SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES $257,000,000
+$16,700,000 / 6.9%

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

	FY 2008 Actual	FY 2009 Current Plan	FY 2009 ARRA Estimate	FY 2010 Request	Change Over FY 2009 Plan Amount	Change Over FY 2009 Plan Percent
Behavioral and Cognitive Sciences (BCS) [2]	$87.30	$88.70	$43.00	$96.90	$8.20	9.2%
Social and Economic Sciences (SES) [2]	93.40	95.14	42.00	101.14	6.00	6.3%
Science Resources Statistics (SRS)	28.66	38.80	-	34.62	-4.18	-10.8%
Office of Multidisciplinary Activities (OMA) [1,2]	18.51	17.66	-	24.34	6.68	37.8%
Total, SBE	**$227.87**	**$240.30**	**$85.00**	**$257.00**	**$16.70**	**6.9%**
Major Components:						
Research and Education Grants	174.51	176.03	85.00	188.07	12.04	6.8%
Research Resources	36.21	47.09	-	43.16	-3.93	-8.3%
Centers Programs	14.10	11.30	-	19.90	8.60	76.1%
Facilities O&M	0.30	0.40	-	0.40	-	N/A

Totals may not add due to rounding.

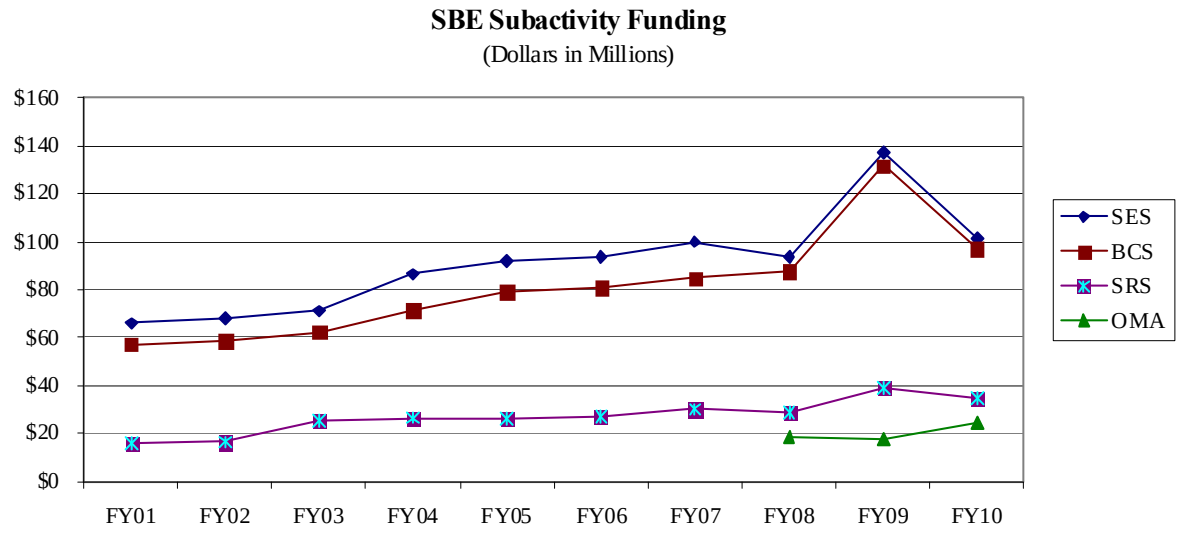
[1] In FY 2010, Science of Learning Centers (SLC) funding is transferred from the Office of Integrative Activities to SBE and split between BCS and OMA. Funding for SLCs is shown in SBE for all years for comparability.

[2] In FY 2010, GK-12, SBE Minority Postdoctoral Fellowships, Research Experience for Undergraduates (REU) Sites, and Science of Science Policy (SciSIP) program funding responsibilities are transferred from SES and BCS to OMA. Funding for these programs are shown for all years for comparability.

The Directorate for Social, Behavioral, and Economic Sciences (SBE) supports fundamental research and related activities that yield new knowledge of human cognition, social organization, and patterns of development and change. In recent decades, SBE research has resulted in new understandings of human development and social dynamics; of perception, memory, linguistic, and reasoning processes; of how people behave as individuals and as members of groups and organizations; and of key social institutions and indicators.

