

Call for Proposals: UR NSF Materials Research Science and Engineering Center (MRSEC) Application

NSF Materials Research Science and Engineering Centers (MRSEC) – Interdisciplinary Research Group (IRG)

The Director of the Materials Science Program, Danielle Benoit, and Dean of Research, John Tarduno, are pleased to announce an internal call for IRG proposals for potential inclusion in the UR MRSEC pre-proposal (due June 2022).

This call provides key information about the requested IRG proposal format, submission deadline and evaluation criteria. Some of the information is based on the most recent NSF MRSEC solicitation; however, it is anticipated NSF will publish updated guidelines in October 2021.

Brief Summary of the MRSEC Program

The Materials Research Science and Engineering Centers (MRSECs) program provides sustained support of interdisciplinary materials research and education of the highest quality while addressing fundamental problems in science and engineering. Each MRSEC should address research of a scope and complexity requiring the scale, synergy, and multidisciplinary provided by a campus-based research center. MRSECs support materials research infrastructure in the United States, promote active collaboration between universities and other sectors, including industry and international organizations, and contribute to the development of a national network of university-based centers in materials research, education, and facilities. A MRSEC may be located at a single institution or may involve multiple institutions in partnership. Specifically related to this call, each MRSEC is composed of up to three Interdisciplinary Research Groups (IRGs), each addressing a fundamental materials science topic aligned with the Division of Materials Research, DMR.

Every MRSEC proposal must contain a minimum of 2 IRGs and a maximum of 3 IRGs. The IRGs in a center may be thematically related, or they may address different aspects of materials science typically supported by DMR. The purpose of this internal process is to outline the process for submitting IRG proposals, the required content, length, deadlines, and evaluation criteria.

Internal IRG Proposal Requirements (all in PDF format)

1. Description of proposed IRG research plan (3 pages of text maximum).

- *Begin with a title and list of investigators that will contribute to the IRG. Note there is a minimum of 6 faculty and maximum of 12.*
- *Provide a concise description of the long-term research goals and intellectual focus (~1/2 page).*
- *Include background information with selected references on the state of the field and any roadblocks at the cutting edge of this work (~1/2 page).*
- *Outline the planned research activities in your IRG that will lead to new knowledge or develop new technology to advance the field (~2 pages).*
- *Optional: append up to 1 additional page of figures.*

Reminder: IRGs are sought that solve fundamental, timely and complex materials problems that are intellectually challenging and important to society.

2. Description of the IRG team (1 page of text maximum).

- *Justify the need for an interactive, interdisciplinary approach involving several investigators.*
- *Provide a brief summary about each investigator, including affiliations, current position, expertise, as well as a statement about diversity within the team.*
- *List any joint publications that involve multiple investigators within the team.*

Key Dates/Deadlines

- Research Retreat to brainstorm ideas & develop IRGs: **9-1 pm EST October 18, 2021 (location TBD)**
- Internal Deadline: **11:59pm EST November 29, 2021 – please submit applications via email to Lindsey Junge: lindsey.junge@rochester.edu**
 - Notification of selection in January 2022
- NSF Preliminary Proposal Deadline: **TBA – expected in June 2022**
- NSF Application Deadline (by invitation only): **TBA – expected in November 2022**

IRG Review Criteria

Some guiding principles that will be used for evaluating the IRG proposals:

1. Does the IRG have a focus that is narrow, while addressing a significant material science problem?
2. Is there a level of creativity and power, so it can be convincingly claimed to be field defining?
3. Is there a compelling need for a team effort, along with a need for a center structure with diverse members and unique expertise at UR?

Beyond the high-level principles outlined above, **the review process will be further guided by the NSF MRSEC criteria below:**

1. Does the IRG describe a well-integrated research program distinguished by intellectual excellence and driven by a clear vision leading to fundamental advances, new discoveries, and/or technological developments that could have national and international significance?
2. Are the capabilities of the investigators, technical soundness of the proposed approach, and adequacy of the resources (available or proposed), including instrumentation and facilities appropriate for a center?
3. Are the benefits of a multi-investigator, interdisciplinary approach to address a major topic or area normally supported by the Division of Materials Research for the IRG clearly laid out? Does cooperation and interdependence of the investigators within the IRG come across?
4. Is the work of a scope and complexity that requires Center support?
5. Is the IRG addressing cutting edge science?

Note that reviewers at each stage will be encouraged to evaluate favorably projects that integrate diversity, equity and inclusion (DEI) activities.