Welcome to 
The BUZZZZ...
Department of Entomology Newsletter
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“Some primal termite knocked on wood;
and tasted it, and found it good.
That is why your Cousin May fell through the parlor floor
today.”
— Ogden Nash

The Department of Entomology at the
University of Arkansas in Fayetteville,
welcomes you to our third newsletter!

New Students

We welcomed six new students this year.
In January, Ace Lynn Miller arrived. This
summer, Kevin Durden, Jessica Hartshorn,
and Amber Tripodi started their programs. In
August, Natasha Wright and Chad Andrews
began their studies.

- Ace Lynn Miller is from Madison, Wis-
consin. He received his B.S. in Entomology
from the University of Wisconsin-Madison
and is pursuing his M.S. in Forest Entomol-
ogy with Dr. Stephen. He is interested in the
management of invasive species.

- Natasha Wright is from Gainesville,
Florida. She received her B.S. from the Uni-
versity of Florida-Gainesville specializing in
urban pest management. She will be working
on a M.S. with Dr. Steinkraus studying varroa
mite control or biological control of small
hive beetles.

- Chad Andrews, originally from Eugene,
Oregon, earned his A.A.S. degree in infor-
mation technology at Ivy Tech Community
College in Lawrenceburg, Indiana, followed
by a B.S. degree in Biology from the College
of Mount St. Joseph in Cincinnati, Ohio. Chad
received his M.S. at the University of Florida
in entomology, studying termite foraging
behavior. Chad is pursuing his Ph.D. under
Dr. Dowling, studying food-web interactions
among the arachnids of the Ozarks.

- Kevin Durden has a B.S. from Missouri
State University, in Industrial Management; a
B.S. from Drury University in Biology; and a
M.S. from Missouri State University in Plant
Science in 2009. He is working toward his
Ph.D. with Dr. Goggin investigating the effect
of lipoxygenase coding genes in tomato and
Arabidopsis plants on choice and fecundity
rates in aphids.

- Amber Tripodi is from Memphis,
Tennessee. She received her B.S. in Biology
with a minor in Entomology from the Uni-
versity of Arkansas. She received her M.S.
from the University of Colorado, Denver, in
Environmental Sciences, Ecosystems. Amber
is working on her Ph.D. with Dr. Szalanski
studying bumble bee genetics to determine
distributions in order to encourage pollination
by native bees.

- Jessica Hartshorn is from Dayton,
Ohio, where she attended Miami Univer-
sity before transferring to Southern Illinois
University. She graduated cum laude in May
2010 with a B.S. in Zoology and a minor in
Chemistry. While at SIU she worked on Lyme
disease at the Cary Institute in New York
and tallgrass prairie stream macroinvertebrates
at Konza Prairie in Kansas. Jessica will be
studying the native siricids and their natu-
ral enemy complex of Arkansas, as well as
using GIS to look at forest stand structure in
Arkansas to determine the risk of infestation
by invasive siricids. She will be working on a
M.S. with Dr. Stephen.

Good Luck

- Randy Luttrell, Professor of Entomol-
ogy, took a position as Project Leader at
USDA-ARS in Stoneville, Mississippi. Con-
gratulations to Dr. Luttrell and best wishes for
success.

- M. Ibrahim Ali, Program Associate
with Dr. Luttrell, took a position with the U.S.
Food and Drug Administration in Pine Bluff,
Arkansas.

- Lingling Jia, Program Associate from
Dr. Goggin’s lab, has moved to New Haven,
Connecticut.

We wish them all the best.
Fall of 2010 is already here!

You have before you the third of our annual Department newsletters, and we look forward to its annual appearance. Once again, the purpose is to bring you up to date on the happenings in the Department and to alert you to upcoming social and scientific functions.

