

National Science Foundation MAJOR RESEARCH INSTRUMENTATION (MRI)

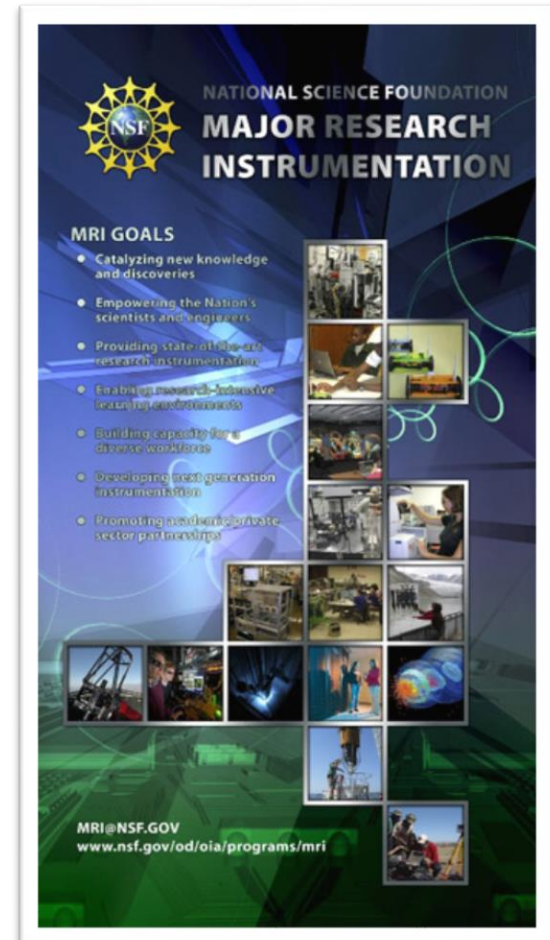
NSF Grants Conference
Phoenix, AZ

November 13-14, 2017

Dr. Randy L. Phelps
Staff Associate

mri@nsf.gov 703-292-8040

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



OFFICE OF INTEGRATIVE ACTIVITIES

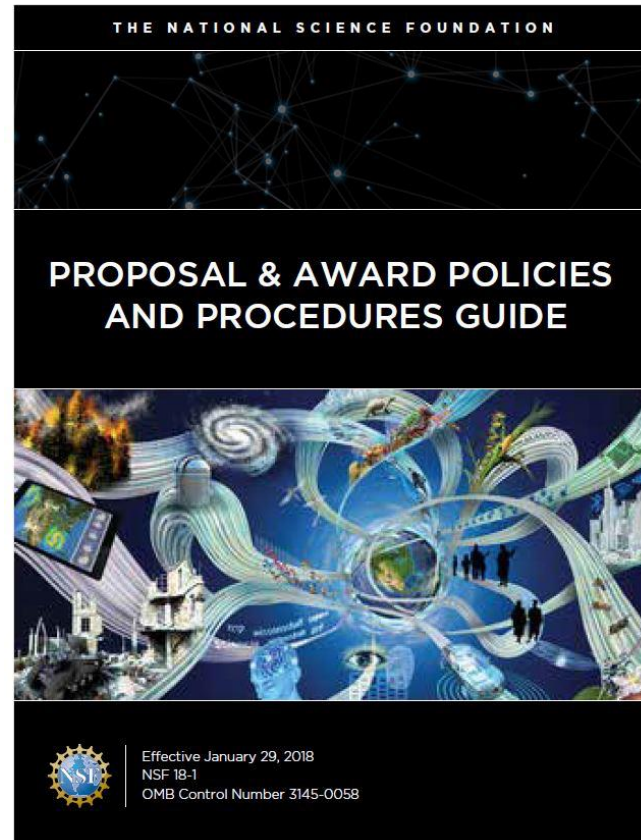
***The Recently Released
Solicitation for the FY
2018 MRI Competition
(NSF 18-513) has Some
Significant Changes***



OFFICE OF INTEGRATIVE ACTIVITIES

***Submission window for FY 2018
MRI proposals will be
January 29 – February 05, 2018***

***PAPPG 18-1
will apply***



OFFICE OF INTEGRATIVE ACTIVITIES

Major Research Instrumentation

FY 2018 Solicitation

Selected Implementation

1. Submission Criteria

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

- *No more than two submissions are permitted in a newly-defined Track 1 (proposals requesting from NSF \$100,000^[1] to less than \$1 million)*
- *No more than one submission is permitted in a newly defined 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 or development of a research instrument. (NSF seeks to support development proposals in numbers (i.e., 20-25% of awards) consistent with recent 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.

