by \$100,000, to a total of \$2.82 million. This investment is consistent with BCS' emphasis on supporting early-career researchers.
- Funding for neuroscience totals approximately \$2.0 million in FY 2013. BCS research will contribute to NSF's participation in upcoming Office of Science and Technology Policy (OSTP) efforts towards coordination of federal research in this emerging field. BCS and other NSF programs work together informally through co-review of interdisciplinary proposals and formally through special solicitations, such as Collaborative Research in Computational Neuroscience. Starting in FY 2012, a Dear Colleague Letter (DCL) will be issued supporting research on neuroscience and cognitive science. In FY 2013, SBE, ENG, BIO, MPS, and the Directorate for Education and Human Resources (EHR) will continue to leverage existing investments in neuroscience, informed by the results of the DCL activity, and come together to call for a broad-based focus on understanding the brain and learning how to deploy that understanding.
- An increase of \$1.0 million will expand SBE's international leadership role through participation in SAVI, the European Open Research Area program, and other international partnerships.
- Increased funding (+\$300,000, to a total of \$3.55 million) for SEES to support research with SBE-specific emphases, such as investments in understanding human behavior and decision making about energy use, interactions among natural and human systems, vulnerability and resilience, and to participate in Sustainable Energy Pathways, Sustainability Research Networks, RCN-SEES, SEES Fellows, and Water Sustainability and Climate (WSC).
- Increased support (+\$250,000, to a total of \$2.10 million) for CIF21 will create new opportunities for BCS researchers to understand human behavior and cognition.
- Continued support of \$1.20 million for SaTC through support for the Cyber Economic Incentives theme within CNCI. Additional continued support for CNCI (\$1.0 million) is provided for multidisciplinary research in three other CNCI themes; The Science of Cybersecurity, Moving Target Defense, and Tailored Trustworthy Spaces.
- Support for the Enhancing Access to the Radio Spectrum (EARS) program is halved (-\$250,000 to a total of \$250,000). These funds will support a partnership with NSF's Directorates for Engineering, Mathematical and Physical Sciences, and Computer and Information Science and Engineering to address the need for research on new and innovative ways to use the spectrum more efficiently.
- \$500,000 supports the Expedition in Education (E²) investment (for a total of \$500,000) enabling SBE scientists to make targeted research data available for educational uses and give scientists better access to substantive science data.
- As planned, support for the SLC program remains constant with the FY 2012 Estimate level of \$5.60 million. A gradual phase down of the SLC program will continue as the centers reach their endpoints.
- \$1.50 million is aimed at understanding population change in the 21st century, a new SBE interdisciplinary investment, with emphasis on migration and human development as they pertain to learning, cognition, language, group dynamics, culture change, and the use of natural resources.
- Continued investment in the science of broadening participation in order to better understand the mechanisms and processes that result in the under-representation of women and minorities in STEM.
- Continued investment in support of integrative and interdisciplinary approaches to the understanding of human cultural and biological evolution over long time scales.

Education

- FY 2013 support for ADVANCE (\$680,000), REU Supplements (\$440,000) and IGERT (\$1.80 million) will remain level with the FY 2012 Estimate level.

Infrastructure

- FY 2013 support for infrastructure activities will remain at the FY 2012 Estimate level. Funding supports multi-million dollar survey awards such as the Panel Study of Income Dynamics (PSID) and the General Social Survey (GSS). These surveys are national resources for research, teaching, and decision-making and have become models for similar undertakings in other fields.

**SBE OFFICE OF MULTIDISCIPLINARY
ACTIVITIES (SMA)**

\$29,110,000
+\$880,000 / 3.1%

SMA Funding

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over	
				FY 2012 Estimate Amount	Percent
Total, SMA	\$25.10	\$28.23	\$29.11	\$0.88	3.1%
Research	19.08	22.56	23.26	0.70	3.1%
<i>CAREER</i>	0.72	-	-	-	N/A
<i>Centers Funding (total)</i>	11.69	8.07	8.07	-	-
<i>Science of Learning Centers</i>	11.69	8.07	8.07	-	-
Education	3.72	3.38	3.56	0.18	5.3%
Infrastructure	2.29	2.29	2.29	-	-
<i>Research Resources</i>	2.29	2.29	2.29	-	-

Totals may not add due to rounding.

