



NSF: History, Form and Function

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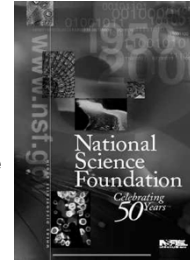
DISCCRS VI Symposium, Colorado Springs, CO, October, 2011

Vannevar Bush and Science: The Endless Frontier

A Report to the President by
Vannevar Bush, Director of the Office
of Scientific Research and
Development, July 1945

NSF established 1950

1952 First grants awarded
97 awards totaling ~ \$1 million



The Endless Frontier Recommendations

- Universities should be the nation's primary basic research infrastructure
- Federal funds should do double duty:
 - Procure research results
 - Educate the next generation
- Award research grants based on merit
- Establish a national science foundation

NSF Act of 1950

Encourage & develop a national policy
for the promotion of basic research and
education in the math, physical,
medical, biological, engineering and
other sciences



National Science Foundation

National Science Foundation (NSF)

The National Science Foundation (NSF) Act of 1950 (Public Law 81-507) sets for its mission:

To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense.

NSF Act: Authorizations

Act of 1950

- Initiate and support:
 - Basic research
 - Programs to strengthen research potential
 - Science education programs at all levels
- Award scholarships and fellowships
- Foster international S&T
- Avoid "undue concentration"
- Provide a central clearinghouse for data on science and engineering and information for policy formulation

Subsequent Authorizations

- Foster and support the development and use of computer and other technologies
- Evaluate the status and needs of the various sciences and fields of engineering
- Promote equal opportunities in science and engineering
- 1997 New Merit Review Criteria

NSF Vision

Advancing discovery, innovation, and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering.

NSF-3

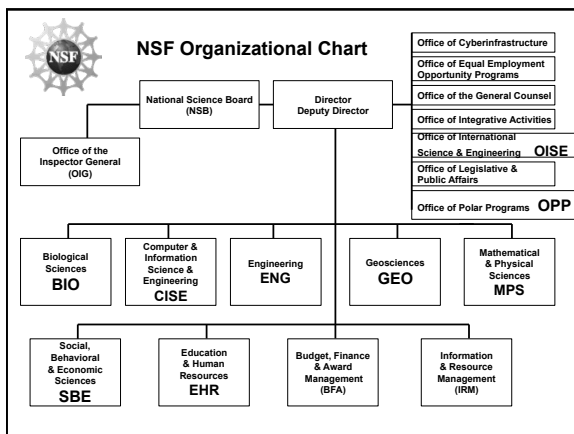
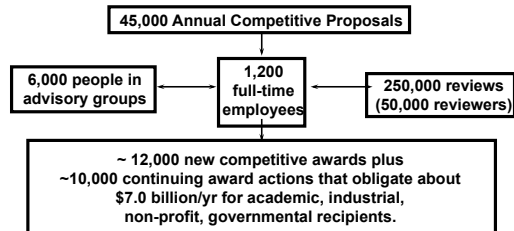
NSF in a Nutshell

- Independent Federal Agency
- Primarily Uses Grant Mechanism with peer review
- Low Administrative Costs
- Discipline-based structure

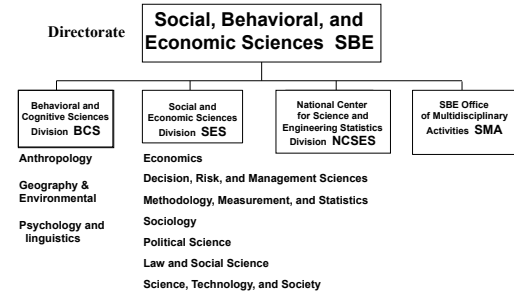


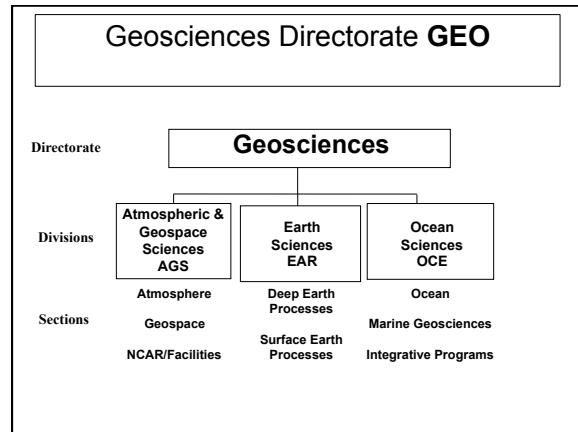
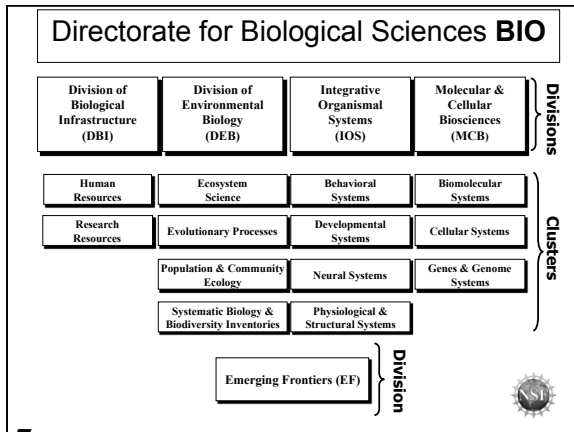
NSF Is a Science Management Agency

