

# PLSC Productivity

NEWS FROM THE DEPARTMENT OF  
PLANT & SOIL SCIENCES



UNIVERSITY OF DELAWARE  
**AGRICULTURE &  
NATURAL RESOURCES**

## Chair's Corner

Welcome to a COVID-19-affected spring! Campus is empty and classes went online March 30, so many of us are taking needed breaks from the computer screen at home to walk the dogs and enjoy the early spring flowers. Speaking of flowers, our Philadelphia Flower Show student team, led by Dr. Jules Bruck (PLSC-LA) with assistance from Karen Gartley (PLSC-Hort Club), Dr. Stefanie Hansen (Theatre), Jame McCray (Earth, Ocean, & Environment) and John Kaszan (PLSC graduate student), received a Silver Medal for their Mediterranean-themed display, "Pompeii: After the Ash." The team also received a special panel award from the American Horticultural Society for "an exhibit of horticultural excellence that best demonstrates the bond between horticulture and the environment." Congratulations on another amazing display that taught our students about working across horticulture, design, and art as a team!



We have a new member of our PLSC staff. Laurie Jones began as an Administrative Assistant III in the PLSC main office on February 3. Laurie joined us from Miles Scientific in Newark where she was an Administrative Assistant for 11 years. She is a UD-CANR graduate with a degree in Agriculture and Natural Resources and has a passion for our department's mission. In her free time, she volunteers at Winterthur.

In the last issue, I announced Plant Diagnostician Nancy Gregory's retirement, and she was soon-after celebrated at meetings held by UD Cooperative Extension and the Delaware Nursery and Landscape Association. Nancy has gone on to become the latest recipient of the Ratledge Family Award for Public Service, given to members of the UD community who exemplify excellence in public service to citizens in the state of Delaware. Nancy's contributions are ongoing as she gives input during the transition to the next directorship of the UD Plant Diagnostic Clinic.

Our new Turf Nutrient Management Extension Agent John Emerson started on March 16. John has a turf degree from the University of Kentucky and he was most recently a golf course superintendent in Fredericksburg, VA. He kicked off his career with a memorable start... working remotely! With his hiring, our nutrient management team is now complete. The full team includes Dr. Amy Shoher, Sydney Riggi, Hilary Gibson, and John. They have been busy trying to get the nutrient management certification efforts accomplished despite the environment of social distancing.

As you may know by now, UD is taking the necessary measures to slow the spread of COVID-19 by closing the university to all but essential personnel until May 15. This means that Ag Day on April 25 has been canceled and UDBG's 28<sup>th</sup> annual plant sale scheduled for the last week of April has been postponed. Much of their annual budget comes from each year's plant sale, so please contact Melinda Zoehrer ([mzoehrer@udel.edu](mailto:mzoehrer@udel.edu)) if you are interested in making online purchases for curbside pickup.

That's all for now. Enjoy family time at home, planting your garden, smelling the spring flowers, and putting that first cut on your lawn for the season!

### The award-winning 2020 Philadelphia Flower Show team!

*Very back row:* Austin Dill, D.J. Bromley, Chris Fettke von Koeckritz

*Next row:* Dr. Stefanie Hansen, Kyle Baang, Sue Biddle

*Next row:* Elisabeth Davis, Kenly Velasquez, Conner Graybeal, Ashlin Davis

*Next row:* Erin Fogarty, Dr. Jules Bruck, Erick Jones, Charley Lavigne, Emma Gray, Jame McCray

*Behind, far right:* Ben Fischer, Christian Riggan, Karen Gartley, Eduardo Limon-Cortez

*Very front row:* Chris Bonura, Myleigh Connery

*Not pictured:* John Kaszan



## Honorifics

### Excellence from former and current students!



Dr. Scott Fendorf, Huffington Family Professor of Earth Science at Stanford University, was the inaugural speaker in the Donald L. Sparks Distinguished Lectureship in Soil and Environmental Sciences. On February 6, 2020, his on-campus lecture “Sustaining Groundwater and Food Quality in the 21<sup>st</sup> Century” was attended by nearly 200! Dr. Fendorf received his Ph.D. in 1992 as a student of Dr. Sparks, went on to become the founding chair of Stanford’s Earth System Science Department, and is presently the senior associate dean in the School of Earth, Energy, and Environmental Science. As a soil scientist and biogeochemist, his particular areas of interest are the chemical and biological processes involving contaminants and nutrients. Understanding, predicting, and controlling the soil processes that underlie groundwater quality and food production are critical for sustaining food and water in the 21<sup>st</sup> century.