SMA provides a focal point for programmatic activities that cut across SBE disciplinary boundaries, including the agency-wide Science of Learning Centers (SLCs). SMA also funds the Science of Science and Innovation Policy (SciSIP) program, Research Experiences for Undergraduates (REU) Sites, and Minority Postdoctoral Research Fellowships (MPRF). SMA will play a critical role in several NSF areas of emphasis for FY 2013, such as clean energy and sustainability (via the SEES investment); cyberinfrastructure and computer science (via the CIF21 investment); national security (via the CNCI investment); international leadership and interaction (via support to the Digging Into Data (DiD) Initiative); innovation (via the Innovation Corps (I-Corps) investment); and interdisciplinary research and training (via the INSPIRE/CREATIV investment and full implementation of the SBE Transformed Portfolio, SBE 2020). These investments reflect both newly requested funds and a significant redeployment of resources previously committed to other social, behavioral and economics science disciplines within SBE. Co-funding with other divisions in SBE and with other directorates is typical for SMA, as is participation in interagency activities. While all SBE divisions pursue interdisciplinary work, SMA assists with seeding multidisciplinary activities for the future. All areas of SBE sciences are represented in the SMA portfolio.

In general, 36 percent of the SMA portfolio is available for new research grants. The remaining 64 percent funds continuing awards made in previous years, including funding for the SLCs.

FY 2013 Summary

All funding decreases/increases represent change over the FY 2012 Estimate. In the FY 2013 Request there is a general reduction for core programs to provide resources for enhancement and implementation of other programs related to directorate priorities.

Research

- Overall, support increases for basic research activities (+\$700,000 above the FY 2012 Estimate to a total of \$23.26 million).

- \$500,000 (to a total of \$500,000) supports the I-Corps investment, strengthening collaboration between social scientists and academe and improving social science students' understanding of innovation.
- \$1.0 million (an increase of \$500,000) supports the OneNSF theme INSPIRE/CREATIV, an NSF priority aligned with SBE 2020.
- In FY 2013, SMA will continue to support six active Science of Learning Centers and funding will remain at the FY 2012 Estimate level, \$8.07 million. A gradual phase down of the program continues as centers reach their endpoints in FY 2014 and FY 2015.
- Continued investment in SEES (a total of \$850,000) to support research with SBE-specific emphases, such as investments in understanding human behavior and decision making about energy use, interactions among natural and human systems, and vulnerability and resilience. SMA will participate in Sustainable Energy Pathways, Sustainability Research Networks, RCN-SEES, and SEES Fellows.
- Support of \$1.0 million, level with the FY 2012 Estimate, for Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) continues in FY 2013. Of particular interest to SMA are new opportunities for SBE researchers to understand the 21st century networked society.
- Funding for the SciSIP program decreases by \$1.45 million, to a total of \$6.10 million as a result of SBE decreasing investments in disciplinary research programs across the directorate.
- With an investment of \$800,000, level with FY 2012, SMA will partner with CISE and OCI in devoting resources to the Secure and Trustworthy Cyberspace (SaTC) initiative through support for the Cyber Economic Incentives theme within CNCI. This investment will support research at the interstices of the economic and computer sciences to achieve secure practices through the development of market forces that incentivize good behavior.
- Continued investment in support of research on understanding population change in the 21st century, an interdisciplinary SBE investment with emphasis on migration and aging and their impact on job creation and human development as they pertain to learning, cognition, language, group dynamics, culture change and the use of natural resources.

Education

Overall, support for Education activities in SMA increases by \$180,000, to a total of \$3.56 million.

- Support for Research Experiences for Undergraduates (REU) Sites increases by \$80,000, to a total of \$2.40 million.
- Funding for the SBE Minority Postdoctoral Research Fellowships (MPRF) increases by \$100,000, to a total of \$1.10 million.

Infrastructure

- FY 2013 support for infrastructure activities will remain at the FY 2012 Estimate level. Funding is primarily for data and tool development. Data development includes such databases as: the National Bureau of Economic Research/Harvard patent database; the University of California, Davis database on initial public offerings; and two surveys, "Management and Organizational Practices Across the U.S.," and the "Division of Innovative Labor." Tool developments include such projects as Open Researcher and Contributor ID (ORCID) unique researcher identifiers and Publication Harvester: An Open-Source Software Tool for Science Policy Research.