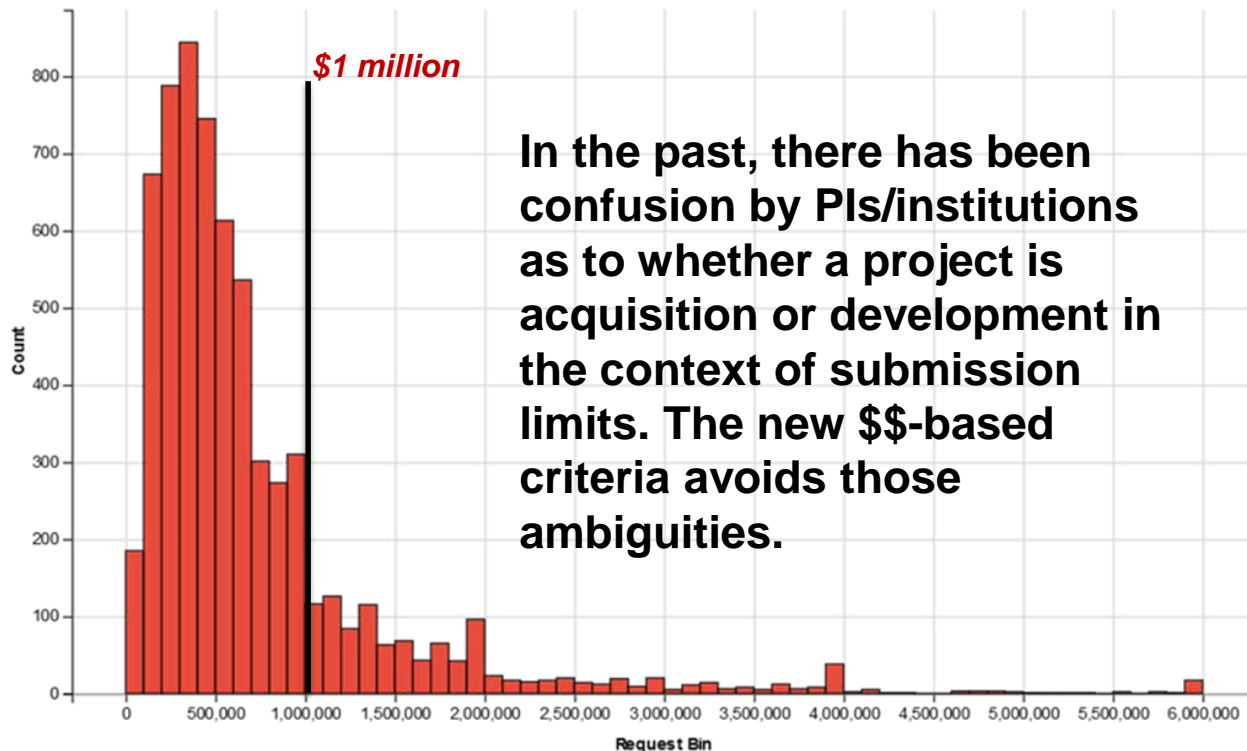


Major Research Instrumentation

FY 2018 Solicitation

Submission limits based on \$-value of request is a “clean” way to limit submissions:

- 85% of proposals requested under \$1M for 2010-2015
- 90% of proposals requested under \$1.3M for 2010-2015



Proposal Submissions by \$ requested, FY 2010-FY2015

OFFICE OF INTEGRATIVE ACTIVITIES



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.*



OFFICE OF INTEGRATIVE ACTIVITIES

Major Research Instrumentation

FY 2018 Solicitation

Significant Changes

2. Women/Underrepresented Minority PI Representation

- Emphasis in the solicitation has been provided indicating that the *“MRI Program seeks broad representation by PIs in its award portfolio, including women, underrepresented minorities and persons with disabilities. Since demographic diversity may be greater among early-career researchers, the MRI program also encourages proposals with early-career PIs.”* (Also part of the MRI-specific Review Criteria.)



