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Department of Entomology Newsletter For Alumni and Friends (2009)

Iowa State University, Department of Entomology

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I joined the Department of Entomology at Iowa State University in January 2008. This was not the easiest time of year to leave sunny Tucson, Arizona where I had been working as an Assistant Research Scientist in the University of Arizona’s Department of Entomology. Despite the cold, however, I am delighted to be in Iowa again. I was born and raised in Dubuque County, where my family has deep roots. Visits to the farms of relatives and family friends filled much of my early years and gave me a strong affinity toward Iowa agriculture. I am very pleased to have returned to Iowa and am impressed by the wealth of research opportunities available in my home state. Moreover, I find it deeply satisfying to have a research appointment that connects with Iowa’s agricultural heritage.

Lewis Elected Fellow of ESA

Leslie C. Lewis, a former research leader with the USDA-ARS and current Chair of entomology, was recently elected Fellow of the Entomological Society of America.

Les is a recognized national and international leader in research on diseases of insect pests of corn, and on multitrophic relationships between insects, insect pathogens, beneficial insects, and plants. His work to define relationships of insect pathogens, macrobiological control organisms, and chemical insecticides contributed significantly to the field of integrated pest management. This work included the definition of a unique tritrophic relationship with Beauveria bassiana, the corn plant, and the European corn borer. He initiated and directed research on the effect of transgenic crops and non-
Bloomquist presents 2008 Dahm Memorial Lecture

Jeff Bloomquist, Department of Entomology, Virginia Tech, Blacksburg, VA presented the 2008 Paul A. Dahm Memorial lecture in Entomology on “Novel and Selective Anticholinesterases for Control of the Malaria Mosquito, Anopheles gambiae.”

Bloomquist has established an internationally-recognized program in neurotoxicology, including work on environmentally-induced disease, as well as insecticide resistance and the search for new insecticidal molecules.

He produced some of the first papers on the Parkinsonian effects of neurotoxic insecticides and established up-regulation of the dopamine transporter as a new biomarker for neurotoxic insult.

His work also demonstrated a possible linkage between mitochondrial-directed insecticides, Parkinsonism, and diabetes.

ISU Sesquicentennial Seminar Speaker: Diana Cox-Foster

Diana Cox-Foster, Department of Entomology, Pennsylvania State University, presented the 2008 Entomology sesquicentennial seminar. Cox-Foster’s lecture was also an F. Wendell Miller lecture and EGSO seminar. Cox-Foster presented a departmental seminar, Intricacies in the Dance of the Bees, Mites, and Pathogens; Ecological and Molecular Interactions and a public seminar The Plight of the Honey Bees: What’s the Newest Buzz on Colony Collapse Disorder? which was well attended by Iowa bee keepers. Cox-Foster’s metagenomic analysis of honey bee colonies identified the Israeli acute paralysis virus as highly correlated with colony collapse disorder (Cox-Foster et al., 2007. Science 318: 283-7). She has also worked on transmission and persistence of the picorna-like viruses in bees, and mite-induced immunosuppression that activates bee viruses.

He currently leads a project on new mosquitocides for malaria control from the Gates Foundation and National Institutes of Health, Grand Challenges in Global Health program.

This project is one of only 43 funded out of >1,500 applications, and was mentioned in a column written by Bill Gates in the Oct 1st 2007 edition of Newsweek calling for increased efforts to fight malaria.
From the Chair’s Perspective

My appointment by Dean Wendy Wintersteen to Chair of Entomology in August is both a privilege and a challenge—especially as I follow in the footsteps of colleagues Jon Tollefson and Joel Coats. It is an honor to serve as department chair and work with faculty and staff to balance the difficult economic realities impacting each of us.

I am certain the department will continue to do an outstanding job addressing issues important to stakeholders in Iowa, the nation and the world. At the time of this writing we are finishing the search for a new faculty member who will conduct extension and research in row crop agriculture with an emphasis on soybean production.

The department will continue to build on our entomological strengths in vectors of disease-causing agents (i.e. humans, animals and plants), environmental quality, biodiversity, population genetics, insect/plant interactions, and production agriculture. The foundation of these efforts are the collaborations between our faculty and other scientists conducting complementary research, excellence in teaching, and further extension of our reach beyond the confines of the University.

The department will continue to build on our entomological strengths.

As a graduate of the program (Ph.D. 1970), and after 43 plus years as a research entomologist with the former European Corn Borer Laboratory, the Corn Insects Laboratory and lastly as Research Leader of the Corn Insects and Crop Genetics Research Unit, beginning a job as a tenured faculty member is a wonderful endeavor. I am pleased to be able to continue my own research, and anticipate that in 2009 we will complete the description of a microsporidium indigenous to the western bean cutworm as well as publish data on the dynamics of indigenous inoculums and success of horizontal and vertical transmission of *Nosema pyrausta* in the European corn borer.

Please continue to let us know of your own work and if in Ames, please stop by or drop us a line. We are always pleased to hear from our graduates.

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Did you know?

Andrew Joseph is the new State Apiarist at the Iowa Department of Agriculture and Land Stewardship. He worked towards an MS in Entomology at the University of Kentucky on bees as pollinators in monoculture looking at the role of nectar foraging in relation to overall foraging activity and, ultimately, plant pollination.

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Gassmann, continued from front page

After attending college at the University of Saint Thomas, in Saint Paul, Minnesota, I completed a Ph.D. in ecology and evolution at the State University of New York, Stony Brook. The goal of my dissertation research was to integrate ecology and evolution with pest management. I was working with herbicide-resistant weeds at the time, but came to realize that entomology offered a natural fit for this overarching research goal. After an initial postdoctoral position in the Department of Entomology at the University of California, Riverside, I moved to the University of Arizona where I undertook the study of integrated resistance management for transgenic, insect-resistant (Bt) crops.

Iowa State University offers me unbounded opportunities to take this earlier research in new directions, working with Bt corn and its primary pests, the northern and western corn rootworms.

My wife, Emily Morgan, moved to Ames from Tucson in late May. She is completing her Ph.D. in art history through the University of Arizona but has found a place at Iowa State University, too, where she has begun teaching in the College of Art and Design. We are both very happy with our decision to move to Ames, and look forward to meeting many of you in the future.

