GEST NEWS

Spring 2008
Volume 20
Number 1

GEST is a consortium of scientists and engineers, led by the University of Maryland, Baltimore County (UMBC), to conduct scientific research in Earth and information sciences and related technologies in collaboration with the NASA Goddard Space Flight Center (GSFC). The consortium members of GEST include UMBC, Hampton University, Howard University, Caelum Research Corporation, and Northrop Grumman Corporation.

GEST News is edited by Amy Houghton and published quarterly by UMBC. Keep up to date between newsletters by checking our website.

Goddard Earth Sciences and Technology Center
University of Maryland, Baltimore County
5523 Research Park Dr.
Suite 320
Baltimore, MD 21228
http://gest.umbc.edu
Phone: 410-455-6362
Fax: 410-455-8806

Using educational technologies to demonstrate the importance of STEM with help from the astronauts and ... WALL•E?

by Dr. Marci Delaney, Assistant Research Scientist

Dr. Marci Delaney works with teachers and students in a unique way: she rarely meets them face-to-face, yet she and her team are often in their classrooms. How? Through technology - she and her team at GSFC are part of NASA's Digital Learning Network™, which utilizes interactive instructional technologies, such as videoconferencing, to deliver NASA educational content for students and their educators. The NASA-wide DLN has made over 500,000 connections in the last year, and its use is on the rise (http://dln.nasa.gov). Often, the DLN presents to schools a scripted event that teachers can select from an on-line catalog. But this past spring, the GSFC DLN team got a unique opportunity to invite the STS-125 astronaut crew into their studio to connect with several schools across the country.

Members of the STS-125 crew connect with students in the Goddard Science Television Studio, April 30, 2008

After numerous weeks of "begging" for the time from the Hubble Project Office, the GSFC DLN team was given a full hour with the astronaut crew on April 30th during their crew fam (crew familiarity) visit to GSFC. This event with the astronauts, from the start, was planned to be different! The objective was to highlight the historic servicing mission of the Hubble Space Telescope and to explore the unique career diversity of the STS-125 crew, emphasizing the use of this crew's STEM skills (science, technology, engineering, mathematics) in the work they do today and will do while in space. Five schools connected via videoconferencing for this event, while four schools in Colorado connected via webcast. The event also included a small in-house audience of local home-schooled children. Participating students had to research each astronaut of this crew and the Hubble Space Telescope, and then submit questions related to what they had just learned. One student asked of Astronaut Feustal: "Was it harder for you to get a job working for NASA because you went to a junior college?" Another student asked of Grunsfeld, "If someone wanted to work on or with a space telescope, like Hubble, what type of careers should he or she pursue?" The event received national press attention and a few of the schools had their own local newspapers feature their participation in the event.

In an effort to gain more interest in the use of the DLN, Delaney eagerly accepted an invitation to a meeting in December with Pixar Studios. She and her team pitched the idea of using a Pixar character in a DLN event using green screen technology. What started as a long, arduous journey of legalities between competing NASA Centers --whom talks to whom, Disney versus Pixar, and Headquarters versus Center-- actually resulted in a Space Act Agreement that included numerous outreach objectives, but only one education project: to put WALL•E in a DLN event featuring NASA's efforts to return to the Moon. Starting this fall, teachers can register through the DLN catalog to bring WALL•E into their classrooms (http://www.nasa.gov/audience/foreducators/explore-robotics-walle.html).

Star of Disney's "Wall•E"; photo courtesy of Pixar

LUNAR ROBOTIC EXPLORATION

by Laurie Cook, Instructional Designer, GEST

Laurie Cook, Summer Center Director, and Dr. Susan Hoban, seated in front in orange shirts, and their MSDE Summer Center students (orange), along with Anne Arundel County 9th grade STEM students (white)

This year, GEST hosted the first Summer Center for Lunar Robotic Exploration as part of the Maryland Summer Centers for Gifted and Talented Students. The Summer Center was designed for students entering grade 8 who are interested in how NASA uses robotic rovers to explore the Moon. Students built and carefully calibrated robots to conduct simulated lunar exploration missions, studied intended targets using remote sensing, and mapped a mock lunar surface. Further, students learned how to skillfully and confidently perform technologies such as image analysis and computer interfacing with the robots. Daily guidance was provided by a UMBC researcher working with NASA, Dr. Susan Hoban, and a field trip to Goddard Space Flight Center was a highlight of the two-week experience, where students witnessed astronauts in training. The 2008 Maryland Summer Centers Program is sponsored by the Maryland State Department of Education and funded by the Maryland General Assembly. The Summer Center Director, Laurie Cook, plans to have the Lunar Robotic Exploration as a yearly program.

CONGRATULAZIONI

Atmospheric Physics student Felicita Russo has completed her Ph.D.. She successfully defended her thesis, "An Investigation of Raman Lidar Aerosol Measurements and Their Application to the Study of the Aerosol Indirect Effect", and she was hooded this past May at UMBC's Spring Commencement. Her co-mentors were Dr. Raymond Hoff and Dr. David Whiteman. Dr. Russo is now working in the lidar group at the National Research Council in Potenza, Italy.

And, bestowed upon Dr. Franco Einaudi was an Honorary Doctor of Science degree from UMBC's Graduate School. Dr. Einaudi is the Director of the Earth Sciences Division of the Sciences and Exploration Directorate at GSFC.

KUDOS TO KURYLO!

Also this past May, Dr. Michael Kurylo was awarded a 2008 Ozone Layer Protection Award by the Stratospheric Protection Division of the U.S. Environmental Protection Agency. This award program, now in its 18th year, recognizes exceptional leadership, personal dedication, and technical achievements in eliminating ozone-depleting substances. Winners are chosen on the basis of originality and public purpose; persuasive, moral or organizational leadership; and, actual elimination of chemical emissions. Unfortunately, Dr. Kurylo was not able to actually attend the ceremony, held at the Kennedy Center in Washington, DC, as he was in Geneva at the time, chairing the 7th Meeting of Ozone Research Managers of the Parties to the Vienna Convention. On his behalf, his wife Mary and two of their children (shown in photo, right) accepted the award.