DIRECTORATE FOR SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES (SBE)

$272,200,000
+$15,350,000 / 6.0%

SBE Funding
(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate	
				Amount	Percent
Social and Economic Sciences (SES)	$91.37	$96.11	$97.72	$1.61	1.7%
Behavioral and Cognitive Sciences (BCS)	88.92	93.39	94.47	1.08	1.2%
National Center for Science and Engineering Statistics (NCSES)	34.92	39.30	50.76	11.46	29.2%
SBE Office of Multidisciplinary Activities (SMA)	27.41	28.05	29.25	1.20	4.3%
Total, SBE	**$242.62**	**$256.85**	**$272.20**	**$15.35**	**6.0%**

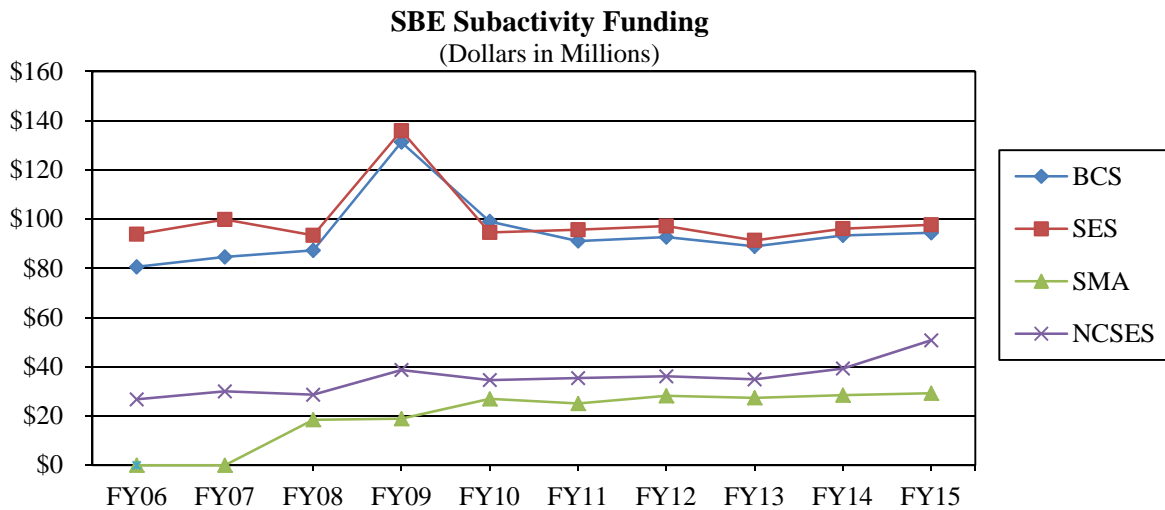Totals may not add due to rounding.

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 (NCSES). 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. SBE is a significant partner in cross-directorate programs that connect the social and behavioral sciences to priority investments across the agency.

SBE's FY 2015 Request is informed by four key priorities: (1) enhancing research investments that advance fundamental knowledge in the social and behavioral sciences broadly; (2) strengthening the understanding of the S&E enterprise through enhancements to the National Center for Science and Engineering Statistics (NCSES) data collection and analysis; (3) sustaining the directorate's ongoing strategic transformation through support for interdisciplinary research and training (via INSPIRE and SBE 2020) and the emerging investment in the Science of Learning; and (4) participating in cross-directorate programs that integrate the social and behavioral sciences into priority NSF investments such as understanding the brain (via the Cognitive Science and Neuroscience investment); Cyberinfrastructure for 21st Century Science, Engineering, and Education (CIF21)/Big Data; Comprehensive National Cybersecurity Initiative (CNCI) (via the Secure And Trustworthy Cyberspace (SaTC) investment); infrastructure security and resilience (via Critical Resilient Interdependent Infrastructure Processes and Systems (CRISP); technologies for cyberlearning and the impact of such technologies on learning (via the Cyberlearning and Future Learning Technologies program); and Innovation Corps (I-Corps). These investments reflect both newly requested funds and a 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. NCSES is the designated federal

statistical entity with responsibility for generating 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 56 percent of the federal funding for basic research at academic institutions in the SBE sciences.

SBE Subactivity Funding
(Dollars in Millions)

FY 2015 Summary by Division

- SES's FY 2015 request reflects its strong contribution to the unifying themes in the FY 2015 NSF Budget Request. This includes SEES, through investments in SEES Fellows and Coupled Natural and Human Systems (CNH) activities; Secure and Trustworthy Cyberspace (SaTC) through the Cyber Economic Incentives theme within CNCI; Critical Resilient Interdependent Infrastructure Processes and Systems (CRISP); and CIF21 through community research networks and research on virtual organizations and with a sustained investment in the Big Data emphasis area. SES will continue efforts to build the scientific foundation and research evidence base needed for future programmatic efforts in broadening the participation of women, underrepresented minorities, and people with disabilities in science and engineering (S&E) (via SBE's Science of Broadening Participation (SBP)). SES will also maintain its commitment to existing programs and continue support for surveys that provide unique insights into U.S. social, economic, and political life, while providing funding for new research that has the potential to transform the social and economic sciences and contribute to effective policy development. SES will also enhance funding for the CAREER program. To further transform SBE by increasing interdisciplinary research, training, and integration with other parts of NSF, SES will sustain its investment in SBE 2020, funding more SBE Fellows (via SBE Postdoctoral Research Fellowships – Interdisciplinary Research in Behavioral and Social Sciences (SPRF-IBSS)). To enhance interdisciplinary research and training, SES will participate in the Interdisciplinary Behavioral and Social Science Research (IBSS) program. SES will maintain investment in the National Nanotechnology Infrastructure Network (NNIN).

