ARMY EDUCATIONAL OUTREACH PROGRAM

High School Apprenticeships: Research Foundations Program

DEADLINE TO APPLY: **MAY 21, 2021**

July 6-30, 2021
Monday through Friday
12:00-4:00 p.m. EST

Do something meaningful this summer to prepare you for competitive college admissions and the next step in your STEM journey.

Why Participate?

- **Stand out from your peers** - spend your summer building STEM skills, learning about STEM careers, and connecting with like-minded peers.
- **Build your STEM network** - work closely with fellow students from throughout the country, near-peer mentors, and instructors.
- **Get ahead of the game** - Prepare for college admissions and the next step in your STEM journey.
- **STEM supplies included** - You'll get all of the supplies you need to do experiments at home.
- **Earn a stipend** - Receive a $400 educational stipend for completing the program.

Eligibility and More...

- Must be a U.S. citizen or permanent legal resident.
- Open to rising 10th and 11th graders.
- Must have access to a computer, webcam, and reliable internet.
- Must be available weekdays July 6-30 at 12:00-4:00 p.m. EST for seminars, small group meetings, webinars, workshops, and informal office hours.
- In support of the belief that equitable access to STEM education is crucial for building the national STEM foundation, this program will target students who meet at least two of the following criteria:
  - Attend a rural, urban, or frontier/tribal school;
  - Qualify for free or reduced lunch;
  - Females in certain STEM fields;
  - Identify as racial/ethnic minority in STEM;
  - Students with English as a second language;
  - Will be a first generation college student;
  - Students with disabilities;
  - A dependent of a military service member or veteran

STILL HAVE QUESTIONS?

Attend our virtual Information Session!

Thursday, May 13, 2021
from 8:00-9:00 p.m. EST

Learn about this NEW opportunity and have all your questions answered!

Register here:
http://bit.ly/summer-program-info-session

Registration is required to receive Zoom access.

Be sure to follow us on social media for future opportunities, important announcements, and upcoming events!

@AEOPapprenticeships
@AEOPapprentice
@AEOPapprenticeships
#AEOPapprenticeships

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Program Overview

Over the course of four weeks (July 6-30, 2021), more than 100 talented high school students will engage virtually with instructors and near-peer mentors (NPM) around the topic "**Engineering the Future of America's Scientists.**" Utilizing project-based learning, the program will incorporate increasingly complex sets of challenges and problems to develop and enhance student learning by encouraging critical thinking, problem-solving, teamwork, and self-management. Students will leave the program with an understanding of the culture of science and engineering, an appreciation for doing STEM in the public interest (including knowledge of government research labs), exposure to high-need areas of STEM research, a deepened understanding of the process of producing scientific knowledge, and with increased preparedness for college and careers in STEM.

Students will take part in lectures, hands-on experiments, small group meetings with NPMs, office hours, and a webinar series for up to four hours each day (*students must be available 12:00-4:00 pm EST daily). Funded by the Army Educational Outreach Program (AEOP) and facilitated by the AEOP Apprenticeships administrative team out of the Rochester Institute of Technology, there is no cost to the program. A kit containing all program materials will be provided and students will earn an educational stipend upon program completion. The program will utilize the web-based Learning Management System, MyCourses. Regular computer, webcam, and internet access is required.

Topics:

- Case studies of foundational experiments conducted in STEM fields; exploring key principles, findings, and impact.
- Hands-on experimentation and design including the use of Arduino to understand the foundational principles of software programming and the intersection with mechanical engineering.
- Team-based engineering design and programming project over the duration of the program.
- Workshops that focus on college and career readiness.
- Webinars with subject matter experts highlighting STEM research areas and Army/DoD laboratories.

Program Instructors

Tori A. Matthews, Ph.D., holds a doctorate of philosophy from the University of Alabama at Birmingham, with concentrations in Cell Biology and Neuro-Pharmacology. He completed his doctoral research and post-doctoral fellowship at the University of Rochester Medical Center. He has contributed to the publication of over 20 scientific research articles and book chapters, was twice awarded the United Negro College Fund/Merck Fellowship, and is a consultant to the State University of New York (SUNY).

Dr. Matthews has a passion for teaching and mentoring and is committed to equity in education. Prior to taking the role of Director of AEOP Apprenticeships and Career Development at the Rochester Institute of Technology, he worked as a tenured professor of Biology at Monroe Community College, teaching courses ranging from Introductory Biology to Molecular Genetics. Dr. Matthews has served as an advisor and coach to students interested in pursuing STEM careers for more than 15 years. He believes that increasing diversity within the STEM workforce is crucial to the continued success of our nation, our ability to meet global challenges, and the quality of our lives in the future.

Having spoken with groups across the country, Dr. Matthews has accepted as his advocacy the mission to ensure that intellect meets opportunity. He is dedicated to working with individuals at all levels, teaching life skills and lessons of resiliency, with the central theme being: anything is possible!

Originally from Los Angeles, California, **Katie Barajas** is a senior studying Applied Physics at Cornell University where she is pursuing interests at the intersection of materials science, biology, and optics. As an undergraduate, Katie has engaged in research at Cornell, studying the morphology of nucleoplasmic reticulum in live cells; through an AEOP Apprenticeship at the University of Southern California, where she worked on an optical sensor to measure the stiffness of biological tissue; and, this summer she will study quantum optics at Harvard University.

As a first generation college student and Latina in STEM, she has often conflated "being the only" with doubting her ability to succeed in science. So, she strives to give back. Katie began mentoring the summer before starting college through the UCLA high school summer research program. During college, she joined the "Intergroup Dialogue Project," an academic initiative that fosters community across difference through dialogue. Last summer she served as a Near Peer Mentor for the inaugural AEOP High School Apprenticeships summer course.

Even though she served as a mentor in all these spaces, Kate recognizes that she has actually learned more from her mentees. She hopes to contribute to an environment that challenges, supports, and welcomes students.

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