



BLIZZARD WATCH

2015 Year in Review

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From the Department Head

Dr. Richard Horsley

2015 again was a year of accomplishments for the department's faculty, students, and alumni. This year's *Blizzard Watch* contains over eight pages of accomplishments and awards received by our undergraduate and graduate students, staff, and faculty. To keep up with the latest news and photos, you can access our website at www.ag.ndsu.edu/plantsciences/, our Facebook page at NDSU Plant Sciences, or our Twitter page at @NDSUPlantSci. One of the items I really enjoy reading in the *Blizzard Watch* and on our website and social media pages are the profiles on our current students and alumni. If you are an alumnus, please visit our alumni page (www.ag.ndsu.edu/plantsciences/alumni) to tell us about your current position and how your experience at NDSU contributed to where you are today.

Last summer Dr. Deland Myers and Dr. Mohamed Mergoum resigned to take positions at other institutions. Dr. Myers is now an Endowed Professor of Food Systems at Prairie View A&M and Dr. Mergoum is now the small grains breeder at the Universi-

ty of Georgia Griffin Campus. Dr. Myers was instrumental in providing instruction, student advising, and research experiences to students and summer interns in the Cereal and Food Science programs. We were fortunate to hire two very qualified faculty, Drs. Bingcan Chen and Anuradha Vegi, to take over Dr. Myers's responsibilities. Refilling Dr. Mergoum's position as the hard spring wheat breeder position took a bit longer to accomplish. Andrew Green will be taking over the responsibilities of the hard spring wheat program around July 1. He is currently completing his Ph.D. at Kansas State University on a project related to hard winter wheat and genetics. Andrew will be only the fifth hard spring wheat breeder that the university has had since its inception. In the interim, I have been overseeing the hard spring wheat program, in addition to my duties as department head and barley breeder. To say it has been a busy and hectic year is an understatement. Thankfully, there are dedicated and extremely knowledgeable support staff on the wheat and barley breeding program that take a great deal of pride in their work. I



personally want to thank Martin Hochhalter, Jesse Underdahl, Matt Abdullah, Adam Walz, and Brad Schmidt for all they do on the barley and spring wheat breeding programs.

The university opened up the new STEM Classroom and Lab Building in December 2015. This three-story building is located just east of the Memorial Union and is expected to provide instruction space for 4,000 to 5,000 students each day. Classes from the department being taught there in spring 2016 include PLSC 455/655 (Cropping Systems: An Integrated Approach) taught by Dr. Deckard and CFS 464/664L (Food Analysis Laboratory) taught by Dr. Bingcan Chen. A limiting factor of the STEM Building for many of our Crop and Weed Sciences and Horticulture undergraduate courses is ready access to greenhouse space. To help us with this dilemma, the university paid for the construction of a new state-of-the-art teaching labor-

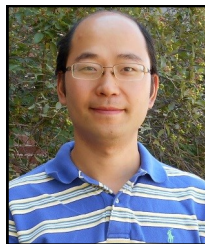
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Faculty Updates

New Faculty

Dr. Bingcan Chen

joined NDSU in August as assistant professor in food and cereal chemistry, following his post-doctoral training at the University of Massachusetts (UMass) in Amherst. Chen earned his B.S. in Food Science and Technology at Sichuan University of Science and Engineering and his M.S. in Pharmacology at Chongqing University, both in China. He earned his Ph.D. in Food Science from UMass Amherst. After his graduation, Chen moved back to his hometown in China, where he held a professor position for close to three years. Chen's research focuses on food and cereal chemistry, including lipid oxidation mechanisms and antioxidant strategies in food systems, novel antioxidant constituents and bioactive ingredients from cereals, and flavor formation in cereal products.



Dr. Anuradha Vegi

joined NDSU Plant Sciences in December as assistant professor of practice with a full teaching appointment in the Cereal and Food Science program. She earned her B.S. in Botany, Chemistry and Zoology at St. Joseph's College for Women, India, and her M.S. in Biotechnology at Andhra University, India.



Vegi earned her Ph.D. in Food Safety with an emphasis in Molecular Biology at North Dakota State University. She also holds Graduate Certificates from NDSU in Food Protection and Applied Statistics. Prior to working for NDSU, Vegi was a post-doctoral research associate at the University of Nebraska Medical Center in Omaha. Following her doctorate studies at NDSU, Vegi worked as a university researcher and teacher in the Veterinary and Microbiological Sciences department.

Faculty Promotions

Two faculty members earned promotions this year.

Dr. Clifford Hall

was promoted to professor. He has been a faculty member in Food Science since 1998 and currently coordinates the undergraduate program. In 2015 he was named director of the pulse quality research program.



Dr. Qi Zhang was awarded tenure and promoted to associate professor. She has been a faculty member in the Department of Plant Sciences since

2007. Her area of research is turf stress physiology.

Promotion acknowledges faculty members for professional competence and excellent service to NDSU. Tenure is affirmation of a faculty member's excellence and potential significant long-term contribution to NDSU.



Faculty Resignations

Faculty members **Dr. Deland Myers** and **Dr. Mohamed Mergoum** resigned from NDSU in 2015.

Myers was a professor in the Cereal and Food Sciences program at NDSU since 2007. He served as director of the School of Food Systems from 2007-2013. He also served as director of Academic Diversity Recruitment and was the NDSU Faculty Athletic Representative.

Myers took an Endowed Professor of Food Systems position at Prairie View A&M University in Texas.

Mergoum was a faculty member and the leader of the NDSU hard red spring wheat breeding program since 2002. In 2009 he was named the Richard C. Froberg Spring Wheat Breeding/Genetics Endowed Professor.

Mergoum took a position as a small grains breeder at the University of Georgia, Griffin campus.



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facebook.com/NDSUPlantSciences

Staff Updates

New Staff

We welcomed several new staff members in 2015.

Dr. Samira Mafi Moghaddam completed her Ph.D. in Genomics under the advisement of Phil McClean and now works as a postdoctoral researcher in McClean's legume genetics and genomics project.

Dr. Jason Fiedler was hired as a bioinformaticist in statistical genomics with Xuehui Li.

Megan Shawgo is an agricultural research technician in durum wheat breeding with Elias Elias. **Andrew Lueck** is a research specialist in Extension sugarbeets with Tom Peters. **Sydney Gilles** is a research specialist in pulse crops breeding with Kevin McPhee. **Alan Bingham** is an agricultural research technician in Extension potato agronomy with Andy Robinson.



Samira Mafi Moghaddam



Jason Fiedler



Megan Shawgo



Andrew Lueck



Sydney Gilles



Alan Bingham



Staff Resignations

Individuals who resigned in 2015 are **Aaron Carlson**, research specialist in Extension sugarbeets; **Sujan Mamidi**, postdoctoral research fellow in legume genetics and genomics; **Monika Michalak**, postdoctoral research fellow in canola breeding; **Christina Johnson**, computer graphics manager in dry bean genetics; and **Dr. Juan Jose Rodriguez**, research specialist in potato breeding. **Jason Faller**, research specialist in barley breeding, transferred to the Agronomy Seed Farm.

Years of Service

5 Years

*Adam Walz
DeLane Olsen*

25 Years

*John Barr
Barb Laschkewitsch
Stan Stancyk
Rich Zollinger*

15 Years

*Jason Faller
Kelly McMonagle
Kreg Kercher*

30 Years

Robert Nudell

20 Years

Pete Gregoire



*John
Barr*



*Barb
Laschkewitsch*



*Stan
Stancyk*



*Rich
Zollinger*

Faculty and Staff Awards and Honors

Robinson Receives Emerging Leader Award



Robinson (left) receives award

NDSU and U of Minn. Potato Extension Agronomist **Andy Robinson** received the Emerging Leader Award from the National Potato Council in

January. The award is presented to individuals under the age of 35 who promote the potato industry and exhibit leadership and community involvement.

Robinson has held the joint agronomist position at NDSU and the U of M since 2012. The focus of his work and research is finding solutions for real life problems faced by potato growers in North Dakota and Minnesota. Robinson conducts research that addresses disease problems such as late and early blight, the effects of row spacing, nutrient management and herbicide exposure. He also plans field days and winter meetings and develops educational materials.

