

WATER NEWS



Summer – Fall 2009
Volume 10 Issue 1

Features

Delaware Environmental Institute Opening Event – October 23, 2009 (p. 2)

DWRC Spotlight on Undergraduate Internships (p. 3)

DWRC Partner Passages (p. 4-5)

DWRC Spotlight on Graduate Research (p. 6-7)

Update on Graduate Fellow Claudia Velez (p. 6)

DWRC Notices and Calendar (p. 7)

DWRC History, Goals, Advisory Panel, & Contact Information (p. 8)

Summer – Fall 2009

Volume 10 Issue 1 page 2

Delaware Environmental Institute Opening Event – October 23, 2009

The **DWRC** and Water Resources Agency are included as research centers in, **DWRC** director Dr. Tom Sims is on the Council of Fellows of, and **DWRC** affiliate faculty member Dr. Donald Sparks serves as director of the newly-formed Delaware Environmental Institute (DENIN). More than 200 people attended the DENIN opening event on October 23, 2009 at UD's Mitchell Hall. Notable speakers included Delaware Governor Jack Markell, UD president Patrick Harker, Delaware Department of Natural Resources and Environmental Control secretary Collin O'Mara, EPA regional administrator William Early, Princeton University professor Francois Morel, and Cary Institute of Ecosystem Studies president William Schlesinger. The goals of the DENIN are to initiate interdisciplinary research projects; support interdisciplinary academic programs; forge partnerships among government agencies, nonprofits, industry, policymakers, and the public to address environmental challenges; and coordinate and sponsor University of Delaware-based interdisciplinary initiatives.



DENIN Director Donald Sparks

Elementary and high school students contributed posters on topics ranging from the benefits of trees to the problems associated with invasive species. Governor Markell, commenting on the presence of the children, reminded that “The future is very much tied up in the condition of the planet that we leave them.” Full event coverage plus further information about the DENIN is found at <http://denin.udel.edu>. (Photos by J. Dooley)



Summer – Fall 2009

Volume 10 Issue 1 page 3

DWRC Spotlight on 2009-10 Undergraduate Internships



UD's Department of Geological Sciences **DWRC** intern Emily Olson tells of her experience working on her project, titled "Investigation of Source and Dynamics of Bacterial Contamination in a Coastal Lagoon." She stated, "I have been investigating how different human and environmental factors affect the health of coastal lakes from a bacteriological perspective. Over the past months I have studied the concentrations of *Escherichia coli* in a tidal lake, Lake Louise, on the coast of New Jersey. This lake has a history of high *E. coli* counts at certain times during the summer months, when the human population in the residential area surrounding the lake increases tenfold from the winter months."

"Lake Louise is unique in that it is directly connected to the Atlantic via the Manasquan Inlet and also connects with two land locked lakes via large conduits. In order to pinpoint potential sources of *E. coli*, I examined the pH, nitrate concentration, salinity, water temperature, and *E. coli* concentration in water samples taken at various tide levels from four sites around the lake. A fifth sample was taken from a second lake connected to Lake Louise near the mouth of the conduit that connects them. Samples were taken on a regular basis and after events such as heavy rainfall to look for a correlation between these events and increased *E. coli* counts. In addition, I performed a high resolution test using seven kayaks to quickly obtain 49 samples and create a 7 x 7 matrix mapping of the lake. The data collected over the summer months are being analyzed to look for further correlations between the high *E. coli* counts and their potential causes, such as rainfall runoff, increased waterfowl population, leaking sewer systems, and contaminated water from the connected lakes. I am also studying tidal differences between the connected lakes and the effect tidal flushing may have on concentrations of contaminants in each area; specifically, whether or not increased concentrations of *E. coli* in the second lake correlate to increased concentrations of *E. coli* in Lake Louise, and under what conditions this increase may occur. My work is being done under the direction of geomicrobiologist Dr. Clara Chan and hydrogeologist Dr. Holly Michael."