—Aaron Gassmann
**Gassmann Publishes in *Nature Biotechnology***

Aaron Gassmann is part of a team of researchers that reviewed global trends in pest susceptibility to transgenic crops producing insecticidal toxins derived from the bacterium *Bacillus thuringiensis* (Bt). Their paper was published in *Nature Biotechnology*.

The paper, which Gassmann coauthored with three members of the Department of Entomology at the University of Arizona, reviewed data on susceptibility of insect pests to Bt crops before and after their commercialization. The data revealed that, in almost all cases, pests remained highly susceptible to Bt, and that planting of non-Bt refuges likely contributed to this very positive outcome.

“Our work highlights the importance of having scientifically sound resistance management strategies in place for Bt crops,” Gassmann said. “Although Bt crops have been extremely successful at controlling pest populations, continued research..."

*Continued on page 5*

**Gynandromorphic Leopard Lacewing**

A rare butterfly emerged from a May shipment to Reiman Gardens’ Butterfly Wing. The butterfly, which was among a batch of 50 leopard lacewings (*Cethosia cyane*), emerged from its chrysalis as a gynandromorph: an individual with both male and female markings.

“They are extremely rare and highly coveted” said Nathan Brockman, curator for the Christina Reiman Butterfly Wing. “We’ve flown more than 75,000 butterflies here since the Butterfly Wing opened five years ago,” Brockman said. “And this is the first we’ve received.”

Gynandromorphic leopard lacewing with the orange, black and white markings of a male on one wing and the white, brown and black markings of the female on the other. Photo courtesy of Nathan Brockman.
Pedigo and Rice Publish 6th Edition

In 2008, Larry Pedigo and Marlin Rice collaborated for a second time to publish a 6th edition to *Entomology and Pest Management*. The new 784-page textbook combines general principles of entomology and modern principles of insect pest management. It features up-to-date coverage on environmentally sound insecticides, the transgenic plant controversy, pest management systems, updated insecticides, current government regulations and labeling of microbial pesticides, plant pesticides and biochemical pesticides, and developments in genetic engineering and plant biotechnology.

Larry has been retired for several years, but he still finds time to be involved with entomology. He remarked that “the book was one of a kind, and one of my most significant contributions to entomology. As long as I can be of service to entomology, I will continue (to write).” Marlin noted that “it has been an honor to work with Larry. He is an internationally recognized leader in pest management and being associated with him as a co-author is a great privilege.”

Lewis is ESA Fellow, continued from front page

target organisms, and directed research on developing insect resistance management programs for transgenic crops. He is the author or coauthor of 160 scientific publications and has made more than 75 paper presentations.

Les began his career as a technician at the European Corn Borer Laboratory in Ankeny, Iowa. He became project leader of the Insect Pathology and Biological Control Projects in 1968, and in 1990 became the leader of the Research Unit. In 1997, he became research leader of the Corn Insects and Crop Genetics Research Unit, which was formed by joining the Corn Insects and Forage Crops Research Units in Ames, IA.

As an adjunct professor of entomology at Iowa State University he has directed 18 graduate students in their studies. He received his B.S. and M.S. degrees in animal science from the University of Vermont, and his Ph.D. in entomology from Iowa State in 1970.

Congratulations to Les on attaining this distinction of honor and representing our department well. (Material excerpted from ESA Newsletter, Sept. 2008)

Gassmann, continued from page 4

on refuge design and pest genetics is essential to ensure the continued efficacy of this new technology.


Did you know?

“Ten years ago it was spider bites. Now, when people wake up with spots, dots, and bumps but have no obvious explanation, it’s bedbugs.” Donald Lewis quoted in the February 25 issue of the *Washington Post*.
Faculty and Staff Awards

Lyric Bartholomay received the College of Agriculture and Life Sciences Early Achievement Award in Teaching, and the Teaching Award of Merit, North American Colleges and Teachers of Agriculture. Lyric has demonstrated outstanding teaching performance since her arrival at ISU through graduate courses The Ecology of Malaria, Insect-Virus Interactions: A Molecular Perspective, and the undergraduate course Insects and Our Health.

Mark Shour was awarded an ISU Professional and Scientific Excellence Award. This award recognizes contributions made by a P&S staff member within and beyond the university, and career progress demonstrated by accomplishments at ISU. A $1,500 award is granted. Shour is recognized nationally for developing and implementing programs that preserve the environment and natural resources, and enhance the well-being of children in Iowa’s schools and day-care facilities. These programs offer a way to control pests with minimal chemical input. He foresaw the potential damage to millions of ash trees in Iowa by the emerald ash borer and developed a statewide monitoring and public awareness program. He also played an instrumental role in Extension’s safety education program for pesticide applicators.

Jon Tollefson and John VanDyk received plaques for teaching distance education courses for 13 and 14 semesters respectively, from the Brenton Center for Agricultural Instruction and Technology Transfer. Ken Holscher and Mark Shour received certificates for their distance education activities.

Student Awards

The Entomology Alumni Scholarship for freshman undergraduates majoring in entomology was awarded to Kayalyn Edmeade. This scholarship for $1,000 was awarded based on promise for a career in entomology.

The Henry and Sylvia Richardson Research Incentive Grant was awarded to Gretchen Paluch for her proposal Characterization of Terpene Odorant Receptors in Aedes aegypti. Gretchen received $2,500 toward research costs for this project. Gretchen also received the 2008 Wayne A. Rowley Scholarship in Entomology, which provides $1,500 to students with preference given to applicants concentrating on medical entomology. Gretchen is co-advised by Lyric Bartholomay and Joel Coats.

The Department of Entomology Herbert Osborn Award for Professional Performance was awarded to Gretchen Paluch (Ph.D. category) and Nina Schmidt (M.S. category).
**Student awards, continued**

The Entomology Student Scholarship for Student Excellence is a new award, which is funded by the Fred Clute Memorial Fund. This award recognizes academic excellence at the undergraduate level, or excellence in research, teaching and/or extension at the graduate level. The first Entomology Student Scholarship of $500 was awarded to **Nick Schmidt**.

**Rebecca Sam** and **Nick Schmidt** were awarded Iowa State University Teaching Excellence Awards. The purpose of these awards is to recognize the accomplishments of the top 10% of teaching assistants at ISU.

