National Science Foundation

Behavioral and Cognitive Sciences: an overview

April 2004

MISSION

Research at the NSF in the social, behavioral, and economic sciences is supported primarily by the Directorate for Social, Behavioral and Economic Sciences (SBE). SBE has two research divisions: Behavioral & Cognitive Sciences (BCS) and Social & Economic Sciences (SES). The Division of Behavioral and Cognitive Sciences supports research to develop and advance scientific knowledge on human cognition, language, social behavior and culture, as well as research on the interactions between human societies and the physical environment. BCS programs consider proposals that fall squarely within disciplines, but they also encourage and support interdisciplinary projects. These are evaluated either through joint review among programs in BCS, joint review with programs in other Divisions, or by NSF-wide multi-disciplinary panels. All programs in BCS consider proposals for research projects, conferences, and workshops. Some programs also consider proposals for doctoral dissertation improvement grants, the acquisition of specialized research and computing equipment, group international travel, and large-scale data collection. BCS participates in special initiatives and competitions on a number of topics including biocomplexity and the environment, children's research, cognitive neuroscience, human origins, and information technology. There is also infrastructure support to improve data resources, data archives, collaboratories and centers.

GENERAL INFORMATION

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Division of Behavioral and Cognitive Sciences: http://www.nsf.gov/sbe/bcs/.
Social, Behavioral and Economic Sciences Directorate: http://www.nsf.gov/sbe/
General information about NSF: http://www.nsf.gov/

Proposal Preparation Advice. If you decide to prepare a proposal, you should consult the *NSF Grant Proposal Guide (GPG)* (http://www.nsf.gov/cgi-bin/getpub?gpg). All proposals must be submitted by your institution's Sponsored Research Office through *Fastlane*, the NSF's web-based system. Information on *Fastlane* http://www.fastlane.nsf.gov/. If you have questions, do not hesitate to telephone or email the Program Director. For *Fastlane* help, contact the FastLane Help Desk, telephone: 1-800-673-6188, email: fastlane@nsf.gov.

Proposal and Submission Guidelines:
http://www.nsf.gov/sbe/bcs/common/bcs_propsub.htm
Additional *Grant and Award information*:
http://www.nsf.gov/sbe/bcs/common/bcs_grant.htm
Additional information can be found in the *BCS Divisional Q&As* portion of the website:
http://www.nsf.gov/sbe/bcs/common/bcs_qa.htm
You can get the latest news by subscribing to the *NSF Custom News Service*:
http://www.nsf.gov/home/cns/
BCS job opportunities: http://www.nsf.gov/sbe/bcs/common/poflyer4.htm

PROGRAMS AND DISCIPLINARY AREAS

Archaeology

This program provides support for anthropologically relevant archaeological research at both a "senior" and a doctoral dissertation level. It also funds anthropologically significant archaeometric research and high-risk exploratory research projects.
Program Director: John Yellen, 703-292-8759, jyellen@nsf.gov.
http://www.nsf.gov/sbe/bcs/arch

Cultural Anthropology

This program promotes basic scientific research on the causes and consequences of human social and cultural variation. The program solicits research proposals of theoretical importance in all substantive and theoretical sub fields within the discipline.
Program Director: Stuart Plattner, 703-292-7315, splattne@nsf.gov.
http://www.nsf.gov/sbe/bcs/anthro

Physical Anthropology

This program supports basic research in areas related to human evolution and contemporary human biological variation. Research areas supported by the program include, but are not limited to, human genetic variation, human adaptation, human osteology and bone biology, human and nonhuman primate paleontology, functional anatomy, and primate socioecology. Grants supported in these areas are united by an underlying evolutionary framework, and often a consideration of adaptation as a central theoretical theme. Many proposals also have a biocultural orientation. The program frequently serves as a bridge within the NSF between the social and behavioral sciences and the natural and physical sciences, and proposals are commonly jointly reviewed and funded with other programs.
Program Director: Mark Weiss, 703-292-7321, mweiss@nsf.gov.
http://www.nsf.gov/sbe/bcs/physical

