# Army Educational Outreach Program

## Research & Engineering Apprenticeship Program

## Request for Proposal 2019 & 2020

ARMY EDUCATIONAL OUTREACH PROGRAM

The Research & Engineering Apprenticeship Program (REAP) is an Army Educational Outreach Program (AEOP) effort which provides high school students, especially those from underserved populations in STEM, a summer apprenticeship opportunity at Army partner universities. Student apprentices contribute to the research activities in a university laboratory research setting under the supervision and guidance of a qualified mentor.

This Request for Proposals seeks to identify host institutions to participate in REAP in FY2019 and FY2020. REAP is administered by the Academy of Applied Science (AAS). AAS is a member of the AEOP Consortium formed by the AEOP cooperative agreement award (W911SR-15-2-0001), a group of education organizations and industry that provide and/or oversee STEM programs designed to support the goals and mission of the AEOP. The lead organization for the consortium is Battelle Memorial Institute, a non-profit research and development organization with a strong commitment to STEM education.

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## Army Educational Outreach Program

The United States has long recognized that a scientifically and technologically literate citizenry is our nation's best hope for a secure, rewarding and successful future. For over 50 years, the Army has supported a wide range of educational opportunities in STEM for our youth, college and graduate students, as well as our valued teachers.

Our nation's economy has greatly benefited from the technological achievements of the last century and is destined for greater achievements throughout the 21st century. The demand for STEM literate citizens has become increasingly high, and STEM talent increasingly valuable and necessary as it will continue to play a dominant role in all aspects of everyday life. For this reason, the Army created the Army Educational Outreach Program (AEOP), which provides a portfolio of Army STEM educational opportunities for the future generations of America's workforce and their teachers.

*STEM talent is essential to delivering innovative solutions for the nation, and AEOP is committed to engaging, inspiring, and attracting that next generation of STEM talent.*

The AEOP is a portfolio of opportunities composed of competitions, unique experiences, research apprenticeships, and teacher resources designed to spark inspiration, exploration, and achievement in STEM literacy as well as foster a STEM literate 21st century workforce. From elementary through undergraduate, students of all proficiency levels, interests, social and economic backgrounds are encouraged to take advantage of real-world STEM experiences at Army research organizations and partner universities while also engaging with mentors from STEM professionals in the field.

## Research & Engineering Apprenticeship Program

AEOP offers a suite of research apprenticeship opportunities to high school and undergraduate students at Army research facilities and partner academic institutions. The Research & Engineering Apprenticeship Program (REAP) is one of these opportunities for high school students from underserved populations (See page 4 for qualifying criteria). Student apprentices receive an educational stipend of $1,500, and are required to conduct research at a minimum of 200 hours for 6-8 weeks duration during the summer months. Student apprentices contribute to the research activities in a university laboratory research setting under the supervision and guidance of a qualified mentor. This hands-on research experience is intended to develop student understanding of the process of research; to spark their curiosity and understanding of work in the sciences, technology, engineering or mathematics (STEM); to introduce them to DoD research and STEM careers, and to broadly contribute to the future pipeline of talent capable of contributing to the nation's future STEM workforce.

At the end of each REAP apprenticeship, students are required to submit an abstract of their summer research project and complete an evaluation. In addition, students will be encouraged to create a poster board that represents their summer laboratory experience. Host universities must participate in AEOP evaluation efforts, and may receive requests from evaluators to be onsite, or to conduct telephone interviews of participants. AEOP evaluations are critical to AEOP's program sustainability. University mentors may receive a stipend of $1,000 to support the cost of materials and other supplies in support of the student apprentice. Mentors may

submit proposals for up to 2 students; however, the mentor stipend will remain at $1,000. If a prospective host institution has the capacity to serve more than 2 students, a request must be submitted and will be reviewed on a case-by-case basis pending available funding. **Please note, since the awards are stipends, universities cannot charge overhead.**

## Program Goals
## Request for Proposal

On behalf of the U.S. Army Educational Outreach Program (AEOP), the Academy of Applied Science (AAS), is soliciting a 2-year proposal from universities, or other qualified educational institutions, to participate in REAP. Year Two is contingent upon a successful first year and submission of statement to continue (supplied by AAS prior to Year 2).

Funding for REAP is provided under a cooperative agreement award between the U.S. Army Research Development and Engineering Command (RDECOM), and Battelle Memorial Institute. The Academy of Applied Science, a nonprofit educational organization in Concord, New Hampshire, administers REAP as a member of the Army's Educational Outreach Program Consortium and under sub-award agreement with Battelle. Funding is always dependent on the availability of Army funding.

REAP funding must be used in support of the REAP apprenticeship and not to supplement a university's existing STEM summer programs. Universities must ensure that REAP is a free program to all apprentices. No application, registration or other fees can be charged to the program.

AAS requests proposals from qualified educational institutions to administer REAP and provide a mentorship experience for high school students. Following this proposal process, AAS provides direct funding to selected educational institutions, or subgrantees. Subgrantees are required to designate a REAP Director who will be responsible for the overall management and administration of their local REAP effort.

University proposals should include:

1. **Program Marketing and Outreach** – Describe how your institution will market and promote AEOP and the Army-funded REAP to eligible students, specifically in underserved communities, and the types of materials and media you plan to use. Mentors are encouraged to widely publicize REAP, to local high schools and work with high school staff to identify underserved students interested in STEM. AAS will provide marketing/outreach materials to the university director, as well as high school and local underserved organization contact information.
2. **Mentor Identification** – Identify potential mentor and describe role in supervising and guiding the mentoring of the student and work assignments. The mentor's CV should be included in the proposal. Mentors will be required to register/apply via the AEOP application process on www.usaeop.com.
3. **Student Selection** - Describe the selection process to recruit and select students for REAP. Identify any skills required to participate in the university's summer program. Student selection, in part, should be based on criteria set forth on page 4.