**NATIONAL CENTER FOR SCIENCE AND ENGINEERING
STATISTICS (NCSES)**

**\$34,760,000
-\$1,390,000 / -3.8%**

NCSES Funding
(Dollars in Millions)

	FY 2011	FY 2012	FY 2013	Change Over	
	Actual	Estimate	Request	FY 2012 Estimate Amount	Percent
Total, NCSES¹	\$35.44	\$36.15	\$34.76	-\$1.39	-3.8%
Research	0.53	0.55	0.50	-0.05	-9.1%
Infrastructure	34.91	35.60	34.26	-1.34	-3.8%

Totals may not add due to rounding.

¹The Division of Science Resources Statistics (SRS) was renamed the National Center for Science and Engineering Statistics (NCSES) in FY 2011.

The National Center for Science and Engineering Statistics (NCSES), formerly the Division of Science Resources Statistics (SRS), was established within the National Science Foundation by Section 505 of the America COMPETES Reauthorization Act of 2010 (P.L. 111-358). The Act not only provides a new name but also provides NCSES with the legislative mission to “...serve as the central Federal clearinghouse for the collection, interpretation, analysis, and dissemination of objective data on science, engineering, technology, and research and development.” NCSES is also called on to support the collection of statistical data on the condition and progress of United States STEM education; to support research using the data it collects and on methodologies in areas related to the work of the Center; and to support the education and training of researchers in the use of large-scale, nationally representative data sets. This change broadens the responsibilities of NCSES and formally supports a number of activities currently underway in the former SRS division. NCSES will refine its priorities to ensure they are in line with the Act and will continue to identify and implement efficiencies in its data collection operations.

As one of the thirteen principal federal statistical agencies, NCSES has responsibility for statistics about the science and engineering enterprise. NCSES designs, supports, and directs a coordinated collection of periodic national surveys and performs a variety of other data collections and research, providing policymakers, researchers, and other decision makers with high quality data and analysis on R&D, innovation, the education of scientists and engineers, and the S&E workforce. The work of NCSES involves survey development, methodological and quality improvement efforts, data collection, analysis, information compilation, dissemination, web access, and customer service to meet the statistical and analytical needs of a diverse user community. It also prepares two congressionally mandated biennial reports — *Science and Engineering Indicators (SEI)* and *Women, Minorities, and Persons with Disabilities in Science and Engineering*. The data collected by NCSES also serve as important tools for researchers in SBE’s Science of Science and Innovation Policy (SciSIP) program.

The funding portfolio for NCSES includes ongoing, cyclical surveys; reports and other products; and projects accomplished primarily through contracts and also a few standard grants.

FY 2013 Summary

All funding decreases/increases represent change over the FY 2012 Estimate.

Infrastructure

- FY 2013 support for core NCSES infrastructure activities decreases by \$1.34 million to an overall total of \$34.26 million.

- As a cost saving measure, NCSSES will accelerate efforts to rely more heavily on data from the National Survey of College Graduates built from the American Community Survey (ACS) to meet its needs for data on the overall science and engineering workforce. As a result, funding for the National Survey of College Graduates will increase by \$2.22 million and funding for the National Survey of Recent College Graduates will decrease by \$4.50 million, for an overall net decrease of \$2.28 million.
- FY 2013 support for NCSSES' exploration of new methods to enhance data collection, analysis, and sharing capabilities, which would help NCSSES better serve its role of providing information on the science and engineering enterprise, will be reduced by \$150,000. NCSSES will proceed with a pilot project establishing collaboration between several federal agencies and NCSSES to test the feasibility of tagging and extracting agencies' administrative records to measure research and development activity. If feasible, the use of such administrative records should reduce the cost of conducting R&D surveys of Federal agencies.
- Funding for NCSSES SciSIP activities decreases by \$1.0 million, to a total of \$4.95 million. Current SciSIP funding is used to support the Business R&D and Innovation Survey, the federal statistical system's primary survey on business domestic and global R&D expenditures and workforce, and the National Survey of College Graduates, the federal statistical system's primary survey of the nation's science and engineering workforce.