Agronomy education holds strong for two alumni
A Note from the Department Head

Welcome to our 2014 newsletter. It does not seem that long ago when I was preparing my letter for the previous edition. How time flies by! While we live in a fast paced world, sending out this newsletter is a good time to reflect on the departmental accomplishments as well as the purpose behind our work.

When I think about the Department’s foundation I recall the College's and the Department’s three mission areas: Extension, Education and Research. The combination of these areas is what allows us to progress, develop new technologies, educate our students and inform the public about best agricultural practices. I think Purdue Agronomy does an outstanding job touching on each area. The first Agronomy courses were taught in 1907 and the Department was officially formed in 1910. If you look on our web site under About Us and read the Departmental History you will see how these three mission areas have been an integral part of the Agronomy Department since its inception.

As you saw on the cover, we highlighted two alumni. This story reflects how a Purdue Agronomy education holds its value over decades of industry changes, advances in technology and a growing population. The students who are graduating now are tomorrow’s leaders.

Speaking of advancements in technology, the Department continues to be at the leading edge of discovery. Just over a year ago President Daniels named Plant Sciences one of the Purdue Big Moves and in about 15 months we will be opening a state-of-the-art Automated Phenotyping and Seed Processing Building at ACRE from which new discoveries will be made. We have included in the newsletter a number of articles that highlight faculty and staff research discoveries. The research we conduct spans the basic to applied continuum and is presented in many ways that range from peer-reviewed publications to discussions topics between Extension Educators and producers.

This brings me to Extension. This year marked 100 years of the Cooperative Extension Service. In the Department we celebrated this historical event at the Agronomy Field Day at ACRE. The field day was brought back after 10 years by the Area Nine Extension Educators and several Agronomy faculty and staff with our Agronomy Extension Specialist as tour stop speakers. Keynote speakers included Dr. Mike Schutz, Director of Extension’s Agriculture and Natural Resources programs, and Dr. Jason Henderson, Associate Dean and Director of Purdue Extension. Schutz spoke of the past 100 years and the impact role Extension has played on many of our lives. Henderson noted that there is a lot to look forward to in the area of Extension, that 100 years is a milestone, yet a mere stepping stone to the potential the future holds.

It has been exciting to look at what our talented faculty, staff and students have accomplished this past year – but I am even more excited about our very bright future.

Go Boilers!

Joe
This year has been a busy, yet rewarding, one for Purdue Agronomy! We are excited to share some faculty and staff honors, undergraduate and graduate student recognitions and events the department has participated in on the following pages. Please visit www.ag.purdue.edu/agry/alumni_friends for a complete list of accomplishments.

**Ag Alumni Fish Fry**

Hopefully you stopped by the agronomy booth at the Purdue Ag Alumni Fish Fry. Nearly 1,500 people attended this famous event. This year the guest speaker was McDonald's CEO, Donald Thompson. He spoke about McDonald's involvement and support of agriculture. The next Purdue Ag Alumni Fish Fry will be Feb. 7, 2015.

*Below:* The 2014 guest speaker, McDonald's CEO Donald Thompson, got a lift to the stage aboard the Purdue Xtra Special.

**Welcome to Agronomy**

This year several new faces have joined the Purdue Agronomy family. We are glad to welcome them and look forward to their success. The new faculty and staff members are: Cankui Zhang assistant professor; Sue Bennett Agronomy Center for Research and Education (ACRE) business manager; Megan Lautenslager and Bonnie Kauffman both teaching staff secretaries; Chloe De Perre an analytical chemist, Anna Holmes and Amy Tarvin are business office account clerks.

**Food Drive Supporter**

Agronomy was busy this past spring raising money for the College of Agriculture Food Drive. The food drive was held March 24 to April 11. The department hosted two walking taco luncheons, a sundae bar and a hot dog luncheon, raising over $2,000 and collecting a large amount of food donations.

**Years of Service**

Clerical, service and A/P staff were recognized recently for their years of service. Shubha Subramanyam, research associate, has been with Purdue for 10 years. Phil DeVillez, Purdue variety testing director, has been employed at Purdue for 15 years. Dawn Foushi, secretary for Agronomy and the Natural Resources and Environmental Science Program, has worked at Purdue for 25 years. Suzanne Cunningham, research crop physiologist, has worked at Purdue for 30 years. Jim Beaty, ACRE farm superintendent; Philip Hess, applications analyst programmer; and Brenda Warren, business office account clerk, have been at Purdue for 35 years.

**Retirements**

Steve Jones retired from Purdue Agronomy after 11 years of service as a farm technician at the Agronomy Center for Research and Education.

Brenda Warren, Purdue Agronomy business office clerk, retired June 30. She has worked at Purdue for 36 years, 28 years being in the College of Agriculture.
Promotions

Faculty and staff members who earned promotion in 2014 were: Dr. Dev Niyogi, Dr. Qianlai Zhuang and Dr. Cale Bigelow to full professor. Dr. Doug Smith was promoted to adjunct full professor. Tom Pluimer advanced to Rank 5 in A/P advancement.

Recognitions

Each year the Purdue Agronomy faculty and staff are recognized for their accomplishments in their professional careers. This year has been no exception.