4. **Student Project Description** – Describe work setting, the research project in which the student will be working, desired deliverables, and anticipated research outcomes. Identify the science discipline so student will be able to choose apprenticeship that falls within their scope of interest.
5. **Student Orientation -** Describe the student orientation process and laboratory protocol.
6. **Anticipated Outcomes** – Identify the gains for the student and the laboratory (i.e. technical skills, scientific or engineering skills, publication opportunities, or opportunities for the future pursuit of STEM). Follow-up opportunities and relationships for students within the lab are encouraged.
7. **Student Development** - Identify how the mentor will support the student's future development in STEM (i.e. future coursework, future mentorship opportunities, design of a future project, participation in high school STEM competitions and scholarship opportunities, reporting on their research through oral, poster or written presentations). Explain how the student will continue research, if applicable, once the summer apprenticeship ends.
8. **Education about AEOP Opportunities and DoD STEM Careers** – Explain how the mentor will ensure that the student is educated about other AEOP opportunities and DoD STEM careers. (AAS will provide printed resources and coordinate webinars, as applicable, on this topic with AEOP)
9. **Program End Event** – Describe how the REAP Director will coordinate an end of program event to bring REAP (and possibly other AEOP participants) together to share experiences and celebrate AEOP STEM opportunities.

## REAP Student Recruitment Process and Selection Criteria

The basic criterion for selection of student apprentices will be the potential shown for pursuing careers in the sciences, technology, engineering or mathematics (STEM). Factors to be considered in the selection process include:

(i) Previous demonstrated abilities or interests in STEM;
(ii) Potential for a successful career in the field as indicated from overall scholastic achievement and/or high school teacher recommendations;
(iii) Students statement on the application form collected at a centralized site for the Army Educational Outreach Program (AEOP);
(iv) Interviews conducted by the mentor with student applicants; and
(v) Students must be underserved in STEM.

Selected REAP subgrantees will reach out to and encourage students who are academically motivated and are considered to be underserved in STEM to apply for REAP. In addition, participants must also be a U.S. citizen or a permanent legal resident. **Students must apply for a REAP apprenticeship via the AEOP application site (www.usaeop.com) in order to be considered for placement.**

To be considered underserved, REAP students must meet two or more of the criteria listed below:

* Student qualifies for free or reduced lunch

* Student is a minority historically underrepresented in STEM (Alaskan Native, Native American, Black or African American, Hispanic, Native Hawaiian or other Pacific Islander)

* Student is a female pursuing research in physical science, computer science, mathematics, or engineering.

* Students in rural, frontier, or other Federal-targeted outreach schools

* English is a second language for the student

* Student is a potential first-generation college student (parents did not attend college)

REAP host sites must conduct local outreach and encourage all interested students to apply to the program through the AEOP website (www.usaeop.com). AAS will review all applications received for completeness/ qualifications and then forward those that meet the minimum program criteria to the appropriate university for their final interview and selection process. Students cannot be placed in REAP apprenticeships unless they have applied through the AEOP website and been competitively selected.

It is strongly encouraged that the REAP apprenticeships be awarded competitively to students that do not have any prior affiliation with the PI, mentor, or laboratory. REAP is designed to provide opportunities for students that otherwise might not have a chance to work in that laboratory and should not be used as a way to pay a stipend to a student already engaged with that laboratory or related to someone in the laboratory.

## REAP Outreach, Recruitment & Selection Timeline

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| Application Opens: students apply to REAP – www.usaeop.com | November 1 |
| Universities conduct outreach to area high school students | November – February |
| Application Closes | February 28 |
| AAS forwards applications to universities | March 1-31 |
| University reviews applications & conducts interviews | March 1-31 |
| University notifies students of acceptance | April 1-16 |
| University notifies AAS of accepted and confirmed students | April 1-16 |
| AAS notifies non-accepted students of outcome | April 16 |
| AAS - Welcome and Orientation for Students, Mentors and Directors | May 1-31 |

## Final Reports

**University Subgrantee** – Upon conclusion of the apprenticeship, the REAP Director will be required to submit to AAS a final report. The report must indicate the type and levels of work performed by the student, an evaluation of the student's performance, and recommendations for any program improvements.

**REAP Student -** The student is required to complete an abstract of their research. Students are also required to complete an on-line evaluation the last week of the apprenticeship, of their experience, and a written report of their summer experience and future plans to pursue studies in STEM. Students should also be encouraged to prepare and present a poster of their work to their peers.

## Proposals

Proposals for REAP funding in 2019 and 2020 are required by **September 14, 2018.** Mentors are encouraged to contact AAS for further information on REAP and AEOP.

| Proposal and Program Cycle | |
|---|---|
| Proposal Announcement | August 15, 2018 |
| Proposal Submission due to AAS | September 14, 2018 |
| Award Notification | October 1, 2018 |
| Period of Performance | October 1, 2018 – September 30, 2019 |
| Purdue University conducts evaluations | June – August 2019 |
| Final reports – Student and mentor evaluations due | August – September 2019 |

All proposals should include:

1. A technical proposal responding to the criteria reviewed in this RFP. Proposals should be a maximum of three pages and include a CV for the Director and names of possible mentors should be included. (CV is not included in the 3 page limit).
2. A financial proposal, incorporated into the technical proposal, which restates the funds for the supplies/mentor (and materials used) and student stipend. (not included in the 3 page limit).

**Please submit your proposals via e-mail in PDF format to:**

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