OSU Materials Research Seed Grant Program
2023-2024 Request for Proposals

Key Dates

- Request for Proposals Issued: Monday, November 27, 2023
- Letters of Intent Due: Monday, January 8, 2024 at 5:00 PM ET
- Notice of MRSGP Appropriateness: Monday, January 15, 2024
- Proto-IRG and Multidisciplinary Team Building Grants tiers only – Mandatory Team Proposal Presentations: Wednesday, January 24, January 31, February 7, and February 14, 2024
  - 3:00PM - 4:00 PM ET, Physics Research Building, Room 4138
- Proposals Due (All Funding Tiers): Monday, March 4, 2024 at 5:00 PM ET
- Awards Announced (anticipated): August 2024
- Funded Projects Start Date (anticipated): September 1, 2024 (12-month project period)

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Program Description

We are pleased to announce the **2023-2024 OSU Materials Research Seed Grant Program (MRSGP) Request for Proposals (RFP)**, which is open to The Ohio State University (OSU) materials community. This integrated seed program leverages resources and best practices of the Center for Emergent Materials (CEM), the Center for Exploration of Novel Complex Materials (ENCOMM), and the Institute for Materials and Manufacturing Research (IMR). The result is a unified RFP with Funding Tiers designed to achieve the greatest impact for seeding excellence in materials research of varying scopes, and with the goal of generating new directions that extend beyond the boundaries of existing research programs.

The three funding tiers of the OSU Materials Research Seed Grant Program offered this cycle are:

1. **Proto-IRG Grants**
   Proto-IRG Grants provide funds up to $100,000/year per award in direct costs, require one Principal Investigator (PI) and two or more Co-Principal Investigators (Co-PIs), and may have unfunded collaborators with the goal of forming new Interdisciplinary Research Groups (IRGs) for the CEM, a National Science Foundation (NSF) supported Materials Research Science and Engineering Center (MRSEC).

2. **Multidisciplinary Team Building Grants (MTBG)**
   MTBGs provide funds up to $70,000/year per award in direct costs, and require one PI and one or two Co-PI, and may have unfunded collaborators, with the goal of forming multidisciplinary materials research teams that can compete effectively for federal block-funding opportunities, such as the NSF MRSEC program.

3. **Exploratory Materials Research Grants (EMRG)**
   EMRGs provide funds up to $50,000/year per award in direct costs, and require one PI, and may have Co-PIs and/or unfunded collaborators, with the goal of enabling nascent and innovative materials research to emerge to the point of being competitive for external funding. EMRGs, while open to all faculty, emphasizes support of pre-tenure faculty members.

The following pages describe the three tiers of seed funding opportunities this cycle and provide details on how to apply. Please visit imr.osu.edu, encomm.osu.edu or cem.osu.edu for additional information and updates related to this year's seed grant RFP.

Description of the Three Funding Tiers

1. Proto-IRG Grants

These grants seek to stimulate interdisciplinary research that broadens the scope of the CEM – a National Science Foundation (NSF) Materials Research Science and Engineering Center (MRSEC) at OSU. The goal is to develop full-scale IRGs to be incorporated into the Center. Technical overlap of the proposed research with the current CEM IRGs is not required. However, synergy with the mission of the CEM is preferred (for example through shared facilities, techniques, theory/modeling, materials, etc.). These proposals should fall within the program scope of the Division of Materials Research at the NSF. We invite proposers to communicate with CEM representatives (http://cem.osu.edu) to identify competitive topics.

These grants will support materials research by small interdisciplinary groups of one PI and two or more Co-PIs per team. Each Proto-IRG team is expected to form the core membership of a future IRG; additional collaborators may be included. Proposed research projects should be broad and interdisciplinary while maintaining a focus on a central theme to meet the requirements of a full IRG.

Although not required for Proto-IRGs, a strong synergy between experimental and theoretical components is essential for full IRGs. Proposers are encouraged to review the most recent RFP from the NSF for further information on what is expected of a full IRG, in particular the specification that the "whole be greater than the sum of the parts" at: https://www.nsf.gov/pubs/2021/nsf21625/nsf21625.htm.

