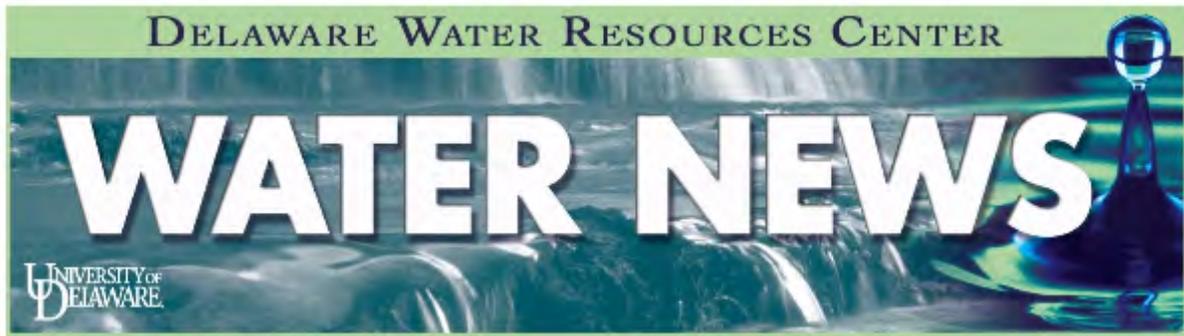


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November 2015

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Celebrating Our 50th Year!

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Director's Remarks



Twenty fifteen has indeed been a watershed year for water resources in the Diamond State. The Delaware Water Resources Center is celebrating the Golden Anniversary of our founding in 1965, just a year after Lyndon Baines Johnson worked with Congress and signed the Water Resources Research Act that formed the 54 National Institutes for Water Resources (NIWR) at land grant universities in the 50 states, D.C. and the three island territories of Guam, Puerto Rico, and U.S. Virgin Islands. The DWRC Advisory Panel has recommended water resources research funding from the USGS that supports 18 undergraduate internships and 3 graduate assistantships to study with faculty and scientists from five colleges at the University of Delaware. In September, the University of Delaware was chosen to host the 3rd Annual Delaware River Forum sponsored by the Coalition for the Delaware River Watershed that highlighted over \$35 million in investments by the William Penn Foundation to 40 nonprofits and universities to protect and restore the

watershed that provides drinking water to 5% of the population of the United States. Accepting the gavel from our NIWR colleague and outgoing President Dr. John Tracy (Director of the University of Idaho Water Resources Research Center), the University of Delaware Water Resources Center's Martha Narvaez was inducted on November 18, 2015 as the 50th President of the American Water Resources Association at the AWRA annual conference in Denver, Colorado. Completing the flow of good news, past president and geography doctoral candidate Asia Dowtin and current president and Water Science and Policy graduate student Sandra Petrakis accepted

the award in Denver on November 15, 2015 as the University of Delaware was recognized as 2015 outstanding AWRA student chapter at the annual AWRA conference in Denver, Colorado. National champs! I wonder what the next ten years will bring for us here at the DWRC. Diamonds anyone?

Three 2015-16 UD WATER Interns Named

The UD WATER Project (Watershed Action Team for Ecological Restoration) was formed in 2008 as a collaborative initiative with the long-term goal of merging and facilitating university-wide efforts to minimize the environmental impacts of stormwater runoff from the University of Delaware campus.

UD WATER brings together a consortium of faculty, staff, and students from various disciplines across campus to work collaboratively to implement creative and innovative storm water management techniques. The ultimate goal for this team is to reduce the quantity and increase the quality of storm runoff from campus properties, which will ultimately benefit our local waterways and is consistent with the mission of EPA regulations requiring the University and City of Newark to have a National Pollutant Discharge Elimination System (NPDES) permit.

A new cohort of three UD undergraduate interns recently attended their first UD WATER meetings; they are now in the process of selecting their topic area(s). The 2015-16 UD WATER interns are (pictured left to right):

junior Environmental Engineering major Norma Brasure - she is very interested to serve in the Peace Corps after gaining skills in water resources and improvements of water and sanitation facilities; junior Environmental Science major Clare Sevcik - she has spent summers monitoring streams in Virginia and Maine and recently studied the effect of sea level rise on brownfields in Wilmington, Delaware; and senior Environmental Science major Gemma Antoniewicz - she feels that increasing awareness of the effects that everyday actions can have on



the environment, especially through environmental education, is an important step towards reducing society's impact on the natural environment. Their project progress will soon be available on a new and improved UD WATER website.