The core of SBE activity addresses the dynamics of cognition, behavior, and social interactions that are important to developing such understanding. Major surveys such as the *Panel Study of Income Dynamics*, the *American National Elections Studies*, and the *General Social Survey* provide broad-based infrastructure for the research community. The Science of Science and Innovation Policy (SciSIP) program aims to understand the contexts, structures and processes of science and engineering (S&E) research, to evaluate tangible and intangible returns from investments in research and development (R&D), and to predict the likely returns from future R&D investments. The data collections and analyses of the Division of Science Resources Statistics (SRS), the designated federal statistical entity with responsibility for the S&E enterprise writ large, are important for evaluating progress toward the goals of the American Competitiveness Act.

SBE participates in inter-directorate, interagency, and international research and education activities and encourages and supports many forms of transformative research. The portfolio includes novel connections among disciplines, research that challenges scientific orthodoxy, development or use of technologies such as functional magnetic resonance imaging (fMRI) and geographical information systems (GIS), experiments with infrastructure for transformative research in the social sciences, rapid-response research on disruptive events, and engagement with urgent, real-world problems.



SBE in Context

SBE provides about 56 percent of federal funding for basic research at academic institutions in the SBE sciences. In some fields, including archaeology, political science, linguistics, and non-medical anthropology and sociology, SBE is the predominant or exclusive source of federal basic research support. SBE also provides predominant federal support for the social aspects of psychology.

Over the past decade, three key elements have caused research in the SBE sciences to undergo dramatic changes. First, new technologies, analytical techniques, and cyber capabilities have been critical. For example, fMRI techniques have enabled behavioral scientists to link behavior to brain activity, opening new channels for investigation. Likewise, the integration of GIS into existing and novel analyses has provided spatial data leading to new insights, since why something happens is often a function of where it happens. New genomic analysis has transformed work on human origins and new cyberinfrastructure has had pervasive, transformative effects on the human sciences.

Second, these new analytical techniques and enhanced cyber capabilities have combined with more traditional technological change to create new approaches to shared infrastructure, making survey information and databases more broadly accessible and enabling links across datasets collected for different purposes. This new infrastructure yields finer resolution of phenomena and enhanced ability to explore complexity in human systems across a broad spectrum of research areas.

Simultaneously, NSF's strong emphasis on partnerships for exploring human and social dynamics has provided the third key element for progress in the SBE sciences. SBE researchers are exploring the processes and implications of constantly changing systems, along with partners across NSF who share an interest in the way human and social behavior interacts with natural and built systems, influences learning, and mediates the interaction between basic research results and marketable technologies. This has led to collaborative enterprises with other directorates focusing on the human dimensions to many aspects of science and engineering as well as STEM learning and education.

This confluence of drivers positions SBE well to contribute toward meeting major national challenges, including addressing human and social aspects of new technologies. SBE will continue to support

government-wide activities such as the National Nanotechnology Initiative (NNI), Climate Change Science Program (CCSP), and the Networking and Information Technology Research and Development (NITRD) program. In addition, SBE will continue to support the administration's programmatic priorities relating to homeland security.

SBE will further support NSF's Cyber-enabled Discovery and Innovation (CDI) investment, focusing on the tipping points and emergent phenomena that permeate the human sciences. Multi-directorate activities that investigate the human dimensions of environmental phenomena, such as climate change, water supply and quality, and sustainable energy, now account for almost 20 percent of the SBE portfolio. This includes participation in the cross-directorate (SBE, BIO, and GEO) standing program — the Dynamics of Coupled Natural and Human Systems (CNH) — which brings together multi-disciplinary teams of scientists and engineers to explore the complex interactions between human and natural systems.

SBE's Science Resources Statistics (SRS) Division conducts, analyzes, and disseminates survey results relating to science and engineering (S&E). SRS activities, products, and services provide critical benchmarking information on research and development (R&D), the S&E workforce, the international S&E enterprise, the role of U.S. S&E in a globalized economy, and the outputs of the S&E enterprise such as patents and scientific publications. In addition to the biennial publications *Science and Engineering Indicators* and *Women, Minorities and Persons with Disabilities in Science and Engineering*, SRS provides access to a variety of data on S&E through its website (www.nsf.gov/statistics) and online databases.

The FY 2010 Request for SBE includes $5.0 million to leverage activities across the directorate aimed at increasing support for transformative research. Examples of potential foci for these investments include funding to support research on complex systems, development of new, enabling infrastructure, and large-scale interdisciplinary work. These themes reflect successful elements of the recently concluded Human and Social Dynamics priority area that SBE has recognized for their ability to transform the way research is done in the SBE sciences.

FY 2010 Directorate-wide Changes and Priorities

Science of Learning Centers (SLC) (+$8.6 million, to a total of $19.1 million).

