



INTERNAL CALL FOR PROPOSALS
The National Science Foundation's
Major Research Instrumentation (MRI) Program

Internal proposals due February 19, 2010

The NSF has announced the availability of grants to support the acquisition or development of major research instrumentation that is, in general, too costly for support through other NSF programs. The Major Research Instrumentation (MRI) Program is designed to increase access to scientific and engineering equipment for research and research training. The program seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments. It encourages the development and acquisition of research instrumentation for shared inter- and/or intra-organizational use and in concert with private sector partners. Specific program goals are to:

- Supporting the acquisition of major state-of-the-art instrumentation, thereby improving access to, and increased use of, modern research and research training instrumentation shared by the Nation's scientists, engineers, and graduate and undergraduate students;
- Fostering the development of the next generation of major instrumentation, resulting in new instruments that are more widely used, and/or open up new areas of research and research training;
- Enabling academic departments, disciplinary and cross-disciplinary units, and multi-organization collaborations to integrate research with education;
- Supporting the acquisition and development of research instrumentation that makes use of, advances, and/or expands the Nation's cyberinfrastructure and high performance computing capability;
- Promoting substantive and meaningful partnerships for instrument development between the academic and private sectors

Additionally:

Proposals involving partnerships with applicability to the NSF Industry/University Cooperative Research Centers (I/UCRCs) program are encouraged if they build capacity for instrument development within academic settings and/or may create new products with wide scientific and commercial impact. Proposals involving cyberinfrastructure which are aligned with the evolving NSF vision (see "Cyberinfrastructure Vision for the 21st Century" at <http://www.nsf.gov/pubs/2007/nsf0728/index.jsp>) are also strongly encouraged.

A summary of the program follows. **For more information, visit the NSF's program announcement on the web at <http://www.nsf.gov/pubs/2010/nsf10529/nsf10529.htm>**

MRI program will require cost sharing of 30% for proposals submitted by PhD granting institutions.

NSF is accepting full proposals only for this funding opportunity.

The anticipated funding amount is \$90,000,000. Proposals submitted in response to this program solicitation will be competing for about \$90 million. Up to \$40 million of these funds will be available for the acquisition or development of instruments costing between \$1 million - \$4 million pending proposal pressure and quality.

The estimated number of awards is 150. Proposals that request funds from NSF in the range \$100,000-\$4 million will be accepted from all eligible organizations. Proposals that request funds from NSF less than \$100,000 will also be accepted from all eligible organizations for the disciplines of social, behavioral and economic sciences.

Guidelines:

Proposals will be considered for instrumentation used for any NSF-supported field of science, mathematics, and engineering.

Research activities using this instrumentation need not be supported by the NSF or the Federal Government.

The program will not provide support for instrumentation to be used in medical education (such as medical school courses). Instrumentation intended for research with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, is normally not supported. Instrumentation for research on animal models of such conditions or the development or testing of drugs or other procedures for their treatment also is not eligible for support. However, instrumentation for bioengineering research, with diagnosis- or treatment-related goals that applies engineering principles to problems in biology and medicine, while also advancing engineering knowledge, is eligible for support. Instrumentation for bioinformatics, biocomputing and bioengineering research to aid persons with disabilities also is eligible.

The MRI program assists in the acquisition or development of major research instrumentation that is, in general, too costly or not appropriate for support through other NSF programs. Proposals must be either for **acquisition** or **development** (see below).

The MRI program will NOT support proposal requests for any of the following:

- Construction, renovation or modernization of rooms, buildings or research facilities - this category refers to the space where sponsored or unsponsored research activities (including research training) occur, whether "bricks-and-mortar", mobile, or virtual;
- Large, specialized experimental facilities that are constructed with significant amounts of common building material using standard building techniques. Instruments in general can be decoupled from the structure or environment that contains them;
- General purpose and supporting equipment - this category includes (but is not limited to) general purpose computers or laboratory instruments that do not serve a specific research or research training focus. Supporting equipment refers to basic, durable components of a research facility that are integral to its operation (e.g., fume hoods, elevators, laboratory casework and cryogen storage systems);

- Sustaining infrastructure and/or building systems - this category may include electrical and plumbing systems, routine computer networks, standard safety features, and other general purpose systems (e.g., HVAC, electrical generation and distribution systems, toxic waste removal systems, and telecommunications equipment).
- General purpose platforms or environments - this category may include (but is not limited to) general purpose fixed or non-fixed structures or manned vehicles whose role is to host or transport an instrument.
- Instrumentation used primarily for science and engineering education courses. Other programs at NSF (e.g., the Course, Curriculum, and Laboratory Improvement program - http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5741) provide funding for the development of exemplary courses and teaching practices, including instrumentation to support such projects;

The NSF limits the number of submissions to this program to three. An institution may submit or be included as a partner or subawardee in no more than three proposals: two for either instrument acquisition or development, and a third solely for instrument development.