Spotlight on 2015-16 DWRC Undergraduate Internships

Ask UD's Department of Geography DWRC intern Margaret Orr about the weather and she may very well tell you about her ongoing research project, "Assessing the Impact of Severe Storm Events on Exported Sediment, Particulate Organic Matter, and Nutrients and Stream Water Quality." Margaret, pictured in a lighter work moment, shares: "This summer, I worked with Masters' candidate Doug Rowland in Dr. Shreeram Inamdar's lab in UD's Department of Plant and Soil Sciences. We worked in the

laboratory as well as in the field at the Fair Hill Natural Resource Management Area in nearby Cecil County, Maryland. Doug's research focuses on soil and sediment, and as one of UD's new Meteorology and Climatology majors, I wanted to find a way to link Doug's research to my interests in weather. My project focuses on connecting weather data to sediment loading and sediment properties during storm events. Severe weather is projected to not only become more frequent but also more intense as climate change occurs, and I wanted to investigate the effects that storm intensification could have on



Margaret Orr conducting field work at Fair Hill Natural Resources Management Area.

sediment loading and streams. One of my tasks was to help collect data following storms by filtering sediment out of water samples collected by two automated water samplers that are set up in Fair Hill. Some of the sediment that remained on the filter was put into capsules and sent for isotope analysis. I have been assessing weather data from the Delaware Environmental Observing System (DEOS) Automated Surface Observation System station in Fair Hill as well as some sediment data collected from storms to find correlations between weather parameters and sediment parameters, such as lag time between peak rainfall and peak sedimentation. Although the work is far from finished, I plan to devote most of my time over UD's winter session to completing my project."

3rd Annual Delaware River Watershed Forum

The 3rd Annual Delaware River Watershed Forum was held at the University of Delaware on October 5-6, 2015 following the first two symposium at the Academy of Natural Sciences at Drexel University in 2013 and in Bethlehem near Lehigh University in 2014. Over 300 participants from throughout the Delaware River Watershed in Delaware, New Jersey, New York, and Pennsylvania learned



Photo caption: Green infrastructure bike tour through the University of Delaware campus and City of Newark, DE, led by DWRC Director, Jerry Kauffman. Photo taken at the top of the Newark Reservoir.

about a range of protection and restoration efforts underway, contributed insights to the development of a watershed-wide vision, toured local sites for a hands-on perspective of different conservation issues, and networked with peers at this event sponsored by the Coalition for the

Delaware River Watershed and the William Penn Foundation. The Delaware River Watershed Initiative is part of a \$35 million investment by the William Penn Foundation to protect and restore the 13,000 square mile that provides drinking water in four states to over 15 million people (5% of the nation's population) and the first (New York City) and 7th largest metropolitan economies in the United States.

Prominent speakers from Delaware who discussed the economic and ecological value of the Delaware River Watershed to the First State included Governor Jack Markell, Congressman John Carney, DNREC Secretary David Small, and National Wildlife Federation President Collin O'Mara. DWRC Director Jerry Kauffman spoke about "Water Use in the Delaware River Basin" during the opening plenary session.

Read the forum overview [here](#) and visit the Coalition's Facebook page [here](#).

National Champs! University of Delaware student chapter recognized as 2015 Outstanding Student Chapter of the American Water Resources Association.

On November 15, 2015, the University of Delaware was honored with the award for 2015 Outstanding Student Chapter by the American Water Resources Association (AWRA) at the annual conference in Denver, Colorado.

Each year the AWRA bestows this award upon the student chapter that best fulfills its mission through:

1. the advancement of water resources-based research, planning, development, management, and education,
2. the creation of common meeting times and spaces in which interdisciplinary scholars, practitioners, and citizens concerned with the provision and safety of water resources can convene, and
3. the collection, organization, and dispersion of pertinent and/or innovative ideas and information regarding the supply, management, and preservation of water resources.



Photo: From left to right: Amanda Doremus, Samantha Brucker, Matt Luddington, Laura Askin, Kelsey Moxey, Kristen Molfetta, Sandra Petrakis, Asia Dowtin and John Tracy (AWRA President)

Over the course of the academic year, the UD Student Chapter of the DE-AWRA has led many initiatives, including the annual Water Resources Career Night, Winter in the Watershed Holiday Party and Networking Event, and monthly discussion-based meetings.