The past year saw the arrival of six new graduate students and departure of five graduated students. Details on the new students (and their tour) and destinations for the graduates are noted elsewhere. Our students were very involved in professional activities, and received a number of awards. By my count, our students presented 5 invited papers and gave another 32 submitted papers or posters at sixteen different meetings. We try to create opportunities for our students to gain experience and be exposed to different groups of scientists. Our students garnered numerous awards both in the Department, elsewhere on campus and in national venues. The students are the key to a thriving department, and the awards given to the students signal a healthy department.

During the past year, several people left for other positions. Randy Luttrell (Professor) left in May for Stoneville, MS; Lingling Jia (Program Associate) left with her family for New Haven, CT; and Ibrahim Ali (Program Associate) began a new position in Pine Bluff, AR. All of them contributed to the Department and will be missed. We certainly wish them all the best in their new ventures.

The students continue to maintain the outreach program with presentations at local schools, libraries and other venues. This past year, the Department was represented in outreach activities at the Fayetteville Farmers’ Market and the Botanical Garden of the Ozarks. The students sponsored Dr. John Acorn as their Student Invited Lecturer; his presentation on using insects in outreach was a perfect addition to the outreach efforts. His visit also offered a chance for the students to take Dr. Acorn to the Big Woods of Arkansas (article elsewhere). As further outreach, we again partnered with the Botanical Garden to co-sponsor a public lecture by Dr. Doug Tallamy, an entomologist from the University of Delaware and author of a recent book on benefits to insects and wildlife from landscaping with native plants.

Our Distinguished Alumnus Award winner, Scott Salom (see accompanying column), will be giving a seminar to the Department and will be presented with an award at a reception at the University House.

The new school year brings new faces and new challenges, including decisions about new directions for faculty, a new strategic plan and thriving in a time of uncertainty. We look forward to those challenges and to input from the friends and alumni of the Department.

Once again, we will have a display at the ESA meeting in December, to recruit new students and re-connect with alumni and friends. We hope to see you there, or feel free to drop by the Department to visit us anytime.

Best wishes,

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Graduates

It is hard to say goodbye to the wonderful people we meet.

- **Laurel Haavik** received her Ph.D. and headed to the University of California-Davis as a postdoctoral fellow.
- **Tara Wood** joined the Doctor of Plant Health Program at the University of Nebraska.
- **Becky Trout** received her Ph.D. and is now a postdoctoral fellow in Entomology at the University of California-Davis.
- **Lirio Milenka Arevalo Soliz** completed her Ph.D. in Cell and Molecular Biology and is currently a postdoctoral fellow at Baylor College of Medicine, Houston, TX.
- **Jake Farnum** finished his M.S. and is working at the Dept. of Agriculture and Consumer Services in Florida.
- **Ben Von Kanel** finished his M.S. and is pursuing a doctorate at Mississippi State University.

Stay in touch! We will miss you!!!

Presentation Awards

- **Justin Whitaker** won first place in the poster competition at the 2009 Annual Meeting of the Entomological Society of America in Indianapolis, for “Distribution and molecular detection of *Nosema ceranae* in US honey bees.”
- **Roxane Magnus** won second place in the poster competition at the 2009 Annual meeting of the Entomological Society of America in Indianapolis, for “Genetic variation in honey bees (*Apis mellifera*) from central and southern United States.”
- **Ben Von Kanel** won second place in the paper competition at the 2010 Beltwide Cotton Research Conference in New Orleans, for “Fruit Injury and Developing Action thresholds in Dual-Gene Transgenic Cotton.”
- **Roxane Magnus** won first place in the Masters posters for the Gamma Sigma Delta student research competition, for “Genetic variation of honey bees (*Apis mellifera* L.) from feral, managed and queen breeder colonies using DNA sequence analysis.”
This year the **Entomology Club Outreach Program** participated in many exciting events. These events included Campus Day at the University of Arkansas, Kids Day at the Fayetteville Farmers’ Market, the Firefly Fling at the Botanical Garden of the Ozarks, Science Night at East Side Elementary School in Rogers, the Northwest Arkansas Emergency Preparedness Fair, Butterfly Day at the Botanical Garden of the Ozarks and many other local classroom visits. We displayed tropical butterflies and large tropical insects as well as local insects children and parents could find outside and in their backyards! We showed live insects and taught children about the body parts of an insect as well as the amazing exoskeletons that keep insects safe from the elements. We had goggles that allowed kids to see the world through compound eyes, and a model of fire ant galleries. Children received an insect hand-stamp to take home with them.

