Agronomy had a very productive year, one filled with faculty and student accomplishments, new faculty and staff, and a CSREES departmental review.

Our faculty have certainly been in the forefront with distinguished honors … Gebisa Ejeta was named the 2009 World Food Prize Laureate and received the CSSA Presidential Award; Dan Szymanski received the 2009 Agricultural Research Award, Lori Snyder received the 2009 New Teacher Award from the Association of Public and Land-grant Universities (APLU), and Dev Niyogi and Kevin Gurney were awarded the NSF Career Award. Scott Jackson, Jianxin Ma, Dev Niyogi, Cliff Weil and Mitch Tuinstra were also inducted into the College of Agriculture’s Millionaire Club (recognized faculty who receive sponsored research awards of $1 million or more), and Craig Beyrouty was named Dean of the College of Agricultural Sciences at Colorado State University. Our Agronomy undergraduate and graduate students have also been recognized for their excellence through awards, scholarships and team competitions. Check out the listings of student awards on pages 10-13.

The department went through an intensive CSREES review of our programs in February 2009 and received very positive comments. The review team members were complimentary of the quality and commitment demonstrated by the department in our mission areas. The department identified six ‘grand challenges’ that represented a new and forward-looking culture of the department leading to new knowledge, solutions and educational opportunities. Collective and interdisciplinary approaches will focus on bio-feedstock production, climate change and its potential impacts on agriculture and natural resources, landscape-scale management for sustainable plant production and ecosystems, harnessing plant breeding and genetics for crop improvement, and managing chemical and biological constituents in the environment and quantifying their impact.

Special thanks go to all our donors, friends and alumni, who support the department. Agronomy has been especially blessed with dedicated and supportive donors. These funds are critical to our ability to recognize outstanding undergraduate and graduate students, provide support funds for students to participate in regional and national meetings and activities, and help with their tuition costs. All of these experiential learning activities are crucial for developing students’ leadership skills and abilities to expand their horizons, and become leaders of the 21st Century.

As we begin our new year, we say farewell to two of our colleagues, Jim Vorst and Zac Reicher. Dr. James Vorst officially became Emeritus Professor of Agronomy on December 31, 2009. Jim joined the department in August 1969 and during his 40 years of service he has been instrumental in Agronomy’s crops teaching program, and providing invaluable advising and mentoring to undergraduate and graduate students. Jim continues to work with the International and Tri-State Certified Crop Adviser Programs for registration and certification of crop production.

Zac will be joining the University of Nebraska staff in March for a similar position with teaching, research and extension responsibilities. Zac came to the department in 1988 as a Research Agronomist in Turf and joined the faculty in 1997. Zac has led a premier extension program, an outreach to the professional turfgrass industry of Indiana and the Midwest, and has provided leadership for the Purdue Turfgrass Science Program. While at Purdue he was the Executive Director of the Midwest Regional Turf Foundation. We wish Jim and Zac the best in their new endeavors, and we look forward to continued interaction with them.

New challenges greet us in 2010 as we search for a new Department Head, a Turfgrass Extension Specialist, and as we continue to seek funding to meet the grand challenges outlined in our review. We look forward to the new opportunities and challenges 2010 brings.

Herb Ohm, Interim Department Head
Gebisa Ejeta was announced as the 2009 World Food Prize recipient on June 11 by U.S. Secretary of State Hillary Rodham Clinton and World Food Prize Foundation President Kenneth Quinn.

The World Food Prize Foundation presents the award each year to individuals who have advanced human development by improving the quality, quantity, or availability of food worldwide. Gebisa was honored for his work in developing sorghum hybrids resistant to drought and the devastating Striga weed. These hybrids have dramatically increased the production and availability of one of the world’s five principal grains, and enhanced the food supply of hundreds of millions of people in sub-Saharan Africa.

Gebisa received the honor at an October 15 ceremony at the Iowa State Capitol in Des Moines. The ceremony was attended by dignitaries and experts from more than 60 countries. U.S. Secretary of Agriculture Tom Vilsack read a congratulatory note to Gebisa from President Barack Obama.

Norman E. Borlaug, winner of the 1970 Nobel Peace Prize, established the World Food Prize in 1986. Dr. Borlaug died just over a month before the 2009 World Food Prize award ceremony.

Gebisa also received Ethiopia’s highest honor, the National Hero Award, presented by President H.E. Ato Girma Woldegiorgis in November.

Gebisa has been a very busy Purdue Agronomy faculty member for the last six months. He will be writing about his experience as the 2009 World Food Prize Laureate in the next Agronomy Alumni/Friends newsletter.
Herb Ohm became the Department of Agronomy Interim Department Head in July. Darrell Schultze became Associate Interim Head in August. Together, they are serving the department with their leadership and direction.