Job Vacancy at UNESCO

The United Nations Educational, Scientific and Cultural Organization is seeking to appoint a renowned scientific leader to serve as Director of the Division of Water Sciences, Secretary of the International Hydrological Programme and Deputy Assistant Director-General for Natural Sciences, based in Paris, France. Further information can be found at <http://www.unesco.org/employment>. **Deadline: Jan. 23, 2010.**

Summer – Fall 2009

Volume 10 Issue 1 page 4

Delaware's Wetlands

More than 30% of Delaware is covered in wetlands. About 1/3 of that is tidal, while freshwater wetlands make up the remainder. Currently, state law only protects tidal wetlands, leaving over 30,000 acres of wetlands unprotected. The Delaware Nature Society is hosting a series of workshops about freshwater wetlands: what they are, why they are important to protect, and what you can do to support this effort.

The Wealth of Wetlands!

Thursday, January 7, 2010 – 6:00-7:00 PM

DuPont Environmental Education Center on the Wilmington Riverfront in the Russell W. Peterson Urban Wildlife Refuge, featuring presentations by Partnership for the Delaware Estuary's Danielle Kreeger, DNREC's Rebecca Rothweiler, and DNS's Ginger North. **Free admission. Refreshments served.** RSVP to 302-239-2334, ext. 100 or to ginger@delawarenaturesociety.org

OR

Thursday, January 14, 2010 – 6:00-7:00 PM

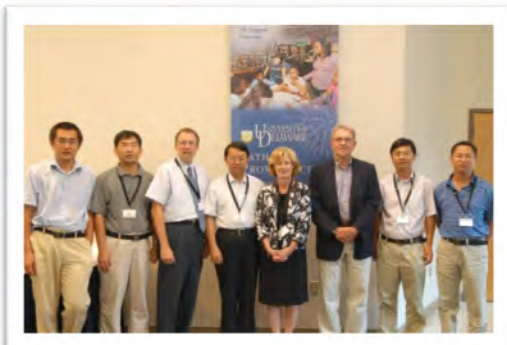
UD's Elbert N. and Ann V. Carvel Research and Education Center, Georgetown, DE, featuring presentations by Center for the Inland Bays' Chris Bason, DNREC's Rebecca Rothweiler, and Ducks Unlimited's Kurt Anderson. **Free admission. Refreshments served.** RSVP to 302-239-2334, ext. 132 or brenna@delawarenaturesociety.org

WATER NEWS Editor Maria Pautler attended the October 11, 2009 grand opening of the DuPont Environmental Education Center. The facility should prove to be a valuable place for learning experiences for all ages. Visit <http://www.delawarenaturesociety.org/deec.html>



UD's College of Agriculture and Natural Resources (CANR) Hosted Visiting Scientists from China Agricultural University (CAU)-College of Resources and Environmental Sciences

From August 17-20, 2009, **DWRC** members, along with representatives from partner organizations, joined in hosting a group of visitors for the purposes of strengthening collaborative research efforts between UD and Chinese scientists. Highlights included a workshop and tour of recently installed wetlands on UD's south campus (*see photos below by D. Quigley*). The CANR and CAU then held an invitational symposium focusing on integrated solutions to the agri-environmental challenges facing China in the 21st century. This was held during the international meetings of the American Society of Agronomy and Soil Science Society of America in Pittsburgh, PA, from November 1-5.



Summer – Fall 2009

Volume 10 Issue 1 page 5

DWRC Partner Passages ~~

Karl Glasener, ASA-CSSA-SSSA Director of Science Policy, stated in his November 11, 2009 science policy report that drastic measures are recommended to clean up the Chesapeake Bay. "U.S EPA's Chesapeake Bay chief yesterday expressed strong support for a Senate bill aimed at aggressively shoring up faltering state cleanup efforts in the nation's largest estuary. The bill, S. 1816, sponsored by Senator Ben Cardin (D-MD), is 'a thoughtful and highly constructive initiative to address the nutrient and sediment pollution problems plaguing the bay,' Chuck Fox, EPA's senior adviser for the Chesapeake Bay, told the Senate Water and Wildlife Subcommittee yesterday. During his testimony Fox added that provisions in the bill that target pollution from farms, new development and urban and suburban runoff are 'highly consistent' with EPA's new strategy for curbing pollution in the bay. The agency's new Chesapeake Bay plan was first outlined in September under a White House directive. An interesting requirement within the bill directs EPA to establish a regional cap-and-trade program for nitrogen and phosphorous in the bay watershed, a provision that Fox said 'makes a lot of sense.' This type of program would permit industrial plants and other so-called point sources of water pollution to purchase the right to pollute from entities in the watershed that have cleaned up their discharges. For example, a company might buy credits from farmers who have cut back on fertilizers, a 'nonpoint source' of nutrients in waterways. Stay tuned..."

