

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

Administered by Lorain County Joint Vocational School

NASA Cooperative Agreement NNX08AC13A

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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 Outcomes 6.1 (Improve retention of students in STEM disciplines by providing opportunities and activities along the education pipeline), and 6.2 (Promote STEM literacy through strategic partnerships with formal and informal organizations). CORE supports these outcomes 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.

- 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.
- 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.

PROJECT BENEFIT TO OUTCOMES 6.1 and 6.2

CORE supports NASA Education efforts to accomplish Outcome 6.1 (Improve retention of students in STEM disciplines by providing opportunities and activities along the education pipeline) by:

- 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.

Efforts to accomplish Outcome 6.2 (Promote STEM literacy through strategic partnerships with formal and informal organizations) includes:

- 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 FY12 included the following:

A total of 6,748 educators were served through CORE with 19,819 curriculum support products. A total of 4,350 in-service and pre-service educators participated in 58 training workshops. CORE Web site received 408,706 page views.

NASA Exploration Space Field Trips is an Exploration Works project in Helena, Montana where middle school students learn about human exploration of space from the Apollo to Shuttle missions and the International Space Station. Components of this field trip include the Knowledge Station, the Planet Walk, the Dry-Ice Comet, and Toys in Space. NASA-sponsored Central Operation of Resources for Educators (CORE) has been working with Exploration Space to provide materials related to project content including Einstein's General Theory, free-fall, escape velocity, and microgravity.

CORE participated in the 21st Century Technology Conference at the Lorain County Community College in Elyria, Ohio. The conference helps educators learn to effectively use technology in the classroom. Topics included Video on Demand, What is the Cloud, Flipping the Classroom for Blended Learning, and more. CORE provided information regarding NASA's technological offerings and how to incorporate those resources into the classroom setting. Internationally acclaimed speaker, Marc Prensky, presented the keynote address entitled "Teaching Digital Natives – Partnering for Real Learning."

CORE was invited to participate in a workshop for educators called Flipping the Classroom, which was held by the SMART Consortium located at the Idea Center

in Cleveland, Ohio. CORE provided information for each educator attending this event. The Flipped Classroom refers to a teaching method where students go home to receive "classroom" instruction online through video. The benefit of this type of instruction is that students can play the video over and over again until they understand the content. During class time at school, students are then able to do their "homework" assignments in class while the instructor is present to help with any difficulties.

CORE held a STEM Career camp the summer 2012 in collaboration with NASA Summer of Innovation. Hosted by the Lorain County Joint Vocational School (JVS) in Oberlin, OH this annual career camp is held to educate students on the importance of understanding career options and giving the students experience in trying activities related different careers first hand. CORE participated once again to provide Science, Technology, Engineering, and Mathematics that relates back to NASA Summer of Innovation content and career opportunities which incorporate STEM.

PROJECT CONTRIBUTIONS TO PART MEASURES

eEducation Small Projects is a contributor to APG 6.1.1.1 (35,000 educators participate in NASA education programs). The eEducation Small Projects annual target was to engage 3,000 educators in participating in NASA Education Programs. The actual FY12 participant total was total 3,046.

eEducation Small projects also contributed to APG 6.2.1.1 (50 percent of educators NASA resources in their curricula after participating in NASA professional development as measured by survey responses). The eEducation Small Projects annual target was 70%. The actual percentage of educators using NASA resources was 81.96%.

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

CORE worked with the NASA Lunar Science Institute (NLSI) to make the tactile book, "Getting a Feel for Lunar Craters" available for teachers on request. The book features tactile diagrams of the lunar surface designed to educate the blind and visually impaired about the wonders of Earth's moon. There are two tactile versions of the book: one in Braille and one without Braille. Both versions come with a CD-ROM to use in conjunction with the book.

CORE played host another year of the Education Resource Showcase webcast training series for educators in collaboration with the NASA DLiNfo Channel. The Education Resource Showcase is a series of webcast trainings which are held on the last Wednesday of the month throughout the school year and are delivered through the DLiNfo Channel as a webcast to provide introductions, demonstrations, and information about new and existing education products and services. This series of six trainings was provided to external audiences as well as internal NASA Education audiences. Topics included:

- My NASA Data
- RealWorld-InWorld NASA Engineering Design Challenge
- Spaced-Out Sports
- Teaching from Space: Microgravity
- NASA BEST Students (Beginning Engineering, Science, and Technology)
- NEON: NASA Education Online Network

In an effort to support our marketing efforts for the state of New York, CORE partnered with organizers of the Tri Region Science and Engineering Fair to initiate a STEM Outreach Program with 37 school districts in the state. These school districts will be working with the science fair organizers and CORE to prepare students in these districts for the science fair in the 2012-13 school year.

CORE held bi-monthly telecons with the NASA Field Center Educator Resource Center (ERC) Coordinators. The purpose of the telecon is to inform and educate ERC staff about updates in NASA Education programs and products. ERC staff then share the information with their regional ERC sites.

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 Educator Resource Center Network (ERCN) 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 and business 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.