Awards will be up to $100,000 in direct costs per grant per year. The initial funding period is one year, but a successful Proto-IRGs may apply for renewal in the next year's open competition of the OSU Materials Research Seed Grant Program. Funded Proto-IRGs are expected to participate actively in further team building and CEM activities.

Contact Information:

Contact Prof. Joshua Goldberger (goldberger.4@osu.edu, 614-247-7438) with any questions.

2. Multidisciplinary Team Building Grants

The aim of these grants is to enable and to invigorate new interdisciplinary collaborations with high potential to have broad impact and win substantial federal block funding. These grants require one Principal Investigator and one Co-PI. Additional unfunded collaborators may be included. The goal is to form multidisciplinary materials research teams of 2 to 4 faculty members each.

Awards will be up to $70,000 in direct costs per grant per year. The initial funding period is one year, but successful Multidisciplinary Teams may apply for a maximum of one additional year renewal in the next year's open competition of the OSU Materials Research Seed Grant Program.

Contact Information:

Contact Profs. Fengyuan Yang (yang.1006@osu.edu, 614-688-4390), Steven A. Ringel (ringel.5@osu.edu, 614-292-6904), or Joshua Goldberger (goldberger.4@osu.edu, 614-247-7438) with any questions.

3. Exploratory Materials Research Grants

The aim of these grants is to stimulate nascent and innovative materials-allied research to the point where a highly competitive external proposal can be developed. These grants require one Principal Investigator. Additional Co-PI(s) and/or unfunded collaborators may be included. These grants complement the Multidisciplinary Team Building Grants. The Exploratory Materials Research Grants program, while open to all faculty, emphasizes support of pre-tenure faculty members.

Awards will be up to $50,000 in direct costs per grant per year. The initial funding period is one year, but successful PIs may apply for a maximum of one additional year renewal in the next year's open competition of the OSU Materials Research Seed Grant Program.

Contact Information:

Contact Profs. Fengyuan Yang (yang.1006@osu.edu, 614-688-4390), Steven A. Ringel (ringel.5@osu.edu, 614-292-6904), or Joshua Goldberger (goldberger.4@osu.edu, 614-247-7438) with any questions.

How to Apply

Eligibility

1. An applicant may serve as Principal Investigator on only **one** proposal in response to this RFP. The PI must hold a faculty-level appointment at OSU. **All proposed research must be clearly distinct from ongoing externally or internally funded research.**
2. Currently funded (2023 MTBG and EMRG awardees) MRSGP Principal Investigators or Principal Investigators with unspent MRSGP funds (no-cost extension) are not eligible to apply to this RFP.

Letters of Intent

Applicants planning to submit a proposal in response to this RFP are required to submit a Letter of Intent (LOI) as **one file in PDF format** via email to OSU_MRSGP@osu.edu with a Cc to gardner.306@osu.edu **by Monday, January 8, 2024 at 5:00 PM ET** for funding consideration. The Letter of Intent is required to include: names, titles, and departmental affiliations of PI, Co-PIs (if applicable) and collaborators (if known); contact information for the PI only (mailing address, email, and phone numbers); identification of the Funding Tier; tentative project title; a short description of the proposed research (100 words maximum) **and, a short statement (100 words maximum) describing how the proposed project advances materials research at OSU.** Proposers will be informed if their LOI is an appropriate topic that is eligible for full proposal submission by **Monday, January 15, 2024**. For letters of intent to the Proto-IRG and Multidisciplinary Team Building Grant funding tiers, the letter of intent must also include the team's date preference of mandatory presentation (See next section for more details): January 24, January 31, February 7, and February 14, 2024 at (3-4pm) options. **Any Letter of Intent that does not provide the above information or does not meet the deadline will not be considered.**

Presentations

The Proto-IRG and Multidisciplinary Team Building Grants proposals are required to make an informal presentation on their proposed collaborative research concept. The presentations (up to 15 minutes each) will be hosted on Wednesday, January 24, January 31, February 7, and February 14, 2024, from 3:00PM – 4:00PM in the Physics Research Building, Room 4138.