The **Isely-Baerg Entomology Club** continued its biweekly booth schedule at the Fayetteville Farmer’s Market on the square again this year. Displays of insects in boxes and under microscopes, insect and spider hand-stamps for children, and refrigerator magnets emblazoned with information about this year’s Insect Festival were all provided. As usual, most of the questions brought by the public concerned common pests like Japanese beetles and brown recluse spiders, and on occasion there were live insects like tomato hornworms for people to handle at the booth. Thanks to all those who helped out with displays.

The **Isely-Baerg Entomology Club** continues to manage the bee hives at the Experiment Station farm. Another successful year yielded approximately 200 lbs. of honey. Their delicious local honey is still for sale in the Department of Entomology office.

At the suggestion of our graduate students several years ago, we implemented a **Distinguished Alumnus Award**. This year’s winner is Dr. Scott Salom, professor of entomology at Virginia Tech University. Dr. Salom earned a B.S. from Iowa State University in 1981, a M.S. in entomology at the University of Arkansas in 1985, and a Ph.D. from the University of British Columbia in 1989.

Dr. Salom has been a part of the Virginia Tech Department of Entomology since 1989. During his time at Virginia Tech, Dr. Salom has published more than 100 papers on his research with southern pine beetle, pales weevil, hemlock woolly adelgid, and biological control of *Ailanthus altissima* (tree of heaven). Along with conducting research, Dr. Salom has a strong service record and helped to form the Southern Pine Beetle Working Group, the web-based Southern Pine Beetle Information Directory, and the Southern Pine Beetle Internet Control Center.

Dr. Salom will be visiting the Department of Entomology on November 5th to present a seminar. Along with an award plaque, he will be honored with a reception at the University House.

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**Student Awards**

- **Becky Trout-Fryxell** was selected as the 2010 recipient of the Aubrey E. Harvey Graduate Research Award by the University of Arkansas chapter of Sigma Xi, the honors research society.
- **Becky Trout-Fryxell** is the 2010 recipient of the John Henry Comstock Award from the South-eastern Branch of the Entomological Society of America.

**Student Achievements**

- Outstanding Ph.D. student in Entomology Spring 2010 — Laurel Haavik
- Outstanding M.S. student in Entomology Spring 2010 — Kelly Carruthers
- Lloyd and Ruby Warren Scholarship for M.S. students Fall 2009 — Roxane Magnus
- Lloyd and Ruby Warren Scholarship for Ph.D. students Fall 2009 — Becky Trout
- Lloyd and Ruby Warren Scholarship for Ph.D. students Fall 2010 — Carey Minteer
- John S. Heiss Fellowship for M.S. students Fall 2009 — Jake Farnum
- John S. Heiss Fellowship for Ph.D. students Fall 2009 — Laurel Haavik
- John S. Heiss Fellowship for Ph.D. students Fall 2010 — Godshen Robert Pallipparambil
- Phillips Scholarship for Ph.D. students Fall 2009 — Narinderpal Singh
- Isely Award for Ph.D. students Spring 2010 — Godshen Robert Pallipparambil
- Isely Award for M.S. students Spring 2010 — Kelly Carruthers
- Doctoral Academy Fellowship for Ph.D. students Fall 2010 — Amber Tripodi
- Lincoln Fellowships were awarded to Ph.D. students, Kevin Durden and Chad Andrews
The Genetic Diversity of Arkansas Bumble Bees

Like honeybees, bumble bees seem to be on the decline in the United States. In most regions, including Arkansas, this is based only on anecdotal observations. Working with Dr. Szalanski, new Ph.D. student Amber Tripodi hopes to examine the status of bumble bees within the state through a survey of their genetic diversity. To sample as wide an area as possible, she is requesting help from volunteer collectors throughout the area. If you are interested in bumble bees and would like to help collect them as part of this project, please contact Amber at: atripodi@uark.edu for a collecting kit.