**Miriam Lopez** was awarded an Iowa State University Research Excellence Award, which recognizes the accomplishments of the top 10% of graduate researchers at ISU.

**Keri Henderson** received an Honorable Mention certificate in the Zaffarano Prize competition at the Sigma Xi banquet in May. The prize is based on research quality and publications.

**Kevin Johnson** was awarded the Pioneer Hi-Bred International Graduate Student Fellowship through the Entomological Society of America. This fellowship recognizes and encourages innovative research and graduate education in the area of entomology with a focus on insect pests of field crops. Kevin's research focuses on better understanding plant responses to insect injury and the assessment of available control tactics for yield protection. Kevin is a graduate student with Matt O'Neal.
Bradshaw Wins ESA Comstock Award

Jeffrey Bradshaw was recognized for “his excellence in research, teaching, and extension” with a presentation of the 2008 John Henry Comstock Graduate Student Award from the Entomological Society of America at the North Central Branch Meeting in Columbus, Ohio. Jeff received his Ph.D. in 2007 in both Entomology and Plant Pathology researching bean leaf beetle and bean pod mottle virus biology and management. He was co-advised by Marlin Rice and John Hill.

The Department of Entomology has produced five previous Comstock Award winners.

Comstock Award Winners

Previous award winners and advisors:

- Clinton Pilcher (1998, Marlin Rice)
- Laura Karr (1989, Joel Coats)
- Paula Davis (1988, Larry Pedigo)
- Scott Hutchins (1987, Larry Pedigo)
- Leon Higley (1986, Larry Pedigo)

Alumni Awards

Several Iowa State alumni were recently honored at the ESA Annual Meeting in Reno for their contributions to entomology.

Scott H. Hutchins (Ph.D. 1987) received the Distinguished Service Award to the Certification Program. The purpose of this award is to encourage and reward outstanding contributions to the ESA Certification Program and the professionalism of entomology. Scott is Global Director for Crop Protection R&D at Dow AgroSciences and a former graduate student of Larry Pedigo.

David R. Coyle (M.S. 2000) was presented the Student Activity Award. This award recognizes an ESA student member for outstanding contributions to the Society, his academic department, and the community, while simultaneously achieving academic excellence. He has 22 refereed journal articles, two book chapters, and 49 scientific presentations. He has received an EPA STAR Graduate Fellowship. David has helped organize and moderate a forest entomology symposium at the national ESA meeting every year since 2002. David is a former graduate student of Elwood “Woody” Hart and is currently a Ph.D. student with Ken Raffa at the University of Wisconsin, Madison.
Steffey and Felsot Receive Highest ESA Honors

The highest Entomological Society of America (ESA) awards were recently given to Iowa State alumni Kevin L. Steffey and Alan Felsot at the annual meeting in Reno, Nevada.

Kevin L. Steffey was recognized as a Fellow of the ESA for his extension entomology program at the University of Illinois, where he has been an extension specialist since 1979, first with the Office of Economic Entomology, then with the Department of Crop Sciences. Kevin’s applied research and extension activities have focused mostly on corn rootworms, European corn borer, and soybean aphid. During his nearly 30-year career, he has published 18 book chapters and invited monographs, 35 peer-reviewed articles in journals, and more than 240 extension publications. In addition to hundreds of extension presentations associated with University of Illinois Extension programs, Kevin has been invited to speak at nearly 150 educational events sponsored by other universities and the agricultural industry. Since 2000, he has developed or co-developed and coordinated nine educational programs delivered via distance-education technology to more than 3,000 people in North America. He has served the ESA as President of the North Central Branch (1998), on the Governing Board (1990-1993, 2000-2005), and as ESA President (2004). He was co-editor of the ESA’s *Handbook of Corn Insects*. Kevin is a former graduate student of Jon Tollefson and graduated in 1979.

Allan Felsot was selected to deliver the 2008 Founders’ Memorial Award lecture in honor of Robert L. Metcalf. This ESA award was established in 1958 to honor the memory of scientists who made major contributions to entomology. Each year, the winner of the award delivers a lecture on an outstanding entomologist during the Plenary Session of the ESA Annual Meeting. Alan is currently a professor and extension specialist in the Department of Entomology at Washington State University, where he specializes in environmental chemistry and toxicology. He obtained a Ph.D. in entomology from Iowa State University (1978) as a graduate student of the late Paul Dahm.

Gray is ESA President

During 2008, Michael E. Gray (Ph.D. 1982) served as President of the Entomological Society of America (ESA). Mike provided outstanding leadership during a year in which the ESA implemented a total restructuring and renewal process in how the Society conducts its governance and scientific programming. He concluded the year with an outstanding Annual Meeting in Reno, Nevada under the theme, “Metamorphosis: A New Beginning.” During this meeting, annual membership reached 5,900 with 2,446 registered attendees. Mike is currently Professor of Entomology, Interim Assistant Dean for Agriculture and Natural Resources Extension, and Crop Sciences Extension Coordinator at the University of Illinois. It is an incredible honor for our department to have an alumnus elected as president of the largest entomological society in the world.

News from Alumni

Maurice Farrier, Raleigh, NC, writes:

The 2008 Newsletter provoked memories. Dr. Drake, pictured on p. 10, was recognized immediately. As one of a few undergrad entomology majors in the department during WWII, I worked as his technician for $0.35/hr testing insecticides on vegetable crops in the back of the Insectary. I remember the first shipment of DDT received. When told to clean up the lab in the Insectary for the returning grad students, there were containers of Paris green, London purple, sabadilla, black hellebore, red squill, ryonis, and more. Fortunate was I to get to see the old and the new and the old again. After the insecticide use, came the “new” pest management, which was essentially the entomology that we heard from “Tiny” Gunderson on the radio in the barn at 6:30 a.m. in ’39 and ’40.

Vern Hagen, Assistant State Entomologist, and myself, assistant to the state entomologist, pumped the last of the state-owned creosote into a tank car at Clarinda, IA, in 1949. The car was pushed onto the siding adjacent to the tank in the afternoon. We arrived at ≈4:00 pm and started the gasoline-driven pump and went to supper. During the night, we would shut down to refuel and check the oil. We played cards until the storage tank was empty at ≈2:30 am. We pumped overnight so only 1-days demurrage would be charged and we didn’t know how fast 15-yr-old creosote would go through the pump. That is the end of the chinch bug fight in Iowa. The chinch bug shows up almost every year here somewhere in the Coastal Plain, but they are usually not very damaging. It has been that way since colonial times so I have read.