In FY 2010, SBE assumes primary responsibility for funding and management of the SLC program through the new Office of Multidisciplinary Activities (OMA) and responsibility for co-funding three SLCs with close disciplinary alignment in the Division of Behavioral and Cognitive Sciences (BCS). FY 2008 and FY 2009 funding consistent with SBE's FY 2010 responsibilities for the SLC program is included within the SBE totals for comparability purposes. SLC increases by $6.40 million in OMA (to a total of $12.90 million) and by $2.20 million in BCS (to a total of $6.20 million). Funding of the six active SLCs in FY 2010, including co-funding from BIO, CISE, and ENG, totals $25.80 million (an increase of $13.30 million over the FY 2009 total of $12.5 million). The large increment results from the renewal of the initial cohort of SLCs, which did not require funding in FY 2009.

Climate Research (+$4.0 million, to a total of $4.0 million).

SBE invests $4.0 million in Climate Research in FY 2010, and focuses on strategies for mitigation, adaptation, and dealing with impacts as part of a broader portfolio of activities related to human dimensions of climate change. Human actions influence climate change at the same time as changes in climate affect the environment in which humans live. This duality creates a critical role for SBE researchers in addressing an important national challenge.

Cyber-enabled Discovery and Innovation (CDI) (+$3.02 million, to a total of $5.60 million).

CDI includes three themes for FY 2010, all of which are central to SBE goals: 1) From Data to Knowledge, 2) Understanding Complexity in Natural, Built, and Social Systems, and 3) Virtual Organizations. Funding for CDI will increase work on complexity and systems models of human thought and behavior as well as social organizations, institutions, and processes. Such approaches promise to transform analysis and understanding by reconceptualizing fundamental behaviors and processes and revealing the emergent properties of dynamic systems.

Disciplinary and Interdisciplinary Research and Education (+$4.32 million, to a total of $170.84 million).

SBE investments in fundamental research in the social, behavioral, and economic sciences stretches across traditional boundaries, encouraging interdisciplinary and international research at the frontiers of discovery across all its fields.

Faculty Early Career Development (CAREER) (+$700,000, to a total of $5.40 million).

CAREER remains the primary mechanism for jump-starting junior faculty toward independent careers in research and education, a priority for FY 2010.

Science Resources Statistics (SRS) (-$4.18 million, to a total of $34.62 million).

A reduction of $6.0 million for the National Survey of College Graduates (from $12.0 million to $6.0 million) reflects the major work done on sample redesign in FY 2009. This amount includes the administration of the NSCG to a larger than normal sample as testing and refinement of the sample frame continues. An increase of $1.82 million continues development in other high priority areas within the SRS portfolio.

Program Evaluation and Performance Improvement

The Performance Information chapter describes the Foundation's performance evaluation framework, which is built upon the four strategic outcome goals in NSF's Strategic Plan: *Discovery*, *Learning*, *Research Infrastructure*, and *Stewardship*. Performance evaluation is conducted at all levels within the Foundation, using both qualitative and quantitative measures – including an agency-wide annual review of research and education outcomes by an external expert committee and periodic reviews of programs and portfolios of programs by external Committees of Visitors and directorate Advisory Committees. Other performance indicators, such as funding rates, award size and duration, and numbers of people supported on research and education grants, are also factored into the performance assessment process.

In FY 2010, SBE is scheduled to hold two Advisory Committee (AC) meetings. In addition, a committee of Visitors (COV) is scheduled for the SES division.

Number of People Involved in SBE Activities

	FY 2008 Estimate	FY 2009 Estimate	FY 2009 ARRA Estimate	FY 2010 Estimate
Senior Researchers	2,983	3,230	1,050	3,478
Other Professionals	407	430	147	441
Postdoctorates	138	200	49	259
Graduate Students	1,952	2,200	683	2,462
Undergraduate Students	1,141	1,240	403	1,330
Total Number of People	6,621	7,300	2,332	7,970

SBE Funding Profile

	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate
Statistics for Competitive Awards:			
Number of Proposals	4,364	4,368	4,600
Number of New Awards	1,126	1,410	1,187
Regular Appropriation	1,126	1,130	1,187
ARRA	-	280	-
Funding Rate	26%	32%	26%
Statistics for Research Grants:			
Number of Research Grant Proposals	3,237	3,243	3,500
Number of Research Grants	684	938	720
Regular Appropriation	684	690	720
ARRA	-	248	-
Funding Rate	21%	29%	21%
Median Annualized Award Size	99,121	99,130	104,086
Average Annualized Award Size	116,070	119,552	121,873
Average Award Duration, in years	2.5	3.0	3.0

