

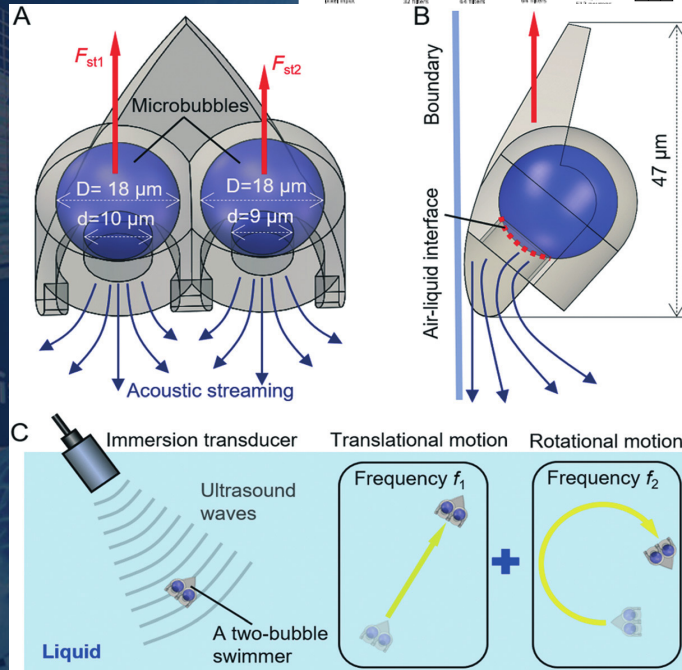
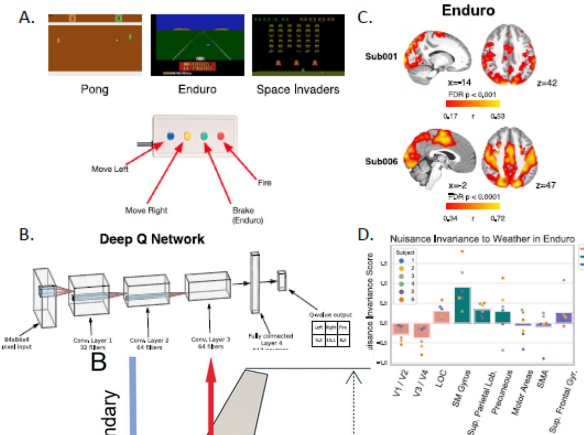
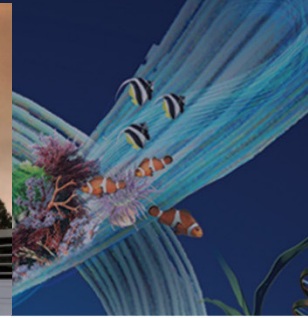
National Science Foundation Major Research Instrumentation (MRI) Virtual Town Hall

<https://bit.ly/NSF-MRIProgram>

mri@nsf.gov



Dr. Randy L. Phelps
Dr. Jonathan Friedman
Office of Integrative Activities
September 14 & 15, 2023



MRI Part I – The Basics



MRI Strategic Goals

Supports the *acquisition* or *development* of a major *shared-use* 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 Changes: *The FY 2024 MRI Competition (NSF 23-519)*

Significant Changes with respect to Previous Years

- **Proposals will be due by 5:00 p.m. submitters' local time November 15, 2023.**
- **PAPPG: NSF 23-1 applies for proposals submitted to this competition.**
- **And ...**



MRI Changes: Submission Window Planning

- ***October 16, 2023 - November 15, 2023***
October 15, 2024 - November 15, 2024
October 15, 2025 - November 14, 2025
October 15, 2026 - November 16, 2026

Note the submission windows (deadlines) have moved up for upcoming MRI competitions!



MRI Changes

The CHIPS and Science Act of 2022

The "Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act of 2022", waives cost-sharing requirements for the MRI Program for a period of 5 years. NSF implemented the waiver for new submissions beginning with the FY 2023 MRI competition.

The maximum MRI request from NSF remains \$4 million. Since voluntary cost sharing is not permitted, the maximum total project cost of proposed projects is now \$4 million.



MRI Changes

Helium Conservation and Microelectronics

Consistent with the guidance of the "CHIPS and Science Act of 2022" :

1. A new track has been added ("Track 3") to incorporate opportunities for proposal requests that include the acquisition, development, installation, operation, and maintenance of equipment to reduce consumption of helium.*
2. MRI encourages instrument proposals that facilitate U.S. leadership in microelectronics research and training.