Dr. Mitch Tuinstra was named the scientific director for the Plant Sciences Research and Education Pipeline (PREP) and confirmed the hypothesis that sorghum deters insects from feeding on its leaves by releasing hydrogen cyanide; Dr. Linda Lee received $1,002,048 from DuPont in state-of-the-art analytical chemistry equipment to support her research on chemical contaminants in the soil environment, and the Excellence in Review Award; Dr. Gary Steinhardt received the North American Colleges and Teachers of Agriculture Judging and Student Service Award; Dr. Phillip Owens developed soil-mapping technology that provides visual information about soil functionality and productivity; Dr. Tony Vyn was involved in an intensive study where nitrogen, phosphorus and potassium taken up by the corn plant at certain ratios increases yield; Dr. Jianxin Ma was part of a team that discovered a soybean gene whose mutation affects plant stem growth, a finding that could lead to the development of improved soybean cultivars for the northern United States, and was appointed as assistant editor for the Genetics Society of America Open Access Journal; Torbert Rocheford was part of a group who found that natural selection can produce orange corn rich in provitamin A; Sherry Fulk-Bringman was named a Purdue Momentum Maker; Connie Foster, Ron Steiner and Matthew Fenton were recognized with a Purdue Thumbs Up.
This academic year Purdue Agronomy welcomed 42 new undergraduate students to the department. We have very talented students who help our department grow and become one of the outstanding examples across the university. The education they are working towards will help them develop skills to make a global impact.

Welcome-Back

At the beginning of each academic year the Department of Agronomy host a welcome-back gathering for students, staff and faculty. This gathering is a great way to meet new people, interact with old friends and network.

Scholarships

One of the department’s proud points is the number of scholarships our undergraduate students apply for and receive. This year the department awarded $55,000 in scholarships. Read more about undergraduate and graduate scholarships on pages 10 and 11.

Senior Steak Fry

May and December graduates were honored at the Purdue Agronomy Annual Senior Steak Fry in May. The event was held at the William H. Daniel Turfgrass Research and Diagnostic Center. The steak fry is a long-lasting tradition, going back to the days when dining courts were not open on Sundays.

Agronomy Club at SASES

The Purdue Agronomy Club attended the annual Students in Agronomy, Soils and Environmental Sciences (SASES) meetings in Long Beach, California. Many members competed in various competitions. The club placed fourth in the poster contest, Cody Hornaday placed second in the speech competition, Kerri Swigley placed second, Valerie Cross placed third in the visual presentation contest, and the Quiz Bowl team placed first. Congratulations to all club members.

Spring Fest

The Agronomy Club is dedicated to making Purdue Agronomy one of the main attractions at Purdue Spring Fest, an annual free event showcasing the lighter side of higher education. The Agronomy Club managed the erosion demonstration, taught event-goers about how plants grow and ran the elephant ear stand, putt-putt golf and the antique tractors areas.

Above: Quiz Bowl team members after their victory. From left: Alex Helms, Carl Joern, Cody Hornaday and Valerie Cross.
Agronomy student experiences culture and agriculture abroad

By Sayde Uerkwitz

As Taylor Sigman woke one morning to the sound of horses traveling along the side street outside her hotel room, she was reminded that she no longer was in Indiana, she was in Costa Rica during a study abroad course. It was one of the most memorable and eye opening experiences of her life.

This semester Sigman, an agronomy and agricultural communication major, took FNR 498, a two-credit course with a one-credit study-abroad component. The class explored global sustainability issues in natural resources with an emphasis on forestry, wildlife, agroforestry, wood products manufacturing, energy, conservation and water management, and their impact on Central America and the world.

Eva Haviarova, Department of Forestry and Natural Resources associate professor, was the instructor of the course.

“When I teach the course I have a base plan, but things could change due to the interest of the students,” Haviarova said. “The benefit of having the study-abroad portion of the course later in the semester is allowing time for the students to get to know one another. They can learn about their classmate’s interests. I notice these interests and instruct the course based on the interests of the students.”

Sigman said she learned a lot about how others live outside the United States. She and her fellow study-abroad companions visited Costa Rica TEC, a university that focuses on wildlife, natural resources and the environment.

“Costa Rican agriculture is so much different than home in the flat lands of Indiana. I had so much fun and I am glad I took a course that opened my eyes to a new culture.”

“During our time at Costa Rica TEC we participated in several lectures,” Sigman said. “One of the lectures focused on water resources and usage. I learned that in some developing countries the average person will use just over a gallon of water a day. Here in the United States over a gallon and a half is used when the toilet is flushed. This

During her study-abroad course in Costa Rica, Taylor Sigman (second from right) learned more about agriculture than she expected. She also learned about the culture. She is pictured here prepared to zip-line with her classmates.
simple fact opened my eyes to how different my world is compared to so many who live across the globe.”

The group participated in activities as well. One was learning about sustainability and agrotourism.

“We toured a facility of an Eco-termales hot spring,” Sigman said. “The farmer who oversaw the hot spring resort also ran a restaurant and cattle herd. There was also a lagoon on the farm. The farmer would take all of the wastewater from the restaurant, showers and restrooms and put it in the lagoon to filter out all of the impurities and put it back out into the environment. During that process, methane was collected and used to cook in the kitchen of the restaurant. The owner also made fertilizer from food waste and cattle manure.”

Haviarova added that the student’s experiences at the Eco-termales hot spring was a perfect example of sustainable practices in a different country.

“In Costa Rica, a lot of people are finding ways to be more sustainable and energy efficient,” Haviarova said. “The students were able to tour a facility where this is happening firsthand. The owner is able to connect different types of agriculture and make the whole process sustainable.”

Sigman also toured a greenhouse facility that grew teak trees.

“This was one of my favorite stops,” Sigman said. “The part I enjoyed here was the greenhouse. The guide spoke about agriculture and how it has priority over forestry, but I’d say the most interesting part about this stop was learning that pineapple production requires around 35 pesticide applications throughout its growing season. This number is much higher compared to teak trees, which is extremely limited on the pesticide applications it can legally use.”

“Costa Rican agriculture is so much different than home in the flat lands of Indiana,” Sigman said. “I had so much fun and I am glad I took a course that opened my eyes to a new culture.”

Although the study abroad portion of the course began and ended in nine days, the memories will forge on.

Haviarova said it is a gratifying feeling to hear students say traveling to a new country was one of the best days of their lives.

