



Youth Science Cooperative Outreach Agreement

Technical Briefing

Industry Day

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Outline



- **Program Review**
 - **Army Research Office (ARO) Programs**
 - **Army Research Laboratory (ARL) Programs**
 - **Walter Reed Army Institute of Research (WRAIR) Programs**
- **Cooperative Agreement**
- **Core Objectives**



Research and Engineering Apprenticeship Program (REAP)



- **Program Summary:**

- High school students apply through the AEOP website and are paired up with University mentors to work in a lab for the summer.
- Students gain hands-on experience working on research and engineering projects with the direct guidance of a faculty mentor.
- Students are encouraged to pursue a college education with maintained interest in STEM fields.



- **Scope:**

- 2009, 149 students participated in REAP at 56 universities in 33 states.





Junior Solar Sprint (JSS)



- **Program Summary:**

- With the guidance of trained educators, students learn applications of solar energy, math, and physical science through the design, assembly, and racing of model solar cars
- Open to all 4th-8th grade students in the northeast
- Regional races culminate in a championship race



- **Scope:**

- 2008-2009 year, 364 teachers/educators trained to facilitate a JSS program in their class/school
- 2008-2009 21 area races were conducted
- 2009 Northeastern Championship race



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International Science and Engineering Fair (ISEF)



- **Program Summary:**

- Army special awards provided at Regional (approx. 300 fairs), State (approx. 50 fairs), and International Level (1 fair held annually)
- Awards include: Savings bonds, Army science fair medallions, and certificates of achievement
- Team of judges are assembled from throughout the Army (RDECOM, Army Corps of Engineers, AMEDD, etc) and travel to ISEF to interview students, judge projects, and present Army awards



- **Scope:**

- Approximately 1,500 high school students participate at the International Level

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Junior Science and Humanities Symposium (JSHS)



- **Program Summary:**

- Tri-Service program that encourages high school students to conduct original research in STEM and compete for scholarships at Regional and National JSHS Symposia
- Student winners receive scholarships at the regional and national JSHS competitions
- One teacher from each region is awarded \$500 annually

- **Scope:**

- Approximately 8,800 students participate at the regional symposia annually
- Approximately 240 participate at national symposium annually
- 48 regions covers US, Puerto Rico, and DoD Dependent Schools in Europe and the Pacific



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ARL Programs



- **ECybermission Internship Program (ECIP):**
 - Provides internships in university laboratories for 9th grade student winners of ECybermission. Mentors are identified at universities near each student by contacting colleges and universities in the areas near the selected students' residences, and are provided a stipend to provide a summer research experience in the university lab.
- **Teach the Teacher:**
 - Program is designed to improve the quality of physical science instruction at the middle, and high school level by providing teachers access to high quality curricula materials in addition to current state of knowledge in areas through a series of in-service professional development programs.
- **ARL College Student/University Faculty Internship Program**
 - Provides opportunities for students and faculty at educational partner institutions and attendees to ARL supported career fairs to have an in-house research experience at one of ARL's six technical laboratories.



Why A Cooperative Agreement?



- **Bring together Government, Industry, Not-for-profit, and Academic Institutions**
- **Create synergy among AEOPs**
- **Increased direct government involvement/oversight**
- **Integration of AEOP Website into all programs**
- **Strategic and comprehensive marketing strategy**
- **Mandatory collection and reporting of program metrics**
- **Collective efforts concentrated on a set of core objectives**



Core Objectives



- **Increase the number of STEM graduates to address the projected shortfall of scientists and engineers in National and Department of Defense (DoD) positions**
- **Expand the involvement of students in ongoing DoD research**
- **Provide STEM educational opportunities for students at all stages of their K-12, undergraduate, graduate, and post-graduate education**
- **Entice students into college-level DoD programs**
- **Inform students about career opportunities in military or civil service STEM fields**



Structure of COA



- The Agreement shall strive for a focused, yet flexible environment
- Other Government agencies may be invited to join this COA
- At the discretion of the US Army, additional program initiatives and/or STEM Educational Outreach oriented organizations may be added
- Shall consist of a small number of academic, not-for-profit, and industrial organizations, possessing significant expertise in one or more of the fundamental components covered by the COA
- Led by a single organization, the Lead Organization (LO)
- Each entity shall be a full member of the COA and possess equal voting rights