* Watch the MRI Program web page for publication of an FAQ on Track 3.



MRI: Revised Tracks and Institution Submission Limits

- **Track 1:** MRI proposals that request funds from NSF greater than \$100,000^[1] and less than \$1,400,000.
- **Track 2:** MRI proposals that request funds from NSF greater than or equal to \$1,400,000 up to and including \$4,000,000.
- **Track 3:** MRI proposals that request funds from NSF greater than or equal to \$100,000¹ and less than or equal to \$4,000,000 for the acquisition or development, purchase, installation, operation & maintenance of equipment to conserve or reduce consumption of helium.

[1] Track 1 proposals requesting funds from NSF less than \$100,000 will be accepted only from: a) eligible performing organizations requesting instrumentation supporting research in the disciplines of mathematics or social, behavioral and economic sciences; or b) non-Ph.D.-granting institutions of higher education requesting instrumentation supporting research in any NSF-supported disciplines.



MRI Track 3

Helium Conservation & Recovery

- From the MRI Solicitation under Section II: Program Description:
“MRI will accept requests that include the purchase, installation, operation, and maintenance of equipment and instrumentation to reduce consumption of helium. Support for such requests will be limited to equipment and instrumentation that serve shared-use research instrumentation. *A request may be part of a Track 1 or Track 2 proposal (within the budgetary limits that apply to those tracks) or be requested separately as a "Track 3" proposal.*
Proposals in Track 1 and Track 2 that request support for instrumentation that requires the use of helium must describe plans for the conservation and/or recovery and reuse of helium; plans to submit a separate Track 3 proposal are not sufficient to constitute such plans.”
- Questions about the scientific justifications for a Track 3 proposal should be addressed to a cognizant Program Officer.



MRI: Revised Tracks and Institution Submission Limits

Each performing organization may submit in *revised* "Tracks", with

- *No more than two (2) submissions in Track 1;*
- *No more than one (1) submission in Track 2;*
- *No more than one (1) submission in Track 3.*

As a result, it is now possible for an institution to submit up to four MRI proposals within the Track limits as described above.



MRI: Classification of Organizations^[2]

- **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.
- **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.

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

^[2]See NSF 23-519 Section V.A.6.a for required institutional certification statement.



Instrument Development

- *NSF seeks to support MRI awards that develop next-generation research instruments that open new frontiers of research.*
- *Up to one-third of the MRI awards are expected to support instrument development in either of Tracks 1 or 2, and even Track 3.*

Within their submission limit, organizations are strongly encouraged to submit proposals for innovative development projects.



Reminder

MRI seeks broad representation of PIs and institutions in its award portfolio, including:

- *Minority-serving institutions*
- *Predominantly undergraduate institutions*
- *Geographically diverse institutions (e.g., in rural areas and EPSCoR jurisdictions)*
- *Under-resourced institutions so that MRI builds capacity for research and PIs who are:*
 - *Women*
 - *Early-career researchers*
 - *In groups that historically have been marginalized in STEM*
 - *Persons with disabilities*