Shaun Casteel traveled to Beijing, China, for the World Soybean Research Conference. The conference is held every four to five years. It featured representatives from 56 countries and had plenary lectures that addressed the full breadth of soybean research from genetics, physiology, production systems, food and feed utilization, engineering, and much more.

Rebecca Doerge was named a 2009-2010 Fellow in the Academic Leadership Program sponsored by the Committee on Institutional Cooperation (CIC).

Gebisa Ejeta received the CSSA Presidential Award at the 2009 International ASA/CSSA/SSSA Meetings in Pittsburgh. He also received the Indiana Hero Award at the Pacers vs. Chicago Bulls game on February 9.

Bob Nielsen received the Agronomic Extension Education Award (ASA) at the 2009 international ASA/CSSA/SSSA meetings in Pittsburgh. He also received the Certificate of Distinction on February 6 during the annual Ag Alumni Fish Fry at the Toyota Blue Ribbon Pavilion at the Indiana State Fairgrounds in Indianapolis.

Gary Steinhardt is the 2009-2010 President of the Soil and Water Conservation Society.

Kevin Gurney and Dev Niyogi were two of 13 Purdue faculty members to win the National Science Foundation’s most prestigious honor for outstanding young researchers in 2009, the Faculty Early Career Development awards.

Jane Wiercioch recently changed positions. Jane is now the Undergraduate Program Administrator for Agronomy and the NRES program, in this position she will act as a staff advisor as well as participate on many College of Agriculture committees.

Please join us on Friday, April 9 for a celebration of Jim Vorst’s 40 year career as Professor of Agronomy. The celebration will be at the W. H. Daniel Turf and Diagnostic Center from 3:00 p.m. - 5:00 p.m.
The 48th annual Clerical and Service Staff Recognition Luncheon was held in December. Four agronomy staff members recognized for their years of service were Eileen Mallery, 10 years; Cindy Boone, 35 years; Karen Clymer, 35 years; and William Garner, 30 years.

Agronomy AP staff honored for years of service:
45 years – Judy Santini
35 Years – Ken Scheeringa
20 Years – Ed Stath
10 Years – Patsy King and Jane Wiercioch

Lori Snyder received the 2009 New Teacher Award at the Association of Public and Land-grant Universities (APLU) 122nd Annual Meeting in Washington, D.C., in November. The award recognizes outstanding faculty members on the basis of their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Bob Brame, Bev Bratton, and Paul Grogan received the Midwest Regional Turf Foundation Award of Achievement.

Zac Reicher received the 2010 MRTF Distinguished Service Award during the 2010 Turf Expo. The Midwest Regional Turf Foundation honored Zac who has served as Executive Director of MRTF since 2001.

Gregory Lee Mullins passed away July 18. He received his Ph.D in Soil/Chemistry/Soil Fertility from Purdue in 1985. He recently was Department Head of Plant and Environmental Sciences at New Mexico State University.

Gerda Kohnke passed away on July 16. She was the wife of the late Helmut Kohnke, who was an Agronomy professor from 1943 to 1970.

Chris J. Johannsen, Ellsworth Christmas, Larry Svaigr, and Dave Fearis (Left to Right) were honored with the Agronomic Achievement Award presented at the Agronomy Harvest Reunion in October.

The 48th annual Clerical and Service Staff Recognition Luncheon was held in December. Four agronomy staff members recognized for their years of service were Eileen Mallery, 10 years; Cindy Boone, 35 years; Karen Clymer, 35 years; and William Garner, 30 years.

Agronomy AP staff honored for years of service:
45 years – Judy Santini
35 Years – Ken Scheeringa
20 Years – Ed Stath
10 Years – Patsy King and Jane Wiercioch

Lori Snyder received the 2009 New Teacher Award at the Association of Public and Land-grant Universities (APLU) 122nd Annual Meeting in Washington, D.C., in November. The award recognizes outstanding faculty members on the basis of their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Bob Brame, Bev Bratton, and Paul Grogan received the Midwest Regional Turf Foundation Award of Achievement.

Zac Reicher received the 2010 MRTF Distinguished Service Award during the 2010 Turf Expo. The Midwest Regional Turf Foundation honored Zac who has served as Executive Director of MRTF since 2001.

Gregory Lee Mullins passed away July 18. He received his Ph.D in Soil/Chemistry/Soil Fertility from Purdue in 1985. He recently was Department Head of Plant and Environmental Sciences at New Mexico State University.

Gerda Kohnke passed away on July 16. She was the wife of the late Helmut Kohnke, who was an Agronomy professor from 1943 to 1970.

Chris J. Johannsen, Ellsworth Christmas, Larry Svaigr, and Dave Fearis (Left to Right) were honored with the Agronomic Achievement Award presented at the Agronomy Harvest Reunion in October.

The 48th annual Clerical and Service Staff Recognition Luncheon was held in December. Four agronomy staff members recognized for their years of service were Eileen Mallery, 10 years; Cindy Boone, 35 years; Karen Clymer, 35 years; and William Garner, 30 years.