Where is Carl Blickenstaff in the list of profs? He taught me economic entomology probably in 1946. He could have been with USDA and not a department member. I took his lecture notes into a pre-bound composition book as was the practice of the veterinary students at the time. I believe I still have them under a pile of rubble. [Blickenstaff received his M.S. in 1948 and Ph.D. in 1956. He worked for the ARS. -Ed]

My thought is that to be a good entomologist one has to know about many things in addition to insects. The quarter system permits 4 or 5 more courses/student per year over the semester system. I hope they still have it there. It is my thought, also, that the principles of most disciplines are presented in the first half of the term. Thus, shortening the term does not usually reduce in a major way the basic principles presented. I have been a student under both systems and believe if education is “what is left over after one has forgotten all the rest,” that the quarter system was best for me.

In the library there, I presume the paintings are still over the main stairs? Grant Wood’s “Arbor Day” school house is on the Iowa commemorative quarter you know? (The sapling beside it grew to a mature tree between the time of his painting and engraving of the coin!) Take a moment to occasionally enjoy the present. Don’t worry about the future. Although I doubted him, Hal Harris was right to encourage me to come here. Sometimes students need a gentle push.

With all good wishes and good wishes to all.

Maurice Farrier (B.S. 1948, M.S. 1950)

Keep in Touch!

Please let us know whether you have information to share with friends and alumni of the ISU Department of Entomology. Items could include job changes, honors and awards, and personal notes. Please direct information to Dr. Bryony Bonning, Department of Entomology, Iowa State University, 418 Science II, Ames, IA 50011-3222; Fax: (515) 294-5957; e-mail: bbonning@iastate.edu.

ISU Entomology Newsletter for Alumni and Friends is produced by the entomology faculty and staff at ISU. This newsletter, previous issues, and additional photographs are online at

http://www.ent.iastate.edu/alumni

Visit our departmental web site at

http://www.ent.iastate.edu
For the third year in a row, an Iowa Stater has become President of the Entomological Society of America (ESA). The presidential trifecta was accomplished when president Mike Gray (M.S. 1982, Ph.D. 1986) passed the gavel to incoming president Marlin Rice at the close of the ESA Annual Meeting in Reno, Nevada, on November 19. Preceding Gray was Scott Hutchins (Ph.D. 1987) who served as president during 2007. Rice’s presidency extends through the next annual meeting, which will be held in Indianapolis, Indiana. Another alumnus, Phil Mulder (M.S. 1981, Ph.D. 1984), currently holds the office of ESA Treasurer. With the treasurer’s position also occupied by an alumnus, during 2008 these four Iowa State entomologists held the four highest ESA offices—president, past president, vice president, and treasurer.

Gray, Hutchins and Mulder are former graduate students of Joel Coats and Jon Tollefson, Larry Pedigo, and Bill Showers, respectively.

Alumni news, continued from page 10

John Hannah, Columbus, NE, has completed his fifth year as an entrepreneur with his business CropDoc, working as an independent crop consultant with customers in five counties. He also does crop damage insurance adjusting for herbicide and livestock damage claims by using GPS and mapping. He has served the past 5 years as an elected official on the board of directors for Lower Platte North Natural Resources District and also serves as a board member of the Nebraska Environmental Land Trust. During the winter, John promotes conservation measures to farmers in a 300,000-acre watershed recovery effort in Shell Creek northwest of Columbus.

John entered ISU in 1962; interrupted his education with 3 years in the army as a meteorological observer, including a year in Viet Nam; and graduated with a B.S. in entomology in 1971. He and his wife, Pam, moved to Shenandoah, IA, where John worked until 1983 in the horticulture industry as a propagator and as a shipping and sales administrator. In 1983, he was a district sales manager for AgriPro Seeds in eastern Iowa, eventually transferring to Columbus, NE. This move was followed by several years as a sales agronomist for Land O’Lakes. Starting in 1993, John worked for DeKalb Seeds for 7 years as a key account representative calling on large-acreage farmers in Nebraska, Colorado, and South Dakota selling some of the first Bt and herbicide-resistant crops available. This was followed by an additional 4 years as a retail agronomist for a local co-op before he started CropDoc.

John seldom collects insects today; however, he has taken up insect and wildflower photography, gardens extensively, and has bred several Hemerocallis cultivars and grows several of the trees surrounding his house from seed. Summers find him putting a lot of miles on his bicycle and fishing almost every weekend for walleye, crappie, and white bass at Sherman Lake west of Columbus. A new granddaughter, Lilly, has added incentive for visiting Omaha more often where son, Ben, teaches chemistry and physics at South Omaha High School. So far, John thinks 80 might be a fine time to start thinking about retirement, although he may have overcommitted by promising his wife a several-week summer trip to Alaska when she retires in 2 to 5 years.
Women Impacting Iowa State University 2008

Three women from Entomology were included among 12 women selected for recognition by the Catt Associates as “Women Impacting ISU.” Wendy Wintersteen, Endowed Dean of the College of Agriculture and Life Sciences, Bryony Bonning, Professor of Entomology, and Rachael Cox, who is conducting undergraduate research in Entomology were honored at a reception held in January 2008.

**Wendy Wintersteen** is one of the most well-known and respected ISU leaders among the citizens and leadership in Iowa Agriculture. She came to Iowa State as an integrated pest management extension associate with ISU Extension in 1979. She rose to professor by 1996. Currently, she is the 10th dean of the college, the second woman to serve as dean and the first dean to serve the newly renamed College of Agriculture and Life Sciences at Iowa State University. She has balanced the everyday leadership tasks along with creating a relationship with the important commodity groups in Iowa. During her tenure at ISU, she has received numerous awards and recognition.