OFFICE OF INTEGRATIVE ACTIVITIES

Major Research Instrumentation

FY 2018 Solicitation:

Other Changes

3. Switch to a Submission Window:

- MRI proposal submission will only be accepted within the specified submission window (January 01, 2018 – January 19, 2018). 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.

4. Clarification on Supported Cyber Instruments:

- Statements have been added to emphasize that 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.



OFFICE OF INTEGRATIVE ACTIVITIES

Major Research Instrumentation Strategic Goals

Supports the *acquisition* or *development* of *major research instrumentation* 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.

- Supports the *acquisition* of a shared, major, state-of-the-art instrument, thereby improving access to, and increased use of, a modern research instrument by scientists, engineers and students;

OR

- Supports the *development* of the next generation of major instrumentation, resulting in a new type of instrument that is more widely used, and/or opens up new areas of research and research training;

AND

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



OFFICE OF INTEGRATIVE ACTIVITIES

The MRI Program Will **Not** Support:

- **Construction, renovation or modernization of rooms, buildings or research facilities** (instruments must be able to decouple from their host environment);
- **Large, specialized experimental facilities** (constructed with significant amounts of common building material using standard building techniques);
- **General purpose and supporting equipment** (e.g., general purpose computers/laboratory equipment, fume hoods, cryogen storage systems);
- **Sustaining infrastructure and/or building systems** (e.g., electrical, plumbing, HVAC, toxic waste disposal, telecommunications);
- **General purpose platforms or environments** (e.g., fixed, non-fixed structures, manned vehicles);
- **Instrumentation used primarily for science and engineering education courses or for medical/clinical/pharmaceutical research.**



MRI-Eligible Expenses

***MRI does not
support requests
for multiple
instruments to outfit
labs/facilities***



OFFICE OF INTEGRATIVE ACTIVITIES

MRI Proposals★

- **Next Deadline:** *New solicitation posted November 07, 2017.*
- **Restrictions on organization submission eligibility**
- **Submission limit - *Three (3) per organization: Details in new solicitation, NSF 18-513.***
- **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.***
- **Merit Review** - At the time of submission, PI's are asked to identify an NSF division(s) to review proposal. NSF reserves the right to place proposals in the appropriate division(s) for review.

★ ***Please examine carefully the new solicitation (NSF 18-513) and PAPPG (NSF 18-1)***



OFFICE OF INTEGRATIVE ACTIVITIES

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.
- **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.