“It is even more gratifying when they take their experiences and implement them into their daily lives in their home country. That is when I know I’ve done my job,” Haviarova added.
This year we welcomed 19 graduate students into the agronomy family. We are excited to see what they bring to the department and what their future holds. Our current graduate students had another successful year. The students carry a heavy academic load, as well as prepare for research, presentations and other collegiate events. Their hard work does not go unnoticed.

Graduate Student Awards

This year’s awards include: Quincy Law received the Teaching Academy Graduate Teaching Award and the Outstanding Graduate Teaching Award (M.S.); Sarah Reagan received the Graduate Instructional Development Certificate; Jason Roth received the Graduate Instructional Development Certificate; Jieqing Ping received the Outstanding Graduate Research Award (Ph.D.); John McMillan received the Outstanding Graduate Extension Award; Amanda Easterly, Raymond Lindsey and Alex Renaud received the John D. Axtell Graduate Student Award in Plant Breeding and Genetics; Alencar Xavier received the Wyman E. Nyquist Scholarship; Amanda de Oliveira Silva received the Stanley A. Barber Memorial Scholarship in Soil Fertility and Plant Nutrition; Jason Geis received the Marvin and Barbara Phillips Scholarship and the M. O. Pence Graduate Scholarship; Joseph Martin received the Joe L. White Graduate Student Award in Soil Chemistry and Mineralogy; Rima Thapa and Sara Reagan received the Wayne P. Rothgeb Memorial Scholarship; Michael Mashtare was awarded the ACS Environmental Chemistry Graduate Student Award; Saerom Park won the Best Poster Award at the 20th World Congress of Soil Science; Heather Pasley and Elizabeth Trybula were named Borlaug Fellows; Saerom Park and Youn Choi received the Andrews Blosser Environmental Travel Grant to present at the 20th World Congress of Soil Science in Jeju Korea; Sara Alford, Sarah Brooks, Isis Chagas, Keru Chen, Minerva Dorantes, Trevor Frank, Monique Long, Shams Rahmani, Amanda Silva, Kelsey Smith, Edwin Suarez, Martha Kille and Min Xu received the 2014 George D. Scarseth Scholarship; Joseph Martin and Jenny Zenobio received the George W. Bailey Graduate Scholarship; Anne Brown, Ben Hall and Alencar Xavier received the Loyal F. "Pete" Bauman Memorial Fund; Megan Fenton, Brenda Owens and Jieqing Ping received the Bauman-Doolittle Endowment Fund.

Chili Cook-Off

Every year our graduate students compete for the title of Chili Champion. Peter Kovacs has claimed the title for the fourth year in a row. Trevor Frank placed second and Darrel Shultz placed third. Shaylyn Wiarda dominated the dessert portion of the competition for the second year in a row. Amanda Cichosz placed second, and Brad Thada was third.
Kin Lau, Doctoral Student  
Major Professor: Cliff Weil  

Briefly describe your research.

Geneticists often study genetic mutants that have abnormal traits and try to determine which genes are causing the abnormality, because they are defective. My research is focused on a corn mutant called Clumped tassel1 (Clt1), in which many parts of the plant, including plant height, ears, tassels and leaves, are smaller than normal. Our work suggests that the causative gene for Clt1 encodes a protein that helps maintain proper shape and arrangement of plant cells. We are in the process of confirming this result and investigating the specific changes to this gene that causes plant parts to be smaller. Additionally, we are studying a second mutant that exacerbates the Clt1 defect. When this second mutant is crossed with Clt1, the upper half of the plant stalk becomes even shorter compared with typical Clt1 plants, but the Clt1 defect in the bottom half is not worsened. We hypothesize that the causative gene of this second mutant has a specific role in the upper part of the plant and works together with the causative gene of Clt1 to influence plant shape.

Why do you feel your area is important to research?

We are trying to identify the genes that control plant shape and figure out how they interact with each other to do their jobs. There are many genes involved, and the accumulation of knowledge is slow, but this type of research could ultimately allow us to breed plants with optimal shape for maximizing grain yield. By analogy, learning about all the different parts in a car is tedious but is required to build a finely honed sports car. The field of crop genetics is a global collaboration among scientists to learn about all the genetic components required to make a finely honed crop plant.

What are your future plans? What do you want to do after you graduate?

In addition to knowledge of specific genetic techniques and concepts, graduate school has taught me vital skills, such as critical analysis of research and writing effectively. I am confident that the skills I have acquired will allow me to be flexible in adapting to various job settings. Most likely, I will start off as a postdoctoral researcher, which will allow me to continue developing my skill set and rise to increasingly impactful positions.
Scholarships

Each year, Purdue Agronomy is fortunate to be able to give scholarships to many students. In 2014-2015, the department awarded approximately $80,590 to its students. Below you will find a list and descriptions of all the scholarships awarded by the Department of Agronomy with names of the most recent recipients. If you have questions about the scholarships please contact Karen Clymer at 765-494-4775. For information about donating to a scholarship contact the Agricultural Advancement office at 765-494-8672.

