

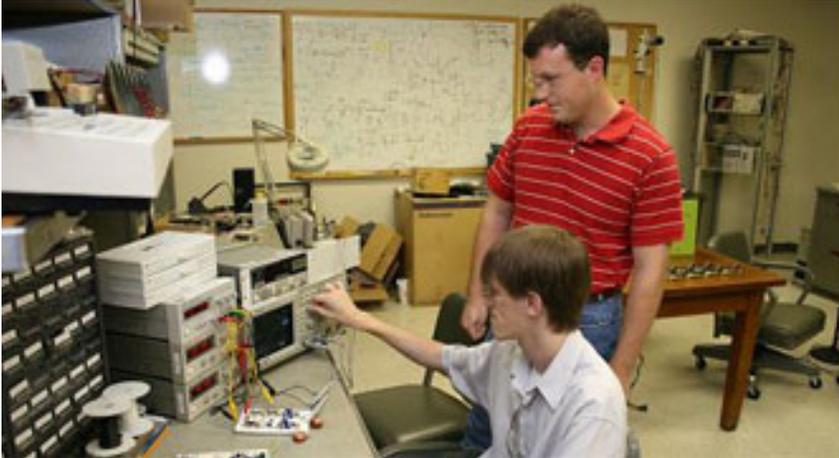


U.S. Army Aviation and Missile Research, Development and Engineering Center Army Educational Outreach Programs **CAPSULES**



OCTOBER/NOVEMBER 2007

AMRDEC and Garrison Participate in SEAP 2007



The 2007 Science and Engineering Apprentice Program (SEAP) can be best described as a fantastic experience. The 2007 program began on 04 June and ended on 27 July. A total of twenty-seven (27) high school and college students participated in this Army Educational Outreach Program (AEOP) that runs from 8 to 10 weeks. The program is sponsored locally by AMRDEC and Garrison organizations. Each year, the quality and diversity of the students continues to be enhanced via recruitment and selection processes.

Thirty-seven scientists, engineers and business employees served as mentors. Apprentices are engaged and guided daily by their individual mentors with challenging and rewarding research and technical projects, and they participate in a series of professional development seminars and tours of various laboratories and facilities.

For the culminating

event, apprentices present a formal paper related to their research or technical projects. The actual presentation of projects was judged by scientists and engineers from various AMRDEC organizations. Awards were granted to first, second, and third place winners. There was also an honorable mention category. Winners earned ribbons from AMRDEC and will receive US Savings Bonds from George Washington University. All participants were awarded a Certificate of Completion. Volunteer mentors, judges, security staff and AEOP support staff received Certificates of Appreciation.

A highlight of this year's Awards Ceremony was the presentation of Citations to Dr. Miles Holloman and Dr. Michael Lyon for their unanimous support of AEOPs over many years.

SEAP dates have been approved and set for the Summer 2008 program, and applications are available at www.gwseap.net or indi-

viduals may contact Ms. Julie Lumpkins at Julie.lumpkins@us.army.mil (256.313.4834). In addition, all city and county high school counseling offices will have applications available for interested students.

Recruitment Update

AMRDEC personnel have participated in two engineering conferences this fall as part of RDECOM's Educational Outreach Initiatives. Scientists, engineers, and outreach representatives recruited at the 19th Annual Hispanic Engineer National Achievement and Awards Conference (HENAAC) in San Diego, Calif., from 12 to 14 October, 2007. They also recruited at the Society of Women Engineer's Conference in Nashville, Tenn., from 25-27 October 2008. Over 70 resumes were collected at these two conferences. Each year, AMRDEC is invited to participate in various science and technology conferences across the U.S.

GEMS

Once again this year, Dr. Steven P. S. Smith, Senior Technical Advisor to the Director of AMRDEC, provided the leadership for the GEMS 2007 program. GEMS is one of the many AEOPs that AMRDEC supports. It is a one-week summer program that provides high school students with paid internships in a teaching laboratory, stressing scientific and mathematical skills.

This year's program hosted 45 GEMS-1 students and 15 GEMS-2 students. GEMS-1 students are first time participants, while GEMS-2 participants are second-year students. Dr. Smith was supported by three Near-Peer Mentors who were college students and one local teacher. GEMSs students originated from 24 schools and 7 home schools. Topics included



Robots/Thermodynamics, Optics/Acoustics, and Electronics for the GEMS-1 students, and Aerodynamics/Mechanics, Ballista, and Team Challenges for the GEMS-2 students. Also, participants enjoyed tours of some of the various laboratories at AMRDEC.

On 10 October 2007, the AMRDEC GEMS program was briefed at the U S Army Assistant Secretary for Acquisition, Logistics, and Technology (ASAALT). Our presentation was presented to Dr. John A. Parmentola's staff as part of a GEMS Best Practices Briefing. Dr. Parmentola is the Army's Director for Research and Laboratory Management.