Robinson heads the planning committee for the 2017 Potato Association of America Annual Convention to be held in Fargo.

Howatt Receives Outstanding Teacher Award

Kirk Howatt, associate professor in weed science, was presented the Outstanding Teacher Award during the Weed Science Society of America annual meeting in February. The peer-selected award recognizes excellent teaching and advising of students.



Howatt has been a faculty member in Plant Sciences since 1999. He also serves as coordinator of the

Crop and Weed Sciences undergraduate program. In addition, Howatt conducts research on weeds in cereals and oilseed crops, teaches courses in weed science and professional development, advises students and serves as the Agronomy Club adviser.

Deckard Receives Advising Award



Deckard (right) with Provost Ingram

Edward Deckard, professor in Plant Sciences, was selected to receive the Outstanding Faculty Advising Award. The award, established by the Office of the Provost, highlights the importance of academic advising at NDSU by recognizing advisers who are committed to helping undergraduate students reach their full potential.

Colleagues, students and friends attended a recognition ceremony and reception in March held in front of the Advising Resource Center in the Memorial Union, where Deckard's photo is displayed alongside a plaque recognizing previous award recipients.

Williams Honored at State Crop Show



Williams (right) receives award

NDSU Foundation Seedstocks Director **Dale Williams** was named the 2015 North Dakota State Crop Show Honoree. He was honored at an awards banquet held during the North Dakota State Winter Show in Valley City.

Williams has been the assistant manager of the Crop Show since 2001. He also works with the North Dakota Crop Improvement and Seed Association, the North Central Foundation Seed organi-

zation and the International Crop Improvement Association.

Osorno Receives Bean Improvement Cooperative Award



NDSU dry bean breeder and Plant Sciences associate professor **Juan Osorno** was awarded the Distinguished Achievement Award by the Bean Improvement Cooperative during their biennial meeting in November.

The award recognizes outstanding scientific accomplishments relating to bean improvement and/or education and is presented to a scientist who has worked in bean (*Phaseolus vulgaris* L.) improvement fewer than 15 years.

Osorno has been the dry bean breeder at NDSU since 2007. The objective of the dry bean breeding program is to develop high yielding, high quality bean genotypes adapted to the Northern Great Plains. His current research focus is on developing bean cultivars with enhanced levels of disease resistance and greater tolerance to abiotic stress such as waterlogging.

During his career, Osorno has developed and released several germplasm lines and cultivars. He has published articles focused on plant breeding and the development and application of molecular markers in breeding programs. He also serves as advisor to breeding programs in Guatemala, China, and Colombia.

In 2014, Osorno was a member of a national research team that successfully completed the sequence of the common bean genome. He organized a national field trial that identified regions of the genome associated with seed size and

other traits of economic importance. (Full story at bit.ly/1O3Dn8d.)

In addition to his research work, Osorno teaches genetics and has been the major advisor for ten graduate and numerous undergraduate students and interns at NDSU.

Faculty Receive Aggies Awards



From left: Animal Sciences assistant professor David Newman, Chiwon Lee, Ed Deckard, Brenda Deckard, Ag/Biosystems instructor Elton Solseng, Burton Johnson

Four Plant Sciences faculty received awards at the inaugural NDSU Ag Week Banquet. **Chiwon Lee** received the Open Door Award; **Ed and Brenda Deckard** received the Aggies Owl Award; and **Burton Johnson** received the Herd Award. The banquet and awards capped off a week of activities designed to celebrate NDSU's rich tradition of agriculture with the entire campus and local community.

Myers Named Oil Chemists Society Fellow



Myers (second from left) with other AOCS Fellow recipients.

Deland Myers was named a Fellow in the American Oil Chemists' Society (AOCS) during their annual meeting in May. The Fellow award recognizes AOCS members' achievements in science and service to the Society. To be eligible for the award, one must be a member in good standing for 15 years.

Myers was a professor in the NDSU Cereal and Food Sciences program until July 2015, when he took a position at Prairie View A&M University in Texas.

Berti Recognized at Faculty Excellence Celebration



Marisol Berti, assistant professor and forages and biomass crop production project leader, was recognized during the NDSU Celebration of Faculty

Excellence for receiving two NDSU Development Foundation Awards for 2015-16. The awards were the Carl A. and Jean Y. White Memorial Ag Research Endowment and the Gordon A. Larson Agricultural Research Endowment.

The endowments will be used to gather preliminary data to develop guidelines for cover crops management in conventional cropping systems in North Dakota. The long term goal is to increase the adoption of sustainable practices in North Dakota cropping systems.

Hatterman-Valenti, McPhee Accepted to Gateways-ND NSF Opportunity

Professors **Harlene Hatterman-Valenti** and **Kevin McPhee** were accepted into the first two-year cohort of an NSF-funded professional development opportunity and research study called Gateways-ND. The objective of the project is to transform teaching and learning at NDSU, with a special focus on Science, Technology, Engineering and Math (STEM) education and helping



Hatterman-Valenti



McPhee

more students succeed in STEM courses. Cohort participants will engage in professional development and a research component intended to extend the project's impact beyond NDSU. The Office of Teaching and Learning is leading the Gateway-ND project. (Full story at bit.ly/1jp4G0m.)

Hatterman-Valenti Grape Growers Society Chair-Elect

Plant Sciences assistant department head and professor **Harlene Hatterman-Valenti** was elected 2015-16 chair-elect for the American Society of Enology and Viticulture-Eastern Section (ASEV-ES). Enology and viticulture are the sciences of winemaking and grape growing.

Hatterman-Valenti leads the high value crop production project at NDSU. Her project's grape research includes germplasm enhancement, variety trials, establishment trials, fertility trials, and canopy management trials.

Hatterman-Valenti has been a member of ASEV-ES for five years and a member of the parent organization, ASEV, for ten years. She presented at annual meetings and was elected to the ASEV-ES board as a director in 2014.

Crop and Pest Report Team Receives National Honors

Plant Sciences faculty **Hans Kandel**, **Tom Peters**, **Joel Ransom**, **Andy Robinson** and **Rich Zollinger** are members of a collaborative team of Extension specialists and staff that contribute to the NDSU Extension *Crop and Pest Report* newsletter. The team was awarded the 2015 Extension and Education Community Award for Newsletter at the American Society of Agronomy annual meeting.

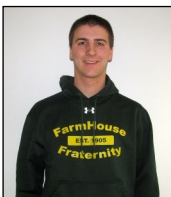
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Department News

Food Science Program Ranked #1 Best Value

The NDSU Food Science program gained recognition in January 2016 as the top *Best Value Food Science Degree Program* in the U.S. The ranking was done by *College Values Online*, which provides information on many college programs nationwide. Twenty-nine other schools also were evaluated for the award. The rankings are determined by calculating return on investment, which includes examining the cost of the education program, future salary potential and job prospects for students completing the degree, and whether the program provides good hands-on learning opportunities, faculty interaction, financial aid options, and accreditation and career placement rates. Find a link to the full article and an update on the NDSU Food Science program at bit.ly/1XtjN6I.

Students Win Top Honors at Innovation Challenge '15



Subart



Hillen



Kallenbach

Three Department of Plant Sciences students won awards in the corn-based innovation track at the 6th Annual Innovation Challenge competition. **Paul Subart** won first place with his project “A Displaced Farmer”. **Cassandra Hillen** and **Joseph Kallenbach** placed third with their project “Color with Corn”.

Subart is a junior from Robinson, ND majoring in crop and weed sciences. He developed a modified rotary hammer mill to be

mounted in the rear of a combine that will pulverize weed seed, resulting in reduced weed pressure and volunteer crop regrowth the following year. His project adviser was Marisol Berti, associate professor in Plant Sciences.

Hillen, from Fargo, ND, and Kallenbach, from Dickinson, ND, are graduate students in cereal science. Their project, “Color with Corn,” uses a corn byproduct as an alternative, low-cost way to color and add nutrients to butter. Clifford Hall, associate professor in Plant Sciences, was the project adviser.

The annual Innovation Challenge competition is sponsored by the NDSU Research and Technology Park.

