National Science Foundation

Overview of the National Science Foundation (NSF)

Purpose of the MRI Program

New Orleans, Louisiana

QEM MRI Workshop

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http://www.nsf.gov/od/oia/

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OFFICE OF INTEGRATIVE ACTIVITIES

NSF Overview

Located in Arlington, VA

OFFICE OF INTEGRATIVE ACTIVITIES

NSF Overview

Strategic Plan

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

Goals:

Discovery: Advancing frontiers of knowledge

Learning: S&E workforce and scientific literacy

Research Infrastructure: Advanced instrumentation and facilities

Stewardship: Supporting excellence in S&E research and education

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NSF Overview

- **An independent Federal agency**
- **Created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense…“**
- **Annual budget of about $6.06 billion**
- **Funding source for ~20% of all Federally supported basic research in America’s colleges and universities.**

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NSF Overview

- **Fulfills mission chiefly by issuing limited-term (3-5 year) grants**
- **Primarily community driven** – "bottom up"
- **Currently fund about 10,000 new awards per year, out of ~42,000 submitted**
- **Fund research proposals deemed most promising by a merit-review system**
- **Merit-review by panels and mail reviews**

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NSF

NSF provides the following types of funding opportunities

- Program Description
  - Published only on the NSF website.
  - Proposals must follow GPG instructions.
- Program Announcement
  - Published NSF document describing the program.
  - Proposals must follow GPG instructions.
- Program Solicitation
  - Published document with additional restrictions and/or requirements.
  - Proposals must follow both the solicitation and the GPG instructions
- Dear Colleague Letter
  - Notifications of opportunities or special competitions for supplements to existing NSF awards.

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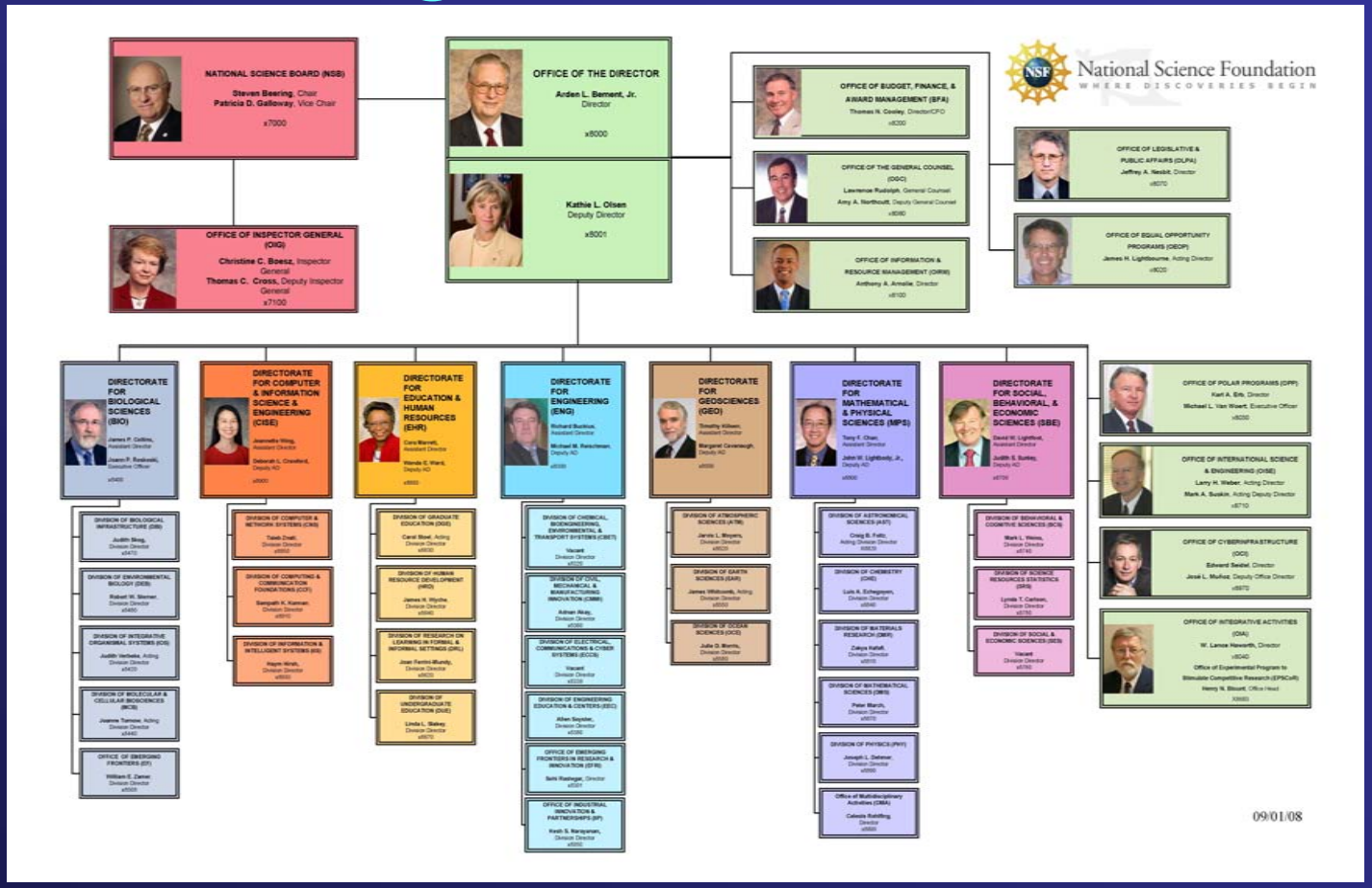
Finding a Home at NSF



