



National Science Foundation Research Infrastructure

- Major Research Instrumentation (MRI)
- Guest Appearance: Mid-scale Research Infrastructure (Mid-scale RI)

NSF Grants Conference

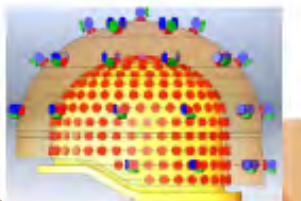
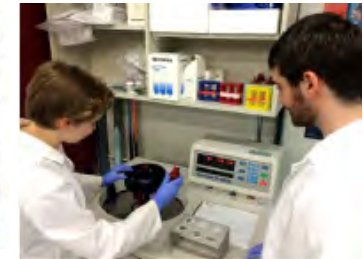
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MRI Part I

The Basics





MRI ***Strategic Goals***

Supports the ***acquisition*** or ***development*** of a *major research instrument* that is, in general, *too costly or not appropriate for support through other NSF programs*. The instrument is expected to be operational for regular research use by the end of the award period.

AND

Enables academic departments, disciplinary & cross-disciplinary units, and multi-organization collaborations to integrate research with ***research training***.



MRI

***The Solicitation beginning with the
FY 2018***

***MRI Competition
(NSF 18-513) had some Significant
Changes w.r.t. Previous Years***

- ***NSF 18-513 applies for the FY 2021 Competition***



MRI

Submission Window

A designated period of time during which proposals will only be accepted for review by NSF. It is NSF's policy that the end date of a submission window converts to, and is subject to, the same policies as a deadline date.



MRI

***Submission window
for FY 2021 MRI
proposals is
January 01 –
January 19, 2021***

- ***PAPPG 20-1
expected to apply***





MRI

1. Submission Criteria

The number of MRI proposal submissions allowed per institution continues to be a maximum of **three** but is based on the **dollar value of the NSF request**

- ***No more than two submissions are permitted in Track 1 (proposals requesting from NSF \$100,000^[1] to less than \$1 million)***
- ***No more than one submission is permitted in Track 2 (proposals requesting from NSF \$1 million up to and including \$4 million).***

Proposal submissions within the two tracks may be either for **acquisition development** of a research instrument. (NSF seeks to support development proposals in numbers (i.e., 20-25% of awards) consistent with past competitions, depending on the numbers and quality of the proposals).

^[1]Track 1 proposals may request less than \$100,000 only from non-Ph.D.-granting institutions of higher education, or for the disciplines of mathematics or social, behavioral and economic sciences from any institution.



MRI: Classification of Organizations

- **Ph.D. granting institutions of higher education** are accredited colleges and universities that have awarded more than 20 Ph.D.s or D.Sci.s in all NSF-supported fields during the combined previous two academic years. Additionally, any organization that awards Ph.D. or D.Sci. in NSF-supported fields is considered to be a Ph.D.-granting institution if the only degrees it awards in NSF-supported fields are post-Bachelor's degrees. → ***Cost sharing at 30% of total project cost required.***
- **Non-Ph.D. granting institutions of higher education** are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years.
- **Non-degree granting organizations** are those that do not award Associate's degrees, Bachelor's degrees, Master's degrees, and/or Ph.D.s or D.Sci.s. Non-degree-granting organizations also include institutions of higher education that award all of their degrees outside of NSF-supported fields. → ***Cost sharing at 30% of total project cost required.***

Organizations that are not PhD-granting are not necessarily non-PhD-granting!



Instrument Development

- *NSF seeks to support MRI awards that develop next-generation research instruments that open new frontiers of research.*
- *Up to 1/3 of the MRI awards are expected to support instrument development in either track.*
- *Within their submission limit, organizations are encouraged to submit proposals for innovative development projects.*



Reminder

MRI seeks broad representation of PIs and institutions in its award portfolio, including a geographically diverse set of institutions (e.g., in EPSCoR jurisdictions) and PIs who are:

- Women,
- Early-career researchers,
- Members of underrepresented minorities, and
- Persons with disabilities (*MRI* encourages PIs to consider Facilitation Awards for Scientists and Engineers with Disabilities (FASED) requests as part of an *MRI* proposal submission. The total amount requested, including the base *MRI* budget and any FASED request must not exceed the *MRI* program's budget limit.



