NDSU
PLANT SCIENCES
CEREAL SCIENCE
FOOD SCIENCE

2013 Year in Review

In this issue

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From the Department Head

Dr. Richard Horsley

Many of you may be keeping up with the department's research, teaching and Extension activities through our website, Facebook page, or Twitter posts. If you are not, but would like to keep up with the latest news and photos, see the addresses at the bottom of this page to access our website, Facebook and Twitter pages. These social media posts include many more pictures than we could include in the annual *Blizzard Watch*. In addition to pictures, a goal of ours is to use the social media pages to provide timely introductions to our new faculty and short write-ups on some of our current undergraduate and graduate students and alumni.

2013 was a year of growth for the department and another where many of our faculty, staff and students were recognized with awards for their service. In July 2013, the School of Food Systems was dissolved and its undergraduate program in Food Science and graduate program in Cereal Science were consolidated into Plant Sciences. Two tenured faculty in the former School, Drs. Deland Meyers and Cliff Hall, were also consolidated into Plant Sciences.

Four of the faculty that teach and/or advise students in the Cereal Science program, Drs. Frank Manthey, Paul Schwarz, Kalidas Shetty, and Senay Simsek, were already faculty members in Plant Sciences. The consolidation of the Food and Cereal Science programs into Plant Sciences allows us to teach and conduct research on all aspects of food production, *"from plants to plates."* Page 10 includes a section dedicated to the activities of our Food Science and Cereal Science programs.

In her sixth year of employment at NDSU in 2013, Dr. Senay Simsek was awarded tenure and promoted to associate professor, awarded the American Association of Cereal Chemists Young Scientist Award, and named the first recipient of the Bert L. D'Appolonia Endowed Associate Professorship in Cereal Science and Technology of Wheat. This endowed professorship recognizes Dr. Simsek's tremendous accomplishments in her short time at NDSU and Dr. D'Appolonia's accomplishments and career at NDSU as a world-renowned wheat cereal chemist. The many awards and accomplishments of other faculty, staff, and students also are provided in this year's *Blizzard Watch*.

In 2013, we saw the retirement of three research support staff that had a combined length of service to NDSU of 90 years. Page 5 summarizes the accomplishments of Duane Wanner (potato breeding), Gloria Nygard (hard red spring wheat quality), and Larry Martin (soybean breeding). Faculty members that left the department to pursue other career goals include Drs. Shahryar Kianian, Jeff Stachler, Farhad Ghavami, and M. Javed Iqbal. A new faculty hire to the department was Dr. Esther McGinnis, who started about one year ago as an assistant professor and Extension horticulturist. Dr. McGinnis is taking over the Extension horticulturist responsibilities following the retirement of Dr. Ron Smith in December 2012. In his retirement, Dr. Smith continues to teach his fall course *History and Evolution of Wine in America* to outstanding student reviews.

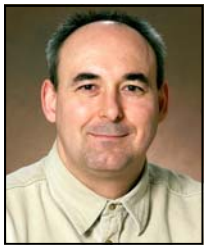
(Continued on page 17)

Faculty Additions and Updates

Dr. Kalidas Shetty joined NDSU in January as Associate Vice President of Global Outreach and Professor in Plant Sciences. His area of emphasis is plant metabolism and food security. Shetty received his B.S. in agricultural science from the University of Agricultural Sciences in Bangalore, India, and his M.S. and Ph.D. in bacteriology and microbiology, respectively, from the University of Idaho, Moscow. Prior to joining NDSU, he was a professor in the Department of Food Science at the University of Massachusetts, Amherst. His passion and commitment is to focus on new innovations to advance global food security on a crops for health and sustainability platform, and he is working toward that end by developing close collaborations between NDSU and institutions in several regions of the world from Asia, Africa and Europe, to the Americas.

Dr. Esther McGinnis joined NDSU Plant Sciences in April as an Assistant Professor and Extension Horticulturist. One might say her path to a horticulture career was a little circuitous. She received a B.A. from Concordia College, Moorhead, MN, and a J.D. from the University of Minnesota Law School, and then practiced law in St. Paul for nine years. After realizing that horticulture was her passion, McGinnis enrolled in the Applied Plant Sciences program at the University of Minnesota, where she earned her M.S. and Ph.D. degrees. Her Ph.D. research focused on the environmental manipulation of flowering in the native sedge *Carex pensylvanica*. In her role at NDSU, McGinnis advises county Extension agents and coordinates horticultural programs in the eastern half of North Dakota, as well as oversees the North Dakota Master Gardener program. In addition, she hopes to continue her research studying the propagation and use of natives in the ornamental landscape.

Two current NDSU faculty members joined the department this fall when Cereal and Food Sciences was joined with Plant Sciences.



Dr. Clifford Hall is an Associate Professor in Cereal and Food Sciences. He received his B.S. from the University of Wisconsin, River Falls, and his M.S. and Ph.D. from the University of Nebraska, Lincoln, all in food science. He began his career at NDSU in 1998 and has served as the Food Science Undergraduate Program Coordinator since 2002. He also served as Interim Associate Director of the Great Plains Institute of Food Safety from 2009 to 2012. His area of research is food crop utilization, which focuses on the chemistry and processing of raw commodities, including flaxseed, pulses and edible beans, soybean, and sunflower.

Dr. Deland Myers, Sr. is a Professor in Cereal and Food Sciences. He received his B.S. in biology from the University of Missouri, Kansas City, and his M.S. and Ph.D. in food technology from Iowa State University. He joined NDSU in 2007 as Director of the School of Food Systems and also serves as Director of Academic Diversity Recruitment and Faculty Athletic Representative. His research interests include the utilization of cereal, legume, and pulse crops in food and nonfood applications.

Dr. Michael Ostlie joined NDSU in April as an adjunct faculty member of Plant Sciences. He is a research agronomist at Carrington Research and Extension Center, with responsibility for oversight of the agronomy research program and conducting research with a focus on weed science, plant health and minor crops. He received his B.S. in crop and weed sciences and his M.S. in weed science at NDSU. He completed his Ph.D. in weed science at Colorado State University.

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Simsek Awarded First Bert L. D'Appolonia Endowment

The first North Dakota State University Bert L. D'Appolonia Endowed Associate Professorship in Cereal Science and Technology of Wheat has been awarded to Senay Simsek.

Simsek is a spring wheat chemist and associate professor in the NDSU Plant Sciences Department. She joined the department in 2007.

"In her short time at NDSU, Simsek has built a strong research program that is recognized internationally," says Rich Horsley, professor and Plant Sciences Department head. "She has been very successful in obtaining grants to outfit a laboratory that had minimal analytical equipment when she arrived on campus to one that is fully equipped to address research problems associated with carbohydrate chemistry and wheat quality. Grant funding also was used to support a mix of service- and research-related projects."

Simsek has published 47 peer-reviewed journal articles since coming to NDSU and has published more than 60 abstracts describing research that will lead to additional peer-reviewed publications.

In 2011, Simsek was awarded the Larson/Yaggie Excellence in Research Award. That award goes to an NDSU researcher with 10 or fewer years of service. Her other awards include the Andersons Early-in-Career Award of Excellence from the NC-213 U.S. Quality Grains Research Consortium and the 2013 AACCI Young Scientist Research Award from the American Association of Cereal Chemists International.