Center for the Inland Bays

The Center for the Inland Bays is a non-profit organization with the mission to promote the wise use and enhancement of Delaware's Inland Bays and their watersheds. Interested citizens can attend many of the center's meetings, such as the Science and Technical Advisory Committee, the Citizen's Advisory Committee, as well as the Board of Directors. For the current meeting schedule and other useful links, visit <http://www.inlandbays.org>.

In Case You Haven't Heard – From a press release found at <http://nationallabday.org>:

National Lab Day Launches – President Obama Applauds Initiative, Calls for New Era in Hands-On Science, Technology Learning / 200 Organizations, 6.5 Million Professionals Partner in Effort

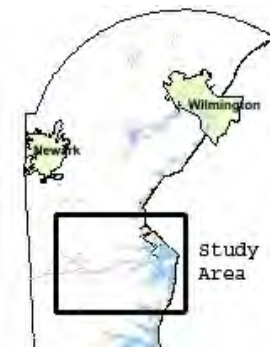
Washington, D.C., November 23, 2009 – A coalition of educators, science and engineering associations, philanthropies and other organizations today announced the launch of National Lab Day, a new grassroots initiative designed to reinvigorate science and math education in the nation's schools and after-school programs and lead to increased U.S. competitiveness... National Lab Day will promote hands-on learning throughout the year and culminate each year with special events the first week of May. Visit the website for information on projects, partnerships, etc.

Summer – Fall 2009

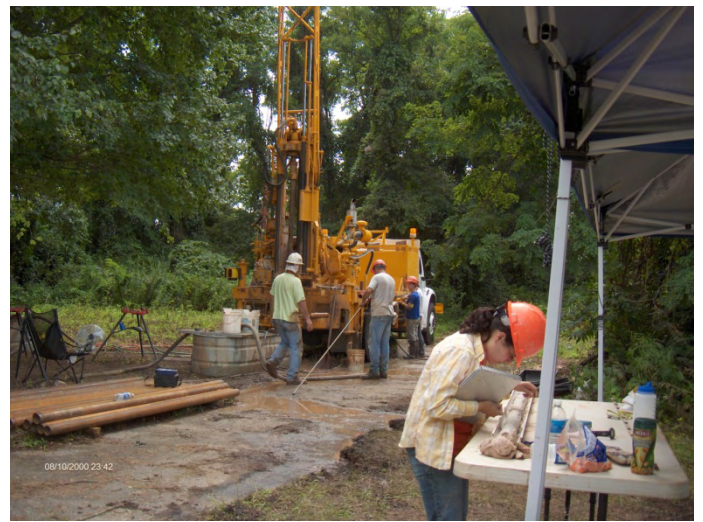
Volume 10 Issue 1 page 6

DWRC Spotlight on Graduate Research

DWRC graduate fellow Claudia Velez continues to pursue her Ph.D. in Geology at UD, working on the project, “Hydrogeologic Characterization of the Potomac Aquifer, Delaware,” under the co-supervision of Dr. Susan McGeary, Associate Professor and Chair of the UD Geological Sciences department, and Dr. Peter McLaughlin, Jr., senior scientist at the Delaware Geological Survey (DGS). During the 2008-09 academic year Claudia processed seven seismic lines comprising ~ 20 km of data, collected in May, 2008. On the basis of the resulting seismic sections, the minimum and maximum depths imaged were ~18 m and ~ 268m, with a resolution of ~4 m, which is sufficient to resolve 10 to 20 m thick aquifer sands typical in the Potomac Formation. Following the processing of the data, she worked with the Delaware Geological Survey to drill a 152-m-deep continuous-cored test hole with a full suite of geophysical logs adjacent to one of the seismic lines. Reflection depths correspond well to depths of lithologic changes in the test hole. Currently, Claudia is working on the facies classification of the core, which she will use for correlation with the seismic data, and existing cores and boreholes at the Delaware Geological Survey in order to produce facies maps to show the distribution of aquifer- and confining-bed type lithologies in the Potomac Formation in the Chesapeake and Delaware Canal area.