MRI

Clarification on Supported Cyber Instruments

An MRI research instrument need not be physically located in a conventional laboratory setting, nor does an instrument need to be physical at all. MRI continues to support distributed/networked instruments and cyberinstrumentation that is *not appropriate for support through other NSF programs.*





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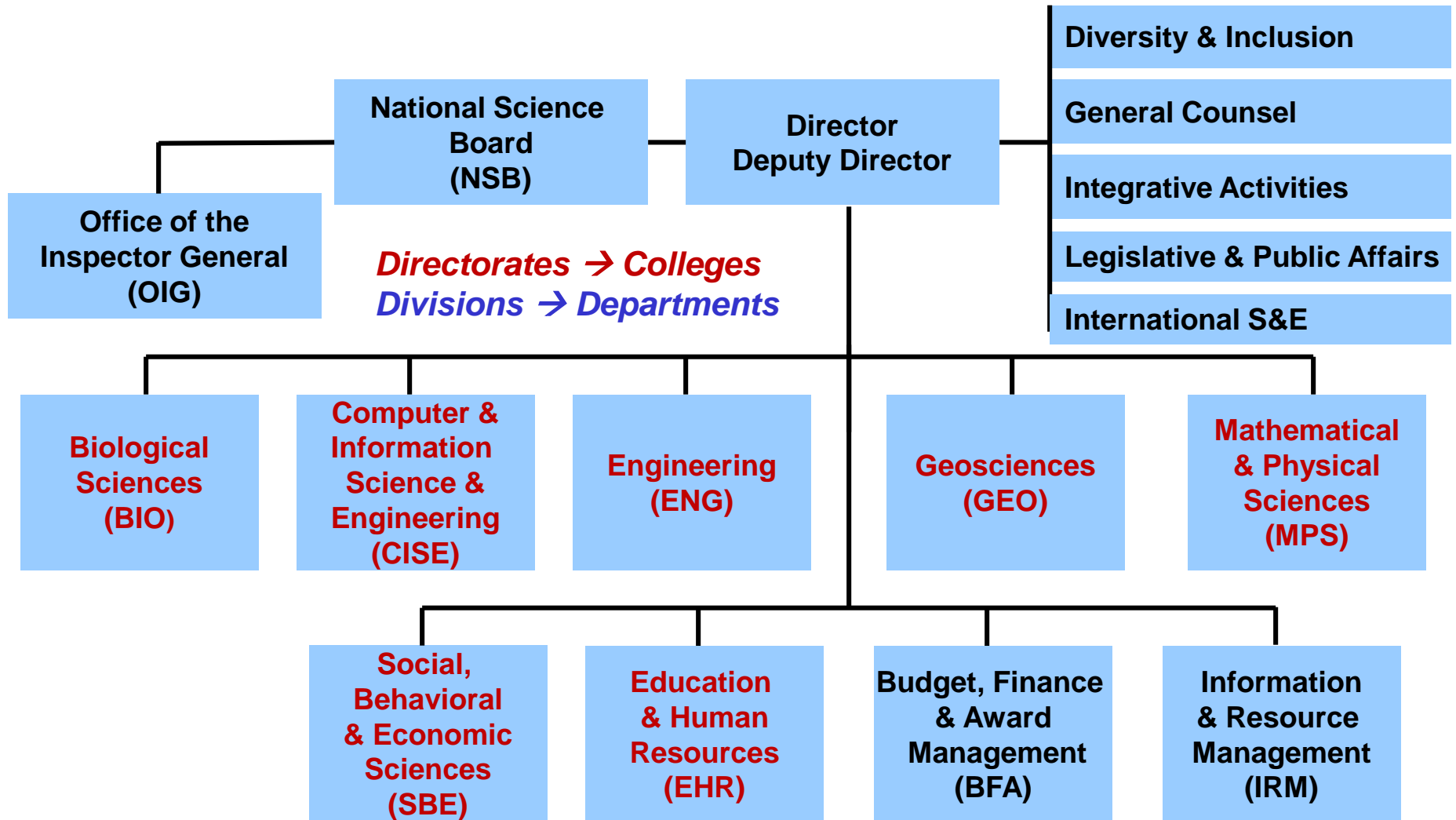
MRI Part II