The endowment is named after Bert L. D'Appolonia, who was a faculty member at NDSU from 1963 through 1993. He retired as a professor and chairman of the Department of Cereal and Food Sciences. He is recognized worldwide as an expert in cereal chemistry and end-use quality of hard red spring wheat. He has served as a consultant to the U.S. Wheat Associates and North Dakota Wheat Commission since 1978. He also gave presentations on hard red spring wheat end-use quality and his research findings to personnel in more than 70 countries.

"Receiving the D'Appolonia endowment is such an amazing honor," Simsek says. "Dr. D'Appolonia is not only a cereal scientist known worldwide, but also a great mentor. This is an important step in my career at NDSU, so I am very excited about it. Today, I am more committed than ever to the NDSU community that has brought me so much joy and success."

Simsek earned her bachelor's degree in chemistry from Bulent Ecevit University in Turkey and her doctorate in food science from Purdue University.

Reprinted from NDSU Agriculture Communication, August 15, 2013 (http://bit.ly/PYrcPo)

Faculty Promotions

Five faculty in the Department of Plant Sciences earned promotions in 2013.

Juan Osorno and **Senay Simsek** were promoted to Associate Professor with tenure. Osorno has been the dry bean breeder/geneticist at NDSU since 2007. Simsek has worked as the hard red spring wheat end quality program leader at NDSU since 2007.

Hans Kandel and **Kevin McPhee** were promoted to Professor with tenure. Kandel has been the Extension agronomist in broadleaf crop production at NDSU since 2007. McPhee has worked as the pulse crop breeder at NDSU since 2008.

Harlene Hatterman-Valenti was promoted to Professor. She has worked as the high value crop production program leader at NDSU since 2000 and serves as the assistant department head.

Juan Osorno

Senay Simsek

Hans Kandel

Kevin McPhee

Harlene Hatterman-Valenti

Staff Additions and Updates

We welcomed several new staff members in 2013 and other staff members had a change in position.

Postdoctoral research fellows to join the department include **Dr. Dipayan Sarkar**, who works in plant metabolism and food security with Kalidas Shetty; **Dr. Stephan Schroder**, who works in dry bean breeding with Juan Osorno; and **Dr. Jichong Zhang**, who works in sunflower cytogenetics with Chao C. Jan at the USDA-ARS Northern Crop Science Lab.

Several new research and support staff joined the department. **James Perleberg** joined the department as a chemist in durum and pasta quality with Frank Manthey. **Michael Kloberdanz** was hired as a research specialist in dry bean breeding with Juan Osorno. **Jerry Gee** and **Brock Fagerstrom** were hired as ag research technicians in soybean breeding with Ted Helms. **Brad Schmidt** joined the department as a research specialist in hard red spring wheat breeding with Mohamed Mergoum. **Greg Lammers** was hired as a research specialist in corn breeding with Marcelo Carena. **Christopher Cossette** was hired as a research specialist and **Karen Dickey** was hired as a lab technician in wheat quality with Senay Simsek. **Brad Bisek** was hired as a research specialist in hard red winter wheat breeding with Francois Marais.

Mary Niehaus, chemist in cereal and food sciences, became a staff member when the cereal and food sciences program was joined with Plant Sciences. **Sally Mann** was promoted to research specialist in durum wheat breeding with Elias Elias. **Kristin Whitney** was promoted to research specialist in wheat quality with Senay Simsek.

Three new staff members joined the Plant Sciences office. **Cora Crane** joined the department as the grants coordinator. **Shannon Ueker** transferred from the NDSU Library to Plant Sciences as an administrative secretary for the graduate program and Extension. **Starr Thies** joined the department as an accounting specialist.


Dr. Dipayan Sarkar


Dr. Stephan Schroder


James Perleberg


Michael Kloberdanz


Jerry Gee

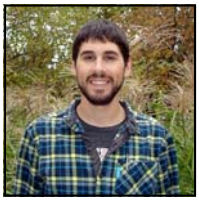

Brock Fagerstrom

Brad Schmidt


Greg Lammers

Christopher Cossette


Karen Dickey


Brad Bisek


Mary Niehaus

Sally Mann


Kristin Whitney


Cora Crane


Shannon Ueker


Starr Thies

Retirements

Research specialist **Duane Wanner** retired in April after 36 years of service at North Dakota State University. His employment at NDSU began in 1977 as a research technician in the corn breeding program under project leader Dr. Harold Cross and later under current project leader Dr. Marcelo Carena. In 1989 his position was reclassified to research specialist.

Wanner noted that over the years he has seen corn acres increase, more interest in research to develop corn in North Dakota, and the number of research locations has grown to include four locations in western ND and 10 locations in eastern ND.

During his years at NDSU, Wanner co-authored several publications and enjoyed working with and mentoring graduate students. In 2002 he was recognized as a member of the Quarter Century Club.

In his retirement, Wanner plans to continue the lawn and snow business he has operated for 25 years, as well as spend time woodworking and gardening. He also looks forward to traveling with his family.

Research specialist **Gloria Nygard** retired in June after nearly 36 years of service at North Dakota State University. Her employment at NDSU began in 1977 as a chemist in the College of Pharmacy pharmacokinetic drug analysis lab. In 1995, she was hired as a research specialist in Cereal and Food Sciences and worked under Dr. Kahlil Khan until his retirement in 2011. At that time, Nygard transferred to Plant Sciences in the wheat quality lab under Dr. Senay Simsek. She was recognized as a member of the Quarter Century Club in 2002.

Nygard and her husband, Dr. Kendall Nygard, NDSU computer science professor, are spending a year in the Washington, D.C. area, where he is a Jefferson Science Fellow serving as a Senior Science Adviser in the Office of Science and Technology, U.S. Agency for International Development, which is part of the U.S. State Department.

Ag research technician **Larry Martin** retired in May after 18 years of service at North Dakota State University. He was hired in 1995 as an ag research technician in the soybean breeding program under project leader Dr. Ted Helms.

"Larry was instrumental in improving the soybean project by being a dedicated worker who was willing to put the project ahead of his own personal interests and hobbies, including working evenings and weekends," says Helms.

Helms said of Martin's contributions to the work of the soybean breeding project that he chose the parents for the soybean variety 'Ashtabula.'

Departing Faculty and Staff

We said good-bye to a few faculty and staff members who left the department for other endeavors in 2013.

Dr. Jeff Stachler, assistant professor and Extension specialist for weed control in sugarbeet since 2008, accepted a position as the Northern Plains Regional Sales Manager for Willowood USA, a pesticide company. **Dr. Shahryar Kianian**, professor in hard red spring and durum wheat germplasm enhancement since 1997, accepted a position as the USDA-ARS research leader in the Cereal Disease Lab in St. Paul, MN.

Dr. Farhad Ghavami, research assistant professor in wheat genetics and nuclear-cytoplasmic interactions, works as genomics lab manager and R&D lead at BioDiagnostic, Inc. in River Falls, WI. **Dr. M. Javed Iqbal**, research assistant professor in wheat genetics and radiation hybrid mapping, moved out of the area.

Postdoctoral research fellows **Dr. Shalu Jain**, pulse crops, and **Dr. Kristin Simons**, wheat germplasm enhancement, transferred to NDSU Plant Pathology.

Research and support staff who resigned included **Dan Liane**, research specialist in hard red spring wheat; **Dan Blilie**, ag research technician in soybeans; **Travis Sanderson**, research specialist in hard red winter wheat; **Sarah Underdahl**, research specialist in durum wheat, transferred to the NDSU Beef Research program; **Claudia Carter**, food technician specialist in durum and pasta quality with Frank Manthey, is pursuing her M.S. in Cereal Science at NDSU; and **Tami Leith**, accounting specialist, transferred to the NDSU Graduate School.

