

Guidelines Partners in Science Program High School - College/University Research Partnerships

PARTNERS IN SCIENCE

Basic research in the natural sciences is the frontier on which new discoveries and explanations of nature arise. Such inquiries stimulate progress by providing the knowledge needed to create technology. Research is also the cornerstone of graduate education in the sciences, and even many undergraduates have opportunities to participate in hands-on investigations under the guidance of faculty mentors. While a smaller number of high school students have a chance to taste scientific inquiry, several organizations are now sponsoring summer research programs for pre-college young people.

By contrast, although some high school science teachers have had the opportunity to participate in an undergraduate research program, many have been educated in a system which emphasizes textbook knowledge. As a result, these teachers may not have been exposed to scientific inquiry and the ways in which science progresses, and thus may not be able to convey the excitement of scientific discovery to their students. For these teachers the chance to be involved in scientific research would be an invaluable experience which might inspire superior classroom teaching.

PROGRAM GOALS

Providing high school teachers with opportunities to work at the cutting edge of science, and thus to revitalize their teaching and help them to appreciate the use of inquiry-based methods in the teaching of science, is a primary goal of the Partners in Science awards. The program enables teachers and academic scientists to collaborate in the advancement of science, with the goal that both will grow professionally in the process. High school teachers begin to see themselves as scientists as well as being an integral part of the scientific community. Teachers will be a part of a cohort of teachers that will form a professional learning community and will present their research at a national science conference in January after each summer of research. Faculty mentors benefit not only from research assistance, but from contact with those shaping their future students. All partners develop broader understanding of the linkages between high school and college science education.

After the two summers of research are completed, secondary goals of the Partners in Science program are to invigorate teachers in their teaching careers, to develop new teaching strategies that help their students also see themselves as scientists, and to foster long-term scholarly collaborations which leads to teachers who are active in science yet committed to their high school classrooms. [green highlights are new edits.]

ELIGIBILITY

Partners in Science awards are made to colleges and universities and to other qualified research institutions to enable high school science teachers to participate in full-time research for 8-10 weeks during the summer.

Applications are accepted from researchers in the natural sciences at institutions located in areas where the Partners in Science program is available.

INSTITUTION

Applications must be submitted through a college or university or other qualified research institution which accepts responsibility for the administration of the award.

PRINCIPAL INVESTIGATORS (MENTORS)

To apply, an investigator must have an active research program as evidenced by grants and/or publications and hold an appointment in a natural science department at a college, university, or other qualified institution in the Pacific Northwest (Alaska, Idaho, Montana, Oregon, and Washington).

HIGH SCHOOL TEACHERS (PARTNERS)

High school teachers should possess academic qualifications in appropriate disciplines, in most cases a baccalaureate degree or the equivalent in chemistry, physics, biology, or earth science. Applicants must be a full-time teacher with a high school appointment and be teaching science. The teacher and high school would normally be within convenient commuting distance of the research host institution so that a research partnership may continue beyond the 8- to 10-week summer research periods.

There are no restrictions with regard to age, rank, or length of service of either teachers or mentors, but preference may be given to teachers who have not had a previous opportunity to do research, those who have had three or more years of teaching experience, and those who plan to continue teaching for several years, so the benefits of the program can be transferred back to the classroom.

MAKING AN IMPACT IN THE CLASSROOM

One of the main goals of the Partners in Science program is to revitalize Partners' teaching and to help them appreciate the use of inquiry-based methods in the teaching of science. Beginning with the 2015-2016 academic year, the Murdock Charitable Trust implemented the QPOE₂ Community of Scientific Practice Model.

As a Partner, you can look forward to: a three-day immersion experience in June, online meetings with the group, mentoring from a QPOE₂ trained implementation coach, two-day training at the regional conference in August, and online professional development resources.

FORMING PARTNERSHIPS

College or university/research institution mentors may identify qualified science teachers through direct contacts or through the program office of the Murdock Trust. Qualified high school teachers can also seek partnerships by contacting a mentor directly or through the Trust office. The Partners in Science application process is available on the Murdock Trust website (www.murdocktrust.org). All applications must be submitted through the Grants Portal (Fluxx).

Potential partners are strongly urged to meet to assess compatibility and the desirability of a joint effort and to develop specific goals for each 8- to 10-week summer research session before an application is submitted.