Scientists and institutions respond to broad civilian scientific needs of the nation



Directorates are divided into Divisions, which are further divided, ultimately into Programs





National Science Foundation

Information about funded proposals

1. Go to the Directorate website on <http://nsf.gov>
2. Find the Program of interest to you
3. Go to the bottom of that page and click on **"Abstracts of Recent Awards Made Through This Program"**

OR Search <http://research.gov>

Office of Polar Programs

Manages and initiates National Science Foundation funding for basic research and its operational support in the Arctic and the Antarctic.

Office of International Science and Engineering

Provides innovative awards and supplements that promote research excellence through new international collaboration and that develop the next generation of globally engaged scientists

www.nsf.gov/oise

The screenshot shows the NSF website's 'Funding Opportunities' page. The 'Search Funding Opportunities' link is highlighted with an arrow. Other visible links include 'Openning due dates', 'How to Prepare Your Proposal', 'Funding Trends', 'Program Areas', 'Quick Links', 'About NSF', 'Career Opportunities', and 'Contracting Opportunities'.

Rotators: Share in the discovery!

Intergovernmental Personnel Act
Visiting Scientists
Temporary Federal



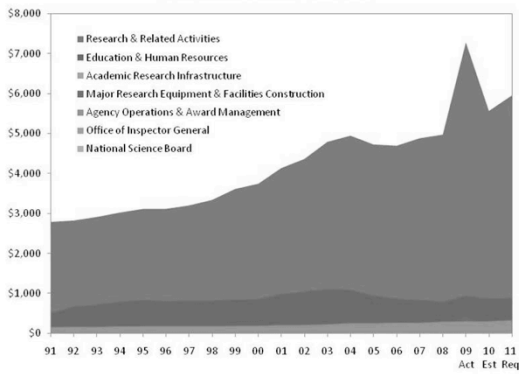
http://www.nsf.gov/about/career_opps/rotators/index.jsp

2007 America COMPETES Act:

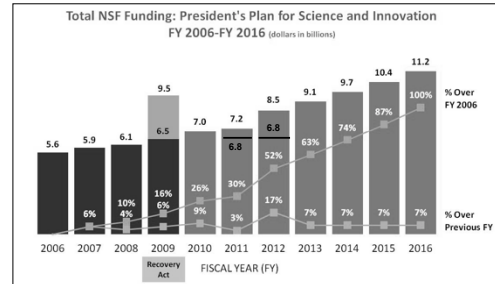
**America Creating Opportunities to
Meaningfully Promote Excellence in
Technology, Education, and Science**

Authorizes budget levels at the National Institute of Standards and Technology, the Department of Energy's Office of Science, and the National Science Foundation (NSF) on a path to doubling within the near term. The total NSF budget is authorized to double its budget in approximately seven years.

NSF Twenty Year Budget History by Account
in Millions of Constant FY 2010 Dollars



FY2010 Budget Request to Congress



Source: NSF FY2010 Budget Request to Congress

NSF PROPOSAL STATISTICS (FY 2008)

- > **44,199** proposal actions
- > **~ 248,000** reviews
- > **~ 45,000** reviewers
- > **11,156** awards
- > **21% funding rate for research**
(some for infrastructure, other)

FY 2011 ALLOCATIONS

BIO	\$712 MILLION
CISE	\$635
ENG	\$763
GEO	\$885
MPS	\$1,308
SBE	\$247
OCI	\$49
OISE	\$50
OPP	\$493
EHR	\$861

<http://www.nsf.gov/about/budget/>

NSF RESEARCH GRANT PROFILE (FY 2008)

Competitive awards (Research): 7,022

Average annual award:	\$143,212
Median annual award:	\$110,000
Average duration (research):	3.0 years

SEES Fellows Program



Create the necessary workforce
to enable discoveries leading to environmental,
energy, and societal sustainability

- Interdisciplinary research beyond applicant's current area of core expertise
- Partnership to broaden impact/scope of research
- Professional development activities, including, for example, broadening participation, education, or public engagement

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SEES Fellows Program



Grant to host institution with Fellow as PI:

- **2-3 years of fellowship costs over 4 years**
 - Salary/benefits; research allowance; international; indirect
- **PhD within last four years**
 - Exceptions for extenuating personal circumstances
 - PhD students may apply but must have degree by start date of award
- **May include a plan for teaching**
 - Must be supported financially by institution
 - Limited to 1 course/semester and 2 courses/award period

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SEES Fellows Program



- Strong overlap of GEO, BIO, SBE disciplines with SEES
 - Habitat wellness (atmosphere, oceans, land, climate, earth systems...)
 - Resilience to natural hazards (storms, droughts, earthquakes, human dimension...)
- Interdisciplinary research
- Partnerships
- Workforce development

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