More Notables

Justin Whitaker and Kelly Carruthers attended the Organization for Tropical Studies (OTS) two-week Tropical Butterfly Ecology Course in Costa Rica this summer. While exploring tropical forests at La Selva and Tirimbina biological stations, they matched wits with deadly snakes and spiders and interacted with monkeys and sloths in their efforts to learn about factors governing butterfly and moth growth and reproduction. Though they had the privilege to see the blue morpho butterfly and tropical curiosities such as amblypigids, the bulk of their experience consisted of learning how to identify plant families and find caterpillar damage to determine herbivory rates, host plant preferences, predation and parasitism rates, and factors affecting butterfly and moth biodiversity.

Sam Kim attended a two-week Chemical Ecology course at Pennsylvania State University in June.

Michael Skvarla attended a three-week course on mite systematics and taxonomy at the Ohio State University Summer Acarology program. Dr. Ashley Dowling taught Medical Veterinary Acarology at this program.

Jessica Hartshorn, Danielle Keeler, Bryan Petty and Ace Lynn Miller attended a one-week Insect Pathology course in June at the Illinois Natural History Survey, sponsored by the Midwest Institute of Biological Control.

Amber Tripodi attended the 1st International Conference on Pollinator Biology, Health and Policy, July 24 -28, 2010, at Pennsylvania State University, and presented a poster titled: Genetic Diversity of Bumble Bees in the South Central United States.

Dr. Steinkraus has been working with his new Ph.D. student, Bryan Petty, and Dr. Johnson’s lab on classical biological control of Japanese beetles, with a microsporidium, Ovavesicula popilliae. This organism has played a role in reducing Japanese beetle numbers in the Northeast and Michigan. Dr. Steinkraus is also working with DuPont to study the effects of new insecticides on behavior of larval and adult Japanese beetles.

Help Keep Our Alumni Database Current

Please let us know if you have moved. Include your current contact information such as address, phone, fax, and email, as well as your University degree, year, and advisor.

Mail your information to the Department of Entomology, AGRI 319, University of Arkansas, Fayetteville, AR 72701; or fax to (479) 575-2452; or email Susan Osredker at osredker@uark.edu.

We look forward to hearing from you!

INSECT FESTIVAL

On October 7, the Department hosted the 12th Insect Festival in the Pauline Whitaker Animal Science Center. The crowd for this year’s Festival was estimated at more than 3,600, with the great majority being busloads of school groups. This year’s Festival featured new activities and games, such as the bee waggle dance, and the new, musical Insect Theater. Five performances of Insect Theater, featuring live narration, music and vocals, and seven costumed actors, were presented to at least 1,000 attendees. More than 120 volunteers pitched in to make this year’s Festival was the best one yet! Look for photos on the Department’s web site.
Entomology graduate students take a trip to Brinkley

Entomology graduate students and naturalist John Acorn, the student-selected speaker at the Feb. 19 Entomology Seminar, took a road trip to the “Big Woods” near Brinkley to see the habitat where the report of the Ivory-billed Woodpecker originated. (right)

The “Big Woods” of Arkansas is the corridor of bottomland hardwood forest along the lower White River and its tributaries Cache River and Bayou De View, the lower Arkansas River, and the Mississippi River near the mouths of the White and Arkansas Rivers. At approximately 500,000 acres, it is the largest block of forest remaining in the northern Mississippi Alluvial Valley or “Delta,” but is only a small remnant of the original 8,000,000 acres of forest in the Arkansas Delta alone.

