



JCET NEWS

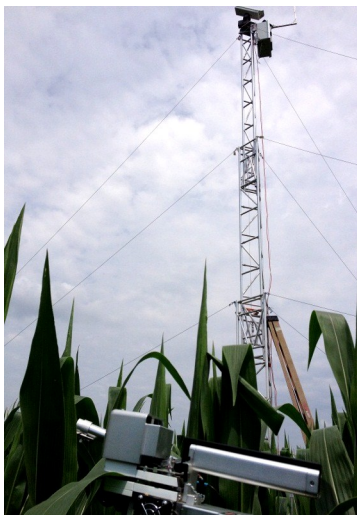
VOLUME 11, ISSUE 3

SUMMER 2013

Students take on new challenges

JCET faculty hosted a number of interns from around the U.S. this summer. The students experienced what it is really like working in the field.

Julie Leifeld from the University of Minnesota, literally spent her summer in the fields with her mentor Dr. Petya Campbell studying the spectral signals of



vegetation. They used a portable system of sensors called "Fusion" designed by L. Corp of SSAI, which collects ground and airborne data and is designed to view vegetation from many different angles. The studies are instrumental in the interpretation and analysis of space-borne remote sensing data. The

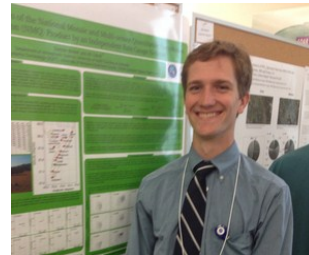
study was a part of the vegetation photosynthesis and function research led by Dr. Elizabeth Middleton at NASA GSFC.

Jonathan Carr of UMBC Physics, spent his summer with Dr. Benjamin T. Johnson simulating the riming of snow crystals, and computing the scattering and absorption properties of rimed ice crystals. [Riming is the rapid freezing of supercooled water droplets on impact with an object, in this case a snowflake.] Jonathan was able to develop a riming aggregation model and tested some approaches on how to design the model to be similar to realistic riming processes. Jonathan continues to work with Dr. Johnson part-time and both are currently running

simulations using these modeled rimed particles to assess the impact on satellite-based remote sensing measurements of precipitation.



J. Duncan Belew of the University of North Carolina - Asheville spent his summer with Dr. Ali Tokay analyzing rainfall measurements from 14 sites on the Southern Delmarva Peninsula. He generated the continuous gauge record from each site and compared the gauge data to the NOAA/NSSL National Mosaic Quantitative Precipitation Estimates.



Allie O'Malley of UMBC, learned how to instruct teachers the Lego Mindstorms programming tool with her mentors Dr. Susan Hoban and Laurie



Cook on NASA's BEST (Beginning Engineering, Science and Technology) program.

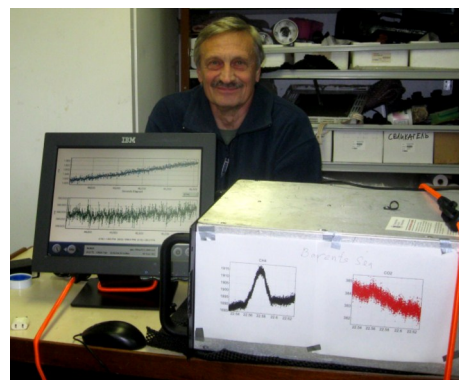
Left to right: Allie O'Malley, Michelle Graf, Susan Hoban, Laurie Cook at the NASA/NSTA Middle School STEM Conference at KSC

Arctic Adventure

Dr. Leonid Yurganov returned from a recent Arctic expedition NABOS-2013 (Nansen and Amundsen Basins Observational System) to study methane (CH₄) emissions from the Arctic Ocean. He was onboard a research vessel from August 21 to September 22, 2013, routed from Norway to the East Siberian Sea and back. The goal of his efforts (supported by NSF, PI Dr. Ira Leifer, University of California, Santa Bar-

bara), was a confirmation of IASI and AIRS satellite data that have indicated a significant emission of methane from the Arctic Ocean. The photo at right was taken on September 19 in the Barents Sea. The upper panel of the instrument's display shows an increasing CH₄ concentration in the surface layer in contrast to lower or no increase of CO₂. A similar pattern was observed there a month before (plots

on the right). A careful analysis of the data is underway, but it appears that the Arctic Ocean is an active player in the cycle of atmospheric methane.



Congratulations!

- **Huisheng Bian** received NASA Award for Outstanding Performance-Technical Support for the development of aerosol chemistry modules to enable studies on aerosol-chemistry-climate interactions, June 2013.
- **Keith Evans** received a Bachelor's Degree in Ancient Studies from UMBC, May 2013.
- **Susan Hoban** wins grant from the National Leadership Grants for Libraries for a "Hi-Tech Academy: The Road to a STEM Career" to increase students knowledge and skills in STEM.
- **Benjamin T. Johnson and Tianle Yuan** are now affiliated with the Physics Department.
- **Ana Prados** received her Mas-

ter's in Public Policy with a focus on Environmental Policy from the University of Maryland, May 2013.

- **Patricia Sawamura** successfully defended her dissertation "Retrieval of Optical and Microphysical Properties of Aerosols from a Hybrid Lidar Dataset." Patricia has been offered a NASA Post-Doc fellowship to continue her research at NASA Langley.

JCET Seminars

Join us for this semester's JCET GRA (Graduate Research Assistant) Seminar Series which is all about data presentation. The talks are on alternate Tuesdays from 11 AM to Noon in UMBC's Physics Building, Room 401. Dr. Christopher Shuman kicked off the series with a discussion of "Antarctica's Larsen B Embayment - A Decade+ of Ice Losses Detailed by Satellite Observations." Dr. Jan Merka followed on 10/8 with a primer on "Visual Presentation of Quantitative Data." The series is available via SeeVogh for those who would like to participate remotely. The schedule and abstracts are available on [JCET's website](#).

JCET People

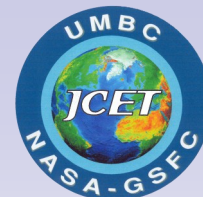
In this issue, we feature Mr. Kevin Mooney, JCET's Accountant.

Kevin works at JCET's UMBC office and is in charge of HR/Payroll, procurement and inventory control.



He is happily married with 2 teenage sons, has 2 dogs and lives in Severna Park, Maryland. His favorite pastimes

are his kids and their activities and traveling with his wife. He particularly enjoys art, history, music, theater, movies and sports.



Joint Center for Earth Systems
Technology (JCET)
5523 Research Park Drive
Suite 320
Baltimore, MD 21228
410-455-8812

Inquiries/comments, contact:
Valerie Casasanto
vcasa@umbc.edu
Jcet.umbc.edu