

## 2024 NSF MRI Town Hall Q&A

### Question Details

#### ***NSF and MRI***

##### **Anticipated Funding Amount**

**Question:** How does this round compare to last round for available funds?

**Answer:** "The FY24 request for MRI is about 11% above that of FY23. But the appropriations made by Congress are still forthcoming. So, we can only talk about the request we made in the NSF FY24 budget request."

##### **Program Success Rate**

**Question:** What is the selection rate- number of projects funded vs applied?

**Answer:** NSF does not currently publish success rates.

Any data that NSF can provide is available at <https://new.nsf.gov/about/about-nsf-by-the-numbers>.

##### **Award/Decline Process**

**Question:** What would cause OIA to decide to not fund a proposal recommended for funding by a division?

**Answer:** "That is rather complex. However, please realize that PDs make recommendations, and these go through a hierarchical approval process, of which OIA is a big part. The PI always receives an award or decline notice. I am not aware of any way that a PI would be told that a particular Division recommended, but another party declined. All recommendations go through the same decision process."

**Question:** Can you say how many Track 1 proposals you received last year? and how many you funded out of the submitted proposals.

**Answer:** We are unable to provide program-specific submission numbers.

"Correct. However, you may check our website for past awards made under this solicitation- <https://www.nsf.gov/awardsearch/> if necessary."

##### **Program Contacts**

**Question:** "In finding a cognizant PO, should we be reaching out to someone at the division level first or someone one-level-down at the program level?"

**Answer:** "There is no harm in contacting both. The division rep (listed on the MRI Program web page) will understand the solicitation better, while the program level PD will understand the science better."

##### **Program Contacts**

**Question:** "Will our proposal be considered if we have not spoken with a PO, but it is still aligned with the scope of the division?"

**Answer:** Yes - it is not necessary to discuss your proposal with a PO prior to its submission.

##### **Division questions**

**Question:** Which disciplines are housed under SBE?

**Answer:** "Sociology, psychology, economics, political science, etc.  
<https://www.nsf.gov/sbe/about.jsp>"

## EPSCoR co-Funding

**Question:** "Are proposals from institutions in EPSCoR states automatically flagged, or do we need to state this very clearly in the proposal?"

**Answer:** It is usually flagged. But no harm stating it in the proposal.

## Co-Funding between Federal Agencies

**Question:** Would split between NSF and DoD would also be considered cost-sharing or co-funding as it is another federal organization?

**Answer:** A project like this was awarded, but the PI was able to split off part that could be classified as a scientific instrument and was funded by MRI, while the remaining components of the project were funded by an award from another agency.

## Program Contacts

**Question:** "Who is the best person to contact to on your end, if I have questions about budget, project content, details, etc.?"

**Answer:** The solicitation and the NSF website contain contact information under "Program Contacts". For general MRI questions, including what is or is not allowed on the budget, contact [mri@nsf.gov](mailto:mri@nsf.gov). For technical and research-related questions, you should contact the cognizant Program Director(s) best aligned with the research objectives of the proposed instrumentation.

## Proposal Managing Division

**Question:** "For an interdisciplinary team of PIs (split evenly across two directorates), are there strategies for how to decide which directorate to apply to?"

**Answer:** The home program is generally determined based on the predominant topical area out of all the proposed activities. Please contact the most closely aligned PD with your proposal for guidance.

**Question:** "For a large team consisting of 20 or more senior personnel, is it required to include biosketch, C&P and CAO sheets from everyone?"

**Answer:** "The solicitation states that PIs/Co-PIs/Senior Personnel must include a biosketch, but ""Other individuals who will be minor users or developers of the relevant research instrumentation may be described in the Project Description but should not include a biographical sketch."" From the team of 20 people, it may be worth deciding who of these qualify for the different categories." The proposal team should consist of people directly involved in the instrument acquisition or development.

## Broader Impacts

### Broad Representation

**Question:** It was discussed how NSF seeks broad representation of PIs and institutions. Will representation of senior personnel (who are not Co-PIs) also be considered?

**Answer:** "Yes. One effective practice specified in the solicitation is: "In narrative and/or tabular form describe the personnel by research area, number, and type (e.g., senior personnel, postdoctoral fellows, graduate students, undergraduate students) anticipated to use benefit from the instrument." Proposals are also supposed to "address whether, and if so how well, the instrument will broaden the participation in science and engineering research by women, underrepresented minorities and persons with disabilities." Consider using the table to highlight that broad representation."

## Broader Impacts

**Question:** "How specific should the broader impacts activities description be? In one proposal we were not descriptive, and it was funded, in another later submission for another instrument, this type feedback was noted."

**Answer:** Please look at the solicitation (NSF 23-519) Section A, Merit Review Principles and Criteria. Keep in mind that MRI awards are very limited as to what types of Broader Impacts can be directly supported. You may want to consider those enabled by the acquisition or development of the instrument. If you have specific questions, please reach out to the cognizant Program Officer.

**Question:** It was my understanding that it's fine (and even good) if the broader impacts of a project are likely to extend beyond the duration of the project. Is that not true?

**Answer:** Very true. MRI awards do not support broader impacts activities, as they do not support research activities, beyond the actual acquisition/development of the instrument. So, in fact, both are enabled by the project far more than being part of the project.

## Commercialization

**Question:** Where in the proposal should the potential for commercialization of a new instrument be mentioned?

**Answer:** This would be a Broader Impact.

## For-profit Company Users

**Question:** "if an outside company wants to use the instrument that we acquire to do research that will ultimately be for-profit, is this also considered a valid broader impact?"

**Answer:** Yes.

## Budget

### Budget Size

**Question:** Does the budget size have any impact (light or heavy) on the chances of the grant being awarded? Will a budget of about half million for an instrument requested by a small URI or group of URIs be too much for Track-I?

**Answer:** "For the budget request, I encourage organizations to request the amount of funding they need to acquire the instrument the meets the needs of their research."

**Question:** So, it sounds like as long as we justify the need of a budget, the size does not matter, whether it is an URI or Tier 1 or 2 institutions. I wanted to confirm.

**Answer:** "Reviewers and NSF staff are evaluating the proposed project, approach, details of the plan, the investigators involved, etc. The instrumentation costs what it costs, and that would be true regardless of the type of institution requesting the instrument. URI/PUIs are very competitive in the MRI program."

### Budget: Allowable costs

**Question:** "I noted that the RFP indicates "the Program does not support research, education or outreach activities that are enabled by the requested instrumentation." Could you clarify how that differs from the training aspect?"

**Answer:** The proposed activities need to be connected to the requested instrument. Training on the instrument can be supported. Training comprises learning the processes of operations, maintenance, and commissioning. MRI does not provide support for research activities, except those required to commission the instrument. Education activities, such as use of the instrument as part of course work, is also not supported by MRI. Outreach activities, such as demonstrating the instrument capabilities and uses, are not supported by MRI.

**Answer:** "As an example, a grad student that helps to set up the instrument and do testing is being ""trained"" on the instrument. Whereas if the PI team wanted to run the instrument for a class for research and education, NSF wouldn't pay for that."

### **Budget: Personnel Costs**

**Question:** "For Track 3, will there be funds allowed for personnel? Helium management often benefits from the participation of a technician."

**Answer:** The budget requirements and limitations are the same for Track 3 as for Track 1 or 2 (acquisition or development) proposals.

**Question:** Can we request funds for a technician?

**Answer:** According to the solicitation: "... eligible project costs are limited to the cost of the instrument, shipping, installation, commissioning, and calibration, the direct and indirect costs of maintenance, and of appropriate technical support (including training) to operate the instrument during the award period. They should be commensurate with the scale and scope of the instrumentation. Salary support, including fringe benefits and indirect costs, is considered an eligible cost only for personnel directly involved in maintaining the instrument or providing appropriate technical support to operate the instrument."

**Question:** "On which line (A, B, C, D) should personnel costs go in the budget? In other words, where should the "operation and maintenance" funds be budgeted?"

**Answer:** Your sponsored projects office or equivalent should be able to help you with the technical aspects of the budget form.

**Question:** Can we request summer salary (half to a month equivalent) for the PI of the proposal as a compensation to his/her effort in installing the instrument and managing or taking care of it during the project years?

**Answer:** Salary support can be provided for a PI/Co-PI or a technician for installation and support (maintenance of the instrument). This must be well justified in the budget justification and generally does not exceed 30% effort.

**Question:** Thank you for answering an earlier question regarding possibly justifying some funds for the PI with respect to installing the proposed system. Related to this: Can a proposal budget include reasonable (partial) support for a facility manager to assist with operation/training of the new system? Thank you.

**Answer:** "Yes, you may include support of personnel in the budget during the award period. ""Salary support, including fringe benefits and indirect costs, is considered an eligible cost only for personnel directly involved in maintaining the instrument or providing appropriate technical support to operate the instrument."""

### **Budget: Salary Support**

**Question:** The availability of MRI funds to support instrument staff is relatively new. Do you have any guidelines and/or examples of allowable and non-allowable allocations of these funds?"