“This is mainly an ornithological investigation now, but if they find a bird, they’ll need entomologists to figure out what it eats,” Acorn said. “There are so many dimensions to ecological issues,” he said, including social, historical and economic as well as aesthetic and scientific.

Acorn is a naturalist, lecturer at the University of Alberta, author and television personality. He said he talks about the Ivory-billed Woodpecker in his course on Environmental and Conservation Science. His website is http://www.acornthenaturenut.net/.

While at the University of Arkansas, John gave a seminar to the Department entitled: “Entomology for the masses: some thoughts from a writer, television host, and university lecturer.”

2010-2011 Graduate Students

Back, from left: Roxane Magnus, Carey Minteer, Natasha Wright, Danielle Keeler, Chad Andrews, Amber Tripodi, Beven McWilliams, Kelly Carruthers, Sam Kim, Godshen Palliparambil.

Front, from left: Ace Lynn Miller, Michael Skvarla, Ray Fisher, Jessica Hartshorn, Justin Whitaker, Kevin Durden, Narinderpal Singh.

Inset: Bryan Petty

Honeybee Article Published

Dr. Don Steinkraus published an article in the April 2010 issue of American Bee Journal, entitled: Early Spring Flowers in Northwest Arkansas: The Excellent, the Good, and the Poor.” This article summarized ten years of observations on which flowers were most important for honeybees during the critical January-March period when overwintered bees begin to produce brood again in preparation for the major spring nectar flows in April-June. The article provides recommendations for plants that beekeepers can grow on their properties to feed their bees. This article contained 21 original color photographs of bees and flowers in Northwest Arkansas.

Arkansas Entomological Society

The fall meeting of the Arkansas Entomological Society was held October 8th at the Pauline Whitaker Animal Science Center. The meeting kicked off with the traditional fish fry on October 7th after the Insect Festival. Twelve paper and 5 poster presentations were given to an audience of 45 attendees. The annual photo competition awarded certificates for the most beautiful insect, the most bizarre insect, interesting scenes encountered while being an entomologist, and entomologists at work. The 2011 meeting is planned for Hot Springs.
Summer Interns

Dr. Fiona Goggin sponsored two student interns this summer: Kiara Potts from Philander Smith College and Courtney Walker from the University of Central Arkansas. Kiara Potts was a participant in the George Washington Carver Project, an eight-week program that gives prospective graduate students from historically black and Hispanic-serving institutions exposure to post-graduate preparation. Under Dr. Goggin’s supervision, Ms. Potts conducted a research project to identify means of enhancing vitamin C content in plants, and she won first prize for a poster presentation on her results at the Carver Program’s research symposium (July 7th).

Courtney Walker, who was co-advised by Dr. Goggin and Dr. Ronald Sayler from the Department of Plant Pathology, received a summer research fellowship from the NIH-funded Arkansas INBRE program (IDeA Network of Biomedical Research Excellence), which is designed to enhance the science and technology base of Arkansas’ future workforce. Ms. Walker conducted a research project on molecular detection of reniform nematodes, and presented her results at the INBRE’s Research Symposium (oral presentation) and Research Day (poster presentation).

BED BUGS in the news

Dr. Allen Szalanski was quoted in four different bed bug articles in the past few months.

Definitive causes of the resurgence of bed bugs are not known, but it may be due to a combination of insecticide resistance, greater international and domestic travel, and less vigilance in hotels and other public places due to the insects’ prolonged absence in most areas, according to the Arkansas Department of Health. Another factor is that bed bugs can live for months between meals.

The Insect Genetics Lab at the University of Arkansas studies the population genetics of bed bugs and other arthropods, the use of bed bugs for forensics, and bed bug insecticide resistance. The lab has determined that bed bugs in Arkansas are highly resistant to DDT, but are susceptible to other classes of insecticides, such as pyrethroids. The ability to identify individual human hosts based on analyses of blood recovered from hematophagous (blood sucking) insects is beneficial for both medical and forensic entomology. Bed bugs do not remain on the host after feeding, yet they will remain near a crime scene. They have successfully isolated, amplified, and sequenced human DNA obtained from bed bugs.

