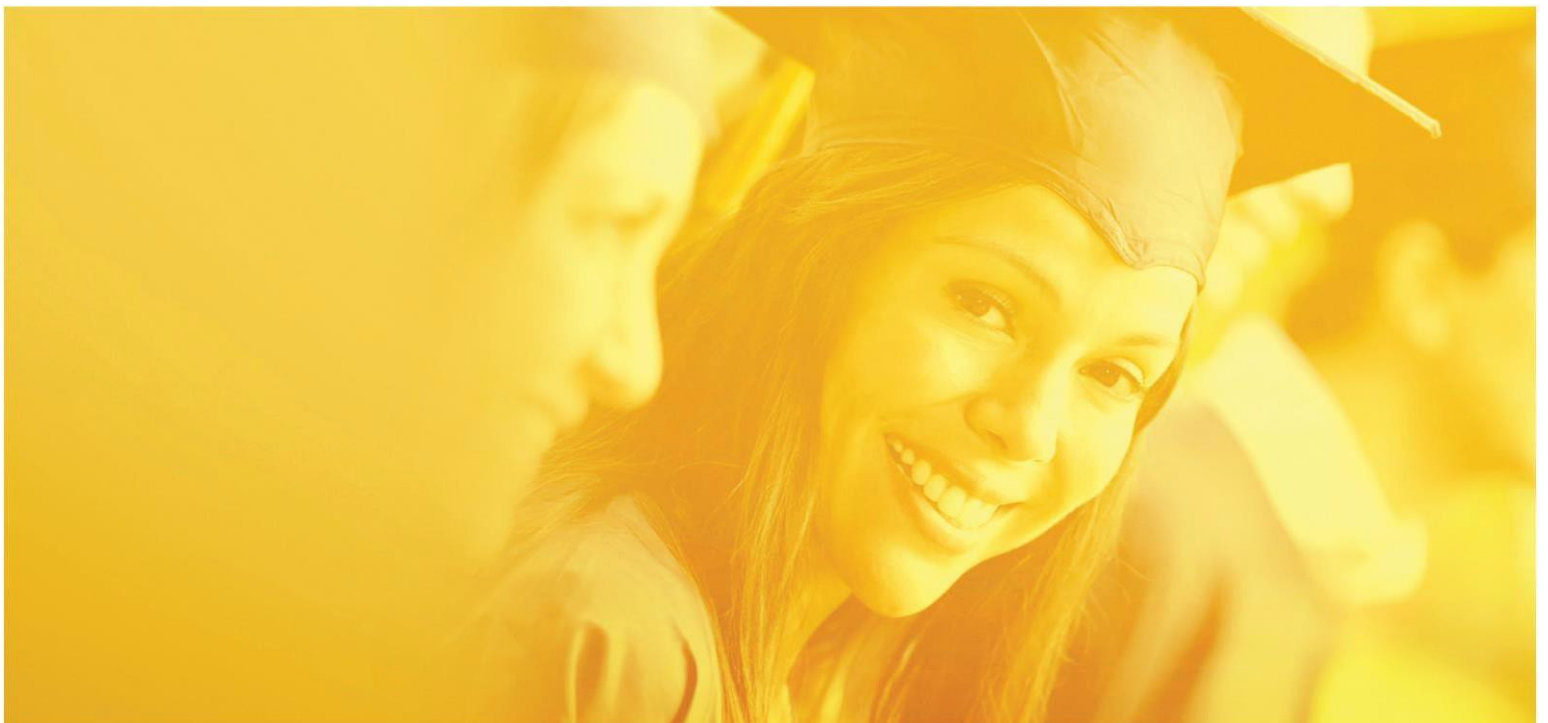# Army Educational Outreach Program

Research & Engineering Apprenticeship Program
Request for Proposal 2018

The Research & Engineering Apprenticeship Program (REAP) is an Army Educational Outreach Program (AEOP) effort which provides high school students, especially those from underserved and underrepresented populations, 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 for FY 2018 REAP. 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.

Points of Contact
Irene O'Mara Program
Director
Research & Engineering Apprenticeship Program
Academy of Applied Science
603.228.4530, Ext. 203
renie@aas-world.org

Pamela Hampton
Army Educational Outreach Program
Apprenticeship Lead Manager
Academy of Applied Science
603.228.4530, Ext. 208
phampton@aas-world.org

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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 underrepresented and underserved populations. 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

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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.

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 **one-year proposal** (for apprenticeships in summer of 2018) from universities, or other qualified educational institutions, to participate in REAP.

Funding for REAP is provided under a prime 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 for REAP in 2018 is dependent on the availability of continued funding from the Army.

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.

Each year AAS will request proposals from qualified educational institutions to administer REAP and provide a mentorship experience for qualifying 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 and the types of materials and media you plan to use. Mentors are encouraged to widely publicize REAP to area high schools and work with high school teachers to identify qualifying students.
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.

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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 and underrepresented in STEM.

Selected REAP subgrantees will reach out to and encourage students who are academically motivated and are considered to be underserved and underrepresented in STEM to apply for REAP. Note that all participants must also be U.S. citizens or legal permanent residents. **All students must apply for the REAP apprenticeship via the AEOP application site (www.usaeop.com) in order to be considered for placement.**

To be considered underserved and underrepresented, REAP students must self-identify as meeting two or   more of the criteria listed below:

- Student self-identifies as qualifying for free or reduced lunch.
- Student self-identifies as 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.

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- Student receives special education services.
- Student has a disability.
- 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

Application Opens: students apply to REAP – www.usaeop.com	November 1
AAS begins outreach to high school students	November 1
Universities conduct outreach to area high school students	November – February
Application Closes	February 28
AAS forwards applications to universities	March 5 - 9
University reviews applications & conducts interviews	March 5 - 30
University notifies students of acceptance	April 2 - 9
University notifies AAS of accepted and confirmed students	April 10 - 13
AAS notifies non-accepted students of outcome	April 16
AAS - Welcome and Orientation for Students, Mentors and Directors	May 1

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. The report should also include a financial summary outlining the total funds expended by budget category. AAS will provide a report template.

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 2018 are required by **August 18, 2017** to provide the best recruiting opportunities for 2018 summer participants. Mentors are encouraged to contact AAS for further information on REAP and AEOP.

Proposal and Program Cycle	
Proposal Announcement	July 10, 2017
Proposal Submission due to AAS	August 18, 2017
Award Notification	September 15, 2017
Period of Performance	October 1, 2017 – September 30, 2018
Purdue University conducts evaluations	June – August 2018
Final reports – Student and mentor evaluations due	August – September 2018

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 PI/mentor (not included in the three page limit).
2. A financial proposal, incorporated into the technical proposal, which states how funds will be utilized to support REAP (not included in the three page limit).

Please submit your proposals via e-mail in PDF format to: Irene O'Mara, Program Director

renie@aas-world.org

Questions:
Irene O'Mara
renie@aas-world.org
603-228-4530, Ext. 203

Pamela Hampton
phampton@aas-world.org
603-228-4530, Ext. 208

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