Geography and Regional Science

The Geography and Regional Science (GRS) Program sponsors research on the geographic distributions and interactions of human, physical, and biotic systems on the Earth's surface. Investigations are encouraged into the nature, causes, and consequences of human activity and natural environmental processes across a range of scales. Projects on a variety of topics (both domestic and international) qualify for support if they offer promise of contributing to scholarship by enhancing geographical knowledge, concepts, theories, methods, and their application to societal problems and concerns. Support also is provided for projects that explicitly integrate undergraduate and graduate education into the overall research agenda.
Program Director: Gregory Chu, 703-292-8754, gchu@nsf.gov.
Program Director: Thomas J. Baerwald, 703-292-8754, tbaerwal@nsf.gov.
http://www.nsf.gov/sbe/bcs/geograph

Developmental and Learning Sciences/Children's Research Initiative

This initiative supports studies that increase our understanding of cognitive, social, and biological processes related to children and adolescents' learning in formal and informal settings. Additional priorities are to support research on learning and development that: incorporates multidisciplinary, multi-method, microgenetic, and longitudinal approaches; develops new methods and theories; examines transfer of knowledge from one domain to another; assesses peer relations, family interactions, social identities, and motivation; examines the impact of family, school, and community resources; assesses adolescents' preparation for entry into the workforce; and investigates the role of demographic and cultural characteristics in children's learning and development. The results of this initiative will add to our basic knowledge

of children's learning and development and, ultimately, will lead to better educated children and adolescents who grow up to take productive roles as workers and as citizens.
Program Director: Peg (Marguerite) Barratt, 703-292-7305, mbarratt@nsf.gov
http://www.nsf.gov/sbe/bcs/dls

Perception, Action and Cognition

This program supports research on cognition, perception and action, including the development of these capacities. Emphasis is on research strongly grounded in theory. Research topics include vision, audition, haptics, attention, memory, reasoning, written and spoken discourse, motor control, and developmental issues in all topic areas. The program encompasses a wide range of theoretical perspectives such as symbolic computation, connectionism, ecological, nonlinear dynamics, and complex systems and a variety of methodologies including both experimental studies and modeling. Research involving acquired or developmental deficits is appropriate if the results speak to basic issues of cognition, perception or action.
Program Director: Guy Van Orden, 703-292-8759, gvanorde@nsf.gov.
http://www.nsf.gov/sbe/bcs/pac/start.htm

Cognitive Neuroscience

The Cognitive Neuroscience Program seeks to stimulate research that will advance basic understanding of the neural mechanisms of cognition. Projects involving multiple measurement modalities to obtain evidence about cortical locations and temporal dynamics of neural processing are encouraged. Projects that seek integration of fundamental knowledge across classical sub-areas of study, such as visual and auditory processing are encouraged. Projects related to plasticity, development, life-span changes, social cognition, and learning are of interest.
Program Director: Lynne E. Bernstein, 703-292-8732, email: lbernste@nsf.gov.
http://www.nsf.gov/sbe/bcs/cogneuro/start.htm

Linguistics

This program supports scientific research on human language. This includes the syntactic, semantic, phonetic, and phonological properties of individual languages and of language in general; the cognitive processes involved in the use of language; the development of linguistic capacities in children; social and cultural factors in language use, variation, and change; the acoustics of speech and the physiological and psychological processes involved in the production and perception of language; and the neurological bases of language.
Program Director: Joan Maling, 703-292-8731, jmaling@nsf.gov.
http://www.nsf.gov/sbe/bcs/ling

Social Psychology

This program supports basic research on human social behavior, including cultural differences and development over the life span. Among the many research topics supported are: attitude formation and change, social cognition, personality processes, interpersonal relations and group processes, the self, emotion, social comparison and influence, the social psychology of health, and the psychophysiological correlates of social behavior. The scientific merit of a proposal depends on four important factors: (1) the problems investigated must be theoretically grounded; (2) the research should be based on empirical observation or be subject to empirical validation; (3) the research design must be appropriate to the questions asked; (4) the proposed research must advance basic understanding of social behavior.
Program Director: Amber Story, 703-292-8728, astory@nsf.gov.
http://www.nsf.gov/sbe/bcs/socpsy