Students Honored at Scholarship Luncheon



The annual NDSU College of Agriculture, Food Systems, and Natural Resources Scholarship Recognition Luncheon was held in November. Ninety scholarships ranging from \$100 to \$2000 were awarded to 79 Plant Sciences, Food Science and Cereal Science students; 52 undergraduates and 27 graduate students. Donors also attended the recognition luncheon.

The total scholarship dollars awarded to Plant Sciences students for the 2015-16 academic year is \$68,365. Lists of donors and recipients can be viewed at bit.ly/1ecffOA.

Crop and Flower Variety Trial Results Published

NDSU crop variety trial results for 2015 and the *Virtual Crop Production*

Guide are published online at www.ag.ndsu.edu/varietytrials. Results can be viewed by crop or by location.

Performance trials were conducted on 239 annual bedding plants at the Horticulture Demonstration and Research plots. The bedding plant trial is an official display garden of All-America Selections. The *2015 Cultivar Trials of Bedding Plants Report* is published online at bit.ly/1Iri0tg.

Master Gardener Course Participation Grows

The 2015 North Dakota Extension Master Gardener Program saw its third year of increased class size with 106 participants this year, a 25% increase from 2014. The 10-week fall course was led by NDSU Extension Horticulturist Esther McGinnis, and NDSU faculty and Extension personnel presented on topics including annual and perennial flowers, tree selection and maintenance, soil health, composting, plant diseases and pests, and vegetable and fruit production. Participants attended weekly classes in a traditional classroom setting or opted for the convenience of taking the course online.



McGinnis

Participants who completed the training are considered Master Gardener interns. Interns must volunteer 48 hours of time during a two-year period on horticultural projects in their home counties to earn a Master Gardener certificate. Throughout the year, McGinnis also planned continuing education, volunteering and recognition events for Master Gardeners.

The purpose of the North Dakota Master Gardener program is to train ambassadors to assist the Extension Service in providing scientifically accurate and environmentally sustainable horticultural advice. The next course will begin September 9, 2016. Learn more at www.ag.ndsu.edu/mastergardener/.

Grapes Research Featured in Publications

Like many Americans, North Dakotans are consuming more wine and making more conscious choices regarding locally grown produce. These factors have spurred the development of 12 wineries in the state since 2002. Lack of high quality wine grapes has been a challenge for northern vineyards due to harsh winters and short growing seasons. This has stimulated state agriculture programs to examine sustainable viticulture in northern climates.



Hatterman-Valenti

Professor and high value crops project leader Harlene Hatterman-Valenti has stepped up to the challenge. She conducts cultivar studies on the main campus, at the NDSU Horticulture Research Farm near Absaraka, ND and at four NDSU Research Extension Centers (Williston, Carrington, Minot, Langdon) to assess the suitability of grape cultivars across the state and to understand the viticulture production management issues that may enhance northern vineyard productivity. This research was highlighted in a regional and a national publication in 2015.

Hatterman-Valenti was interviewed for an article in the May 2015 issue of *North Dakota Living Magazine*. In the article she discussed the early challenges and more recent successes of her cold-hardy grape cultivar research. Early results of the variety trials were not encouraging, so a germplasm enhancement program was introduced as a method to foster hardiness. Hatterman-Valenti reported that testing continues, with success, in the effort to grow vines that ripen early and retain sufficient durability during winter. Read the full article at bit.ly/1pl6smt.




Stenger

Ph.D. student John Stenger's research on cold-hardy grape cultivars was featured in an article in the March/April 2015 issue of *Vineyard & Winery Management Magazine*. His project is a grape germplasm enhancement program aiming to develop cultivars that can survive temperatures of at least 40 degrees below zero. Hatterman-Valenti oversees Stenger's research. Read the full article at bit.ly/21nb07x.

Interest in grape growing is spreading to home gardeners, too. In response, a growing guide was created by Extension Horticulturist and Plant Sciences Assistant Professor Esther McGinnis, Grand Forks County Extension Agent Steve Sagaser and Hatterman-Valenti. The publication, *Growing Grapes in North Dakota: A Guide for Home Gardeners and Hobby Growers*, guides home gardeners through the process of

choosing an optimal site for planting grapes, selecting hardy cultivars, and training and pruning the vines. It also provides information on managing disease and insects that are common to North Dakota. The publication can be downloaded at bit.ly/1YHHEFp.



The 68th United Nations Assembly/ Food and Agriculture Organization has declared 2016 the International Year of the Pulse, which will focus increased interest on pulse crop research programs, as well as the benefits of production and consumption of pulses worldwide. Learn more at www.fao.org/pulses-2016.

The fully integrated pulse program at NDSU includes two dedicated breeding programs and a pulse quality research program, which is unique in the United States. Researchers from the Departments of Plant Sciences and Plant Pathology as well as Extension Service work closely together. All programs function together to produce a full complement of current and cutting edge research and information on pulse production and end use. Read more at bit.ly/1UjrIFL. Watch our website and social media news feeds for updates on pulse research and activities at NDSU.



Find more news on our website! www.ag.ndsu.edu/plantsciences/news
Plant Sciences: www.ag.ndsu.edu/plantsciences
Cereal Science: www.ag.ndsu.edu/cerealscience
Food Science: www.ag.ndsu.edu/foodscience

Barley Breeding and Quality Research

According to the USDA National Agricultural Statistics Service, North Dakota has long ranked as one of the top barley producing states in the U.S. NDSU is the only university that has a fully integrated barley program, including two-rowed and six-rowed barley breeding, barley pathology and barley and malt quality research, as well as experts in agricultural economics and engineering who understand barley production issues.

Over the years, barley production has moved to the western part of the U.S. due to disease and competition from other crops. However, in recent years the craft brewing trend and local food production trends have led to increased interest in growing barley in eastern states.

Barley Variety Added to American Malting Association List

Published by NDSU Ag News at bit.ly/1pBYdS.

The new NDSU two-rowed barley variety ND Genesis has been added to the American Malting Barley Association's 2016 list of recommended malting barley varieties. ND Genesis was released by the North Dakota Agricultural Experiment Station in 2015 and distributed for the first time through the North Dakota County Seed Increase Program.

Improved foliar disease resistance and yield potential give ND Genesis an advantage over Pinnacle, an NDSU two-rowed barley variety released in 2007.

"ND Genesis seems adapted to all parts of North Dakota and adjacent areas of Minnesota, Montana and South Dakota," says Richard Horsley, NDSU Department of Plant Sciences head. "ND Genesis also has some promise in the spring barley production areas of the eastern U.S., where growers producing

barley for the craft market have been growing Pinnacle because of its low protein."

Collaboration with Eastern Barley and Malt Producers

The NDSU Barley Improvement Program and Craft Malt Guild helped organize a Uniform Regional Malting Barley Nursery in a number of states in the northeast, including Massachusetts, Maine, Vermont, and New York. The objective is to work with regional researchers, Extension personnel and growers to determine which barleys perform best in these locations.

In June 2015, NDSU barley breeder Richard Horsley, barley and malt quality specialist Paul Schwarz, and research specialist Martin Hochhalter participated in barley nursery field days and craft malt house tours in New England.

"Craft brewing and craft malting are growing rapidly," says Schwarz, "and there is a great demand for local barley. NDSU varieties Conlon and Pinnacle are already being grown, and it appears that ND Genesis is well suited to some areas."

According to Horsley, "NDSU is a widely recognized center of barley expertise. Many growers we met in the northeast know growers in North Dakota from whom they are eager to learn about successful barley production." He hopes the collaborative research planned in Eastern locations will benefit maltsters and brewers nationwide.



Horsley



Schwarz



Hochhalter

Barley Field School

To ease an information vacuum in areas where barley has not recently been grown, Horsley and Schwarz, along with the North Dakota Barley Council, began offering field schools for those seeking information on how to successfully grow high quality malting barley and also basic malting and brewing information. The school covers information on botanical and physiological factors in barley growth, grain handling and storage information specific to malting barley, risk management and marketing, and practical advice from barley growers in North Dakota. The first school was offered in 2012 and attendance has increased steadily each year since.

In July 2015, twenty individuals from nine U.S. states, Canada and Norway attended the Institute of Barley and Malt Sciences Fourth Annual Barley Field School. The group included farmers planning to grow malting barley; emerging and established brewing and malting company employees and owners; educators and researchers; specialty grain marketers; and international malting and brewing entrepreneurs.

