

NASA-SPONSORED CENTRAL OPERATION OF RESOURCES
FOR EDUCATORS (CORE)

Administered by Lorain County Joint Vocational School

NASA Cooperative Agreement NNX08AC13A

Jeff Ehmen

NASA Marshall Space Flight Center

(256) 961-1567

PROJECT DESCRIPTION

The Central Operation of Resources for Educators (CORE), operated through a cooperative agreement with Lorain County Joint Vocational School, serves as the worldwide distribution center for NASA-produced multimedia educational materials. CORE also supports the state-based NASA Educator Resource Center Network (ERCN) with materials and training to assist the Educator Resource Center (ERC) staff in better serving educators within their region.

CORE regularly communicates with the ERCN concerning required monthly reporting, internal professional development opportunities, and the availability of new products and materials. The ERCN includes more than 60 state-based sites located at universities, museums, and science centers. CORE also demonstrates applications of science, technology, engineering, and mathematics (STEM) and related content areas by providing curriculum support materials and opportunities for educators and students.

PROJECT GOALS

CORE directly supports the NASA Education Strategic Coordination Framework, specifically NASA Education Outcome 2: Attract and retain students in STEM disciplines through a progression of educational opportunities for students, teachers, and faculty. CORE supports this outcome through the following goals:

- Provide professional development resources and training opportunities for NASA's Educator Resource Center Network related to NASA content and innovative teaching methodologies through use of technology in workshops and classrooms.

- Serve as a point of contact on federal regulations (508) compliancy to assure quality control of materials for the NASA Educator Resource Center Network.
- Identify appropriate conferences and conventions to attend and present educational sessions and workshops relating to CORE and NASA Educator Resource Center Network (ERCN) materials and services.
- Reproduce and distribute NASA's aerospace audiovisual and multimedia educational materials to K-16 educators nationally and internationally.
- Identify appropriate NASA educational publications with audiovisual and multimedia products to enhance K-16 educators' use of Earth Science, Space Science and other aerospace media.
- Provide personal assistance to K-16 educators with information, resources, technical support and referrals for NASA programs and services as it relates to science, technology, engineering, and mathematics in aerospace products.
- Partner and collaborate with the NASA to assure that a broader number of educators in minority and underrepresented schools have access to NASA audiovisual and multimedia aerospace products and NASA programs.
- Facilitate collaboration with universities; industry, professional educational organizations, Department of Education, National Science Foundation, and the NASA to assure that a broader number of educators have access to NASA audiovisual and multimedia aerospace products.
- Demonstrate the use of NASA educational materials and technology to pre-service, formal and informal educators through training workshops provided via distance learning, on-site and off-site sessions.
- Partner and collaborate with inter-agency departments/Missions to improve the capacity of science centers, museums, libraries and other institutions, to translate and deliver engaging NASA content.
- Preparation and submission of Weekly Activity Reports and 90-Day reports
- Host a bi-annual ERCN Conference for all members of the ERCN.

PROJECT BENEFIT TO OUTCOME 2

CORE supports Outcome 2 through the following:

- Reproducing and distributing NASA's aerospace audiovisual and multimedia educational materials to K-16 educators nationally and internationally
- Identifying appropriate NASA educational publications with audiovisual and multimedia products to enhance K-16 educator's use of Earth Science, Space Science and other aerospace media
- Providing personal assistance to K-16 educators with information, resources, technical support and referrals for NASA programs and services

as it relates to science, technology, engineering, and mathematics in aerospace products

- Partnering and collaborating with other NASA education projects to assure that a greater number of educators in minority and underrepresented schools have access to NASA audiovisual and multimedia aerospace products and NASA programs
- Facilitating collaboration with universities, industry, professional educational organizations, Department of Education, National Science Foundation, and the NASA education projects to assure that a broader number of educators have access to NASA audiovisual and multimedia aerospace products
- Demonstrating the use of NASA educational materials and technology to pre-service, formal and informal educators through training workshops provided via distance learning, on-site and off-site sessions

PROJECT ACCOMPLISHMENTS

In addition to the project contributions to the PART measures listed below, CORE's accomplishments for FY10 included promotion to the ERCN for participation in eight NASA eEducation Product Showcases. This professional development program is by Webcast in partnership with the NASA Digital Learning Network (DLN) and is open to NASA Education staff and the public. The purpose of the eEducation Product Showcases is to highlight new or innovative NASA Education products, materials, or opportunities to educators and those who provide professional development to educators.