**Answer:** "From the MRI solicitation:

""Acquisition proposals: Within the Total Project Cost (see Section V.A.6), eligible project costs are limited to the cost of the instrument, shipping, installation, commissioning, and calibration, the direct and indirect costs of maintenance, and of appropriate technical support (including training) to operate the instrument during the award period. They should be commensurate with the scale and scope of the instrumentation. Salary support, including fringe benefits and indirect costs, is considered an eligible cost only for personnel directly involved in maintaining the instrument or providing appropriate technical support to operate the instrument. Any proposal including students or post-doctoral associates in operations and maintenance should justify the involvement in terms

of both instrument needs and the training the next generation of instrumentalists; reviewers will be asked to evaluate the appropriateness of this type of involvement. ""

"For acquisition proposals, at least 70% of the Total Project Cost must consist of items that can be included on the Equipment line of the NSF budget form (Line D)."

**Question:** Is it permissible to include in the budget funds to pay salary to staff who will manage and maintain the instrument?

**Answer:** "Salary support, commensurate with the complexity of the instrument and time commitment required, can be part of the operations and maintenance request. If justified....."

### **Budget: Educational Support**

**Question:** Can the fund partially be used for education purposes such as upgrading an existing instructional lab and/or support senior design projects in a non-PhD-granting institution?

**Answer:** No

**Answer:** "If you are at an HBCU, please contact the HBCU Excellence in Research program with this sort of need for instructional labs."

### **Budget: Quotes must be current?**

**Question:** We received a set of quotes (in June 2023) for the instrument we are proposing for our internal down select process. Can we use those quotes (which will exceed their 30-60 day expiration date) for our final MRI submission or do the quotes need to be 'active' on the day of submission?

**Answer:** ""Inclusion of representative, itemized vendor quotes is required for all MRI proposals. Although a proposal might reference and have a quote(s) for a specific make and model, the proposer is reminded that his/her organization's approved procurement processes must be utilized in the event of an award, to establish the appropriate item(s) to be purchased and ensure that applicable procurement standards are utilized."" Representative quotes are allowed per solicitation."

"You may use those quotes. Should an award be considered, you may need to obtain updated quotes. Generally, additional funds will not be available, so we encourage you to ""negotiate"" with the sales representative to honor their initial quote. A sale is better than no sale for the rep."

### **Budget: Training**

**Question:** Can I budget training fees for students for summer workshop related to the instrument?

**Answer:** The only personnel costs must be related to operations and maintenance of the instrument. Training for instrument operators is allowable, and they can in turn train students, but the student training would not be supported by MRI.

**Question:** "I am at a PUI and currently have a collaborative BRC-BIO grant with others at an R1 institution. I am hoping to purchase a mobile instrument that could be used by interns/students at both field sites (my own and the R1 site). If the new instrument is incorporated into a CURE (research experience) course, would those undergraduate students be considered among the research/training requirement?"

**Answer:** "From the solicitation ""An MRI award is expected to enhance research training of students who will become the next generation of instrument users, designers and builders"" and integrating the instrument into undergraduate course is one way of achieving this goal."

Training is that provided by the manufacturer to ensure that operators can use the instrument competently, responsibly, and safely. During the award period, training of operators may be considered to be eligible costs.

## **Budget: Service Contract**

**Question:** "Regarding the service contract question, is that considered part of the Budget 'Line D' or does the service contract have to be in the 30% of the budget not on line D?"

**Answer:** Service contracts should be included on line D and be for the award period only (up to 3 years for acquisition).

## **Collaborators and Collaborations**

### **Collaborations**

**Question:** Can we share MRI funding with different institution as co-PI?

**Answer:** Yes if a researcher in a different institution plays a critical/major role and your institution allows it.

**Answer:** "Following on that, please note the following footnote in the solicitation concerning institutional limits: ""An unfunded collaboration does not count against the submission limit. Inclusion as a funded subawardee on a development proposal at a level in excess of 20% of the total budget requested from NSF, or as a funded subawardee, when allowed, on any acquisition proposal, will be counted against an organization's proposal submission limit. Separately submitted linked collaborative proposals count against the submission limit of each of the submitting organizations. However, if a subaward to an organization in a development proposal is 20% or less of the proposal's total budget request from NSF, the subawardee's submission limit will not be affected. For subawards within a linked collaborative proposal, the 20% threshold applies to the budget request from NSF in the proposal containing the subaward(s), not to the combined budget request from NSF for the collaborative project.""

### **Collaborators Project Personnel & Involved Organizations**

**Question:** "In "Minor Correction to MRI Solicitation" it states that The proposer is required to send, by email, to MRImailbox@nsf.gov, a spreadsheet containing the information in 6.g.a and 6.g.b in the form of an Excel two-tab spreadsheet. I can't find what 6.g.a and b are referring to in the proposers' book. Could you please explain?"

**Answer:** "The solicitation sections '6.g.a.' and '6.g.b.' refer to in the minor correction can be found in the ""Proposal Preparation Instructions"", section V.A of the Solicitation. Specifically, under a subsection labeled Proposal Setup, which includes various numbered sub-sections corresponding to what should be included in MRI proposals. Sub-section 6.g. discusses the two-tab spreadsheet with project personnel and involved organizations. These should include all collaborators named as primary users and whose use of the instrumentation is described in the proposal.

6.g. reads as follows ""For all proposals. As 1). a PDF file in the Supplementary Documents section, and 2). in a two-tab Excel spreadsheet (one tab for 6.g.a. and one tab for 6.g.b) and delivered by email as described in step 8, below, provide the following:

- a. List of all project personnel, organized alphabetically, who have a role in the project. Use the following format: last name, first name, middle initial, institution/organization.
- b. If the proposal involves organizations other than the performing organization, include a separate list, in alphabetical order, of all institutions and organizations with which project personnel are affiliated. Designate for each an appropriate category: Institution of Higher Education, National Laboratory, Federal Government, Industry, Non-Governmental Organization, State/Local Government, or International organization.""

### **Collaborators and Subawards**

**Question:** "Can Track 2 acquisition proposals demonstrate a broad demand without having multiple sub-awards? That is to say, I have many close collaborators at other universities that would use (and even commission) the instrument — but I suspect they will not be able to be sub-awardees due to their institutional limits."



**Answer:** "Yes, in fact they should not be sub-awardees if they are mainly going to be users. You can list the primary users and describe the types of projects that would be enabled within the proposal."

### **Collaborators: What documentation is allowed?**

**Question:** "For proposals with unfunded collaborators, may we include NSF biosketches for the collaborators, in addition to their letters of collaboration?"

**Answer:** "The PAPPG states that only Senior Personnel are required to have a bio sketch. The MRI solicitation states that ""Other individuals who will be minor users or developers of the relevant research instrumentation may be described in the Project Description but should not include a biographical sketch.""

### **Collaborators and Other Affiliations document**

**Question:** Several of my Co-Is have individual publications (recent NASA missions) with >100 coauthors. Should their COA forms include all of these coauthors?

**Answer:** "In that special case, contact the MRI program director most relevant to the instrument (e.g., Astronomy)."

Typically, all coauthors should be listed, with few exceptions.

### **Industry Collaborations**

**Question:** "Established industrial partners in (bio)chemical analytics often hesitate to commit to custom engineering projects with university PIs for economic reasons. If the company has the expertise to build an instrument in principle but is unwilling to do so, how can the PI justify a development proposal?"

**Answer:** First, if the development work is done at a company for the PI's institution, it would be an Acquisition and not a Development project. If they do not want to undertake the instrumentation, they can be a sub-awardee or sub-contractor in a Development project and provide the expertise to the PI's group. The PI would then undertake the development, with the company providing expert consultation.

### **Industry Collaborators**

**Question:** "We are proposing to acquire an instrument that may have applications in industry (aquaculture); if we have an aquaculture contact who is not a co-PI or senior personnel, should that person in industry submit a statement of collaboration for the MRI?"

**Answer:** "If they are mentioned in the narrative as a potential user of the instrument, their commitment to use can be demonstrated by a collaboration letter. These are in a specific format that should be strictly adhered to."

From the solicitation: ""For-profit commercial organizations, especially U.S. small businesses with strong capabilities in scientific or engineering research or education, are eligible for instrument development support through subawards/subcontracts as private sector partners with submitting organizations; they may not submit proposals. Such partnerships must be substantive and meaningful, and build capacity for instrument development within MRI submission-eligible organization(s). Title to the resulting instrument should be retained by the MRI-eligible performing organization(s).""

## **Cost Sharing**

### **Cost Sharing**

**Question:** "I understand cost-sharing is not permitted. But what about co-funding of NSF with foundations? For example, If the instrument I am trying to obtain is \$1.3M, could this cost, if selected, be co-funded with foundations giving us \$500k (arbitrary number)?"

**Answer:** That would still be construed as cost-sharing.

**Question:** Does cost sharing not being allowed also pertain to installation and infrastructure costs?

**Answer:** "NSF MRI proposals do not provide funds for infrastructure. Installation of the equipment would be allowable, but please carefully read the solicitation. Things like building modifications, utility supply, heat and cooling, etc., are not allowable expenses."

If you have doubts, please contact the relevant Program Director.

**Question:** "Can you expand on ""institutional cost sharing is not required"" part? thanks."

**Answer:** "As part of the CHIPS Act, cost sharing is not required for 5 years. Cost-sharing is not allowed during this time."

**Question:** "Regarding cost-sharing, would split funding between NSF and DoD would also be considered cost-sharing or co-funding, as it is another federal organization? Thank you"

**Answer:** "Cost-sharing is waived for the next 4 years. However, I suggest you contact the NSF PD most aligned to your research to explain the nature of the DOD investment (is it in \$ or existing infrastructure at your institution, etc.) you want to leverage and your particular case."