Presenters were experts from the NDSU Departments of Plant Sciences, Soil Science, Agriculture and Biosystems Engineering, Agribusiness and Applied Economics, and ND Founda-



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Variety, Germplasm Releases and Woody Plant Introductions

ND Genesis barley and ND Henson soybean were released by the North Dakota Agricultural Experiment Station (NDAES) in 2015. These two varieties, along with previous releases Joppa durum and Gold ND flax, were distributed for the first time through the North Dakota County Seed Increase Program in 2015.

The North Dakota Crop Improvement and Seed Association has a license agreement with the NDSU Research Foundation (NDSURF) to produce and distribute seed. For more information on these and other varieties, visit the ND Foundation Seedstocks website at www.ndfss.com.

In addition, the NDAES and NDSURF introduced two new woody plant selections developed by the NDSU Woody Plant Improvement program, and 13 new corn germplasm releases were made available.

ND Genesis Two-rowed Barley

Breeder: Richard Horsley



Released in early 2015, ND Genesis seems adapted to all parts of North Dakota and adjacent areas of Minnesota, Montana and South Dakota. It has high yield, large, plump kernels, some drought tolerance, improved resistance to the net and spot forms of net blotch, and good malt extract values. The testing of ND Genesis began in 2005 under the supervision of Professor Emeritus Jerry Franckowiak.

ND Henson Soybean

Breeder: Ted Helms



Released in early 2015, ND Henson is a conventional soybean variety intended to replace the NDSU-developed cultivar Cavalier. It has good defensive traits and performed well in the multi-state Uniform Regional Tests. ND Henson was named in honor of the late Bob Henson, who was an associate agronomist at the Carrington Research Extension Center.

Lavaburst™ Ohio Buckeye

Aesculus glabra 'LavaDak'

Project Leader: Todd West

Lavaburst™ Ohio Buckeye is a narrow, upright, northern hardy selection that maintains a bright green summer color, changing to a showy orange-red in autumn. Its compact growth habit makes it ideal for limited space planting sites where a full sized buckeye is not suitable. Recommended uses include landscapes, boulevards and golf courses.



September Flare™ Sugar Maple

Acer saccharum 'SeptDak'

Project Leader: Todd West

September Flare™ Sugar Maple is a very winter hardy selection noted for its early annual display of radiant orange-red to red fall color. Its color change is photoperiod initiated, not frost dependent, causing it to begin fall coloring before other trees in the landscape. It is suitable wherever tree diversity and adaptability to northern conditions are important.



Corn Inbred Lines

Breeder: Marcelo Carena



Thirteen new corn germplasm releases were made available in 2015. The releases are NDSSR (North Dakota Synthetic for Stiff Roots), NDS22 (NDSS22 for Amino Acid Quality Protein), NDS23 (NDS13HP for High Protein), NDS24 (NDS13HY for Yield and Fast Dry Down), NDS25 (NDSS17HY for Yield and Earliness), NDS26 (NDL17HY for Yield), NDS27 (NDS15HO for Oil Content), NDEarlyGEM32 (Exotic Adaptation from Temperate Argentina), NDEarlyGEM33 (Exotic Elite Adaptation from Tropical Brazil), NDEarlyGEM34 (Exotic Elite Adaptation from Tropical Caribbean), NDS57 (NDL18 for Grain Quality), NDS68 (NDSS1 for Adaptation and Female Inbred Lines), and NDS69 (NDSSRS for Recurrent Selection and Females).

Student Profile: Justin Zahradka



By Karen Hertsgaard

Justin Zahradka will graduate in May with a B.S. in Crop and Weed Sciences and will enter the working world with a huge log of practical experience. While a student at North Dakota State University, he participated in many student groups and National FFA, worked summers at Huso Crop Consulting in Lakota, ND, grew a cattle business from 20 to 173 steers at his home farmstead in Lawton, ND, and was selected to participate in United States Department of Agriculture Natural Resources Conservation Service research projects on various cover crops used as cattle feed.

Zahradka chose to major in Crop and Weed Sciences because it fit well with his established livestock and crop production operation. His favorite Department of Plant Sciences courses were *Principles of Weed Science* and *Advanced Weed Science*, taught by his major adviser Dr. Kirk Howatt, and *Principles of Forage Production*, taught by Dr. Marisol Berti. He also enjoyed the *Introduction to Soil Science* class taught by Dr. Jay Goos, which led him to minor in soil science. Courses in the Department of Animal Sciences complimented his growing cattle business and his favorites were *Growing/Finishing Cattle*, taught by Dr. Marc Bauer, and *Fundamentals of Meat Processing*, taught by Mr. Spencer Wirt.

Howatt commented that "Justin has al-

ways been very involved in his education as well as his professional development and was active in several organizations, including the Agronomy Club." Zahradka says he is amazed at the opportunities he's had participating in the Agronomy Club. He said, "I have been able to meet lifelong friends, travel, listen to guest speakers, and become aware of what is possible in the future of agriculture."

Zahradka also participated in Alpha Gamma Rho Fraternity, the College of Agriculture, Food Systems and Natural Resources Ag Ambassadors, the Saddle and Sirloin Club, and Collegiate Farm Bureau. He currently serves as President of Ag Ambassadors, has served as a State FFA Officer and was named National FFA American Star in Agriscience in October 2015.



Dr. Kirk Howatt (left) and Zahradka

After graduation he plans to return to his hometown and work for Midwest Consulting in Park River, ND as a crop production consultant. He will continue to expand his farming operation producing wheat, canola and cover crops and continue background feeding cattle and add a custom grazing component to his operation.

He has been recognized as a Farm Credit 100 Fresh Perspectives national honoree and his livestock production operation was used by the North Dakota Department of Agriculture to promote livestock production in North Dakota. He also

serves on the North Dakota Sustainable Agriculture Research and Education Advisory Board and has presented his cover crop research at soil health, grazing and cover crop workshops all over North Dakota.

Last summer Zahradka was featured in the Producer Progress Report series, a regular feature of the *Farm and Ranch Guide*. He said the experience was very satisfying and he appreciated the opportunity to share his cover crop research findings, which he hopes will help others improve their farming operations. "It is exciting that young farmers with innovative ideas can truly make a difference," he said. The series was written by Dale Hildebrandt.

Zahradka's advice to students entering NDSU and planning to study in the Department of Plant Sciences is, "Give everything a try; try lots of new activities and drop those you don't like."

He says he will miss the friendly instructors and students and the comradery of the down-to-earth people in the department. He enjoyed sharing common goals with friends in organizations and the challenge to learn to understand points of view different from his. He enjoyed being challenged and thinking on the "cutting edge" in the college environment. He says that the Department of Plant Sciences has a great atmosphere and created a sense of family that he will miss.

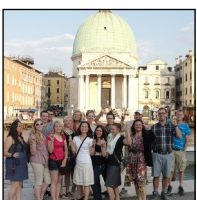


Zahradka presenting at a workshop

Study Abroad Opportunities

In recent years, undergraduate and graduate students have had several opportunities to enhance their learning through short term study abroad courses led by Department of Plant Sciences faculty.

Sustainable Agriculture & Renewable Energies in Europe



In the summers of 2013 and 2015, associate professor Marisol Berti led a study abroad course titled “Bioenergy Crops: The European View”.



Hoping that students will become ambassadors for new ways to use bioenergy in the U.S., the purpose of the course is to introduce students to bioenergy crop production in Europe, where students learned, observed, and experienced the production



and processing of major energy crops used for electricity, biodiesel and bioethanol, first and second generation biofuels in Germany, Austria, and Italy. While traveling through the historic European cities of Vienna and Graz, Austria; Stuttgart, Germany; Venice and Bologna, Italy, students experienced first-hand the bioenergy crop production and processing as it occurs in Europe.

In 2013, a group of eight undergraduate and eight graduate students from Agribusiness, Agricultural and Biosystems Engineering, Animal Sciences, and Plant Sciences participated in the course, which combined class time and bioenergy research site tours with tourist activities.

Key research facility visits in Austria included the European Center for Renewable Energy in Güssing, the Sonnenerde Biochar Production facility in Ried-

lingsdorf and the University of Hohenheim Bioenergy Center and Experiment Station. A week of classes were held at the University of Bologna in Italy.

