

# President's Research Excellence program: Catalyst proposals

The Ohio State University aims to grow its research and innovation enterprise and increase its research eminence among the nation's and the world's research universities by attracting more externally sponsored research funding, enabling curiosity-driven research and discoveries, and addressing large, complex societal challenges.

Towards these goals, the President's Research Excellence (PRE) program will provide seed support for cross- and interdisciplinary research that will attract external funding. Specifically, the PRE program will support (1) small teams formed to pursue curiosity-driven, novel, high-risk and high-reward research; and/or (2) large cross- and interdisciplinary teams to pursue large-scale, high-impact research that addresses emerging or existing challenges of national and international societal importance, generates long-term, sustained, and significant impact, and positions Ohio State as THE leader in this area.

Proposals must make a compelling case for the nature and scope of anticipated scientific, technological or societal impacts that will result from the proposed research. Applicants should also provide plausible and measurable impacts consistent with program goals to increase research expenditures and enhance Ohio State's leadership position. Projects will be expected to result in a proposal submitted for external funding by the end of the grant period. Failure to do so will disqualify the PI and co-PIs from submitting PRE requests for two years. Faculty investigators may only be involved in a single funded project at any given time and are limited to submitting one proposal per funding cycle.

## Program

The PRE program will be supported, on average, with \$2 million per year for 10 years. A call for proposals will be issued annually with at least one funding cycle offered in each of two categories: Accelerator Grants, and Catalyst Grants. Specific details and priorities are subject to adjustment from year to year.

*Note: The level of expected research eminence is the same for both grant categories; the difference is the breadth and scope of the proposed projects.*

## Catalyst Grants

Catalyst Grants will support cross- and interdisciplinary teams proposing bold, creative, and potentially transformative ideas that address significant societal challenges and raise the level of research eminence at Ohio State. Successful Catalyst projects will: (1) address a recognized challenge of societal significance; (2) propose a transformative research concept; (3) employ breakthrough technology and/or novel methodologies; and (4) lead to submission of a large-scale (\$3-5 million or more), national-level center proposal by the end of the grant period.

Proposing teams must include at least three to five (3-5) Ohio State faculty representing at least two (2) colleges. **The TIU college for each participating faculty member will be used to determine if teams meet this eligibility requirement, with no exceptions granted based on joint appointments.** The lead PI for this program must be a faculty member, either tenure/tenure track or research, or a clinical-track faculty member who is engaged in research. PI status at Ohio State is required for all lead PIs. Co-investigators can be faculty, research staff or post-docs from intellectually distinct disciplines. Highly collaborative, cross- and interdisciplinary teams formed with attention to the diverse perspectives and approaches required to address the identified challenge, and that include faculty at all career stages, are strongly encouraged to apply.

Applications from all areas of inquiry are welcome. **Highly interdisciplinary research proposals that integrate business, art, policy, law, or humanities with natural, social and physical sciences, engineering, health, or agricultural sciences are strongly encouraged.**

The Catalyst program will prioritize support for proposals that address emergent and convergent research aligned with national scientific, medical, and engineering priorities. Within these broad areas, the university is especially interested in proposals that position Ohio State for leadership in (in alphabetic order):

- Aging, Healthy Aging;
- Cancer Science and Engineering, Immunology and Therapeutics;
- Cardiopulmonary Disease;
- Data Sciences, Artificial Intelligence, Machine Learning;
- Digitalized and Next Generation Manufacturing;
- Emerging Autonomous Technologies and Systems, Smart Mobility, Cybersecurity;
- Food, Nutrition, Metabolism, Behavior and Health;
- Genomics;
- Health Disparities, One Health;
- Neuroscience;
- Novel social science research concepts that address societal challenges related to food, water, health, racial equity and inclusion, and national security;
- Precision and Sustainable Agriculture;
- Quantum Information Science and Technology, Next Generation Wireless Communication; and
- Renewable Energy, Smart Grid, Energy Storage.

#### **Budget:**

Catalyst Grants will provide up to \$200,000 for an 18-24 month performance period. Funding will be allocated in two installments, with the second installment contingent on interim review of progress towards milestones. Proposals will be accepted at least once per year, and awards will be made until the annual funding increment is depleted. The number of projects supported each year will vary based on requested proposal budgets.

Allowable spending: Catalyst Grants may fund the following:

- Out-of-pocket research expenses, support for students (stipends and tuition/fees);
- Salary and benefits for staff scientist(s) and/or post doc(s);
- Matching funds (\$50K maximum) for research instruments or technical infrastructure;
- Faculty release time during the semester before the external proposal is due; and
- Expenses associated with project specific travel to meet with external collaborators or host collaborator meetings on campus.

Funds cannot be used to support or supplement faculty salaries or for travel to conventional academic meetings or conferences. External collaborators are welcome, but must not be supported by PRE funding.

