NSF Funds Collaborative Study on Lake-Effect Snow

Millersville University, in collaboration with eight other universities including the University of Wyoming, University of Illinois, University of Utah, State University of New York (SUNY) Oswego, Hobart and William Smith Colleges, Penn State University, University of Alabama in Huntsville, SUNY Albany and the Center for Severe Weather Research (CSWR) in Boulder, CO, are participating in a study on Lake-Effect Snow near Geneva, New York.

The project, funded by the National Science Foundation, is called Ontario Winter Lake-effect Systems (OWLeS). OWLeS scientists, including MU’s Professors Richard Clark and Todd Sikora, are converging on the shores of Lake Ontario from Dec. 5-21, 2013, and Jan. 4-29, 2014. Together, they work to better understand mechanisms that lead to the deep snows that accumulate across the lake region each winter. Researchers are using three Doppler-on-Wheels (DOW) and a University of Wyoming instrumented aircraft, the King Air. Millersville’s primary goal is to collect data in the lowest portion of the atmosphere at very high resolution and to connect the airborne measurements to the ground-based measurements using our tethered balloon. Twenty Millersville University students are participating as research assistants on this project. “In addition to operating Millersville’s instruments, our students will help other researchers collect their data,” said Clark. “One day they may be taking measurements at our base facility, and the next they may be driving a vehicle outfitted with weather instrumentation into a major snowstorm. Dr. Brad Smull, Program Director for Physical and Dynamic Meteorology at NSF, offered that OWLeS could be the largest group of undergraduate students that he had ever seen in the field.”

New Book on Numerical Modeling

Dr. Alex DeCaria has authored a new book, A First Course in Atmospheric Numerical Modeling, along with co-author Dr. Glenn Van Knowe, Meso, Inc. Their new book is published by Sundog Publishing (www.sundogpublishing.com) and is available for purchase directly from the publisher. Dr. DeCaria thanks all the alums who took his modeling course over the years, and whose feedback has greatly influenced the quality of the finished book.

Chincoteague Bay Field Station of the Marine Science Consortium

The Chincoteague Bay Field Station (CBFS) of the Marine Science Consortium (MSC) provides outstanding multi-disciplinary, educational and research opportunities that celebrates the rich natural, cultural, economic, and technological resources of the mid-Atlantic coastal region through field-based and hands-on learning. Millersville University is a senior full partner of the CBFS, and continues to offer summer courses including the Field Methods of Oceanography and Coastal Environmental Oceanography among others. Dr. Robert Vaillancourt (Ocean Sciences and Coastal Studies) is the Millersville Representative to the Academic Advisory Council of the CBFS. At the CBFS, students have the opportunity to explore the Chesapeake Bay aboard research vessels and deploy instruments along transects to help characterize the condition and change in the Bay.

MU Welcomes Dr. John Anderson

Dr. John M. Anderson became the 14th president of Millersville University of Pennsylvania in April 2013. Throughout his career he has been a strong advocate for community engagement and sustainability. Dr. Anderson chairs the American Association of State Colleges and Universities Economic & Workforce Development Committee; and serves on the Board of Springbrook, Inc., a not-for-profit organization that supports children and adults with developmental disabilities. He also serve on the Steering Committee for the American College and University Presidents’ Climate Commitment (ACUPCC) and was instrumental in enrolling MU in the ACUPCC.

2014 Northeast GSA Meeting

The Northeast Geological Society of America (GSA) meeting will be held in Lancaster on March 22-25, 2014. Dr. Lynn Marquez (Geology) will be leading a field trip with Stephen Shank from the PA Geological Survey titled, “Geology of the Baltimore Mafic Complex.” Dr. Charlie Scharnberger (Geology, Emeriti) will lead with Joseph Smoot from the USGS, Ed Simpson, from Kutztown University, and Jeri Jones from Jones Geological Services titled, “Stratigraphy and Structure of the Chilhowee Group in Lancaster and York Counties.” Further information can be found at, http://www.geosociety.org/Sections/ne/2014mtg/.

Dr. Bob Vaillancourt
Nate Murry OSCS is involved in a collaborative project with the University of Delaware & The Gulf of Mexico Research Initiative to determine the dispersal patterns of oil spilled during the Deepwater Horizon accident. He has supported a research cruise in the Gulf by providing real-time analysis of wind & current data collected by Lagrangian ocean drifters deployed during the cruise. He continues to participate in on-going processing & analysis of oceanic data obtained by the drifters as well as from commercial oil platforms, NOAA ADCP units & NDBC buoys. He develops time series plots and vector animations of the data in MATLAB to assist in understanding the behavior of current flow & eddies in the Gulf of Mexico, which is then used to make accurate predictions of how oil particulate will disperse about the Gulf & general ocean basin.