- In FY 2015, BCS will make an initial investment in the NSF-wide Science of Learning investment that builds on the sunsetting Science of Learning Centers to support interdisciplinary research on the science of learning. BCS will be a major partner in NSF-wide interdisciplinary activities such as

SEES, CIF21, Cognitive Science and Neuroscience, 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, youth violence, sustainability, and the need to strengthen forensic science. SEES funding will support SEES Fellows and CNH. In its ongoing programs, BCS will operate in an interdisciplinary context, providing support for research on the complex ways people interact with climate and other natural systems. BCS support for CNCI will enable research on cognitive and behavioral aspects of threats to cybersecurity. BCS will contribute to the science of broadening participation in S&E via the Science of Broadening Participation (SBP). Funding for the SBE 2020 activity is sustained and will enable BCS to partner with other NSF directorates, increasing interdisciplinary research and training for behavioral and cognitive scientists. The final year of support of the Science of Learning Centers (SLC) program funds investments in integrative interdisciplinary approaches to the understanding of animal, human, and machine learning. BCS will also continue to fund basic research that advances understanding of cognition and behavior through various research mechanisms.

- For FY 2015, NCSES will maintain its core programmatic data collection and publication activities and pursue significant and strategic targeted improvements in its statistical and analytic programs. NCSES will expand and recast the sample drawn for the Survey of Doctorate Recipients (SDR) to collect data and develop national estimates for employment outcomes by STEM subfield and by race and gender. In addition, NCSES will continue to develop and test new measures from the SDR that address data gaps related to understanding the relationship between federal support for graduate education and student outcomes, such as employment. NCSES will continue work to close a growing gap in its national estimates for research and development by implementing a survey of nonprofit organizations. NCSES will expand the scope of administrative records sources that could potentially augment its existing surveys and will implement a pilot project establishing collaboration between several federal agencies to assess the feasibility of using agencies' administrative records to measure research and development activity. To better answer questions about new or emerging science and technology (S&T) topics and provide a flexible format for testing new questions for the Center's surveys, NCSES will design and test the capacity to collect Short Pointed on Time survey data. In support of its internal data infrastructure, NCSES will build on its nascent data repository to take advantage of newer technologies for the automated generation of public content (data and metadata), analysis, and graphics.

- SMA provides a focal point for programmatic activities that cut across NSF and SBE boundaries. In addition, SMA assists with seeding interdisciplinary activities for the future. In FY 2015, SMA will fund NSF's Public Access Initiative and the Science of Learning investment. SMA will continue to play an important role in the expansion of interdisciplinary training as part of SBE 2020, with continued support to the SBE Postdoctoral Research Fellowships (SPRF) program; SMA will provide overall management for the program. Support for enhancing the research experience for students will continue via investments in the Research Experiences for Undergraduates (REU) Sites and Supplements programs. SMA will fund interdisciplinary activities associated with CIF21; the Science of Science and Innovation Policy program (SciSIP); and cognitive science and neuroscience. SMA's support of SEES is eliminated as a result of SBE's redeployment of funds for interdisciplinary research programs to establish and further other SBE and NSF priorities. SMA will participate in I-Corps, INSPIRE, and SaTC (through the Cyber Economic Incentives theme within CNCI, a multi-agency priority). SMA will continue to manage the agency-wide Science of Learning Centers program.

Major Investments

SBE Major Investments

(Dollars in Millions)

Area of Investment	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Percent
CAREER	8.75	7.75	7.84	0.09	1.2%
Cognitive Science and Neuroscience	1.00	3.00	5.00	2.00	66.7%
CNCI	6.28	6.00	6.00	-	-
Critical Resilient Interdependent Infrastructure Processes and Systems (CRISP)	-	-	2.00	2.00	N/A
CIF21	4.50	6.00	6.00	-	-
Cyberlearning and Future Learning Technologies (Cyberlearning)	1.00	1.00	1.00	-	-
I-Corps	0.35	0.35	0.50	0.15	42.9%
NRT[1]	4.90	3.67	4.20	0.53	14.4%
Public Access Initiative	-	1.75	1.75	-	-
Science of Learning	-	-	5.00	5.00	N/A
SaTC	4.00	4.00	4.00	-	-
SEES	7.25	5.25	3.50	-1.75	-33.3%
SciSIP	10.84	11.05	11.05	-	-

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

[1]The FY 2013 Actual represents Integrative Graduate Education and Research Traineeship (IGERT) program funding. Outyear commitments for IGERT are included in the NRT line and are $3.03 million in FY 2014 and $2.74 million in FY 2015.