Recent Research Highlights

► **Sacred Values in Decision Making and Cultural Conflict:** A team of researchers at the University of Michigan Ann Arbor is investigating the role of ethical and religious beliefs, or "sacred values," in motivating human behavior. Sacred values often concern issues of justice, honor, and religion, and are dissociated from prospects of success. The team is looking at the relationship between sacred values and decision making, the role of sacred values in intergroup conflict, and possibilities for reducing intergroup conflict through a better understanding of sacred values. Researchers found that material incentives often backfire in conflict resolution while symbolic concessions may be a key to resolving conflicts. The research included interviews with both students and leaders involved in the Israeli-Palestinian conflict. Most of the participants responded negatively if the proposed solution was an economic trade-off, responded extremely negatively if offered a trade-off along with some substantial material incentive, and responded more positively to a trade-off also involving a symbolic concession.

Israeli soldiers join Jewish settlers at withdrawal from Gaza Strip on Monday, Aug. 15, 2005. *Credit: US Dept of State public image database.*

► **Research Breakthrough on First Modern Humans:** Arizona State University researchers have made striking new discoveries about the earliest modern humans, including their ecology, social structures and evolutionary history. *Homo sapiens* arose between 200,000 and 100,000 years ago. During this period, coastal South Africa offered one of the most hospitable environments for human habitation. The area offers rich shellfish beds and a vegetation regime - abundant food for hunter-gatherers. The team found that people on this coast began to eat shellfish about 164,000 years ago. Hunter-gatherers who ate this diet could reduce their mobility and increase their group size. The team also discovered the earliest evidence for the use of pigment as well as stone tools made with very small blades that probably were hafted. Altogether, the findings show people were behaving in ways that resemble complex modern humans at an earlier time in our evolution than previously thought.

A view of the Indian Ocean from the coast of South Africa at Pinnacle Point where the archaeological discoveries were made. *Credit: Marean.*

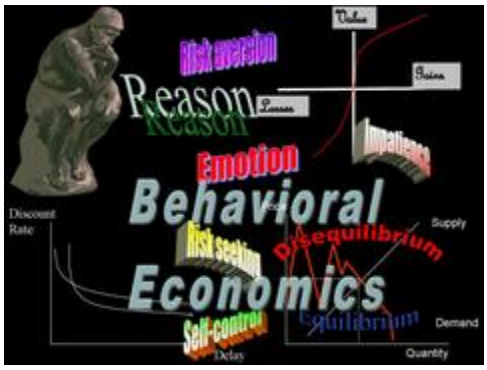
Researchers excavating shell fish. The high quantity of this stable food source was likely a significant factor in the evolution of modern humans, who were able to survive as hunter-gatherers at this site between 100,000 and 200,000 years ago. *Credit: Marean.*

► **High School Exit Exams and Labor Market Outcomes Among Young Adults:** In a study of high school exit examinations requirements, researchers at the University Minnesota-Twin Cities and the University of California-Davis studied whether certifying that students possess basic skills necessary for success in the modern labor market enhances students' post-high school economic prospects and labor market outcomes. Using data from the Department of Labor Current Population Surveys and the Population Censuses, the researchers found no evidence that passing state exit exams positively affects labor force status or translates into higher earnings. Further, they find no evidence that employment and earning outcomes vary by students' race and ethnicity or the level of difficulty of state exit exams. These findings make clear that having a policy that makes passing exit exams a requirement for earning a high school diploma does not improve (or worsen) wages earned by graduates. The meaning and value that employers attach to the high school diploma appear unaffected by states' exit exam polices. This empirical evidence calls into question the basic assumption that standardizing high school graduation requirements improves employability and earnings. Employers do not assign additional value to passing the exit exams. To them high school diplomas are the same--with or without passing the exit exams.

► **Influences on Language Development:** Researchers at Rutgers University studied more than 1,250 children, including 450 pairs of twins, to learn how genetic factors and prenatal and neonatal environments affect children's language, cognitive, motor, and social development. They found that genetic factors play a greater role in the development of pronunciation and grammar than they do in the development of vocabulary. The same genetic factors also affect fine motor development but not gross motor development. The researchers showed very early environmental factors, such as premature birth, low birth weight, and some medical treatments, affect spoken language, gross motor, fine motor and social development more than later postnatal environment factors, such as family income and parent education. In contrast with their findings for spoken language and motor development, Stromswold and her students have found that written language is affected more by the postnatal environment than the early environment. This study may help identify children who are at risk for particular types of disorders and eventually aid in the prevention and treatment of these disorders.