Over the summer and fall of 2013, seniors Jordan Brown (B.A. Earth Sciences), Thomas Horn (B.S. Geology), and Matt Yoder (B.S. Geology) have been conducting research at Catoctin Mountain, Maryland. Jordan has primarily focused on hydrologic changes associated with the 24 m-tall Cunningham Falls. Tom is currently studying bedrock contributions to stream water chemistry from metamorphosed volcanic rocks that previously have been ignored as a source of solutes to stream water, and Matt is currently studying changes in stream chemistry, including dissolved CO$_2$ across the falls. Findings thus far indicate that Cunningham Falls serves a distinct hydrologic and geochemical boundary for its watershed. The influence of different rock types on the stream chemistry changes abruptly at the falls, CO$_2$ is degassed from the stream to the atmosphere as the streams cascades over the falls, and at the present time the falls are getting taller.

Dr. Richard Clark) has served as one of the participating scientists. Clark and his students will be operating an aerostat and ground sensing platforms as part of this project. In California, the emphasis was more directed to aerosol measurements on Table Mountain near Golden, CO. Clark and his students will be operating a series of flights, with scientific instruments on board to measure gaseous and particulate pollution.

Students Jordan Brown and Tom Horn conducting research at Catoctin Mountain, MD

The aircraft measurements are combined with ground observations in order to shed light on how satellites could be used to make similar, consistent measurements over time, with the ultimate goal of putting better data in the hands of policymakers and elected officials.

Millersville University students have had an opportunity to participate in three of the DISCOVER AQ missions. Eight students along with Dr. Clark participated in the DISCOVER-AQ; Edgewood, MD in 2011. The focus of this phase was sea and bay breezes and their effect on the air chemistry in coastal Maryland. In addition, 11 students spent parts of January-February, 2013 in Huron, CA measuring meteorological conditions, air chemistry, and aerosols using an impressive suite of ground-based instruments, sensors onboard an aerostat, and remote sensing platforms as part of this project. In California, the emphasis was more directed to aerosol transport over the San Joaquin Valley. In addition to carrying out fundamental research, the group interacted with the Huron Middle and Elementary Schools, and is redesigning the City of Huron web pages. Students were able to gain valuable skills and experience in the use of a wide variety of instruments.

In September 2013, 13 students were part of the third location for this project at Trinity Bay east of Houston, TX. Millersville University was one of six organizations conducting atmospheric chemistry research at Smith Point, TX. Other investigators were strategically distributed across the Houston area, including Ellington, TX, the base or the NASA P3B aircraft. The fourth phase of the project is scheduled for summer 2014 in Denver, CO. Clark and his students will be operating an aerostat and ground-based instruments on Table Mountain near Golden, CO.
Millersville University Becomes UCAR Full Member

In 1991, the University Corporation for Atmospheric Research (UCAR) created the Academic Affiliates Program (AAP) to provide a mechanism for participation for non-Ph.D. granting institutions offering programs in atmospheric and related science. Millersville University was a founding member of the AAP and has remained an active member in good standing for the past 22 years, with our faculty serving in leadership positions in the organization as members and chairs of governing committees. Our level of involvement in UCAR has been equal to or exceeding that of many of the most active Ph.D. granting institutions. Yet, the AAP institutions had no voting power within UCAR and our presence was not necessary for a quorum. This changed on October 9, 2013 when full members and AAP members alike passed a change in the bylaws in favor of a unified membership. As regular members, the former AAP institutions will now enjoy all the rights and privileges of the Ph.D. granting members, most notably the right to a vote, but more importantly, the deserved recognition that we are equal partners in the UCAR community. As full members, the non-Ph.D. granting institutions comprise approximately one-fourth of the total membership.

M.S. in Integrated Scientific Applications

The MSISA is a fairly new Master’s Program at Millersville University. The development of the program is a response to regional and national trends that show a growth in the need for highly skilled scientists and technically astute professionals with good business sense, excellent communication skills and the ability to work in a team-oriented environment in the workforce. The MSISA includes specialization in a number of areas including, Environmental Systems Management, Climate Science Applications, Geoinformatics, Weather Intelligence and Risk Management, and others based on the evolving workforce needs. The Bureau of Labor Statistics predicts about 48,000 job openings between 2008 and 2018 for the environmental scientists requiring a graduate degree. A first-year student in the program, Christopher Prebish, states, “The MSISA program is a very unique, and it has provided me with some very interesting and rewarding opportunities.” Amanda Kibbe is the first graduate of the program. She is working for the Information Technology and Innovation Foundation (ITIF).

Winter Keeps Weather Center Busy

The MU Weather Information Center continues its Winter Storm Forecasting service with the Pennsylvania Department of Transportation. For a six winter season (currently third year of a three-year, $115,000 contract), the WIC provides targeted forecasts for the eight counties in South Central PA (PaDOT District 8). Managed by WIC Director Eric Hörst, this forecasting service employs several meteorology students and brings outside funding for Weather Center upgrades such as the newly expanded electronic map wall.

New Major in Multi-disciplinary Studies

In the fall of 2013, the first concentration in the newly approved Major in Multidisciplinary Studies (MDST) titled Environmental Hazards and Emergency Management Bachelor’s program was approved. The new concentration combines courses from the Earth Sciences along with courses in emergency management and occupational safety and environmental health. More information on the program can be found at http://www.millersville.edu/mdst/approved-programs/index.php.