- CAREER: SBE supports CAREER (+$90,000 over FY 2014 Estimate, to a total of $7.84 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.

- Cognitive Science and Neuroscience: Support for this cross-foundation activity (+$2.0 million to a total of $5.0 million) will contribute to NSF's efforts to understand the brain through integrative and innovative research. SBE and other NSF directorates work together informally through co-review of interdisciplinary proposals and formally through special solicitations, such as Collaborative Research in Computational Neuroscience. A Dear Colleague Letter (DCL) was issued in FY 2013 supporting research on neuroscience and cognitive science. In FY 2015 SBE, in conjunction with the Directorates for Computer and Information Science and Engineering (CISE); Engineering (ENG); Biological Sciences (BIO); and Mathematical and Physical Sciences (MPS), 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, behavior, and cognition and learning how to deploy that understanding to benefit society. Funding will support greater emphasis on research relevant to the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative.

- Comprehensive National Cybersecurity Initiative (CNCI): In partnership with CISE, 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 2015. 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.

- Critical Resilient Interdependent Infrastructure Processes and Systems (CRISP): SBE will partner with NSF's CISE and ENG directorates in support of research investments that bring together researchers from all three communities to develop the appropriate interdisciplinary knowledge base needed to address significant challenges in developing resilient and sustainable infrastructure (inclusive of water, wastewater, power, transportation, telecommunication, and cyber). SBE support for CRISP aligns with the Presidential Policy Directive (PPD-21) on Critical Infrastructure Security and Resilience. In FY 2015, SBE will make an initial investment of $2.0 million in CRISP.

- CIF21: Funds ($6.0 million total) 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. Also, SBE will make an initial investment in CIF21's Big Data emphasis area for research that advances the core scientific and technological means of managing, analyzing, visualizing, and extracting information from large, diverse data sets, especially related to neuroscience, economics, and the integration of the human, social, and natural worlds.

- Cyberlearning: SBE's participation in Cyberlearning and Future Learning Technologies (Cyberlearning) remains at $1.0 million in FY 2015 for research on the development of technologies for cyberlearning, and for studying the impact of technologies on learning.

- I-Corps: With an increase of $150,000 to a total investment of $500,000, SBE will continue a multi-year effort to strengthen collaboration between SBE scientists in academe and the technological, entrepreneurial and business communities and practitioners.

- NSF Research Traineeship (NRT): In FY 2015, SBE will participate in the NSF-wide activity, NSF Research Traineeship (NRT) program, which is a modernization of the Integrative Education and Research Traineeship (IGERT) program. For more information regarding NRT, see the Major Investments in Science, Technology, Engineering, and Mathematics (STEM) Graduate Education narrative in the NSF-Wide Investments chapter.

- Public Access Initiative: Continued investment of $1.75 million will further NSF's efforts, which began in FY 2013, to make the results of the NSF-funded research available to the public. This initiative aligns with OSTP policy memorandum, "Expanding Public Access to the Results of Federally Funded Scientific Research." Detailed information regarding the information technology (IT) investments required to increase public access to NSF-funded data and publications can be found in the Public Related Technology (PRT) section contained within the Organizational Excellence, Program Accounts: R&RA and EHR chapter of this request.

- Science of Learning: SBE will make an initial investment of $5.0 million to the cross-directorate Science of Learning investment in FY 2015. In conjunction with other NSF directorates (CISE, ENG, and EHR as a non-funding partner), SBE will support interdisciplinary research on the science of learning, with an overarching goal of creating, on a national scale, an integrated Science of Learning community. Investments in this area complement other NSF and interagency activities, including the Cognitive Science and Neuroscience program and the National Robotics Initiative. Funding from the sunsetting Science of Learning Centers (SLC) program ($-8.22 million total) is

redeployed to establish an initial investment in the Science of Learning and to increase support for Cognitive Science and Neuroscience.

- SEES: In FY 2015 support for SEES decreases due to a combination of realignment of resources in SBE as well as NSF priorities and management considerations. Funding will be more focused on fewer SEES activities. SBE will continue its commitment to sustainability research by making investments in Coupled Natural and Human Systems (CNH) and SEES Fellows. Funding for SEES decreases by $1.75 million below the FY 2014 Estimate to a total of $3.50 million.

- Science of Science and Innovation Policy (SciSIP): SciSIP funding is held constant with the FY 2014 Estimate, $11.05 million total. SciSIP will continue to support research and data collections related to innovation and R&D spending.

SBE Funding for Centers Programs and Facilities

SBE Funding for Centers Programs
(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Percent
Centers Programs Total	**$17.86**	**$14.20**	**$5.98**	**-$8.22**	**-57.9%**
Nanoscale Science & Engineering Centers (SES & BCS)	1.17	0.60	0.60	-	-
Science of Learning Centers (SMA & BCS)	16.69	13.60	5.38	-8.22	-60.4%

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 2015.

- The Science of Learning Centers (SLC) program funding decreases (-$8.22 million) below the FY 2014 Estimate to a total of $5.38 million. Support includes annual increments to two of six centers: the Spatial Intelligence and Learning Center (SILC); and the Temporal Dynamics of Learning Center (TDLC). 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 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Percent
Facilities Total	**$0.40**	**$0.40**	**$0.40**	**-**	**-**
National Nanotechnology Infrastructure Network (NNIN)	0.40	0.40	0.40	-	-

Totals may not add due to rounding.