Faculty and Staff Awards and Honors

Cai and Chao Receive USDA/NIFA Grant

by Karen Hertsgaard

Xiwen Cai

Shiaoman Chao

NDSU wheat geneticist and associate professor **Xiwen Cai**, in collaboration with USDA-ARS research geneticist **Shiaoman Chao** (co-PI), was awarded a four-year, half-million dollar grant in August 2013 by the Agriculture and Food Research Initiative (AFRI) through the USDA's National Institute of Food and Agriculture (USDA/NIFA). The grant is entitled "Enriching and Understanding the Wheat Genome by Inducing Homoeologous Recombination."

Nearly $9 million in grants were awarded nationwide for research in plant breeding and production to improve U.S. agriculture production, sustainability and competitiveness. The director of the NIFA, Sonny Ramaswamy, stated that research funded by these grants "will allow us to successfully face challenges in food security, bioenergy, climate change and increasing global competition."

This research will address the problem of limited genetic variability in wheat germplasm while augmenting the gene pool needed for progressive wheat breeding. The stated goal is to "expand genetic variability of the wheat genome and to develop a physical map of the wheat genome." They will introduce genes for characteristics such as disease resistance and salt/waterlogging tolerance from wild species into wheat and perform physical mapping of the wheat genome by "inducing meiotic homoeologous recombination."

Howatt Receives Weed Science Society Award

by Kamie Beeson

Kirk Howatt (right) accepting award from NCWSS president Dave Johnson.

Kirk Howatt, associate professor in annual weeds at North Dakota State University, received the Distinguished Achievement Award in Education during the 2013 North Central Weed Science Society (NCWSS) annual meeting. The award recognizes outstanding educational achievements in weed science. Selection criteria includes innovative approaches that result in learning, ability to clearly communicate ideas, motivation of the intended audience, and recognition of accomplishments by peers.

Howatt has been a faculty member in the Department of Plant Sciences at NDSU since 1999, and was appointed coordinator of the Crop and Weed Sciences undergraduate major in 2006. Since that time, the strength of agriculture has encouraged the program to grow from about 85 to more than 230 students.

Howatt's teaching responsibilities include undergraduate and graduate level weed science courses and professional development courses for graduate students. He advises approximately 40 undergraduate students in the Crop and Weed Sciences major each year, has advised 13 graduate students in their programs of study, and serves as faculty adviser to the Agronomy Club.

Howatt's leadership and excellence in education has been commended by others, too. He was recognized with the H. Roald and Janet Lund Excellence in Teaching Award and the William J. and Angelyn A. Austin Advising Award by the NDSU College of Agriculture, Food Systems, and Natural Resources in 2013 and 2011, respectively. He was recognized as Educator of the Year by Mid America CropLife Association in 2011, and he was accepted into the Faculty Institute for Excellence in Learning at NDSU in 2002.

By happy coincidence, NDSU agronomy doctorate alumnus Adrian Moses was on hand as the Master of Ceremonies for the NCWSS awards luncheon where Howatt received his award.

Mergoum and Howatt Receive Awards for Excellence

by Karen Hertsgaard

The 22nd Annual Agriculture and Extension Faculty/Staff Awards program was held in December. The program honors employees in the College of Agriculture, Food Systems, and Natural Resources for excellence in research, teaching, advising, staff and Extension/outreach work. A total of 50 people were nominated for the various awards.

Mohamed Mergoum, endowed professor in hard red spring wheat breeding/genetics, received the Eugene R. Dahl Excellence in Research Award, and **Kirk Howatt**, associate professor in annual weeds, received the H. Roald and Janet Lund Excellence in Teaching Award.

Mohamed Mergoum

Kirk Howatt

Nominees l-r: Chad Deplazes, Marisol Berti, Bob Nudell, Kamie Beeson, Tom Kalb. Harlene Hatterman-Valenti not pictured.

The awards were presented by Dr. Ken Grafton, Vice President for Agricultural Affairs; Dean of the College of Agriculture, Food Systems, and Natural Resources; and Director of the North Dakota Agricultural Experiment Station; Dr. Chris Boerboom, Director of the NDSU Extension Service; and Dr. David Buchanan, Associate Dean for Academic Programs in the College of Agriculture, Food Systems, and Natural Resources.

Other Plant Sciences nominees were Kamie Beeson, information processing specialist, Marisol Berti, associate professor in forages, Chad Deplazes, research specialist, Harlene Hatterman-Valenti, professor in high value crops, Thomas Kalb, Extension horticulturist, and Robert Nudell, research technician.

Styczynski Receives STAR Award

by Kamie Beeson

Plant Sciences pulse crops research specialist **Deven Styczynski** received a 2013 winter quarter STAR award, given by the Council of State Employees (COSE). He is one of 13 state employees who received the award this quarter.

According to the COSE website, the STAR acronym stands for Service, Team, Achievements, and Respect, qualities which are valued in promoting a positive work environment.

Developed by the COSE Board of Directors, the quarterly award recognizes employees who provide quality service in a professional manner; who help create a team environment; whose achievements stand out among their peers; and who exhibit respect to all.

Grant Receives Governor's Award

by Kamie Beeson

Michelle Grant, senior accounting specialist in NDSU Plant Sciences, was among six state employees selected in 2013 to receive a Governor's Award for Excellence in Public Service. The award is given in recognition of an employee's dedication and contributions to the people of North Dakota. Nominations are accepted in six categories. Grant was recognized in the Technical/Paraprofessional category.

Lieutenant Governor Drew Wrigley presented the awards during a luncheon at the State Capitol in Bismarck, ND, as part of State Employee Recognition Week.

In a news release, Governor Jack Dalrymple congratulated the six award recipients, saying, "North Dakota's state employees are the best in the nation, and these six individuals recognized today represent the outstanding work that is performed by state employees every day across our state. We applaud them for their exemplary service and faithful dedication to North Dakota and its citizens."

The award recipients were nominated by their peers and selected by a committee of judges who reviewed and scored the nominations. Nominees were rated on their overall job performance, contributions to their department, commitment to customer service, working relationship with fellow workers and involvement in their community.

Richard Horsley, Plant Sciences Department head, said, "Plant Sciences is fortunate to have someone as professional, dedicated, and caring as Michelle working for us. The accounting group would not be succeeding at such a high level without her service."

"This award really belongs to everyone in my department," Grant said. "My co-workers make my job easy, fun and exciting. It's a team effort in our office and I was just the lucky one who got to accept it."

Staff Years of Service

5 Years
Chad Deplazes
Michelle Grant
Kevin Rue

10 Years
Christina Johnson

15 Years
Paula Petersen

20 Years
Janet Davidson-Harrington
Justin Hegstad
Theja Wijetunga

30 Years
Katheryn Christianson

35 Years
Eileen Buringrud

40 Years
Robert Baumann
Ronald Roach

Department News

New Equipment Assists in Study of Plant Disease and Food Safety

by Karen Hertsgaard

Simsek (left) and Schwarz with new QTOF equipment.

New cutting edge equipment at NDSU will improve food safety and disease research on wheat and barley. The equipment, manufactured by Agilent Technologies of Santa Clara, CA, is called *ultra-high performance liquid chromatograph and quadrupole time of flight mass spectrometer* (UHPLC Q-TOF/MS or QTOF) and is unique within the North Dakota University System. The QTOF was obtained through the efforts of NDSU researchers Senay Simsek and Paul Schwarz, faculty members in the Department of Plant Sciences.