Berti worked with European experts to plan the tours and class. She was assisted by Agricultural and Biosystems Engineering associate professor Dr. Scott Pryor.

In 2015, twelve students from Agricultural Economics, Agricultural Systems Management, Plant Sciences, and Soil Science joined Berti on a two-part European study abroad course. Eight students went along on the first part of the trip, which was spent in mainland Europe with stops in Italy, Austria and Germany. Four students joined the group on the second leg of the trip, which was spent in Scandinavia with visits in Finland, Sweden and Denmark. The students received instruction in bioenergy crops and processing, visited universities, toured research and experiment facilities, and toured bioenergy and sustainable agriculture sites.

Plant Sciences graduate student Jared Nelson summed up the experience by saying, “This has definitely been a very memorable trip, from learning about the bioenergy processes used, to the Europeans’ ways of agriculture, as well as making new friends. This trip has helped to give me a new perspective at work and on agriculture, but also has helped to give me a new perspective on life.”

Because of the well-rounded information and experiences covering all aspects of agriculture that they have been able to receive on their tours, Berti is planning to refocus future trips toward sustainable agriculture, in order to appeal to and benefit students from many agriculture majors. The 2016 course is named “Sustainable Agriculture and Renewable Energies in Europe”. To learn more, go to bit.ly/1RncBEJ.

The Food Industry in Southeast China

In the spring of 2015, nine students traveled to China with former Cereal and Food Sciences professor Deland Myers as part of the course titled “The Food Industry in Southeast China”. The purpose of the course was to learn about food processing and food safety in China.

The trip included tours of Cargill Food Technology Co., Ltd. in Pinghu, near Shanghai; Beijing Hormel Foods Co., Ltd.; Weiquan Dairy in Hangzhou; the Beijing Office of Emerson Electric (China); Smart Agricultural Analytics in Beijing; a tea plantation; and iconic sites such as Tiananmen Square, the Forbidden City and the Great Wall of China. The group also spent time with students and faculty at ZJTEP University in Hangzhou, where they met students who will be studying Food Safety at NDSU next year.



Highlights of their tours included meeting the Vice President of Emerson Electric (China), Mr. Scott Olson, who is an NDSU Electrical Engineering graduate, and touring the Hormel facility in Beijing. The Vice President of Operation at Hormel told the group that the employees in the facility were highly impressed with the group’s behavior and understanding of food safety.

In April, the students hosted an open house and gave presentations about their trip, sharing their impressions of China and highlights of their learning experiences. Photos of the open house and presentations can be viewed at <http://on.fb.me/1J198g0>.

Graduate Student Awards and Honors

Khalid Receives Award at National Meeting



Cereal Science Ph.D. student Hazila Khalid won the “People’s Choice Award” for best poster at the 2015 NC-213 Annual Meeting (The U.S. Quality Grains Research Consortium). This is the first year a graduate student poster competition was held during the meeting.

The title of Khalid’s poster was *Whole Wheat Milling of Hard Red Spring Wheat*. This was her first presentation in the U.S. She also was offered an opportunity to work on a cooperative research project with an international seed quality company while she completes her graduate degree.

Khalid is researching whole-wheat milling and bread quality, bran components and, genotype x environment effect on whole wheat bread quality. Her adviser is Senay Simsek, associate professor in wheat end quality. Other co-authors were Frank Manthey, professor in milling and durum end use quality and Jae-Bom Ohm, USDA adjunct professor.

Graduate Students Receive Travel Scholarships

Three graduate students received travel scholarships to attend national meetings in 2015. M.S. student **Amanda Crook** received a scholarship to attend the 99th annual meeting of the Potato Association of America. Ph.D student **John Stenger** and M.S. student **Abigail Debner** received scholarships to attend the American Society for Horticultural Science (ASHS) annual meeting.

Crook was selected for her scholarship based on the abstract for her oral



Crook

presentation, titled *Marketability and Seed Production Effects from Glyphosate Drift Injury to Red Norland Potato*.



Stenger

Students eligible for the ASHS scholarship must be enrolled in a horticultural science major, and must have submitted an abstract for an oral or poster presentation to be given during the ASHS annual conference.



Debner

Stenger presented a poster titled *Environmental Stability in the*

Fall Acclimation Response of Cold-hardy Interspecific Hybrid Wine Grapes. Debner gave an oral presentation titled *Rooting Single-node Floriscane Blackberry Cuttings*.

All three students are advised by Harlene Hatterman-Valenti, professor and high value crops specialist in Plant Sciences.

Debner Earns Certified Horticulturist Designation

Abigail Debner became an American Society of Horticultural Science (ASHS) Certified Horticulturist after passing a certification exam during the ASHS annual meeting. Individuals who earn this designation have demonstrated skill and knowledge in all areas of horticulture.

The four-hour exam, developed by industry experts, consists of 200 questions on topics such as landscape design and maintenance, plant production and propagation, diagnosing plant problems, business practices, and more.

To qualify for the Certified Horticulturist exam, applicants must have more than three years of experience or a corresponding level of experience and education. Continuing Education Units must be earned and reported to ASHS to maintain the certification.

Crook Receives Awards at National Meetings

Amanda Crook was awarded third place in the Frank L. Haynes Graduate Student Research Award competition during the Potato Association of America annual meeting. The award is given for outstanding student research presentations.

Thirteen graduate students from across the country participated in the competition. Cash awards and certificates were given to the top three presenters.

Crook also competed in the graduate student poster competition at the 70th Annual North Central Weed Science Society meeting. She was awarded second place in the Horticulture and Ornamentals division for her poster titled *Marketability Effects from Simulated Glyphosate Drift Injury to Red Norland Potato*.

Malalgoda Wins Best Research Award



Maneka Malalgoda won first place in the Best Student Research Paper competition at the American Association of Cereal Chemists International Centennial Meeting in October. She was one of six finalists from around the globe who competed for the distinguished award.

“Maneka was able to present her work in a clear and succinct manner to the audience, which was made up of scien-

tists in many different areas of cereal science research,” said her adviser Senay Simsek.

Maneka is a Cereal Science M.S. candidate. Simsek is the Bert L. D’Appolonia Cereal Science and Technology of Wheat Endowed Associate Professor in the Department of Plant Sciences.

Malalgoda and Simsek collaborated with Steven Meinhardt, associate professor in the Department of Plant Pathology, and Jae-Bom Ohm, USDA adjunct professor affiliated with the Cereal Science graduate program, when conducting the research.

Malalgoda’s research is titled *Spring wheat gliadins: Have they changed in 100 years?* The study looked at 30 hard red spring wheat cultivars released in North Dakota during the last century. In her research, Malalgoda focused on two main questions. First, she examined how protein composition changed over the years and how wheat quality

changed in relation to changes in protein composition. Second, she looked at protein fragments or “immunogenic peptides” related to celiac disease. The objective of this second portion of the study was to see if there is a change in the amount of these peptides over the years.

According to Malalgoda, the results of her research were interesting, since they indicated that a certain protein fraction called omega-gliadins may have a positive influence on dough quality. With regard to the “immunogenic peptides,” they discovered that these protein fragments are found in both historical and modern spring wheat cultivars, which dispels claims that breeding practices have changed wheat protein chemistry and claims that modern wheat cultivars are more immunogenic in terms of celiac disease than older varieties.

NDSU Ag Week

Celebrating NDSU's Roots

April 11-16, 2016

Schedule

Monday: Kick-off Cookout

Tuesday: Poster Session
GMO Discussion Panel

Wednesday: Ag Movie Day

Thursday: Ag Olympics
Chili Cook-Off

Friday: Ag Week Banquet

Saturday: Fun Run/Walk and
Brunch

Stay up-to-date
on Facebook:

[The NDSU Agriculture Coalition](#)

2015 Ph.D. & M.S. Graduates

Ph.D.