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

Summary and Funding Profile

SBE supports investments in core research and education as well as research infrastructure. At the FY 2015 Request, the number of research grant proposals increases by 100 and SBE expects to award approximately 610 research grants. The average annualized award size will increase over the FY 2014 Estimate and duration will be held constant at the FY 2015 Estimate level.

In FY 2015, funding for the centers accounts for about 2 percent of SBE's Request. Center funding decreases $8.22 million from the FY 2014 Estimate level, and includes support for only two of the original six Science of Learning (SLC) centers and support to the Nanoscale Science and Engineering Centers.

SBE Funding Profile

	FY 2013 Actual Estimate	FY 2014 Estimate	FY 2015 Estimate
Statistics for Competitive Awards:			
Number of Proposals	4,433	5,000	5,200
Number of New Awards	920	1,100	1,120
Funding Rate	21%	22%	22%
Statistics for Research Grants:			
Number of Research Grant Proposals	2,891	3,000	3,100
Number of Research Grants	530	600	610
Funding Rate	18%	20%	20%
Median Annualized Award Size	$101,295	$104,300	$104,300
Average Annualized Award Size	$139,250	$143,400	$144,900
Average Award Duration, in years	2.5	2.6	2.6

Program Monitoring and Evaluation

Committees of Visitors (COV):
- In FY 2014, no SBE COVs will convene.
- The Committee of Visitors (COV) for the Division of Social and Economic Sciences (SES), consisting of twenty distinguished scientists, met June 3-5, 2013. The COV provided recommendations in the areas of intellectual vision, data access and infrastructure, review innovation, Doctoral Dissertation Research Improvement Grants, program management, and COV reorganization. The COV identified six key features defining the future landscape for SES sciences and programs: interactions of human and natural systems; socio-genomics and other biological/social interactions; Big Data; human security; human factors in the development, adoption, and impact of new technologies; and systems science. Over the course of the next several years, the COV report will influence both divisional operations as well as informing deliberations regarding programmatic portfolio development. The Chair of the SES COV will present the report and response to the SBE Advisory Committee on April 3-4, 2014.
- The Division of Behavioral and Cognitive Sciences (BCS) COV convened October 10-12, 2012. The COV's report and the division's response to it was reviewed and approved by the SBE Advisory Committee in Spring 2013. The next BCS COV will convene in FY 2015.
- In FY 2012, one COV convened on December 15-16, 2011 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 recommended SBE management review the current placement of multidisciplinary programs in the directorate, as well as the question of how many proposal submissions a year are appropriate. The COV also recommended taking actions to broaden participation and increase capacity for research related to the Science of Science and Innovation Policy (SciSIP) program. The SMA COV report and response to the report were presented to and accepted by the SBE Advisory Committee (AC) on May 17-18, 2012. The next SMA COV will convene in FY 2015.

Workshops and Reports:
- The SBE Advisory Committee (AC) subcommittee tasked with exploring future directions for the Science of Learning organized two workshops at NSF that resulted in recommendations for consideration in development of the programmatic portfolio. *Science of Learning: History* (October 2012) focused on the scientific achievements in the Science of Learning over the past decade; the results were reported at the SBE AC meeting in November 2012. *Science of Learning: Prospects* (February/March 2013) focused on strategies and objectives to advance the Science of Learning into the future. The results were discussed at the May 2013 SBE AC meeting with emphasis on future strategic and budget planning in SBE's investment in the Science of Learning. Activities in this program will also be informed by discussions that took place at the NSF-OECD Conference, *Innovation in Education: Connecting How we Learn to Educational Practice and Policy: Research Evidence and Implications* (January 2012), and three additional events: 1) *Workshop on Glial Biology of Learning and Cognition*, designed to synthesize current knowledge and outline future directions for brain research on the role of glia in learning (sponsored by SBE and the DOD Office of Naval Research and Army Research Office; February 2013); 2) *Integrating Approaches to Computational Cognition*, a workshop designed to identify frontiers for collaborative research integrating mathematical and computational modeling of human cognition with machine learning and machine intelligence (sponsored by SBE and CISE; May 2013); and 3) the *International Convention on Science of Learning*, which will address how Science of Learning research can facilitate human learning, and inform educational practice and policy (co-organized by NSF, OECD and UNESCO, in collaboration with the East China Normal University, Shanghai Normal University and the University of Hong Kong; March 2014).
- The SBE Advisory Committee (AC) Subcommittee on Advancing SBE Survey Research organized *The Future of Survey Research: Challenges and Opportunities*, a pair of conferences held at NSF in October and November 2012, to prepare for NSF investments in survey data collection and management over the coming decade. The first conference focused on operational challenges for survey researchers, while the second focused on opportunities to augment survey data with an emphasis on data linking and data dissemination. The net result of these conferences include: (1) a set of insights about how surveys should be done today to maximize data quality (thereby specifying how major infrastructure surveys should be designed and carried out), (2) a list of the most important challenges facing the methodology, (3) a list of opportunities for augmenting survey data, and (4) a list of research questions that merit future investigation. A final report on the conferences will be presented and discussed at the April 2014 AC meeting.
- SBE sponsored two recent workshops, along with CISE, that inform programmatic portfolio development and strategic planning. These workshops were held in May 2013 focusing on "Integrating Approaches to Computational Cognition" (http://matt.colorado.edu/compcogworkshop /report.pdf) and "Linking Language and Cognition to Neuroscience via Computation" (www.psych.nyu.edu/clash/dp_papers/NSF-Workshop-report.pdf). A third workshop is planned in the Spring 2014 focusing on "Quantitative Theories of Emergence of Learning, Memory, and Prediction in Humans," in conjunction with MPS. The results are expected to inform division investments in cognitive science and neuroscience with regard to standing programs and cross-directorate activities in the BRAIN initiative.