#### **Concept Paper Requirements:**

Proposing teams must submit a 2-page concept paper narrative\* **that is organized using the required section headers listed below:**

- Title: descriptive project title;
- Project Narrative: non-technical narrative describing the societal challenge to be addressed, the proposed cross- and interdisciplinary approach(es) to be employed, and how the proposed work will utilize or develop breakthrough technology and methodologies to produce potentially transformative results;
- Research Priority Area: identification of one or more research priority areas listed above that are addressed in the concept paper or that speaks to the societal impact and significance of the proposed research if it falls in a category outside of the identified priority topics;
- Team: list of core proposing team members with departmental affiliations and a brief statement of their role(s) on the proposed project;
- External Funding Opportunity: name of the external sponsoring agency and specific program to which a proposal will be submitted by the end of the grant period, and;
- Budget Narrative: a brief narrative description of the anticipated allocation of requested seed funding. For example, "Project expects to utilize seed funding to support 50% stipends for 2 graduate students (total \$\$),

25% compensation for a research scientist AA (total \$\$), 50% compensation for a post-doctoral researcher YY (total \$\$) and \$25K to cover the ZZ core facility usage fees.” Do not include a budget table or form.

- NOTE: References are optional and, if included, are separate from the required 2-page narrative. Do not include a cover page or any biosketches/CVs.

\*Concept paper narratives should be single-spaced with 1-inch margins on all sides and a font size no smaller than Arial 10.

### **Review and Selection:**

Concept papers for the Catalyst program will be reviewed by a faculty panel. The Associate Deans for Research from each college will be asked to recommend 1-3 faculty experts to serve on this panel. The number of panel members from each college will depend on its faculty size. Panelists will be appointed to two-year staggered terms (inaugural panel members will be asked to serve for 1 or 2 years with reappointment possible). Panel members will not be eligible to apply for PRE funding during their term of service. The faculty panel will make recommendations for projects to invite for full proposal submission to the Program Executive Lead, who will make the final decision, in consultation with an advisory team designated by the head of the Research, Innovation and Knowledge Enterprise and the Office of Research.

### **Invited Full Proposals:**

Teams whose concept papers were invited for full proposal submission will submit a 1-page “Response to Reviewer Feedback,” a 5-page proposal narrative, team member biosketches, and a budget and budget narrative **within a single PDF file**.

### **Full Proposal Requirements:**

- Response to Reviewer Feedback – 1 page
  - Describe how you have elected to respond or not respond to reviewer feedback of your concept paper.
- Narrative (must be organized using the section headers underlined below) – 5 pages
  - Title: descriptive project title;
  - Project Narrative: non-technical narrative describing the societal challenge to be addressed, the proposed cross-disciplinary approach(es) to be employed, and how the proposed work will utilize or develop breakthrough technology and methodologies to produce potentially transformative results
  - Timeline and Milestones: timeline and milestones for the activities to be supported with grant funds
  - Identified Priority Topic(s) or Societal Impact and Significance: statement as to how the proposed research fits in one or more of the identified priority topics, or that speaks to the societal impact and significance of the proposed research if it falls in a category outside of the identified priority topics
  - Expected Impact: explanation of the significance and expected impact of the work on science and/or society, along with the anticipated contribution to Ohio State’s goals related to research eminence and external funding;
  - External Funding Opportunity: name of the external sponsoring agency and specific program to which a proposal will be submitted at the end of the grant period.
- Team Member Biosketches – 2 pages each
- Budget and Budget Narrative – 2 page maximum
- NOTE: References are optional and, if included, are separate from the required 5-page narrative. Do not include a cover page.

Teams submitting to this program should present a clear, compelling, and detailed plan that addresses the preliminary research to be pursued and milestones to be achieved to enable submission of a large, externally sponsored grant proposal by the end of the 18-24– month performance period.

A final report of activities and budget expenditures, along with a copy of the proposal submitted for external funding will also be required at the conclusion of the funding period.

\*Proposals should be single-spaced with 1-inch margins on all sides and a font size no smaller than Arial 10.

### **Review and Selection:**

Invited full proposals will be reviewed by the same faculty panel that reviewed the concept papers. The faculty panel will make funding recommendations to the Program Executive Lead, designated by head of the Research,

Innovation and Knowledge Enterprise. The Program Executive Lead will make the final decision, in consultation with an advisory team designated by the head of the Research, Innovation and Knowledge Enterprise and the Office of Research.

### **PRE Evaluation Criteria**

- Degree to which the proposed project is discovery driven, and offers A) novel, high-impact and high-reward research concepts to a well-defined challenge of regional or national significance (Accelerator Grant) or B) transformative and high-impact research concepts for larger-scale, significant societal challenges (Catalyst Grant).
- Degree to which the proposed project will increase Ohio State's research eminence and prestige and result in external funding.
- Degree to which the project includes strong rationale for the proposed activities and offers compelling near-term proposal submission, long-term impacts on science and/or society, and clear return on university-invested dollars consistent with program goals.
- Degree to which planned activities will plausibly achieve the desired outcome(s) in the designated performance time (i.e., 12 months for an accelerator grant and 18-24 months for a catalyst grant).
- Degree to which there is demonstrated knowledge and expertise of the team members to effectively execute the project. It is expected that all partners are substantively involved in the design and implementation of the proposed work.
- Degree to which Ohio State's unique strengths and expertise are leveraged to position the university for regional, national and international leadership in the project area.
- Degree to which the plan for the external submission is clear, technically sound and attainable within or at the conclusion of the performance period.

### **For More Information Contact**

Please direct questions to [PRE@OSU.EDU](mailto:PRE@OSU.EDU)



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