COLLEGE AND UNIVERSITY FACULTY/RESEARCH PERSONNEL APPLICATION

To initiate the submission of a grant application, the Principal Investigator (qualified faculty member/research scientist - mentor) OR the High School Teacher (partner) will register through the Grants Portal (Fluxx). Use the appropriate link (provided on the Trust website, spring 2018) to register. The registrant will provide (Research Institution) Organization Information, Contact Information (for Principal Investigator), and Additional Contacts information (for Grants Administrator, Research Institution President, and High School Teacher).

(Login and password will be provided upon registration.)

Login to the Grants Portal to complete the online application. A portion of the application will be completed by the mentor; and a portion will be completed by the high school teacher. Applications must include both portions, for the contributions of each partner will be considered in the review process. The application must be completed and submitted through the Grants Portal. Everyone registered for this application will be able to work together in developing it, but the research institution's grant administrator will ultimately be responsible to submit the proposal.

The completed Partners in Science application includes the following: Organization Information and Contact Information; Mentor/Principal Investigator Information; Partner/High School Teacher Information; HS Teacher Candidate Statement – Education Information; HS Teacher Candidate Statement – Save the Date; Letter of Recommendation from the high school teacher's principal or department head (specifically address the teacher and his/her interactions with the students); Mentor's CV (NIH or NSF style); and IRS documents for the (Research Institution) Organization.

BUDGETS

Awards are in the amount of \$15,000 apportioned over two years. The budget breakdown will be:

	1 st year	2 nd year
High school teacher stipend	\$5,000	\$5,000
Discretionary funds	\$1,000	\$1,000
Travel funds (annual conference)	\$1,000	\$1,000
Academic-year enrichment	\$500	\$500
Total	\$7,500	\$7,500

It is Trust policy in this program, as in others, to disallow the use of Trust monies for “overhead” or “indirect” costs. The discretionary funds can be used for items directly needed in the research (supplies, equipment, or travel) or to enhance the teaching of the high school teacher partner. Travel funds are designated for the high school teacher (and the mentor if funds permit) to attend the annual Partners in Science January Conference. Each high school teacher will also have \$500 budgeted for academic-year enrichment. This may include, but is not limited to, books, software, professional memberships and journals, classes, and workshop and conference fees. (These conference fees are over and above those for the annual Partners in Science January Conference.)

DEADLINE AND REVIEW PROCESS

The program deadline is December 1. Applications submitted through the Grants Portal by that date will be acted upon by March 1. Completed applications will be reviewed by a committee set up by the Murdock Trust. The committee will consider the qualifications of the partners, the appropriateness and presentation of the research problem, the quality of the proposed research project, the high school setting, and the high school teacher's perception of how the partnership might affect his or her teaching. Should you have any

questions/inquiries related to this program, contact Jill Tatum for advice (jillt@murdocktrust.org or 360-694-8415).

PARTNERS IN SCIENCE SUPPLEMENTAL AWARDS

High school teachers who have completed two summers of research in the Partners in Science Program may apply for a Supplemental Award of up to \$7,000. These awards are made directly to the teacher's high school, and are for the purpose of implementing ideas from the research partnership in their classrooms. The Application Deadline for these awards is September 15. More information about Supplemental Awards and application process will be available on the Trust website). Invitation with the link to submit a Partners supplemental proposal will be sent to eligible 2nd year Partners during their second summer of research.

BACKGROUND OF PARTNERS IN SCIENCE

Research Corporation for Science Advancement, a foundation for the advancement of science with headquarters in Tucson, Arizona, initiated this program in 1988 as an experimental venture to improve science education and increase the number of students choosing science as a career. In 1990 the M. J. Murdock Charitable Trust joined Research Corporation in funding the program in the Pacific Northwest and providing some additional support services to partners in that region. When Research Corporation chose to withdraw from administering this program in order to focus their energies on other priorities, the Murdock Trust accepted the challenge of continuing the program in the Pacific Northwest. Under this arrangement, those applications submitted in fall 1999 were the first to be administered solely by the Trust.

The M. J. Murdock Charitable Trust was created by the will of the cofounder of Tektronix, Inc., the late Melvin J. (Jack) Murdock. Established in 1975 as a private foundation, the Murdock Trust endeavors to discover, develop, and support the most important and creative efforts for achieving benefits to society in a five-state region of the Pacific Northwest. Since its inception, the Trust has given a majority of its funds for the support of education and scientific research.