Agronomy AP staff honored for years of service:
45 years – Judy Santini
35 Years – Ken Scheeringa
20 Years – Ed Stath
10 Years – Patsy King and Jane Wiercioch

Lori Snyder received the 2009 New Teacher Award at the Association of Public and Land-grant Universities (APLU) 122nd Annual Meeting in Washington, D.C., in November. The award recognizes outstanding faculty members on the basis of their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Bob Brame, Bev Bratton, and Paul Grogan received the Midwest Regional Turf Foundation Award of Achievement.

Zac Reicher received the 2010 MRTF Distinguished Service Award during the 2010 Turf Expo. The Midwest Regional Turf Foundation honored Zac who has served as Executive Director of MRTF since 2001.

Gregory Lee Mullins passed away July 18. He received his Ph.D in Soil/Chemistry/Soil Fertility from Purdue in 1985. He recently was Department Head of Plant and Environmental Sciences at New Mexico State University.

Gerda Kohnke passed away on July 16. She was the wife of the late Helmut Kohnke, who was an Agronomy professor from 1943 to 1970.

Chris J. Johannsen, Ellsworth Christmas, Larry Svaigr, and Dave Fearis (Left to Right) were honored with the Agronomic Achievement Award presented at the Agronomy Harvest Reunion in October.

The 48th annual Clerical and Service Staff Recognition Luncheon was held in December. Four agronomy staff members recognized for their years of service were Eileen Mallery, 10 years; Cindy Boone, 35 years; Karen Clymer, 35 years; and William Garner, 30 years.

Agronomy AP staff honored for years of service:
45 years – Judy Santini
35 Years – Ken Scheeringa
20 Years – Ed Stath
10 Years – Patsy King and Jane Wiercioch

Lori Snyder received the 2009 New Teacher Award at the Association of Public and Land-grant Universities (APLU) 122nd Annual Meeting in Washington, D.C., in November. The award recognizes outstanding faculty members on the basis of their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Bob Brame, Bev Bratton, and Paul Grogan received the Midwest Regional Turf Foundation Award of Achievement.

Zac Reicher received the 2010 MRTF Distinguished Service Award during the 2010 Turf Expo. The Midwest Regional Turf Foundation honored Zac who has served as Executive Director of MRTF since 2001.

Gregory Lee Mullins passed away July 18. He received his Ph.D in Soil/Chemistry/Soil Fertility from Purdue in 1985. He recently was Department Head of Plant and Environmental Sciences at New Mexico State University.

Gerda Kohnke passed away on July 16. She was the wife of the late Helmut Kohnke, who was an Agronomy professor from 1943 to 1970.

Chris J. Johannsen, Ellsworth Christmas, Larry Svaigr, and Dave Fearis (Left to Right) were honored with the Agronomic Achievement Award presented at the Agronomy Harvest Reunion in October.

The 48th annual Clerical and Service Staff Recognition Luncheon was held in December. Four agronomy staff members recognized for their years of service were Eileen Mallery, 10 years; Cindy Boone, 35 years; Karen Clymer, 35 years; and William Garner, 30 years.

Agronomy AP staff honored for years of service:
45 years – Judy Santini
35 Years – Ken Scheeringa
20 Years – Ed Stath
10 Years – Patsy King and Jane Wiercioch

Lori Snyder received the 2009 New Teacher Award at the Association of Public and Land-grant Universities (APLU) 122nd Annual Meeting in Washington, D.C., in November. The award recognizes outstanding faculty members on the basis of their ability as classroom teachers, use of innovative teaching methods, service to students and their profession, and scholarship.

Bob Brame, Bev Bratton, and Paul Grogan received the Midwest Regional Turf Foundation Award of Achievement.

Zac Reicher received the 2010 MRTF Distinguished Service Award during the 2010 Turf Expo. The Midwest Regional Turf Foundation honored Zac who has served as Executive Director of MRTF since 2001.

Gregory Lee Mullins passed away July 18. He received his Ph.D in Soil/Chemistry/Soil Fertility from Purdue in 1985. He recently was Department Head of Plant and Environmental Sciences at New Mexico State University.

Gerda Kohnke passed away on July 16. She was the wife of the late Helmut Kohnke, who was an Agronomy professor from 1943 to 1970.
In a report in a 1930 issue of the Proceedings of the Indiana Academy of Science, Tom Bushnell (1889 - 1976), former Professor of Soil Science in the Purdue Agronomy Department, barely contains his excitement at having received the first set of aerial photographs covering a full Indiana county. Through the work of Bushnell and others active in soil survey at that time, the soil survey of Jennings County, Indiana became the first in the U.S. mapped entirely on aerial photographs, marking the end of the slow, inaccurate, plane table work that was standard up to that time. In January 2007, all soil survey data for Indiana became available over the Internet for the first time. We are now at the beginning of another revolution in field soil science as exciting and as significant as the introduction of aerial photography over 75 years ago.

