



EARTH SCIENCES NEWSLETTER

Fall 2008
At The 'Ville

www.millersville.edu/esci

Happenings at the DES

**Celebrate the 75th Anniversary of Homecoming
November 1, 2008**

Craft Vendors, Food Vendors, Petting Zoo, Pony Rides, Community Parade, Football Game and the biggest Greek Reunion ever!

It's a Homecoming you don't want to miss!

Saturday, November 1, 11:30 a.m. to 1:30 p.m. Science & Math Alumni Luncheon (Steinman Courtyard, Argires Science Complex). See classmates, visit with DES faculty, see student research posters. Register online at www.villealumni.com or call 1-800-681-1855

Tech Improvements for Meteorology: Meteorology students returned this fall to three significant program improvements: 27 new PCs for the Weather Center and two labs; a new telestrating solution for streaming video; and an allocation for an additional 40 dual-core processors for the WRF (Weather Research and Forecasting) modeling system for high resolution numerical modeling.

Geology Pointing the Way: Thanks in part to a generous gift from Dr. William McIlwaine and the Mrs. Lelia Stauffer annual donation, the geology program will be acquiring several new Brunton compasses to be used in a variety of courses and field experiences.

Winter Weather Wizard: Eric Hörst, Director of the MU Weather Information Center, with assistance from four students, will provide precision road weather forecasts for an eight-county region for the second consecutive year under a contract with the PA Department of Transportation. Weather forecasts are relayed directly to the transportation managers in the field and displayed on their PDAs. In addition, a Web site contains more detailed analysis and commentary for PA-DOT managers.

Roof Greening Research: Millersville geologist (J. Price) and meteorologist (R. Clark) are partnering with the Lancaster County Planning Commission, Environmental Center, Sierra Club, and LIVE Green in an interdisciplinary study of the effects that vegetated roofs have on lowering heat and moisture fluxes and reducing storm water runoff. The project has far-reaching consequences for diminishing Lancaster's heat-island footprint and improving the quality of storm water that runs into the Conestoga River. Millersville will provide the instruments (e.g, flux tower and storm water test structures) to compare and quantify the differences before and after the roof materials application.

Example of vegetated roof application at Dansko, Inc.



Science Olympiad: MU hosted the 2008 PA Central Region Science Olympiad (SO) this past spring, and is hosting the 2009 event on March 28th. The event brings hundreds of middle and high school students from dozens of school districts to the campus for this one-day competition. Winning teams advance to the State Science Olympiad, with a chance to further advance to the National Science Olympiad. Dr. Alex DeCaria (Meteo) is the MU site director for the Science Olympiad, and several DES students and faculty are assisting with individual events.

EXPERT IN OCEAN-OPTICS JOINS DES

Dr. Robert Vaillancourt; Bio-Oceanographer

Dr. Vaillancourt is the newest member of the department of Earth Sciences, entering in August 2008 as a tenure-track assistant professor of Ocean Sciences and Coastal Studies. Dr. Vaillancourt received his BS degree in biochemistry and chemistry from the University of Massachusetts, Amherst and his MS and PhD in biological oceanography from the University of Rhode Island's Graduate School of Oceanography. He did post-doctoral research at the Bigelow Laboratory for Ocean Sciences in Boothbay Harbor, ME, focusing on the bio-optical properties of marine particles and phytoplankton. He



then moved to Lamont-Doherty Earth Observatory of Columbia University in New York, where he became a member of the Doherty research staff. His focus there was on the biological-physical coupling in the ocean, and the consequences for primary production.

Dr. Vaillancourt's current research interests include biological oceanography, bio-optics, and the physiological ecology of marine phytoplankton. His specific research focus has been on how the physical ocean environment determines the structure of marine phytoplankton communities and their rates of carbon uptake and sequestration. He has extensive sea-going field experience aboard ocean-class research vessels. In his research he has examined the effects of wind-driven and buoyancy-driven upwelling on the photo-physiology and taxonomic diversity of phytoplankton in coastal Antarctica, in ocean eddies on the leeward side of the Hawaiian Islands, and throughout the coastal and open ocean waters of the western North Atlantic Ocean. The overall goal and common link in these research projects was to observe and describe causal relationships between the physical environment (light, movement of water), the chemical environment (plant nutrients), and the biological response at the base of the marine food web – the phytoplankton.

Dr. Vaillancourt's personal interests include participating in competitive cycling in Lancaster County, and rooting for his beloved Red Sox as a displaced Bostonian.

With two new oceanographers on board, a revitalized effort to recruit new students is paying dividends. We are seeing a significant increase in the number of students declaring Ocean Sciences and Coastal Studies (OSCS) as their major or minor. The recruiting efforts are getting a push from renewed vitality of the University's involvement in the Marine Science Consortium at Wallop's Island, VA, and the major renovation that is taking place there. DES currently boasts 216 majors across five degree programs, with 13 in OSCS, an increase of 100% over the past year.

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STUDENT SPOTLIGHT

⇒ The fall semester is a wonderful time because students are back from their summer intern experiences and rife with enthusiasm. The first two department seminars were dedicated to presentations by students that interned over the summer. In all, 14 students presented in internships spanning academia, government, and private sector.

⇒ The NOAA Office of Education has recognized two Millersville Meteorology students for their oral presentations as part of the 2008 Ernest F. Hollings Scholarship Program. Congratulations to **Jim Kurdzo** (1st Place NWS division) and **Alex Davies** (2nd Place NESDIS division).

⇒ **Kevin Tarbert** (2008) and **Alex Nawotka** (2009) received a student research grant from the Geological Society of America for their work on the petrography and geochemistry of the Honey Brook Upland, SE Pennsylvania.