Undergraduate Student Scholarships

Charles and Rosalee Schmidt Scholarship (for students in the College of Health and Human Sciences or Agronomy):

- Maggie Shoue, Agronomy: Agronomic Business & Marketing

Arvin R. “Rudy” Hilst Memorial Scholarship (for students enrolled in Agronomy with an interest in soil and crop science): (Pictured below from left to right with Martha Hilst and Bobbi Phillips)

- Houston Miller, Agronomy: Agronomic Business & Marketing
- Isaac Greeson, Crop Science
- Matthew Shafer, Agronomy: Crop & Soil Management

Beck Foundation Scholarships (awarded to the top overall freshman, sophomore and junior in Purdue Agronomy):

- Michael Busche, Plant Genetics Breeding & Biotechnology
- Kathryn Graf, Agronomy: Agronomic Business & Marketing
- Hailey Edmondson, Plant Genetics Breeding & Biotechnology

Bruce F. Hardy Memorial Scholarship (for Indiana residents studying crop science in Agronomy):

- William Denton, Agronomy: Crop & Soil Management

Carol A. Thiele Memorial Scholarship (for women studying soil and water conservation, engineering or agriculture):

- Sarah Schwegman, Agronomy: Agronomic Business & Marketing
- Kathryn Graf, Agronomy: Agronomic Business & Marketing

Kenneth and Mary Cohee Crop and Soil Science Award (for juniors and seniors studying crop and soil sciences and who are interested in pursuing a career in the crop production industry):

- Michaela Turner, Agronomy: Crop & Soil Management

Bruce and Katherina M. Maunder Scholarship Honoring Dr. Wayne Keim in Agronomy:

- Carl Joern, Agronomy: Crop & Soil Management

Bruce and Katherina M. Maunder Scholarship Honoring Dr. J. B. Peterson in Agronomy:

- Michaela Turner, Agronomy: Crop & Soil Management

Emerson J. Kuhn Scholarship (for undergraduates seeking a degree in the Department of Agronomy or Animal Sciences):

- Jeffrey Koberstein, Crop Science

F. E. Robbins Scholarship (for juniors and seniors majoring in Agronomy or closely related fields):

- Matthew Price, Applied Meteorology
- Andrew Wilhelm, Turf Science & Management
- Matthew Dudley, Turf Science & Management

James J. Vorst Cropping Systems and Soil Science Scholarship in Agronomy (for students in cropping systems and soil science):

- Sarah Schwegman, Agronomy: Agronomic Business & Marketing
- Cody Hornaday, Agronomy: Crop & Soil Management

Keim Family Scholarship:

- Isaac Greeson, Crop Science
- Daniel Sweeney, Plant Genetics Breeding & Biotechnology
- Emma Kaehler, Plant Genetics Breeding & Biotechnology
- Michael Busche, Plant Genetics Breeding & Biotechnology
Kenneth B. and Mary Cohoe Scholarship in Agronomy (for Agronomy students):

- Kathryn Graf, Agronomy: Agronomic Business & Marketing
- Ethan Carpenter, Agronomy: Agronomic Business & Marketing
- Dillon Burchett, Agronomy: Agronomic Business & Marketing
- Arthur Franke, Agronomy: Crop & Soil Management
- Christopher Bueckers, Agronomy: Crop & Soil Management
- Jeffrey Kuhn, Applied Meteorology & Climatology
- Garrett Corning, Crop Science
- Ariel Kucera, Soil & Water Science

M.O. Pence Scholarship (for both an undergraduate and graduate student with a career interest in agronomic extension or in applied agronomic research):

- Carl Joern, Agronomy: Crop & Soil Management

Mary Frances Seever Award (for freshman students from Sullivan, Vigo or Knox counties):

- Jessica Snyder, Preveterinary Medicine

Graduate Student Scholarships

Joe L. White Graduate Student Award in Soil Chemistry and Mineralogy (recognizes outstanding M.S. and Ph.D. students in soil chemistry and mineralogy):

- Joseph Martin

Dr. Wyman E. Nyquist Scholarship (recognizes graduate students in the disciplines of genetics, plant breeding, plant genomics and/or related agronomic sciences that include a significant genetics component):

- Alencar Xavier

The Marvin and Barbara Phillips Scholarship (recognizes outstanding M.S. and Ph.D. students interested in Extension):

- Jason Geis

John Axtell Graduate Student Award in Plant Breeding and Genetics (recognizes outstanding M.S. and Ph.D. students in plant breeding, genetics and genomics):

- Amanda Easterly
- Raymond Lindsey
- Alex Renaud

Wayne P. Rothgeb Memorial Scholarship (recognizes outstanding M.S. and Ph.D. students in Agronomy):

- Rima Thapa
- Sara Reagan

Loyal F. “Pete” Bauman Memorial Scholarship (recognizes and supports outstanding M.S. and Ph.D. students in plant genetics and breeding):

- Anne Brown
- Ben Hall
- Alencar Xavier
Donor List 2014

It is with many thanks that we announce the Agronomy donors from the 2013-2014 fiscal year. Our research and scholarships are possible because of the generous contributions from so many of our alumni and friends. Every effort has been made to include all donors from July 1, 2013, to June 30, 2014, of the Agronomy Department; however, omissions may occur. Please accept our apology in advance if your generous contribution was not properly acknowledged. If you bring it to our attention we will be glad to correct it in the next edition. Thank you! If you would like information about how you can contribute to the Purdue Department of Agronomy, please call the Purdue Agriculture Development Office at 765-494-8672 or 800-718-0094.

Individuals

Jan and John Adler
Gene Alberts
John R. Allen
Willis and Peggy Alt
Jerry M. Arnold
Kevin A. Arnold
Don and Kathy Ave
Harold S. Aycock
Peter S. Baenziger
Tony and Kelley Bailey
Brian J. Ball
Alvin and Paulette Balmer
Stuart and Sandra Bangs
Kevin and Anne Barber
Dick Barnhill
Marvin E. Bauer
Missy and William Bauer
Winfried Bauman
Marion and Maralee Baumgardner
Larry Bayless
Jim and Harriet Beard
James R. Beatty
Jim and Janet Beatty
Sonny and Glendia Beck
Bucky Beck
Brent and Sandra Beeson
John and Mary Ann Bernard
Bob and Marilyn Bevington
Gary A. Bex
Ed Beyer
Jim and Martha Blank
Sis and Tom Bloodgood
Harold E. Boekelman
Sharon A. Bohannon
Betsy Bower
Laura C. Bowling
Tom and Sue Bradford
Carmen and Jeff Bratz
Bob and Jane Brewer
Max E. Brock
Rex and Nancy Brock
Jarvis H. Brown
Ty and Sasaki Brown
Julie and Jeff Brown
Virgil J. Bulach
Megan L. Burton
Jim Cabell
Bill and Robin Camerer
Mary Laura Campbell
Clinton J. Campbell
Ron Cantrell
Jeff P. Cardinal
Gail A. Carmody
Dennis D. Cermahan
Kevin and Carey Cavagnaghi
Robert and Neva Challant
Bob Chattin
Jim-Song Chen
Sandi and Charles Chetwynd
Ira S. Chorush
Chris and Nancy Christmas
Phil and Mary Christy
Terry A. Coffelt
Jack and Sue Colbert
Neil and Alison Collignon
Megan C. Comerford
Fredrick L. Conelley
Gonzalo Costal
Richard and Hortensia Coy

