Outline

• Basics of the National Science Foundation
  - SBE’s place in the hierarchy
  - Support for basic research
• Opportunities for support of SBE research
  - Core Programs
  - Special competitions
• Points to remember as you think/write
NSF in a Nutshell

- Independent agency
- Supports basic research
- Uses grant mechanism
- Low overhead; highly automated
- Discipline-based structure
- Cross-disciplinary mechanisms
- Use of rotators/IPAs
- National Science Board
### What NSF Supports

<table>
<thead>
<tr>
<th>NSF supports basic research across all fields of science, including:</th>
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<tbody>
<tr>
<td>• Behavioral and Cognitive Sciences</td>
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<tr>
<td>• Social and Economic Sciences</td>
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<tr>
<td>• Geographic and Anthropological Sciences</td>
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<tr>
<td>• Chemical sciences</td>
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<tr>
<td>• Computer and information science</td>
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<tr>
<td>• Engineering</td>
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<tr>
<td>• Geosciences</td>
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<tr>
<td>• Biological sciences</td>
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<tr>
<td>• Mathematical sciences</td>
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<tr>
<td>• Physics and astronomy</td>
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<table>
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<tr>
<th>NSF does not support applied research, such as:</th>
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<tbody>
<tr>
<td>• Clinical research</td>
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<tr>
<td>• Counseling</td>
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<td>• Business</td>
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<td>• Management</td>
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<td>• Social work</td>
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<tr>
<td>• Planning</td>
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<tr>
<td>• Legal training</td>
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<tr>
<td>• Practice-oriented professional degree programs</td>
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</tbody>
</table>
Much of NSF’s Funding Goes to Support Basic Research

What is basic research?
"It’s like true love!"

You can’t really define it, but you know it when it’s there.
Let’s Try to Describe Basic Research Anyway...

- Basic scientific research is grounded in a broader theoretical framework.
- It focuses on one or a few questions grounded in that broader framework.
- It uses scientifically sound approaches to assess the viability of answers to those questions.
- Its focused results also contribute to enhancement of broader theoretical knowledge.
As a result...

• Basic scientific research contributes to general understanding.
• It’s research that’s well grounded in a general theoretical framework or that generates development of new frameworks.
• It’s research that’s valuable even if we don’t care about its specific findings or applications.
• It’s research that often increases knowledge regarding how we expand knowledge.
Basic "vs." Applied Research

• It's not "either/or."
• Basic research results often have direct and indirect utility and applicability.
• At its core, basic research is first and foremost about broader theoretical development, not the focused application of specific research results.
• Analysis and synthesis are favored over prescription.
How Do You Gain Access to Some of NSF’s Funds?

• Submit a proposal to compete in one of the standing program competitions for “unsolicited proposals”
• Submit a proposal for a special program competition
In Addition to Its Standing Programs, NSF Has Many Special Funding Opportunities

Check the NSF web site for more information or contact relevant program officers
### Social, Behavioral, and Economic Science Programs

#### Disciplinary
- Cultural Anthropology
- Biological Anthropology
- Archaeology
- Linguistics
- Social Psychology
- Economics
- Sociology
- Political Science

#### Interdisciplinary
- Cognitive Neuroscience
- Developmental and Learning Sciences
- Documenting Endangered Languages
- Perception, Action, and Cognition
- Geography and Spatial Sciences
- Decision, Risk, and Management Sciences
- Science of Science and Innovation Policy
- Science of Organizations
- Methodology, Measurement, and Statistics
- Science and Society
- Law and Social Sciences
Division of Behavioral and Cognitive Sciences

...supports research to develop and advance scientific knowledge about humans spanning areas of inquiry including brain and behavior, language and culture, origins and evolution, and geography and the environment.
Division of Social and Economic Sciences

...seeks to enhance understanding of human, social, and organizational behavior by building social science infrastructure and by supporting disciplinary and interdisciplinary research projects that advance knowledge in the social and economic sciences.
Social, Behavioral, and Economic Sciences
Joint Funding

**Jointly Funded Programs**
- Cognitive Neuroscience
- Ecology of Infectious Disease
- Biology and Society
- Dynamics of Coupled Natural and Human Systems (CNH)
- Sensors
- Nanotech & Society
- Cyber-Enabled Discovery and Innovation (CDI)
- Cyberinfrastructure
- Science, Engineering, and Education for Sustainability

**Funding Partners**
- NIH
- CISE and NIH
- BIO
- GEO
- ENG and DoD
- MPS
- NSF-Wide Initiatives
Activity designed to frame innovative research for the year 2020 and beyond that enhances fundamental knowledge and benefits society in many ways continues.