INCREASING RESEARCH CAPACITY

The Human and Social Dynamics (HSD). This NSF-wide priority area seeks to stimulate breakthroughs in knowledge about human action and development as well as organizational, cultural, and societal adaptation and change. Research about human and social behavior is increasingly characterized by a focus on dynamics--how cognitive systems, individuals, formal and informal organizations, cultures, and societies evolve and change over space and time. Scientific understanding of the dynamics of mental processes, individual behavior, and social activity increasingly requires partnerships that span the different science, engineering, and education communities. HSD aims to increase the collective ability to anticipate the complex consequences of change; to better understand the dynamics of human and social behavior at all levels, including that of the human mind; to better understand the cognitive and social structures that create and define change; and to help people and organizations better manage profound or rapid change. HSD has the potential to create new understandings of the complexities of human and social life and new modes of synergistic collaboration for science, engineering, and education. The three topical emphasis areas for 2004 include: Agents of Change, Dynamics of Human Behavior and Decision Making and Risk. Resource related areas include Spatial Social Science, Modeling Human and Social Dynamics, and Instrumentation and Data Resource Development. For additional information, contact Sally Kane at 703-292-8741, skane@nsf.gov, or Miriam Heller at 703-292-7025, mheller@nsf.gov
http://www.nsf.gov/home/crssprgm/hsd/start.htm

Human Origins (HOMINID). This competition is directed towards enhancing our knowledge of the complex biological, physical and behavioral interrelationships that led to the development of our species and which are responsible for both the shared and variable features that characterize living human populations. Support in this area will also continue to expand our knowledge of the relationship of humans and the world's environments and human adaptation processes over the last 5-6 million years.
http://www.nsf.gov/cgi-bin/getpub?nsf01120

Human Dimensions of Global Change. This activity focuses on the interactions between human and natural systems, with an emphasis on the social and behavioral processes that shape and influence those interactions. The NSF has supported a consortium of Research Centers on the Human Dimensions of Global Change (HDGC) since FY 1995. The goals of these centers are to facilitate the progress of HDGC research; promote the education and training of researchers ranging from undergraduates to postdoctoral levels; and foster interdisciplinary and multidisciplinary research collaboration on HDGC issues.
http://www.nsf.gov/sbe/hdgc/hdgc.htm

Social and Economic Sciences (SES). SES supports research to develop and advance scientific knowledge focusing on economic, legal, political and social systems, organizations and institutions. In addition, SES supports research on the intellectual and social contexts that govern the development and use of science and technology. Specific programs include: Methodology, Measurement & Statistics; Decision, Risk & Management Sciences; Economics, Innovation and Organizational Change; Sociology; Political Science; Law and Social Science; Science and Technology Studies; Societal Dimensions of Engineering, Science and Technology.
http://www.nsf.gov/sbe/ses

Office of International Science and Engineering (INT). Support of international cooperation in science and engineering is an integral part of NSF's mission. INT promotes and coordinates international cooperation by supporting new partnerships between U.S. scientists and engineers and their foreign colleagues, or new cooperative projects between established collaborators. Activities can be in any field of science and engineering research and education supported by NSF. Participation of students, recent Ph.D.'s, junior faculty members, women, and minority and disabled scientists and engineers is an INT priority.
http://www.nsf.gov/sbe/int/start.htm

OTHER NSF INITIATIVES

Biocomplexity in the Environment: This priority area is a multidisciplinary effort that draws on new scientific and technological capabilities to investigate the interactions among ecological, social and physical earth systems. To learn more about the Biocomplexity in the Environment priority area, see http://www.nsf.gov/geo/ere/ereweb/fund-biocomplex.cfm
Pay particular attention to the "Dynamics of Coupled Natural and Human Systems" topical area: http://www.nsf.gov/pubs/2003/nsf03597/nsf03597.htm#cnh

Information Technology Research: This priority area supports research on software, networking, scalability, and communications to improve ways to gather, store, analyze, share, and display information. To learn more about the Information Technology Research priority area, see http://www.itr.nsf.gov/

Mathematical Sciences: The role of mathematics has expanded in science and society, and today's discoveries in science and engineering are intertwined with advances across the mathematical sciences. This priority area will focus on fundamental mathematical and statistical research, collaboration between the mathematical sciences and other disciplines, and mathematics education. http://www.nsf.gov/mps/divisions/dms/start.htm