**Bryony Bonning** is one of two women faculty members within the Department of Entomology and a faculty member in interdepartmental programs including: Genetics, Microbiology, Molecular, Cellular and Developmental Biology, and Toxicology. She is a professor, leader of a strong and dynamic lab and successful fundraiser. In addition to a broad understanding of scientific practice, she strives to help undergraduate and graduate students to hone their professionalism by strengthening their skills in speaking, presentation, writing, and mentoring. As a mother of two, she is also noted for her ability to speak honestly about the challenges and rewards of balancing academic life and family life.

**Rachael Cox** combines leadership abilities and potential with a commitment to public service. Her leadership role at the local, national and international levels has opened the door for other U.S. students to travel and become exposed to views of others around the world. She organized an international art festival to build international awareness and to raise funds for IAAS - International Association of Student in Agriculture and Related Sciences. This event took place in Chicago and involved IAAS members and others in a forum for exchange of ideas, information, and cultures, all with the ultimate goal of improving the human condition. Rachael’s work increases the international visibility of ISU.

Andre, continued from page 14

Carl Drake, the noted Hemipterist and department chair at the time. The thesis was published in 1936 and primarily consisted of a taxonomic key with descriptions of species. He immediately started teaching courses at ISU for the next two years. He left ISU for administrative positions in Washington, D.C. and the University of Wisconsin. In 1949 he became the dean of the College of Agriculture as well as director of the Agriculture and Home Economics Experiment Station. He provided strong leadership during more than two decades of growth in student numbers and course offerings. He and his family lived in the Farm House during his entire time as dean.
Featured Graduate Student: Gretchen Paluch

Interesting fact about Gretchen Paluch: She’s eaten an insect on national television.

She was an undergrad, a leader in the Entomology Club, when the organization was featured on TBS’ Ripley’s Believe it or Not, cooking and eating such delicacies as mealworm-coated caramel apples and chocolate-covered grasshoppers.

It’s a passion for science and learning that has given her the opportunities to take part in fun, unique experiences like Ripley’s. A high school class insect collection sparked Gretchen’s interest in entomology, and so she arrived at Iowa State University in fall of 1998, looking for a place to soak up knowledge, study, and become a part of a community of entomologists.

She worked as an intern in Joel Coats’ lab investigating the biological activity of catnip essential oil. After earning her bachelor’s degree in Entomology, she joined the Coats lab full-time to work on an M.S. project on trends in elm foliar chemistry, aimed toward the development of hybrids with reduced susceptibility to insect injury.

Since then, her academic interests have expanded into the science of insect toxicology and she is currently finishing up a Ph.D. in Entomology and Toxicology (co-majors) and Statistics (minor). Her research focuses on the mechanism of repellency in mosquitoes and characterization of a botanical sesquiterpenes, several of which are now covered by U.S. and International patent applications filed by the Iowa State University Foundation.

Gretchen currently lives in Ankeny, Iowa with her husband who is a magazine editor, their adorable pug Ralph, and a cat, Maggie. She’s involved with Big Brothers Big Sisters, loves to garden, and cheers on the Chicago White Sox.

4-H Moth Display

Dean Wendy Wintersteen honored 4-H during National 4-H Week in October by displaying an entomology exhibit created by an 11-year-old 4-H’er. 4-H selected a number of State Fair 4-H youth exhibits to be displayed at the Extension 4-H Building and at various locations on campus. The Polyphemus Moth Life Cycle exhibit was created by Matthew Chamberlain, in his third year in 4-H from Tama County.
Herbert Osborn (1856-1954)

The first entomologist at then Iowa State College was Herbert Osborn. He was born in Wisconsin but grew up in Fairfax, Iowa, where his first paying job was knocking Colorado Potato beetles off potato leaves into a can. Some of you can probably relate to that job. The devastation caused by the pest outbreaks of the time probably contributed to the profession that Osborn chose. The grasshopper plagues of the 1870's and Hessian fly devastation of early settler's wheat crops were some of the insect outbreaks that economic entomologists were trying to control. In those years there were few entomologists to help control these pest outbreaks. Osborn attended Iowa College, Grinnell, Iowa, for a few months but in 1876 entered Iowa State College. He graduated in 1879 with the B.S. degree, being the first student majoring in Zoology. He received the first M.S. degree given at Iowa State College in 1880 and the first honorary Doctor of Science in 1916. After receiving his M.S., Osborn began teaching and his first course from 1880-1882 was called “Entomology.” In 1883 the course title was switched to “Economic Entomology,” reflecting his major interests. When the Hatch Act established Experiment Stations it was separate from Iowa State College and C.P. Gillette became the first Station Entomologist at a starting salary of $1,600 per year. In 1890 the Station became part of the College of Agriculture and Osborn was made Station Entomologist and Head of the Department of Zoology and Entomology. In 1898 Osborn also became the first State Entomologist. Shortly afterward Osborn accepted a position at Ohio State University as head of the Department of Zoology and Entomology. He remained department head at Ohio State until 1916 when he retired from active teaching but continued research until 1933 and died in Columbus, Ohio in 1954 at the age of 98.

Osborn’s research interests were largely concerned with the taxonomy and biology of the Hemiptera, Anoplura, and Thysanoptera. He revised numerous genera and described many new species of Cicadellidae. Many insect species bear his name. He was author or coauthor of more than 500 publications. He described methods for the control of insect pests that were published by the Department of Agriculture in 1896. Many of these methods were in general use until 1945 when DDT became widely available. The influence of Professor Osborn at ISU is commemorated by the use of his name for the ISU Osborn Research Club, Osborn Cottage, and Osborn Drive.

Floyd Andre (1909-1972)

Floyd Andre is best known at Iowa State University for serving as the fifth dean of the agriculture college from 1949 until his death in 1972. However, he started his career as an entomologist. He was born in New Sharon, Iowa but moved to California for the last 4 years of elementary school and completed high school at Pasadena. He came back to Iowa and received a B.S. in Farm Crops and Soils in 1931. He immediately started working on his master’s degree which he completed in 1933. The thesis was “The biology of Oncopeltus fasciatus (Dallas) under constant conditions of temperature and relative humidity.” The next year he spent as an entomologist with the Emergency Conservation Service. This was a program to employ young people during the great depression. After about a year in that capacity he came back to Ames and began work on his Ph.D. thesis: “Thysanoptera of Iowa.” The professor in charge of major work was Continued on page 12
History of Computing in the Entomology Department

Back in the mists of time, those wanting to use computers had to painstakingly prepare punch cards and take them over to the Computation Center where they were processed. The first microcomputers to be used in the department were Commodore PET computers with 32k of RAM which Joel Coats and Wayne Rowley purchased in a special “buy two, get one free” deal. They gave the third to Robert Lewis.