- 252 white papers have been reviewed
- Operational planning continues within SBE

Paths to SBE Support: Where to Start?

- **AN IDEA** (preferably a brilliant one)
- Check awards by program, keyword, etc. ([www.nsf.gov/awardsearch/](http://www.nsf.gov/awardsearch/))
- Read the solicitation carefully (if not unsolicited competition)
- Read *Grant Proposal Guide*
- Think about scale and budget
Pathways to SBE Support

- Core Program Senior Proposals
- CAREER Proposals
- Student Support
- Internal Merit Review
- Dear Colleague Letters
- Special Solicitations
Paths to SBE Support
Core Program Research

Division of Behavioral and Cognitive Sciences
FY10 Program Allocations (millions of dollars)

- Archaeology and Archaeometry: $6.9
- Cultural Anthropology: $3.7
- Cognitive Neuroscience: $7.6
- Developmental and Learning Sciences: $6.6
- Geography and Spatial Sciences: $7.0
- Linguistics: $5.9
- Documenting Endangered Languages: $2.1
- Perception, Action, and Cognition: $7.0
- Physical Anthropology: $4.1
- Social Psychology: $6.4
## Paths to SBE Support

**Core Program Research**

### Division of Social and Economic Sciences

FY10 Program Allocations (millions of dollars)

<table>
<thead>
<tr>
<th>Field</th>
<th>Allocation</th>
</tr>
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<tbody>
<tr>
<td>Decision, Risk, and Management Sciences</td>
<td>$7.5</td>
</tr>
<tr>
<td>Economics</td>
<td>$25.8</td>
</tr>
<tr>
<td>Innovation and Organizational Sciences</td>
<td>$3.4</td>
</tr>
<tr>
<td>Law and Social Science</td>
<td>$5.1</td>
</tr>
<tr>
<td>Methodology, Measurement, and Statistics</td>
<td>$4.0</td>
</tr>
<tr>
<td>Political Science</td>
<td>$9.9</td>
</tr>
<tr>
<td>Science and Society</td>
<td>$9.0</td>
</tr>
<tr>
<td>Sociology</td>
<td>$9.5</td>
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</tbody>
</table>
### Division Funding Rates (FY11)

#### Behavioral & Cognitive Sciences

<table>
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<tr>
<th>Competitive Proposal Actions</th>
<th>Competitive Awards</th>
<th>Funding Rate</th>
</tr>
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<tr>
<td>2,649</td>
<td>470</td>
<td>17.7%</td>
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#### Social & Economic Sciences

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<th>Competitive Proposal Actions</th>
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<tr>
<td>2,289</td>
<td>471</td>
<td>20.6%</td>
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</table>
Paths to SBE Support

CAREER Proposals

CAREER Solicitation (NSF 11-690)

• Available in nearly all NSF programs
• Single scholar award
• Must have doctoral degree
• Must be in a tenure-track (or comparable) position
• Must not yet have tenure
• “Three strikes and you’re out” (3 proposals lifetime limit)
• $400,000, 5-years minimum award
• Mid- to late-July deadline (varies by discipline and year)
• High-prestige awards with high expectations
• Highly competitive (often <10% success rate)
• Presidential Early Career Awards for Scientists and Engineers (PECASE)
Paths to SBE Support
Doctoral Student Support

Doctoral Dissertation Research Improvement Grants
(DDRIs or DDIGs)