Traditionally, users of soils information relied on the County Soil Survey books and associated paper maps. With NRCS’ release of Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/) and digital soil surveys called SSURGO, access to spatial information is easier than ever. The hardcopy versions and digital versions of the soil surveys are still a great resource, but Phillip Owens and his research group are transforming this information into the next generation of new soil survey products. One of the problems with traditional soil surveys is the apparent abrupt changes that occur across the soil boundaries. Most often, soils change gradually and grade from one type of soil to the other. Owens and his students take the information within the soil survey, disaggregate it using Geographic Information System software, and re-aggregate it with digital mapping software and elevation models to create maps related to specific functions of soils. For instance, soil mapping units were often divided based on small differences in appearance and classification. For agricultural uses, however, these small differences may not be correlated with soil management or yield differences. The goal of digital soil mapping is to map soil properties that will affect yield, such as plant available water content, organic matter content, texture, or depth to a limiting layer. The goal of this work is to take advantage of digital technologies and all available data and information to provide solutions for improving agriculture production, addressing environmental concerns, and understanding ecosystems.

Another approach to using our new wealth of digital soils data is being developed as part of a project titled, Integrating Spatial Educational Experiences into Crop, Soil, and Environmental Sciences Curricula, Isee for short. This project, led by Darrell Schulze and including Phillip Owens, George Van Scoyoc, John Graveel, Lori Snyder, Stephanie Mitzman, and Gary Steinhardt in Agronomy, and collaborators from the Purdue University Libraries, the Purdue Computer Graphics Technology Department, and the Indiana State Office of the Natural Resource Conservation Service, has the goal of developing the ability of our students to better understand how and why soils, landscapes, cropping systems, land use, and environmental and natural resource issues vary at many different scales. The Isee website we are developing uses the more than 1.6 million soil polygons from the detailed soil survey of Indiana in such a way that students can see Indiana as a whole, then zoom into any area and examine maps of soils properties at ever-increasing detail, down to the level of an individual field. We invite readers to explore Indiana in this new way themselves by going to http://gis.lib.purdue.edu/isee/. Zoom in to see the terrace of the Wabash River on which the Purdue Campus located, look at how the sand dunes in the Kankakee River Valley are islands of well drained soils in an otherwise wet landscape, and check out the sinkholes and well drained soils in the karst landscape of the Mitchell Plateau in Southern Indiana.

These are exciting times in soil science. We would like to think that Purdue Agronomy is leading the way in how we use this new digital soils information to better understand the world in which we live.
Lori Unruh Snyder’s research addresses both national and international issues regarding forage utilization. Locally, she has two major projects that are interdisciplinary. The first is looking at the impact of ensiling distiller grains with haylage or corn silage for beef producers within Indiana. The second project evaluates no-till winter wheat systems in which wheat is harvested at varying maturities and followed by corn, soybeans or sorghum to maximize annual grain and/or biomass production for either forage or bio-fuel purposes.

Ricardo Arias, a M.S. graduate student from Honduras, is helping bridge Snyder’s research with the Animal Science Department. His Master’s thesis addresses topics including co-ensiling whole plant chopped corn, re-ensiling corn silage with modified wet distillers’ grains, and measuring the effects on growth performance of beef heifers. In addition, Ricardo has researched co-ensiling wilted grass with modified wet distiller grains for feedlot performance and carcass characteristics of finishing beef steers. Dr. Snyder and Ricardo are helping to put beef on the table by supporting research using corn by-products and ensiled forages.

Snyder is also collaborating across departments to bring together the wheat cropping systems team. This research encompasses co-chairing two graduate students, a M.S. student in Agricultural Economics (Julia Navarro) and Ph.D. student in Agronomy (Samantha Shoaf). The experiment provides data to evaluate the economic consequences of agronomic decisions made by the producer at the field level. These systems include evaluation of early wheat harvested as green chop to facilitate timely planting of a nearly full-season corn, sorghum or soybean crop. These same crops are also no-till into bare ground treatments to provide comparison data with the current farmer practices. The results of this research will provide county educators and producers useful data to recommend new or modified cropping systems to produce grain, feed and/or biofuel in response to specific market constraints. This system encourages producers to diversify their production portfolios. The double cropping systems established by this experiment provide producers with appropriate decision-making tools for mid-season flexibility. Producers will be able to respond to economic triggers such as fluctuating grain, forage, and feedstock prices.

Julia is creating enterprise budgets for each crop that have been estimated based on the inputs used in the trials and the yields achieved for the various crops. Samantha is measuring yields and biomass and analyzing the forage nutrition. The budgets will be used to develop a linear programming model to identify the rotation system. Julia is looking for a rotation system that generates the highest return in terms of yield while maximizing the profits from the sales of different crop combinations (either for grain, ethanol or livestock production). With the use of the linear programming model and the agronomic data, together we can help producers identify the best crop rotation in terms of: market prices, internal needs (forage and silage) and biomass/grain production.