Dr. McLaughlin and co-workers set up the sonic tool to run the geophysical log at the Summit Marina site. (Photo by DGS staff)



Ms. Velez logs the core while Dr. McLaughlin and co-workers work the drill. (Photo by DGS staff)

Summer – Fall 2009

Volume 10 Issue 1 page 7

DWRC Spotlight on Graduate Research

DWRC graduate fellow Claudia Velez, along with co-authors P.P. McLaughlin, S. McGeary, and S.L. Sargent, created a poster titled: **Seismic imaging of a cretaceous fluvial system: Results from an ongoing study of the Potomac Formation in Northern Delaware.** Claudia subsequently presented the poster at the American Association of Petroleum Geologists and Society of Exploration Geophysicists Student Expo in Houston, TX, September 21-22, 2009.



DWRC Notices and Calendar

UPCOMING MEETINGS

Delaware - American Water Resources Association Annual Dinner

The DE AWRA will hold its annual dinner on Thursday, **Dec. 10, 2009** from 5:30-8:00 PM at the Iron Hill Brewery on the waterfront in Wilmington, DE. The program includes keynote speaker DNREC secretary Collin O'Mara, overview of the annual report by DE chapter president John Harrod, results of the second annual scavenger hunt, and the UD student chapter silent auction. Visit <http://www.deawra.org> to register for the dinner. **DONATIONS FOR THE SILENT AUCTION are most welcome.** To donate, please contact Erin McVey at emcvey@udel.edu.

Feb. 2010 – The Partnership for the Delaware Estuary is planning a wetlands monitoring and assessment workshop. Visit <http://www.delawareestuary.org> for updates on date and location.

Apr. 11-15, 2010 – The 2010 conference, "Groundwater for a Thirsty World," will be held in Denver, CO. Visit <http://www.ngwa.org/summit2010/index.aspx>.



The Midwest Geosciences Group conducts workshops, short courses, field trips, and webinars to provide solutions to problems faced during environmental and engineering projects "far beyond the geographic boundaries of the Upper Midwestern United States." Upcoming webinars of interest to the water community include, "Introduction to Arsenic in Groundwater" and "Soil and Ground Water Remediation." Visit <http://www.midwestgeo.com> for the complete schedule and other resource information.



The EPA's National Network for Environmental Management Studies (NNEMS) 2010 Student Fellowships program has been announced. The application deadline is **Feb. 5, 2010**. For details and an application visit <http://www.epa.gov/education/students.html>.

Delaware Water Resources Center Advisory Panel

The Delaware Water Resources Center

The Delaware Water Resources Center (DWRC), established in 1965, is part of a network of 54 Water Resources Research Institutes throughout the nation. The DWRC receives funding through Section 104 of the Water Resources Research Act of 1984. The US Geological Survey administers the provisions of the Act and provides oversight of the nation's Water Resources Centers. The primary goals of the DWRC are: to support research that will provide solutions to Delaware's priority water problems, to promote the training and education of future water scientists, engineers, and policymakers, and to disseminate research results to water managers and the public. For more information, visit our website:

<http://ag.udel.edu/dwrc/>

WATER NEWS is published biannually by the Delaware Water Resources Center, *Dr. J. Thomas Sims*, Director. *Maria Pautler*, Editor, welcomes materials for publication, including news articles and letters to the Editor. To submit material or request future issues, please address your correspondence to the address below or contact the Editor at mpautler@udel.edu or 302-831-0847.

Steven Abbott

USDA Natural Resources Conservation Service

Scott Andres

Delaware Geological Survey

Katherine Bunting-Howarth

DNREC Division of Water Resources

Martha Narvaez

UD IPA Water Resources Agency

Judith Denver

US Geological Survey

Jen Mihills

Delaware Nature Society

Mingxin Guo

Delaware State University

David Hansen

UD Research & Education Center

Paul Imhoff

UD Civil & Environmental Engineering

Shreeram Inamdar

UD Bioresources Engineering

David Legates

UD Geography

Edward Lewandowski

Center for the Inland Bays

Andrew Manus

The Nature Conservancy

William Rohrer

DE Nutrient Management Commission

Denise Seliskar

UD College of Earth, Ocean, and Environment

WATER NEWS

SUMMER – FALL 2009

Delaware Water Resources Center

College of Agriculture and Natural Resources

University of Delaware

152 Townsend Hall

Newark, DE 19716-2170

<http://ag.udel.edu/dwrc/>

Address Service Requested