- Waste Limitation Management and Recycling Design Challenge on October 28, 2009 highlighted closed-loop recycling systems and their important role to long duration space flight. This webcast focused on the Waste Limitation Management and Recycling Design Challenge for students in grades 5-8.
- NASAimages.org and eClips, conducted on November 18, 2009, had presenters from NASA Ames Research Center and NASA Langley Research Center providing ideas and suggested use of NASA images and video clips from the NASAimages.org archive and NASA eClips video collection.
- Exploring Space Through Math was presented on December 16, 2009. This presentation was designed to provide content and examples to help students (grades 7-12) develop a deeper understanding of key mathematical concepts, and how to apply those concepts in the context of space exploration.
- STS-131 Robotics, conducted on January 27, 2010, had the Teaching from Space (TFS) team at Johnson Space Center providing information on their efforts to provide educational support for the STS-131 mission. The

- presenters demonstrated a robotics kit that has been sent to each NASA facility and is available for educators from CORE along with other materials related to the topic of robotics.
- NASA Fit Explorers, conducted on February 24, 2010, featured education specialists from Johnson Space Center presenting NASA Fit Explorer educational materials to teachers and explained how they can be used in the classroom. NASA Fit Explorer enables students to simulate astronaut training and engages them in science, technology, engineering and mathematics activities.
 - NASA eProfessional Development Network -- Robotics Course was held on March 31, 2010. Participants were introduced to the NASA Electronic Professional Development Network. The network, located at The Georgia Institute of Technology, is dedicated to preparing teachers to engage their students in science, technology, engineering and mathematics through the use of NASA-developed learning materials and resources. The online courses in robotics was highlighted.
 - MoonWorld, conducted April 28, 2010 presented the NASA-sponsored Classroom of the Future-developed virtual world *MoonWorld*, as a tool to provide useful information regarding the effectiveness of virtual worlds as experiential learning environments. *MoonWorld* is also an avenue to help learners of all ages experience and understand the Moon.
 - On the Moon, conducted on May 26, 2010, reviewed the new "On the Moon" educator guide created in partnership with WGBH, Boston's Public Broadcasting Station (PBS), and NASA. Susan Buckey from WGBH was the main speaker and provided a detailed overview of PBS's "Design Squad," which focuses on engineering challenges for grades 5-12. Two guest speakers, one a K-12 educator and one a university educator, were on hand to speak of their experiences using this curriculum supplement in their classrooms.

CORE holds bi-monthly telecons for the Educator Resource Center (ERC) coordinators. During the telecon, updates are given on topics related to the Educator Resource Center Network regarding upcoming events, new products, business operations and policy matters.

PROJECT CONTRIBUTIONS TO PART MEASURES

CORE and the ERCN contribute to Part Measure: "Percentage of elementary and secondary educators who obtain NASA content-based education resources or participate in short-duration NASA education activities and use NASA resources in their classroom instruction." During FY10, CORE and the ERCN reached a total of 57,713 direct participants. The percentage of elementary and secondary educators using NASA content-based STEM resources in the classroom was 78.5

percent. This percentage is based on the number of replies to a follow-up survey where 84 of 107 participants reported they are in fact using the NASA materials in the classroom.

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

The Office of Education Performance Measurement (OEPM) System is an application that supports the collection of like data across all NASA Education projects and automatically produces performance measurement reporting. The OEPM system makes it possible to take in data from surveys and measure how well NASA is performing in terms of its educational goals. During FY10, each NASA Educator Resource Center was provided data collection capability through OEPM for the entire fiscal year. Report generation capability for individual field centers was initiated in September, 2010 and is expected to be concluded in November, 2010.

Each NASA field center Educator Resource Center was provided \$9,000 in funds (\$90,000 total) to use to purchase much needed supplies, equipment (including information technology upgrades) that would have a direct impact on the services provided to educators.

PROJECT PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

CORE, which is operated through a cooperative agreement between Marshall Space Flight Center and Lorain County Joint Vocational School, serves as the worldwide distribution center for NASA-produced multimedia educational materials. CORE also supports the state-based NASA ERCN's with materials and training to assist the Educator Resource Center staff in better serving educators within their region.

Lorain County Joint Vocational School and CORE have an Advisory Committee composed of representatives the educational community. The Advisory Committee meets two times a year to learn about activities conducted by CORE and to suggest ideas on how best to leverage resources to make the greatest impact on the community and education.