**Question:** Does the cap mean that instruments with a price tag of > \$4M cannot be requested even if the institution would pay for the difference above 4M?

**Answer:** The proposal budget should now reflect the total cost of the instrument. The cap is at \$4.0M. An institutional contribution would be considered "cost-share", which is no longer permissible.

**Answer:** The Mid-scale Research Infrastructure - 1 (MsRI-1) program now has implementation projects that start at \$4M. Infrastructure and instrumentation are different, so make sure and understand those differences.

**Question:** "I do not want to run afoul of the prohibition on cost-share, but I would like to draw attention to my institution's support of the facility by providing 0.75 FTE for a dedicated specialist. It has always been my impression that institutional support for a facility is an important positive criterion. How can I navigate this issue in the project description and/or budget justification? apologies if someone already posted this question."

**Answer:** Use Facilities, Equipment, and Other Resources to describe this, and don't include any monetary value.

This can also be mentioned in the Operations and Maintenance commitment letter.

## **Eligibility**

### **Eligibility**

**Question:** I am interested a laser facility. My university is an Indian American serving institute for undergraduates. Can I be eligible to submit a proposal for only laser facility for long term?

**Answer:** "Institutions of higher education (Ph.D.-granting and non-Ph.D.-granting), acting on behalf of their faculty members, that are accredited in and have their main campus in the United States, its territories or possessions. Distinct academic campuses (e.g., that award their own degrees, have independent administrative structures, admissions policies, alumni associations, etc.) within multi-campus systems qualify as separate submission-eligible institutions."



From your description, your university is an eligible MSI institution. MRI could support acquisition or development of a single instrument for your laser facility.  
Please contact one of the POs to discuss the specifics about your request."

**Question:** My title is the Research Professor. This is not tenure track or tenured position. I am the director of the core facility. Am I allowed to be a lead PI?

**Answer:** MRI proposals are submitted by the institutions that determine eligibility based on the solicitation. Please confer with your research office.

**Question:** "I saw in the questions that a facility director can be the PI, and the facility manager can?"

**Answer:** "The institution makes the determination of who can be the PI, so please reach out to your SRO for clarification."

### Support for Educational Programs

**Question:** Does MRI support for Phonics Program implementation for Pre-K-1st Grades in Poor counties?

**Answer:** It seems unlikely. but you should contact the MRI contact for the Education Directorate. At the time of the Townhall, there was not an MRI contact from EDU. If there is still not a Program Contact, please write to [mri@nsf.gov](mailto:mri@nsf.gov).

### Eligibility: Current Support?

**Question:** Does the PI need to have a funded research proposal before applying for MRI to improve their chance?

**Answer:** It can be helpful to demonstrate a well-justified need for the instrument. However, it is not required.

### Helium Conservation and Track 3

#### Helium

**Question:** "If we are applying for Track 2, but the instrument we want to acquire has the additional advantage of not requiring helium, is this worth highlighting in our proposal?"

**Answer:** "Yes, absolutely."

**Answer:** "It would have the most value if it is an instrument that traditionally has used helium but the one you are proposing for does not."

**Question:** Do you know if all MRI proposals using helium (NMR instrument) go through Track 3?

**Answer:** "Requests for research instrumentation should be submitted as Track 1 or Track 2.

""Proposals in Track 1 and Track 2 that request support for an instrument that requires the use of helium must describe plans for the conservation, and/or recovery and reuse of helium.""

### Helium Conservation

**Question:** "Clarifying the He recovery plans. It appears you are saying heavy He users (like FT NMRs) must also add He recovery systems as part of the instrument request. These typically involve drying, and recompression, but not reliquification (but they can also reliquefy). A PUI with an FTNMR can end up with many cylinders of low grade He gas annually, for which we would have limited local use, and He suppliers might not be interested in buying back."

**Answer:** ""Proposals in Track 1 and Track 2 that request support for an instrument that requires the use of helium must describe plans for the conservation, and/or recovery and reuse of helium."" Plans for conservation of helium vary based on the institution's helium usage. I'd suggest contacting the MRI program PD in the division of interest to discuss your specific case."

## Helium and Cryogenic Research

**Question:** I have a question related to liquid helium and cryogenic research. Might NSF open a Track 3 next year but more broadly defined than liquid Helium recyclers?

**Answer:** NSF has prepared a FAQ to provide more clarity on the Track 3 proposals. This FAQ document is available to the community through the MRI Program web page. The answer is *no*, NSF has no plans to broaden the scope of Track 3. Instrumentation for helium and cryogenic research may be requested under Track 1 or Track 2.

## Institutions

### Institution Classification

**Question:** Should an institution of higher education that does not have undergraduate programs or doctoral programs in NSF-supported fields but that does award Master's degrees in NSF-supported fields classify itself as a Ph.D.-granting institution?

**Answer:** ""PhD-granting university"" is defined in the solicitation and needs to be certified by the institution: ""Ph.D.-granting institutions of higher education are accredited colleges and universities that have awarded more than 20 Ph.D. or D.Sc. degrees in NSF-supported fields during the combined previous two academic years.""

**Question:** is there any place in the proposal to indicate a PUI?

**Answer:** "As part of the proposal submission, a letter on institutional letter head is required from each sponsored projects office confirming whether the institution is a PhD granting, non-PhD granting, or non-degree granting. The letter does not necessarily identify PUIs. Please refer to the solicitation (Section V.A.6) for further guidance."

### Institution Classification and Award Size

**Question:** My question is are smaller institutions are more likely to receive smaller grants and Tier 1 and 2 institutions likely to receive larger grants?? So is it a wiser idea to request as small budget as possible from URIs? I wanted to confirm this.

**Answer:** Your initial supposition is incorrect. We encourage any applicant to create a budget that is consistent with the instrument that they require to support their research.

Non-Ph.D.-granting institutions do not compete with most R1 and R2 Ph.D.-granting institutions. So the request size is not relevant in this context.

## Institutional Commitment

**Question:** Can I get a letter of commitment about purchasing auxiliary equipment? From my institution upon awarding MRI?

**Answer:** It depends. Equipment required for the MRI instrument to perform its measurements as described in your proposal must be requested from the NSF as part of your MRI proposal. Your institution may provide auxiliary infrastructure and safety equipment that would be considered ancillary, generally found in a laboratory, or relatively easily procured, as described in the solicitation. Examples might be safety goggles, a fume hood or other extraction system, cooling water, service gas lines, etc.

## Institutional Commitment: Service Contracts

**Question:** Are we allowed to ask our institutions to continue to support the service contract beyond the funding period?

**Answer:** "Yes, this can be part of the institution's commitment to operations and maintenance."

## Institution Eligibility

**Question:** Can a non-profit institute submit a proposal for MRI?

**Answer:** "Solicitation NSF 23-519 includes a section on Submission Eligibility, which discusses eligibility of non-profit organizations. See below:

""Not-for-profit, non-degree-granting domestic U.S. organizations, acting on behalf of their employees, for example (but not limited to) independent museums and science centers, observatories, research laboratories and similar organizations that are directly associated with the Nation's research activities. These organizations must have an independent, permanent administrative organization (e.g., a sponsored projects office) located in the United States, its territories or possessions, and have 501(c)(3) tax status.""

**Question:** Are non-degree granting institutions eligible?

**Answer:** "Yes, non-degree granting organizations may submit if eligible to receive NSF funding."

""Not-for-profit, non-degree-granting domestic U.S. organizations, acting on behalf of their employees, for example (but not limited to) independent museums and science centers, observatories, research laboratories and similar organizations that are directly associated with the Nation's research activities. These organizations must have an independent, permanent administrative organization (e.g., a sponsored projects office) located in the United States, its territories or possessions, and have 501(c)(3) tax status.""

**Question:** "Is it possible for the Dept. of Biomedical and Pharmaceutical Sciences, College of Pharmacy professors to apply for MRI as PI?"

**Answer:** "Of course you can apply. It is the nature of the research that is being conducted with the instrument that could possibly determine the success or failure of the proposal. Be aware that the Biological Sciences Directorate at NSF does not support human health related research. However, it is certainly possible for projects addressing human disease or therapeutics could be relevant to understanding basic biological mechanisms."

## Institution focus outside NSF-supported Research

**Question:** I am a Core Director at a Medical School but readily in a position to support NSF-supported research projects by offering service and instrumentation to PIs at other institutes in the area. Would working at a primarily NIH funded institution put me at disadvantage?

**Answer:** "At a base level, no, it should not put you at a disadvantage. However, you will have to make sure that the Intellectual Merit and Broader Impacts are NSF-like."

The research described in the proposal should be primarily in NSF-supported fields of science and engineering. Research in fields that NSF does not typically support are considered part of Broader Impacts.

## Institutions: Non-Ph.D.-granting and Minority-Serving

**Question:** We're an MSI/PUI institution. Should this be included in the proposal title?

**Answer:** "No. This information is required as a separate document, as described in Section V.A.6 of the solicitation.

As for the title, it must be concise and convey the primary purpose of the proposal, e.g., ""MRI: Track # Acquisition of \_\_\_\_,"" or ""MRI: Track # Development of \_\_\_\_.""/>Consortium project titles must also be identified in the title e.g., ""MRI Consortium: Track # Acquisition of \_\_\_\_,"" or ""MRI Consortium: Track # Development of \_\_\_\_." (Track # refers to submission of a Track 1, Track 2 or Track 3 proposal.)