The Review Process





Finding a Home at NSF





Proposal Review and Award

- Proposals submitted to OIA with division(s) preference indicated
→ *compliance and tracking*
- Proposals reviewed in division(s) selected (largely) by PI. May be co-reviewed.
- Divisions recommend awards (OIA concurrence) and declines.
- MRI funding formula:
 - Initial funds allocated to divisions based on proportion of total MRI \$\$ a division is reviewing. → *comparable success rate by divisions.*
 - Division funds further siloed by percentage of proposals from a) non-PhD/MSIs and b) PhD/non-degree → *comparable success rate by institution-type.*
 - Some funds reserved for >\$1 million meritorious Directorate-level priorities → *all Directorates have opportunity to make large (Track 2) awards.*
 - A reserve is held for portfolio balance.



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MRI Part III: Proposal “Best” Practices





Understand NSF before Considering a Proposal!

- Know the NSF Website (www.nsf.gov)
- Search Recent Awards (www.nsf.gov/awardsearch)
- Identify appropriate programs (www.nsf.gov/funding):
 - Know program purpose, goals, and requirements
- 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=papp)
- Serve as a panelist!
- Talk to successful PIs
- Know NSF’s role compared to other Federal agencies



MRI Proposals

So what makes an MRI proposal competitive?

***Note the term “competitive”, rather than
“successful”!***

***Due (in part) to budget limitations, 20-25% of
submitted proposals are funded***

Good proposals may not get funded



MRI Proposals

Think like a reviewer

- *What “story” would you want to hear? **Science drives the request!***
- *If you wonder if reviewers will have a concern, almost certainly they will!*
- *MRI, like other grants programs, is a competition – what makes your proposal stand out?*



MRI Proposals

So what makes an MRI proposal competitive?

Build your case on its merits

What is the intellectual merit of the proposed activity?

What are the broader impacts of the proposed activity?

- Describe (enthusiastically) compelling research / research training activities to be undertaken with the instrument. *Buy/Build it and they will come is not a good reason...*
- Demonstrate how your activities will make meaningful contributions within and across disciplines in both research and research training. *We are the ones best able/positioned to do this work!*
 - Establishing a *need* is usually not enough. *What makes you unique?*
- Match your proposed effort to the mission of your institution and describe it in that context. *MRI awards build institutional capacity...*



MRI Proposals

Some Additional Thoughts...

- Demonstrate appropriate leadership and commitment to bring the project to completion. *Being a good research scientist is one thing, being a good manager is quite another...*
- How would the project enable the integration of research and education? *MRI is a Research and Research Training program.*
- How would the project enable integrating diversity into NSF programs, projects, and activities? *Saying it will is not enough!*
- Ask for what you need, no more no less. *Bells and whistles are nice, but..*
- Avoiding pitfalls (*i.e.*, “Don’t Do This”) will not guarantee a competitive proposal. *So your proposal is technically flawless but is it compelling?*

There is a vast range of possible approaches, strategies, and designs for your proposal.