- Small grants for dissertation research
- Supports dissertation costs only; does not provide salaries or stipends (indirect costs will be permitted starting in November 2011)
- Available in some SBE programs:
  - Archaeology
  - Biological Anthropology
  - Cultural Anthropology
  - Decision, Risk, and Management Science
  - Economics
  - Geography and Spatial Sciences
  - Law and Social Science
  - Linguistics
  - Methodology, Measurement, and Statistics
  - Biological Anthropology
  - Political Science
  - Science and Society
  - Sociology
Paths to SBE Support
Undergrad Student Support

Research Experiences for Undergraduates

• Available in all programs
• Two types of awards
  - REU Supplements: Awards added onto senior awards to sponsor undergraduate student research
  - REU Sites: training programs, often in the summer months, for teaching research methods to undergrads
Paths to SBE Support
Internal Merit Review

Grants for Rapid-Response Research (RAPID)

- Research when data are ephemeral
- $200,000 maximum; 1-year duration
- 5-page project description
- Internal review required; external review is optional
- Available in all programs
- Contact program officer first
- "You’re wanting the money rapidly is not a good reason to request a RAPID award."

For projects having a severe urgency with regard to availability of or access to data, facilities, or specialized equipment, including quick-response research on natural or human-related disasters and similar unanticipated events. Projects must be theoretically motivated and have a sound scientific plan. RAPIDs are not to gather data now and figure out what to do with it later.
 Paths to SBE Support: Internal Merit Review

Early-Concept Grants for Exploratory Research (EAGER)

- Exploratory work on untested, potentially transformative ideas
- High-risk, high-potential payoff
- $300,000 maximum; 2-year duration
- 8-page project description
- Internal review required; external review is optional
- Contact program officer first.
- "Your eagerness to get NSF funding is not a good reason to request an EAGER award."

- Many programs prefer you to submit proposals that undergo merit evaluation by peers before you argue that your ideas are so innovative and unorthodox that they can't be evaluated fairly through normal evaluation processes."
Paths to SBE Support

Dear Colleague Letters

• Official requests for research proposals on specific topics
• Often cross-disciplinary, applicable to a number of programs

Examples:
• Dear Colleague Letter: Stimulating Research Related to the Science of Broadening Participation
• Dear Colleague Letter: Interdisciplinary Research Across the SBE Sciences
• Dear Colleague Letter: Science, Engineering and Education for Sustainability (SEES)
Special Solicitations

- Opportunities for funding on selected topics

Examples:

- Dynamics of Coupled Natural and Human Systems (CNH) *
- Science of Science and Innovation Policy (SciSIP) *
- Ecology and Evolution of Infectious Disease (EEID)
- Earth System Modeling (EaSM)

* Now standing programs
Human Subjects

• No award for a project involving human subjects can be made without prior Institutional Review Board (IRB) approval/exemption of the research activity.
• IRB approval is not needed at the time of proposal submission, but be prepared to get IRB certification quickly if you are notified that NSF wants to fund your project.
Advice

• Learn to get beyond rejection
• Team up
  – Collaborate
  – Ask colleagues to comment on proposals
• E-mail or call a program officer with specific questions
More Tips

• Give yourself plenty of time
  - Don't expect to be successful by “throwing something together at the last minute.”

• Consider theoretical foundations and prospective theoretical contributions.

• Read solicitations, GPG, etc.

• Learn how proposals will be evaluated; think like those who will review and make decisions

• Talk to program officers
Examples of Funded Projects?

- NSF makes basic information available to the public: name of the investigator, organization receiving award, the award title and abstract, and the amount awarded to date.
- Link at bottom of each funding program’s web site that reads “Abstracts of Recent Awards Made Through This Program”
- Search at http://www.nsf.gov/awardsearch/
QUESTIONS?

