APPLICATION GUIDELINES

Purpose
The National Science Foundation has announced the submission deadline for the Major Research Instrumentation (MRI) grant program for FY 2013. Applications will be due January 24, 2013. Additional information regarding the program, including full proposal guidelines, may be found here: [http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5260](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5260), and in the attached Information Sheet (Attachment A).

The NSF MRI grant program allows only three proposal submissions per institution: TWO proposals for equipment acquisition and ONE proposal for equipment development. For the past several competition cycles, UTC has had more than two faculty teams who wanted to pursue equipment acquisition grants. In the event that we have more than two faculty teams interested in equipment acquisition this year, the OPSP will be coordinating an internal review and selection process.

How to Apply
Faculty members who are interested in submitting an NSF MRI proposal for FY 2013 should submit a brief abstract of the proposed project to opsp@utc.edu no later than October 12 at 5:00 PM.

The abstract should include:

1. MRI Internal Selection Competition Cover Page (Attachment C)
2. A 2-3 page narrative that includes:
   - A description of the proposed instrumentation purchase
   - A description of the instrument’s application and usage
   - How the proposal will support department/college/UTC research needs and priorities
   - How the proposal will further MRI program goals (e.g., integration of research and education, improving shared access to modern research and research training instrumentation)
   - A discussion of the intellectual merit of the proposed activity
   - A discussion of the broader impacts of the proposed activity
3. If you have previously submitted an MRI proposal and wish to revise and resubmit that proposal, include a summary of the reviewers’ comments and a 1-2 paragraph description of your plan to address them or utilize them to strengthen the proposal for resubmission.
In addition to the abstract, applicants may also submit any attachments that they deem essential to a thorough panel review, including, but not limited to:

1. **Full proposals:** Although not required, applicants may attach a full proposal (in draft form or one that has been previously submitted) to their internal application. Please indicate whether or not the proposal has been submitted to NSF in the past.
2. **Support letters:** If your project requires significant internal or external commitments, you may consider including documentation of support as an appendix.

The review panel will be encouraged to take supplemental attachments into consideration when making their evaluation.

**Proposal Review and Selection**

The Assistant Provost for Research and Engagement will engage a review panel composed of 5 UTC faculty representatives and administrators. Each abstract will be evaluated using a 45-point scale aligned with the MRI guidelines (see attachment B).

**NEW FOR 2012:** Up to 5 priority points will be awarded to investigators who have previously submitted their proposals, have included the reviewers’ comments, and have provided a detailed and adequate description of how they will address the reviewers’ concerns in their resubmission.

The panel will review and score each abstract separately, and the scores from each individual review will be compiled and tallied. In the event of a tie, the review panel may meet to discuss the applications until consensus is reached. The top 3 abstracts (2 acquisition and 1 equipment development) will be invited to develop and submit a full MRI application.

*It is important to note that the review panel is fully aware that they are reviewing an abstract of a project, and not a fully developed proposal. Although the evaluation criteria from the full guidelines will be used to evaluate the abstract, it is understood that a thorough discussion of each criteria will not be possible given space restraints. Please use your best judgment when preparing your abstract and include the information that you feel will be most relevant and helpful to the panel when making their decision.*

**MRI Internal Review and Selection Timeline**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tr>
<td>Proposal abstracts submitted to OPSP at <a href="mailto:opsp@utc.edu">opsp@utc.edu</a></td>
<td>5:00pm-October 12, 2012</td>
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<tr>
<td>Review process</td>
<td>October 15-25, 2012</td>
</tr>
<tr>
<td>All applicants notified of final decision</td>
<td>October 26, 2012</td>
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</table>
NSF Major Research Instrumentation (MRI) Information Sheet

Acquisition Proposals

Program Title: Major Research Instrumentation Program (MRI)

A. Synopsis of Program

NSF’s MRI program seeks to increase access to shared scientific and engineering instruments for research and research training. This program especially seeks to improve the quality and expand the scope of research and research training in science and engineering, by providing shared instrumentation that fosters the integration of research and education in research-intensive learning environments.

Proposals must be for acquisition of a single instrument or for equipment that, when combined, serves as an integrated research instrument (physical or virtual).

B. MRI Program Purpose and Goals

The primary purpose of the MRI program is to facilitate scientific and engineering research and research training through the acquisition of major research instrumentation.

An MRI proposal must conform to the program’s primary goals of:

- Supporting the acquisition of shared major state-of-the-art instrumentation, thereby improving access to, and increased use of, modern research and research training instrumentation by scientists, engineers, and graduate and undergraduate students;

  **AND**

- Enabling academic departments, disciplinary and cross-disciplinary units, and organizations and multi-organization collaborations to integrate research with education.

An MRI proposal may also address the following additional program goals: acquisition of research instrumentation that makes use of, advances, and/or expands the Nation's cyber-infrastructure and/or high performance computing capability (while avoiding duplication of services already provided by NSF investments). MRI proposals that are aligned with the evolving NSF vision, including those that support development of computational and data-intensive science and engineering programs, or that provide pathways to regional and national infrastructure, are strongly encouraged.

C. MRI Acquisition Program Scope

1. The science and engineering research enterprise relies on the availability of modern instrumentation, much of which can be acquired with little/no modification from existing sources. For this reason, an acquisition proposal is characterized by a rapid implementation requiring limited personnel and 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.
Eligible project costs are limited to instrument purchase, installation, commission, calibration, and the direct and indirect costs of operations and maintenance and other appropriate technical support during the award period. Salary support, including fringe benefits and indirect costs, is allowed only for personnel directly involved in operations and maintenance of the instrument.

