



## Guidelines

# Partners in Science 2.0 Grant Application

### PURPOSE AND BACKGROUND

Partners in Science has been a program supported by the Murdock Charitable Trust for about 35 years. The program's purpose is to engage secondary science teachers in authentic and innovative research experiences in a university lab or other research institution so these teachers will more effectively guide their students through the processes of science in creating new knowledge. The program enables teachers (Partners) and academic scientists (Mentors) to collaborate in the advancement of science, with the goal that both will grow professionally in the process.

In June 2023, the Murdock Trust approved the transition to a different program delivery model. Similar to the National Science Foundation's Research Experience for Teachers (RET) Sites grant, the Trust is seeking grant applications to fund research experiences for secondary science teachers on university campuses or qualified research institutions. Institutions (individually or collaboratively with other nearby institutions) can apply for a renewable three-year grant to run the research experience for three or more partnerships each year. Grantee institutions would be responsible for recruiting, supporting the partnerships through providing research opportunities and professional development, and administering the grant.

The Murdock Trust will provide two annual conferences: a four-day August conference for the teachers to support the translation of the research experience into a change in classroom practices; and a two-day January conference for both the teachers and their mentors. The January conference will include a keynote speaker, teacher research presentations, workshops supporting the implementation of research in the classroom, and more. The Trust will cover the costs of the hotel, food, and other general conference expenses.

### GRANT GUIDELINES

#### Research experiences:

- 2 summers (7-8 weeks, each) of research in the natural sciences.
- For in-service and pre-service secondary school science teachers—at least 50 percent of the partners (teachers) each summer must be in-service teachers.
- Three to six new partnerships for each year of the three-year grant.

#### Eligibility:

- Colleges, universities, and other qualified research Institutions in the Trust's five-state funding region (Alaska, Idaho, Montana, Oregon, and Washington) and Trinity Western University in British Columbia.

### Who may submit proposals:

- One proposal per institution may be submitted by a university administrator. The principal investigator (PI) and co-PIs (other Mentors) must have an active research program as evidenced by grants and/or publications and hold an appointment in a natural science department.

### General expectations:

- The Partners in Science 2.0 program intends for teachers to take off their “teacher hats” and fully immerse themselves in the research experiences. Funding and time to develop curriculum during the research experience are not supported. Having the teacher-researcher supervise secondary school students in the laboratory is also not supported.

## APPLICATION GUIDELINES

### Prior to preparing the Partners in Science 2.0 Application

To initiate grant application submission, the proposal lead (the lead principal investigator) will register through the Fluxx grants portal to initiate the grant application using this link:

<https://murdocktrust.fluxx.io/apply/pis2>

### Proposed Project Elements

- Location(s)
  - Where will the proposed research occur?
- Number of Partnerships
  - Number of teachers recruited each year.
- Teacher Recruitment and Selection Parameters
  - Please specify a recruitment plan with as much specificity as possible. The types and/or names of schools and school districts from which teachers will be recruited. Sites that plan to include a combination of pre- and in-service teachers need to discuss how the group will be managed to be appropriate and relevant to all and to allow for all the participants to be fully engaged. Participants should be able to commute to a given site easily each day and not need funds for housing and meals. However, in order to recruit teachers from very rural areas, it may be necessary to include in the budget funding for housing while considering a hybrid approach to research (for example—four weeks in person and four weeks virtual).
  - Identify the qualities of a successful Partner such as educational background, full-time middle school or high school science teacher, education in the applicable science, and so on.
- Site Team (include biographical sketch [NSF or NIH style] for each team member)
  - Lead PI (can be a mentor)
  - Co-PIs leading projects (each co-PI must hold an appointment in the natural science field at a college, university, or other qualified institution in the Trust’s region). Note: One Mentor may have one to two Partners as long as each Partner has a separate research project.
  - If the PI is not directly mentoring the teacher, clarify in the application who will be the mentor. Another qualified research-scientist in the lab with available time may be an appropriate mentor.
- Site Cohort Integration
  - Involvement in science journals and relevant meetings are part of the learning process.
  - What activities will the research institution offer and plan to support the Partners as a cohort as they transition their identities from teacher to teacher-researchers?