Even though identical twins are genetically identical, sometimes they have different experiences in the womb and are quite different at birth. *Credit: Karin Stromswold.*

► **The Rise of Behavioral Economics:** Traditionally, economics has been a study of the role of incentives in influencing behavior. Increase the price of a commodity and you will eventually decrease the rate at which people consume it. Researchers at the University of Pennsylvania, Yale University, and Cornell University in the new subfield of *behavioral economics* are examining a broader set of influences on behavior and expanding the economists' policy toolkit in the process. One fundamental assumption behavioral economists have employed with great success is that the carriers of value - those things that sway our decisions one way or another -- are gains and losses rather than final amounts of wealth. A second particularly powerful assumption concerns what is referred to as "loss aversion," -- the observation that the pain people experience



Behavioral Economics. *Credit: Jonathan Leland.*

from a loss of a given magnitude is far more intense than the pleasure associated with experiencing a gain of equivalent magnitude. These assumptions imply that the way options are framed may influence peoples' choices - outcomes of decisions may appear to be losses or may appear to be gains depending on what people perceive as the status quo. A remarkable implication of this sensitivity to framing is that effective policies to alter behaviors, from willingness to save to the propensity to spend economic stimulus money, may be achieved by simply re-describing the alternative courses of action - and economists used to say "there's no such thing as a free lunch!"

BEHAVIORAL AND COGNITIVE SCIENCES

$96,900,000
+$8,200,000 / 9.2%

Behavioral and Cognitive Sciences Funding

(Dollars in Millions)

	FY 2008 Actual	FY 2009 Current Plan	FY 2009 ARRA Estimate	FY 2010 Request	Change Over* FY 2009 Plan Amount	Change Over* FY 2009 Plan Percent
Total, BCS[1]	**$87.30**	**$88.70**	**$43.00**	**$96.90**	**$8.20**	**9.2%**
Major Components:						
Research and Education Grants	81.08	81.97	43.00	87.74	5.77	7.0%
Centers	4.40	4.38	-	6.58	2.20	50.2%
Science of Learning Centers (SLC) [2]	*4.00*	*4.00*	-	*6.20*		
Long Term Ecological Res. (LTER)	*0.22*	*0.20*		*0.20*		
Nano S&E Centers	*0.18*	*0.18*	-	*0.18*	-	-

Totals may not add due to rounding.

[1] In FY 2010, GK-12, SBE Minority Postdoctoral Fellowships, Research Experiences for Undergraduates (REU) Sites, and Science of Science Policy (SciSIP) program funding responsibilities are transferred from BCS and SES to OMA. Funding for these programs is shown as if it were in OMA for all years for comparability.

[2] In FY 2010, there is a transfer of program funding responsibilities for co-funding of 3 Science of Learning Centers from Integrative Activities to BCS. Funding is shown as if it were in BCS for all years for comparability.

Behavioral and Cognitive Sciences Division (BCS) (+$8.20 million, to a total of $96.90 million). BCS supports research and related activities that advance fundamental understanding in the behavioral, cognitive, anthropological, and geographic sciences. 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. The division also supports activities focusing on human variation at the scales of society, culture, and biology, and how these variations and related patterns develop. 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. The division aims to increase basic understanding of and capabilities to explore geographic distributions and relationships, with an emphasis on interactions of human and natural systems on the Earth's surface. Strong core programs are complemented by active involvement in competitions that support collaborative and cross-disciplinary projects.

In general, 60 percent of the BCS portfolio is available for new research grants. The remaining 40 percent is used primarily to fund continuing grants made in previous years. The BCS portfolio mainly supports research and education grants ranging in scope from dissertation and individual-investigator awards to larger group projects that span multiple disciplines and institutions.

Major activities include:

- Understanding fundamental human processes including language, cognition, perception, reasoning, and action planning in relation to adult and childhood developmental and learning processes;
- Providing fundamental understanding of human social behavior including attitude formation and change, social cognition, affective and motivational influences, and personality processes;
- Integrating qualitative and quantitative analyses to better understand cultures;

- Understanding human biological variation, adaptation, and ontology;
- Using a geographic framework for understanding social, political, and economic change;
- Facilitating research to address the complexity in human-environmental interactions;
- Using non-linear models to understand dynamics of human behavior;
- Documenting the world's endangered languages in order to preserve retrievable information about linguistic structures; and
- Creating platforms for annotating and archiving textual, audio, and video language samples, as well as accessing the material for analyses.