Snyder also has international endeavours in Costa Rica. M.S. students, Anna Verseman and Patrick Woodson, are on the search for finding ways to manage pastures effectively in the humid tropics. Anna is currently examining the effects of tillage and fertilization on stargrass yield and quality. She is also looking at soil bulk density on an intensively grazed dairy pasture. Patrick is exploring sustainable agricultural pasture tools to help make fast rapid decisions on how to measure pasture stocking density and incorporate by-products in silage combinations. In addition to international research Lori also teaches two Study Abroad Courses, one in Costa Rica and one in Guatemala.
It is with many thanks that we announce the Agronomy Donors from the 2008-2009 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, 2008 to June 30, 2009 to 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 Agronomy Department, please call the Purdue Agriculture Development Office at 765-494-8672, or 800-718-0094.

ABG Ag Services, LLC
Janet Adler
Advanced Design & Machine
AgReliant Genetics
Agricultural Alumni Seed
Improvement Assc., Inc.
Agrotain International, LLC
Albaugh, Inc.
Edward Eugene Alberts
Susan Jane Albrecht
John Herman Allen
John Richard Allen
American Society of
Agronomy
Aquatrols Corporation of
America
Leslie Armstrong
Robert Eugene Armstrong
Jerry M. Arnold
Arysta LifeScience North America
Donald Paul Avey
Harold Shepherd Aycock
Robert Keith Bacon
Peter Stephen Baenziger
Anthony Ray Bailey
Max Robert Bales
Alvin K. Balmer
Stuart Scott Bangs
Richard Irven Barnhisel
BASF Corporation
Marvin Eugene Bauer
Winifred Bauman
Marion Fisher Baumgardner
Christopher Alton Baxter
Bayer Cropscience
Joseph Eric Beale
James Joseph Beaty
Lawrence C. Beck
Becker Underwood
Beck’s Hybrids, Inc.
Scott Larkin Beecher
John Robert Bernard
Robert Burl Bevington
Edgar Herman Beyer
Craig Alan Beyrouthy
John A. Blair
Kansas City Board of Trade
Karen Ruth Bowman
Robert L. Brewer
Max Eldon Brock
Rex A. Brock
Jarvis Howard Brown
Julia Lynn Brown
Phillip William Brown
Virgil Joseph Bulach
William Scott Calvert
James J. Camerato
William Robert Camerer
Ronald Paul Cantrell
Jeff Paul Cardinal
Gail Ann Carmody
Dennis Duane Carnahan
Kevin James Cavanaugh
Jorge H. Cazenave
Jorge Horacio Cazenave
Ira Stuart Chorush
Ellsworth Christmas
Philip L. Christy
Terry Alan Coffelt
Mary Jane Cohee
Jack Lew Colbert
Keith Sheldon Cooper
Regaland Eugene Cornett
Helen E. Crane
Harold F. Creech
Rodger Lee Cripe
Richard Dennis Cross
Donn Paul Cummings
Terry Michael Cuzzort
Craig Stephen Torbush
Daughtry
Helen Carter Day
Dayton Elementary School
David Allen Delau
Jerry Wayne Devore
Donald Gene Dillabaugh
Glen Howard Doll
K. Moreen Donkin
Maurice Douglas
Dow AgroSciences, LLC
Roger Alan Dumond
David Vern Dunn
Gordon Richard Dutt
Eagle Elementary School
N. Fay Earnhart
John Ben Edmondson
Donald Lee Ekstrom
Margaret E. Eller
Krista Ann Emmons
David Lee Epperson
Paul H. Everett
Robert Clark Fanning
Farmsaver.Com
David William Fears
Jesalyn Ferguson
Fernando Ravaglia
Consultores Asociados
Clifford Donald Fields
Fluid Fertilizer Foundation
FMC Corporation
Ford Co. Soil & Water
Conservation
Jeffrey Allen Ford
Foundation for Agronomic Research
Marilyn Fowler
Donald P. Franzmeier
Charles Edward Froehle
Stephen S. Furste
Arthur L. Gehlbach
Gerald T. Gentry
Emma F. Glover
David Brian Glunt
Matthew Ryan Grady
Greater Wabash River
RC&D, Inc.
V. Steven Green
Kenneth Richard Griepentrog
Jeffrey Erwin Habben
Dale Emil Habenicht
Michael Anderson Hacker
Julie Diane Hall
Robert William Hancock
Julianne Hanney
Fred Harris
Dean Harvey Hartley
Scott Alan Hartwell
O. Elwood Hatley
Joseph L. Hawkins
Shichuan He
Glen Alton Hemstock
Dean Louis Ralph Hesterberg
Doug Duane Heiatt
Peter Robin Hill
John Hudlin Hillis
Martha Kathryn Hilst
Teresa Katherine Hogue
Oscar Hopkins
Thomas Housley
Gary Lane Hudson
Luther Bertram Hughes
Indiana Crop Improvement Assoc.
Indiana Golf Course Superintendent Assoc.
Indiana Nursery & Landscape Assoc.
Indiana Soybean Alliance
Brad Lester Inman
John Clinton Inman
International Plant Nutrition Institute
Peter Michael Jacobs
Chris D. Jeffries
Eugene Duane Johanningsmeier
Mary Karen Johnson
Randall Lee Johnson
Karissa Brandice Jordan
Edward Earl Jordan
Journay Farms, Inc.
Michael Charles Karr
Joseph William Keaschall
Wayne F. Keim
The Agronomy Ambassadors program was established in 2004. Since then there have been 43 ambassadors, 11 of which are current ambassadors. Some of the duties that Agronomy Ambassadors have during the year include giving tours to prospective students and their families, meeting with guests of the college and department and representing the student body at events such as the Harvest Reunion. Agronomy Ambassadors are great students and student leaders at Purdue University. It is our pleasure to introduce our current Agronomy Ambassadors.