Contact Thomas Baerwald
703-292-7301
tbaerwal@nsf.gov

OR....
Program Information

• The following slides are for your reference
• They provide a brief sense of SBE programs and program officer names.
• Word to the Wise:
  - Dates, names, etc change, so double-check the program's website.
Division of Social and Economic Sciences (SES)

• Supports research to develop and advance scientific knowledge focusing on economic, legal, political and social systems, organizations, and institutions
• Supports research on the intellectual and social contexts that govern the development and use of science and technology

Directorate for Social, Behavioral, and Economic Sciences
SES Target/Deadline Dates

January 15, August 15
Law and Social Science
Political Science
Sociology

January 16, August 16
Methodology, Measurement, and Statistics

January 18, August 18
Decision, Risk, and Management Sciences
Economics

February 1, August 1
Science and Society

February 2, September 3
Science of Organizations
Decision, Risk, and Management Sciences

- Supports research that explores fundamental issues in judgment and decision making, risk analysis, management science, and organizational behavior
- Research must be relevant to an operational or applied context, grounded in theory, and based on empirical observation or subject to empirical validation

Program Officers: Robert O’Connor, Jonathan Leland, and Jacqueline Meszaros
Economics

- Supports:
  - Both empirical and theoretical economic analysis as well as work on methods for rigorous research on economic behavior
  - Research designed to improve the understanding of the processes and institutions of the U.S. economy and of the world system of which it is a part
  - Almost all subfields of economics including: econometrics, economic history, finance, industrial organization, international economics, labor economics, public finance, macroeconomics, and mathematical economics

Program Officers: Nancy Lutz, Michael Reksulak, and Niloy Bose
Science of Organizations

• Supports research that advances fundamental understanding of how organizations develop, form, and operate
• Successful proposals use scientific methods to develop and refine theories, to empirically test theories and frameworks, and to develop new measures and methods.
• Funded research is aimed at yielding generalizable insights that are of value to the business practitioner, policy-maker, and research communities.

Program Officer: Jacqueline Meszaros
Law and Social Science

• Supports social scientific studies of law and law-like systems of rules, institutions, processes, and behaviors
• Topics can include, but are not limited to
  - research designed to enhance the scientific understanding of the impact of law
  - human behavior and interactions as these relate to law
  - the dynamics of legal decision making
  - the nature, sources, and consequences of variations and changes in legal institutions

Program Officers: Christian Meissner and Susan Sterett
Methodology, Measurement, and Statistics

- Seeks proposals that are interdisciplinary in nature, methodologically innovative, and grounded in theory, such as:
  - Models and methodology for social and behavioral research
  - Statistical methodology/modeling directed towards the social and behavioral sciences
  - Methodological aspects of procedures for data collection

Program Officer: Cheryl Eavey
Political Science

• Supports scientific research that advances knowledge and understanding of citizenship, government, and politics
• Substantive areas include, but are not limited to:
  - American government and politics
  - comparative government and politics
  - international relations
  - political behavior
  - political economy
  - political institutions
• Supports Doctoral Dissertation Research Improvement Grants

Program Officers: Brian Humes and Erik Herron
S&S considers proposals that examine questions that arise in the interactions of engineering, science, technology, and society.

There are four components:

- Ethics and Values in Science, Engineering and Technology (EVS)
- History and Philosophy of Science, Engineering and Technology (HPS)
- Social Studies of Science, Engineering and Technology (SSS)
- Studies of Policy, Science, Engineering and Technology (SPS)

The components overlap, but are distinguished by the different scientific and scholarly orientations they take to the subject matter, as well as by different focuses within the subject area.

Program Officers: Fred Kronz, Kelly Joyce, Michael Gorman
The Sociology Program supports theoretically-grounded research on systematic patterns of social relationships that examine the causes and consequences of human behavior, social structure and social change. Studies range from micro to macro levels of interaction.

Topics include, but are not limited to:
- Stratification, labor markets, mobility, social change
- Organizations, networks, economic and workplace change
- Crime, delinquency, social organization and social control
- Race, ethnicity, social identity/interactions, culture, education
- Family, gender, population, migration, immigration
- Social movements, political processes, globalization and more

The Sociology Program supports research that uses the range of social science methodologies — experimental, quantitative, qualitative and the combinations of multiple methods — for original data collection and secondary data analysis.