Rowley hooked his up to a flight mill and used it as a data recorder for mosquito flight research. Coats used his to calculate LD50’s and do probit analysis. Lewis tinkered with his but was wooed instead by the Kaypro II, one of the first portable computers. It weighed 29 pounds.

While the early microcomputers were used for word processing and spreadsheet work, a revolution came in the early 1990’s when the Insectary and Science II were wired with serial connections, enabling use of the university’s mainframe. For the first time, instead of going to Durham Center or to one of the satellite terminals, one could enter data and run SAS directly from a PC or Macintosh.

In 1992, Donald Lewis headed up a special committee to get the department wired with a new technology called Ethernet. Some faculty were resistant to this, questioning the need for “being networked.” Several also opposed getting an e-mail address, emphasizing that anyone who needed to reach them could use the telephone.

In 1993, John VanDyk approached chair Tom Baker to say, “There’s this thing called the World Wide Web, and it’s going to be really big.” VanDyk established the department’s website using an old Macintosh SE/30 computer, and began compiling a list of entomology-related resources into the Entomology Index, which he maintained for the next 15 years. Other early attractions on the fledgling website included *Flea News*, edited by Robert Lewis, the *Integrated Crop Management Newsletter*, edited by Marlin Rice, and later *Horticulture and Home Pest News*, edited by Donald Lewis.

The department was a participant in early online collaborative efforts in integrated pest management, and was an integral part of the National IPM Network (a precursor to today’s eXtension program). Iowa State was also one of the first to offer web-based distance education courses. Among the over 50 websites now offered by the department is the BugGuide.net site, the largest repository of insect information on the internet, with more than 195,000 insect images and 21,000 pages.

September 2008 was the department’s busiest month yet, serving over 4.6 million page views to more than 333,000 unique visitors. That’s a lot of extension contacts!

Did you know?

A new sculpture “The Moth” sculpted by Mac Adams has been erected outside the new Electrical and Computer Engineering Building, Coover Hall. The sculpture, which consists of three slabs of Vermont marble that line up to form the image of a moth, depicts the first computer bug, a moth that got stuck between metal points on a relay in a primitive computer built at Harvard University in 1947. That moth specimen resides today in the Smithsonian History of American Technology Museum.
Brown Bag Lunch Series Promotes Discussion

Faculty and students in the Department of Entomology have been meeting regularly for a bring-your-own lunch to talk about professional development issues faced by graduate students. With consultation from Matt O’Neal and Bryony Bonning, Lyric Bartholomay coordinates this Brown Bag lunch. Meetings are intended to be informal and interactive to encourage dialogue. The series has allowed us to talk about a range of topics, from individual student’s research to applying and interviewing for jobs. For example, we have used the time to have each lab present an overview of on-going research, and have discussed writing a CV and building a website to advertise professional successes. A number of benefits have been witnessed from these regular meetings. Students have practiced and received feedback on talks prepared for scientific meetings. They have expressed appreciation for new insight into how to transition from graduate school to the job market in academia, government or industry. Most importantly, students and faculty alike are learning about the research taking place in the diverse laboratories in the department; as a result, we broaden our understanding of available research tools and techniques and know where to seek out expertise and resources to augment our research strategies.

Native Pollinators of Cucurbit Investigated

The recent concern about the health and sustainability of using highly managed European honey bees for crop pollination has increased interest in native pollinators. Unlike honey bees, however, most native pollinators cannot be transported in large numbers. In Iowa, several fruit and vegetable crops require insect pollination, including cucurbits. Cucurbits have native pollinating bees that are obligate pollinators: they only gather pollen from cucurbit plants. In particular, *Peponapis pruinosa*, a solitary ground nesting bee, is reported to be one of the primary pollinators of cucurbit plants. However, there is very little information about the occurrence of this species in Iowa and its

Continued on page 17

Department of Entomology Faculty at Fall Teaching Retreat

*Back row, left to right:* Les Lewis, Matt O’Neal, Lyric Bartholomay, Bryony Bonning, Aaron Gassmann, Mary Harris, Russ Jurenka, Joel Coats, Greg Courtney. *Front row:* Ken Holscher, Donald Lewis, Jon Tollefson, Mark Shour, Jeff Beetham.
Native Pollinators, continued from page 16

role in pollinating squash, muskmelon, cucumber, and zucchini.

Donald Lewis, Mark Gleason (Plant Pathology Department) and Laura Jesse along with other scientists are collaborating to learn more about the pollination of cucurbit plants and sustainable management of disease and insect pests of cucurbits while maintaining pollination. Experimentation includes floating row covers left over plants for several weeks to prevent disease, but opening up the ends of the covers to allow native pollinators access to flowers, or placing a commercially purchased hive of bumble bees under the row cover. —Laura Jesse

Parasitoid Release for Soybean Aphid Management

Beginning in 2007, a new chapter was entered in the playbook for soybean growers combating the soybean aphid with the release of the Asian parasitoid *Binodoxys communis*. This braconid is the first exotic natural enemy intentionally released for managing soybean aphids in the U.S.

After several years of study in quarantine, USDA gave permission to release *B. communis* in several north-central states. This permission was granted in part because of *B. communis*’ specificity for aphids in the genus *Aphis*. In the case of native *Aphis*, when aphids feed on the mature host plant with ants tending them parasitism was extremely limited. In light of this evidence, *B. communis* is expected to have low risk for non-target impacts.

To advance this tool, the Iowa Soybean Association has funded a three-year release program. This funding is allowing Matt O’Neal and his students to join with several entomologists in releasing *B. communis*.

In 2008 this included 5 locations in Iowa where insecticides were not applied even though soybean aphid populations increased well above economic threshold levels.

Initial results are promising; several generations of *B. communis* in soybeans were observed at each location. Furthermore, *B. communis* was released at multiple locations in the fall on buckthorn infested with soybean aphids and after several weeks these populations decreased sharply without producing eggs.