- Intended Outcomes and Longer-Term Impact
  - Suggest direct or indirect ways that this partnership might strengthen the high school and mentor’s research or college science programs. To the extent possible, suggest the direction that future interactions or collaborations [i.e. visiting the classroom, inviting students to the lab after the two summers of research are completed] might take.
- Project description
  - Research opportunities
    - For Cohort 1 (to start Year 1): Outline each research opportunity for each proposed partnership. Include a brief description of the research project, the question or hypothesis to be addressed, the importance of the research question, and an overview of the experimental design for both summers (including data collection methods and analysis). Be sure to address the activity of the teacher in each of the two 7- to 8-week sessions. Assuming the research is successful, in what journal(s) will the PI seek publication?
    - For Cohorts 2 and 3 (to start Years 2 and 3): Identify potential Mentors, including a brief description of their research and a potential question to be addressed.
- Proposed budget (sample budget included below)

Note: The per-teacher cost must not exceed \$37,500 for the two summers. Adjustments to the budget may be necessary to fit within this parameter.

<b>Proposed Budget</b>			
	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
New Partnerships	4	4	4
Teacher Stipends (for two summers)	\$46,000	\$46,000	\$46,000
Mentor Stipends	\$48,000	\$48,000	\$48,000
Travel to the January and August conferences	\$4,000	\$4,000	\$4,000
Lab Supplies	\$12,000	\$12,000	\$12,000
Supplemental Grant	\$15,000	\$15,000	\$15,000
Peer-reviewed publication (up-to \$8,000 over three years).	\$2,500	\$2,500	\$2,500
Other (specify)			
Project-related indirect costs (up-to 20 percent)	\$22,500	\$22,500	\$22,500
<b>Totals</b>	<b>\$150,000</b>	<b>\$150,000</b>	<b>\$150,000</b>
<b>Total Award Requested</b>	<b>\$450,000</b>		

Note: For the **sample budget** (above), the total grant award is \$450,000 (includes a one-year no-cost extension in Year 3, in order for the Year 3 cohort to complete the two-year cycle.)

#### Eligible Costs

- In-service summer stipends, up to \$6,500 per teacher per summer, for eight weeks of full-time participation. Preservice summer stipends, up to \$5,000 per student per summer, for eight weeks of full-time participation.
- Faculty summer stipends, up to \$7,500 for up to eight weeks of full-time participation in the research. For shorter periods, the stipend should be prorated. If stipend support is also being paid from other sources, a prorated reduction in this proposal is also appropriate.
- Travel costs: roundtrip travel to Vancouver, WA, for the two required conferences. The mentor is invited to the January conference. In the sample, the funds are for local travel. Depending upon your location, expenses may be higher due to air travel.
- Lab Supplies: up to \$1,500/partnership/summer

- Supplemental grant: this grant aims to provide funding to support the implementation of an inquiry-based project for in-service teachers. After two summers of research, the teacher is encouraged to request support to purchase equipment to enable the implementation of an inquiry-based unit or project in the classroom.
  - The Partners in Science 2.0 grant proposal should describe a process on how to encourage, evaluate, and award the supplemental funds. Direct application to the two summers of research is not necessary; however, the applicant should demonstrate how the process of science will be used. Up to \$7,500/teacher, but no less than \$5,000.
- Other: special and unusual expenses, not listed above, that are essential in the performance of the research.
- Up to 20 percent of the budget each year may be proposed by the coordinating institution to support the salary for an administrative assistant directly.

#### Ineligible costs:

- Faculty and student academic year stipends, postdoctoral stipends, and graduate student stipends.
- Teacher tuition costs.
- Books and journals.
- Travel expenses to scientific meetings.

## SELECTION CRITERIA

- All aspects of the proposed project are clearly and thoroughly outlined.
- The research plans have a clearly identified purpose and design. The teachers'/partners' proposed research is realistic, coherent, engaging, and powerful for generating valid and reliable data within the 7- to 8-week timeline.
- Benefits to the researcher and institution are specified. Clearly describes both direct and indirect ways the partnerships will strengthen the research or college programs.

## GRANT APPLICATION SUBMISSION PROCESS

See Instructions and Checklist: Partners in Science 2.0 Grant Application