Danqiong Huang (*Plant Sciences, Dai*)
B-Mihiri Mendis (*Cereal Science, Simsek*)
Xianwen Zhu (*Plant Sciences, Cai*)
Samira Mafi Moghaddam (*Genomics, McClean*)
Gerardo Gracia Gonzalez (*Cereal Science, Simsek*)
Ahmed ElFatih ElDoliefy (*Plant Sciences, Mergoum*)
Qun Sun (*Genomics, S. Xu*)
Naiyuan Dong (*Plant Sciences, Carena*)
Sintayehu Daba (*Plant Sciences, Horsley*)
Renata Jung (*Plant Sciences, Horsley*)
Santosh Sharma (*Plant Sciences, Carena*)



M.S.

Craig Carlson (*Plant Sciences, West*)
Roshan Sharma Poudel (*Plant Sciences, Marais*)
Etsehiwot Gebreselassie (*Cereal Science, Hall*)
Martin Hochhalter (*Plant Sciences, Horsley*)
Simerjot Virdi (*Genomics, McClean*)
Tyler Larson (*Plant Sciences, Marais*)
Ratko Balic (*Cereal Science, Simsek*)
Elina Adhikari (*Plant Sciences, McPhee*)
Rachel McArthur (*Plant Sciences, Cai*)
Ryan Buetow (*Plant Sciences, Kandel*)
Kellie Podliska (*Plant Sciences, Ransom/Knodel*)
Adriana Rodriguez (*Plant Sciences, Thompson*)
Juan Franco Coronado (*Plant Sciences, West*)



Undergraduate Student Awards and Honors

Pederson Awarded Mid America CropLife Scholarship



Photo by Megan Fridgen

Matthew Pederson, a junior crop and weed sciences major from Wheaton, MN was awarded the Mid America CropLife Association (MACA) Young Leader

Scholarship.

The scholarship program is designed to expose future agriculturists to the crop protection industry and future career opportunities. Candidates for the scholarship must be enrolled in an agriculture-focused program at one of the 13 Land-Grant Universities and have secured a summer internship within agriculture, preferably in the crop protection industry. One scholarship is awarded per university.

Pederson interned at Riverview Dairy in Morris, Minn. He worked as a production agriculture intern with forage crops used in dairies and feedlots. In September, he attended the MACA annual meeting in Chicago, Illinois, where he and the other scholarship recipients presented on their internship experiences.

Students Named in College of Ag Top Ten Seniors

Nathan Jahnke and **Hannah Barrett** were among the students honored as Top Ten Seniors by the College of Agriculture, Food Systems and Natural Resources at the inaugural NDSU Ag

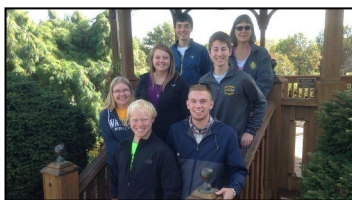


Jahnke (center) and Barrett (second from right) with fellow Top Ten Seniors. (Photo credit: CAFSNR)

Week Banquet. Selection for the award is based on the student's GPA, leadership, community service, awards and honors, and work, internship and scholarly activities. Jahnke and Barrett each graduated in December 2014 with a B.S. in Horticulture.

Horticulture/Forestry Club Ranks High in Competition

Six students representing the NDSU Horticulture and Forestry Club at the Mid America Collegiate Horticulture Society (MACHS) conference and competition held at Iowa State University in October won seven individual awards and placed second in the team competition.



Front to back, left to right: Scheldorf, Swanson, Stephens, Jones, Carda, Hagemeyer, Hatterman-Valenti

Connor Hagemeyer, a freshman horticulture major from Clara City, MN, took first place in woody plant identification, placed second in herbaceous plant identification, and was first overall individual.

Meredith Swanson, a senior horticulture major from Upsala, MN, took first place in the general knowledge exam, tied for third in herbaceous plant identification, and was third overall individual.

Mitch Stephens, a senior horticulture major from Sioux Falls, SD, tied for third place in woody plant identification.

Swanson, Stephens, Torie Jones, a junior horticulture and public history double major from Fessenden, ND, and

Andrew Scheldorf, a sophomore horticulture major from Chokio, MN, made up the second place overall team, missing first place by only two points.

"It's the first time since I've been [at NDSU] that they've placed as a team," said Horticulture and Forestry Club co-adviser Harlene Hatterman-Valenti. Todd West is also a club co-adviser.

Jones was elected the Communications Officer for the MACHS officer team during the organization's business meeting.

Ryan Carda, a freshman agriculture and biosystems engineering major from East Bethel, MN, also competed for NDSU.

In addition to the competition, the conference agenda included a speaker; tours of the ISU campus, greenhouse, horticulture research farm, and display gardens; and visit to the Iowa State Arboretum, the Des Moines Botanical Gardens, and the USDA North Central Plant Introduction Station.

The MACHS is comprised of horticulture clubs from universities and two-year colleges in Midwest Region states. The fall conference is hosted by a different school each year, bringing together some of the best and brightest horticultural programs in the nation.

Patrie Receives Garden Club Scholarship



Jillian Patrie was the recipient of a scholarship from the Green Thumb Garden Club of Casselton, ND. For the last five years the group

has held a Pie Day at Casselwood Retirement Center in Casselton to raise money for the scholarship, which is given to a horticulture student chosen

by the NDSU Horticulture faculty.

Patrie is a senior horticulture major from Moorhead, MN, with an emphasis in production business.

Scegura Awarded Third Place in NDSU Explore Showcase



Crop and Weed Sciences senior **Amy Scegura** was awarded third place in the morning poster session of the NDSU Explore undergraduate research showcase in November. Her

poster presentation, titled *Effect of Simulated Hail Treatment on Yield Loss in Chickpea*, was based on research she began during her 2015 summer internship with Kevin McPhee, Plant Sciences professor and pulse crops breeder.

The study evaluated the amount of damage from simulated hail exposure on chickpea and its effect on yield. Results indicated that hail events later in the growing season with an increased level of damage reduced seed yield. Data from this research will aid crop adjusters to quantify hail damage

in chickpea fields at certain growth stages.

Scegura is from Avon, MN and graduated with her Bachelor's degree in December 2015. She is pursuing an M.S. in Plant Sciences with an emphasis in Plant Breeding and Genetics at NDSU.

The annual NDSU Explore event is sponsored by the Office of Research and Creative Activity. It is an opportunity to recognize and showcase the research and scholarly activity of NDSU's undergraduate students.

Summer Interns

Plant Sciences Undergraduate Summer Research Fellowship Intern

Amy Scegura is from Avon, MN. She completed her undergraduate degree at NDSU in Crop and Weed Sciences prior to her internship with Dr. Kevin McPhee in pulse crop breeding. She is pursuing an M.S. in Plant Sciences under Dr. McPhee's advisement.



University of Puerto Rico Mayagüez Summer Research Fellowship Interns



NDSU Summer STEM Program Summer Research Interns

- ◆ **Tamika Qualls** is a biology major from Virginia State University. She worked with Dr. Cliff Hall.
- ◆ **Ashley Henderson** is a biology major/chemistry minor from Virginia Prairie View A&M University. She worked with Dr. Kalidas Shetty.



- ◆ **Gustavo Reyes-Ramirez** is an undergraduate student in horticulture from Carolina, P.R. He worked with Dr. Todd West in woody plant improvement.
- ◆ **Diana Carolina Coronell-Tovar** is an M.S. student in food science and technology from Cali, Colombia. She worked with Dr. Frank Manthey in durum and pasta quality and Dr. Cliff Hall in pulse quality.
- ◆ **Juan Nieves-Christie**, from Carolina, P.R., completed his M.S. in food science and technology. He worked with Dr. Senay Simsek in wheat quality.



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From the Department Head (continued)

(Continued from page 1)

atory in Loftsgard Hall in the space that formerly housed growth chambers. The growth chambers were moved to the new AES Greenhouse. Courses to be taught in the new classroom beginning next fall include the labs for PLSC 110 (World Food Crops), PLSC 215 (Weed Identification), PLSC/BOT/BIOL/ZOO 315L (Genetics Lab), and PLSC 320 (Principles of Forage Production). In total, the new classroom will be occupied with lab classes nearly 40 hours each week. Pictures of progress on the new classroom are posted on our Face-

book page and will continue to be updated throughout the project.