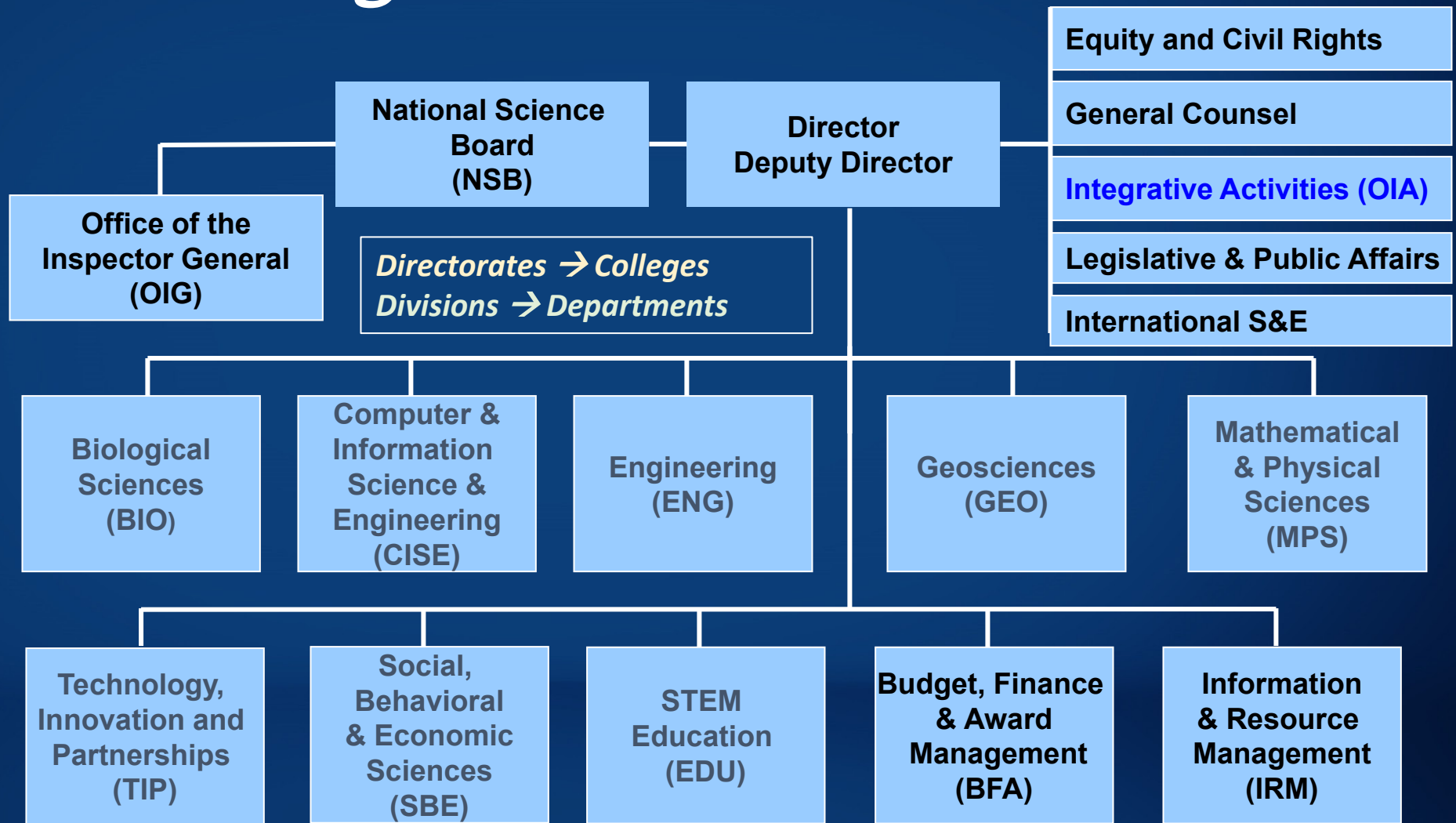


MRI Part II

The Review Process



Finding a Home at NSF



Proposal Review and Award (1/2 - Review)

- Proposals submitted to OIA with ****Division(s) preference indicated****.
 - *OIA responsible for compliance, funds and portfolio monitoring*
- Proposals (mostly) reviewed in Division(s) selected by PI. May be co-reviewed.
 - *NSF reserves the right to place proposals in the proper home!*
- Divisions recommend awards (w/ OIA concurrence) and declines.



Proposal Review and Award (2/2 - Award)

- MRI funding: OIA holds the MRI budget provided by Congress.
 - 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 >\$1.4 million meritorious Directorate-level priorities
 - *All Directorates have opportunity to make large (Track 2) awards.*
 - Other:
 - OIA holds a reserve for portfolio balance;
 - Some Divisions use their own program funds to support MRI;
 - EPSCoR also contributes \$\$.



MRI Part III: Proposal “Best” Practices



Understand NSF before Considering a Proposal!

- Know the NSF Website (new.nsf.gov)
- Search what MRI has funded through www.nsf.gov/awardsearch/advancedSearch.jsp. (*Element Code 1189*)
- Identify appropriate programs (www.nsf.gov/funding or links within <https://new.nsf.gov/about/directorates-offices>)
- 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)
- Read and understand the Program solicitation (MRI is NSF 23-519)
- Serve as a panelist!
- Talk to successful PIs
- Know NSF’s role compared to other Federal agencies



Understand NSF before Considering a Proposal!