These results showed that DNA isolated from bed bugs is sufficient for DNA typing and could help identify individual human hosts for forensic analysis.

For information and photos about insects in Arkansas, check out the Entomology Museum photo gallery at:
www.uark.edu/ua/arthmuse/gallery.html
Teacher Training

Dr. Fiona Goggin, Dr. Julie Carrier (Biological and Agricultural Engineering) and Dr. Vibha Srivastava (Crop, Soil, and Environmental Sciences) developed a new workshop for K-12 teachers entitled “From field to table: the science behind plants as food and fuel,” (held July 26-27, 2010, on the UA campus). Dr. Goggin led a discussion on the use of genetically modified crops for insect management, demonstrated a simple immunodetection assay that teachers can use as a laboratory activity, and developed a computer-based exercise to teach students about pesticide safety. The workshop was supported by a $12,000 grant from the Arkansas Science and Technology Authority.

Student Tour

As part of orientation to the Department, six graduate students who began in 2010 toured the state, along with faculty members Tim Kring and Rob Wiedenmann. Dr. Kring organized the tour, which was August 16-18. Sites visited included the Buffalo National Scenic River, Cotton Plant, Marianna, the Louisiana Purchase State Park, Stuttgart and West Helena.

At Cotton Plant, the group visited the family farm of alumnus Adam Chappell (MS 2006), who explained some of the agricultural and entomological issues faced by growers. Adam also explained how he used the research findings and other information gained from his education to manage his crops and minimize pest problems. Adam and his family cooked barbecue for the group, which also included a visit by departmental alumni John Riggins (PhD 2008) and John Smith (MS 2006). Picture below at Chappell Farm.

The group stopped at the Lon Mann Cotton Research Station at Marianna, where Gus Lorenz, Program Associate Kyle Colwell, and student workers Ben Thrash and Andrew Plummer explained the programs in field-crop IPM.

The next tour stop was the Rice Research and Extension Center at Stuttgart, where John Bernhardt led a tour of the new facility and helped with the visit to rice fields.

The final stop was south of West Helena, where phorid flies have been released against imported fire ants. Kelly Loftin provided the information for the stop, which yielded many ants but few phorids.

Students on the tour included Chad Andrews, Kevin Durden, Jessica Hartshorn, Ace Lynn Miller, Amber Tripodi and Natasha Wright.

Research Grant

Dr. Fiona Goggin received a grant from the National Science Foundation to support a research project entitled “Influence of fatty acid desaturation on plant defenses against aphids” (Total: $637,448. Duration: 4/2010-3/2013). The goal of this project is to determine how insect infestations on crop plants may be reduced by modifying the fatty acid profiles of these plants. This project should also shed light on how the plant “immune system” against insects functions.
Fall 2010 Entomology Seminars

All seminars will be held in AGRI 332, 11:30 a.m.

September 17    Jason Bond, East Carolina University
September 24    Travis Marsico, Arkansas State University
October 1       Sonja Hausmann, University of Arkansas
October 15      Jim Whitfield, University of Illinois
October 22      Micky Eubanks, Texas A & M
October 29      Phil Mulder, Oklahoma State
November 5      Scott Salom, Virginia Tech
                Distinguished Alumnus Award Winner
November 12     Ken Raffa, University of Wisconsin
November 19     Sherah van Laerhoven, University of Windsor

Calendar

October 7  Insect Festival, 9 a.m. to 4 p.m., Pauline Whitaker
           Animal Science Center
October 8  Arkansas Entomological Society Meeting, Fayetteville
October 14 Public Lecture — Sydney Cameron, Univ. of Illinois
           7:30 p.m., Giffels Auditorium
November 5 Reception for Distinguished Alumnus, Scott Salom
           4:30 p.m., University House
December 12-15 ESA Annual Meeting, San Diego, California