2009 DFRC VISITOR CENTER FUNDS SUMMARY - $553,000

Congressionally Directed Funding
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1. PROJECT DESCRIPTION

The NASA Dryden Flight Research Center's (DFRC) Education Office has partnered with its Educator Resource Center, the DFRC Visitor Center, DFRC Exhibits Office, and with the AERO Institute to develop NASA-related STEM educational activities, exhibits, events, and materials that address one or more of the NASA Education Outcomes and aligns with NASA Education principles.

The DFRC Visitor Center is recognized by the general public as the main Visitor Center which is located at Edwards Air Force Base. During the visits of many tour groups, an educational component was added as time permitted by the group. An area of the Palmdale AERO Institute building houses a satellite Visitor Center that provides more accessibility and participation of community events to both formal and informal education groups. One Education Resource Center located at the AERO Institute, Palmdale, CA can serve the Southern California Regional and through our partnership with Embry-Riddle Aeronautical Univerisity (ERAU), Prescott, AZ, provides educators of Arizona access to NASA materials and professional development both onsite at the ERAU campus and via on-line workshops.

The DFRC Visitor Center has been enhanced through the Visitor Center initiative because it has provided the opportunity to begin updating educational tools and exhibits. This will assist in becoming more appealing to educators, students, and the general public in learning more about NASA and STEM. These improvements have included:

a. Magic Planet Globe – Two digital video globes are available to project data sets onto a sphere. One is stationary in the Palmdale Visitor Center and the other is portable to be used in a variety of educational venues. These data sets include things such as global climate patterns, natural disasters, and earth observing. Digital video globes capture an audience's attention and spark their imagination. It provides a much easier mode for people to understand dynamic global systems. Software has already been developed for the globe such as Mars and Beyond, the Solar System, and Geology Earth Systems. One can also develop other software to meet the needs of a specific educational program.
b. Shuttle Tire Exhibit – A freestanding structure is being developed and tire stands so that the shuttle tires may be shown either at the Dryden Visitor Center or external venues such as museums, schools, and airports.
c. Exhibits and Video – Development of new temporary exhibits and video imagery is currently underway that will direct more attention to the current DFRC projects and programs, and the new ways that the agency casts itself. Some materials will still be maintained to continue to showcase the center's heritage and contributions to aerospace. Development of other items includes aircraft instruments, exhibits that coincide with specific celebrations, a large cut-away model of the Ares 1 rocket, displays of rover vehicles and life support vehicles, a model of Ikhana with video showing infrared

imaged shot during some of the Western States Fire Missions, with Global Hawks used as platforms for science missions and vehicles that portray their importance on many levels.
d. Linear Diffraction Grating Slides – The slides were used as a tool in explaining the electromagnetic spectrum during an Astronomy workshop presented to educators at the Palmdale ERC.
e. Space and Flight Suits – During public events the suits bring attention to NASA's education program area and are also placed as a display in the Dryden Visitor Center as a demonstration model for public events.
f. Telescope and Optics – In the current inventory of DFRC telescopes additional hardware was required to increase its functionality and an additional telescope would provide utilization of current more modern technology. By improving and broadening the scope and range of the telescopes it will greatly enhance our educational events as well as our ability to reach out to the public for use towards astronomical events.
g. Product Overview DVD – A summary of educational materials produced by NASA Aeronautic centers is being finalized for distribution to educators.
h. Life Size – Video Teleconferencing equipment will provide access to Engineers located at NASA Center who may broadcast STEM topics from their shops to the Palmdale site for educators and students as well as from other venues. It will also be used to access other educational events and make them available to educators and students. We have discovered that sometimes schools do not have Digital Learning Network capability; therefore, this VITS technology will provide another alternative.
i. Contractor Support – In partnership with the AERO Institute, support is provided to staff the Dryden Educator Resource Center and the Visitor Center. Through a separate Congressional Earmark, Embry-Riddle University is able to staff for a NASA ERC in Arizona with direct support from the DFRC ERC.

PROJECT GOALS

The goals of this project include needed updates or access to current technology to showcase NASA products and for usage in educational activities, develop exhibits and materials that could be used both in the Visitor Center building itself and provide transportability to external educational venues both formal and informal.

Dryden supports the principal educational goals that have been defined to meet the agency's mission and strategic goals; they include: To strengthen the nation's future workforce, to engage Americans in the Vision for Space Exploration, and to attract and retain students in STEM disciplines.

PROJECT BENEFIT TO OUTCOME (1, 2, OR 3)

Outcome 1 – Higher Education – Continue to the development of the STEM workforce in disciplines needed to achieve NASA's strategic goals through a portfolio of investments.

Outcome 2 – Elementary and Secondary Education – Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers and faculty.

Outcome 3 – Informal Education – Build strategic partnerships, and linkages between STEM formal and informal education providers that promote STEM literacy and awareness of NASA's mission.

PROJECT ACCOMPLISHMENT

The project has resulted in providing NASA visibility and awareness to elementary and secondary educators about using NASA content-based STEM resources in the classroom; increased attendance of both formal and informal educators in NASA training programs and activities; increased student participation in NASA activities; increased student participation in the STEM employment pipeline. This increase is reflected in data captured during the May 2009 to September 2009 period. Through the DFRC Educator Resource Center 7 Workshops were conducted with 185 educators in attendance. Educator packet distribution is estimated at 370. In 2008 a Discovery Dome was purchased through the NASA Visitor Center initiative that now provides a tool for the Visitor Center WYE to conduct workshops. The Dome was used 41 times reaching 125 students. We have been able to extend our support to local Girl Scouts reaching 82 during this time period and through 18 community events 1,509 general public audience participation. The Visitor Center initiative has been instrumental in showcasing to educators and students that NASA Education is a viable resource to their understanding about STEM and quality provider of tools in the area of STEM education.

PROJECT CONTRIBUTIONS TO PART MEASURES

Family Night Activities – 3.2.2, 3.2.3
Education Resource Center Activities - 2.4.4.
Palmdale Thursday On the Square – 3.2.2, 3.2.3
Portable Inflatable Dome Planetarium – 2.1.2, 2.4.4., 2.4.9
Girl Scout Workshops
DFRC Tour Activities – 2.4.4., 3.2.2.

IMPROVEMENTS MADE IN THE PAST YEAR

Continued partnership with the AERO Institute, Palmdale, CA has provided staffing flexibility to implementing Visitor Center initiatives.
Re-configuration of the ERC and satellite Visitor Center has been very useful in increasing the capability to conduct education and outreach activities. Usage of the Discovery Dome has provided a long overdue gap in formulating partnerships with the local informal education community and providing leaders of those groups to continue educating their groups about NASA and in STEM topics. Improving or acquiring technology to meet today's audience's familiarity will further enhance DFRC educational activities.

PROJECT PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

DFRC currently partners with the AERO Institute, a non-profit organization based in Palmdale, California via a cooperative agreement for the purpose of supporting education and outreach activities aligned to NASA's Education Strategic Plan and DFRC's mission.