Our department and its programs continue to grow. We currently have nearly 150 full-time benefitted employees, including 44 faculty members. Student-wise, we have over 300 undergraduate students in our four programs and over 100 students in our three graduate programs. Our undergraduate Food Science program was recently selected as the Best Value Food Science Program nationally by *College Values Online*.

As I finish this update, it is April 19 and we are receiving a needed rain. On the barley breeding project, we already have our Williston, Nesson Valley, Minot, and Carrington yield trials planted. The rain gave us a bit of a reprieve to get our seed from our Yuma, Arizona winter nursery cleaned and packaged for planting in Fargo, McVille, and Osnabrock. To everyone with field activities, I hope you have a safe and successful season.



Faculty and Staff Awards and Honors (continued)

(Continued from page 5)

Employees Recognized at Annual Awards Program

Ten Department of Plant Sciences faculty and staff were nominated for NDSU Agriculture and Extension Faculty/Staff Awards, with one winning an award. The program honors employees in the College of Agriculture, Food Systems, and Natural Resources (CAFSNR).



L to r: Kalb, Johnson, Beeson, Rue, McPhee, Robinson, Manthey. Not pictured: Hall, Hanson, Oliver.

Johnson, professor; Thomas Kalb, Extension horticulturist; Frank Manthey, professor; Kevin McPhee, professor; Rebekah Oliver, assistant professor of practice; Andrew Robinson, Extension potato agronomist; and Kevin Rue, research specialist.

Congratulations and awards were presented by President Dean Bresciani; Provost Beth Ingram; Vice President for Agricultural Affairs and Dean of CAFSNR Kenneth Grafton; Associate Dean for Academic Programs in CAFSNR David Buchanan; and the Director of the NDSU Extension Service Chris Boerboom.

Office Staff Receives Team Award

The Plant Sciences administrative secretaries and accounting team was awarded the 2015 Staff Recognition Team Award at a Staff Senate sponsored recognition event in April. Team members are Kamie Beeson, Eileen Buringrud, Cora Crane, Louise Heinz, Michelle Grant, Starr Thies and Lisa Johnson. Fellow team member Shannon Ueker submitted the nomination.



L to r: Thies, Crane, Grant, Heinz, Buringrud, Johnson, Ueker, Beeson



Kamie Beeson, information processing specialist, won the Donald and Jo Anderson Staff Award. This award recognizes significant contributions to the mission of NDSU Agriculture and Extension by clerical staff.

Other Plant Sciences nominees were Clifford Hall, professor; David Hanson, agricultural research technician; Burton

Barley (continued)

(Continued from page 8)

tion Seedstocks.

Tours were conducted of the NDSU Agricultural Experiment Station Greenhouse, the Barley and Malt Quality Labs, the Barley Pathology Nursery and research plots, the Commodity Trading Room, a commercial elevator facility and a small grain farm in central North Dakota.

Barley and Malt Short Course

High attendance at the October barley and malt short course, *Barley and Malt-ing Quality: A Field to Brewhouse Perspective*, is evidence of changes in the malting and brewing industries in the U.S. The course was offered by the NDSU Institute of Barley and Malt Sciences, the Northern Crops Institute and the Master Brewers Association of the Americas.

Course attendees included close to 30 current or aspiring maltsters, brewers, growers and craft distillers from 12 different states seeking basic and technical information on barley and malting and factors impacting barley and malt quality. Many had little or no experience with sourcing and malting locally grown barley, in many cases simply because barley is not currently grown in their area of the country.



Photo by Northern Crops Institute

Lectures, discussion sessions and laboratory demonstrations helped participants understand malt processing and

how to effectively interpret barley and malt analyses. Well respected experts from Rahr Malting, Valley Malt, Ecolab, the North Dakota Barley Council, and NDSU presented information.

Mark Weber of the Northern Crops Institute said, "This course is invaluable to anyone wanting to learn about malting and brewing from technical experts, especially for anyone who is new to brewing and malting."

Course director Paul Schwarz said, "The assemblage of so many barley experts in one place and with experience in all areas of malting and brewing operations is truly invaluable to anyone working in the malting and brewing industry."

Visit www.ag.ndsu.edu/ibms/education for information on past and future barley and malting courses.



Find more news on our website! www.ag.ndsu.edu/plantsciences/news

Plant Sciences: www.ag.ndsu.edu/plantsciences

Cereal Science: www.ag.ndsu.edu/cerealscience

Food Science: www.ag.ndsu.edu/foodscience

Social Media Highlights

The Department of Plant Sciences social media outreach continued to increase throughout 2015.

As of publication time, the Plant Sciences Twitter page is followed by 508 people, a 70 percent increase from last year, and the Facebook page has 948 followers, a 37 percent increase.

The most popular stories included student profiles, recognition and awards for faculty, staff and students, and professional conference activities.

One of our faculty, Extension Horticulturist Esther McGinnis, saw one of her posts go viral this year. Just before Valentine's Day, she posted a photo of a heart shaped box of succulents on the Extension Lawns, Gardens and Trees Facebook page (www.facebook.com/NDSUExtLGT). The post reached 713,984 people and inspired 2,000 likes, 8,911 shares, and 245 comments.

Remember, you do not need a Facebook or Twitter account to view these pages. They are publicly available!



[facebook.com/](https://www.facebook.com/NDSUPlantSciences)

[NDSUPlantSciences](https://www.facebook.com/NDSUPlantSciences)



[twitter.com/](https://twitter.com/NDSUPlantSci)

[NDSUPlantSci](https://twitter.com/NDSUPlantSci)

Alumni Spotlight



Jason Eckert

Degree: B.S. in Food Science

Year Graduated: 1993

Adviser: Dr. Bert Moore

Current Position: SVP of Global Research, Development & Quality at Leprino Foods, Denver, CO

How has NDSU Plant Sciences contributed to where you are today?

“The food science and microbiology programs gave me a great foundation for my career in quality and research. The staff was instrumental in helping me secure work experiences while I was in school and my first job at Dakota Growers Pasta Company.”

We want YOU for our next Alumni Spotlight!

If you are an alumnus of NDSU Plant Sciences or Cereal and Food Sciences, we would like to hear from you! Visit our alumni page (www.ag.ndsu.edu/plantsciences/alumni) to submit an update form. Tell us about your experience at NDSU, include a photo, and indicate your permission to use it in our news and social media outlets.

In Memoriam

Clarence E. McDonald

Retired NDSU Cereal Science and Food Technology professor Dr. Clarence E. McDonald passed away in Marquette, Kansas. His funeral was held June 23, 2015. McDonald worked in Cereal Science and Food Technology from the 1960s to the early 1990s. He was hired to conduct research in wheat proteins and teach at the graduate level. He was a member of the American Association of Cereal Chemists.

James S. Quick

Former Plant Sciences associate professor Dr. James S. Quick passed away July 5, 2015 in Fort Collins, Colorado. Quick received his B.S. degree from NDSU and returned to research and teach after completing his M.S. and Ph.D. degrees in plant breeding and genetics at Purdue University. During his time at NDSU, he researched durum wheat breeding. He left NDSU for Colorado State University in 1981.

James R. Liedahl

Retired agricultural research technician James R. Liedahl passed away February 11, 2016. Liedahl was hired in 1969 to work in the hybrid wheat project with wheat breeder Dr. Karl Lucken. He worked in the department 20 years and retired in 1989.



Newsletter Archive

Take a stroll down memory lane with the newly posted *Blizzard Watch* newsletter online archive! Former department chair Dr. Jack F. Carter began the annual department newsletter in 1967, and the tradition has continued every year since. In 1989 the newsletter was named the *Blizzard Watch*. The archived issues contain all the significant happenings in the department over the years. We are missing only one issue - 1977. If you have saved past issues that far back, we would love to copy or scan it to complete our collection! Contact Kamie at 701-231-7123 or kamie.a.beeson@ndsu.edu.

Don't miss out on the next issue! Use the form on the next page to update your contact information or complete the form on our website—be sure to include your e-mail address. When the next issue of the *Blizzard Watch* is published online, you will be notified by e-mail. If you know someone who would like to receive the *Blizzard Watch*, please forward this information to them. We appreciate your help and we look forward to keeping in touch!