You can further describe your institution in the Program Description.

### **Institutional Limits**

**Question:** Our institution still has not made internal selections. Is this timeline typical or are they lagging?

**Answer:** "Given the new deadline, it is difficult to gauge timelines."

**Question:** "Are there limitations to awarding the same school multiple MRIs in a 3-5 year time period? If our institution had a recent MRI led by a different school (say engineering), is it reasonable for a different one to be submitted by Arts and Sciences?"

**Answer:** "There are no constraints based on previous awards. In fact, it is possible to receive multiple awards in the same competition, although that is more likely in different disciplines."

**Answer:** According to the solicitation (NSF 23-519): "An MRI proposal may request from NSF up to \$4 million for either acquisition or development of a research instrument. Each performing organization may submit in revised ""Tracks"" as defined below, with no more than two (2) submissions in Track 1 and no more than one (1) submission in Track 2. For the newly defined Track 3, no more than one (1) submission per competition is permitted. As a result, it is now possible for an institution to submit up to four MRI proposals within the Track limits as described above."

**Question:** "Could more than one (different) proposal be submitted by the same institution at the same time?"

**Answer:** "Yes, but there are limitations per Track: ""Each performing organization may submit in revised ""Tracks"" as defined below, with no more than two (2) submissions in Track 1 and no more than one (1) submission in Track 2. For the newly defined Track 3, no more than one (1) submission per competition is permitted. As a result, it is now possible for an institution to submit up to four MRI proposals within the Track limits as described above.""

**Question:** "If an institution submitted proposals in Jan. 2023, does the number of submissions per track count towards this submission cycle or is this Oct-Nov. submission window considered a new cycle?"

**Answer:** No it does not. NSF is on the Federal fiscal year, which starts on October 1.

### **Institutional Commitment to Operations and Maintenance**

**Question:** "The feedback for my proposal said that I should have a technician, but I am at a PUI. Other solutions?"

**Answer:** Institutions must commit to supporting operations and maintenance during the useful lifetime of the instrument. This does not imply hiring staff, for example. Rather it requires demonstrating that the institution has a plan for keeping the instrument in operation for the planned research beyond the MRI award period, making it available for users, and other activities as described in the Project Description. This can be based on planned research proposals to support science operations, a fee system for external users, assigning institution personnel responsibilities for operations and maintenance as part of their normal time and effort, and other plans. You should work with your institution on finding the best way for you to answer the reviewers' concerns.

### **Instrument**

#### **Instrument Accessories and Safety Equipment**

**Question:** "Can we ask in the budget for the required accessories, safety development, special exhaust systems and other requirements required to run the instrumentation?"

**Answer:** Accessories required to connect the instrument to required support equipment, such as electrical power, networks, chilled water, gas exhaust, and other systems are allowed. Accessories

necessary to operate the instrument safely are also allowed. However, infrastructure is not allowed, as described in Section II of the solicitation.

### **Instrument Components/Accessories**

**Question:** "I am at a PUI and some of my feedback was that my instrument was too expensive, despite making a strong case for the instrumentation and the specific bells and whistles. Any suggestions on how to make a strong case?"

**Answer:** "Addressing the reviews can only help improve your proposal. The budget is not a review criterion, but please request only what the amount needed and present a compelling case for each of the accessories."

**Question:** Can part of the instrument include data processing hardware which is necessary for the successful use of the instrument altogether?

**Answer:** "'A plan for managing data that will be generated by the instrument is required so that users, as needed, can more easily meet NSF's data management requirements. Please see the PAPPG for further information'."

Instrument add-ons or accessories that facilitate its intended uses are allowed.

**Question:** "Can part of an electronic instrument package include a data processing unit, or is this considered a separate instrument?"

**Answer:** "A group of components that serve as a single instrument can be eligible."

**Question:** Would a specialized TEM holder be allowed with the acquisition of a TEM instrument?

**Answer:** Yes in general. Be aware of the minimum requirement.

The need for the specialized holder should be described in the Project Description.

**Question:** Is an uninterruptible power supply a component that can be funded with the scientific instrument?

**Answer:** "Yes, it would be best included as part of the instrument package."

**Question:** "If we are interested in a laser system for example, then is it allowed that we include detectors, spectrometers, and/or microscope together with the laser use?"

**Answer:** If these accessories are integral to the optimal function of the laser, are not readily available in your laboratory, and if they are to be integrated into the laser system, they are allowable. Please keep in mind two things: 1) for acquisition proposals, the equipment budget cannot be below 70% of the total budget, and 2) you should make the case for the need of any accessories in the Project Description, as reviewers may ask if they see it in your budget.

### **Instrument Accessories – Development**

**Question:** "We want to develop a system that can be connect to different end sensors or actuators for different users or projects, can we add the sensors or actuators to the scope? or those are the responsibility of users?"

**Answer:** This depends. Sensors or actuators that are integral to the function of the instrument would be allowable. That said, it is best you have a conversation with the cognizant Program Officer.

### **Instrument Development - Single Instrument**

**Question:** "For clarification on the development of an integrated instrument, would the MRI program support the creation of a new behavioral lab that would propose several instruments

including eye-tracking devices, immersive technology (e.g., VR, AI), biometric wristbands, brainwave headsets, and facial expression analysis?"

**Answer:** From the solicitation: "A proposal integrating components that when combined serve as a single research instrument must justify the request in the context of the MRI goal of providing support for individual research instruments, including requests that incorporate elements to reduce consumption of helium. The MRI Program does not typically fund common, general-purpose ancillary equipment that would normally be found in a laboratory and/or is relatively easily procured by the organization, nor does MRI support requests for multiple instruments."

## **Instrument Development**

**Question:** "Can a Development project also have an Acquisition component, and how much of the budget is expected for Acquisition in this case?"

**Answer:** "Development proposals include the resources, instruments and equipment needed to accomplish the new instrument. They are standalone requests, not combined with Acquisitions."

**Question:** "This is a follow-up to the earlier question, as I couldn't understand the response. The question was: "Can a Development project also have an Acquisition component, and how much of the budget is expected for Acquisition in this case?" The response was "Development proposals include the resources, instruments and equipment needed to accomplish the new instrument. They are standalone request, not combined with Acquisitions."

The instrument in our vision is a suite of software tools (which we will build and integrate in the project) running on a cyberinfrastructure (GPU clusters at its core). Can the budget have a part for the acquisition of the GPU clusters? Does the project fit the program's scope? Thank you!"

**Answer:** "Development proposals can, and probably should, have funding on the equipment line. That said, this is a question best raised with a cognizant Program Officer from the CISE Directorate. Please see the list of Program contacts on the MRI Program web page."

**Question:** "For development of a MRI instrument, what is the best place to stress the efforts of each personnel to the design and construction of an integrated instrument (project description or budget justification)? What is the appropriate ratio of personnel cost to material cost? Our last submission received a reviewer's comment regarding improper ratio of the two."

**Answer:** The best place is within the Project Description. The budget justification should not be used to circumvent the 15-page limit. The ratio of personnel to materials (for a development) can vary widely. It is incumbent upon the PIs to justify the need for the personnel time.

**Question:** "For a development project, how deep should we go with the design and construction of the instrument? Do you have suggested pages to talk about the design in comparison to the primary research project?"

**Answer:** The MRI solicitation has a suggestion. See Section II.A. Beyond that, the amount of detail to include is your decision.

**Question:** To develop a platform that need to assemble multiple functional components. Is it okay?

**Answer:** If you are just assembling multiple components into a single instrument platform - then this would be considered acquisition and it is okay.

Alternatively, if you are describing instrumentation that manufactures functional components, you should discuss the idea with a cognizant MRI Program Officer for the best-related NSF Division.

## **Instrument Development: Design?**

**Question:** Would computer chips that we design be counted as a research instrument?

**Answer:** "If your MRI proposal would include design activities, please consult the solicitation guidance for Development proposals, specifically. Further instructions on what to include in a



Development proposal can be found in the Proposal Preparation and Submission Instructions section of the solicitation. Please keep in mind that the MRI program does not fund research and the line between development and research can be grey. Please contact the most relevant cognizant MRI Program Officer for discussion."

### **Instrumentation: Cyber versus Physical**

**Question:** Is there any weight/preference given for computing resources versus instrumentation resources? Or is it primarily based on the scientific need and whether the requested resources are reasonable?

**Answer:** Proposals for a multi-user computing resource are eligible for the MRI program and often submitted to the NSF Office of Advanced Cyberinfrastructure. There is no specific weight/preference for computing resources versus other instrumentation besides the budget breakdown by scientific directorate referred to in the webinar.

### **Instrument: Does a microprocessor qualify?**

**Question:** Would an implantable microprocessor chip be considered as an instrument, or should the instrument encompass broader components specific to how the chip is going to be used such as e.g., probes, contact wires, and other interface electronics, beyond the chip?"

**Answer:** "Within the MRI solicitation, you may find this quote useful when considering what components would constitute a 'single research instrument':

""A proposal integrating components that when combined serve as a single research instrument must justify the request in the context of the MRI goal of providing support for individual research instruments....The MRI Program does not typically fund common, general-purpose ancillary equipment that would normally be found in a laboratory and/or is relatively easily procured by the organization, nor does MRI support requests for multiple instruments.""