Directorates/Divisions → Colleges/Departments

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Seeking Funding from NSF

Understand NSF before considering a proposal

- **Know the Website (www.nsf.gov)**
- **Search Recent Awards (www.nsf.gov/awardsearch)**
- **Identify possible funding opportunities (www.nsf.gov/funding)**
- **Talk to Program Officers in Divisions where you fit**
- **Know the "Proposal and Award Policies and Procedures Guide" (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf091)**
- **Know program requirements**
- **Serve as a panelist!**
- **Talk to successful PIs**
- **Know NSF's role compared to other Federal agencies**

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Programs

Major Research Instrumentation (MRI)

Program Overview

- Proposals can be for Instrument Acquisition (3 years) or Instrument Development (5 years)
- Number of Anticipated awards, pending availability of funds:
  ~235, including up to 8 mid-scale ($2-4 million) awards[1]
- Anticipated award size:
  $100,000 to $2 million for development proposals
  $100,000 to $4 million for acquisition proposals[2]

(no minimum for non-Ph.D. granting institutions and for mathematical and social, behavioral and economic sciences)

1 Information based on the FY 2009 plan

2 Requests over $2 million must be for the acquisition of a single instrument only. Acquisition proposals requesting $2 million or less may be for a single instrument, a large system of instruments, or multiple instruments that share a common or specific research focus.

http://www.nsf.gov/od/oia/programs/mri/

OFFICE OF INTEGRATIVE ACTIVITIES

Programs

Major Research Instrumentation (MRI)

Goals

- Supporting the acquisition of major state-of-the-art instrumentation, improving access to, and increased use of, modern instrumentation by scientists, engineers, and students;
- Fostering the development of the next generation of instrumentation, resulting in new instruments that are more widely used, and/or open up new areas of research and research training;
- Enabling academic departments, disciplinary and cross-disciplinary units, and multi-organization collaborations to create well-equipped research environments that integrate research with education;
- Supporting the acquisition and development of instrumentation that takes advantage of new opportunities enabled by investments in cyberinfrastructure;
- Promoting substantive and meaningful partnerships for instrument development between the academic and private sectors.

http://www.nsf.gov/od/oia/programs/mri/

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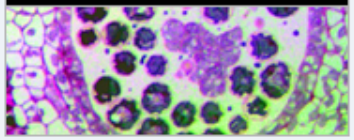
Office of Integrative Activities



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Activities

Presentations

OIA Staff

Major Research Instrumentation Program

CONTACT INFORMATION

Major Research Instrumentation Questions: Email: mri@nsf.gov Phone: 703-292-8040

Specific Program Contacts:

Staff Associate: Randy Phelps Tel: 703-292-8040 Office of Integrative Activities Room 1270

FY 2009 COMPETITION INFORMATION

The solicitation and frequently asked questions (FAQ'S) for the FY 2009 competition are expected to be posted in Mid-October.

The FY 2008 solicitation can be found in the archived section below.

COMMITTEE OF VISITORS

- **2000**: Report - Response - Summary
- **2005**: Report - Response - Member's Website

PROGRAM INFORMATION

Programs

Major Research Instrumentation (MRI)

Caveats

The MRI program will NOT support proposal requests for:

- General purpose equipment, including general purpose computers or assorted instruments that do not share a common or specific research or research training focus;
- Instrumentation used primarily for standard science and engineering courses.
- Renovation or modernization of research facilities, supporting equipment, and general purpose research platforms.
- Instrumentation related to animal models of disease-related conditions or the development or testing of drugs or other procedures for their treatment
- *However*, bioengineering instrumentation that advances engineering research and knowledge, applies engineering principles to problems in biology and medicine, aids persons with disabilities, and may also have clinical uses or diagnosis- or treatment-related goals *is* eligible for support.

http://www.nsf.gov/od/oia/programs/mri/

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Programs

Major Research Instrumentation (MRI)

Eligible Organizations

- Ph.D. granting institutions of higher education are academic institutions that have produced more than 20 Ph.D.s or D.Sci.'s in all NSF-supported fields of science, mathematics or engineering during the combined previous two academic years

- Non-Ph.D. granting institutions of higher education (i.e., primarily bachelor and/or master degree granting academic institutions) are two- and four- year colleges and universities that have produced 20 or fewer Ph.D.s or D.Sci.'s in all NSF-supported fields of science, mathematics, and engineering during the combined previous two academic years.

