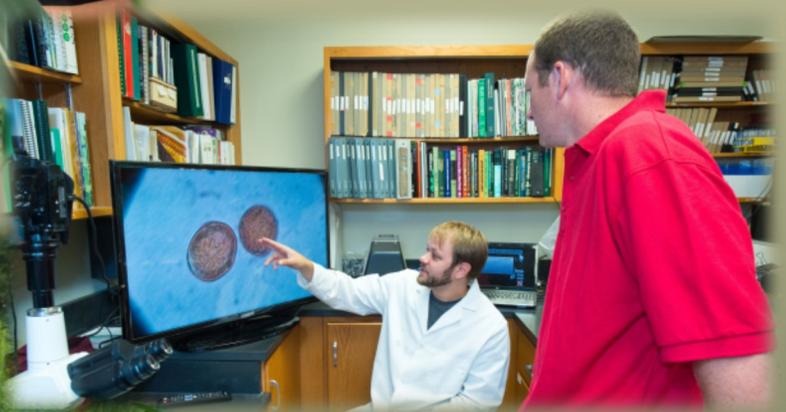


Doctor of Plant Health

# THE DPH PRACTITIONER



*“Educating Leaders for Tomorrow’s Sustainable Plant Production Systems”*



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Dean Steve Waller presents the Farmers National Company Fellowship in Agriculture  
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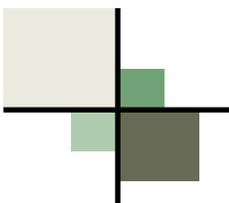
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**THE MISSION OF THE DOCTOR OF PLANT HEALTH PROGRAM AT THE UNIVERSITY OF NEBRASKA—LINCOLN**

is to produce plant practitioners with broad expertise and experience across the various disciplines that impact plant health and plant management. These plant practitioners (plant doctors) will integrate from across this expertise to diagnose and solve plant health problems and to develop integrated plant and pest management systems that maximize the system's economic, environmental, and social sustainability.



**Dr. Gary Hein  
DPH Director**

**Welcome to the Doctor of Plant Health newsletter!**

The Doctor of Plant Health program at the University of Nebraska–Lincoln is an innovative model for educating plant health practitioners. DPH is a professional program similar to a medical or veterinary program, but instead, graduates are prepared to understand and diagnose plant health issues and manage the entire plant production system. Our program provides coursework and internship experiences that will prepare you to make a difference in tomorrow's agriculture.

Graduates of the Doctor of Plant Health program are in demand worldwide for their comprehensive knowledge and experience, resulting in 100 percent job placement.

Interested in us? We're interested in you! Contact Dr. Gary Hein, DPH program director, at [ghein@unl.edu](mailto:ghein@unl.edu), or call 402-472-3365 for more information. We look forward to visiting with you!



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**Faculty Highlight: Dr. Brian Wardlow**

Dr. Brian Wardlow joined UNL as a research assistant professor in 2006 and led the GIScience program at the National Drought Mitigation Center (NDMC) for six years.

He also serves as Director with the Center for Advanced Land Management Information Technologies (CALMIT). Dr. Wardlow works on a range of research projects that analyze satellite-based Earth observations to incorporate information about vegetation health, soil moisture, and evapotranspiration into drought monitoring, both in the United States and internationally.

In March 2012, Dr. Wardlow became an assistant professor in the School of Natural Resources (SNR), where he teaches remote sensing courses and maintains his current research program in remote sensing.

About the Doctor of Plant Health program... *“Students in the DPH program are motivated, high-caliber students that embrace cutting-edge techniques and methods in their careers. DPH students are incorporating remote sensing into their professional tool kit that can be applied to acquire information about plants at the leaf, plant, plot, and field scales for a wide variety of agricultural and natural resource applications.”* - Dr. Brian Wardlow



2015 December Graduate



Congratulations Dr. Kenneth Roché with Dr. Gary Hein (DPH Director)

**C**ongratulations to Dr. Kenneth Roché. Kenny Roché, William J. Curtis Fellowship Recipient, has his Bachelor of Science (Botany) (2010) from Metropolitan State College of Denver (MSCD). Kenny spent part of his youth roaming the forests of Guam, playing in the Everglades and the Keys of Florida, and swimming off the coasts of Puerto Rico and Miami. He expressed an early interest in the size and scale of the plants, leaves, and flowers and how the local population used them everyday. It was at MSCD Kenny decided that botany would be the focus of his studies.