In 2019, Dr. Donald L. Sparks, a longstanding professor of soil and environmental chemistry in PLSC, and current Unidel S. Hallock du Pont Chair and Director of the Delaware Environmental Institute, created his namesake lectureship. Dr. Sparks' goal is to bring renowned thought leaders from across multidisciplinary backgrounds to UD in order to share insight and research around the latest topics in soil and environmental sciences. A big thanks goes out to Dr. Angelia Seyfferth and her committee for organizing such a successful inaugural event!

Gretchen Dykes, who is pursuing a Ph.D. as a member of the Seyfferth Environmental Soil-Plant Interactions Research Group within PLSC, recently was awarded a Preston C. Townsend Biotechnology Fellowship. When asked about her research, she relates, “Arsenic uptake in rice is an issue not only because arsenic is toxic for people, but also because it lowers rice yields—and microbes are a crucial player in determining the amount and type of arsenic that ends up in rice grains. Therefore, I research the connection between microbes and their environment. By understanding how soil conditions influence the microbial community we can make better decisions on how to grow rice with less arsenic.” A proponent of science outreach to K-12 students, she explains, “I’m frequently surprised to hear that kids think all microbes are bad and will make you sick, so it’s exciting to show them examples of microbes in the environment doing cool, helpful things. One of my favorite activities is teaching about bioluminescent bacteria. Kids are really excited to learn that these guys glow! I like sharing about soil microbiology as well, since lots of people don’t know that there are tons of bacteria in the soil. In fact, there could be up to a billion microbes in just one teaspoon of soil. And those microbes are of course very important for the health of the soil.”



The American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA) have selected the recipients of the 2020 ASA, CSSA, and SSSA Future Leaders in Science Awards. Spencer R. Moller is one of just 18 graduate student Society members who received this award in recognition of his interest and engagement in science advocacy. Award winners received a trip to Washington, DC to participate in the annual ASA, CSSA, and SSSA Congressional Visits Day on March 3, where they met with their members of Congress and advocated for food, agriculture, and natural resources research. Spencer is a second-year Ph.D. student in PLSC at UD. He is in the Environmental Biogeochemistry Lab focusing on isotope method development and glyphosate degradation research under the direction of Dr. Deb Jaisi.

## Faculty Highlights

*Editors note: So much good news about our faculty and their groups has come out in our UD press, space does not allow for a lengthy description. If you are interested to read more about these headlines, please search [www.udel.edu/udaily](http://www.udel.edu/udaily) or email [mpautler@udel.edu](mailto:mpautler@udel.edu) for the UDaily links.*

### January 2020:

**Dr. Tara Trammell’s Lab:** Elms Go Urban - UD researchers plant and study iconic American elm trees in harsh urban environments

**Dr. Jung-Youn Lee’s Lab:** Putting down Roots - Groundbreaking research identifies cellular communication loop in root emergence

### February 2020:

**Dr. Jarrod Miller’s Lab:** Covering up for Winter - Agricultural researchers examine how a blend of cover crops increases yield while improving soil and environmental health

**Dr. Randy Wisser’s Lab:** Harnessing Exotic Genetics - UD researchers uncover the genetics of how corn can adapt faster to new climates

The following grants were awarded this fall/winter to our talented PLSC faculty and their UD colleagues.

<u>Principal Investigator(s)</u>	<u>Title/Topic</u>	<u>Sponsor</u>
Dr. Shreeram Inamdar	Draining the Landscape: Will the Drop in Stream and Groundwater Levels following Dam Removal Increase the Leaching/Leakage of Nitrogen from Riparian Zones?  Low-head Milldams as Hotspots for Denitrification and Nitrogen Consumption: Hydrologic and Biogeochemical Controls	National Science Foundation
Dr. Tom Evans Dr. Nicole Donofrio	Characterization and Deployment of Newly Identified Genes for Durable Resistance to Downy Mildew in Lima Bean	USDA
Dr. Mark VanGessel	Integrated Weed Management in Cover Crop-based Field Crop Production	USDA
Dr. Mark Isaacs	Irrigation Research at Carvel Research and Education Center and Warrington Irrigation Research Farm	Delaware Department of Agriculture
Dr. Erin Sparks Dr. Monique Head	Dynamic Plant Monitoring to Inform Structural Design Models	UD Research Foundation

## Undergraduate Student Highlights

Undergraduates enrolled in Dr. Susan Barton’s Landscape Horticulture Internship class in PLSC gain work experience and then share details by giving a presentation. Below are the most recent interns and where they worked.