Nanoscale Science and Engineering: This priority area explores phenomena at molecular and atomic scales and new techniques to facilitate a broad range of applications. Recent advances have already begun to spawn useful new materials and promising innovations that will touch every part of our lives. To learn more about the Nanoscale Science and Engineering priority area, see http://www.nsf.gov/od/lpa/priority/nano/start.htm

SPECIAL FUNDING OPPORTUNITIES

The Office of Cross-Directorate Activities (CDA) houses and provides information about various cross-directorate programs in which the Division of Social and Economic Sciences and the Division of Behavioral and Cognitive Sciences participate. CDA administers some programs directly and coordinates other programs aimed at Foundation-wide goals of increasing the participation of women, minorities, and the disabled in science and engineering; encouraging and rewarding promising new faculty; support of undergraduate, graduate, and postdoctoral activities; and improving the infrastructure of the social and behavioral sciences. Below is a summary of some of the CDA programs. Check the CDA website for current information.
Program Director: Bonney H. Sheahan, 703-292-7219, bsheahan@nsf.gov
Science Assistant: Michelle Costanzo 703-292-7323, mcostanz @nsf.gov
http://www.nsf.gov/sbe/ses/cda

ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers: This program includes three types of awards (institutional transformation, leadership, and fellows) aimed to increase the number of women in science and engineering.
http://www.nsf.gov/advance

CAREER: Faculty Early Career Development Program: These are the NSF's most prestigious awards for new faculty members. Awardees are selected on the basis of their plans to develop highly integrative and effective research and education careers.
http://www.nsf.gov/career

RUI: Research in Undergraduate Institutions: Supports research and/or the acquisition of research instrumentation by faculty members of predominantly undergraduate institutions. This is not a special competition – it is fully integrated into disciplinary programs.
http://www.nsf.gov/cgi-bin/getpub?nsf00144

ROAs: Research Opportunity Awards: Supports faculty at RUI-institutions to work with NSF-supported investigators at a different institution. Awards are given as supplements. http://www.nsf.gov/cgi-bin/getpub?nsf00144

ITWF: Information Technology Workforce: Addresses important research issues related to the under-representation of women and minorities in the IT workforce. Multi-disciplinary collaboration among researchers in IT, the social sciences and/or education is required. http://www.nsf.gov/cgi-bin/getpub?nsf0133

Minority Postdoctoral Research Fellowships: Provides grants for underrepresented minority scientists within four years of receipt of their doctoral degree. Fellows choose a sponsoring scientist and a research and training environment most beneficial to their scientific development. http://www.nsf.gov/cgi-bin/getpub?nsf00139

Research Experience for Undergraduates (REU) Sites: Grants to run undergraduate research "sites" for 8-12 undergraduate students, usually during the summer. The emphasis is on providing a pedagogical, meaningful research experience.
http://www.nsf.gov/reu
NOTE: REU Supplements support the same activities for 1-2 undergraduate students, as a supplement to a regular grant.

IGERT: Integrative Graduate Education and Research Traineeships: This program is intended to catalyze a cultural change in graduate education by establishing new, innovative models for graduate education in an environment of collaborative research that transcends traditional disciplinary boundaries. http://www.nsf.gov/igert

GK-12: NSF Graduate Teaching Fellows in K-12 Education: Supports fellowships and associated training that will enable graduate students and advanced undergraduates in the sciences, mathematics, engineering, and technology to serve as resources in K-12 schools. http://www.nsf.gov/home/crssprgm/gk12

MRI: Major Research Instrumentation: This competition supports the acquisition or development of major research instrumentation by U.S. institutions that is, in general, too costly for support through other NSF programs. Maintenance and technical support costs associated with these instruments are also supported.
http://www.nsf.gov/od/oia/programs/mri

Science of Learning Centers (SLC): The Science of Learning aims to understand what learning is and how it is affected at all levels, ranging from the digital to the societal. The science of learning emerges from the intersections of diverse disciplines across the biological, cognitive, computational, mathematical, physical, and social sciences, engineering, and education. Areas include psychological, social and pedagogical aspects of learning, the biological basis of learning, machine learning, learning technologies, and mathematical analyses and modeling of all of these. This growing body of knowledge is extending our understanding of learning and connecting learning research to the scientific, technological, educational, and workforce challenges of our time**.**
http://www.nsf.gov/home/crssprgm/slc/