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

OFFICE OF INTEGRATIVE ACTIVITIES

- Q: Cost Sharing***
- VCCS: Budget, Elsewhere***
 - Eligible Costs***

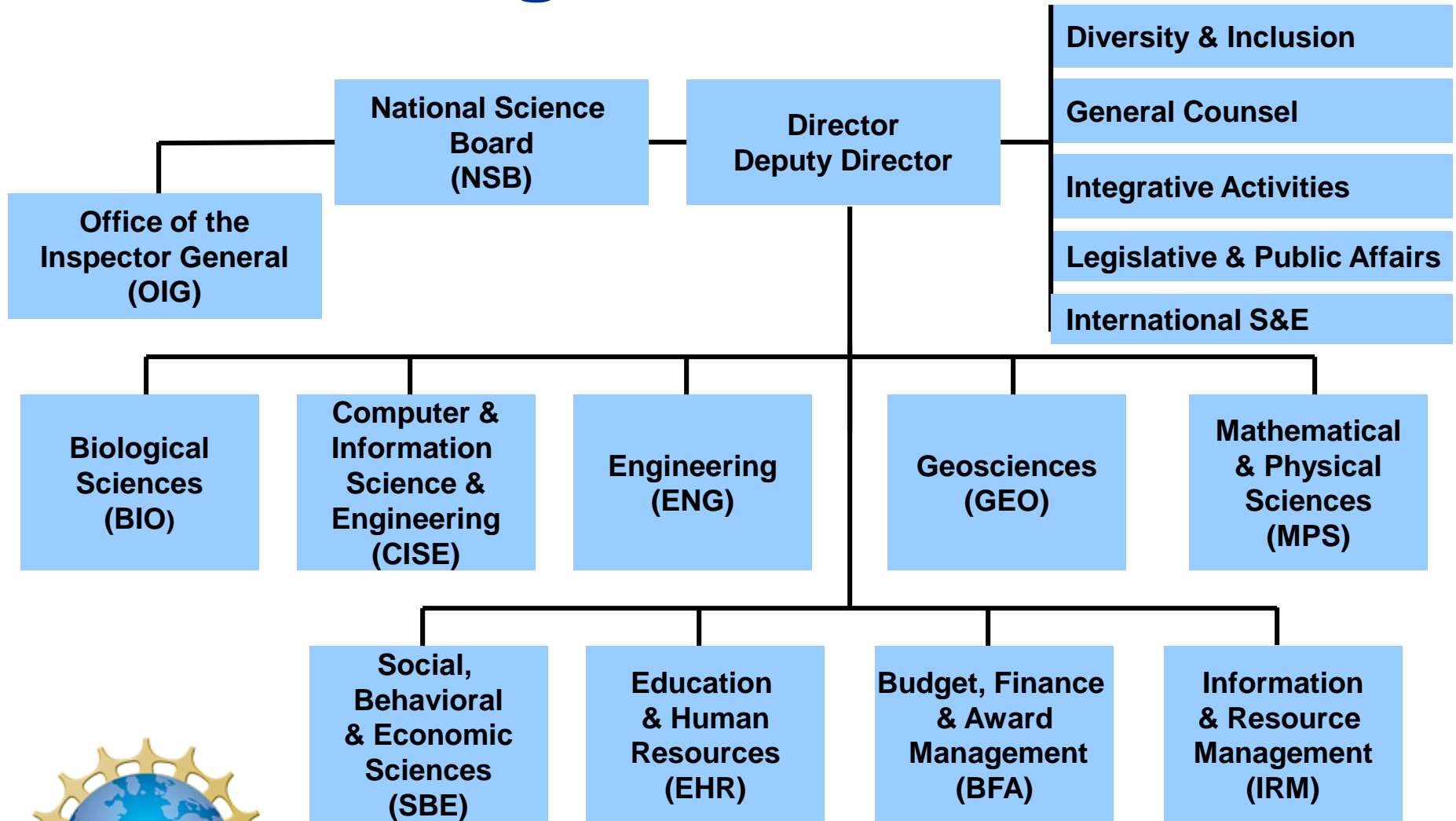


Q: Proposal Review

- OIA vs. Divisions***
- Interdisciplinary →
co-review/ad hoc***



Finding a Home at NSF



OFFICE OF INTEGRATIVE ACTIVITIES

Understand NSF Before Considering a Proposal!

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



MRI Proposals

What makes an MRI proposal fail before it is reviewed?

- Proposals describing activities that fall outside of the scope of those supported by the MRI program;
- Proposals describing activities that fall outside of the scope of those supported by NSF;
- Proposals that exceed an organization's submission limit;
- Proposals that represent standard research projects appropriate for submission to regular NSF programs;
- Proposals to place an instrument at a facility of another Federal agency or one of their FFRDCs that are not submitted by consortia (rare);
- Proposals with budgets outside of allowable requests;
- Proposals that do not indicate appropriate levels of cost-sharing;
- Proposals that do not contain required documentation or contain supplemental documentation not required and/or encouraged by the MRI program;
- Proposals that do not contain a Management Plan in the Project Description.