While these presentations are required, their content will not be part of the formal review criteria. The purpose of these presentations is to provide a forum for forming and enhancing interdisciplinary collaborative connections amongst OSU materials researchers in an informal setting, and to provide an opportunity to strengthen the proposals.

Proposal Submission

All proposals are due by **Monday, March 4, 2024 at 5:00 PM ET** (for all funding tiers). Submit your proposal as an email attachment in **one PDF file** to OSU_MRSGP@osu.edu with a Cc to gardner.306@osu.edu . **Any proposal that does not meet the deadline will not be considered.**

Proposal Preparation Instructions (Multidisciplinary Team Building and Exploratory Materials Grants)

1. **Cover Page** (1 page maximum) including: identification of the Funding Tier; proposal title; names, titles, and departmental affiliations of PI, Co-PIs (if applicable) and collaborators (if any); contact information for the PI only (mailing address, email, phone and fax numbers); date and title of team building presentation (Multidisciplinary Team Building); proposal abstract (200 words maximum)
2. **Project Description** (4 pages maximum) including:
   a. Objectives of the proposed research project
   b. Description and scope of research
   c. Work plan and methodology
   d. Expected outcomes
   e. Research facilities that may be used to conduct the research
   f. Expertise of the team and synergy among team members to enable research of a scope and complexity requiring the advantages of scale and inter-/multi-disciplinarily provided by a team (required only of Proto-IRG and Multidisciplinary Team Building proposals)
   g. A coherent management plan detailing how the project will be executed as a team effort (required only of Proto-IRG and Multidisciplinary Team Building proposals)
   h. A list of targeted federal block-funding opportunity(ies) with deadline(s) (if known), and a description of how the team will be able to compete effectively for those opportunity(ies) if the proposed research objectives are met (required only of Multidisciplinary Team Building proposals)
   i. A list of targeted external funding agency(ies), with deadline(s) (if known), and a description and how meeting the objectives of the proposed research would translate into external proposal development (required only of Exploratory Materials Research proposals)
   j. Plan for expansion to a full IRG with integrated experimental and theoretical components (required only of Proto-IRG proposals)
3. **References Cited** (no page limit)
4. **Budget Information** (1 page maximum): Provide a detailed budget for the proposed project and a brief explanation of the proposed budget items.
5. **Curriculum Vitae** (2 pages maximum each) for PI and all co-PIs (if applicable)
6. **Current & Pending Support** (no page limit) for PI and all co-PIs (if applicable)
7. **Performance on Prior Internal Awards:** For those Principal Investigators who have previously received **any** research funding through the OSU Materials Research Seed Grant Program - Exploratory Materials Research Grants, Multidisciplinary Team Building Grants, or Proto-IRG Grants) - we require a synopsis of every funded

project(s) including details on all outcomes. The application must include a brief paragraph explaining the outcomes of each project and full citations for all publications, presentations, and externally funded projects related to your activities on that project. This information should be included as part of the application as an addendum and is **not** included in the page limit.

8. **Quad Chart (not for external use):**
   The Quad Chart shall be prepared in Landscape orientation as an editable PowerPoint attachment**. A link to a Quad Chart template can be found on IMR's Materials Research Seed Grant Program webpage:**
   The Quad Chart should be formatted as stated and include the following information:
   - **Heading** (Arial 24pt Bold):
     - Title of Project
   - **Upper Left Quadrant:**
     - Picture or graphic illustrating proposed research
   - **Lower Left Quadrant** (Arial 12pt Normal):
     - Project objectives and scope
     - Key personnel, facilities/equipment
     - Related prior or current work
   - **Upper Right Quadrant** (Arial 12pt Normal):
     - How the project contributes to and addresses the requirement
     - How the project could be leveraged into future government or industry opportunities
     - Technical Readiness Level (current level and anticipated level at project completion). Technical Readiness Level definitions can be found here.
   - **Lower Right Quadrant**: (Arial 12pt Normal):
     - Estimated costs
     - Major activities/milestones
     - Deliverables, metrics/measures of success
     - Potential risks
9. Use a minimum 11-point font size, single line-spacing, and 1" margins throughout your written proposal. **Proposals longer than the stated page limits and/or omitting information requested above will not be reviewed.**