Research and Education Grants (+$5.77 million for a total of $96.90 million in FY 2010).

BCS aims to strengthen the basic research enterprise and encourage transformative research in the behavioral, cognitive, anthropological, linguistic, and geographic sciences through increased support to programs that serve these critical research communities. Emphasize additional funding to expand in new directions, increase cross-disciplinary interactions, and support the work of early career scientists. Funding Changes for FY 2010:

- $2.49 million will strengthen disciplinary research to enhance the number of transformative projects that expand in new directions, increase cross-disciplinary interactions, and support early career scientists.

- $1.51 million will fund BCS-related investments in the CDI activity with emphasis on complexity and interacting systems in the behavioral, cognitive, anthropological, and geographic sciences.

- $2.0 million will support an expansion of environmental research for work on human causes and consequences of environmental change and sustainable energy related to the NSF-wide investment in climate research.

Centers (+2.20 million for a total of $6.58 million in FY 2010).

BCS co-funds (with SBE's OMA) three Science of Learning Centers (SLC) and also supports Long Term Ecological Research centers and Nanotechnology Science and Engineering centers. Funding Changes for FY 2010:

- $2.20 million for increased funding requirements for the BCS-related SLCs.

SOCIAL AND ECONOMIC SCIENCES

$101,140,000
+$6,000,000 / 6.3%

Social and Economic Sciences Funding

(Dollars in Millions)

	FY 2008 Actual	FY 2009 Current Plan	FY 2009 ARRA Estimate	FY 2010 Request	Change Over FY 2009 Plan Amount	Change Over FY 2009 Plan Percent
Total, SES[1]	**$93.40**	**$95.14**	**$42.00**	**$101.14**	**6.00**	**6.3%**
Major Components:						
Research and Education Grants	82.38	83.34	42.00	89.08	5.74	6.9%
Research Resources	7.91	8.94	-	8.94	-	-
Centers	1.01	0.42	-	0.42	-	-
Nano S&E Centers	*1.01*	*0.42*	-	*0.42*	-	-
Facilities	0.30	0.40	-	0.40	-	-
NNIN	*0.30*	*0.40*	-	*0.40*	-	-

Totals may not add due to rounding.

[1] In FY 2010, GK-12, SBE Minority Postdoctoral Fellowships, Research Experience for Undergraduates (REU) Sites, and Science of Science Policy (SciSIP) program funding responsibilities are transferred from BCS and SES to OMA. Funding for these programs is shown as if it were in OMA for all years for comparability.

Social and Economic Sciences Division (SES) (+6.0 million, to a total of $101.14 million). SES supports research and related activities, conducted within the U.S. and globally, that improve systematic understanding of political, economic, and social institutions and how individuals and organizations behave within them. It also supports research and activities related to risk assessment and decision making by individuals and groups; the nature and development of the various sciences and technologies and their implications for society; methods and statistics applicable across the social, economic, and behavioral sciences; scholarly career development; and broadening participation in the social, behavioral, and economic sciences. Its programs include economics, political science, and sociology, and interdisciplinary fields such as decision making and risk, law and social science, and science and technology studies. In many of its programs, SES is the major (sometimes only) source of federal funding for fundamental research, making crucial investments in the data resources and methodological advances that produce transformative research.

SES supports research and education through grants that range in size from small supplements for undergraduates to collaborate with faculty on research projects to multi-million-dollar survey awards such as the *Panel Study of Income Dynamics* (PSID), the *American National Elections Studies* (ANES), and the *General Social Survey* (GSS). These surveys are national resources for research, teaching, and decision-making that have become models for similar efforts in other societies.

SES also coordinates the Ethics Education in S&E Program, supporting (with other NSF directorates) the Online Ethics Center for Engineering and Science, and manages the Centers for Nanotechnology in Society. SES is also a participant in a number of Nanoscale Science and Engineering Centers and the National Nanoscale Infrastructure Network

In general, 60 percent of the total SES portfolio is available for new research grants. The remaining 40 percent is used primarily to fund continuing grants made in previous years.

Funding Changes for FY 2010:

- $2.49 million will strengthen fundamental research in programs that has transformative potential for the social and economic sciences and will support new investigators. SES will give particular emphasis to the development and application of advanced qualitative and quantitative methods and to research that addresses the origin, shaping, and uses of science, knowledge, and technology.