- SBE sponsored a workshop in February 2013 on "Youth Violence: What We Need to Know". The resulting report summarized the existing scientific evidence regarding the precursors of violence among children and adolescents and identified key questions in need of additional study. This report was presented and accepted by the SBE Advisory Committee in the Spring 2013. The directorate is now preparing a Dear Colleague Letter based in part on the report from this workshop.
- NSF sponsored two two-day public planning meetings on public access to the results of federally-supported research and development data and publications at the National Academy of Sciences in May 2013 to support developing the plans called for in the Office of Science and Technology (OSTP) memorandum, *Increasing Access to the Results of Federally funded Scientific Research*, issued on February 22, 2013. Approximately 20 federal agencies signed on as co-sponsors of the event in which more than 500 individuals and organizations participated on site or through remote access. Topics addressed included access to data and publications for different kinds of user groups; disciplinary differences; the roles of scientific and scholarly societies in promoting progress in science; the roles of publishers, libraries, universities, and other organizations; embargo or delay periods; and the need for ongoing communication as the plans are implemented. Video of the sessions together with a written transcript and copies of white papers are available at: http://sites.nationalacademies.org/DBASSE/CurrentProjects/DBASSE_082378
- A Principal Investigators meeting for the Ethics Education in Science and Engineering (EESE) program was held at NSF, September 23-24, 2013. In response to the results of this meeting, the EESE working group is working toward defining new programmatic directions addressing questions regarding effective ethics education and the cultural and institutional contexts that promote it.

Please see the Performance chapter for details regarding the periodic reviews of programs and portfolios of programs by external Committees of Visitors and directorate Advisory Committees.

Number of People Involved in SBE Activities

	FY 2013 Actual Estimate	FY 2014 Estimate	FY 2015 Estimate
Senior Researchers	3,022	3,200	3,400
Other Professionals	770	700	700
Postdoctorates	270	400	400
Graduate Students	1,920	2,300	2,300
Undergraduate Students	764	800	900
Total Number of People	**6,746**	**7,400**	**7,700**

DIVISION OF SOCIAL AND ECONOMIC SCIENCES (SES) $97,720,000
<div align="right">+$1,610,000 / 1.7%</div>

SES Funding

(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Change Over FY 2014 Estimate Percent
Total, SES	**$91.37**	**$96.11**	**$97.72**	**$1.61**	**1.7%**
Research	**74.68**	**85.20**	**86.52**	**1.32**	**1.5%**
CAREER	2.54	4.15	4.20	0.05	1.2%
Centers Funding (total)	0.99	0.42	0.42	-	-
Nanoscale Science & Engineering Centers (NSEC)	0.99	0.42	0.42	-	-
Education	**3.81**	**3.51**	**3.80**	**0.29**	**8.3%**
Infrastructure	**12.87**	**7.40**	**7.40**	**-**	**-**
Nat'l Nanotechnology Infrastructure Network (NNIN)	0.40	0.40	0.40	-	-
Research Resources	12.47	7.00	7.00	-	-

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 funds 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. 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. In addition, SES plays a major role in managing the Decision Making Under Uncertainty collaborative projects.

In general, 75 percent of the total SES portfolio is available for new research grants. The remaining 25 percent funds continuing grants made in previous years.

FY 2015 Summary

All funding decreases/increases represent change over the FY 2014 Estimate.

<u>Research</u>
Overall, support for SES disciplinary and interdisciplinary research increases (+$1.32 million to a total of $86.52 million).