**Samantha Ambrose** is a junior, majoring in Agronomic Business and Marketing. She expects to graduate in May 2011. Last summer she interned for Monsanto in Jonesboro, AR. After graduation Samantha plans to attend graduate school studying weed science.

**Hannah Bergeman** is a senior, double majoring in Natural Resources and Environmental Science (NRES) and Anthropology. She will be graduating in May 2010. Last summer she was in Sydney, Australia as a Marketing and Communication Intern at Act for Peace, the non-profit arm of the National Council of Churches in Australia. Her post-graduation plans are unknown.

**Samantha Downey** is a junior, majoring in Plant Breeding and Genetics. She expects to graduate in May 2011. Last summer she interned at AgReliant Genetics and this semester Samantha is studying abroad in Australia. After graduation Samantha plans to attend graduate school.

**Cody Fink** is a junior, majoring in Crop and Soil Science. He plans to graduate in May 2011. Last summer he had an internship with AgReliant Genetics in Lebanon. Following graduation Cody plans to attend graduate school.

**Melissa McDonald** is a sophomore majoring in Plant Breeding and Genetics. She plans to graduate in May 2012. Last summer Melissa was a field intern for Dow AgroSciences at the Midwest Research Center in Fowler, IN. Melissa plans to continue her education and attend graduate school and eventually work for a seed company improving crop varieties.

**Zach Myers** is a senior majoring in Soil and Crop Management. He will be graduating in May 2010. Last summer Zach was a sales intern for Channel Bio where he had the opportunity to interact with farmers and complete an agronomic project on Round-Up Ready 2 Yield Soybeans. After graduation he will be working for Channel Bio where he will be a District Sales Manager in Indiana.

**Emily North** is a senior double majoring in Plant Breeding and Genetics and Horticulture Science. She will be graduating in May 2010. Last summer Emily worked in the Agronomy Department with Herb Ohm in the wheat and oats breeding program. After graduation Emily plans to attend Penn State University working in interdisciplinary research combining extension and research in plant pathogens in small fruits.

**Kyle Schwarzkopf** is a senior majoring in Agronomic Business and Marketing and will graduate in May 2010. Last summer he interned at Heritage Seeds in Reynolds, IN. Kyle is still looking for employment but plans to get a full time job in the agronomic field.
Justin Shirley is a junior, majoring in Turf Science and expects to graduate in May 2011. Last summer he took summer classes and worked part-time on his family’s farm. In past summers Justin has interned at Olympia Fields Country Club and Green Gardens Country Club both near Chicago. After graduation, Justin hopes to find a position in golf course or sports field management.

Sarah Tagtmeyer is a junior, majoring in Crop and Soil Management and expects to graduate in May 2011. Last summer she interned at Remington Hybrids in Remington, IN. Following graduation Sarah hopes to work in a seed company.

The Purdue Soils Team placed second at the 2009 American Society of Agronomy Collegiate Soils Contest in Springfield, MO. Team members were (pictured above) Joey Dunn, who placed fifth overall; Cody Fink; Colton Yoder, who placed second overall; and Jeannie Ross. The team was coached by Cathy Egler and Gary Steinhardt.

Cody Fink, Ann Bechman, Colton Yoder, Josh Biddings, Danielle Atkins, Ashley Bechman, Patrick Cashman, Jeff Fischer, D.J. Graper, Jacob Harden, Ryan Lewis, Kevin Neal, Lori Nussbaum, Justine Penix, Daniel Robinson, John Scott, Quinton Stilwell placed first at the Region 3 Collegiate Soils Team Judging contest. The team was coached by Cathy Egler, Kristi Linvill, and Gary Steinhardt.

