

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.

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## Students Spend Summer on Science The 2007 Student Summer Programs at NASA GSFC

by Valerie Casasanto, GEST Program Coordinator

This past summer, GEST and JCET along with the NASA Goddard Space Flight Center (GSFC) hosted 30 summer interns in the Earth Sciences. Students of all levels were matched with GSFC/UMBC scientist mentors to work on a variety of cutting edge Earth Science research projects including aerosol properties analysis and the study of geological structures on Mars. The different summer programs include the *Graduate Student Summer Program (GSSP)*; the *Summer Institute on Atmospheric, Biospheric, and Hydrospheric Sciences*; and the *JCET Student Summer Program*.

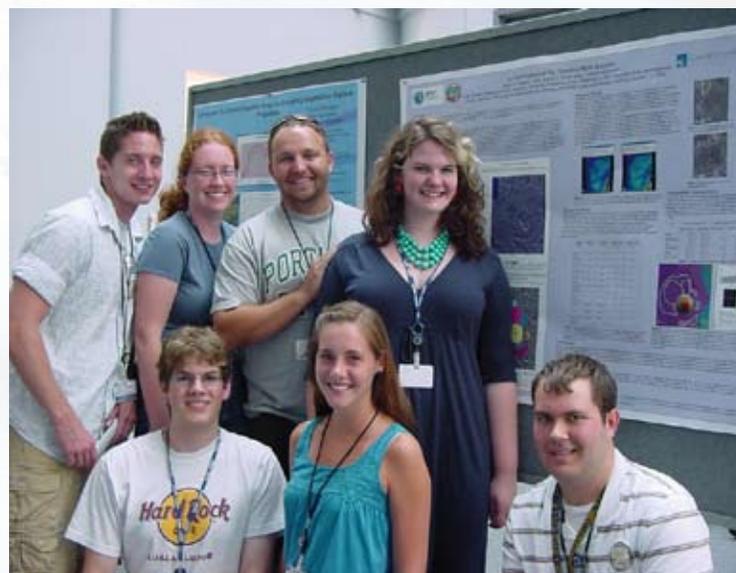
### Graduate Student Summer Program (GSSP)

The 7th successful GSSP, sponsored by NASA GSFC's Earth Science Division, took place from June 4 to August 10, 2007. Four Ph.D. and three Master's level students took part this year. One student worked with his mentor on air-sea interactions at the Wallops Flight Facility (WFF) in Virginia while the other six worked alongside their mentors at GSFC in Greenbelt, Maryland. Students spent an intensive 10-week session working on specific research projects with their mentors. On arrival day, students participated in an orientation and a welcome lunch with their mentors,

GEST Director Raymond Hoff, GEST Associate Director Tom Low, and Program Coordinator Valerie Casasanto, then went with their mentors to begin discussions on their summer research projects.

While they were at GSFC, a student tour of the facility was provided for students through the Goddard Visitor's Center. The tour concluded with the presentation of "Science on a Sphere," an interactive display of Earth science data on a rotating globe, at the Visitor's Center. Toward the end of the program, a half-day seminar series, "Climate in the extreme: Melting Ice & More powerful Hurricanes?" was held in the "Science on a Sphere" auditorium. Experts on hurricanes (Dr. Jeffrey Halverson, JCET) and polar ice (Dr. Marco Tedesco, JCET) gave presentations, then an intensive dialogue occurred between the speakers and the audience regarding the questions surrounding the science of global warming.

All students conducted research that will be utilized in their theses at their home institutions. Several students have announced their intentions to extend their graduate research with their summer mentor. Student final presentation seminars were held on the last day of the program. Each student gave a 15-minute seminar on the work completed during the summer. Student mentors and other GEST and JCET faculty were in attendance. (A full report is available on-line at [http://gest.umbc.edu/student\\_opp/students.html](http://gest.umbc.edu/student_opp/students.html). A complete list of the GSSP summer projects appears on the table on the reverse.) A farewell dinner was held in Annapolis and certificates were presented to participants.



Summer Institute Students at NASA Poster Session

## Student Programs (cont. from Page 1)

### Summer Institute on Atmospheric, Biospheric, and Hydrospheric Sciences

The Summer Institute, also sponsored by NASA GSFC's Earth Science Division, is targeted at undergraduate students interested in pursuing careers in Earth Sciences. A group of 12 students spent the summer at NASA. During the first week of the program, they were given presentations by potential mentors at GSFC. The students then made their selections of whom they wanted to work with for the duration of the summer. At the end of the Institute, students made oral and written presentations and an optional poster presentation of their work.



Student Gergely Dolgos presents poster to JCET faculty at UMBC's "Research Fest"

### JCET Student Summer Program

JCET sponsored three undergraduate students this summer to work with a JCET Faculty member on a specific research project. Students presented their final posters at the UMBC "Research Fest" along with other UMBC summer interns. One of the JCET students has been accepted into the UMBC Graduate School to continue his research in atmospheric physics.

### Conclusion

Students in all three programs reported a positive experience and felt that they had been provided a unique opportunity to investigate science as a career, possibly having a real influence on their lives and future careers. Several students have elected to continue the relationship with their mentor to extend their research activities together. Students had a mix of academic, real research experience, and social and local events to keep them very busy during each program.

These student summer programs are another example of NASA GSFC Earth Science division's commitment to academics that has been enabled by the cooperative agreements that established both JCET and GEST. Together UMBC and NASA have provided a unique opportunity for these students to explore a career in science. Thanks to the GEST and JCET faculty who mentored a student—an important step in ensuring another great generation of scientists! The 2008 Summer Programs are in full preparation for another exciting summer. Information, and how to apply (the deadline is in mid-February), can be found online at [http://gest.umbc.edu/student\\_opp/students.html](http://gest.umbc.edu/student_opp/students.html), <http://neptune.gsfc.nasa.gov/summerinstitute/> and <http://jcet.umbc.edu/SummerProgram.html>.

## GSSP Projects for Summer 2007

Project	Student, Affiliation	Mentor(s)
An Introduction to Meteorological Forcing of Ocean Color in the South Atlantic Bight	Lauren Urban, Creighton University	Dr. Amelia Colarco (GEST)
Bombay Plume Transport, Structure and Microphysical Interactions Over the Arabian Sea during Indian Winter Monsoon	Andrew Martin, Florida State University	Dr. William Lau (GSFC), Dr. Kyu-Myong Kim (GEST)
Simulating West African Squall Lines with the GCE-PLACE model: Influences of Surface Fluxes Near the Land-Ocean Transition	Marcia DeLonge, University of Virginia, Charlottesville	Drs. Wei Kuo-Tao and Steve Lang (GSFC), Dr. Karen Mohr (visiting from University at Albany, SUNY)
Analysis of Aerosol Properties Derived from MODIS, AERONET, and Shipborne Measurements During AEROSE Field Campaigns	Tamil Maldonado, Bowie State University	Dr. Allen Chu (GEST)
Physical Controls on Continental Shelf Air-Sea CO <sub>2</sub> Fluxes: Autonomous In Situ Observations	Philip Orton, Columbia University	Dr. John Moison (WFF)
Validation of NWS Stage IV Multi-Sensor Precipitation Estimates (MPE) in the Mid-Atlantic Region	Boone Larson, Louisiana State University	Dr. Ali Tokay (JCET)
Comparison of a Global Landslide Event Inventory to a Satellite-based Landslide Algorithm	Dalia Bach, Columbia University	Dr. Bob Adler (GSFC), Dr. Yang Hong (GEST)