- Investment in Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) is initiated at $2.0 million. In conjunction with NSF's CISE and ENG directorates, SBE will support research investments that aim to bring together researchers from all three communities to develop the appropriate interdisciplinary knowledge base needed for a resilient and sustainable infrastructure.
- Continued support is provided ($7.10 million total) for interdisciplinary research, training, and integration opportunities through SBE 2020 (via SBE's Interdisciplinary Behavioral and Social Science IBSS) program. Funding in this investment will require a reduction in core disciplinary research programs.
- CAREER funding in FY 2015 increases by $50,000, to a total of $4.20 million. This investment is consistent with SES's emphasis on supporting early career researchers.
- SES continues its investments of $400,000 to the Ethics Education in Science and Engineering (EESE) cross-directorate program.
- Investment in CIF21 will support a Big Data ($1.50 million) emphasis area with research that aims to advance the core scientific and technological means of managing, analyzing, and visualizing, and extracting information from large, diverse, data sets. CIF21 total in SES is $3.50 million and $2.0 million will support SES infrastructure activities.
- Support for SEES ($2.0 million) is held constant with the FY 2014 Estimate and will support investments in SEES Fellows and the Coupled Natural and Human Systems (CNH).
- Continued support of $2.0 million for SaTC is provided through support for the Cyber Economic Incentives and other themes within CNCI.
- Funding for SES' Science of Broadening Participation investment is held at the FY 2014 Estimate level of $750,000 total. SES' SBP investment supports efforts to build the scientific foundation and research evidence base needed for future broadening participation efforts. Investing in research that informs the science of broadening participation spans education and the SBE sciences, and engages all of NSF.
- A decrease (-$730,000) to core program funding is included to support and implement programs related to directorate priorities.

<u>Education</u>
- Support for the ADVANCE program is decreased (-$190,000 to a total of $600,000) and REU supplements ($500,000) remain constant with the FY 2014 Estimate level.
- In an effort to establish a better balance between the responsibilities and demands of work lives and family lives for social and behavioral scientists, an investment of $20,000 (a decrease of -$110,000) provides support to the Career-Life Balance (CLB) initiative.
- Funding for IGERT is reduced (-$70,000 to a total of $1.68 million).
- SES will invest $1.0 million total (+$660,000) in graduate traineeships as IGERT evolves into the new NRT program, which will encourage the development of bold, new, potentially transformative, and scalable models for STEM graduate training that ensure graduate students develop the skills, knowledge, and competencies needed to pursue a range of careers within and outside academe.

Infrastructure
- FY 2015 support for NNIN ($400,000) will remain at the FY 2014 Estimate. Funding for the existing award expired at the end of FY 2013 at the completion of its ten-year cooperative agreement. The ENG directorate will re-evaluate the scope for future nanotechnology user facility support in FY 2014.
- SES Research Resources activities are funded at the FY 2014 Estimate, $7.0 million total. 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. $2.0 million of the research resources funding supports SES' CIF21 investment inclusive of support for the Building Community and Capacity for Data-Intensive Research in the Social, Behavioral, and Economic Sciences and in Education and Human Resources (BCC-SBE/EHR) initiative. This investment seeks to enable research communities to develop visions, teams, and capabilities dedicated to creating new large-scale, next-generation data resources and relevant analytic techniques to advance fundamental research for SBE and EHR sciences.

DIVISION OF BEHAVIORAL AND COGNITIVE SCIENCE (BCS) $94,470,000
                                                          +$1,080,000 / 1.2%

BCS Funding
(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Percent
Total, BCS	**$88.92**	**$93.39**	**$94.47**	**$1.08**	**1.2%**
Research	**83.94**	**89.43**	**90.94**	**1.51**	**1.7%**
CAREER	6.04	3.60	3.64	0.04	1.1%
Centers Funding (total)	5.14	5.78	1.81	-3.97	-68.7%
Nanoscale Science & Engineering Centers (NSEC)	0.18	0.18	0.18	-	-
Science of Learning Centers	4.96	5.60	1.63	-3.97	-70.9%
Education	**3.59**	**2.82**	**2.39**	**-0.43**	**-15.2%**
Infrastructure	**1.40**	**1.14**	**1.14**	**-**	**-**
Research Resources	1.40	1.14	1.14	-	-

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, 61 percent of the BCS portfolio is available for new research grants. The remaining 39 percent funds continuing grants made in previous years.

FY 2015 Summary

All funding decreases/increases represent change over the FY 2014 Estimate.

Research
Overall, support for BCS disciplinary and interdisciplinary research increases (+$1.51 million to a total of $90.94 million).

- Support ($4.40 million total) for SBE 2020 (via SBE's IBSS solicitation and Dear Colleague Letter (DCL)) to support interdisciplinary research, training, and integration opportunities for behavioral and cognitive scientists is upheld.

- CAREER funding will increase by $40,000, to a total of $3.64 million. This investment is consistent with BCS' emphasis on supporting early-career researchers.
- Cognitive Science and Neuroscience: BCS support for this cross-foundation activity totals approximately $4.0 million in FY 2015 (+$2.0 million). Funding will support greater emphasis on research relevant to the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative.
- Decreased funding (-$1.45 million, to a total of $1.50 million) for SEES will support research with SBE-specific emphases, such as investments in SEES Fellows and in Coupled Natural and Human Systems (CNH). SEES funding is redeployed to core and disciplinary and interdisciplinary research programs.
- Continued support ($1.60 million total) for CIF21 will create new opportunities for BCS researchers to understand human behavior and cognition in the context of the 21st century's networked society.
- $1.20 million will be used for SaTC to support the Cyber Economic Incentives theme within CNCI. An additional $1.0 million is provided for multidisciplinary research in other CNCI activities.
- Centers Funding: Science of Learning Centers (SLC) funding decreases $3.97 million, to a new total of $1.63 million. Funding will support the last year of the SILC Center. BCS SLC funding is redeployed to support the division's initial investment in the cross-directorate Science of Learning investment. Support for the Nanotechnology Centers ($180,000) remains constant with the FY 2014 Estimate level.
- BCS will support ($4.0 million) the Science of Learning investment. SBE in partnership with the CISE, ENG, and EHR directorates will support interdisciplinary research on the science of learning, with an overarching goal of creating, on a national scale, an integrated Science of Learning Community.
- Funding for BCS' Science of Broadening Participation (SBP) investment remains unchanged, $750,000 total. BCS's SBP investment supports efforts to build the scientific foundation and research evidence base needed for future broadening participation efforts.
- A general reduction (-$560,000) to BCS core program investments is included to support and implement programs related to directorate priorities.