⇒ **Stefan Cecelski** was selected to participate in the Undergraduate Leadership Workshop sponsored by the University Corporation for Atmospheric Research in Boulder, CO this past summer.

STUDENT CLUBS

⇒ The **MU-AMS (MU Student Chapter of the American Meteorological Society)** will be presented the AMS 2007-08 Student Chapter of the Year award at the AMS annual meeting in Phoenix. This is the second consecutive year for this award. The Award cites the student-run mentoring program, Weather Outreach Program, speakers series, and fund-raising activities. Congratulations (again) MU-AMS!

"Coming home" on Nov 1? Stop by the student poster display in Caputo lobby.

⇒ The **Geology Club** travelled to southern Utah and northern Arizona this spring to observe and study the rocks of Zion, Bryce Canyon, and the North Rim Grand Canyon National Parks testing their skills as both geologists and backpackers. There they learned about the different geologic features and how they formed: incised meanders, cross-beds, hoodoos, unconformities...and the students responded with aplomb, always fascinated to see the real thing rather than mere pictures. This year students will be raising funds to go to the



Northeast Regional meeting of GSA and travel to Glacier National Park.

⇒ The **Ocean Science Club** is undergoing a major sea-change in its structure. The club, which had been largely defunct in recent years, is being revitalized. With a slate of new and highly enthusiastic officers and infusion of interest from the new ocean sciences faculty, the club had its first meeting to establish its constitution and lay out plans for the academic year. The DES is extremely encouraged by the resurgence of interest and dedication on the part of students and faculty, and looks forward to engaging a greater number of students interested in club membership. Because the club spans ocean sciences and marine biology, it has the potential to attract students from a wide range of disciplines and engage them in interdisciplinary activities and interactions with other DES student clubs.

FACULTY/STAFF FOCUS

Dr. Jason Price (geo) will be giving an invited talk, "Determination of the Biomass Term in Watershed Geochemical Mass Balance Methods from Soil and Bedrock Bulk Chemistry," at the GSA meeting in Houston.

Dr. Alex DeCaria (meteo) published "The Carnot Cycle and Area-Specific Work Equivalence on a Skew T- log p Diagram," which will appear in the October issue of *Monthly Weather Review*.

Dr. Todd Sikora (meteo) is author of a refereed article "Summary of the North Pacific Environmental Satellite Workshop for Coastal and Marine Applications" that appeared in *National Weather Digest*. He also co-authored a conference paper on "High-velocity wind measurements using synthetic aperture radar" at the IEEE International Geoscience and Remote Sensing Symposium in July 2008 in Boston.

Dr. Bob Vaillancourt (ocean) will present results of NSF-sponsored research on biological productivity in the ocean. His talk, "ON_DEQUE, Optical and Nutrient Dependence of Quantum Efficiency: Preliminary Results from the Western North Atlantic Ocean," will be presented in December at the AGU meeting in San Francisco.

Dr. Ajoy Kumar (ocean) presented "Error characteristics of the

MODIS Sea Surface Temperature retrievals" and "Detection of Harmful Algal Blooms of the West Coast of Florida" at the Ocean Sciences Meeting in Orlando, FL in March 2008.

Dr. Lynn Marquez (geo) served as chair of the MU Freshmen Year Experience Committee, which designs and implements programs to aid the transition to the University. This summer, Dr. Marquez presented "Extended Orientation vs. Content Rich FYE Seminars: Contrasting Models" at the International First Year Experience Conference in Dublin, Ireland.

Dr. Richard Clark (chair/meteo) has been nominated to the University Corporation for Atmospheric Research (UCAR) Board of Trustees as an at-large member. If elected at the October meeting, Clark will be the first-ever member of BOT from the academic community from a non-Ph.D.-granting institution.

Dr. Sepi Yalda (meteo) was elected by the AMS Council to head the AMS Board on Women and Minorities. Dr. Yalda already chairs the History of Atmospheric Sciences Committee and COMET® Advisory Panel of UCAR. Drs. Yalda and Clark are offering an IEEE e-science workshop on activities developed for the LEAD project (<http://portal.leadproject.org>) at Indiana University at Bloomington in December.

ALUMNI ACTIVITIES

Jim Hower ('73, ESCI) has been named the 2008 recipient of the John Castaño Honorary Member Award by The Society of Organic Petrology. Jim is in his 30th year as a Senior Scientist at the University of Kentucky's Center for Applied Energy Research and is completing his 10th and final year as editor of Elsevier's *International Journal of Coal Geology*. He is married to Judy (Miller) Hower ('74 Chemistry). Congratulations Jim!



Deborah C Stein Zweers ('00, meteo) received her Ph.D in Environmental Sciences from University of Virginia in May 2008 and is working as a post doctoral satellite/remote-sensing researcher at the KNMI (Royal Netherlands Meteorological Institute).

Patrick McKinney ('07, ESCI) is working for the American Water Resources Association - PA Chapter AmeriCorps/Indiana County Parks & Trails.

David Hiatt ('98, meteo) is an Operations Officer at Fleet Numerical Meteorology and Oceanography Center in Monterey, CA.

Evan Lowery ('05, meteo) went on to earn his MS at Plymouth State University and is now a Business Applications Meteorologist at Weather Trends International in Bethlehem, PA

PHOENIX RISING

If you are planning to attend the 89th Annual Meeting of the American Meteorological Society in Phoenix, AZ in January, or are a resident of the greater Phoenix area, please be sure to join MU Provost and VP of Academic Affairs Dr. Vilas Prabhu, VP of Advancement Mr. Jerry Eckert, meteorology faculty, students, and other alums at our 7th Annual Earth Sciences Alumni Reception on Tuesday evening, 6:00 pm, January 13, 2009 in the Hyatt Regency Phoenix. More information will follow via email, mailers, and our Web site.

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Alums! We ♥ hearing from you!

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