- Non-degree granting organizations are independent nonprofit organizations, museums and science centers, and consortia of organizations working in NSF-supported fields of science, mathematics, and engineering.

http://www.nsf.gov/od/oia/programs/mri/

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Programs

Major Research Instrumentation (MRI)

MRI Proposals

MRI solicitation: Revised solicitation to be posted later this month

- Full Proposal Deadline: Fourth Thursday in January
- Submission limit:

- an organization may submit or be included as a funded subawardee/subcontractor in no more than three MRI proposals. No more than two proposal submissions may be for instrument acquisition.
- if an organization is on three MRI proposals, at least one of the three proposals must be for instrument development.

- Cost-sharing at the level of 30% of the total project cost is required for Ph.D.-granting institutions and non-degree-granting organizations. Cost-sharing is not required for non-Ph.D. granting institutions
- At the time of submission, PI's are asked to identify an NSF division to review proposal

Note: A revised version of the NSF Proposal & Award Policies & Procedures Guide (PAPPG), NSF 09-1, was issued on October 1, 2008. Proposals responding to a funding opportunity with a due date on or after January 5th must comply with the guidelines in NSF 09-1.

http://www.nsf.gov/od/oia/programs/mri/

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Programs

Major Research Instrumentation (MRI)

Proposal Evaluation

- **What is the intellectual merit of the proposed activity?**

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative, original or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

- **What are the broader impacts of the proposed activity?**

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

- **Is management plan appropriate?**
- **For instrument acquisition proposals**: Evaluate whether the plan: 1) includes sufficient infrastructure and technical expertise to allow effective usage of the instrument; and 2) provides organizational commitments for operations and maintenance.
- **For instrument development proposals**: Evaluate whether the plan has a realistic schedule and mechanisms to deal with potential risks. In addition, evaluate the availability of appropriate technical expertise to design and construct the instrument and the cost of the new technology.

http://www.nsf.gov/od/oia/programs/mri/

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Programs

Major Research Instrumentation (MRI)

2008 Award Snapshot - Overall

Number Reviewed: 810

Dollars Requested : $515.8 million

Number of Awards: 224 (39 DEV, 185 ACQ)

MRI Amount Awarded: $93.2 million

NSF Amount Awarded: $101.0 million

Overall Success Rate: 27.7%

Mean Award: $451,000

Median Award: $330,000

Number of Institutions that Participated: 449

Number of Institutions Awarded: 184

Data currently omit 1 MRI late award that was made but not using MRI funds

Programs

Major Research Instrumentation (MRI)

2008 Award Snapshot by Institution Type

	Ph.D.	non-Ph.D.	Non-degree	MSI
# reviewed	472	304	34	74
Mean request	$765 K	$430 K	$704 K	$555 K
Median request	$568 K	$323 K	$559 K	$397 K
# awards	129	84	11	24
NSF $ awarded	$73.7 M	$22.4 M	$4.8 M	$9.8 M
MRI $ awarded	$67.8 M	$21.2 M	$3.9 M	$9.3 M
Success rate	27.3%	27.6%	32.4%	32.0%
Mean award	$571 K	$267 K	$440 K	$407 K
Median award	$465 K	$211 K	$474 K	$309 K

Programs

Major Research Instrumentation (MRI)

2008 Award Snapshot - EPSCoR

Number of Proposals Reviewed: 181
Dollars Requested : $116.5 M
Number of EPSCoR-eligible Awards: 50
Amount Awarded to EPSCoR-eligible Awards: $20.2 M
EPSCoR Amount Awarded to MRI Awards: $2.0 M
EPSCoR-eligible Success Rate: 27.6%
Eligible proposals co-funded by EPSCoR: 17
Mean award: $404,000
Median award: $295,000

Programs

Major Research Instrumentation (MRI)

1998-2008 Award Snapshot[1]

FY	# Proposals	$ Requested	# Awards	MRI Funding	Total NSF Funding*
1998	479	$248.5	165	$49.9	$56.4
1999	472	$261.5	166	$49.9	$56.8
2000	475	$252.0	163	$49.9	$54.7
2001	741	$305.5	311	$74.6	$78.7
2002	691	$296.3	279	$75.7	$81.3
2003	757	$351.2	280	$83.2	$91.0
2004	838	$421.4	327	$109.1	$112.9
2005	784	$473.0	256	$88.8	$95.6
2006	769	$427.4	233	$88.2	$97.0
2007	774	$478.3	222	$89.7	$96.9
2008	810	$515.8	224	$93.2	$101.0
TOTAL:	**7,590**	**$4,030.9**	**2,626**	**$852.2**	**$922.3**

[1]includes only awards submitted directly to MRI program

*includes MRI funds and contributions from Directorates and Offices