Through generous contributions from the AWRA, the Delaware section of the AWRA (DE-AWRA), and UD Water Resources Agency, eight UD students were able to attend the 2015 annual conference and awards reception. Outgoing president and UD geography doctoral candidate Asia Dowtin (College of Earth, Ocean, and Environment) accepted the award from AWRA President John C. Tracy, Director of the University of Idaho Water Resources Research Institute. Also representing the UD student AWRA chapter were graduate students Amanda Doremus (Geography), Samantha Brucker (Urban and Regional Planning), Matthew Luddington (Water Science and Policy), Laura Askin (Public Administration), Kelsey Moxey (Water Science

and Policy), Kristen Molfetta (Water Science and Policy), DE-AWRA student chapter president Sandra Petrakis (Water Science and Policy).

Past recipients of the Outstanding Student Chapter award include Pennsylvania State University, University of Florida, University of Washington, University of Wisconsin, and Oregon State University.

The University of Delaware Student AWRA Chapter was founded in 2005 and is advised by Martha Narvaez and Gerald Kauffman from the University of Delaware Water Resources Center.

UD's Martha Narvaez inaugurated as the 50th President of the American Water Resources Association

On November 18, 2015, the University of Delaware's Martha Narvaez was inducted as the 50th President of the American Water Resources Association at the AWRA annual conference in Denver, Colorado. Martha accepted the gavel from outgoing President John C. Tracy who is the Director of the University of Idaho Water Resources Research Institute in Boise, Idaho. Martha will serve her term during 2016 and follows predecessors from

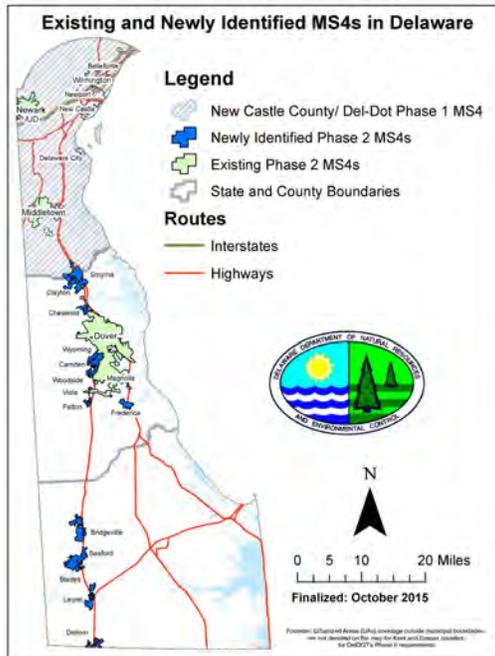
institutions of higher learning such as Texas A&M, Pennsylvania State University, University of Wisconsin, and University of Illinois. Martha Narvaez, Policy Scientist with the University of Delaware Water Resources Center in the Institute for Public Administration and School of Public Policy and Administration, has also served as founding President of the Delaware state chapter of the AWRA and co-founder of the University of Delaware student section of the AWRA. Established in 1964 the AWRA has over 2,100 members, has sponsored 120 symposia over the last 50 years in the U.S. and abroad with over

30,000 attendees, and publishes the Journal of the American Water Resources Association (JAWRA) with an impact factor ranking in the upper third of peer publications. The University of Delaware Water Resources Center is one of the 54 National Institutes for Water Resources (NIWR) supported by the U.S. Department of Interior at land grant universities in the 50 states, District of Columbia, and the island territories of Guam, Puerto Rico, and U.S. Virgin Islands.



Photo: Martha Narvaez accepting the gavel from current AWRA President, John Tracy.

MS4 Permit Changes in Delaware: Will You Be Ready?



The Delaware Department of Natural Resources and Environmental Control (DNREC) has released its new draft MS4 general permit. Based on expansion of Urban Areas as of the 2010 decennial census, several additional communities in Delaware are now required to submit a permit application to discharge their storm water into the waters of Delaware.

On November 5th at Heritage Shores Golf Club in Bridgeville, Delaware the Delaware Section of the American Water Resources Association (DEAWRA), in partnership with DNREC, held a fall symposium, "MS4 Permit Changes in Delaware: Will You Be Ready?" The MS4 fall symposium discussed the upcoming MS4 (Municipal Separate Storm Sewer Systems) permit changes in Delaware. The event was sponsored by RK&K, Pennoni, KCI Technologies,

Duffield Associates, Sussex Conservation District and New Castle Conservation District.