These sites will be monitored during the next two years to determine if this wasp was able to survive on the soybean aphid’s overwintering host. It is not yet determined if soybean aphid populations will be negatively affected by this new source of mortality. Stay tuned for what may be an electrifying conclusion.

Binodoxys communis released for management of soybean aphid.

Rice and Lewis Paper Cited 133 Times

In 2007, the Leopold Center for Sustainable Agriculture celebrated 20 years of service. During those two decades, the Center funded 233 projects, which generated 107 publications. The Center recently explored the outcomes of their funded research by using on-line tools such as Web of Science to find highly significant research. In the fall 2008 Leopold Letter, the Center noted that what they found was that, “one journal article in particular, ‘Preimaginal development, survival, and field abundance of insect predators on transgenic *Bacillus thuringiensis* corn’ from *Environmental Entomology* (26:446-454, 1997) has been cited 133 times in the scholarly world. This article was the outcome of a 1995 Leopold Center grant conducted by Marlin Rice, John J. Obrycki, Sr., Leslie C. Lewis, and Clinton Pilcher.” The newsletter further stated this “means the impact that the Leopold Center has on advancing agriculture is great.”
Students Get Teaching Experience at the Zoo

Each year the Insect Zoo presents to thousands of Iowa citizens with the mission of increasing awareness and knowledge regarding the life cycles, habitats and the vast roles insects play in the ecosystem.

This mission doesn’t get accomplished on its own. Sure it’s captivating critters such as Madagascar hissing cockroaches, New Guinea walking sticks and tarantulas that snag the attention of the young and old alike, but who keeps the audiences’ focus and solidifies their understanding? The real stars of the Insect Zoo are the numerous presenters that have shined while sparking the interest of others.

The summer of 2008 was no exception. The Insect Zoo was in such high demand to conduct programs at libraries and other venues throughout the state that additional summer interns were needed. And what incredible entomological presenters they became! It is always a pleasure to watch interns grow from nervous to confident, and from student to teacher. But, the question is, is there a benefit to the presenter too? Here are reactions from our interns:

“…the numerous programs I conducted for the Insect Zoo helped shape me into a more confident speaker... I learned how to balance education and fun…”
—Curtis Behrens, sophomore in Interpretation of Natural Resources in Animal Ecology

“….by slowing down a program and working one on one with a student, I am able to show how the creepy part of the insect actually serves a functional purpose.....and when the student finally holds the insect, they have pushed aside their fears and gained a new respect and appreciation....”
—Maggie Tierney, sophomore in Nutritional Science

“Working at the Insect Zoo has been one of my favorite experiences at Iowa State and has served as a corridor in helping me confirm I want to pursue a path in outdoor education.”
—Jessica Lancial, senior in Animal Ecology

“Thanks to my position with the Insect Zoo, I added Entomology as a second major.”
—Erick Hernandez, sophomore in Biology and Entomology

“When facing “teaching obstacles” I can now refer to my experiences with the Insect Zoo and brainstorm ways to facilitate learning instead of just displaying knowledge and expecting others to understand it.”
—Jess Slavik, senior in Animal Science
Insect Horror Film Festival

The 2008 Insect Horror Film Festival held at Reiman Gardens on October 23 featured the films *Ant Bully* and *Mothra*. The festival, which was coordinated by the Entomology Graduate Student Organization, included the ISU Insect Zoo, the Christina Reiman Butterfly Wing, cockroach races, insect origami, and of course, insect cuisine.

Did you know?

The Japanese beetle, first found in the USA in 1916, was briefly present in Iowa back in the 1970s but disappeared until it was rediscovered in Bettendorf (Scott County) in 1994. Since then it has been found in a few new counties almost every year and has now been reported in 37 counties. This past year was an exceptional year for Japanese beetle: They were more abundant in areas where they were already known to occur, and 13 new counties reported their presence in 2008. For more information about Japanese beetle management in the landscape visit the Iowa Insect Information Notes online at http://www.ipm.iastate.edu/ipm/iiin/node/125

Counts reporting presence of Japanese beetle are indicated in red.
Bob Elbert, ISU Photographer of Entomologists

Bob Elbert, the official ISU photographer for 32 years, selected his favorite photographs for an exhibition held in the Memorial Union this fall. The images included three entomologists; Russ Jurenka, graduate student Wendy Sparks, and an award-winning image of Greg Courtney that was printed in the 2007 alumni newsletter. Bob also served as the judge for the department’s fall 2008 entomological photograph competition. From 45 submissions, he selected the three winning entries shown below.

Bob Elbert’s favorite photographs included the photo of Russ Jurenka, left and Wendy Sparks, right.

Photo Competition Winners

First place went to Jon Oliver, for Pediculus humanus capitis (head louse) nymph with human hair.

Second place was awarded to Jessica Petersen, for the crane fly Epiphragma fasciapenne on a fern.

Third place was awarded to Marlin Rice for acorn weevil, Curculio sp.
A License for Vanity

Several creative entomologists, or those with a few extra dollars, have gone out of their way to personalize their vehicles and boast of their association with insects. This creativity is limited to a small metal “canvas,” contains no more than 7 letters or numbers, but is proudly displayed for all to see. It takes the form of a license plate, or “vanity” plate, and suggests that the vehicle owner wanted something a little more unique than a semi-random grouping of numbers and letters.

Four insect vanity plates are shown below for your enjoyment, and while some vanity plates are difficult to decipher, these should be straightforward for the entomologically inclined.

Although I can only display one vanity plate at a time, I’m always on the lookout for other clever plate names. I did see a pickup truck once on Interstate 35 with the vanity plate “GO4BUGS,” which I thought was an absolutely awesome insect plate. As I accelerated up along side the truck to see if I recognized the person as a fellow entomologist, I was surprised to see that the driver was a cowboy. A decal on the rear window promoted the attributes of BUGS, which it turns out, was a racehorse! –Marlin E. Rice

Clockwise from top left: Marlin Rice is N2BUGS, Jon Tollefson is the BUG DOC, state entomologist Robin Pruisner shows her allegiance for insects and the ISU mascot with BUGS4CY, and alumni Clint and Carol Pilcher captured the idea of BUGSRUS.