Education
- BCS support for ADVANCE decreases to $400,000, $280,000 below the FY 2014 Estimate level.
- Support for NSF's Career-Life Balance activity is continued and funding is reduced to $30,000 total (a $90,000 reduction).
- NRT and IGERT: BCS FY 2015 funding for IGERT ($1.06 million total) supports continuing grant increments. In FY 2014, IGERT evolves into a new program, NSF Research Traineeships (NRT), which will encourage the development of bold, new, potentially transformative, and scalable models for STEM graduate training that ensure that graduate students develop the skills, knowledge, and competencies needed to pursue a range of careers within and outside academe. BCS support for the NRT effort increases to $460,000 (+$160,000 above the FY 2014 Estimate).
- Support for Research Experiences for Undergraduates (REU) Supplements ($440,000) is sustained.

Infrastructure
- FY 2015 support for infrastructure activities is continued at $1.14 million. Funding supports BCS' CIF21 investment inclusive of support for the Building Community and Capacity for Data-Intensive Research in the Social, Behavioral, and Economic Sciences and in Education and Human Resources (BCC-SBE/EHR) initiative which seeks to enable research communities to develop visions, teams, and capabilities dedicated to creating new large-scale, next-generation data resources and relevant analytic techniques to advance fundamental research for SBE and EHR sciences.

NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS (NCSES)

$50,760,000
+$11,460,000 / 29.2%

NCSES Funding
(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate Amount	Percent
Total, NCSES	**$34.93**	**$39.30**	**$50.76**	**$11.46**	**29.2%**
Research	**0.38**	**0.77**	**0.64**	**-0.13**	**-16.9%**
Infrastructure	**34.55**	**38.53**	**50.12**	**11.59**	**30.1%**

Totals may not add due to rounding.

The National Center for Science and Engineering Statistics (NCSES) was established within the National Science Foundation by Section 505 of the America COMPETES Reauthorization Act of 2010 (P.L. 111-358). The Act 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 called on to support the collection of statistical data on research and development trends, the science and engineering workforce, U.S. competitiveness, and the condition and progress of the Nation's 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 its own and other large-scale, nationally representative data sets.

As one of the thirteen principal federal statistical agencies, NCSES has broad 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 science and engineering 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 an important resource for researchers in SBE's Science of Science and Innovation Policy (SciSIP) program.

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

FY 2015 Summary

All funding decreases/increases represent change over the FY 2014 Estimate.

Infrastructure
At the FY 2015 Request level, support for NCSES infrastructure activities increases by $11.46 million to an overall total of $50.76 million. Funding at this level maintains NCSES' core programmatic activities and supports significant targeted improvements in NCSES' statistical and analytic programs as follows:

- $7.50 million to enhance the Survey of Doctorate Recipients. Funding is required to expand and recast the survey sample to collect data and develop estimates for employment outcomes by STEM subfield and by race and gender. In addition, NCSES will continue to develop and test new measures that address data gaps related to understanding the relationship between Federal support for graduate education and outcomes, such as employment.
- $750,000 to fully implement a survey of research and development funding and performance by nonprofit organizations. Work on a new survey of R&D in the nonprofit sector was initiated in FY 2014 to fill a long-standing (15 year) data gap in NCSES's estimates of national R&D investment.
- $800,000 to continue work focused on expanding the scope of administrative records sources that NCSES is exploring to support the conduct of its existing surveys. NCSES will build on a pilot project establishing collaboration between several federal agencies to test the feasibility of using agencies' administrative records to measure research and development activity. NCSES will explore approaches to improving access to and use of other agencies' data sets, closely coordinating such activities with relevant offices in OMB.
- $400,000 to plan and design program modifications to respond to recommendations received from the National Academy's Committee on National Statistics Panel on Developing Science, Technology and Innovation Indicators for the Future.
- $500,000 to significantly redesign the production and presentation of Science and Engineering Indicators as a "digitally born" document.
- $700,000 to build on the nascent NCSES data repository to take advantage of newer technologies for the automated generation of public content (data and metadata), analysis, and graphics. Automation will allow NCSES to better disseminate timely data and information on the U.S. science and engineering enterprise. This project is in line with the President's initiatives on open access to scientific data.
- $800,000 to explore, design, test, and build the capacity to collect Short Pointed on Time (SPOT) survey data in three to six month timeframes. These small, quick response data collections will allow NCSES to better answer questions about new or emerging S&T topics and provide a flexible format for testing new questions for the Center's surveys. SPOT surveys will greatly enhance NCSES's capability to meets its mission of collecting data related to the U.S. competitiveness in science, engineering, technology, and R&D and the condition and progress of STEM education in the U.S.
- Funding for NCSES SciSIP activities will remain at $4.95 million total. 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 (NSCG), the federal statistical system's primary survey of the nation's science and engineering workforce.