The Center for Disaster Research and Education (CDRE)

The CDRE was chosen as one of thirty Universities around the nation by the Federal Emergency Management Agency, FEMA, to host the Multi-Hazard Emergency Planning for Higher Education course. The goal of the course is to provide institutions of higher education with knowledge and planning strategies to better protect lives, property, and operations on college campuses with the collaboration of the local communities. The CDRE has expects participation from numerous local agencies and PASSHE Universities from across the state. The course will be held at Millersville University on April 8-10, 2014. The three day course is an all-hazards exercise based training, taught by FEMA instructors.

The CDRE was recently represented at the 2013 IAEM Conference in Reno, NV. Emergency Management Professor Duane Hagelgans presented at the conference and was accompanied by CDRE Graduate Assistants Shauna Stoy and Paul McGonigal. MSEM Students Alyssa Stehli and Jarrett McLane also represented the CDRE at the conference.

The CDRE in collaboration with the Disaster Recovery International (DRI) presents a new course: Introduction to Business Continuity Planning Management. This 16-hour course will be offered in two formats. We will have a face-to-face offering at the Dixon University Center in Harrisburg, PA on April 23rd and 24th from 8:30am to 4:30pm and a fully online course on Tuesdays from April 8th to April 29th from 8am to 12pm.

Dr. Yalda and Dr. Hagelgans have been selected to be partners with the Dering Consulting Group for the design and development of a course entitled "Emergency Management for Vehicle Maintenance Facilities." Millersville University will account for approximately 18 percent of the nearly 1,300 project task hours assigned to complete the project. This is the highest partner percentage in the project.

The CDRE will be offering their monthly Virtual Seminar Series Fridays at 1pm eastern during the Fall and Spring semesters. More information at www.millersville.edu/cdre/virtual-seminar-series.php.
Geology:

“The Geology Program at MU was challenging yet highly rewarding. Not only did the program prepare me for my position as a staff geologist, the material covered in the courses has proven to be practical on a daily basis. In addition, the majority of my classmates have had great success obtaining jobs or being accepted into master’s programs.”

Bradley Gehman, Staff Geologist
ARM Group, Inc.

Ocean Science and Coastal Studies:

“The curriculum at Millersville helps build a strong foundation of knowledge that is applicable across many different fields.”

“The resources at Millersville are industry grade, giving students an edge when making the transition into industry.”

“The courses at Millersville provide a near seamless transition to graduate level studies.”

Justin Gilchrist, Resource Modeling Analyst,
NextEra Energy Resource / WindLogics

Meteorology:

“The Meteorology Program at Millersville University provided a world class education and experience that prepared me for a successful graduate school experience and a career in meteorology within NOAA. During my time at MU from 1987-1992, I was exposed to “cutting edge” technologies within the field of meteorology, including McIDAS, GEMPAK, NCAR Graphics and more. The small class sizes provided great direct relationships with professors for all classes.”

Tom Renkevens; Deputy Division Chief
NOAA/NESDIS/OSPO Satellite Products and Services Division

Earth Science Education:

“The Earth Science Department at Millersville University has exposed me to outstanding experiences, educational opportunities and applicable real-world experiences. Due to the small class size I was able to foster excellent relationships with faculty, staff and students. I was provided with experiences such as attending seminars with highly qualified professionals and participating in and presenting at regional and national conferences across the globe such as AAAS in Boston, MA and IAEM in Reno, NV. In addition, I was fortunate enough to have a truly outstanding advisor. My advisor, Dr. Yalda, provided me with excellent guidance and advice as I made career path changes from Meteorology to Earth Science Education and finally to my current career path of Emergency Management. Currently, I am in my first year of graduate school at Millersville University completing my Masters of Science in Emergency Management. I am also the graduate assistant for the Center for Disaster Research and Education. Due to the dedicated faculty and staff at Millersville University, I was able to graduate with my BSE in Earth Science Education, on time, in May 2013. I am expected to complete my Master’s of Science in Emergency Management by December 2014. I am extremely thankful for the opportunities and experiences provided by my professors and I am proud to be continuing my education at such an incredible institution!”

Shauna Stoy; Graduate Assistant
Center for Disaster Research and Education

Recent Student Activities

2013 Northeast GSA Conference, Bretton Woods, NH

Students on an Ocean Sciences and Coastal Studies Field Trip

May 2013 Earth Science Graduates

Public Weather Awareness Day

The 6th Annual Public Weather Awareness Day will be held on April 12, 2014 in Millersville University's Pucillo Gymnasium.

Northeast Storms Conference

Members of Millersville’s student chapter of the American Meteorological Society attended the 38th annual Northeast Storms Conference in Rutland, Vermont. At the conference, the MU students learned of recent research projects and were able to network with other students and professors in their field. The conference is organized by Lyndon State College, and attracts participants from across the country.

Department of Earth Science Alumni: Please update your information on the alumni information page at www.millersville.edu/esci/contactus.php/