### **Instrument Example**

**Question:** "Could the fund could be used to acquire a gas analyzer or an eddy tower."

**Answer:** Please reach out to the appropriate cognizant Program Officer.

### **Instrument Manufacturer or Supplier: Foreign-based**

**Question:** Can the equipment be purchased from foreign country (UK)?

**Answer:** "As long as it is perhaps a sole source and justified."

For NSF, the "Build America Buy America" (BABA) Act applies to "construction, alteration, maintenance or repair of infrastructure. For more information, see the NSF's "Build America, Buy America" website at <https://new.nsf.gov/funding/build-america-buy-america>.

### **Instrument Purpose**

**Question:** Is this proposal solely for research purposes? Can there be educational and outreach aspects?

**Answer:** "Research training is important in that it prepares the next generation of researchers. Pure education and outreach can be broader impacts, but are not funded by MRI nor is the research that is enabled."

### **Instrument Service Contract**

**Question:** Is it possible to request instrument service contract money in the budget for Track 1?

**Answer:** Yes, but only for the award period.

## **Instrument: Supplies for Operations**

**Question:** "If specialized reagents/consumables are required for the use of the equipment, can those items be included in the requested funding?"

**Answer:** "While we will support the acquisition of reagents needed to support the upkeep, calibration, and commissioning of the instrument during the award period, we do not support the acquisition of reagents necessary to perform the actual research projects."

## **Instrumentation Type**

**Question:** Does it make a difference if the instrumentation is lab or field equipment?

**Answer:** Both types of equipment are perfectly acceptable for the MRI program.

## **Instrument Type: Virtual?**

**Question:** Would a realistic virtual earth for everything (think Google Street View with time slider wvTensorFlowAI) paralleling planet earth (so digital physical) be a research instrumentation project proposal?

**Answer:** That may be too specific of a question for this webinar. I would encourage you to follow up later with the most closely-related program that you can find at NSF.

**Question:** World University & School (WUaS) seeks to build a realistic virtual earth further (think Google Street View with time slider) as campus and STEM field site (and has the green light to accredit and license with Middle States Commission on Higher Education and the state of PA's department of education - and planning to offer online Bachelor, PhD, Law, MD, IB high school, AA and Master's degrees, in 200 countries and in their main languages). Does the NSF award grants to virtual campuses? Should an applicant university be fully accredited?

**Answer:** Institution eligibility is described in the solicitation.

**Question:** "Would a realistic virtual earth (so physical-digital) be a research instrumentation project that the NSF has a history with?"

**Answer:** Please consult the appropriate PO for the NSF supported discipline this development will benefit. There is a list of Program contacts on the MRI Program web page. I suggest you contact POs listed under NSF/GEO for further guidance.

## **Instrument Upgrades**

**Question:** If I have a desperate need to upgrade our instrument that's badly outdated. Do you consider this as an augmentation or a new enabling acquisition?

**Answer:** "We are unclear about this. If you are in need of a new instrument b/c the current one is not functional and beyond repair, then that would be a new acquisition. If you are willing to add a component to revive or upgrade an existing instrument, it is still going to be a new acquisition. MRI is either acquisition or development"

## **Instrumentation or Infrastructure?**

**Question:** Can the proposal leads to make a Core facility which impact a state research?

**Answer:** "The program supports the acquisition or development of a single instrument, not the creation of a core facility."

## **Multiple Instruments?**

**Question:** Can you ask for more than one instrument in one proposal?

**Answer:** The simple answer is "no". However, instruments are composed of multiple components, some of which may themselves be classified as "instruments". Development projects often combine

multiple instruments to achieve a specific measurement capability. Read Section II of the solicitation for a description of what the program supports. Then if you have questions, please reach out to the cognizant program Officer best aligned with your project. You can find the names and emails of POs in the Program Contacts list on the MRI Program website.

**Question:** "Can we include two instruments, one being necessary for sample preparation for analysis on a major instrument?"

**Answer:** "While the award is generally for a single ""instrument"", we do recognize that at times, an ancillary, non-data generating instrument, will complete a reasonable pipeline. So, yes." Please consult your plans with a cognizant Program Officer.

"This is best included, if possible, with the main instrument in a single quote, and the proposal should make a compelling case for its inclusion."

**Question:** Are two instruments allowed?

**Answer:** Each proposal should include a single instrument.

**Answer:** "Generally no, but it can depend exactly on what you are asking for. The key statement in the solicitation is: ""An MRI proposal may request support for the acquisition or development of a research instrument or components that when combined serve as an integrated research instrument.""

**Question:** Let me reiterate the questions: is it allowed to put a single crystal diffractometer and a power diffractometer in one proposal? They are both needed for the same research.

**Answer:** "An MRI acquisition proposal is characterized by a purchase or upgrade of a generally available, yet sophisticated, instrument with little or no modification and risk. So no."

From the solicitation "An MRI proposal may request support for the acquisition or development of a research instrument or components that when combined serve as an integrated research instrument" The request for two different instruments as you described are not allowed

**Question:** "Can the proposal include multiple instruments? For example, a big instrument for research and related smaller instruments for research related trainings? And can the instrument be obtaining software?"

**Answer:** "No, the program does not support the acquisition of multiple instruments."

**Question:** "Are there guidelines on how cohesive the equipment requests should be? If several pieces of instrumentation can serve as a 'toolbox' enabling different types of research, would such a collection make for a competitive proposal?"

**Answer:** "The solicitation states: ""The MRI Program does not typically fund common, general-purpose ancillary equipment that would normally be found in a laboratory and/or is relatively easily procured by the organization."" Please note that the various pieces when combined must serve as an integrated research instrument. The program is not intended to support the creation or augmentation of a facility. Please consult your idea with a cognizant Program Director."

**Question:** Can MRI ask for more than 1 major instrumentation? Since some projects require series of stages in getting complete study done.

**Answer:** "No, only a single instrument is allowed."

**Question:** Can we use MRI to upgrade two instruments commonly used together but can be used separately based on the type of research being done?

**Answer:** "Generally, this would be considered two separate instruments and thus not permissible."

## **Instrument: Single Instrument with Multiple Components**

**Question:** We are in need of 2 environmental chambers (\$108K each). Would proposing 2 be OK or is this for single items only?

**Answer:** MRI program allows proposals for a 'research instrument or components that when combined serve as an integrated research instrument.' It is up to your team how you wish to make the case for your 2 environmental chambers constituting an 'integrated research instrument.'

## **Safety Equipment**

**Question:** Can safety equipment required for instrument installation be included in the Line D equipment budget?

**Answer:** It can be included in the budget. Work with your sponsored program office to determine which line in the budget form should be used.

## **Installation**

**Question:** What the general elements that can be included in install cost?

**Answer:** For acquisition projects, this is the cost for the supplier to install the instrument at your location. It should be included in the quote. For development, this is generally part of the development process.

## **Installation and Infrastructure**

**Question:** Can you include cost to remove old infrastructure as installation cost?

**Answer:** No.

## **Management Plan**

### **Management Plan**

**Question:** "We want to design and build a testbed. After successful building the testbed, can we charge for using it based upon agreement?"

**Answer:** "Under the ""operations and maintenance"" discussion section of the solicitation, you may find the following text helpful:

""Many major research instruments have long lifetimes and can be expensive to operate and maintain over that lifetime. Proposals should only be submitted by institutions that are willing to undertake the responsibility of maintaining and operating the instrument for the benefit of a community of users engaged in research and research training. Defraying the costs of operations and maintenance through user fees is permissible, but not required.""

**Question:** What are the most missed items in the management plan?

**Answer:** A description of the elements of the management plan is given in the solicitation, Section V.A.1.e. The question is not so much one of what items are missed as whether the PI read and followed the guidance given in this section. Reviewers use this section to evaluate the content of the Management Plan, but it is up to the PI to determine what elements are most relevant to their project and make that case in the proposal.

**Question:** "Could you please elaborate on the ""management"" expectation by any experienced Co-PI in case the PI is an Early Career Researcher."

**Answer:** There is likely going to be a distinction in the expectation for management experience between a simple acquisition proposal and a national-level development proposal. Effectively the entire package (beyond the PI qualifications) should indicate that there is enough expertise to conduct the project.

## **Management Plan: Income from Users Fees**

**Question:** Can revenue from private industry users be proposed for the long-term maintenance of the instrument?

**Answer:** Your institution is responsible for managing the instrument operations and maintenance during its useful lifetime. Part of that may come from charging user fees. Such plans should be described in the Management Plan.

## ***Operations and Maintenance***

### **Operations & Maintenance**

**Question:** What kind of institutional commitment towards maintenance of the instrument is expected in the proposal? Will charging the users (as in a recharge center) be sufficient?

**Answer:** "From the solicitation Section V.A.6.b: "Include a letter documenting the performing institution's commitment to ensuring successful operations and maintenance over the expected lifetime of the instrument." However, no \$ amount should be included as cost-sharing is not allowed."

**Answer:** Section II.C states: "Defraying the costs of operations and maintenance through user fees is permissible, but not required."

**Question:** "If we are proposing to acquire an instrument that requires 2-3 operators for safety reasons, can we hire graduate students to serve as technicians who operate the instrumentation?"