Kenny plans to use his DPH degree in small-scale food/fiber/forage production systems (<15 acres) utilizing sustainable methodologies. This would include aquaculture, vermiculture, composting of plant materials, and livestock manures along with water conservation and soil fertility preservation.

Kenny said growing up certain philosophies were imprinted on him: self motivation, public activism, function over form, have what you need not what you want, reduce, re-use, recycle, bike or bus before driving, sustainability, responsibility, accountability, and respect for other people and cultures, these values all remain as important to him as they were then.

NEW DPH Students

Welcome to new DPH students, Emily Stine and Aaron Sedivy!



**Emily Stine** received her B.S. in in Turfgrass and Landscape Management and a minor Engler Agribusiness Entrepreneurship program (2015) from the University of Nebraska–Lincoln.

Emily's career goals are to "educate and assist consumers and producers in better practices to help their plants be as beneficial and healthy as possible". Her background includes a UCARE grant studying tomatoes in conjunction with ConAgra and an internship with Nebraska Nursery and Color Gardens in Lincoln as well as Summer Intern with Nebraska Extension in Lancaster County, NE. Her primary focus was developing the interactive kiosks at the Raising Nebraska Outdoors project in Grand Island, NE.

Emily believes the DPH program will allow her to examine and experience more opportunities, allowing her to better serve the public and agricultural communities, and provide more career advancement through additional training, hands-on experience and interaction with other graduate students and faculty.



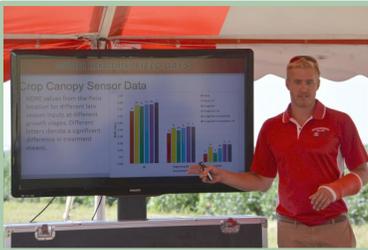
**Aaron Sedivy** received his B.S. in Horticulture—Plant Science (2010) from the University of Nebraska–Lincoln.

Upon graduation, Aaron has worked for the Denver Botanic Gardens, employed as a horticulturist on the tropics team. Aaron believes his Plant Science degree was the ideal precursor to the DPH program because "it focused on the study of plant systems rather than a specialized area of horticulture, allowing for unmatched flexibility within the field. Plants are not all the same, but with a knowledge of plant systems, one can read any plant and know what it needs to thrive". Aaron says he has built relationships with people from all across the world, especially with his involvement with the Bromeliad Society International. Through this relationship, Aaron developed a seed propagation system for epiphytes that is used by several home enthusiasts, botanic gardens, colleges and universities in the US. In particular, this system is being used to propagate native Tillandsia species of Florida that are endangered due to an invasive weevil.

Aaron's career goals include working with a world agriculture agency, such as CGIAR or an associated foundation... companies whose mission is very much like the Doctor of Plant Health... "to diagnose and solve plant health problems and to develop integrated plant and pest management systems that maximize the system's economic, environmental, and social sustainability".

DPH Student Internships & Activities 2015

**Joshua Miller experienced a busy summer:**



Throughout the summer Josh collected data for his PhD project; looking at the use of crop canopy sensors in soybeans. Josh participated in Soybean Management Field Days, speaking at each of the four stops about the Integrated Study looking at the effects of using seed treatments and foliar treatments to increase soybean yields.

Josh and Agronomy graduate student, Rodrigo Werle started a new course spring 2015 to prepare students to participate in the Weed Science Contest. The 2015 contest was held in Columbus, OH and was a national contest with teams representing schools from across the country. Nebraska took home 13 different awards, including the undergraduate team winning first place in the

nation! As a reward, the undergrads are being sent to Puerto Rico to be recognized at the international weed science meeting, and Josh will attend as the coach of the team.

Josh continued work in the Dow AgroSciences grant funded Diagnostic Garden in conjunction with the Backyard Farmer. Tomatoes, zucchini, and edamame were planted with some good disease symptoms developing on the tomatoes and zucchini.

Josh assisted in teaching a graduate level distance plant pathology course over the summer, preparing the content and recording lectures for the third module of the course covering pathogen-host interactions. Josh said "It was a great experience and definitely a chance to learn about the intricacies of the interaction between pathogens and plants".



**Anthony "Justin" McMechan**

Justin's internship with UNL Extension working with Dr. Roger Elmore, Professor and Extension Cropping Systems Agronomist. The internship concluded with Justin helping with the Late Season Crop Management Diagnostics Clinic at the Agricultural Research and Development Center (ARDC) near Mead, NE.