Curtis and Michelle Crafton
Harold F. Creech
Rodger L. Cripe
Rich Cross
Donn and Tanya Cummings
Suzanne M. Cunningham
Michael Cuzzort
Robert F. Dale
Don and Sandra Daniel
Carl E. Danner
Craig and Phyllis Daughtrey
Mary and Mark Davis
Steven and Darlene Decker
Curtis J. Dell
Russ DeMaris
Jerry and Shelly DeVore
Dale and Mitzi DeYoung
Don and Joyce Dillabaugh
Dick and Sharon Dobis
Glen H. Doll
Douglas Douglas
Betty R. Dragoo-Wheaton
David V. Dunn
Christine and Stephen Durbin
N. Fay Earnhart
Ben Edmondson
Tom and Emily Eickholtz
Sue and Ed Eiler
Donald L. Ekstrom
Marie and Jim Eiler
Mike Elmore
Krista and Derek Emmons
Bob and Sandy Fanning
Jim and Karen Farris
Dave and Lynn Fearis
Jack and Ann Ferwick
Jesalyn and Willard Ferguson
Stephen E. Fuller
Cliff and Herreche Fields
Nancy A. Fitzgerald-Bellovary
Eugene and Angie Flamingan
Robert and Marlene Floyd
Jeffrey A. Ford
Angela and Jeff Ford
Marilyn Fowler
Donald and Karen Franzmeier
Chuck Frostieh
Samuel and Lymarie Fry
Robert W. Fulwider
Miguel D. Gallo
Jane Gemmecke
Steve Gipson
Dave Gunt
Mike and Sue Goad
Jack and Nita Goris
John and Sheila Gravel
Matthew and Susan Gremelspacher
Gregory K. Grenz
Kenneth R. Griepentrog
Bill and Roberta Griggs
Mike Groff
Mike and Jules Grott
Jeff and Brenda Guernsey
Jeff Habben
Adam R. Hall
Julie D. Hall
Kevin and Elizabeth Harner
Fred and Pamela Harris
David J. Harris
Jack M. Hart
Scott and Mindy Hartwell

Joe Hawkins
Glen and Evelyn Hemstock
Tara and Jeremy Henry
Doug D. Hurst
John H. Hillis
Martha K. Hilst
Dave and Diann Hines
Teresa K. Hogue
Don and Margaret Holt
Eldon and Mary Hood
Jim and Terry Hopf
Ed and Carla Hopkins
Oscar and Beverly Hopkins
Bill Hostetter
Yueh-Ching Hsu
Chi-Hua Huang
Andy Huber
Gary and Sarah Hudson
Keith and Joanne Huffman
Larry P. Huffman
Luther B. Hughes
John P. Hunt
Gary and Paula Hunter
Brad and Sandra Inman
Clair C. Inomoto
Frank T. Ivanic
Pete and Cassandra Jacobs
Chris and Jo Johannsen
Randie and Vicki Johnson
Edward and Diana Jordan
Rex and Carolyn Jornay
Mike Karr
Joe and Deb Keaschall
Wayne and Joyce Keim
Eric T. Kelley
Lloyd W. Kennedy
Bill and Sharon Kenworthy
Tammy and Bruce Kettler
John D. Kinnett
Dana L. Kinney
Eileen J. Klavicki
Steve and Judy Klus
Jill S. Knapp
Abbie A. Knight
Gunter and Ellen Kohlhaw
Roger A. Koleszar
Kathleen M. Kozienki
Gunther W. Kreps
Anthony J. Kritisch
Bill and Joyce Kuhn
Norman and Jane Kuhn
Diane R. Kuhn
Jeff Kuss
Hugo E. Laborde
Royce L. Lambert
Nancy and Tom Lange
Richard and Sally Langer
Robert and Cheryl Laszynski
Carol J. Latowski
Vic and Gayce Lechtenberg
Jerry A. Leenheer
Steve Legg
Lori D. Leonard
Roger and Susan Levy
Darrell R. Lind
James A. Linville
John and Jane Linville
Toni and Jan List
Kyle and Jennifer Lively
Shane A. Love
James J. Luby
Organizations
Advanced Design & Machine
Ag Alumni Seed Impr. Assn.
Ag Reliant Genetics
AGD S. A.
Agrum Technologies, Inc.
Agronorte S.A.
Agtec Innovations Inc.
Alliance of Crop Soil & Env Sci Soc
Am. Assoc. of State Climatologists
American Endowment Foundation
Ameren Foundation/MGP
Aquatrols Corp of America
Arysta LifeScience North America
Ashland Inc./M. G. P.
BASF Corporation
Bayer Corporation
Becker Underwood
Beck’s Hybrids Inc.
Bellinger’s Prof. Gnd. Maint.
Bill & Melinda Gates Foundation
Brookside Agr
Chemtura Corporation
Chicago District Golf Association
Cisco Seeds
Clay Minerals Society
Deere & Company
Delta Foundation MG Program
Dow AgroSciences
Dow AgroSciences, LLC
Eichholz, Inc.
El Lilly & Co. Fdn. Inc. MGP
Environmental Tillage Systems, Inc.
FMC Corporation APG
Ford Motor Company
Gowan Company
Howard G Buffett Foundation
Ind Assn. of Soil Classifiers
Indiana Corn Marketing Council
Indiana Crop Improvement Association
Indiana Farm Bureau Inc.
Internat’l Plant Nutrition Inst.
Kraft Foods Group Foundation MGP
Life Sciences Research Fdn.
Mars, Inc.
Midwest Regional Turf Fdn.
Moghu Research Center, Ltd.
Monsanto Company
Monsanto Fund/MGC
National Corn Growers Assoc.
National Crop Insurance Svs.
National Turfgrass Evaluation Prog.
Northwestern IN Terrymens Assoc.
Nufarm Americas Inc.
O.J. Noer Research Foundation
O.J. Noer Research Foundation
PAQ Interactive Inc.
PepsiCo Foundation MGP
Pfizer Matching Gifts Program
Phosyn PLC
Pioneer Hi-Bred Fdn. Growing EMP
Pioneer Hi-Bred International
Pioneer Hi-Bred International Inc
Precision Laboratories Inc.
Renaissance Charitable Fdn., Inc.
Rubisco Seeds, LLC
SePro Corporation
Sigma Xi Scientific Res Soc
Spectrum Technologies, Inc.
Standiford Farms
State Farm Companies Foundation
Step One
Step One Group
Stoller Enterprises Inc.
SWANK
Symuco, Inc.
Syngenta Crop Protection Inc.
The Mosaic Company
Turfgrass Water Cons. Alliance
United States Golf Assoc.
Wade’s Soil Investigations
Wells Fargo Foundation/MGP
By Sayde Uerkwitz