MRI program requires that an organization may, as a performing organization, submit or be included as a significantly funded³ subawardee in no more than three MRI proposals. To promote instrumentation development, the program requires that if an organization submits or is included as a significantly funded³ subawardee in three MRI proposals, at least one of the three proposals must be for instrument development.

Inclusion as a funded subawardee on a development proposal at a level in excess of 20% of the total budget request from NSF, or on any acquisition proposal, will be counted against an organization's proposal submission limit. 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.

Acquisition Proposals

An acquisition proposal is characterized by a rapid implementation requiring limited personnel, and as having little risk to complete. An MRI acquisition proposal may also be characterized by a demonstrated need for the purchase or upgrade of a generally available, yet sophisticated, instrument with little or no modification. An acquisition proposal must meet these guidelines to be considered for the MRI program.

Development Proposals

A development proposal is characterized by a demonstrated need for a new or upgraded instrument that can provide enhanced or potentially transformative use and performance, open up new areas of research and research training, and/or have potential as a commercial product. "Performance" may include accuracy, reliability, resolving power, throughput speed, sample capacity, flexibility of operation, breadth of application, user-friendliness, and/or new types of measurement or information gathering. An MRI development proposal is characterized by a need for longer timescales involving design, construction, testing and commissioning such that the equipment cost may not represent the largest portion of the budget. A development proposal also tends to involve greater risk to complete.

A development proposal must describe the added performance of the new instrument and the expected impact on the broader research community. The MRI program does not consider the acquisition of individual pieces of equipment simply combined in a new system, the mere purchase of an upgrade, or the development of enabling technologies, devices, products or techniques to constitute instrument development. A development proposal with commercial partners must be substantive, meaningful and build capacity for instrument development within academic settings; a proposal that "outsources" the development to the commercial partner will be considered to be an acquisition proposal by the MRI program.

A development proposal must meet the above guidelines to be considered for the MRI program.

As the MRI program limits the number of submissions from the university, a centralized selection process is necessary. Individual faculty members or teams of researchers who wish to apply are invited to submit a pre-proposal with supporting material, as follows:

A) a pre-proposal with a project title and 5-6 pages containing the following information:

- 1) the proposal category: instrument acquisition or instrument development;
- 2) indication of whether the proposal would involve the participation of other institutions;
- 3) the names of the principal investigator(s) and outside collaborators, if any;
- 4) a description of the proposed instrumentation;
- 5) the research and research training to be conducted with the instrumentation;
- 6) the reasons why new or further developed instrumentation is needed for this research activity, including a list of related instrumentation available at UNC-CH or nearby;
- 7) the impact on research and educational activity that would result if the proposal were funded;
- 8) a brief description of the management plan;
- 9) a brief overview of the proposed budget including approximate total cost;
- 10) a proposed method or strategy for meeting the 30% cost sharing requirement.

If the internal pre-proposal is a resubmission of a proposal previously submitted to the MRI program, reviews from the NSF and a response of up to one page should accompany the pre-proposal.

B) summary CVs or biosketches (not more than 4 pages each) of proposed Principal and Co-Investigators.

C) a list of up to three internal (to UNC) faculty members who could knowledgeable discuss the proposal as part of an internal review panel. Please do not include the names of chairs or deans on this list so as to avoid a potential conflict of interest.

All information discussed in an internal review is confidential.

To meet the NSF's **April 21, 2010** deadline, the internal proposal material must be received at the Office of Research Development by **Friday, February 19, 2010**. Material may be submitted electronically to ord@unc.edu or regina_bartolone@unc.edu For questions, contact Regina Bartolone in the Office of Research Development at 962-7504

IMPORTANT INFORMATION AND REVISION NOTES

The parameters for the *Major Research Instrumentation (MRI)* competition¹ have been modified or clarified as follows:

- A requirement to address in separate paragraphs within the Project Summary the merit review criteria of Intellectual Merit and Broader Impacts has been included.
- The maximum budget request from NSF (\$4 million) is the same for either acquisition or development proposals.
- Clarification regarding the definitions of organization² type and eligibility criteria as used by the MRI program has been provided.
- Clarification regarding potential effects of subawards on institutional submission limits and cost-sharing requirements has been provided.
- Clarification regarding appropriate requests for more than one piece of equipment has been provided.
- Clarification regarding cost-sharing requirements has been provided.
- The option to use Grants.gov for proposal submission has been provided.

¹ The most recent MRI competition, the *Major Research Instrumentation - Recovery and Reinvestment (MRI-R²)* competition ([09-561](#)), included special provisions for cost-sharing, reporting requirements, maximum award size, etc. which were specific to that competition only.

² Unless otherwise specified, the term "organization" refers to all categories of proposers. Universities and two- and four-year colleges (including community colleges) are also referred to as academic institutions of higher education.

Please be advised that the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) includes revised guidelines to implement the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will be returned without review (see the PAPP Guide Part I: *Grant Proposal Guide* Chapter II for further information about the implementation of this new requirement).