

Visitor Center Congressionally-Directed Funds
Administered by Johnson Space Center
Space Center Houston (also known as MANNED SPACE FLIGHT
EDUCATION FOUNDATION, INC.)
Type of Agreement: Cooperative Agreement: NNX09AW09G
Principal Investigator: Melanie Johnson, Ed.D.
Space Center Houston
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PROJECT DESCRIPTION

For the Visitor Center project initiative 2009, Space Center Houston has been collaborating with the Johnson Space Center's Education Department to develop education activities, including exhibits, events and materials that address one or more of the NASA Education Outcomes and create a strategic alliance among all NASA Center Education and Visitor Centers that will outlast the funding.

PROJECT GOALS

The following are Space Center Houston's goals for the Visitor Center Funds:

- a. To facilitate professional development internally and externally that will allow educators to become familiar with best practices in teaching space science.
- b. To encourage collaboration and sharing of educational activities between NASA's JSC community and its partners.
- c. To enhance and upgrade traveling and permanent exhibits so that they directly connect the mission of NASA
- d. To upgrade Space Center Houston's existing programs so that school aged children and youth will be inspired by space science.

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

NASA’s Objectives

(Objective #1) Education events based on NASA education framework	(Objective #2) The number of new or upgraded exhibits, or products based on NASA’s mission is 51.	(Objective #3) Sustain and refresh existing NASA education communities
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- a. To facilitate professional development internally and externally that will allow educators to become familiar with best practices in teaching space science.

(Outcome #1)

- Space Exploration Educators Conference (SEEC)
- Association of Science and Technology Centers (ASTC),
- Conference for the Advancement of Science Teachers (CAST), Texas Middle School Association(TMSA)
- Texas Association of Gifted and Talented (TAGT)

Benefit- The 16th annual SEEC will reach approximately 700 educators. This conference of hands-on training facilitated by NASA engineers, astronauts and science educators will provide teachers with current teaching tips and best practices.

- b. To encourage collaboration and sharing of educational activities between NASA’s JSC community and its partners. **(Outcome #3)**

JSC/SCH Newsletter (monthly newsletter that shares educational programs and factoids to the Johnson Space Center (JSC) community

Benefit – This monthly newsletter is distributed to thousands of contractors educators and JSC employees so that events, facts, and current collaborations are shared between and within the NASA community.

- c. To enhance and upgrade traveling and permanent exhibits so that they directly connect the mission of NASA **(Outcome #2)**

- National Geographic’s MAPS exhibit add-ons that serve to directly connect the traveling exhibit to NASA’s mission
- Models and displays – Upgrade mediums such as Ares I, Orion, Photo Op. and pop-up

Benefit – To ensure that Space Center Houston’s traveling exhibits have a direct and recognizable tie to NASA’s current educational mission.

- d. To upgrade Space Center Houston’s existing programs so that school aged children and youth will be inspired by space science. **(Outcome #2)**

- Outer Space Academy Upgraded to include secondary curriculum and current NASA mission.
- Space School upgraded to include current technology, secondary curricular components and current NASA missions **(outcome #1 and 2)**
- LEGO Mindstorm robotic kits - enhances education events such as day camps

A staff member is working to research the mission of STS-131 to incorporate into the log book. The development of the log book has not yet begun.

Administrative Costs

\$3,000

Dr. Melanie Johnson (Director of Education) and Angela Case (Senior Education Program Assistant) will be responsible for the implementation of the grant. \$2,000 has gone towards Dr. Melanie Johnson's salary and \$1,000 has gone towards Angela Case's salary. These costs will cover the time spent implementing all aspects of programming as well as budget and grant reporting.

PROJECT CONTRIBUTIONS TO PART MEASURES (INCLUDE DATA PLUS EXPLANATION)

To facilitate professional development internally and externally that will allow educators to become familiar with best practices in teaching space science.

The staff at Space Center Houston has developed a long term vision statement whereas professional development is encouraged. The educational staff at SCH has received professional development as well as provided professional development at Houston area conferences. The training series that the staff devised has increased our delivery to students. As a result, our network of educators now reaches beyond our previous Region 4 Educational Service Center in prior years to significant numbers in other school regions

To encourage collaboration and sharing of educational activities between NASA's JSC community and its partners.

The monthly newsletter is distributed to more than 5,000 contractors, civil servants, visitor center and educational workers.

- a. To enhance and upgrade traveling and permanent exhibits so that they directly connect the mission of NASA.

The 2009 Morey report found that the educational experience (83%) of space science was almost equivalent to the entertainment experience (85%) for visitors.

- b. To upgrade Space Center Houston's existing programs so that school aged children and youth will be inspired by space science. Pre- and post tests are given to space school students to assess the extent to which they attain new knowledge (see table 2.).
 - Upgraded Day Camps, software for new day camps, Space School curriculum and upgraded equipment,
 - Day camps reached 9550 students in 2009 and Space School has reached ~7,000 international students. Virtual Space Community reached ~ 126,000 students in 2009.

IMPROVEMENTS (e.g. project management, efficiencies, etc.) MADE IN THE PAST YEAR

Space Center Houston improved its educational offerings with the use of Visitor Center Funds by upgrading its educational programs such as Space School (purchased Mars explorer software, laptop computers, secondary curriculum development and LEGO Mindstorm robotics). SCH has also developed more programs for secondary learners in hopes to inspire STEM college majors and/or careers.

