National Science Foundation

MAJOR RESEARCH INSTRUMENTATION (MRI)

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

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Major Research Instrumentation
Top-level 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***.

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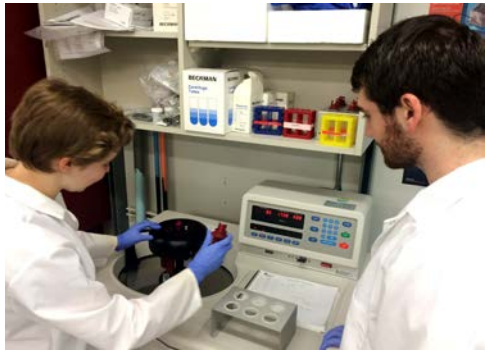
MAJOR RESEARCH INSTRUMENTATION (MRI)



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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/

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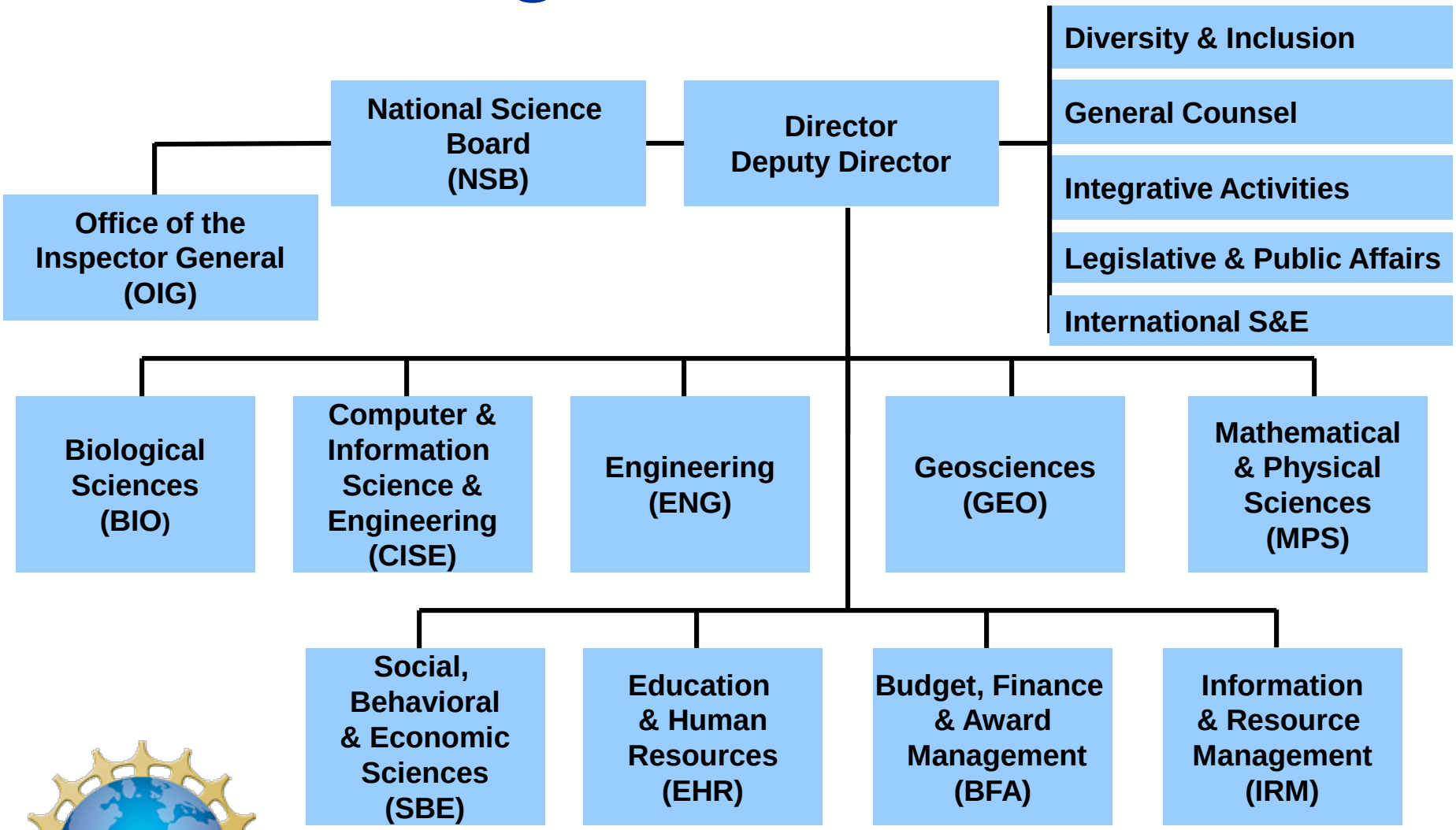
MRI Proposals

- **Next Deadline: January, 2017 (*TBD*)**
- **Restrictions on organization submission eligibility**
- **Submission limit -** Three (3) per organization: *If three proposals are submitted, at least one of the proposals must be for instrument development.* ***(Stay tuned....)***
- **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.