New QTOF equipment

The research accomplished using QTOF is called plant metabolomics and examines the influence of genetics and external environmental factors on the small molecules or metabolites produced by the biochemical pathways in a plant. According to Simsek, metabolomics was developed in the medical sciences and is widely used to identify markers of disease and the effect of pharmaceutical treatments. Metabolomics can be a powerful tool for the study of plant diseases, such as Fusarium head blight (FHB). However, it also has tremendous potential for research on many aspects of plant physiology, grain quality and processing, and the nutritional aspects of grains.

Chemists James Gillespie and Kristin Whitney anticipate that the research completed by QTOF instrumentation will also complement other research projects at NDSU, including genomics and transcriptomics which deal with plants' genetic make-up and gene expression.

Current research projects include determining the metabolites that are formed in response to the infection of hard red spring wheat by FHB, and it is hoped that this will help identify defense mechanisms within the wheat plant. Simsek and Schwarz are studying the levels of mycotoxins in wheat and barley, which has important food safety and regulatory implications. The QTOF is also being used to investigate metabolites associated with sprouting in barley. The QTOF is capable of generating as many as 1000 metabolites and 1000 megabytes of data from a single plant extract.

Major funding for the purchase was provided by the North Dakota Wheat Commission and USDA-AFRI. Additional support came from the North Dakota Barley Council, NDSU Agricultural Experiment Station, NDSU Department of Plant Sciences and Agilent Technologies.

NDSU Daylily Collection Open House

by Karen Hertsgaard

During an open house in July at the North Dakota State University daylily display gardens, Mary Baker, former regional vice president of the American Hemerocallis Society (AHS) Region I, was honored. According to Esther McGinnis, NDSU Extension horticulturist and assistant professor, Baker was instrumental in preserving the daylily collection at NDSU. Her award was presented by NDSU Plant Sciences Department head Dr. Richard Horsley, who thanked her for her years of work and service.

Horsley (left) presenting the award to Baker (middle). Dr. Marcia McMullen looks on.

Baker announced that hybridizers are working on a special NDSU series of daylily cultivars, which will be registered and planted in the NDSU garden. The daylilies in this series will be excellent garden performers with good branching, bud count, and beautiful flowers that bloom over a long period of time.

McGinnis said that "NDSU has the largest collection of daylilies at any land grant university in the U.S." The gardens are official AHS Historic Daylily Display and modern AHS Daylily Display gardens. Established in 2004, NDSU's public AHS Historic Daylily Display Garden is the first public garden of its kind established in the U.S. and includes more than 1,200 cultivars registered before 1980. The garden is located at the corner of 12th Avenue North and 18th Street and is open for public viewing.

For more information on the display gardens, visit *www.ag.ndsu.edu/plantsciences/research/gardens*.

Fall 2013 Enrollment

NDSU's fall 2013 enrollment set a record as the highest in university history. (See article at *www.ndsu.edu/news/view/detail/9941/*)

Enrollment in several Department of Plant Sciences programs is up, as well. Enrollment in the Crop and Weed Sciences program has jumped 236% in the last six years. Department head Richard Horsley says, "The increased enrollment is due to increased employment opportunities and favorable salaries in the region for our graduates."

In the last year, enrollment in the Food Science program remained steady, while there was a 24% increase in the Horticulture program and a 20% decrease in the Sports and Urban Turfgrass Management program.

The Plant Sciences graduate program (M.S. and Ph.D.) has seen a 20% increase in enrollment in the last year.

Fall 2013 enrollment numbers for students with their primary major in an area overseen by the Department of Plant Sciences are:

Undergraduate Programs
Crop and Weed Sciences: 232
Food Science: 38
Horticulture: 36
Sports & Urban Turfgrass Mgmt: 15

Graduate Programs
Cereal Science: 20 (13 M.S.; 7 Ph.D.)
Horticulture: 2 M.S. students
Plant Sciences: 81 (45 M.S.; 36 Ph.D.)

Arbor Day Tree Planting

by Karen Hertsgaard

Students from associate professor Todd West's Woody Landscape Plants course (PLSC 355) helped beautify the NDSU campus on Arbor Day in October. While digging holes and planting trees chosen for beauty and disease resistance, the students discussed internships and job opportunities available for Horticulture and Landscape Architecture graduates.

Sophomore Horticulture major, Joshua Schwebach, would like to start his own produce nursery after graduating. He cited the success of Community Supported Agriculture (CSA) gardens, which sell memberships and deliver fresh produce directly to customers.

Derek Christianson will graduate in December with a degree in Sports and Urban Turfgrass Management and has interned with the Minnesota Twins groundskeeping and field maintenance crew, which he feels will help him find full time work after graduation.

The tree planting activity commemorated Arbor Day and the designation of NDSU as the only North Dakota Tree Campus USA through the Arbor Day Foundation. (*www.arborday.org/programs/treecampususa/*)

Variety Release

by Gonzalo Rojas-Cifuentes

Rio Rojo small red dry bean was developed by the NDSU Dry Bean Breeding Project under the direction of Dr. Juan Osorno, and released by the North Dakota Agricultural Experiment Station (NDAES) in spring 2013.

Rio Rojo has shown superior performance (seed yield and disease resistance) when compared with other small red bean commercial cultivars. This variety has improved resistance to common bacterial blight (CBB). Even though Rio Rojo cannot be considered as resistant, the intermediate levels observed in field tests showed that Rio Rojo is better than all the small red cultivars commonly grown in the U.S. Rio Rojo also has the marker linked to the I gene, which confers resistance to bean common mosaic virus (BCMV).

Seed quality (shape, size, color, etc.) is within the commercial ranges of acceptability. The Rio Rojo line is susceptible to the new race of bean rust (20-4) and anthracnose (race 73). Canning tests conducted at NDSU during 2011 (using seed produced in 2010), rated Rio Rojo as average.

The North Dakota Foundation Seedstocks project (*www.ndfss.com*) is increasing foundation class seed for a first distribution of Rio Rojo in North Dakota and Minnesota in 2014.

Find even more news on the web! 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

Cereal and Food Sciences News

Simsek Receives Young Scientist Award

by Kamie Beeson

Senay Simsek, endowed associate professor in hard red spring wheat end quality, is the recipient of the 2013 American Association of Cereal Chemists International (AACCI) Young Scientist Research Award. The award is presented to an individual for outstanding contributions in basic and applied research to cereal science with the expectation that contributions will continue.

AACCI is a global, nonprofit association of nearly 2,500 scientists and food industry professionals working to advance the understanding and knowledge of cereal grain science and its product development applications through research, leadership, education, superior technical service, and advocacy. *(www.aaccnet.org)*

Faculty Present at Craft Brewers Conference

Reprinted from NDSU News

Schwarz (left) and Horsley

Paul Schwarz, professor of Plant Sciences, and **Richard Horsley**, professor and head of Plant Sciences, presented "The Past, Present and Future of Malting Barley for Craft Brewers" at the 30th Craft Brewers Conference and BrewExpo America in Washington, D.C. The conference is the largest industry gathering in North America and this year's meeting brought together more than 6,400 brewing professionals. Schwarz is the malting barley cereal chemist and Horsley is the barley breeder at NDSU.

Craft brewers are defined by beer production volume as well as high percentages of malt used in brewing recipes. Average craft brewer production is about 5,000 barrels per year, less than 0.0005 percent of large multinational companies. Craft beer production has increased an average of 9.8 percent per year in the last five years, and the number of craft breweries increased from eight in 1990 to more than 1,600 in 2010. Craft brewing companies range from relatively large brewers with national distribution, such as the Boston Brewing Co., which produces the Samuel Adams line of products, to smaller local brewers such as the emerging Fargo Brewing Co.