Distance Learning was improved by supporting a community of museums, nationwide, as well as their neighboring school districts with distance learning modules and activities that deal with space science and NASA's mission.

Day camps and outreach programs were improved by the curricular development of new and engaging day camps.

Exhibits were improved with the NASA add-ons to the MAPS exhibit. Communication and sharing among JSC and Space Center Houston are enhanced via a monthly newsletter sponsored by VCF funds.

PROJECT PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION *(THIS IS WHERE FURTHER FOLLOW-UP TO OCCUR FOR COLLECTING 2009 GRANTEE PERFORMANCE SUMMARIES FOR PUBLISHING TO OUR EDUCATION HOME PAGE)*

There will be four constellation program modules that are under development by JSC and will be converted to distance learning modules by Space Center Houston. These modules have been delayed until further notice on the state of the constellation program's future.

Additionally, Space Center Houston will redevelop the activities in Kids Space Place with several vendors. Computer software will be developed by software companies in order to provide unique experiences.

The use of Visitor Center Funds, thus far has assisted Space Center Houston with resources to upgrade and redevelop existing programs that had become outdated over the years. These upgrades are critical components to the vision of Space Center Houston to expand its educational reach to school age children who are not able to travel to Space Center Houston due to funds, proximity to the center and lack of awareness. Through upgrades that include converting our lesson plans to DVDs, including exciting traveling exhibits with NASA add-ons and updating the curriculum of our educational programs, SCH is able to attract and extend its reach to students at an increased rate. We increased visitors to Space Center Houston from 675,000 visitors in 2008 to 755,000 visitors in 2009.

Budget Table for FY2009 VCF

Activity	Original funding	What	Actuals	% complete	Remaining \$\$	other
Space Exploration Educators Conference (SEEC)	\$85,000	Equip Rental Scholarships Conf. items Brochures Admin costs	\$29,500 \$9,600 \$15,000 \$5000 \$20,900	100% 100% 100% 0% 100%	\$5,000	Feb. 4- 6, 2010
Professional Development and Conferences *	\$24,300	ASTC CAST TMSA TAGT BSA GSUSA	\$4,000 \$4,500 Future event \$3,300 \$4,000 \$4,000	100% 100% 0% 100% 0% 0%	0 0 \$4,500 0 \$4,000 \$4,000	No expenses No expenses September 2010 No expenses July 2010 July 2010
Education Joint Newsletter	\$7,000	Quarterly newsletter	\$2,000	25%	\$5,000	Next publication - April 2010
ERC support	\$27,500	Staffing (PT) Equipment	\$2,000 \$2,650	12% 24%	\$14,500 \$8,350	Hired 1 PT staff member DVD transfer equip.
National Geographic MAPS: Tools for Adventure" Exhibit	\$40,000	Design & Devlpt Fabrication Installation of NASA add-ons	\$10,000 \$25,000 \$5,000	100% 100% 100%	0 0 0	See proposal for specific data description
Outer Space Academy	\$20,000	SCH curriculum Contracted curriculum consumables	\$2,000 \$6,000 \$3,000	40% 60% 60%	\$3,000 \$4,000 \$2,000	See proposal for specific data description
Day Camp Programs	\$26,950	Curriculum coord.	\$12,950	93%	\$14,000	See proposal for specific data description
STS-131 Mission Log Books	\$10,000	Research and dev.	\$1,000	90%	\$9,000	See proposal for specific data description
Kids Space Place Gallery Enhancements	\$154,250	Hardware Design and Fabrication	\$75, 404 \$78,846	0%	154,250	See proposal for specific data description
Smart Board	\$21,500	0	\$21,500	0%	\$21,500	See proposal
Smart Table	\$ 8,500	0	\$8,500	0%	\$8,500	See proposal
Grant Administration	\$25,000	Director Ed. Spec.	\$3,000 \$1,500	20% 15%	\$12,000 \$8,500	See proposal

***Legend Acronyms for Budget Table:**

- ASTC = Association of Science-Technology Centers Conference
- CAST = Conference for the Advancement of Science Teaching
- TMSA = Texas Middle School Association Conference
- TAGT = Texas Association of Gifted and Talented Conference
- BSA = Boy Scouts of America Jamboree
- GSUSA = Girl Scouts of USA, National Conference
- ERC = Educator Resource Center

NASA Technical Officer Conclusions:

Funding drop for the FY2009 Visitor Center assistance was not available for use by Space Center Houston until September 2009. SCH also has had many personnel changes in the last several months which delays funding draws and task completion due to training of new personnel. SCH is making progress toward their proposed expenditures and still have many items to complete in the next several months. Specifically,

- Finalizing the log books for STS-131
- Training a part time staffing assistant for the Educator Resource Center
- Completing the major upgrades to the *Kids Space Place* Exhibit area.
- Completing Education Modules written in conjunction with NASA and then developing them into Distance Learning products.
- Purchasing of Hardware in support of the educational classroom needs.

As a final note, the Technical Officer would like to see the *monthly/quarterly* newsletter content prior to distribution to ensure it is a collaborative document and contains information that both NASA Education and Space Center Houston Education offices want distributed.