The *Blizzard Watch* newsletter and archive is online!
www.ag.ndsu.edu/plantsciences/news/newsletter

2016 Field Days Research Extension Centers

June 28 – Canola Field Day, North Central REC
July 11 – Central Grasslands REC, Streeter
July 12 – Hettinger Research Extension Center
July 13 – Dickinson Research Extension Center
July 14 – Williston Research Extension Center
July 15 – Nesson Valley - Irrigation, Williston
July 18 – Agronomy Seed Farm, Casselton
July 19 – Carrington Research Extension Center
July 20 – North Central REC, Minot
July 21 – Langdon Research Extension Center

Let's Keep in Touch!

We would like to hear what you are up to now and update your contact info so we can keep in touch. Please take a moment to fill out and mail or fax this form to our office, or go to our website to complete the form. We look forward to hearing from you!

First Name _____ Last Name _____

Last Name used while at NDSU (if different from above) _____

Grad. Year _____ Degree _____ Discipline _____ Adviser _____

Email _____

Current Position/Title _____

Company/Organization _____

Department _____

Preferred mailing address _____

City/Locality _____ State/Province _____

Postal Code _____ Country _____

This is my Home Address Work Address (check one)

Preferred phone number (optional) _____

This is my Mobile Phone Home Phone Work Phone (check one)

Comments:

Please mail or fax this form to:

Dept. of Plant Sciences
NDSU Dept. 7670
PO Box 6050
Fargo, ND 58108-6050
Fax: (701) 231-8474

To submit this form online, go to:

www.ag.ndsu.edu/plantsciences/alumni

Plant Sciences Faculty

Richard D. Horsley	Dept. Head and Professor (6-rowed and 2-rowed barley breeding, genetics)
Marisol Berti	Associate Professor (forages and biomass crop production)
Chris Boerboom	Director, NDSU Extension Service and Professor (weed science)
Xiwen Cai	Professor (wheat genetics and cytology, genetics teaching)
Marcelo J. Carena	Professor (corn breeding, genetics)
Bingcan Chen	Assistant Professor (food and cereal chemistry)
Michael J. Christoffers	Associate Professor (weed science, genetics teaching)
Wenhao (David) Dai	Associate Professor (woody plant physiology, biotechnology)
Edward L. Deckard	Professor (crop physiology)
Elias M. Elias	University Distinguished Professor, J.F. Carter Durum Wheat Breeding/Genetics Endowed Professor (durum wheat breeding)
Kenneth F. Grafton	VP for Ag. Affairs; Dean, College of AFSNR; Director, NDAES (dry bean breeding)
Greta Gramig	Assistant Professor (weed science)
Clifford Hall, III	Professor (flaxseed, antioxidants, phytochemical stability in food systems)
James J. Hammond	Professor (flax and crambe breeding, biometrics, computer programming)
Harlene Hatterman-Valenti	Assistant Dept. Head and Professor (high value crop production)
Theodore C. Helms	Professor (soybean breeding, genetics)
Kirk A. Howatt	Associate Professor (weed science-annual weeds)
Burton L. Johnson	Professor (sunflower, minor and new crop production)
Thomas Kalb, II	Extension Horticulture Specialist (western ND)
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Chiwon W. Lee	Professor (greenhouse production, vegetable culture and breeding)
Deying Li	Associate Professor (sports turf management)
Xuehui Li	Assistant Professor (statistical genomics)
Rodney G. Lym	Professor (perennial weed control)
Frank A. Manthey	Professor (durum and pasta quality)
G. Francois Marais	Associate Professor (hard red winter wheat breeding, genetics)
Phillip E. McClean	Professor (dry bean genetics, biotechnology)
Esther McGinnis	Assistant Professor (Extension horticulture)
Michael S. McMullen	Professor (oat breeding, genetics)
Kevin McPhee	Professor (pulse crop breeding)
Rebekah Oliver	Assistant Professor of Practice (genetics)
Juan M. Osorno	Associate Professor (dry edible bean breeding)
Tom Peters	Assistant Professor (Extension agronomist, sugarbeet/weed science)
Mukhlesur Rahman	Assistant Professor (canola breeding, genetics)
Joel K. Ransom	Professor (Extension agronomist, small grains and corn)
Jiajia Rao	Assistant Professor (food chemistry and ingredient technology)
Andrew Robinson	Assistant Professor (Extension agronomist, potato production)
Paul Schwarz	Professor (malting barley quality)
Kalidas Shetty	Assoc. VP for International Partnerships; Professor (plant metabolism, food security)
Senay Simsek	Bert L. D'Appolonia Endowed Associate Professor (hard red spring wheat end quality)
Asunta (Susie) L. Thompson	Associate Professor (potato breeding)
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Richard K. Zollinger	Professor (Extension weed control)
Alan Zuk	Associate Professor (sports and urban turfgrass management)

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Dennis Gordon
Khalil Khan

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Arthur A. Boe
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Adjunct Faculty (*USDA)

James V. Anderson* (plant biochemistry)
Larry G. Campbell* (sugarbeet genetics)
Patrick M. Carr (sustainable agriculture)
Shiaoman Chao* (genomics)
Wun S. Chao* (perennial weeds)
Justin Faris* (cereal crops)
Michael E. Foley* (weed biology)
Karen L. Fugate* (sugarbeet physiology)
David P. Horvath* (perennial weed physiology)
Khwaja Hossain (wheat germplasm enhancement)

Brent Hulke* (sunflower breeding and genetics)
Chao C. Jan* (sunflower cytogenetics)
Brian Jenks (weed science)
Ed C. Lulai* (potato physiology)
Michael Ostlie (crop production)
Lili Qi* (molecular genetics)
Gerald J. Seiler* (sunflower and sugarbeet germplasm)
Jeffrey C. Suttle* (potato physiology)
Steven Xu* (hard red spring wheat development)

Beijing Forestry University, China

Liebao Han (turfgrass science)

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Russell Gesch (oilseed crops)

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James Beaver (dry, edible beans)

Bryan Brunner (tropical/subtropical crops)

Raul Macchiavelli (statistics/biometry)

Timothy Porch (dry bean breeding, genetics)

Linda Wessel-Beaver (squash, pumpkin)

Postdoctoral Research Fellows

Jawahar Jyoti (barley genetics)
Ajay Kumar (hard red spring wheat breeding/genetics)
Zhao Liu (sunflower germplasm development)
Yunming Long (sunflower germplasm development)
Samira Mafi Moghaddam (legume genetics/genomics)
Seyed Pirseyedi (hard red winter wheat pre-breeding)

Dipayan Sarkar (plant metabolism, food security)
Stephan Schroder (dry bean genetics)
Ali Soltani (dry bean breeding & genetics)
Zahirul Talukder (sunflower germplasm development)
Hongxia Wang (sunflower doubled haploid production)
Qijun Zhang (wheat stem rust resistance)

Research and Support Staff

Matthew Abdallah (hard red spring wheat breeding)
Jason Adams (Extension weed control)
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Collin Auwarter (high value crop production)
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Joyana Baumann (Foundation seedstocks)
Kaitlin Beck (wheat quality)
Alan Bingham (potato production)
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Jason Fiedler (statistical genomics)
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James Gillespie (barley quality)
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Dave Hanson (soybean breeding)
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Michael Klobberdanz (dry bean breeding)
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Kueh Fei Fernandez	MS	Manthey	Andrew Lueck	MS	Peters
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Cassandra Hillen	MS	Hall	Te-ning Ma	MS	Cai
Ramon Huerta Zurita	PhD	Schwarz	Oleksandr Maistrenko	MS	Bergholz
Amber Kaiser	PhD	Hall	Carlos Maldonado Mota	MS	Osorno
Joseph Kallenbach	MS	Hall	Aurora Manley	MS	Marais
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			Md. Mizanur Rahaman	MS	Rahman
			Theresa Reinhardt	MS	Zollinger
			Shuangfeng Ren	PhD	Cai
			Daniel Restrepo Montoya	PhD	McClellan/Osorno
			Jose Rivera	MS	Horsley
			Kevin Rue	MS	Zhang
			Jyoti Saini	PhD	Faris/McClellan
			Evan Salsman	MS	Elias
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			Amy Scegura	MS	McPhee
			Michael Schaefer	MS	McPhee
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			Jose Vasquez	PhD	Osorno
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