Individuals interested in the GEMS 2008 program should contact Dr. Smith at steven.smith1@us.army.mil.

eCybermission Competition Open

eCybermission is a web-based AEOP science, math and technology competition that targets 6th through 9th graders. Teams work with a Team Advisor who is either a teacher, coach, counselor, youth leader, or parent. Teams propose solutions to real problems in the community and compete for lucrative regional awards, ranging from \$2,000 to \$5000 in EE Savings Bonds.

Mission Folders are judges using the following criteria: Application of Science, Math and Technology; Innovation, Originality, and Creativity; Benefit to the Com-

munity, and Team Collaboration and Communication. Team registrations are open until 12 December 2007 for the 2008 competition.

AMRDEC's representatives are currently marketing eCybermission to local middle and high school students. Interested persons should visit the eCybermission web-site at www.ecybermission.com. Contact the AMRDEC liaison, Gayla Turner McMichael, Electronics Engineer in the Weapons Sciences Directorate, at gayla.turner.mcmichael@us.army.mil or at 256-876-2789.

AMRDEC Representatives Participate in Local Workforce Coalition Initiative

The Educational Task Force of the Workforce Coalition is an initiative of NASA Marshall Space Flight Center which focuses on K-12 education specific initiatives as identified by the Coalition. The Task Force will develop mechanisms for community stakeholders to align resources and activities to improve science, technology, engineering, and mathematics (STEM) education for workforce experience. The monthly meetings serve

as updates on new development in the STEM workforce locally and across the State of Alabama. Mr. Phil Hodges, AMRDEC's Deputy Director, participated in a briefing with the Huntsville-Madison County Chamber of Commerce, which led to AMRDEC's monthly involvement in this local workforce coalition.

AMRDEC's Outreach representatives have been participating in the monthly meetings of the

Education Task Force. They plan to 1) engage community stakeholders in benchmarking local partnership efforts to realize synergies, take advantage of commonality, and avoid duplication; 2) establish relevance through implementation of activities that are useful to the education community and that strengthen the ability to engage students in the STEM workforce pipeline; and 3) create a model of

sustainability for partnership to potentially be used in other communities.

Some of the other local organizations and industries involved in the Coalition are Boeing, NASA, Chamber of Commerce, Hudson-Alpha Institute, UAH and AAMU Engineering faculty, Madison City Schools, Madison County Schools, Huntsville City Schools, and the National Space Science and Technology Center.

AMRDEC Supports Establishment of Master's Program in Materiel Engineering at AAMU

Mr. Eugene Edwards serves as a member of the Alabama A&M University School of Engineering and Technology Graduate Program Committee. His support of that committee led to its successful petition to the Alabama Commission on Higher Education (ACHE) for a master's degree program in Materiel Engineering. The program was

approved during ACHE's 21 September meeting. *Materiel* is defined as the equipment, apparatuses, and supplies used by an organization; thus, the program involves the design, production, test/evaluation, distribution, operation/support, and ultimate disposition of man-made materiel. Personnel from the Army Materiel Command, NASA, support contractors

and technical personnel will have the opportunity to earn a master's degree in Materiel Engineering by earning 30 credit hours. The program expects to respond to the growing population of engineers that will come as a result of changes in the Huntsville Metropolitan Statistical Area related to the federal government's Base Realignment and Clo-

sure Act. According to Dr. Trent Montgomery, Dean of Engineering and Technology, Edwards served on the Graduate Program Committee, along with Mr. John Lassiter for NASA-MSFC, Dr. Ray Watson, retired Engineer from Teledyne Brown Engineering and several AAMU engineering faculty members.

ASFL Awarded Grant

Huntsville City School's Academy for Science and Foreign Language (ASFL) was awarded its third Optics Lab grant on 10 October from the Directed Energy Society, a non-profit organization. Mr. Eugene Edwards, AMRDEC's University Affairs and Outreach Officer, supported ASFL in obtaining a commitment from the Physics Department at Alabama A&M University to provide near-peers to ASFL. This program at ASFL continues to be one of only two middle school programs in the United States that aims to develop student interest in laser-optics. Results from these activities serve to increase the future workforce's interest in STEM areas.

Further, critical support was provided to nine (9) junior scientists from ASFL at the 10th Annual Directed Energy Symposium at the Von Braun Center in Huntsville. Technical guidance was provided in order to allow these teens the opportunity to conduct laser-optics demos for over 100 elementary students and their parents and teachers.

Edwards supported the planning of optical lab experiments, successfully conducted experiments in the following areas: single optical plane mirrors, beam steering methodologies, theoretical design philosophy for spectroscopes, analysis of electromagnetic spectrum, optical law of reflection, laser filtering, laser power assessment and filtering principles, dichroic thin film optics, laser diffraction, and Rayleigh scattering.



Eugene Edwards, AMRDEC's University Affairs and Outreach Officer (standing, facing camera), offers assistance to students and retired Academy for Science and Foreign Language (ASFL) teacher Bob Montgomery.