Funding Opportunity: NSF Releases MRSEC Solicitation

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The National Science Foundation (NSF) released the solicitation for the 2019 Materials Research Science and Engineering Centers (MRSEC) competition. The MRSEC program supports interdisciplinary and multidisciplinary large scale, complex materials research and education at campus based centers, and contributes to a national network of materials research facilities. MRSECs compliment the NSF materials portfolio of traditional individual research projects, small group projects, national user facilities, and instrumentation in materials research.

MRSECs are made up of Interdisciplinary Research Groups (IRGs). Each IRG focuses on a major topic or research area and is composed of several researchers with complementary skills and expertise. Each MRSEC may include between two and three IRGs, which can be thematically related or address different topics related to materials science. Proposals should address “fundamental, timely and complex materials problems that are intellectually challenging and important to society.” NSF staff will ensure a balance of research topics and center size across the MRSECs proposals, in addition to evaluating the proposals using the standard merit review criteria.

Unlike the previous MRSEC solicitation, this solicitation names specific potential areas of interest for the MRSEC program, although proposals are not limited to these areas. NSF seeks proposals that align with the Division of Materials Research (DMR) participation in the NSF 10 Big Ideas. DMR is active in the following Big Ideas:

- Harnessing the Data Revolution
- The Future of Work at the Human-Technology Frontier
- Understanding the Rules of Life
- The Quantum Leap

The solicitation also calls out several other areas of interest that are not represented in the current MRSEC portfolio:

- Machine Learning for Materials Science Complex Problems, especially related to Ceramics, Metals, and Metallic Alloys
- Synthetic Materials Biology
- Recyclable Plastics and Alternative Materials for Sustainable Development

Within the MRSEC award, NSF will provide seed funding to enable the center to respond quickly and effectively to new and emerging opportunities. Seed funding is also intended to support partnerships with industry and national laboratories and support high risk / high impact transformative research.

Centers are expected to work in collaboration with other academic organizations, agencies, industry, national and government laboratories, and international partners where appropriate. NSF expects all MRSECs to engage fully in a national network of university materials research centers. Each center must integrate research and education, including Research Experiences for Undergraduates (REU), and
develop outreach activities. MRSECs should foster increased participation of members of underrepresented groups at all levels.

MRSECs will offer shared experimental and computational facilities that are accessible to the broader research community, and will contribute to a national network of materials research facilities to support research infrastructure in the U.S. Proposals should address how they will contribute to existing cyber infrastructure and computational facilities.

Letters of Intent: Not required.

Due Dates: Preliminary proposals are due June 24, 2019 and, if invited to submit, full proposals are due November 26, 2019.

Total Funding and Award Size: NSF anticipates that there will be $31.5 million to support 8-10 MRSEC awards. Each award will be between $2.6-4 million per year for an initial duration of up to six years.

Eligibility and Limitations: Academic institutions in the U.S. with existing programs in materials research and education may submit proposals. There is no limit on the number of PIs per proposal. An institution may only submit one MRSEC preliminary proposal as the lead. When an organization proposes research covering multiple research areas, a single MRSEC proposal should be submitted containing multiple IRGs (a minimum of two and a maximum of three). Institutions awarded MRSECs as the lead in the FY 2017 competition are not eligible to be the lead in this competition.

Sources and Additional Background:
• The complete solicitation is available at https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5295.
• Information on NSF’s 10 Big Ideas is available at https://www.nsf.gov/news/special_reports/big_ideas/.
• Information about centers, current research areas, and the national networks supported by MRSECs is available at http://www.mrsec.org/.
• More information about this Materials Research Facility Network is available at www.mrfn.org.