As Mike Cuzzort and Aaron Englert arrive at work, they realize there is more in common between them than being employed at Superior Ag Resources CO-OP in Princeton, Indiana. They both are alumni of the Purdue Department of Agronomy. Although they graduated nearly 45 years apart, their education from Purdue has withstood a generation of changes in the agriculture industry.

Englert, BS ‘13, is a newly hired agronomist and seed salesman while Cuzzort, BS ‘69, has stepped down from a full-time to part-time applicator.

Jesse Uebehlor, Superior Ag Resources CO-OP agronomy sales manager, said the relationship between Englert and Cuzzort is influential.

“Mike has been involved with this company for many years, so he has been part of countless situations from every angle,” Uebehlor said. “Aaron came to us with a great amount of knowledge of agronomy and the geographical area we cover. They are able to teach and help each other because they both have a passion for this business and rely on each other’s strengths.”

There is even more in common between these two Purdue Agronomy graduates. They both attended Vincennes University before completing their bachelor’s degree at Purdue, they both are from southern Indiana, and both have a passion for teaching others about agronomy.

Through the years

Cuzzort grew up on a farm where they raised corn, wheat and melons.

“My dad was the type of farmer who wasn’t afraid to incorporate new technology into his farming operation,” Cuzzort said. “He was the first farmer in the area to have a self-propelled combine. I guess with this mentality on our farm, I was encouraged to continue my education after high school.”

After applying to Vincennes University and completing three years of course work, Cuzzort made the decision to earn his bachelor’s degree.

“Dr. Ellsworth Christmas was teaching classes at Vincennes at the time. He saw the potential I had to obtain a bachelor’s degree and encouraged me to attend Purdue. I was always interested in agronomy, and studying at one of best agronomy programs in the country made the decision much easier.”

Dr. Christmas recalls teaching Cuzzort and the type of student he was.

“Vincennes University and Purdue University have a cooperative agreement in the agriculture program where Purdue will supply the faculty to teach two classes in the areas of horticulture, animal sciences, agricultural economics and agronomy at Vincennes,” Christmas said.

“I was the Agronomy Department faculty member during the time Mike was at Vincennes. The group of students I had the first two years were academically outstanding, which was the group Mike was in. I had no issues with these students. The only problem I ran into was that some were concerned about continuing their education at a school like Purdue. I knew they could do well at Purdue, so I encouraged them to finish out their degree. Some even attended graduate school.”

After graduating from Purdue University and moving back to his home area, Cuzzort took a job with Princeton Farms, a family-owned and operated farm, as their production manager. After the farm was bought out in 1995, Cuzzort started with Gibson County CO-OP, now Superior Ag Resources.

“The year Gibson CO-OP hired me, I started in the fall at
Cuzzort has seen several changes during his time in the agricultural industry. "I was in one of the first groups to go through the Pesticide Applicator License training. I was able to be certified in four different areas at one time. When I register at events, they ask what my number is. There is a surprised look on their face when I tell them it is 493. The biggest change I see in agriculture is precision farming. More people are attuned to the idea of better production, if the right technology is used, farmers can achieve their production goals."

Cuzzort said his Purdue degree not only taught him about agronomy but much more. "My experiences at Purdue taught me to make decisions, the right decisions."

Looking Forward

Englert grew up helping his family manage a dairy production facility. "I found my passion for agriculture in the dairy industry. As I grew older, I started to explore different parts of agriculture and found that the area of agronomy interested me. I knew I wanted to be in the farming industry when I grew up and wanted to do more on the crop side. I am still interested in livestock, and like how my two interests are related."

When Englert was a student in the Purdue Department of Agronomy, he was heavily involved with many agronomic activities across campus.

"Being part of the Agronomy Club, Purdue Soil Judging Team and helping with Ag Week opened up many opportunities for me during college. These organizations allowed me to network with professionals from different parts of the industry at events like Spring Fest and the Purdue Ag Alumni Fish Fry."

Sherry Fulk-Bringman, Purdue Agronomy Club adviser, said Englert hit the ground running and never looked back when he joined the department.