There is a checklist in the solicitation – use it!

Proposals with the above issues are subject to Return Without Review!



OFFICE OF INTEGRATIVE ACTIVITIES

FAQ: Shared Use

- ***# personnel***
- ***Research***

Description Format

→ Drives Request

→ Bells/Whistles



FAQ: Management

- Scientists ≠ Managers?***
- Management Plan***
- DMP for instruments?***



MRI Proposals

What makes an MRI proposal fail during the review?

- Proposals that do not demonstrate adequate institutional commitment;
- Proposals that do not adequately demonstrate how and by whom the instrument will be utilized, operated and maintained – i.e., proposals without a strong management plan;
- Proposals that do not demonstrate shared-use within the institution, and/or among institutions → 24/7/365;
- Proposals that request instrumentation that is otherwise reasonably accessible;
- Proposals that do not adequately match the budget to the scope of the project → science drives budget;
- Proposals that do not describe research training, particularly for women and underrepresented groups in science & engineering / persons with disabilities.

These proposals will be *not review well!*

OFFICE OF INTEGRATIVE ACTIVITIES



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

So what makes an MRI proposal competitive?

An obvious first step is to avoid the pitfalls already mentioned!



OFFICE OF INTEGRATIVE ACTIVITIES

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...*



OFFICE OF INTEGRATIVE ACTIVITIES

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?*

The “opposite” of “Don’t Do This” is a vast range of possible approaches, strategies, and designs for your proposal.

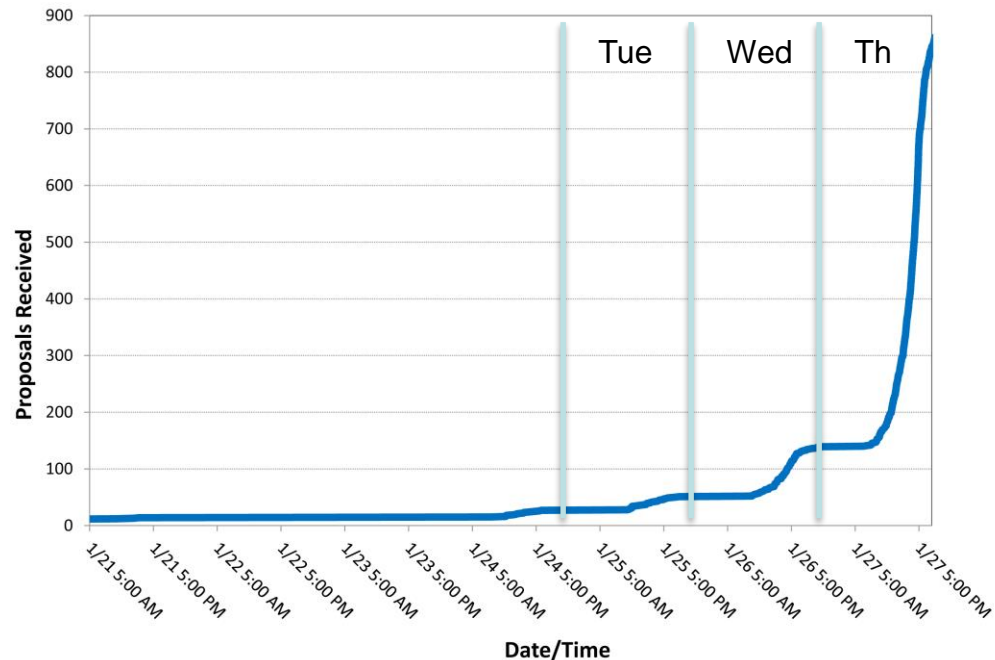


Important Takeaway

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



OFFICE OF INTEGRATIVE ACTIVITIES

MRI Proposals

Some Additional Thoughts...

Think like a reviewer

- *What “story” would you want to hear?*
- *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?*



Thank You!



OFFICE OF INTEGRATIVE ACTIVITIES