Although the nation's roughly 2,400 craft brewers produce only 6 percent of all beer, they consume 21 percent of the malting barley, due to a greater use of malted barley, and less corn and rice in their formulations. This creates a potential new market for North Dakota barley growers. Schwarz and Horsley see educational demands and opportunities increasing in step with the craft industry's growing interest in the quality of the malting barley supply.

Alumnus Leads Program

The Daily Standard, Celina, Ohio, reports that NDSU B.S. food science graduate and Ph.D. cereal science graduate **Courtney Simons** will develop a new food science curriculum and teach most of the classes at Wright State University-Lake Campus in Celina, Ohio. Simons's Ph.D. adviser was associate professor Cliff Hall. Read the full article at *http://bit.ly/1cgwrUw*.

Graduate Student's Paper One of Most Viewed

by Kamie Beeson

NDSU Cereal Science Ph.D. candidate **Mihiri Mendis** authored a paper that is one of the most viewed research papers on the American Association of Cereal Chemists International (AACCI) website. Dr. Senay Simsek, Mendis's faculty adviser, was the corresponding author on the paper, titled "Variability in Arabinoxylan, Xylanase Activity, and Xylanase Inhibitor Levels in Hard Spring Wheat." The paper was generated from Mendis's M.S. degree thesis, which she completed in August 2012 in Simsek's wheat quality program.

In her research with Simsek, Mendis investigated the presence of arabinoxylans (cell wall polysaccharides in wheat), xylanases and xylanase inhibitors in various hard red and hard white spring wheat genotypes from multiple locations. These compounds have an important role in many cereal food processing applications of wheat. Mendis's research showed that genotype contributed 72% to the variability in one of the xylanase inhibitor's activity, indicating that activity of this inhibitor in wheat bran is largely under genetic control. These results enable the industry to choose between different wheat varieties with varying xylanase activities to complement its intended use.

The original article was published in *Cereal Chemistry*, May/June 2013, Volume 90, Number 3, and can be viewed on the AACCI website at *http://bit.ly/1b0dGwU*.

NDSU Celebrates 50th Anniversary of Doctoral Degrees

First Agronomy Doctoral Graduate Recognized

Reprinted from NDSU News, May 6, 2013 (www.ndsu.edu/news/view article/17165)

by Hart Portrait Artists, Stillwater, OK

North Dakota State University recognized Frank "Ed" LeGrand, the only living graduate from its first class of doctoral students, at spring commencement on May 11, 2013. LeGrand, who studied agronomy, was one of five students to earn the first doctoral degrees from NDSU 50 years ago.

1963: LeGrand (left) with adviser Glenn Smith

After completing his doctorate, LeGrand worked as a professor at Oklahoma State University, where he was well known for his knowledge and expertise in wheat production agriculture. He held Extension meetings in every county in Oklahoma and wrote many articles related to wheat production. He wrote extensively about the agricultural production of several crops adapted to Oklahoma.

Named professor and director of Oklahoma Pedigreed Seed Services in 1979, LeGrand also provided leadership and direction to Oklahoma Foundation Seed Stocks, Inc. and the Oklahoma Crop Improvement Association. He held that position until his retirement in 1994.

LeGrand lives in Stillwater, Okla., where he farms and ranches 1,000 acres. He has received the Governor's Conservation Award twice for his conservation practices.

In 1963, NDSU offered five doctoral degree programs. Today, NDSU offers 50 doctoral and 86 master's degree programs, and 12 certificate programs.

Alumni Attend Doctoral Reunion

by Karen Hertsgaard

In 2013, North Dakota State University marked the 50th anniversary of conferring doctoral degrees. The first doctoral graduating class in 1963 had a total of five graduates, including one agronomy graduate, Dr. Frank "Ed" LeGrand. Since that time, more than 250 Ph.D. candidates in Agronomy, Cereal Science, Crop and Weed Sciences and Plant Sciences have received degrees from NDSU.

During a campus-wide Doctoral Alumni Reunion in September, Plant Sciences and Cereal Science hosted a reception and tour of Loftsgard and Harris Halls. Alumni attending, and year of graduation, included Cal Messersmith, 1970, Plant Sciences Professor Emeritus; Duane Berglund, 1971, Plant Sciences Professor Emeritus; Jerry Miller, 1975; Mary Evenson, 1976; Edward "Jamie" Retzinger, 1980; Bill Niehaus, 1981; Pat Berglund, 1984, Cereal Science Professor Emeritus; Adrian Moses, 1985; Frank Manthey, 1985, current Cereal Science faculty; Paul Schwarz, 1987, current Cereal Science faculty; Richard Horsley, 1988, current Plant Sciences faculty and department head; Burton Johnson, 1993, current Plant Sciences faculty; Marisol Berti, 2007, current Plant Sciences faculty; and Andrea Travnicek, 2008.

Horsley says that "industry employers continue to return to our department seeking doctoral graduates, which illustrates the high quality of NDSU Plant Sciences graduate students."

Frank Manthey and Adrian Moses

Tour of Loftsgard Hall Labs

Marisol Berti and Jerry Miller

Paul Schwarz, Mary Evenson, Pat Berglund

Duane Berglund and Cal Messersmith

Loftsgard Hall Tour

Andrea Travnicek and Staff Member Louise Heinz

Loftsgard Atrium Named for Dr. H. Roald Lund

Reprinted from NDSU Agriculture Communication, Dec. 20, 2013 (http://bit.ly/1la8Brw)

NDSU Plant Sciences Professor Emeritus Dr. H. Roald Lund spent his entire professional career serving North Dakota State University and North Dakota farmers. His name was synonymous with agriculture in the state during his 25-year tenure in the office of the dean of agriculture.

Because of Lund's outstanding leadership in agricultural research and academics at NDSU, the atrium in Loftsgard Hall was named the H.R. Lund Atrium during a dedication ceremony on Dec. 19.

"We are thankful for H. Roald Lund's service to agricultural research and academics at NDSU," says Ken Grafton, vice president for Agricultural Affairs, dean of the College of Agriculture, Food Systems, and Natural Resources, and director of the North Dakota Agricultural Experiment Station. "This is just a small token of our appreciation."

Lund served as dean of agriculture and director of the North Dakota Agricultural Experiment Station from 1979 to 1994. He also was director of the NDSU Biotechnology Institute and secretary of the NDSU Research Foundation.

Construction on Loftsgard Hall began in 1988 and was funded entirely under an $8 million supplemental federal appropriations grant for agriculture, which Lund secured. It houses the Department of Plant Sciences. The central atrium encloses three floors and was designed, by walkways, to connect Walster and Waldron halls into a Plant Science Center Complex.

"To be included among the names now in and on the building is a real honor," Lund said. "To have been able to secure federal funding for a building on the NDSU campus during a period of economic stress in the state of North Dakota was a significant event in my career at NDSU."

Lund sharing his remarks following presentation of the plaque.

During his career at NDSU, Lund worked with many of the university's formative agricultural figures. Loftsgard Hall features the busts of former President Laurel D. Loftsgard, professor Henry L. Bolley, and brothers and longtime NDSU faculty members Lawrence R. Waldron and Clare B. Waldron. Loftsgard 114, a 130-seat lecture hall, is named after former faculty member and graduate school dean Glenn S. Smith, and Loftsgard 102, a 48-seat classroom, is named after former agronomy department chair Jack F. Carter.