- $1.51 million will increase support for SBE-related investments in CDI through programmatic funding for applications of computational and complexity thinking to the most challenging scientific problems in the human sciences. Social and economic phenomena are inherently complex, because they include patterns and structures that only emerge through the accumulation of individual decisions and actions that occur over space, time and populations. Complexity and interacting systems have transformative potential across the spectrum of social and economic sciences. Virtual organizations are both objects of study for SES researchers and vehicles that extend the transformative capacity of SES research.

- $2.0 million will expand support for research on the fundamental problems in economics, decision making, and methodology that underlie the human causes and consequences of disruptive weather events, long-term climate change, and the consumption of scarce natural resources in conjunction with the NSF investment in Climate Research. Decision making under uncertainty is a major factor in risk mitigation strategies.

SCIENCE RESOURCES STATISTICS

$34,620,000
-$4,180,000 / -10.8%

Science Resources Statistics Funding

(Dollars in Millions)

	FY 2008 Actual	FY 2009 Current Plan	FY 2009 ARRA Estimate	FY 2010 Request	Change Over FY 2009 Plan Amount	Change Over FY 2009 Plan Percent
Total, SRS	**$29.96**	**$38.80**	-	**$34.62**	**-4.18**	**-10.8%**
Major Components:						
Research and Education Grants	1.43	0.10	-	0.10	-	-
Research Resources	28.30	38.15	-	34.22	-3.93	-10.3%

Totals may not add due to rounding.

Science Resources Statistics Division (SRS) (-$4.18 million, to a total of $34.62 million). The legislative mandate for SRS as stated in the National Science Foundation Act of 1950, as amended, is "…to provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources and to provide a source of information for policy formulation by other agencies of the Federal Government…." To meet this mandate, SRS, in its role as the federal statistical agency with responsibility to cover the S&E enterprise, provides policymakers, researchers, and other decision makers with high quality data and analysis on R&D and the S&E workforce for making informed decisions. The work of SRS 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, as well as preparation of the congressionally mandated biennial reports — *Science and Engineering Indicators (SEI)* and *Women, Minorities and Persons with Disabilities in Science and Engineering (WMPD)*. The data collected by SRS serve as an important tool for researchers in SBE's Science of Science and Innovation Policy (SciSIP) program and as the major component of the content of *SEI*.

The funding portfolio for SRS includes ongoing, cyclical surveys; reports and other products; and projects accomplished primarily through contracts and also a few standard grants. In FY 2010 SRS will:

- Continue to conduct surveys and engage in analytical activities that produce information for carrying out NSF's statutory mandate, for meeting NSF strategic goals, and for developing *SEI* and *WMPD*. SRS will also aim to continually improve the relevance and quality of the data it collects and the information it disseminates. Such activities will lead to additions to current activities in subsequent years.
- Implement the results of prior methodological, analytical, and planning activities directed toward improving the quality, relevance, timeliness, and accessibility of all SRS products.
- Continue to hold workshops with industry, R&D, and S&E workforce experts; data users, and innovation experts on enhancing the Science of Science and Innovation Policy (SciSIP). These workshops inform and enhance the redesigns underway for the SRS surveys, analytical reports and *SEI*.
- Continue ongoing activities to improve information on the globalization of the S&E enterprise, through continued interaction with OECD, EUROSTAT, UNESCO Institute for Statistics, and other international and national statistical agencies.
- Work with the National Science Board on potential improvements and enhancements for *SEI 2012*.

Funding Changes for FY 2010:

- The FY 2009 Current Plan includes a significant increase in order to redesign the sample design for the National Survey of College Graduates (NSCG) to replace the decennial census long-form, which was used in previous decades. The new frame will be the American Community Survey (ACS), which includes a question on field of degree that will provide the basis for NSCG sampling in the future. In FY 2010, a reduction of $6.0 million for the NSCG (from $12.0 million to $6.0 million) reflects the major work done on sample redesign in FY 2009. Plans for FY 2010 include refining the sample design, launching the first administration of the NSCG using the new ACS-based frame, and conducting analyses to guide activities in the future.

- Increase of $1.30 million for continuing development of a Microbusiness R&D and Innovation module, work on exploring how best to collect data on innovation in the academic sector as part of the redesigned Higher Education Research and Development Survey (HERD); redesign activities related to the Survey of Earned Doctorates and continuing work on harmonization and modernization of SRS taxonomies. Work will also begin to explore implementing recommendations from the Committee on National Statistics report on updating the federal R&D surveys.

- Increase of $700,000 to develop a pilot data collection on postdocs based on feasibility activities undertaken in FY 2006 through FY 2009. The pilot will study how best to develop a sample frame for postdocs that includes those who do not have a research doctorate from a U.S. institution and those who work in non-academic institutions. Implementation of the pilot is planned in FY 2010.

