

AERO Institute
Palmdale, California
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Description of the Program

The AERO Institute, located in a state-of-the-art facility in the Palmdale Civic Center, is a unique collaboration with the NASA Dryden Flight Research Center, the City of Palmdale, and numerous Universities and Commercial Companies. The strategic partnership provides leadership as the integrator and facilitator of joint projects among government, academia and industry.

The AERO Institute was founded to address the critical technology workforce demands of the 21st Century. To develop the necessary pipeline of students for higher education, the AERO supports Science, Technology, Engineering and Math (STEM) education at every level. The AERO also serves as a technology demonstrator to both the onsite and the distance education community with leading edge technology infrastructure in telecommunications, wireless access and digital broadcasting. It establishes an innovative educational initiative to cultivate, incubate and stimulate advances in engineering and science through education and research in a joint setting with industry. The proximity of industry and academia also lends itself to collaborations in business development through the development of a highly qualified workforce in support of aerospace technology.

Goals of the AERO Institute include the following:

- Workforce development for the future
- Provide comprehensive technical, undergraduate and graduate education locally
- Conduct leading edge aerospace research
- Incubate, stimulate and commercialize new intellectual property
- Promote aerospace science and engineering
- Build industry partnerships

Programs Relevance to NASA

The AERO Institute provided information to NASA's Human Resources office as one major facet of Dryden's Human Capital Plan. The information described the cooperative agreement partnership with the Aerospace, Education, Research and Operations Institute (AERO Institute) in Palmdale, CA. The partnership offers human capital development, educational outreach, applied research and operations improvement through a consortium of academia, industry, and government with an aim to produce the next generation of

aerospace technical workforce. It also provides the mechanisms for the development of activities that will lead to the strengthening and growth of mutually beneficial educational, scientific, and technical programs conducted jointly and independently by these institutions and NASA.

Programs Benefit to Society

The AERO offers Industry Workforce Training and Education Short Courses for the Aerospace Industry companies such as Boeing, Northrop Grumman, and Lockheed Martin, in addition to NASA. Programs hosted are instructed by external consultants who are recognized experts in their fields. The location of the AERO, outside security perimeters enables ease of access for both instructors and participants.

The AERO has also developed and implemented, and/or supported numerous other activities in support of the local workforce development such as the SouthValley WorkSource Center's – Boeing Recruitment Event and support of the Workforce Development Grants.

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Program Accomplishments

A. Expanding Educational Opportunities in the Antelope Valley

The AERO offers college-credit courses in aerospace technology from public and private colleges and universities from around the country, including the prestigious Purdue University College of Engineering, California State Polytechnic University, Pomona and Embry-Riddle Aeronautical University. This unique and innovative approach to advanced level education offers a broad spectrum of opportunities for student interaction with industry partners, increased cooperation with the industry and the university faculty, and collaboration in the area of research and development in a setting for meaningful partnership.

Student Accomplishments

The AERO Institute provides hands on learning environments for undergraduate, graduate, and faculty through the AERO Associates collaborative research and projects. The AERO Associates program supports scholarships and internships for high school, undergraduate and graduate students to work side-by-side with professional mentors within NASA. Students, through this program, may also be able to compete for scholarships to support Higher Education degrees in STEM and/or attending a STEM conference or visit a NASA Center. Another element available is fellowships to post-docs, university and college faculty to work on a specialized project with NASA, while gaining insight into the industry and/or government research and development.

The AERO Institute in partnership with NASA participated in the 16th Annual Salute to Youth program at Palmdale Site 9. The Antelope Valley "Salute to Youth: the Career Connection" is a unique local event. For 16 years, this event has been sponsored by the business community, for about 2,300 high school junior students who explore career options and make contacts for senior projects. This event has earned a California School Boards Association Golden Bell award. Salute to Youth provides exposure to a variety of career fields in our local businesses. Volunteers from industry, government and community businesses attend to represent one of the eight designated career pathways. Individual vendors set-up exhibits, disseminated brochure information, conducted demonstrations, and displayed aircraft and vehicles. The AERO Institute in partnership with NASA sponsored 10 buses, provided literature on education programs, provided F-16XL flight simulator rides, and a NASA Test Pilot and Flight Test Engineer flew in an F-18 and signed autographs.

The support of the Digital Learning Network (DLN) continued in 2007 as it provided distance learning experiences to elementary and secondary schools around the nation. The AERO also enabled distance learning at the post-secondary level with the numerous universities that are partnering with the AERO.

Significant effort continued into the development and sponsorship of the MSI Research Clusters Conference. The conference was created to give HBCU's, Hispanic Serving Institutions (HSI) and Tribal Colleges an opportunity to enhance relationships in partnering in targeted research areas such as Information Technology, Entrepreneurship, Biotechnology, Environment, and Homeland Security. This year's conference was held at the University of Texas, Pan American, Edinburg, Texas. The MSI Research Clusters Conference is an excellent avenue for government, businesses and academia to identify potential contractors and contracting opportunities. As part of the MSIRP'06 Conference, a Career and Student Expo was held that included 72 exhibitors representing entities such as government agencies, educational institutions, and businesses, most of which are on the cutting edge of technology.

At all of these events, the dissemination of information about the numerous research and student programs available at DFRC was a material accomplishment.