**Answer:** An MRI award can provide support for operations and maintenance (which may include commissioning but not research) during the award period. This must be well justified in the Project Description and Budget Justification. Your institution must also provide a letter describing how it will support operations and maintenance during the useful lifetime of the instrument. If it intends for these functions to be performed by graduate students, it must describe how the institution will support continuity and institutional knowledge and competence.

It may also be a question to raise with your institution's Environmental Health and Safety Office.

### **Operations and Maintenance Commitment**

**Question:** "Our institution is in the process of hiring a technician, who will be dedicated to assisting the research team with the management and maintenance of the proposed equipment. However, that person won't be known until after the deadline. How would you recommend we address this in the proposal? Should it be noted in the two-page institutional letter?"

**Answer:** That is a good place and you may want to mention it in the O&M section of the proposal to better alert the readers of the proposal.

It should also be mentioned in the Facilities, Equipment, and Other Resources document.

**Question:** Does the institution's commitment need to provide a specific dollar amount?

**Answer:** "Cost sharing is currently not allowed, so there should be \$0 committed from your institution."

Your institution's commitment letter for post-award Operations and Maintenance should not include dollar amounts.

### **Operations and Maintenance: Service Contract**

**Question:** Can we include a service contract for years 2 and 3 as part of the proposal budget?

**Answer:** "Yes, we encourage you to include service contracts in the cost of the instrument"

**Question:** "Should the service contract expense be budgeted as a capital expense, or as one for which indirect applies, e.g. equipment maintenance?"

**Answer:** NSF encourages that the service contracts be part of the instrument cost and thus not subject to indirect costs.

**Question:** Can you please reiterate your comment on the service contracts? In the past I was told we could NOT request service contracts.

**Answer:** We encourage you to request service contracts for the duration of the award (generally 3 years).

### ***Prior Support***

#### **Prior MRI Awards**

**Question:** "Does the NSF award search site show multiple divisions under "NSF Org" when an award was accepted under multiple divisions, or does it just show one?"

**Answer:** Give it a try and find out!

**Answer:** It should show if multiple programs fund a proposal

#### **Prior NSF Support**

**Question:** "If the PI and Co-PI have not received any NSF funding in past 5 yrs (but funded by other agencies), should they still include a Prior Results section, about their last NSF funded project?"

**Answer:** "If there is no prior NSF support (based on the end date within the past 5 years), then this section is not needed. However, I might suggest that a heading for this be included and then a statement to say that this is not applicable for the investigators named on this proposal."

### ***Prior Submissions***

#### **Prior Submission**

**Question:** "I'm referencing a declined proposal, but the reviewer comments have not been released yet."

**Answer:** That is unusual. You need to contact the cognizant PO and find out why the reviewer comments have not been released.

**Question:** "If (re)submissions must be ""substantially revised"" and proposers should demonstrate a responsiveness to prior reviewer comments, how can the proposers do this if the reviewer comments from the previous round haven't been released yet?? Can you please encourage program directors to release comments so that proposers to the upcoming cycle can respond to comments? Thank you."

**Answer:** "Please reach out to the MRI coordinator for your proposal and get an update as to the status of the review process. Most proposals should have been awarded or declined at this point, so you need to find out why an action has yet to be taken on your proposal."

**Question:** "Can we mention on our proposal the previous submission? For example, we had submitted in the previous cycle, but it was not awarded. We are requesting for the same instrument again because it is very essential for the reasons mentioned in the proposal. Can we mention it? Will it have positive or negative impact to our proposal? Thanks."

**Answer:** You may mention the previous submission and also that your present submission has responded to comments from reviewers of the previous submission.

**Question:** "If we are addressing the reviewers' comments and mention them on the new proposal for the same instrument in this cycle, should we highlight or mention what exact concerns or doubts of the reviewers have been addressed? Should we just incorporate their concerns and address but do not mention the particular concerns?"



**Answer:** "You need not be specific, though you can say, generally, that concerns raised in a previous review have been addressed. We treat each submission as a new proposal - which goes through a whole new review process. The POs will certainly pay attention to the changes requested and the previous feedback, to make sure they were addressed but the new reviewers would not necessarily know that."

**Question:** "From early 2023's webinar, one the answers in the FAQs, mentioned that a declined application should be submitted as New Application and should not mention any reviewers' comments from declined application in the New application. Please remind us if that is still correct."

**Answer:** You may want to mention that this proposal responds to feedback from a previous review, however, you should not feel it necessary to specify what those comments were. It is very likely that the new submission will not be reviewed by the previous reviewers.

**Question:** Does the review panel take into account the revisions of the proposal in response to the previous year's submission? Assuming that last year's proposal is not granted.

**Answer:** "If your proposal is a revision of a prior year's submission, you should provide specific information that helps to demonstrate that you have been responsive to prior reviewer comments. NSF's proposal format does not require that, but it is an effective practice in proposal development to guide the reader of your proposal. Help the reviewers see the improvements to the proposal."

**Answer:** "A reminder that the review slate for the proposal is likely to be different than the previous version, so even if you address reviewer comments that does not mean that you will be funded. NSF is different from journal reviews in this way. Each proposal is technically a new submission."

**Question:** "The PAPPG says, ""A declined proposal may be resubmitted, but only after it has undergone substantial revision."" If a declined proposal receives overall excellent reviews, how much change is needed to justify resubmission without risking changing the aspects that were considered excellent? i.e., what qualifies as ""substantial revision""?"

**Answer:** We would strongly suggest that you contact the program director relevant to the area that you have proposed. They could provide more specifics about how to calibrate the revision to meet the spirit of the PAPPG instructions.

## **Project**

### **Research**

**Question:** It has been suggested to me by some organic chemists that synthetic medicinal organic chemistry is a liability for NSF MRI requests. Does the NSF MRI program preclude this kind of research; is it only the purview of NIH programs?

**Answer:** The instrument should primarily enable research in NSF-fundable research areas. Benefits to other disciplines may be included as examples of the broader impact of the instrument requested.

### **Research: MRI for a Ph.D. Project**

**Question:** Can we draft a proposal for acquiring an instrument necessary for our Ph.D. dissertation?

**Answer:** "An MRI acquisition proposal should describe a ""multi-user/shared instrumentation"". An instrument for a single researcher or single research group would likely not be competitive. Student research activities enabled by the instrument are welcome to be included among the research use cases described in the appropriate section of the proposal."

"The answer is yes, but the research will have to be supported by other funds."

## Research Uses

**Question:** " We are interested in an instrument that would be used regularly by 5-6 members across the department. Is the expectation that there will be a primary project proposed with additional users, or is it acceptable to outline 5-6 projects of equal weight?"

**Answer:** The program encourages instruments that will be shared and support exciting research. The strategy for justifying your proposal is up to you and your team.

**Question:** "Does NSF support instruments that can be used for research in ocean renewable energy (as one of the possible projects)? If so, which division typically supports that type of research?"

**Answer:** "Depending on the focus, GEO and ENG are the most likely Directorates that align with this topic."

Within GEO, the Division for Ocean Sciences would be the likely choice, while in ENG, maybe the Division for Civil, Mechanical, and Manufacturing Innovation would be a place to start.

**Question:** "Hi all, I am a new PI and this is my first NSF MRI proposal. How do you recommend balancing research breadth to show value to the larger community and achieving sufficient scientific depth to convince reviewers of your research?"

**Answer:** That is a question you will have to resolve for your own case. Keep in mind that you need to convince reviewers of both, but there is no one formula for doing so.

**Question:** "Thank you, is there an area for Recreation Therapy?"

**Answer:** "That may fall too far on the health side to be NSF-like, but we do encourage you to go to the award search page and put in a few relevant terms. That could lead you to the programs that fund similar research."

## Research supported by NSF: Health-related

**Question:** Would it be appropriate to contact a PO to discuss if we are unsure whether our research is too human health related? Are there NSF resources we should reference to try to understand the line between basic biological processes and human health related areas?

**Answer:** "You should contact the MRI Program Contact for the BIO Directorate."

## Research: Not typically supported by NSF

**Question:** "Instrumentation that will facilitate medical research (disease, cancer etc) does not qualify, correct? Research projects supported by the instrument need to align with NSF programs but don't necessarily need to be NSF-funded. Do I understand this correctly?"

**Answer:** In general, this is correct. An MRI proposal needs to be aligned with an NSF program. "The Biological Sciences Directorate at NSF does not support human health related research. That said, many ""human health"" associated research areas illuminate basic biological processes. So, it can depend how you frame the research. Also, CBET in Engineering has greater flexibility on some human health related areas."

**Question:** "If clinicians have the desire to use our proposed instrument for more clinically-oriented minimal risk, not clinical trial research, is this an appropriate user base to include in our proposal? or should it all be basic research?"

**Answer:** NSF does not limit or monitor the types of research conducted on the instrument. Such research would be part of the Broader Impacts.

## **Shared Use**

### **Shared Use**

**Question:** If similar equipment is available in other institution, will be okay to request for similar equipment or research?"

**Answer:** "This will depend on your specific circumstances and the type of instrument and user base. In all cases, the critical need needs to be clearly demonstrated."