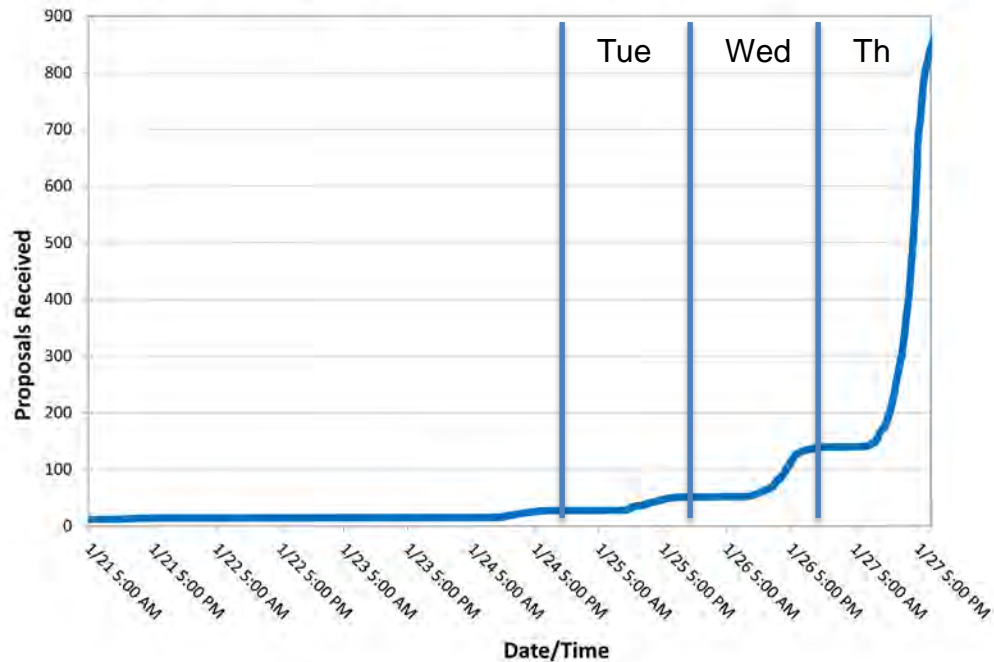


Important Takeaway

Submit early and check that what was received at NSF is what you intended to submit!

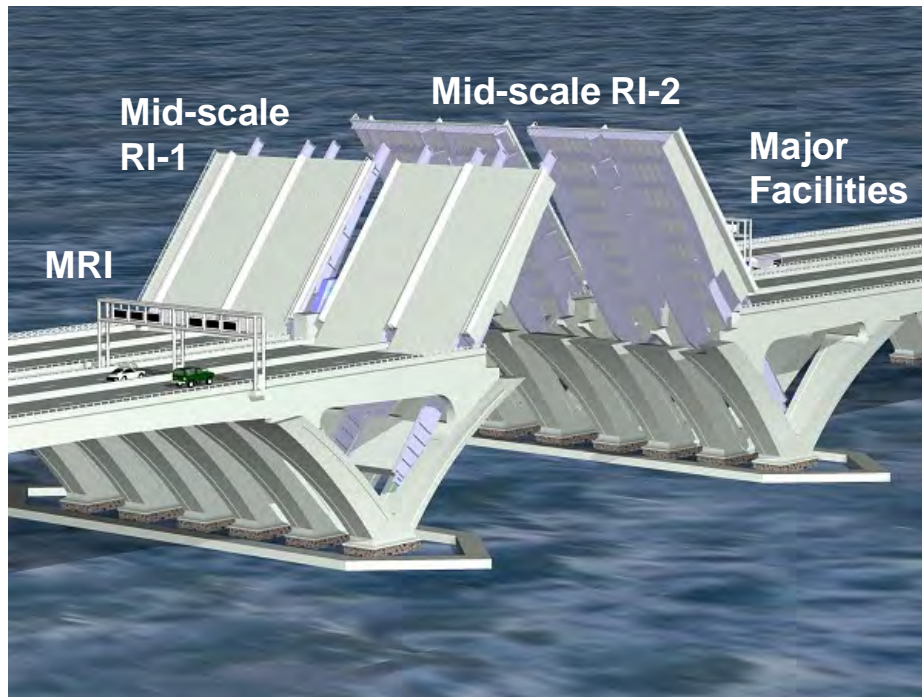
You can always revise and resubmit proposals prior to the deadline, but not afterwards!

FY2011 MRI Proposal Deadline: 01/27/2011, 5 PM Local Time





Mid-scale Research Infrastructure



- Many important potential experiments and facilities fall between the \$100K to \$4M¹ Major Research Instrumentation (MRI) program and the > \$100M Major Multi-user Facilities range.
- This gap results in missed opportunities that may leave essential science undone.
- NSF needed a new agile process for funding experimental research capabilities in the mid-scale range.
 - Mid-scale RI-1: \$6 - <\$20 M
 - Mid-scale RI-2: \$20 - \$100 M

¹\$5.7 million with the addition of Congressionally mandated cost sharing



Mid-scale RI-1 (NSF 21-505) due dates

**Preliminary Proposal
(Required)**

• ***January 07, 2021***

**Full Proposal Deadline
(By Invitation Only)**

• ***April 23, 2021***

- Mid-scale RI-2: TBD



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Thank You!