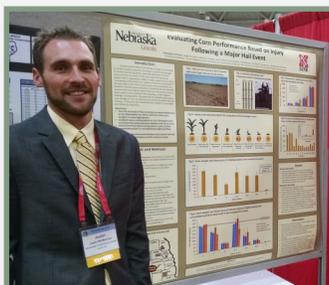
Justin discussed late season hail damage impact on yield components, the potential for increased damage from insects and disease, and management options for reducing yield losses under situations.

Justin was also cited in the September 2015 issue of Nebraska Farmer magazine, "A deeper look at hail damage". He also co-authored a poster, "Evaluating Corn Performance Based on Injury Following a Major Hail Event", for the combined annual meetings of the American Society of Agronomy and Entomological Society of America in Minneapolis, MN in November 2015. This poster won first place in the poster competition!



PHOTO COURTESY OF JUSTIN MCMCHAN

**HAIL MACHINE:** Justin McMechan pelts young corn with the hail machine as part of his research to more accurately assess initial hail damage and the corn plant's ability to recover.



**Gregory "Greg" Brittain, Jr.** is employed with Pacific Ag Research in San Louis Obispo, California working as a field and lab technician.

Greg runs, and assisted with set up of the plant pathology lab, including developing protocols for making inoculum as well as detecting and quantifying pathogens in trial plots to confirm infection.

Greg also aids in insecticide and fertilizer trials when needed.



DPH Student Internships 2015—continued



*Organizational skills are just as important as technical proficiency" - Kenny Roché*

**Kenneth “Kenny” Roché’s** worked for Research Designed for Agriculture (RD4AG) a commercial research organization that executes third party research for clients exploring new agricultural products through testing and analyzing new technologies that push our understanding of agricultural sciences.

Kenny experienced firsthand the inner workings and logistics involved with third party agricultural research, particularly with regards to regulated test materials (i.e. GMOs) as well as the importance of timely herbicide applications. Kenny primarily worked with 3 commodity crops (wheat, field peas and canola).

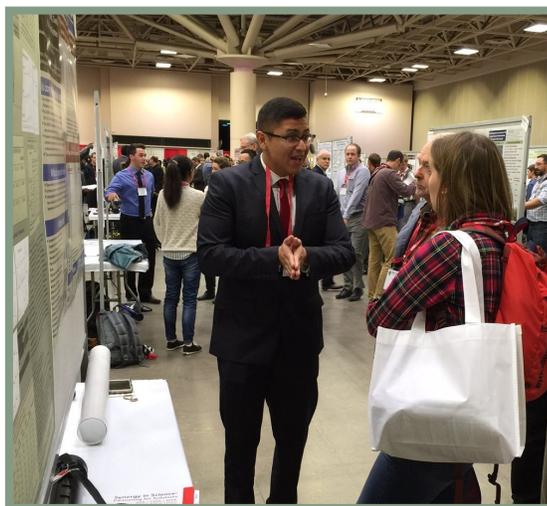
**Jon “Derek” Pruitt** worked at Monsanto’s Gothenburg Water Utilization Learning Center in Gothenburg, NE. The goal of the Water Utilization Learning Center is helping farmers to achieve yield and productivity goals with an emphasis on water utilization.

While there, Derek fulfilled a wide variety of assignments involving field research; applying treatments, data collection, and writing up the final presentation of data.

Derek coordinated with the resident Technology Development Representative Associate and Learning Center Agronomist on many of the trials conducted to ensure proper timing and rate of applications. Derek prepared as well as gave field tours to a number of different groups. He helped with general maintenance and provided training workshops at the learning center.

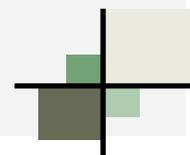


*"I learned the importance of providing good, valuable, and especially pertinent information to those involved in production. They want to improve, but we can only help that through effective communication to understand accurately what their needs are and then to help provide them with the tools and information necessary to meet those needs." - Jon Derek Pruitt*



*"I gained experience with the field component of my research" - Salvador Ramirez, II*

**Salvador Ramirez, II** continues his research for Drs. John Lindquist and Rhae Drijber on the CERES Trust Organic Research Initiative concerning diverse cover crop strategies for improved yield and weed suppression in organic cropping systems for the western corn belt. Sal attended the 2015 ASA-CSSA-SSSA meeting.