Lund attended NDSU, then known as North Dakota Agricultural College, earning a bachelor's degree in agronomy and agricultural education in 1955 and a master's degree in agronomy in 1958. In 1959, he was named assistant professor of agronomy at NDSU. He earned a doctorate in plant breeding and genetics at Purdue University before returning to NDSU as associate professor of agronomy.

Lund was instrumental in securing funding to construct the Northern Crops Science Laboratory and the Quentin Burdick Building, formerly known as the Industrial Agriculture and Communications Center. Among his many professional activities, he served as an officer in the National Association of State Universities and Land-Grant Colleges.

A Fargo native, Lund retired from NDSU in 1998 but remains active with the university. He established the H.R. Lund Freshman Plant Sciences Scholarship, and the H. Roald and Janet Lund Excellence in Teaching Award, which are awarded annually by the NDSU agricultural administration. He also contributes to the Harvest Bowl, which celebrated its 40th anniversary in November.

"The 'AC' [ND Agricultural College] has never lost its love for the public of North Dakota," Lund says. "Now it's a first-class research university that has never underestimated the importance of its credibility serving the land and its people."

A large crowd gathered to honor Lund. Pictured l-r: Dr. Ken Grafton, Dr. Dean Bresciani, and Mrs. Lund.

Dr. Richard Frohberg Receives Harvest Bowl Agribusiness Award

by Karen Hertsgaard

NDSU Plant Sciences Professor Emeritus Dr. Richard Frohberg received the Agribusiness Award at the 40th annual NDSU Harvest Bowl awards program in November. During his 36 years researching and leading the hard red spring wheat breeding program, 25 varieties were released with nine more released after his retirement. He received other honors during his career including the Alpha Zeta Fraternity Outstanding Agriculturist of the Year in 1987; the Distinguished Service Award from the North Dakota Crop Improvement and Seed Association in 1992; the NDSU Faculty Economic Development Award in 1993; the Excellence in Research Award, Senior Faculty, from the NDSU College of Agriculture in 1995; the Honorary Kernel from the North Dakota Grain Growers in 1999; the NDSU Research Foundation Fred L. Waldron Award in 2000; and the Greater North Dakota Association Agricultural Award in 2001. He also was inducted into the North Dakota Winter Show Ag Hall of Fame in 2006.

Before the Harvest Bowl celebration, Frohberg walked through campus and reminisced about the years he worked in the Agronomy/Plant Sciences Department. He talked about the challenges he faced during his career, the exceptional people and NDSU Research Extension Centers with whom he worked and collaborated, and the support and academic freedom he received from department and campus administrators to move forward with his significant body of work. He told of slight trepidation the day NDSU President Dr. Dean Bresciani invited him to his office. When he found that the purpose of the invitation was to inform him that he would receive the Agribusiness Award, he laughed and said, "I never expected that." Dr. Frohberg expressed great appreciation for the honor and gratitude toward everyone with whom he worked during his time at NDSU.

The biggest challenge of Frohberg's career occurred during the last decade of his tenure. After a severe drought in the late 1980s, Fusarium head blight (FHB) began causing problems in the North Dakota wheat crop. In 1992, Extension cereal grains pathologist Dr. Marcia McMullen noticed FHB in Minnesota and was alarmed enough to tell Frohberg and wheat plant pathologist Dr. Robert Stack, "We have to do something about this." Coincidentally, Frohberg and Stack had already begun working to cross Chinese germplasm ('Sumai 3') with North Dakota lines. They received the germplasm through collaboration with CIMMYT in 1986 and by 1992 were growing the second cycle of the crosses at the NDSU Agronomy Seed Farm at Casselton, ND. Frohberg credits Stack with "pushing the research utilizing 'Sumai 3' before significant disease issues had appeared." The result was the release of the FHB resistant variety 'Alsen' in 2000. The significance of that release was huge. Dr. Mohamed Mergoum, the current NDSU hard red spring wheat breeder, says that "releasing 'Alsen' saved the wheat crop in North Dakota."

The collaboration with CIMMYT also led to the formation of the U.S. Wheat and Barley Scab Initiative in 1997, which Mergoum calls "a model for a successful USDA-funded project to solve a major threat such as FHB and save a major crop in the U.S. and worldwide."

Frohberg also reflected on how much he appreciates the collaborative nature of working at NDSU and with North Dakota growers. He said that Stack and cereal scientist Dr. Bert D'Appolonia, as well as numerous colleagues in Plant Sciences and researchers at the USDA and NDSU Research Extension Centers, all contributed greatly to the success of the hard red spring wheat breeding program. He also praises the support provided by the ND State Legislature, the Spring Wheat Quality Council and grower organizations, such as the ND County Crop Improvement Association and the ND Wheat Commission.

When Frohberg finished the campus tour, his final comments complimented the administration in the Agronomy/Plant Sciences Department at NDSU, which he says gave him academic freedom to focus on supervising the wheat breeding program. He said, "I like wheat breeding," and was able to do just that for 36 years.

Frohberg examines wheat in the greenhouse.

Frohberg with crossing equipment cabinet.

Frohberg with Carri Faller, child of former technician Jim Faller.

Graduate Student Awards and Honors

Samira Mafi Moghaddam Wins Award

by Kamie Beeson

The 2013 biennial joint meeting of the Bean Improvement Cooperative (BIC) was held October 27-November 1, in Portland, Oregon. A group of NDSU Plant Sciences faculty and graduate students attended the meeting.

Genetics Ph.D. student **Samira Mafi Moghaddam** won the BIC Student Recognition Award for her presentation, a collaborative work, titled "Molecular Genetic Analysis of the *Phaseolus vulgaris* P Locus." The award is given in recognition of an outstanding oral presentation, based on scientific content and presentation skills. Mafi Moghaddam's adviser is Dr. Phil McClean.

Established in 1957, the BIC is an informal organization whose mission is to facilitate the exchange of information and materials for the improvement of bean production worldwide.

Students Awarded Graduate Fellowships

by Kamie Beeson

Three NDSU Plant Sciences graduate students received fellowships for the 2013-14 academic year.

Plant Sciences Ph.D. candidate **Itai Mutukwa** was selected to receive a Graduate School Dissertation Fellowship. The fellowship is awarded by the NDSU Graduate School and represents a significant accomplishment for the doctoral student. The award includes a stipend along with additional funding for academic travel and supplies.

The title of Mutukwa's doctoral research is "Drying and Pretreatments Affect Sensory and Nutritional Quality of Oyster Mushrooms." Her advisers are Dr. Chiwon Lee, professor in Plant Sciences, and Dr. Carolyn Grygiel, professor of practice in Natural Resources Management.

Plant Sciences Ph.D. candidate **Mona Mazaheri** was selected to receive the Frank Bain Dissertation Fellowship. The fellowship is awarded by the NDSU College of Agriculture, Food Systems, and Natural Resources and recognizes an outstanding Ph.D. student whose major adviser is a faculty member in a department in the College, and whose research is close to completion. The fellowship award is to be used to expedite degree completion and/or publication of dissertation results.

The topic of Mazaheri's research is developing a radiation hybrid map of barley chromosome 3H. Her advisers are former Plant Sciences professor of of hard red spring and durum wheat germplasm enhancement Dr. Shahryar Kianian, and Dr. Mohamed Mergoum, endowed professor of hard red spring wheat breeding and genetics.