Note: Subject to change. Please await a likely new solicitation planned for Fall, 2016!

Finding a Home at NSF



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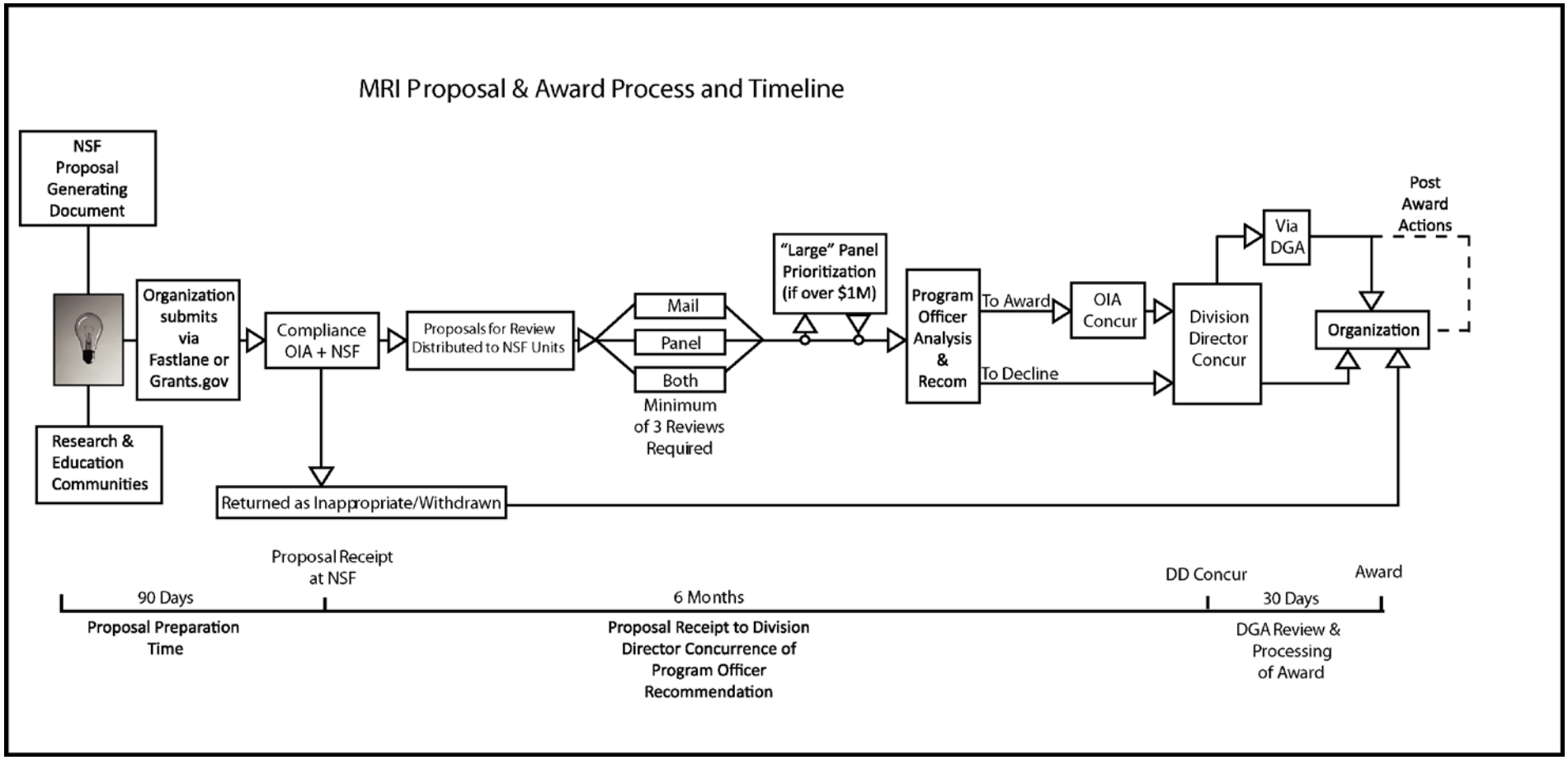
MRI Flowchart



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What makes for a competitive proposal to the NSF MRI program?

--now and into the future

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Understand NSF Before Ever 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 <u>before</u> it is reviewed?