Nate Brown, Phil Long, Trevor Perkins (asst. coach), Mitch Hardy, Isaac Dorrel, and Sam Ambrose (asst. coach) (pictured above) won the Southeastern Regional Crops Contest on November 7 in Mount Sterling, KY, and placed fifth in Kansas City. Phil Long was 9th overall and Mitch Hardy was seventh in Crop and Weed Identification. At the Chicago competition, Phil Long placed ninth overall. Dr. Housley coaches the team with assistant coaches Sam Ambrose and Trevor Perkins.
Growth promoting hormones are used extensively to provide increased profits in the beef cattle industry in several meat exporting countries. A recent trend towards more intensive production facilities, termed confined animal feeding operations (CAFOs), has been a concern over more growth hormone use and more waste generation in a relatively small area with potential risks to ecosystem and human health. Therefore there has been an increasing interest in the contribution of land-applied manure on hormone loads to the environment. There are about six different primary cattle growth promoters approved for use in the U.S. with the synthetic anabolic agent 17β-trenbolone acetate (TBA) entering the U.S. market in 1987 (used in combination with 17β-estardiol E2).

Hormones are transported to the land when manure or retention lagoon effluents are land applied as a fertilizer or for irrigation purposes. They may ultimately get transported to the surface water through runoff and leaching. Natural and synthetic hormones have been detected in water bodies receiving cattle feedlot effluents.

Routs of Trenbolone Environmental Entry

Low part per trillion concentrations of these chemicals may adversely affect the reproductive biology of aquatic vertebrates by disrupting the normal function of their endocrine systems.

Observed Masculinity Effects in Female Fish Exposed to Trenbolone

TBA has anabolic potency 8 to 10 times greater than testosterone. Cattle dosed with TBA excrete both stereoisomers 17α- and 17β- Trenbolone and trendione, with the 17α-Trenbolone comprising about 95% of the excreted product. Concern over the potential negative impacts of synthetic androgen trenbolone and its metabolites on non target organisms and ecosystem health has prompted a few laboratory and field-scale assessments of its fate in the environment.

The overall goal of the research presented in this dissertation was to evaluate the ultimate fate, persistence and metabolic pattern of trenbolone in the environment, including: 1. Quantifying microbial transformation and sorption of trenbolone and its metabolites in aerobic agricultural soils and 2. Quantifying androgenic and estrogenic hormone concentrations in manure of growth hormone implanted cattle and subsequently in the animal-waste lagoon water.

In multi-concentration sorption isotherms we observed that; 17β-trenbolone and trendione, are moderately to strongly sorbed such that hormones will be associated primarily with the soil phase in the environment. For all three androgens, sorption is well correlated to organic carbon (OC) content with average log OC-normalized distribution coefficients (Koc, L/kg) of 2.77 ± 0.12 for 17α-trenbolone, 3.08 ± 0.1 for 17β-trenbolone and 3.38 ± 0.19 for trendione. The differences between Koc values for the two isomers suggests some contribution from additional non-hydrophobic stereo-selective processes such as H-bonding.

At favorable moisture conditions, trenbolone degraded to trendione in the order of a few hours to 0.5 d at applied concentrations from 0.05 to 1 mg/kg. Aerobic degradation rates determined at combinations of temperature (5 to 25°C) and water availability (-0.03 to -1 MPa) representative of the range expected in tile-drained agricultural fields exemplified the impact of moisture and temperature on the persistence of hormones. Degradation rates decreased with decreasing water availability and decreasing temperature. Trendione persisted longer than the parent trenbolone. A small amount of trendione converted back to 17β-trenbolone.

Longer persistence under dry soil conditions and during colder months of the year may increase the likelihood of hormone transport to tile-drains from manure-applied fields in subsequent rain events.
Environmental Fate of Anabolic Steroid cont.

In TBA:E2 implanted beef cattle manure 17α-trenbolone was the most abundant androgen (max. conc. 3.6 mg/kg dry manure) at all times, trenbolone and 17β-trenbolone peaked at ~10 to 15 times lower than 17α-trenbolone and for the estrogens, the highest concentrations were observed for the metabolites estrone and estriol (3 mg/kg and 0.2 mg/kg respectively). In lagoon effluents, 17α-trenbolone and estrone were detected at highest concentrations (1,500 and 1,700 ng/L respectively). Hormonal concentration entering soil through manure land application will vary according to various crops’ nutrient demands. Manure applications in the late fall, when temperatures are relatively colder, may allow hormones to persist into the winter and early spring snowmelt periods. Although degradation and dilution processes may decrease hormone loads to streams by a few orders of magnitude, concentrations reported in surface water are often well above some lowest observed effect concentrations (LOECs) of inducing reproductive effects in certain fish.

