CEM Seed Program

2009 Strategic Interest Call for Proposals: Hybrid Materials

The Ohio State University Center for Emergent Materials (CEM) announces acceptance of proposals for its Seed Program.

The aim of the Seed Program and, in particular, the Strategic Interest Call is to provide funding for research that broadens the scope of the CEM by developing into areas of strategic interest to the materials community. *Direct ties of the proposed research with the existing Interdisciplinary Research Groups (IRGs) are not required. However, synergy with the mission of the CEM is expected.*

This Call focuses on the field of **HYBRID MATERIALS**, broadly defined. Hybrid materials include organic-inorganic hybrids as well as any material in which the chemical composition and/or structure varies spatially. The call encompasses structural and functional (electronic, magnetic, …) properties of such materials.

Proposals that demonstrate potential synergy with ongoing CEM activities and/or the potential to nucleate interdisciplinary collaborations are preferred. The grants provide funds of **up to $50,000 in direct costs to be expended over a 12-month period.**

ABOUT THE MRSEC SEED PROGRAM

The Materials Research Science and Engineering Center (MRSEC) funded by the National Science Foundation (NSF) at the Ohio State University (OSU), titled Center for Emergent Materials (CEM), performs integrated research on emergent materials and phenomena in magnetoelectronics. The aim of the CEM is to lay down the scientific foundation for building future oxide-based electronic devices that can perform multiple functions, and energy-efficient, fast computers that have integrated memory and logic. The scientific foundation is in the form of deep and comprehensive understanding of the emergent materials and phenomena, and the development of highly sophisticated experimental and theoretical tools required to study them. CEM has two Interdisciplinary Research Groups (IRGs). IRG-1: Towards Spin-Preserving, Heterogeneous Spin Networks develops a new understanding of electron-spin injection and transport in low-dimensional, spin-preserving materials such as silicon and carbon. This understanding provides a new materials-basis for creating novel high-density spin networks for next-generation computing. IRG-2: Double Perovskite Interfaces and Heterostructures designs and controls multifunctional properties of innovative double perovskite heterostructures through the understanding of structure, defects, and magnetotransport properties at interfaces. This new understanding of magnetism in metallic oxides enables important advances in the emerging field of oxide-based electronics.

Through the Seed Program, NSF intends to provide flexibility for the Center to respond quickly and effectively to new opportunities *beyond the current scope of the CEM*, and pursue high risk / high impact and transformative research. Activities should be related to the mission of the Center, and may include (but are not limited to): seed support for junior faculty and for investigators changing fields; emerging areas of interdisciplinary research; programs to link the university effort in materials with industry and other sectors; the development of tools for remote access to instrumentation; and innovative interdisciplinary educational ventures. Seed funding through the Center is not intended to provide a substitute for NSF individual investigator funding.

More information about the Center for Emergent Materials and the Seed Program can be found at http://cem.osu.edu

ELIGIBILITY

All regular faculty members of OSU who are *not* currently core members of the CEM are eligible to apply to the MRSEC Seed Program. Consistent with the purpose of the Seed Program to broaden the scope of the CEM, current core members may not apply.

DEADLINE

The deadline for the 2009 Strategic Interest Call for the Seed Program is **5:00 PM, Wednesday, July 1, 2009,** with an anticipated start date on or about September 1, 2009.

APPLICATION INSTRUCTIONS

OSU faculty interested in applying to the Seed Program within the Strategic Interest Call should submit an application with the following information and length restrictions:

1. Cover Page (1 page maximum): the names, titles, and departments of the Applicant and any Co-Applicants, contact information for the Lead Applicant only (mailing address, email, phone and fax numbers), and the names of unfunded CEM collaborators
2. Project Description (4 pages maximum): Summary of the proposed research including:
    - Objectives of the proposed research project
    - Description and scope of research
    - Work plan and methodology
    - Expected outcomes
    - Research facilities that may be used to conduct the research
    - A brief statement of how the proposed research furthers the CEM mission
    - Metrics for evaluating performance
3. References (1 page maximum)
4. Budget Information: A detailed budget for the proposed project and a brief explanation of the proposed budget items. Refer to the "Budget Restrictions" section below when developing your budget proposal. (1 page maximum)
5. Curriculum Vitae of each Co-Applicant (2-page maximum per Co-Applicant)

All applications should use a minimum 11-point font size. Applications longer than the stated page limits or omitting information requested above will not be reviewed.

Please submit your application as an email attachment in a single file in PDF format by 5:00 PM, Wednesday, July 1, 2009 to Tracee Mohler, CEM Administrative Associate, at mohler@mps.ohio-state.edu.

BUDGET RESTRICTIONS

The following expenses are not allowed: faculty salary or benefits (including release time and summer quarter salary).

REVIEW CRITERIA

The Seed Program will allocate resources based on the quality of the proposed research and the synergy with the CEM activities.

Review criteria for the 2009 Strategic Interest Call are:

- Intellectual merit of proposed research activity: originality, potential contribution to science, technology and education
- Synergy with CEM activities
- Relevance to targeted area of hybrid materials
- Extent to which proposed research fosters interdisciplinary collaborations
- Availability of resources
- Broader impacts

Proposals will be evaluated by internal and external reviewers. Based on the reviews, the Seed Board will forward suggested action to the CEM Executive Committee for final dispensation.

TERMS AND CONDITIONS

Strategic Interest Seed Grants must be fully expended **within twelve months** of award. The grants are eligible for one competitive renewal. A brief technical report and financial report are due at the end of the award cycle. Seed Grant recipients will be expected to acknowledge support of the CEM Seed Program on publications resulting from the funded research and to share their research findings at future CEM events, including seminars and workshops.

CONTACT INFORMATION

Potential applicants may contact the Seed Board Co-Chairs **Ezekiel Johnston-Halperin** (ejh@mps.ohio-state.edu, 614-247-4074) or **Julia Meyer** (jmeyer@mps.ohio-state.edu, 614-292-7995) for questions related to potential research activities.