<u>Employer</u>	<u>Undergraduate(s)</u>	<u>Employer</u>	<u>Undergraduate(s)</u>
Coastal Resiliency Project	Chris Bonura Olivia Boon Josh Gainey Alex Hubler Jess Toy	Longwood Gardens	Christian Riggan
Delaware State Parks	Alex Cross	Nanjing Changjiang Urban Agricultural Design	YanJun Wang
Doe Run LLC	Morgan Zebley	Nutrien Ag Solutions	Cole Macaron
Edible Forest Project	Shirley Duffy	UD Botanic Gardens	Connor Armstrong Hunter Fleming
Fisher Island Conservancy	Erick Jones	UD Education and Research Center—Weed Project	Devan Just
Kranz Hill Farm	Jacob Paraskiewicz	Wilson Farm	Myleigh Connery

## Events and Outreach



At the end of February 2020 Dr. Harsh Bais hosted 10 scientists from the Indian Agricultural Research Institute (IARI) on the Newark campus for a workshop with UD plant and soil scientists around the theme of “Transnational Research Needs and Applications of Plant Microbiomes.” IARI is the leading agricultural research institute and graduate school in India. Results of this workshop will be a memorandum of understanding where some of their best students will come to UD, all expenses paid, to work with our faculty towards graduate degrees. Congratulations to Dr. Bais and his team for their outstanding research in this area that resulted in such a prestigious scientific organization wanting to partner with us.

On February 25, 2020, the NJDelMarVaPa regional meeting of plant pathologists gathered at Townsend Hall on the Newark campus for their 74<sup>th</sup> meeting. This group has been meeting since 1945 and UD has been the host location since 1949. The 2019 meeting had to be canceled due to snow, postponing the 74<sup>th</sup> meeting until 2020. This meeting brought together 13 plant pathologists and graduate students from New Jersey, Delaware, Maryland, and Pennsylvania. Regional updates, graduate student presentations, and discussions were shared throughout the day. At lunch, attendees celebrated the retirement of long-time member Nancy Gregory with a UDairy Creamery ice cream cake!



*Left to right: Dr. Alyssa Collins, Joe Cinderella, John Bickel, Lexi Kessler, Adam Ginn, Dr. Alyssa Koehler, Jessica Pancake, Karen Rane, Dr. Bob Carroll, Nancy Gregory, Dr. Bob Mulrooney, Andy Wyenandt, Dr. Dave Clement.*

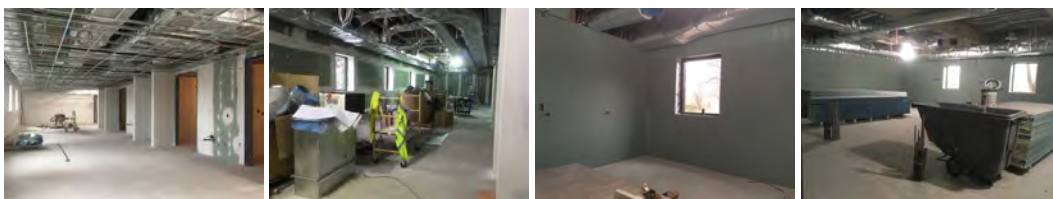
## Ready – Set – Grow!

Researchers were permitted to take a guided tour to see the progress inside of the Worrilow Hall renovation before COVID-19 disrupted normal activities. We will keep fingers crossed that construction will stay on schedule as best as possible.

*These exterior photos show progression of the assembly of the new external stairwell. The fourth photo shows that the north side of the building has not changed much at all. (Two first-floor windows have since been bricked in.)*



*Inside, faculty will be grouped into “neighborhoods” according to compatible/ similar research interests.*



*Work is being done from the third floor down. From left to right, painting has been done in a neighborhood on the third floor; a second-floor neighborhood has been spackled; drywall shapes up the new Soil Testing Lab and Food Science classroom/ teaching lab.*



We encourage alumni to send us news to keep us informed! A new job, a promotion, a personal or professional award... they're all accomplishments we want to know! Email a note or a press release, including your graduation year, to [mpautler@udel.edu](mailto:mpautler@udel.edu)

We are seeking to showcase alumni stories on a bulletin board in the PLSC corridor of Townsend Hall. We would like to highlight the career paths of our former students to current and prospective students and their families. If you are interested in providing a 250-words or less description of your career path from your PLSC education to your current job, along with a photo showing you at said job, please email [mpautler@udel.edu](mailto:mpautler@udel.edu) for more details.

## Back Porch Business

[Make a gift to the Plant & Soil Sciences Department](https://ud.alumniq.com/giving/to/plantandsoil) (https://ud.alumniq.com/giving/to/plantandsoil) to support student success. Gifts to the department provide funding for student travel to research and professional development events as well as stipends for undergraduate summer research and Extension Scholars. You may also give to the College of Agriculture and Natural Resources or another PLSC program by selecting “Other” and searching for the fund you wish to support. Contact Dan Sarkissian, Director of Development, College of Agriculture and Natural Resources at 302-831-4595 or [djs@udel.edu](mailto:djs@udel.edu) with any questions or concerns.

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