An improved understanding of the environmental bioavailability and factors controlling movement of natural and synthetic hormones is needed. There is still little known about the toxic effects of hormone metabolites. Given that natural and synthetic steroidal hormones are typically present as mixtures in a number of rivers, the issue of synergistic effects among estrogenic and androgenic mixtures is also important to assess.

M.S. August & December Graduates
Benjamin Atinson
Jared Nemitz
Ying Wang
Yanbing Xia

Ph.D. August & December Graduates
Joseph Alfieri
Stephen Baluch
Kristen Rinehart
Jer-Young Lin
Christopher Boomsma
Candiss Williams
Bushra Khan

Samantha Shoaf received the Loyal F. “Pete” Bauman Memorial Scholarship. This scholarship recognizes current graduate students in the area of plant genetics and breeding. Because Dr. Bauman always made a special effort to see that graduate students attended professional meetings, this scholarship pays travel expenses incurred by graduate students attending the American Society of Agronomy’s annual meetings.

Zamir Libohova, Stephanie Mitzman, Sayjro K. Nouwakpo, and Mary-Jane Orr received the George Scarseth Scholarship. This scholarship recognizes students who show promise to carry on the “Scarseth Philosophy” of solving practical problems by applying basic scientific principles. The scholarship provides money for graduate students to participate in the annual meetings of the American Society of Agronomy, the Crop Science Society of America, and/or the Soil Science Society of America.

James Rutledge placed first in the CSSA Division 5 Graduate Student Oral Presentation Competition at the 2009 international ASA/CSSA/SSSA meetings in Pittsburgh.

Yanbing Xia earned First Place (tie) in the 2009 Graduate Student Poster Contest at the North Central Extension-Industry Soil Fertility Conference in Des Moines, IA, in November.

Zamir Libohova’s manuscript, “Developing Methods for a Terrain Attribute Derived Soil Map,” was selected as the graduate student winner for the student paper/essay contest of Soil Survey Horizons.

Samantha Shoaf is the current champion of the agronomy graduate student chili cook-off hosted by Shaun and Denae Casteel in November. Anna Verseman, Eric Miller’s mom, Michael Muenich, Mirayda Torres-Torres, Aiko Iwata, and Hector Midence all prepared chili.

For information about the Purdue Agronomy Graduate Program visit: www.agry.purdue.edu/grad/
At a Glance

Emeritus Lunch

Purdue Agronomy had a good turn-out for an Emeritus Lunch on June 26.

Martha Hilst, Gwen Daniel, and Bobbi Phillips

Everyone liked the lunches from Heavenly Ham.

Eldon and Mary Hood

Sherry Fulk-Bringman and Connie Foster gave Id Jones a big hug to welcome him.

This was Craig and Valerie Beyrouty’s last time to see emeritus staff before they left for Colorado, pictured here with Maralee & Marion Baumgardner

Fall Gathering

The annual Fall Gathering for Faculty, staff, and students was on August 26.

The shade tree and chairs were nice improvements this year!

Zach Myers and Samantha Ambrose enjoyed the food and company.

The Ohm lab: Melissa McDonald, Judy Lindell, Samantha Shoaf, and Herb Ohm

John Graveel, Sue Axtell, and Jim Ahlrichs had a nice time catching up.

Yiwei Jiang and his lab attended the gathering.
Sherry Fulk-Bbringman giving soil demonstrations and lessons.

FFA Students came to campus from Indiana, Iowa, and Texas to learn more about Purdue University and Agronomy.

High School students learning about silt, sand and clay.

The first Ag Discovery Camp was hosted at Purdue last summer.

Phillip Owens braved the rain and taught the students about soil.

Students got a tour of Ross-Ade Stadium from an Agronomy graduate student.

K-12 Activities

Harvest Reunion

Herb Ohm and Larry Svajgr caught up at the Harvest Reunion during Homecoming weekend last fall.

Agronomy Ambassadors Emily North, Melissa McDonald, and Sam Ambrose were student hosts.

Ozzie Luetkemeier and Sandy Spitznagle got their picture taken with World Food Prize Laureate Gebisa Ejeta.

Ellsworth Christmas catches up with new Soybean Extension Specialist Shaun Casteel and his wife, Denae.

Eldon Hood, Judy Pence, and Hugh Pence enjoyed the Harvest Reunion.

Kyle Bymaster and Brad Inman were ready for the homecoming football game. Go Boilers!
The Agronomy Department and your colleagues want to hear what is happening with you. Please share your professional and personal accomplishments or news by completing and returning the form below or visit the Alumni/Friends section on our Web site and use the online form: www.agry.purdue.edu. If you know someone deserving recognition or are aware of an interesting storyline, please let us know that too.

Name: 

Degree(s) year(s): 

Address: 

Phone: 

E-mail: 

Mail accomplishments and news to: Kelly Delp, Purdue University, Department of Agronomy, 915 W. State St., West Lafayette, IN 47907-2054 or E-mail to: kdelp@purdue.edu