Science and Technology Centers (STC): These large centers offer the research community an effective mechanism to: embark upon long-term scientific and technological research activities; explore better and more effective ways to educate students; and develop mechanisms to ensure the timely transition of research and education advances made into service in society. http://www.nsf.gov/od/oia/programs/stc/

SBIR: Small Business Innovative Research: This program stimulates technological innovation; utilizes small business concerns to meet federal R&D needs; fosters and encourages participation by minority and disadvantaged persons in technological innovation; and increases private sector commercialization of innovations from federal R&D.
http://www.eng.nsf.gov/sbir

Graduate Research Fellowships: The National Science Foundation (NSF) seeks to ensure the vitality of the human resource base of science, mathematics, and engineering in the United States and to reinforce its diversity. A competition is conducted for Graduate Research Fellowships, with additional awards offered for women in engineering and in computer and information science. NSF Graduate Fellowships offer recognition and three years of support for advanced study. http://www.ehr.nsf.gov/dge/programs/grf/

BCS DIVISIONAL Q&As

For which NSF Program shall I designate my proposal?
The ultimate assignment of proposals to NSF programs is the responsibility of the NSF. However, when submitting via *Fastlane*, you will be asked to select the organizational unit (division and program within the division) you think most appropriate. The easiest way to determine what program or programs at the NSF might be most appropriate for your proposal is to access the database of NSF awards, which contains abstracts of all recent awards, as well as well as their amounts and which program(s) funded them. Use the NSF's *Fastlane Award Search* system to search lists of recent awards made by those programs you might think potentially appropriate. For this purpose, the best starting point is the *Fastlane* page called *Query Awards by Program*. You may prefer to browse the list of NSF programs and select from it, rather than typing in the program name, because any tiny error in typing the name may prevent you from finding the information you want. If, after trying this, you need further information, you should contact the appropriate program director or directors via phone or e-mail. If you use e-mail, attaching a brief abstract of your proposed research is often helpful.

How do I go about having my proposal jointly reviewed? And should I?
Determining whether joint review is appropriate is the responsibility of the NSF. Programs review proposals jointly when they fall within the overlap of their areas of responsibility. We work to ensure that joint review will neither decrease nor increase a proposal's chance of funding. If you believe that your research might be of interest to two or more programs at the NSF, follow *Fastlane's* instructions when you are selecting the organizational unit or units you wish to consider your proposal. If you do select more than one program, make sure that the most suitable is listed first in the "Current List of selected NSF Units." This will be the primary program taking responsibility for the paperwork involved in processing the proposal.

Can I make suggestions about appropriate reviewers for my proposal?
We encourage you to do so, taking care that those you suggest have no real or apparent conflicts of interest. You may also suggest a modest list of those whom you would prefer, for some reason, not to review your proposal. In *Fastlane*, the main page for "Form Preparation" has a choice, "List of Suggested Reviewers (optional)," where you can make any reviewer suggestions.

Where can I find information related to "Human Subjects" matters?
First check the relevant section of the *Grant Proposal Guide*. All projects involving human subjects must either: (1) have approval from your organization's Institutional Review Board (IRB) before issuance of an NSF award; or (2) identify the applicable subsection exempting the proposal from IRB review, as established in Section 101(b) of the Common Rule.
Additional information related to human subjects can be found on the NSF website at:
http://www.nsf.gov/bfa/dga/policy/guidance.htm#human
Also, take a look at “Frequently Asked Questions and Vignettes”:
http://www.nsf.gov/bfa/dga/policy/hsfaqs.htm

Dr. Wanda Ward, Acting Assistant Director

Behavioral and Cognitive Sciences (BCS)	Social and Economic Sciences (SES)	Science Resources Statistics (SRS)	Office of International Science and Engineering (INT)

bcs

Behavioral and Cognitive Sciences

Dr. Peg (Marguerite) Barratt, Division Director

Anthropological and Geographic Sciences cluster (AGS)

Archaeology & Archaeometry	Cultural Anthropology	Physical Anthropology	Geography and Regional Science

Cognitive, Psychological and Language Sciences cluster (CPL)

Cognitive Neuro-science	Linguistics	Perception, Action and Cognition	Developmental & Learning Sciences	Social Psychology