## Program News & Development



Dr. Gary Hein and Greg Brittain attended the American Phytopathological Society (APS) meeting in Pasadena, CA. in October 2015, along with Dr. Amanda Hodges, Director of the Doctor of Plant Medicine program at University of Florida

At the joint annual meetings of the Entomological Society of America (ESA) and Agronomy Society of America (ASA) in Minneapolis, MN in November.

**Justin McMechan**, DPH and Ph.D. candidate, presented a poster “Effect of wheat curl mite infestation and wheat streak mosaic virus inoculation timing on disease severity in winter wheat.” and “Risk for alternate overwintering hosts for the wheat-mite-virus complex in winter wheat”.



At the American Society of Agronomy meeting two DPH students presented posters:

\***Salvador Ramirez** presented “Impact of Corn Stover Removal on Soil Microbial



Community Composition in a Long Term, Irrigated, Continuous Corn Production System” and

\***Joshua Miller** presented “Integrated Evaluation of Multiple Inputs to Increase Soybean Yield in Nebraska (Part II): Evaluation of Crop Canopy Sensors As a Tool for Soybean Research and Production”.



Dean Steve Waller presents the Farmers National Company Fellowship in Agriculture to Joshua Miller

**Joshua Miller** also received the Farmers National Company Fellowship and was recognized for at a luncheon on October 13<sup>th</sup>. He also received the graduate student award at the North Central Extension-Industry Soil Fertility Conference in November and presented a poster as part of the award.

## Program News & Development



You can find additional details on stories and stay informed of the most recent events and important announcements regarding the DPH program by checking out our Facebook page at: <https://www.facebook.com/planthealthdoctor>

If you are interested in previous issues of the Plant Practitioner, you can read them online at <https://dph.unl.edu/doctor-plant-health-newsletter>

The website <https://dph.unl.edu> provides information about the history of the program, its mission, curriculum, as well as current students and involved faculty. Our website also highlights other opportunities to learn more about how to apply for enrollment, contact us for questions or to support the DPH program.

## Student Profile

Chris Wynn - *Why did I choose the DPH Program?*



“While in my undergrad, I realized that I really wanted to work with farmers and in the agricultural community. I thought that the best way to do this was to pursue a graduate degree in entomology. So, I applied to Entomology masters programs around the country, and I was accepted. I was first introduced to the DPH program at the 2014 ESA society meeting in Portland, Oregon. It was there that I met Dr. Hein and he introduced me to the program. I was immediately impressed by the multi-disciplinary curriculum. I saw that the DPH program was a program that would train me in a way that would make me far more competitive than a degree in entomology. I was a little put off by the fact that I would have to pay for the program, especially when other programs offered to pay for their graduate students. I had to choose between paying for graduate school while attending the DPH program or going the traditional route by pursuing a masters in entomology which would be paid for. I saw that the cost of the program was a minimal sacrifice in order to become the kind of trained professional I was hoping to become. The DPH program stood above the rest. Through its multi-disciplinary curriculum and the multiple connections UNL has with the agricultural community around the world I felt like the best educational pursuit was through the DPH program. Thankfully I was offered an assistantship which paid for my tuition and made my decision to attend the DPH program that much more satisfying.”



# Doctor of Plant Health

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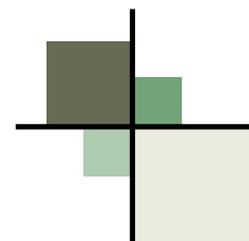
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For additional information visit our website at:  
[www.dph.unl.edu](http://www.dph.unl.edu)

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## Help us grow the Earle Raun Plant Health Fund



Dr. Earle S. Raun

The Earle S. Raun Doctor of Plant Health Fellowship Fund was created to honor Earle Raun's efforts in establishing UNL's Plant Health Program and his professional contributions to crop consulting and agricultural education.

In addition to his work at UNL, Dr. Raun created Pest Management Company- the first independent crop consulting firm in the Midwest specializing in research and advice on pest management and crop production, and was instrumental in founding the National Alliance of Independent Crop Consultants (NAICC) and its Nebraska affiliate, Nebraska Independent Crop Consultant Association (NICCA).

Contributions to this fund will enable UNL to offer fellowships for Doctor of Plant Health students. To give, go to [nufoundation.org/fundsearch](http://nufoundation.org/fundsearch) and enter Earle S. Raun into the search window.

For more information, contact Josh Egleyat  
402-458-1176 or Gary Hein at 402-472-3345.

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