Budget Restrictions

These seed grants are intended to support primarily student and postdoctoral researcher salaries and benefits; tuition; materials and supplies; and equipment user fees. The following expenses are **NOT** allowed (all Funding Tiers): faculty salaries and benefits; computers and equipment purchases; and food and entertainment.

Terms and Conditions

All selected proposals are subject to terms and conditions, including reporting requirements, that will be specified when the awards are made.

- All publications that result from seed funding must appropriately acknowledge OSU MRSGP support.
- Investigators are required to submit reports consisting of one page of text and one "highlight" slide in April for inclusion in annual reports. The exact deadline and requirements will be communicated to PI's of the awarded seed grants.
- F&A distribution for CEM funded awards is assigned per CEM's cost share agreement

and cannot be changed
- All purchases, travel, and HR appointments will be conducted in the home departments of the investigators.
- Funds cannot be transferred from this project to another internal fund.

Review Process

MRSGP Board

- Fengyuan Yang, MRSGP Chair, ENCOMM Director, Professor, Dept. of Physics
- Joshua Goldberger, MRSGP Oversight Committee, CEM-MRSEC Director, Professor, Dept. of Chemistry and Biochemistry
- Steven A. Ringel, MRSGP Oversight Committee, IMR Executive Director, Professor, Depts. of Electrical and Computer Engineering, Materials Science Engineering, and Physics

Each proposal (all Funding Tiers) will be reviewed by external and OSU reviewers. At the time of award notification, PI(s) will receive an anonymous copy of the reviews.

Review Criteria

- Intellectual merit of proposed research activity, including originality, novelty, and potential for contribution to science, technology and education
- Potential for the proposed research to be funded through existing federal funding mechanisms
- Potential to seed transformative advances involving materials-allied research
- Clearly distinct from ongoing externally or internally funded research including recent OSU Materials Seed Grant Program funding (these are not meant to be continuation grants)
- Potential to positively impact Investigators' career trajectory

Additional Review Criteria (Proto-IRG and Multidisciplinary Team Building Grants)

- Evidence of team synergy
- Potential for winning federal block funding
- Presentation

Additional Review Criterion (Exploratory Materials Research Grants)

- Plan for external proposal development

Post-Award Spend and Reporting Compliance

Award Spending

Teams will have 12 months from the date of fund transfer (anticipated September 1, 2023) to expend all funds. Any remaining funds will be retrieved by the IMR to be used towards the next MRSGP fiscal year funding cycle.

Extensions

If you cannot complete your project aims within the specified project period, MRSGP will allow no more than **(1) request** to extend your project **(Not guaranteed)**. We refer to this as a no-cost

extension (NCE). An NCE extends the original project period, allowing the completion of project aims without additional funds being provided. Extensions will not be granted for the sole purpose of spending remaining funds. Requests containing award information and detailed justification must be emailed to the MRSGP Board Members with a cc to IMR Proposal Development Specialist, Joanna Gardner (gardner.306@osu.edu), no later than 60 days prior to the end of the award.

Reporting

- Within 60 days of the end of the award, teams must **update the PPT Quad Chart** included in their original proposal with a new section to answer, *"So What?/Broader Impacts".* Do not include any confidential or proprietary information.
- Teams are expected to provide data on any associated awards/funding, publications, professional awards and invited talks that have fully or partially resulted from this award. Papers must site program: "*This work was supported in part by The Ohio State University Materials Research Seed Grant Program, funded by the Center for Emergent Materials, an NSF MRSEC, under award number DMR-2011876, the Center for Exploration of Novel Complex Materials, and the Institute for Materials and Manufacturing Research."*