Secretary Small and the Surface Water Discharge Section, along with the EPA, MS4 regulated communities and many other organizations were present to discuss the new proposed regulations and answer questions that regulated entities, water resource professionals, and the public may have. Karl Graybill from the City of Lancaster, PA, the keynote speaker, discussed green infrastructure projects in the City of Lancaster. In closing Bryan Ashby provided remarks on what's on the horizon for MS4 communities. The day concluded with a DEAWRA social hour.

See the website of the [Delaware section of the American Water Resources Association](#) (DEAWRA) for more information.

Map credit: DNREC

Jobs in Water Resources

Delaware Center for the Inland Bays
Entry-level Environmental Scientist

The Delaware Center for the Inland Bays is inviting applicants for an entry-level Environmental Scientist who will assist with scientific research, monitoring, and habitat restoration projects in the Inland Bays watershed. The Center—a National Estuary Program—is a private, nonprofit organization located at the Indian River Inlet, in Delaware Seashore State Park near Rehoboth Beach, Delaware. This full-time position, with benefits, will be hired for a one-year term, which may be extended as funding allows. The position will remain open until an appropriate candidate is selected; for best consideration, apply by December 18, 2015A more detailed description can be found [here](#)

Delaware Nature Society
Director of Sites and Visitor Experience

The Delaware Nature Society (DNS) is looking for a leadership team member who is an active participant in making strategic decisions affecting the organization and provides leadership and direction for all DNS sites as places where visitors connect with nature through unique, relevant, authentic hands-on experiences. Support implementation of strategic vision and goals at each site, and work with site managers to assure a high-quality visitor experience at all sites that meet the needs of the community and targeted audience. Assure adoption of best practices and facilitate strong internal communication, networking and team collaboration among all sites and staff in mission-related and support departments. A more detailed job description is available on the [website](#)

UD College of Agriculture and Natural Resources

GET ENRICHED! The UD College of Agriculture and Natural Resources internships are listed [here](#).

UD College of Earth, Ocean, and Environment

Visit the [website](#) for news about jobs and internships through the UD College of Earth, Ocean, and Environment.

Delaware Environmental Institute

Visit the DENIN [website](#) for news about fellowships and internships through the Delaware Environmental Institute.

Delaware Nature Society

Additional job listings with the Delaware Nature Society, celebrating its 50th anniversary, can be found [here](#).

Upcoming Water Conferences and Events

Winter in the Watershed Holiday Party

Save the date for the third annual Winter in the Watershed Happy Hour on December 4, 2015, 6-8 pm at Klondike Kate's on Main Street in Newark, Delaware. This event is co-hosted by the University of Delaware, Water Resources Agency, the Delaware Section of the American Water Resources Association (DEAWRA) and the DEAWRA Student section.

International Conference on Environmental Science and Technology 2016

The International Conference on Environmental Science and Technology 2016 sponsored by the American Academy of Sciences will be held on June 6-10, 2016 in Houston, Texas, USA. The conference will provide a multidisciplinary platform for environmental scientists, engineers, management professionals and government regulators to discuss the latest developments in environmental research and applications. Please visit the conference [website](#) for more information or send email to env-conference@AASci.org.

Water Resources Information and Training

From WaterSense, a USEPA Partnership: Get Schooled on Water Savings - and Pass It On

WaterSense has completed a series of fun and informative videos featuring Flo, the WaterSense spokesperson, which show how you can save water year-round. From switching showerheads to

checking for leaks, WaterSense has the viral videos that can inspire your friends and followers. View some of them [here](#)

Free, downloadable e-books are available from the International Water Association's IWA Water Wiki [website](#). Vol. 1 titles include "[Constructed Wetlands for Pollution Control](#)" and "[Integrated River Basin Governance](#)" can be found in Vol. 2.

Delaware Sea Grant and local partners have adapted a popular rain garden app for the mid-Atlantic region to help homeowners build their own rain gardens and improve water quality. More information about the app can be found [here](#).

The Delaware Section of the American Water Resources Association events information can be found [here](#).

The Delaware Student Section of AWRA activities can be found [here](#).

The DENIN events calendar is found [here](#).

The Delaware Nutrient Management Commission (as well as other State of Delaware departments) public meeting and workshop information is found [here](#).

Welcome new subscribers! Contributions, comments and questions are always appreciated. Water News serves citizens interested in topics on Delaware water resources and is published by the Delaware Water Resources Center, University of Delaware.

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