Avoid the Dreaded "Rw/oR"

- 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 with budgets outside of allowable MRI limits;
- Proposals that do not contain Results from Prior MRI Support in the Project Description;
- Proposals that do not contain required supplemental documentation;
- 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 (and others) are subject to *<u>Return Without Review!</u>*

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Q: Shared Use

- ***Personnel (How many?)***
- ***Research Description***
  - → ***Format?***
  - → ***Drives Request***
  - → ***Bells/Whistles***

Q: Management

- ***A management plan is required and should describe allocation of time to users, anticipated downtime, operations and maintenance, etc.***

Great Researcher

≠

Great Manager!

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Q: Management

- ***All NSF proposals must include (or not?) a data management plan (DMP) describing how NSF-funded research will be made available at incremental cost in a reasonable time.***

DMP for instruments?

MRI Proposals

What makes an MRI proposal fail <u>during</u> 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;
- Proposals that request instrumentation that is otherwise reasonably accessible;
- Proposals that do not adequately match the budget to the scope of the project;
- Proposals that do not describe research training, particularly for groups underrepresented in science & engineering or persons with disabilities.

These proposals will be *not review well!*

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!

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 generally 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

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Describe your activities and goals in the context of the mission of your organization.

MRI Proposals

Some Additional Thoughts…

- Demonstrate leadership and commitment to complete the project.

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.

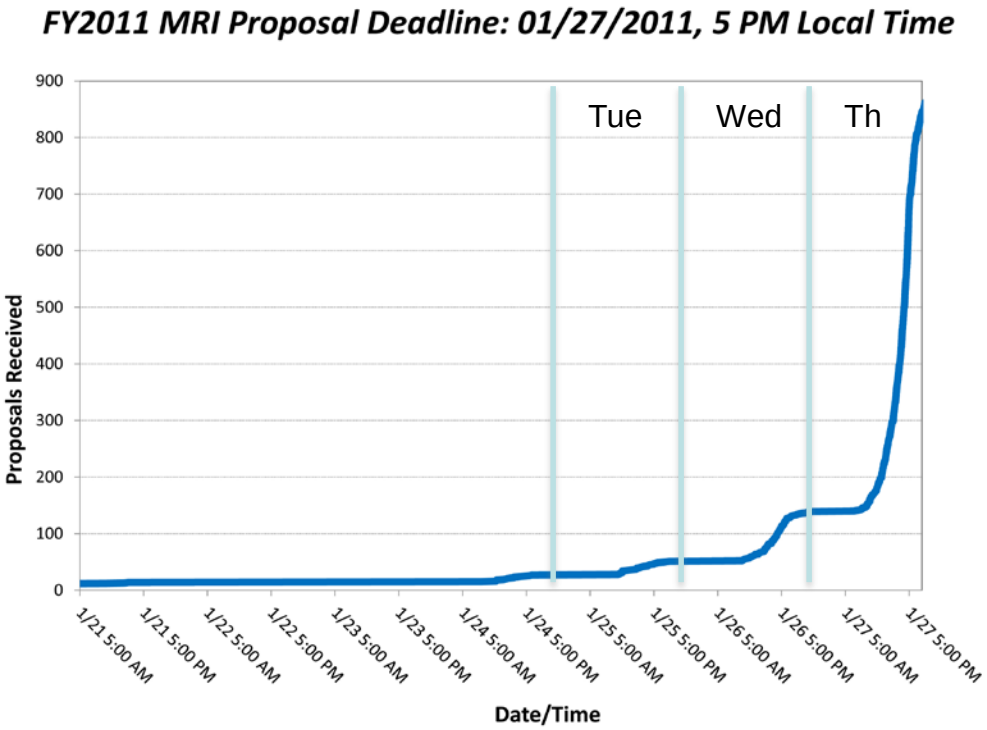
So your proposal is technically flawless but is it compelling?

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!



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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?***

2015 MRI Award Snapshot - Overall

Number Reviewed: 822 (184 DEV, 638 ACQ)
Dollars Requested: $532.88 M
Mean Dollars Requested: $649.07 K
Median Dollars Requested: $500.00 K
Number of Awards: 167 (35 DEV, 132 ACQ)
MRI Amount Awarded: $74.18 M
NSF Amount Awarded: $94.54 M ($103.19 requested)
Overall Success Rate: 20.3%
Mean Award: $566.10 K
Median Award: $379.13 K
Number of Institutions that Participated[1]: 436
Number of Institutions Awarded: 151

1) 1 proposal: 175. 2 proposals: 136. 3 proposals: 125.