"When Aaron came to the Department we knew he was going to do well in Agronomy inside and outside the classroom," Fulk-Bringman said. "Aaron is a great leader who has the skills to encourage others. He worked hard to become the Agronomy Club president and made the club a place where more students could get involved and learn about agronomy and agriculture."

Dr. Gary Steinhardt, Purdue Soils Judging Team coach, adds that Englert is the type of person you can rely on. "Aaron goes beyond the requirements and improves the situation," Steinhardt said. "When he was on the soils team, he was willing to help anywhere he could."

Cathy Egler, Purdue Soils Judging Team assistant coach and past Vincennes University adjunct professor in soil classification, remembers Englert as a student. "I specifically remember Aaron because he came to my class although he wasn’t signed up for it," Egler said. "He attended my three-hour lab to just learn more about soils. This is not heard of very often."

Like most Purdue Agronomy graduates, Englert started his career a few days after graduation. "I accepted my position with Superior Ag Resources the November before graduation," Englert said. "As an Agronomy student, I interned with Superior Ag Resources for two years. It was nice having a strong relationship with my employer before I was hired fulltime. There are great opportunities in agronomy; my peers either were going onto graduate school or had a job. That says a lot about Purdue and the need the industry has for incoming professionals."

Englert adds what he learned in college was the foundation to his early career. "The courses I took in college set me up to better serve our customers. Courses that covered soils, plant diseases and physiology helped me prepare to answer the questions our customers have. I would not have learned these skills without going to college. I became a well-rounded person and have a better understanding of what it takes to raise a crop correctly."

Englert said the favorite part of his job is helping people make decisions that will improve their business. "I could not do this part of my job without my Purdue Agronomy degree."

As a recent graduate, Englert appreciates working with Cuzzort, someone who has experience with the company and the industry.

Cuzzort said he hopes he has influenced the younger generation throughout his career. "There have been a lot of changes in this industry, and if I can help the younger folks coming in with experiences that I’ve had, then I guess I’ve reached one of my goals."
Describe your position.
I’m a professor of applied meteorology in the Purdue Department of Agronomy. I get to solve problems that people bring to me by applying meteorology to those problems. These problems typically relate to organisms in the environment - how the organism and the environment interact.

How did you get involved with the research aspect of your position?
Growing up, I was a Boy Scout. I hiked, camped and was outside a lot. I wanted to understand the environment that I was in. I wanted to understand the clouds and the plants - that really got my interest in the environment. It was fairly early on that I could see what I wanted to do. I really wanted to understand it. I didn’t want to just read about it. I was interested in research as a high school student. At a high school age I was wanting to be a professor.

I started out in plant ecology. As an ecologist I learned a lot about plants and plant chemistry. As I started to model, I found that the ecological models lacked realism in the plant/atmosphere/soil interface. I saw an opportunity and a need and chose to work in the physical and environmental interface to help fill in gaps that lacked this knowledge.

Describe how your research has changed over the years.
My field work started in forest meteorology. When I moved to the Midwest, agriculture was far more important for the area than forests. I shifted over in working with the agricultural systems in the environment. A canopy of corn is different than a forest canopy but fundamentally similar. I could use what I learned in the forestry setting and translate that knowledge to an agricultural system.

We looked at the climate within those canopies how the canopy interacts with the environment. We also looked at organisms within the canopy, for example insects or materials that come out of the canopy, such as pollen. How does that get influenced by the climate within the canopy, within the agricultural system?

As the environmentalist era came, I shifted my focus on how the environment was being influenced by agricultural systems. I started to look at things like ozone, organic materials coming off the crops, how sulfur dioxide increases the acidity of the rainfall and soils, how man’s activity and the development of urban areas influence the ozone levels and enhance the survivability and productivity of crops. I shifted into that area as the environmental emphasis became a strong aspect of what society was interested in.

From there, society became interested in climate change. The ozone hole was seen for the first time in the late 1980s. In 1990 I shifted a lot of my work from dealing with just air quality and environment to ultraviolet radiation associated with the ozone hole - trying to understand the linkage between the atmospheric ozone and ultraviolet radiation and crops or people or animals and what the impacts are.

What do you wish other people knew about your area of research?
Working at the interface of plants, animals, soils and the atmosphere, there is a great deal of opportunity for collaboration. I think a lot of people work with these organisms as I used to, but they are not aware of the environment or the variability in the environment that influences what they are trying to understand about their soil, crop or animal production, etc. I would like to help them understand that the environment and the variability is really important, and it can help explain processes that become variable in their experiments.

Considering the energy, mass and momentum transfers between the atmosphere and the biological environment can greatly improve understanding of variability in plant and soil processes in the field.

What is a proud point in your career?
I’m not only a researcher, I am also a teacher. I manage the applied meteorology and climatology student undergraduate population, so I really get a charge out of seeing them graduate and head off into jobs.

What might someone be surprised to know about you?
I’m a president of a nonprofit organization called Global Involvement Through Education. I do quite a bit of international travel to evaluate projects and visit offices that we have throughout North Africa, the Middle East and Central Asia.

What do you do when you are not researching?
In my spare time I like to read and hike.
Please briefly describe your position.

I teach undergraduate genetics in the summer and advanced plant breeding for graduate students. I advise students in the plant genetics breeding and biotechnology major. The rest of my time is spent advising graduate students on our research projects.

My research is focused on genetic improvement of soybean for economically valuable traits, primarily yield, yield-associated traits and yield components, and seed quality. As part of this, I work on yield prediction, integrating genetic/genomic, phenotypic and environmental data. I also work to improve accuracy and precision of phenotyping, including close-range remote sensing with Unmanned Aerial Systems (UAS).

How did you get involved in the research aspect of your position?