Vanity Plate Competition

Send your entomology-related vanity plate entries to bbonning@iastate.edu by December 1, 2009. Winning entries will receive copies of the 2010 ISU Department of Entomology Calendar!
2008 Graduations

Dan McCoy graduated with a B.S. degree in Entomology and now works for APHIS-PPQ in Missouri. Eric Whitted graduated with a B.S. in Entomology and is now based in Hawaii, working for Mycogen Seeds (Dow AgroSciences). Keri Henderson graduated in May with a Ph.D. in Toxicology. The title of her dissertation conducted with Joel Coats and Tom Moorman, USDA as co-advisors was Impact of veterinary antibiotics in the environment. Keri now works as Environmental Risk Assessor in the Regulatory Department at Pioneer Hi-Bred in Johnston, IA. Stephanie Kadlicko graduated in August with a Masters degree under the direction of Jon Tollefson. The title of her thesis is: Evaluation of Serbian commercial corn hybrid tolerance to feeding by larval western corn rootworm (Diabrotica virgifera virgifera LeConte) using the novel difference approach. Stephanie is currently working toward a Master of Public Administration degree in the Department of Political Science at ISU. Jason Kinley graduated in May with a Master’s degree. His thesis: Studies on the vector competence of a Mid-western strain of Aedes vexans (Meigen) (Diptera: Culicidae) for West Nile virus. Wayne Rowley and Kenneth Platt, VMPM, were co-advisors. Jason has worked as the Director of County Mosquito Control and Abatement near Boise, Idaho since 2005. Miriam Lopez graduated in May with a Master’s degree received under the direction of Les Lewis and Jon Tollefson. The title of her thesis was Bt-resistant European corn borers and Nosema pyrausta: Implications for resistance management. Miriam continues to work at USDA, ARS in Ames as a Biological Science Technician. Wayne Ohnesorg graduated with an M.S. degree having conducted research in Matt O’Neal’s lab, and accepted a position as Extension Educator in Cropping Systems and Water Management with University of Nebraska-Lincoln Extension. Wayne is now based in Pierce, Nebraska. The title of his thesis was Non-target effects of soybean aphid, Aphis glycines Matsumura (Hemiptera: Aphididae), management in Iowa. Matthew Petersen graduated in August with a Ph.D. under the direction of Greg Courtney. His dissertation was titled A systematic investigation of the crane fly subfamily Limoniinae (Tipuloidae: Limoniidae). Matt is currently a postdoctoral research associate at Cornell University (Geneva campus). Hailin Tang graduated in December with a Master’s degree in Toxicology. Hailin conducted research with Bryony Bonning on the specificity of an insecticidal basement membrane-degrading protease. His thesis was titled Tissue specificity of a baculovirus-expressed, basement membrane degrading protease in larvae of Heliothis virescens. Hailin is continuing with his graduate studies at ISU in Computer Science.

Postdoctoral Research Associate Departures

Felicitas Avendano, who conducted research on interaction between the soybean aphid and soybean cyst nematode with Matt O’Neal, is now an Assistant Professor in the Biology Department, Grand View University, Des Moines, IA. Jeff Bradshaw, a former graduate student of Marlin Rice, left in June to take a postdoctoral research appointment with Mike Gray at the University of Illinois where he is working on management of pests in biofuel crops. Man-Yeon Choi, who conducted postdoctoral research with Russ Jurenka, is now a Research Associate at the Center for Medical, Agricultural, and Veterinary Entomology, USDA-ARS, Gainesville, Florida. He is working on various aspects of pheromone production in the imported fire ant. Huarong Li completed his postdoctoral research appointment with Bryony Bonning and began a position at Dow AgroSciences in Indianapolis in September to continue working on insect control technologies. Patti Prasifka, who completed her doctoral degree and worked as a postdoctoral research associate with Jon Tollefson, joined Dow AgroSciences in Champaign, Illinois.

Did you know?

Fan Tong, a toxicology graduate student in Joel Coats’ lab, along with two other ISU students, finished in 21st place at the 2008 College Table Tennis National Championships.
Faculty-Staff Team Trounces Students in Grudge Match

The faculty-staff team prevailed with an 11-10 victory in 2008 at the annual faculty and staff versus student softball game held in September. Brad Coates drove in the winning run when he delivered the last of eight consecutive hits. Last year’s equally competitive game had been won by the Grad Student team 16-15, so the Faculty-Staff team were happy to return the favor. The Entomology Grad Student Organization organized a picnic at River Valley Park following the game and provided excellent food. A good time was had by all!

[Headline written by staff member. -Ed]


Corrections

Last year we published a short article on the history of Extension entomologists at Iowa State. One name was inadvertently left off the list on page 25; that person was Linda Buntin, Pesticide Applicator Certification. Linda was on staff during 1977-1982 and was recognized as the first woman Extension entomologist in the nation by the Entomological Society of America during the 1997 Annual Meeting in Washington, D.C. We regret the omission. — Marlin E. Rice

John Owens, who was the corn entomologist from 1971 to 1974 was also omitted from the chronological list of Entomology faculty published in last year’s newsletter. Thanks to Ronald B. Hammond, OARDC-The Ohio State University for pointing this out.
Scenes from the ISU Alumni Mixer at the 2008 ESA Annual Meeting

Left to right: Kevin Steffey (University of Illinois), Jeff Bradshaw (University of Illinois), Amanda Jacobson (University of Tennessee), Gretchen Paluch, Wayne Ohnesorg (University of Nebraska), Kevin Johnson, Mariana Chiozza, Joel Coats, Keri Henderson (Pioneer Hi-Bred), Steve Lefko [back row] (Pioneer Hi-Bred), Mike McCarville [front row], Nick Schmidt, Rachel Binning (Pioneer Hi-Bred), Kelsey Prihoda (Pioneer Hi-Bred), Patti Prasifka (Dow Agrosciences). Photos by Marlin Rice.

J. E. McPherson (Southern Illinois University), Mike Gray (University of Illinois), Les Lewis.

Joseph Munyaneza (USDA-ARS), Laura Anne Weiser-Erlandson (SUNY Institute of Technology), Colothdian Tate (USDA-APHIS).

Rachel Binning (Pioneer Hi-Bred), Keri Henderson (Pioneer Hi-Bred), Amanda Jacobsen (University of Tennessee).

View more alumni mixer photos on the web at http://www.ent.iastate.edu/alumni

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