**Question:** "In evaluating the shared use of an instrument, do you take into account the amount of time required for testing. Such as an instrument that can collect data in 1-2 days may have 6+ users. Is it acceptable for an instrument that takes 3 months to collect data to only have 4 users, with the instrument being used daily for most of the year? Just wondering if the protocol length and amount of use is also evaluated and not just the number of users?"

**Answer:** "Generally, such questions are handled by reviewers (and not the program) in your specific scientific disciplines based on the NSF Merit Review Criteria."

This is different for every instrument and field(s) of research.

Please consult the appropriate NSF PO to discuss your specific case.

**Question:** "Is there a minimum threshold number of users that qualifies as ""shared-use?"" The more users, the more competitive the application?"

**Answer:** This varies per scientific discipline or type of instrument. Again these are assessed during the reviews by your peers but reach out to the cognizant Program Officer for guidance.

**Question:** Can you clarify the best way to make a compelling proposal from a PUI when it is a shared-use instrument and the research uses may be quite disparate among users. Is it best to focus on one story or highlight various ones?

**Answer:** Remember that your proposal will be competing against those from similar institution types. All will have similar challenges, and the answer to this question will be different for each. Focus on your strengths.

## **Training**

### **Training**

**Question:** Is there any guidance you can give on what a typical/expected/appropriate level of student training is for the MRI program?

**Answer:** Training is allowed for the operations and maintenance of the instrumentation. It is up to you to determine what is appropriate. Every case will be different.

**Question:** How much training component should be written in the proposal?

**Answer:** It is up to you to determine what is appropriate. Every case will be different.

**Question:** Would training in semiconductors be valuable as part of a track 1? Should I include it specifically?

**Answer:** Yes.

## **Users**

### **Users**

**Question:** "Is the number of identified primary and secondary users a decision criterion for a Track 1 proposal? If so, how many are typically identified for a compelling proposal?"

**Answer:** There should be multiple primary users. The exact number depends on the nature of the requested instrument.

**Question:** "Regarding the instrument users, could the users listed in the proposal be only at the institution where the instrument will be built (e.g., multiple groups and laboratories at the institution), or, should the proposal target users from multiple organizations?"

**Answer:** "It is permissible for an instrument to only serve researchers at the proposing institution with a couple of caveats: If the proposal is for greater than \$1.4M, then there is an expectation of regional impact. In addition, if an instrument has the potential to impact a community beyond the institutional walls, this is generally considered a strength if it is demonstrated that this will be properly managed."

**Question:** "When considering how the instrument can be shared with / used by the broader community, should we prioritize less privileged communities or institutions?"

**Answer:** "From the solicitation "The MRI Program especially seeks broad representation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines. Proposals from women, underrepresented minorities, persons with disabilities and early-career PIs are encouraged, as are proposals that benefit early-career researchers and proposals with PIs from geographically under-served regions, including EPSCoR jurisdictions. Additionally, proposals are encouraged from under-resourced institutions, including from emerging research institutions, where MRI can significantly build capacity for research."

Generally, how to do this is left up to the team's imagination and creativity."

## ***Proposal Content***

### **Project Time Frame, Personnel**

**Question:** "Is there a limit on the duration, level of funding for PI, graduate student, or Co-PIs?"

**Answer:** For Acquisition proposals, we recommend three years (36 months). For Development proposals, we recommend five years (60 months). As for personnel costs, please see the solicitation, Section V.B.

### **Statements of Collaboration**

**Question:** Are all 5 PIs and all 5 senior personnel expected to submit statements of collaboration?

**Answer:** "No. If listed as personnel, there is no need for a collaboration letter."

### **Letters of Commitment**

**Question:** "To clarify, the Co-PIs should also include letters of commitment?"

**Answer:** "No, that is not necessary. The PI and Co-PI roles should be spelled out in the proposal"

### **Letters of "Support"**

**Question:** "Regarding the Letters of Support, there is a reference to the 'performing institution'. If we are aiming to install an instrument as part of a consortium, could I get you to confirm that the Performing institution is specifically the institution of the Lead PI, even if the instrument is proposed to be housed elsewhere?"

**Answer:** From the solicitation: "Proposals for the acquisition or development of an instrument to be located at an organization other than, or away from, the submitting organization must describe the rationale for performance of all or part of the project at the specified location(s) and provide, if appropriate, a (one-page maximum) supplementary document providing the host organization's commitment to house the instrument. For the purposes of this solicitation, use of instruments at NSF's Antarctic facilities is considered to be field deployment and a supplementary document from the host facility is not required."

This depends on many factors. Please contact the MRI office or cognizant Program Officer in the most relevant Directorate/Division for your proposal to discuss this question.

Note: the required supplementary document for the case described is a letter of *commitment*, not *support*.

### **Proposal: Major & Minor Users' Projects in the Project Description**

**Question:** "Is it beneficial to have a lot of additional users/collaborators from a variety of institutions listed in tabular form, if they do not have major projects in the proposal?"

**Answer:** This could be a good strategy that does not eat up as many pages as trying to describe all the more minor users as part of the narrative. Many applicants use this strategy successfully.

### **Subawards/Subcontracts: For-Profit Organizations**

**Question:** "Are subawards or subcontracts distributed to for-profit organizations that currently have sole proprietorship, but plan to update instrument to benefit all people, especially marginalized, for free."

**Answer:** The question is unclear, but if you are asking if subawards or subcontracts to for-profit companies are allowed, the answer is yes.

We note the following from the solicitation:

"For-profit commercial organizations, especially U.S. small businesses with strong capabilities in scientific or engineering research or education, are eligible for instrument development support through subawards/subcontracts as private sector partners with submitting organizations; they may not submit proposals. Such partnerships must be substantive and meaningful, and build capacity for instrument development within MRI submission-eligible organization(s). Title to the resulting instrument should be retained by the MRI-eligible performing organization(s)."

### **Facilities, Equipment, and Other Resources**

**Question:** What forms of institutional support are allowed? Space renovation? Staffing support? etc...

**Answer:** "Any contribution brought to the project should be addressed in the Facilities, Equipment and Other Resources section with no monetary value. Only items requested from NSF should appear on the budget pages/justification"

### **Travel**

**Question:** "If we are applying for an instrumentation that will be shared by different universities, can we ask travel grant for those collaborators to visit and train on the instrumentation at the hosting location?"

**Answer:** "Per the solicitation: ""Travel costs associated with training for operations and maintenance may be an eligible expense but must be well-justified."""

### **Proposal Team**

#### **Proposal Team Composition**

**Question:** "I'm submitting a proposal to the Track 1 category, and as of now our team consists of 3 professors all from the same department! Do we need to include people from other institutions to increase our chances of getting our proposal funded?"

**Answer:** "The solicitation does not require Track 1 proposals to have a wider impact like Track 2 proposals. Whether you add other users is a value judgement on your side and there is no straightforward answer to your question. However, we have made plenty of awards that are one institution only."

## PI and Project Team

**Question:** "If a PI is just starting and does not yet have PhD students, but plans to get them by next year, and all of the other PIs do have PhD students, should this be addressed, or is this acceptable?"

**Answer:** There is no requirement to have PhD students.

**Question:** "I have a question about strategy for PI/co-PIs for track 3. Is it better (more competitive) to have lots of co-PI's (representing the many users of the instrument)? Is it fine if the PI is more junior (fewer publications using the instrument), and the co-PI's be more senior (many more publications using the instrument), or will it decrease the competitiveness of the proposal?"

**Response:** This may depend on the discipline but you should approach the project and proposal as a team. There are decisions that institutions make to assemble the team in particular ways, including helping an early-career investigator as a chance to take the lead of a team. The more information you can provide reviewers about the team, major users and the like, the more that helps reviewers understand your approach.

The number of PIs is not a review criterion for MRI. We leave it up to you to put the best team together.

**Question:** "Can single PI propose a grant or is it necessary to have multiple PIs? In the case of former, how should one support their case for shared use of instrument. Thank you."

**Answer:** "Yes, a single PI can submit a proposal. Potential users' commitments can be demonstrated through collaboration letters. These are in a specific form given in the solicitation that must be strictly adhered to."

**Question:** Can proposal have "other senior personnel" .other than Co-Pis? In case that there are more PIs who would be major users of the instrument too. Or they should be listed as major users only?

**Answer:** "Senior Personnel are allowed. Your institution should follow the PAPPG definitions of the participant types. The relevant section in the MRI solicitation states:

""NSF proposals identify only a single PI and up to four co-PIs with those titles. For the purposes of the MRI program, other major participants may be designated as ""Senior Personnel"". Please see the NSF PAPPG for definitions of Senior Personnel.""

**Question:** Can there be more than 1 lead PIs for a proposal?

**Answer:** NSF requires there to be 1 PI and up to 4 Co-PIs.

## PI Early Career

**Question:** I am a early career researcher and I am working as Visiting Research Scientist. Can I apply for the MRI 2 as PI or I have to go for as Co-PI?

**Answer:** "Please work with your institution to clarify your eligibility as a PI. From the solicitation it says: ""There are no restrictions or limits. The MRI Program especially seeks broad representation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines. Proposals from women, underrepresented minorities, persons with disabilities and early-career PIs are encouraged, as are proposals that benefit early-career researchers and proposals with PIs from geographically under-served regions, including EPSCoR jurisdictions. Additionally, proposals with PIs from under-resourced institutions, including from emerging research institutions, where MRI can significantly build capacity for research., are encouraged.""