I came to this career with more of an interest in plant science and genetics than agriculture, per say. I’ve always loved genetics, plants and agriculture. So I found that studying plant breeding was a great fit for me.

I’ve always been a researcher. I love intellectual creativity and freedom. I like the complex applied challenges that come with research. I am not as interested in basic biology-type questions but complex economically important questions, like how can we change the carbohydrate composition of soybean and what that means for feeding animals, what is my role as a breeder and how can I provide resources to other institutions and industry.

I did not grow up on a farm; I grew up in the suburbs in East Tennessee. Members of my family farmed, but I did not have a lot of direct agriculture plant exposure. My mother and grandmothers all love horticulture, so I become interested in plants for that reason. I also liked genetics. My undergraduate degree is in botany. I perceived that if I went into plant breeding, I would have better opportunities, and I found it interesting.

What do you wish others knew about your research work?

I wish other people knew that my work is primarily genetics. Sometimes people joke that I am obsessed with beans. What we do is fundamentally genetics in the lab, and there is a lot of technology that we are using that isn’t seen. If you go to the field, it looks like a field of soybeans. There is so much behind that field in terms of millions of data points of genomic information, decades of elite germplasm development, several years of resources to help answer difficult questions, not to mention the advances that we are applying to statistical models.

Describe how your position has changed over the years. What will it look like in five to 10 years?

In some ways plant breeding uses the same methods as 100 years ago. There are basic elements, like how we plant the field, that don’t change. There is constant change in other ways - one of them is data integration. We are trying to integrate genomic data, climatic data, precision high throughput phenotyping data. It used to be that a person would specialize in one or the other and now we are able to integrate multiple streams of data and have more complex objectives as a result. I hope we get better at this in five to 10 years, where it is more automated and there are better pipelines and tools for data integration. My hope is that we can predict yield as a result of this movement.

What is a proud point in your career?

Being hired at Purdue has allowed me to advance my research and work with awesome colleagues. I also enjoy seeing my graduate students be successful, complete their degree and get a job that they love. That has been my favorite part.

What might someone be surprised to know about you?

If I wasn’t a scientist, I would be a seamstress. I love to make clothes. I also enjoy human evolution, migration and ancient culture. This area uses genetic information, which I enjoy.

What do you do when you are not working?

Taking walks with my 10-month-old son Henry, playing Euro board games with my husband or sewing garments for my family.

Find out more about the opportunities you have as an alumni or friend of Purdue Agronomy at:

www.ag.purdue.edu/agry/alumni_friends.aspx
Boosting Global Corn Yield

Ensuring that corn absorbs the right balance of nitrogen, phosphorus and potassium is crucial to increasing global yields, a Purdue and Kansas State University study finds. Dr. Tony Vyn and his collaborators reviewed data from more than 150 studies from the U.S. and other regions. They showed that high yields were linked to production systems in which corn plants took up key nutrients at specific ratios - nitrogen and phosphorus at a ratio of 5-to-1 and nitrogen and potassium at a ratio of 1-to-1. Read more here [www.ag.purdue.edu/agry](http://www.ag.purdue.edu/agry)

College of Agriculture Alumni Pancake Breakfast

On Sept. 27 the College of Agriculture hosted an alumni pancake breakfast before the Purdue Homecoming game. Although the Boilermakers were not able to overcome the Hawkeyes, Purdue Agronomy was able to name several of their alumni winners. All alumni in attendance were able to take home a gift from the department and participate in the Dig into Agronomy game. From left, Linda Eastman won the women’s basketball tickets, Gunther Kreps received a clock, and Tom Bradford won the men’s basketball tickets.

Crop Diagnostic Training and Research Center

The Purdue Crop Diagnostic Training and Research Center (DTC) conducted 34 workshops and trained 990 individuals on several agronomic topics including weed management, corn growth and development, soybean stand establishment, fertilizer additives, disease identification, insect identification and management, nitrogen management and forage management. In 2014 the second edition of the Midwest Cover Crops Field Guide and the 2014 Corn and Soybean Field Guide were released. Total publication sales for 2014 were nearly 48,000.
The Year of the Coliseum

Fair food, fun and fellowship are just some of the great things you can find at the Indiana State Fair. This year's fair theme was the Year of the Coliseum. One main attraction at the fair was the newly renovated coliseum. During Purdue Day at the fair, Purdue Agronomy entertained and educated many fair-goers about agronomic practices. People from all ages played the Dig into Agronomy game, discussed academic major options and received a departmental update.

Agronomy Field Day at ACRE

The Agronomy Field Day at ACRE was hosted by Purdue Agronomy and the Area 9 Extension ANR educators. This is the first agronomy field day the department has helped host in 10 years. Nearly 100 participants engaged in current agronomic issues related to field crops, weeds, fungicides and soil health. Before the field tours started, a breakfast was provided, and a series of guest speakers spoke about the last 100 years of Extension, the future of Extension and a plant sciences update. Be sure to attend next year's field day on Sept. 2, 2015.

Gene Discovery

Purdue agronomy professor Jianxin Ma and collaborators identified a gene known as Dt2, which causes semideterminacy in soybean plants. Semideterminate soybean plants - mid-size plants that continue vegetative growth even after flowering - can produce as many or more pods than current northern cultivars but do not grow as tall. Their reduced height makes them more resistant to lodging, a bending or breaking of the main plant stem. Read more here www.ag.purdue.edu/agry
Future Giant of the Seed Industry Award Winner

Seed World sits down with the 2014 Future Giant of the Seed Industry award winner and explores the realities that keep Chris Boomsma motivated.

“What excites me about working in the seed industry is the ability to employ my passion for research and skills in science to address humanity's core need for affordable, sustainably-grown food. It's very rewarding to work in an industry that has a direct impact on the quality of life of so many individuals.”

- Chris Boomsma, Ph.D. 2009