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2015 MRI Award Snapshot

By Institution Type

	Ph.D.	non-Ph.D.	Non-degree	MSI
# reviewed	504 (149 DEV)	292 (27 DEV)	26 (8 DEV)	107 (20 DEV)
$ Requested	$390.46 M	$125.26 M	$17.17 M	$61.08 M
Mean request	$774.72 K	$428.96 K	$660.27 K	$570.81 M
Median request	$588.95 K	$338.44 K	$481.33 K	$505.11 K
# awards	107 (28 DEV)	54 (4 DEV)	6 (3 DEV)	21 (6 DEV)
NSF $ awarded	$74.10 M	$16.38 M	$4.05 M	$12.32 M
MRI $ awarded	$55.03 M	$15.66 M	$3.49 M	$9.66 M
Success rate	21.23%	18.49%	23.07%	19.6%
Mean award	$692.55 K	$303.39 K	$675.63 K	$586.82 K
Median award	$492.29 K	$264.76 K	$522.42 K	$394.10 K

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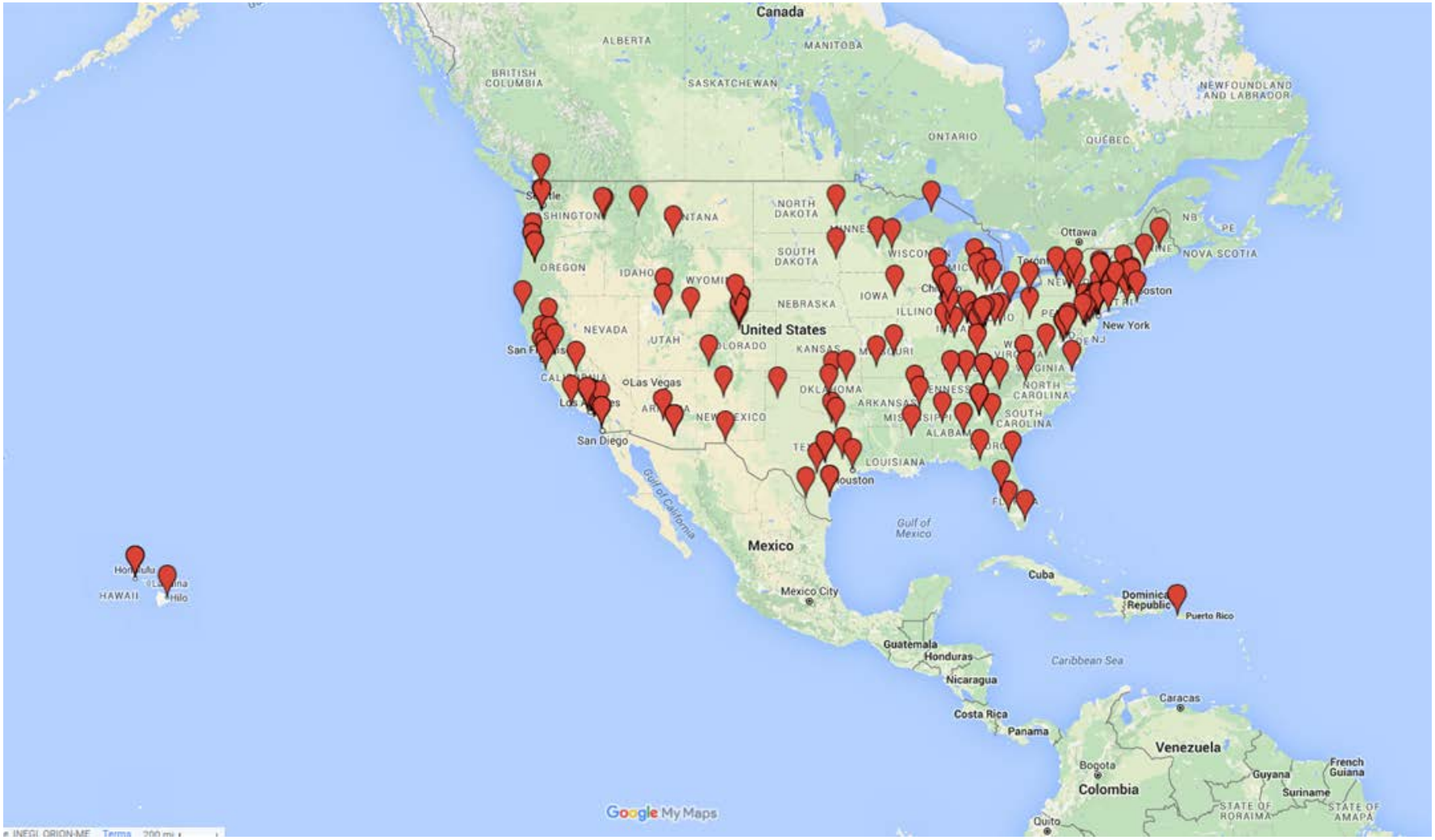
2015 MRI Award Snapshot

By Location



Thank You!

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