- Evaluate the redesign of the survey of R&D in the industrial and services sectors (conducted in FY09 as a full-scale pilot) and implement the survey for 2010 with appropriate changes. The newly re-named Business Research and Development and Innovation Survey (BRDIS) collects data for the manufacturing and services sectors on: the role of R&D in both the U.S. and internationally, R&D infrastructure, the way R&D is currently conducted, and limited innovation and technology transfer data, all critical components for understanding economic competitiveness. Survey data will be in the 2012 *SEI*.

- Invest in a number of activities to determine how best to link important SRS statistical data sets with supplemental data on publications, patents, and innovation-related activities. In addition, SRS will work on harmonizing taxonomies of fields of science to more fully integrate its data sets both internally and with other national and international data; this includes support for international activities to encourage data comparability and usefulness in data collected and used by international organizations such as OECD, Eurostat and the UNESCO Institute of Statistics. All these activities will be in support of both *SEI* and SciSIP.

OFFICE OF MULTIDISCIPLINARY ACTIVITIES

$24,340,000
+$6,680,000 / 37.8%

Office of Multidisciplinary Activities Funding
(Dollars in Millions)

	FY 2008 Actual	FY 2009 Current Plan	FY 2009 ARRA Estimate	FY 2010 Request	Change Over FY 2009 Plan Amount	Change Over FY 2009 Plan Percent
OMA Total [1,3]	**$18.51**	**$17.66**	**-**	**$24.34**	**$6.68**	**37.8%**
Major Components:						
Research and Education Grants	9.62	10.62	-	11.15	0.53	5.0%
Instrumentation	-	-	-	-	-	N/A
Centers	8.69	6.50	-	12.90	6.40	98.5%
Science of Learning Centers [2]	*8.69*	*6.50*	-	*12.90*	*6.40*	*98.5%*

Totals may not add due to rounding.

[1] OMA was created in FY 2010 by shifting funding from Integrative Activities (Science of Learning Centers) and SBE/BCS and SBE/SES (all other activities).

[2] In FY 2010, there is a transfer of program funding for Science of Learning Centers from Integrative Activities to OMA. Funding is shown as if it were in OMA for all years for comparability.

[3] In FY 2010, GK-12, SBE Minority Postdoctoral Fellowships, Research Experience for Undergraduates (REU) Sites, and Science of Science Policy (SciSIP) program funding and responsibilities are transferred from BCS and SES to OMA. Funding for these programs is shown as if it were in OMA for all years for comparability.

Office of Multidisciplinary Activities (OMA) (+$6.68 million, to a total of $24.34 million). OMA provides a focal point for programmatic activities that cut across SBE disciplinary boundaries, including agency-wide Science of Learning Centers (SLCs), Science of Science and Innovation Policy (SciSIP) which engages in much interagency work, Research Experiences for Undergraduates (REU) sites, and Minority Postdoctoral Research Fellowships (MPRF). Co-funding with other divisions in SBE and with divisions in other directorates is typical for OMA. While all SBE divisions are expected to pursue an appropriate range of interdisciplinary work, OMA assists with seeding multidisciplinary activities for the future. All areas of SBE sciences are represented in the OMA portfolio.

In general, 38 percent of the OMA portfolio is available for new research grants. The remaining 62 percent funds continuing grants made in previous years. In particular, funding for SLCs is entirely committed to continuing awards.

OMA is a new office in FY 2010. The majority of its budget is devoted to the SLC program, which moves from Integrative Activities to SBE in FY 2010. OMA houses management of the six current SLCs, with matching co-funding from disciplinary partners in BIO, CISE, ENG, and SBE/BCS. SBE has transferred programmatic responsibility for SciSIP, REU sites, and MPRF, previously shared by BCS and SES, to OMA, as well as providing additional funds for seeding transformative multidisciplinary research.

OMA Priorities for FY 2010

- The SLC program as a whole (including co-funding outside OMA) increases from $12.50 million in FY 2009 to $25.80 million in FY 2010. This allows for renewal of the first cohort of SLCs, which did

not require funding in FY 2009. Within OMA, the SLC program increases by $6.40 million to a total of $12.90 million.

- Provide multidisciplinary oversight for the SLC program, ensuring all Centers are managed appropriately toward their goals and objectives.
- Approximately $1.50 million will enable OMA to stimulate transformative multidisciplinary research through co-funding with other organizations, including at least $1.0 million for the SBE-wide pool.