Cereal Science Ph.D. candidate **Mihiri Mendis** was awarded the prestigious Raymond J. Tarleton Graduate Fellowship by the American Association of Cereal Chemists International (AACCI). The purpose of the AACCI fellowship program is to encourage graduate research in grain-based food science and technology. Fellowships are supported by endowment funds of the AACCI Foundation. The Raymond J. Tarleton graduate fund was established to help worthy students achieve education in the grains field. Tarleton served as Executive Vice President of AACCI for 41 years.

The title of Mendis's doctoral research is "Arabinoxylan Hydrolyzates as Prebiotics and Immunomodulators." Her adviser is Dr. Senay Simsek, endowed associate professor in wheat end quality.

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Graduate Students Host Symposium

29th Annual Plant Science Graduate Student Symposium Held at NDSU

by Kamie Beeson

The 29th Annual Plant Science Graduate Student Symposium, "Supporting Life through Agricultural Innovation," was held at NDSU on March 22-23, 2013. The NDSU Plant Sciences Graduate Student Association planned and hosted the event, led by the association officers and a 20 member organizing committee. 60 participants attended from NDSU, the University of Manitoba, and the University of Saskatchewan. The symposium rotates yearly between the three universities and provides opportunities for graduate students to exchange research work, results and ideas. Symposium events included NDSU facilities tours, invited speakers, participant research presentations, a banquet, and social activities.

Dr. Wes Jackson, president of the Land Institute in Salina, Kansas, gave the opening keynote address "When Ecology Comes to Agriculture." Dr. Justin Faris, NDSU graduate and wheat geneticist at the USDA-ARS in Fargo, gave a presentation titled "Wheat Domestication: Unlocking the Secrets to Agricultural Revolutions Past and Future." Dr. John Soper, NDSU graduate and vice president of Crop Genetics Research and Development for Pioneer Hybrid, gave the closing banquet address, "Next Generation Agriculture."

Research presentations by graduate students from the participating universities were judged and scored by a panel of NDSU Plant Sciences and Plant Pathology faculty. Presentation categories included Agronomy, Weed Science, Plant Ecology and Physiology; Plant Genetics and Breeding; and Plant Pathology. First, second and third place awards were presented at the closing banquet.

Symposium sponsors included DuPont Pioneer, CHS Foundation, NDSU Department of Plant Sciences, NDSU Graduate School, NDSU Provost's Office, Monsanto, Amity Technology, North Dakota Barley Council, and the NDSU Plant Sciences research projects of Dr. Phil McClean, Dr. Mohamed Mergoum, and Dr. Susie L. Thompson.

The NDSU Plant Sciences Graduate Student Association is advised by Dr. Burton Johnson, Plant Sciences professor in sunflower, minor and new crop production.

Students Win Awards at Symposium

by Kamie Beeson

Three out of nine awards were won by NDSU Plant Sciences students for their research presentations during the 29th Annual Plant Science Graduate Student Symposium. In the Agronomy, Weed Science, Plant Ecology and Physiology category, **Danielle Fiebelkorn** placed second with her presentation, "Effects of Acclimation on Survival of Winter Pea (*Pisum sativum* L.) in Artificial Conditions," and **Osvaldo Teuber** placed third with his presentation, "Performance and Production of Forage Brassicas in North Dakota." In the Plant Genetics and Breeding category, **Mona Mazaheri** placed second with her presentation, "Developing a High Resolution-Radiation Hybrid Map of Barley Chromosome 3H."

Photos of the winners can be viewed at *http://bit.ly/1oyjEMZ*.


Symposium Participants


Bowling Social Event


Speakers (l-r): Wes Jackson, Dean Bresciani, Jon Soper


General Session


Participants from University of Saskatchetwan

Greenhouse Tour

Ag Students Study European Bioenergy Crops

by Karen Hertsgaard

Sixteen NDSU agriculture students, led by Plant Sciences associate professor Marisol Berti and Biosystems Engineering associate professor Scott Pryor, traveled abroad June 22 to July 7 to study bioenergy crop production and processing in Germany, Austria and Italy.

Hoping that students will become ambassadors for new ways to use bioenergy in the U.S., Berti, assisted by Pryor, led her first study abroad course. The group of eight undergraduate and eight graduate students who are seeking degrees in Agricultural and Biosystems Engineering, Agribusiness, Crop and Weed Sciences and Animal Sciences, combined class time and bioenergy research site tours with tourist activities.

Key research facility visits in Austria included the European Center for Renewable Energy (*www.eee-info.net/cms/EN/*) in Güssing; the Sonnenerde Biochar Production facility in Rieldlingsdorf; and the University of Hohenheim Bioenergy Center and Experiment Station (*www.uni-hohenheim.de/English*). In addition, a week of classes was held at the University of Bologna in Italy. (*www.unibo.it/en*)

Berti worked with Gerald Marinitsch of the European Center for Renewable Energy, Dr. Iris Lewandowsky at the University of Hohenheim and Dr. Andrea Monti at the University of Bologna, among others, to plan the tour and class. Pryor presented a pre-travel seminar to the students in June.

Berti provided course updates on the NDSU College of Ag Facebook page (*facebook.com/NDSUAg*) while traveling. The album also can be seen on the Plant Sciences Facebook page. (*facebook.com/NDSUPlantSciences*)

The 3 credit course will be offered again in 2015. Interested students should look for sign up information by early fall 2014. For more information, go to *http://bit.ly/OxyMiJ.*

Summer Interns

University of Puerto Rico Mayagüez Summer Research Fellowship Interns

(Left to right)

Cecelia Monclova Santana, Puerto Rico *(Horsley)*

Emill Chinea Perez, Puerto Rico *(Mergoum)*

Mariely Rosado Martinez, Puerto Rico *(Shetty)*

Plant Sciences Undergraduate Summer Research Fellowship Interns

Tyler Franklin
Palo, IA *(Hatterman-Valenti/Johnson)*

Eliza Hartmann
Eagan, MN
(McPhee)

David Mettler
Swanville, MN
(West)

Nicholas Seedorf
Cedar Rapids, IA
(McMullen)

Ethan Sweep
Fosston, MN
(Kandel/Johnson)

Scholarships

Congratulations to the 2013-14 scholarship recipients and a wholehearted "thank you" to the scholarship sponsors! Scholarship awards this year were presented to 48 undergraduate and 23 graduate students. Total dollars awarded were $57,660 ($37,830 to food science, horticulture and crop and weed sciences undergraduates, and $19,830 to cereal science and plant sciences graduate students). To view individual awards and recipients, visit our website. The scholarships were sponsored by 51 individuals or organizations. We always welcome and appreciate new scholarship sponsors. Please contact our office if you would like more information.

Horticulture Students Place at Regionals

by Kamie Beeson

Three NDSU horticulture students representing the Horticulture and Forestry Club came home with awards and honors from the 41st annual Mid-America Collegiate Horticultural Society (MACHS) competition hosted by the University of Wisconsin, River Falls, in early October.

The students who received awards included junior Nathan Jahnke, sophomore Justin Brown and senior McKenzie Wollman. Jahnke placed first in Plant Identification and second in Fruit and Nursery Plant Judging and was elected secretary of the MACHS officer team. Brown placed thrid in the General Knowledge exam and Wollman was chosen to represent the MACHS at the American Society for Horticultural Science (ASHS) convention in Florida next summer with financial assistance from MACHS to attend the convention.

l-r: Justin Brown, McKenzie Wollman, Nathan Jahnke

Seventy participants from seven schools attended the event, which offered opportunities for networking and visits to horticultural sights, in addition to horticultural competitions. In the competitions, students tested their knowledge against their peers in categories such as general horticulture, woody plant identification, herbaceous plant identification and plant evaluation.