SBE OFFICE OF MULTIDISCIPLINARY   **$29,250,000**
ACTIVITIES (SMA)   **+$1,210,000 / 4.3%**

SMA Funding

(Dollars in Millions)

	FY 2013 Actual	FY 2014 Estimate	FY 2015 Request	Change Over FY 2014 Estimate	
				Amount	Percent
Total, SMA	**$27.41**	**$28.05**	**$29.25**	**$1.20**	**4.3%**
Research	**22.80**	**19.45**	**20.65**	**1.20**	**6.2%**
CAREER	0.18	-	-	-	N/A
Centers Funding (total)	11.73	8.00	3.75	-4.25	-53.1%
Science of Learning Centers	11.73	8.00	3.75	-4.25	-53.1%
Education	**4.59**	**5.95**	**5.95**	**-**	**-**
Infrastructure	**0.02**	**2.65**	**2.65**	**-**	**-**
Research Resources	0.02	0.90	0.90	-	-
Research Resources- Public Access Initiative	-	1.75	1.75	-	-

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 SBE Postdoctoral Research Fellowships (SPRF). SMA will play a critical role in several NSF areas of emphasis in FY 2015: cyberinfrastructure and computer science (via CIF21); national security (via CNCI); innovation (via I-Corps); interdisciplinary research and training (via both INSPIRE and the SBE Transformed Portfolio, SBE 2020 through the Interdisciplinary Behavioral and Social Science Research (IBSS) solicitation); the emerging investment in the Science of Learning; and Cognitive Science and Neuroscience. 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, 39 percent of the SMA portfolio is available for new research grants. The remaining 61 percent funds continuing awards made in previous years, including funding for the SLCs.

FY 2015 Summary

All funding decreases/increases represent change over the FY 2014 Estimate. In the FY 2015 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 ($1.20 million to a total of $20.65 million).
- SMA will make an initial investment of $1.0 million in the Science of Learning investment at the FY 2015 Request level. Funding will support interdisciplinary research on the science of learning and the overarching goal to create, on a national scale, an integrated Science of Learning community.

- Support for Cognitive Science and Neuroscience is sustained at $1.0 million.
- $1.0 million supports INSPIRE, an NSF priority aligned with SBE 2020.
- An increase of $150,000 (to a total of $500,000) supports the I-Corps investment, strengthening collaboration among SBE scientists in academe and the technological, entrepreneurial and business communities and improving social science students' understanding of innovation.
- Cyberlearning: Support to the Cyberlearning and Future Learning Technologies program is sustained ($500,000 total).
- In FY 2015, SMA will continue to support two of the remaining six active Science of Learning Centers. Funding decreases by $4.25 million (to a total of $3.75 million). A gradual phase down of the program continues as centers reach their endpoints in FY 2014 and FY 2015.
- Funding for the SciSIP disciplinary research activities is held at the FY 2014 Estimate level, $6.10 million.
- Funding for SEES is eliminated (-$300,000) as a result of SBE's redeployment of interdisciplinary research program funds to establish and further investments in other SBE and NSF priorities.
- With a continued investment of $800,000, SMA will partner with CISE 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 market mechanisms and behavioral incentives.

Education
Support for Education activities in SMA is held at the FY 2015 Request Level, $5.95 million total.
- SMA investments in the Research Experiences for Undergraduates (REU) Sites ($2.89 million) and REU supplement ($60,000) programs are continued at the FY 2014 Estimate level. Funding will support enhanced research experiences for students in their first two years of college, as recommended by the President's Council of Advisors on Science and Technology (PCAST) in their report, *Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics.*
- In FY 2012, NSF/SBE expanded an existing postdoctoral fellowship program to include interdisciplinary post-doctoral fellows. The SBE Postdoctoral Research Fellowship (SPRF) has two tracks: broadening participation (SPRF-BP), which replaces the former SBE Minority Postdoctoral Fellowships; and interdisciplinary research (SPRF-IBSS) which aligns with SBE 2020 activities. At FY 2015 Request, SMA funding for SPRF-BP and SPRF-IBSS is unchanged, $1.50 million total for each activity.

Infrastructure
- Continued investment of $1.75 million in NSF's Public Access Initiative will support efforts to make NSF-funded research available to the public, including developing outreach and guidance materials. Detailed information regarding the information technology (IT) investments required to increase public access to NSF-funded data and publications can be found in the Public Related Technology (PRT) section contained within the Organizational Excellence, Program Accounts: R&RA and EHR chapter of this request.
- Support for research resources is held constant with the FY 2014 Estimate, $900,000 total. Funding supports SMA's CIF21 investment inclusive of support for the Building Community and Capacity for Data-Intensive Research in the Social, Behavioral, and Economic Sciences and in Education and Human Resources (BCC-SBE/EHR) initiative.