- Know the NSF Website (new.nsf.gov)
- Search what MRI has funded through www.nsf.gov/awardsearch/advancedSearch.jsp. (Element Code 1189)

Program Information

NSF Organization

Element Code
 Any All

Reference Code
 Any All

Program

Program Officer

HINT: The "Program" box searches both program element and program reference names and codes.

- 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, only a limited fraction of submitted proposals are funded.

Not all strong proposals 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 a lackluster 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. Everyone needs the best instrument. *What makes you unique?*
- Match your proposed effort to the mission of your institution and describe it in that context. *You are competing against your peer institutions, and MRI awards build institutional capacity...*



MRI Proposals

- Demonstrate appropriate leadership and commitment to make the project a success. *Being a good research scientist is one thing, being a good manager is quite another. Randy's soapbox...*
- How would the project enable the integration of research and education? *MRI is a Research **and** Research Training program. (Education and Outreach are broader impacts.)*
- **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 may be a minor part of the project...*
- Avoiding pitfalls (*i.e.*, "Don't Do This") will **not** guarantee a competitive proposal. *So, your proposal is technically flawless, but is it compelling?*

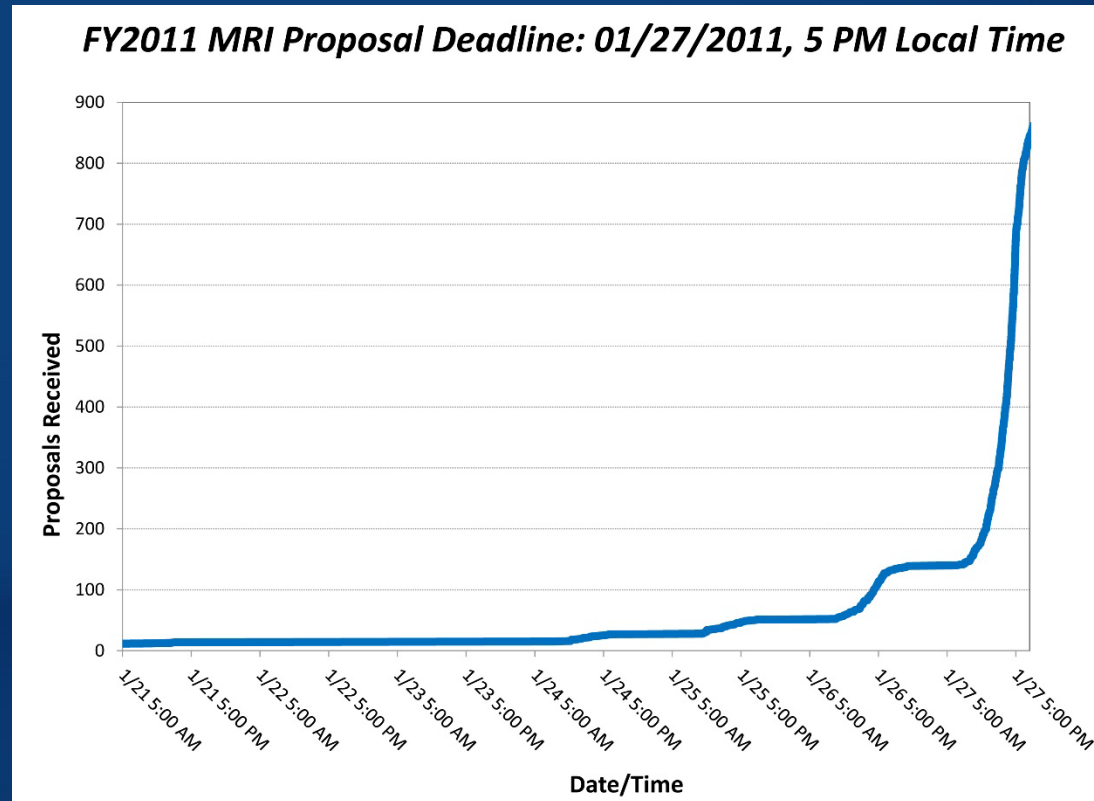
There is a vast range of possible approaches, strategies, and designs for your proposal.



Important Takeaway

Soapbox: 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! 80% of proposals are submitted on the deadline day, 50% within 2 hours of the 5pm deadline!



Thank You!