The MACHS promotes the horticulture profession, provides a network of communication for horticulture students, and serves as a channel for the exchange of ideas. The NDSU Horticulture and Forestry Club will host the 42nd annual MACHS meeting in 2014.

For more information about the NDSU Horticulture program, visit *www.ag.ndsu.edu/plantsciences/*.

From the Department Head

(Continued from page 1)

The 2013 growing season saw a return of wet field conditions during the spring planting season. Many growers in the northern tier of counties across the state were unable to plant a crop. My barley breeding project was unable to seed our largest research site near Osnabrock in the northeastern part of the state. I hope the 2014 growing season will be more kind than many of the years we have had in the last decade.

The next legislative session in North Dakota won't begin until January 2015, but the State Board of Agricultural Research and Education (SBARE) listened to testimony from stakeholders from October-January and established their prioritized list of requests for new funding for the Agricultural Experiment Station (AES) and Extension Service budgets. Items that would directly benefit the department that received high prioritization in the AES budget included three support positions in bioinformatics, operating funds for precision agriculture research, and additional funds for state-funded graduate research assistants (GRA's) and major equipment. The Extension priority list included funding for a research support position in hybrid corn testing, which was part of the top ranked Agricultural Program and Capacity Initiative. In the past decade, our research and Extension programs at NDSU have been able to grow and modernize due to tremendous stakeholder support, and high crop prices and increased revenues in the energy sectors.

Alumni Spotlight

Teresa (Jacobsen) Mitzel

Photo by Taylor Mitzel

Degree: M.S. in Horticulture

Year Graduated: 1988

Adviser: Dr. Shelley Jansky

Current Position: Head of Product Evaluation & Advancement Vegetables at Syngenta in Idaho

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

"NDSU Plant Sciences gave me an awesome foundation to launch a career in plant breeding. My undergraduate degree focused on landscape design, and my Master's program on plant breeding in potatoes. I was very fortunate to combine both of them in a career of breeding ornamentals. I have been with Syngenta for 22 years, and have now transitioned to Vegetables as the Head of Product Evaluation in North America. My team takes the products from the discovery science stage and decides which products best fit our customer needs. Bringing plant potential to life and feeding the world!!! Thank you NDSU for initiating my journey."

Robynn (Anfinrud) Dillon

Degree: M.S. in Plant Sciences

Year Graduated: 2012

Adviser: Dr. Marisol Berti

Current Position: Secondary Science Teacher at Christian Life School in Farmington, MN

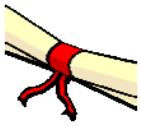
How has NDSU Plant Sciences contributed to where you are today?

"My MS education in Plant Sciences at NDSU has helped me to develop a greater appreciation for those who produce food and fuel crops around the world. I now have the privilege of educating my students about the importance of agriculture and how it impacts their lives daily."

We want to hear from you!

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) and submit an update form. Include a statement about your experience at NDSU, along with a photo, and indicate your permission to use it in our web and social media outlets.

2013 Ph.D. & M.S. Graduates



Ph.D.

Filippo Bassi (*Plant Sciences, Kianian)*

Ronald Dorcinvil *(Plant Sciences, McMullen)*

Tonette Laude *(Plant Sciences, Carena)*

Gurleen Sandhu *(Cereal Science, Manthey)*

Courtney Simons *(Cereal Science, Hall)*

M.S.

Aman Anand *(Plant Sciences, Gramig)*

Nolan Berg *(Plant Sciences, Li)*

Ryan Burciaga *(Plant Sciences, Kianian)*

Adam Chyle *(Plant Sciences, Deckard)*

Marina Dobrydina *(Plant Sciences, Manthey)*

Danielle Fiebelkorn *(Plant Sciences, McPhee)*

Vibin Harilal *(Plant Sciences, Mergoum)*

Aaron Hoppe *(Plant Sciences, Kandel)*

Casey Johnson *(Cereal Science, D. Thavarajah)*

Jenny Kuchynski *(Cereal Science, Hall)*

Grant Mehring *(Plant Sciences, Hatterman-Valenti)*

Sonali Mehta *(Genomics and Bioinformatics, Christoffers)*

Irene Roman *(Plant Sciences, Thompson)*

Dulan Samarappuli *(Plant Sciences, Berti)*

Amanda Schoch *(Plant Sciences, Ransom)*

Jaidev Sehrawat *(Cereal Science, Schwarz)*

Cody Turner *(Cereal Science, Hall)*

Kristin Whitney *(Cereal Science, Simsek)*

Blizzard Watch 2014 to be Electronic Only!

The 2013 issue of the *Blizzard Watch* is the last one we will print and mail out. In an effort to save printing and postage costs, future issues of the *Blizzard Watch* will be accessible only on our website, along with past issues. Those for whom we have an e-mail address will be sent this link. Those for whom we do not have an e-mail address will no longer receive a mailing.

Don't miss out on the next issue! Update your contact information and include your e-mail address using the form below or complete the form on our website. We would like to hear from graduate alumni as well as former employees of the department. When the next issue of the *Blizzard Watch* is published online, you will be notified by e-mail. If you know of 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!

***Blizzard Watch* is online! Go to www.ag.ndsu.edu/plantsciences/news/newsletter**

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:
http://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	Associate Professor (wheat genetics and cytology, genetics teaching)
Marcelo J. Carena	Professor (corn breeding, genetics)
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	Associate 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)
Hans Kandel	Associate Professor (Extension agronomist, broadleaf crop production)
Chiwon W. Lee	Professor (greenhouse production, vegetable culture and breeding)
Deying Li	Associate Professor (sports turf management)
Rodney G. Lym	Associate Dept. Head and Professor (perennial weed control)
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Michael S. McMullen	Professor (oat breeding, genetics)
Kevin McPhee	Professor (pulse crop breeding)
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Paul Schwarz	Professor (malting barley quality)
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University of Minnesota-Morris
Russell Gesch (oilseed crops)
University of Puerto Rico-Mayagüez
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Bryan Brunner (tropical/subtropical crops)
Raul Macchiavelli (statistics/biometry)
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Timothy Porch (dry bean breeding, genetics)
Linda Wessel-Beaver (squash, pumpkin)

Postdoctoral Research Fellows

Wesam AbuHammad (durum wheat genetics)
Niaz Ali (wheat cytogenetics/genomics)
Jawahar Jyoti (barley genetics)
Ajay Kumar (hard red spring wheat breeding/genetics)
Zhao Liu (sunflower germplasm development)
Yunming Long (sunflower germplasm development)
Sujan Mamidi (legume genetics/genomics)
Monika Michalak (canola doubled haploid production)
Seyed Pirseyedi (hard red winter wheat pre-breeding)
Robert Sabba (potato germplasm evaluation)
Dipayan Sarkar (plant metabolism, food security)
Stephan Schroder (dry bean genetics)
Zahirul Talukder (sunflower germplasm development)
Hongxia Wang (sunflower doubled haploid production)
Jichong Zhang (sunflower germplasm development)
Qijun Zhang (wheat stem rust resistance)

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Lingzhu Deng	PhD	Manthey
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Etsehiwot Gebreselassie	MS	Hall
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Alberto Jimenez Diaz	PhD	Schwarz
Khairunizah Hazila Khalid	PhD	Simsek
Yu Liu	MS	Manthey
Mihiri Mendis	PhD	Simsek
Ebony Sampson	MS	Myers/Hall
Emily (Hunt) Schmidt	MS	Hall
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