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 ancillary computers or laboratory instruments. 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 multi-purpose 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.
- The MRI program does not support requests for general purpose ancillary laboratory equipment or multiple instruments that serve to outfit a laboratory or research environment.
- Instrumentation used primarily for science and engineering education courses. Other programs at NSF (e.g., the Transforming Undergraduate Education in STEM (TUES) program) provide funding for the development of exemplary courses and teaching practices, including instrumentation to support such projects.
- 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.

D. Eligible Fields of Science and Engineering

Proposals for instrumentation will be considered for all NSF-supported fields of science, mathematics, and engineering. Although the MRI program will not support instrumentation for biomedical purposes (see final bullet of Section C, above, for details), 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.
ATTACHMENT B: EVALUATION RUBRIC

UTC Internal Review
National Science Foundation
Major Research Instrumentation

Directions:

The criteria listed below represent the project elements necessary for a competitive proposal. Each proposal will be evaluated against the criteria and given a rating of 0-5. Note that the proposals should not be ranked against each other but rather rated based on the fit of their project elements to the criteria. The highest possible “Total Score” a proposal might have is 45. The result will be a natural ranking of all the proposals, from highest score to lowest score.

NEW FOR 2012: Up to 5 priority points will be awarded to investigators who have previously submitted their proposals, have included the reviewers’ comments, and have provided a detailed and adequate description of how they will address the reviewers’ concerns in their resubmission.

Rate each proposal’s fit with the criteria on the following scale:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
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<tbody>
<tr>
<td>5</td>
<td>exceeds criteria</td>
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<tr>
<td>4</td>
<td>direct fit with criteria</td>
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<tr>
<td>3</td>
<td>significant fit with criteria</td>
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<tr>
<td>2</td>
<td>elements applicable to criteria</td>
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<tr>
<td>1</td>
<td>slight correspondence to criteria</td>
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<tr>
<td>0</td>
<td>no fit to criteria</td>
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CRITERIA:

I. Proposal furthers MRI program goals. (5 pts.)

Further Explanation:

An MRI proposal must conform to the program’s primary goals of:

1) Supporting the acquisition of shared major state-of-the-art instrumentation, thereby improving access to, and increased use of, modern research and research training instrumentation by scientists, engineers, and graduate and undergraduate students; and

2) Enabling academic departments, disciplinary and cross-disciplinary units, and organizations and multi-organization collaborations to integrate research with education.
An MRI proposal may also address additional program goals which include:

1) Supporting the acquisition and development of research instrumentation that makes use of, advances, and/or expands the Nation’s cyberinfrastructure and/or high performance computing capability; and

2) Promoting substantive and meaningful partnerships for instrument development between the academic and private sectors. Such proposals are expected to create innovative ideas or products with wide scientific or commercial impact.

II. Proposal demonstrates strong intellectual merit. (5 pts.)

Further Explanation:

1) How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
2) How well qualified is the proposer (individual or team) to conduct the project?
3) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
4) How well conceived and organized is the proposed activities?
5) Is there sufficient access to resources?

III. Proposal will have significant broader impacts. (5 pts.)

Further Explanation:

1) How well does the activity advance discovery and understanding while promoting teaching, training, and learning?
2) How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
3) To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships?
4) Will the results be disseminated broadly to enhance scientific and technological understanding?
5) What may be the benefits of the proposed activity to society?

IV. Proposal supports department/college/UTC research needs and priorities. (5 pts.)

Further Explanation:

The extent to which the proposed project will make a substantial improvement in the institution’s capabilities to conduct leading-edge research, to provide research experiences for undergraduate research, to provide research experiences for undergraduate students using leading edge facilities, and to broaden the participation in science and engineering research by women, underrepresented minorities and persons with disabilities.
**FOR INSTRUMENT ACQUISITION PROPOSALS:**

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<tr>
<td>V.</td>
<td>The instrumentation will be shared for the use of research and/or research training. (5 pts.)</td>
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<td>VI.</td>
<td>The management plan includes sufficient infrastructure and technical expertise to allow effective usage of the instrument and provides the organization’s commitments for operations and maintenance. (5 pts.)</td>
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<tr>
<td>VII.</td>
<td>The request for operations and maintenance is justified and reasonable in magnitude. (5 pts.)</td>
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<tr>
<td>VIII.</td>
<td>Plans for using the new or enhanced research capability in research and research training are well developed. (5 pts.)</td>
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**PRIORITY POINT CONSIDERATION:**

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<td>IX.</td>
<td>Proposal Resubmission (5 pts.)</td>
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**Further Explanation:**

1) Investigators have previously submitted their proposals to NSF.
2) Proposals have adequately and sufficiently discussed the reviewers’ comments and adjusted their projects accordingly.
# National Science Foundation
## Major Research Instrumentation Program
### Internal Review and Selection

**Internal Competition Submission Deadline:** 5:00pm on October 12, 2012

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<tr>
<th>Cover Page</th>
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<tr>
<td><strong>Principal Investigator:</strong></td>
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<td><strong>Co-PIs and Collaborating Personnel:</strong></td>
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<td><strong>Working Title of Project:</strong></td>
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<th><strong>Type of Proposal:</strong></th>
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<tr>
<td>☐ Development</td>
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<td>☐ Acquisition</td>
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**Consideration for Priority Points:**

Have you submitted an MRI proposal to NSF in the past? ☐ Yes ☐ No

If Yes:
- When was the proposal submitted? ____________________________
- Was the proposal funded? ☐ Yes ☐ No
- Do you plan to revise and resubmit that proposal for this competition? ☐ Yes ☐ No

*If yes, attach a summary of the NSF reviewers’ comments and a 1-2 paragraph description of how you plan to address them.*