**Question:** "What does NSF consider ""Early-career"" for a PI? Assistant professor? or a certain number of years"



**Answer:** Assistant prof or equivalent. More generally, *early career* refers to the first seven years following your terminal degree (be it Ph.D. or other).

### **PI: First-time MRI Preparation Support?**

**Question:** Is there a first time NSF MRI co-authoring contact possibly?

**Answer:** No. This is something your institution would have to provide.

### **PI Qualifications**

**Question:** "Must the PI have an independent research project proposed for the shared instrument OR can the PI coordinate/facilitate/collaborate the multiple investigators that have research projects proposed for the shared instrument? For example, can a Facility Director act as PI?"

**Answer:** "Yes, a facility director can be the PI. While NSF does not limit who can be a PI, the institution may determine PI eligibility. Their role in the overall management should be discussed and well justified as the PI."

**Question:** How would you like the early career and underrepresented PI's to identify themselves in the proposal?

**Answer:** "Your biosketch can inform reviewers on where you are academically, and as for demographics it is typically captured in your user profile if you provide them"

### **PI/Co-PI/Senior Personnel**

**Question:** is the distinction between Co-PI / Senior Personnel / User written in the NSF solicitation?

**Answer:** No, but the PAPPG discusses some of these roles. The PI, Co-PI, and Senior Personnel have direct responsibilities in the MRI project. Anyone who plays no role until the instrument is in operation would be a User. If you have doubts, please reach out to one of the Program Contacts. From the solicitation: "The proposal must include biographical sketches of the PI and any Co-PI(s) (i.e., those personnel listed on the Cover Sheet), as well as any designated Senior Personnel. Other individuals who will be minor users or developers of the relevant research instrumentation may be described in the Project Description but should not include a biographical sketch."

**Question:** Can senior personnel from a different entity and research institution be allowed if they are benefitting from the use of such instrument?

**Answer:** "Yes, but that is up to your individual institution. The definitions of personnel roles are in the PAPPG."

**Question:** For a proposal for an instrument for a multi-user center facility, we will have 2-3 PI/co-PI's. Other senior faculty will conduct their research programs on this instrument, but will not be involved in day-to-day management. Are they considered senior personnel (with requirements for biosketch etc) or "minor users" who are listed and just provide letters indicating their use of the equipment. Are minor users the same as "auxiliary users" as defined in the latest NSF PAPPG 23-1 biosketch instructions; and must supply a short biosketch with 5 publications as this is an equipment proposal?

**Answer:** "The MRI solicitation describes situations where the solicitation differs from the PAPPG. In this case, follow the instructions in the biosketch section (copied below). It is up to the institution to define who is Senior Personnel.:

The proposal must include biographical sketches of the PI and any Co-PI(s) (i.e., those personnel listed on the Cover Sheet), as well as any designated Senior Personnel. Other individuals who will be minor users or developers of the relevant research instrumentation may be described in the Project Description but should not include a biographical sketch."

## PI Team / Collaborator: New Investigator

**Question:** "Would a major user or Co-PI being a new investigator have any negative affect to the application? For example, a new PI may have a lot of hands-on experience on the instrument proposed but does not have active federal funding support to conduct the proposed research using the request instrument yet."

**Answer:** "No. Reach out to a program officer for more detailed information. In general, a well-justified need for the instrument should be demonstrated. This is often demonstrated through existing projects that would use the instrument."

On Page 4 of the solicitation: "Proposals from women, underrepresented minorities, persons with disabilities and early-career PIs are encouraged, as are proposals that benefit early-career researchers ..."

## Review

### Review Division

**Question:** Following on a previous question: we have an interdisciplinary team spanning multiple academic departments – and therefore multiple directorates/divisions – that will be proposing to acquire an HPC cluster. (No one field predominates our group.) Would CISE/OAC be a good "discipline-agnostic" route for these types of proposals?

**Answer:** "Should your proposed instrument be a computing system that would support multiple areas of science and engineer, CISE/OAC would be an acceptable unit of consideration to select for your proposal. You may view MRI awards made via CISE/OAC in the past by going to [www.nsf.gov/awardsearch](http://www.nsf.gov/awardsearch) selecting '1189' under Element code and OAC as the NSF Organization."

**Question:** "If instrument users are engaged in research that aligns with multiple NSF Divisions, either as interdisciplinary, or some users align with one, others with another, what should we recommend as the appropriate Division for review? Can more than one Division be listed?"

**Answer:** "Yes, more than one Division can be listed as Units for Consideration"

**Question:** "How common is it to submit to multiple divisions? A quick search of active awards for 1189 under STEM education, for example, didn't turn up anything."

**Answer:** You should submit to a single division. The PO's recognize that instrumentation often spans multiple disciplines. We have the option to co-review proposals across multiple divisions. Divisions in the EDU Directorate receive very few MRI proposals. While selecting multiple divisions is not common, every competition sees some.

**Question:** "In the review process, are reviewers tasked with reading and commenting on the facilities and data management sections? Or is that mainly for the program officer? Some feedback/question I received from the last submission window suggested some of the reviewers did not read those two sections of our submission, and I'm wondering if I should add a statement or two in the proposal pointing to those sections."

**Answer:** Reviewers are expected to read the facilities statements and data management statements and can impact their review.

## Review Process

**Question:** "Some PIs who applied to last year's competition have been notified by the program officer that they have not been funded. However, the proposals are still pending in research.gov and reviewer comments are not yet available. When do you expect these declines to be updated in research.gov? Is there any concern that these proposals might not be eligible to resubmit this year because the proposals are still ""pending""?"

**Answer:** "Please reach out to your program director. We try to make all decisions within 6 months, but sometimes the workload makes that difficult. There shouldn't be a problem with submitting to the new solicitation even if the prior proposal is still pending."

**Question:** How long does the review process take?

**Answer:** NSF's goal is to have 75% of proposal decisions made within 6 months from the submission date.

**Question:** Can the checks for compliance be performed during this window since there a lot of details that need to be checked?

**Answer:** Much of the technical compliance work (PAPPG) happens now during the Research.gov submission. NSF is not planning on performing MRI-like compliance ahead of the submission deadline.

**Question:** What is the highest ranking in proposal reviews? 'Competitive' or 'Highly competitive'?

**Answer:** "The NSF PD in charge of the panel can decide exactly what the rating scale is. One common version is ""Highly competitive"", ""Competitive"", ""Not Competitive""."

## **Reviewer Service**

**Question:** How can I volunteer to serve as a MRI proposer review?

**Answer:** Thank you for asking. Please contact the PD most closely aligned to your research field. There is a list of Program Contacts on the MRI Program web page. Please send a biosketch and identify your areas of expertise.

## **Submission**

### **Project Description**

**Question:** "How much detail should be provided for the proposed research given that the focus is on the instruments? Also, can multiple projects be showcased, or should only one research be provided in detail?"

**Answer:** You must provide enough information about the research that reviewers can determine:

- a) if the instrument fits the proposed work and
- b) that the research to be enabled is compelling.

We will ask reviewers to consider the impact of the instrument on the proposed research. Multiple projects can be highlighted as long as there is enough detail for reviewers to consider whether the instrument is needed and whether the research is compelling.

## **Proposal Revisions (see "Prior Submissions")**

### **Submission Deadline**

**Question:** Does NSF have a chart about the correlation between proposal submission time and success rate?

**Answer:** We are not aware that NSF has made any data like that available.

## **Proposal Tracks**

### **Proposal Track**

**Question:** "If previous submission was for a Track 2 application and based on reviewers' comments and suggestions, the new submission changes to a less expensive instrument and falls under Track 1, will there be any negative impact for the application?"

**Answer:** No. Your submissions are independent.

**Question:** "Can you say anything about relative oversubscription of Track 1 vs. Track 2 proposals? We have a project that is likely right at the boundary, with what we choose to include determining suitable for either category."

**Answer:** "Please consider the following aspect mentioned in the solicitation:

""Proposals requesting over \$1.4 million (Track 2) should address the potential impact of the instrument on the research community of interest at the regional or national level. For large multi-user instruments that enable usage beyond a single institution, concrete plans for enabling access by external users (including those from non-Ph.D. and/or minority-serving institutions) through physical or virtual access should be presented, and the uniqueness of the requested instrument should also be described.""

"1. Make the decision based on the instrument cost.

2. The proposal near the boundary should be prepared in a very similar way, regardless of whether it is Track 1 or Track 2."

## **Track 2: Regional Impact**

**Question:** Regarding: ""If the proposal is for greater than \$1.4M, then there is an expectation of regional impact."" , here is "regional impact" just intended to mean impact at places broader than the PI's organization e.g., multiple universities perhaps across the nation, and not necessarily impact in a given geographical region e.g., state or north-east/mid-west etc?"

**Answer:** Correct.

## **Webinar**

### **Webinar**

**Question:** Is it possible for these slides, or a recording of the webinar, to be shared? Thank you!"

**Answer:** "Yes, they will be available at: <https://new.nsf.gov/funding/opportunities/major-research-instrumentation-program-mri>."

**Question:** Will a copy of the Q&A be made available to attendees after the presentation?

**Answer:** This document.

## **Website: "Program Director" = "Program Officer"**

**Question:** "I'm having trouble finding program officers - I see ""Program Director"" but is that the same as Program Officer"?

**Answer:** Yes