Program Officers: Regina Werum, Kay Meyer, and Pat White
Division of Behavioral and Cognitive Sciences

- Supports research to develop and advance scientific knowledge focusing on human cognition, language, evolution, social behavior, and culture
- Supports research on the interactions between human societies and the physical environment

Directorate for Social, Behavioral, and Economic Sciences
BCS Target/ Deadline Dates

January 15, July 15
Developmental and Learning Sciences
Linguistics
Social Psychology

January 15, August 15
Cultural Anthropology
Geography and Spatial Sciences

January 20, August 20
Biological Anthropology

January 24, August 27
Cognitive Neuroscience

February 1, August 1
Perception, Action, and Cognition

July 1, December 1
Archaeology

September 15
Documenting Endangered Languages
Archaeology Funds:

• Archaeological research that contributes to an anthropological understanding of the past
• Anthropologically significant archaeometric research

Program Officer: John Yellen
Biological Anthropology

- Supports basic research in areas related to:
  - Human evolution
  - Anthropological genetics
  - Human adaptation
  - Skeletal biology
  - Primate biology
  - Ecology and behavior

- Grants are often characterized by:
  - An underlying evolutionary framework
  - A consideration of adaptation as a central theoretical theme
  - Generalizable results

- Serves as a bridge between the social and behavioral sciences and the natural and physical sciences

Program Officer: Carolyn Ehardt
Cognitive Neuroscience

• Program supports highly innovative and interdisciplinary proposals
• Proposals should aim to advance a rigorous understanding of how the human brain supports:
  • Thought
  • Perception
  • Affect
  • Action
  • Social processes
  • Other aspects of cognition and behavior, including how such processes develop and change in the brain and through evolutionary time.

Program Officer: Lynne Bernstein
Cultural Anthropology

- Promotes basic scientific research on the causes and consequences of human social and cultural variation
- Supports social scientific research of theoretical importance in all theoretical and empirical subfields

Program Officer: Deborah Winslow and Stephen Langdon
• Supports studies that increase our understanding of cognitive, social, and biological processes related to children and adolescents’ learning in formal and informal settings

• Supports 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
  - Investigates the role of demographic and cultural characteristics in children’s learning and development

Program Officer: Peter Vishton
• Supports projects to develop and advance knowledge concerning endangered human languages
• Can support fieldwork and other activities relevant to the digital recording, documenting, and archiving of endangered languages, including the preparation of lexicons, grammars, text samples, and databases
• Supports projects that contribute to data management and archiving, and to the development of the next generation of researchers

Program Officer: Keren Rice
Geography and Spatial Sciences

- Supports research on human, physical, and biotic systems on the Earth’s surface, as well as their related subfields
- Investigations into the nature, causes, and consequences of human activity within particular "places and spaces" are encouraged
- Both international and domestic projects that may contribute to related fields are also funded

Program Officers: Tom Baerwald, Antoinette WinklerPrins, and David McGinnis
Linguistics

- Supports scientific research of all types that focus on human language as an object of investigation
  - The syntactic, semantic, phonetic, and phonological properties of individual languages and of language in general
  - The psychological 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 speech
  - The biological bases of language in the brain

Program Officers: Joan Maling and William Badecker
Perception, Action, and Cognition

- Supports basic research on human cognitive and perceptual functions
- Topics include, but are not limited to:
  - Attention
  - Memory
  - Spatial Cognition
  - Language Processing
  - Perceptual and Conceptual Development
  - Visual, Auditory, and Tactile Perception
  - Reasoning
- Research supported by the program encompasses a broad range of theoretical perspectives such as Symbolic Computation, Connectionism, and Dynamical Systems

Program Officers: Betty Tuller and Lawrence Gottlob
Social Psychology

• Supports 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 psychophysiological correlates of social behavior

Program Officers: Brett Pelham and Kellina Craig-Henderson
Cross-Directorate Activities

- Serves both divisions – SES and BCS
- Administers and coordinates programs to increase underrepresented groups in science and engineering
  - Research Experiences for Undergraduates
  - Minority Postdoctoral Fellowships
- Administers some special SBE-wide competitions
  - Research Experiences for Undergraduates Sites
- Provides information about cross-NSF, cross-cutting programs

Program Officer: Fahmida Chowdhury
Science of Science and Innovation Policy

- Supports research designed to advance the scientific basis of science and innovation policy
- Develops, improves and expands models, analytical tools, data and metrics that can be applied in the science policy decision-making process
- Contributes to interagency efforts to develop a new area of social science research

Program Officers: Julia Lane and David Crosson