



Department of Entomology Newsletter

Events from 2012

John Clarke III Named Distinguished Alumnus

John Lyell Clarke III (Ph.D. 1988) was presented with the ISU Distinguished Alumnus Award by the Alumni Association. Clarke has worked for more than 25 years in the entomology field, including 23 with The Clarke Group, Inc., a global environmental products and services company.

He began his career in 1986 as a mosquito control consultant, and then went on to serve as vice president, president, and chief executive officer upon his father's retirement in 1996. Clarke has furthered his father's vision of mosquito control with a focus on public health and sustainability.

The Clarke Group is an environmentally friendly company that succeeded in creating an organic larvicide. In conjunction with Dow AgroSciences, Clarke introduced Natular, the first reduced-risk larvicide. Natular is 15 times less toxic than alternatives and can be applied at use rates two to



Steven Leath (ISU President), John Clarke III, and Jeffery Johnson (ISU Alumni Association President)

Continued on page 13

Larry Pedigo First Legend of Entomology



The new Plant-Insect Ecosystems (PI-E) Legends of Entomology Award recognizes entomologists who have been legends and mentors. **Larry Pedigo** was selected to be the first ESA P-IE "Legend of Entomology" at the ESA meeting in Knoxville, TN. Larry has been a national leader in IPM for more than 30 years. He led the development and use of economic injury levels, and his approach has been the primary method used in the U.S. and abroad. Pedigo also was an early leader in sampling methodologies for agricultural pests, co-editing *Handbook of Sampling Methods for Arthropods in Agriculture* in 1994. He published more than 160 refereed papers and was named a Fellow of ESA in 2007.

Pedigo earned an M.S. (1965) and Ph.D. (1967) in entomology from Purdue University. In 1967, he became an assistant professor at ISU, from where he retired as a professor in 2001. Pedigo taught courses in entomology, pest management, and zoology. He taught more than 2,000 undergraduates in *Fundamentals of Entomology and Pest Management* and wrote the textbook and lab manual for the course.

Awards and Nominations

John VanDyk received the ISU Professional and Scientific Excellence Award in 2012. This award recognizes and honors people who have achieved excellence in their field.



John VanDyk

Ken Holscher is the 2012 recipient of the ISU James Huntington Ellis Award for Excellence in Undergraduate Introductory Teaching. This award acknowledges outstanding performance in teaching undergraduate introductory classes.



Steven Leath (ISU President) and Ken Holscher

Lyric Bartholomay and **Sharron Quisenberry** were named finalists in the 5th Annual DuPont Pioneer Women of Innovation Award in November. This event recognizes women who are leaders in science, technology, engineering or math.

Aaron Gassmann was awarded the ISU College of Agriculture and Life Sciences Early Achievement in Research Award for 2012. The purpose of this award is to identify faculty members that have demonstrated outstanding accomplishments with at least two years at ISU.

Sue Blodgett is the NCB-ESA President-Elect. Her position started in June 2012, where she will begin to prepare for the 2014 meeting in Des Moines, IA (see page 19). She will become President in 2013 and then transition to the Past President office for a year after the meeting.

There were two publication awards presented to **Erin Hodgson** at the 2012 NCB-ESA meeting in Lincoln, NE. The first award was the Entomology Educational Project Award: *Field Guide, Soybean aphid management, 2nd edition* (other authors: **Matt O'Neal**, Adam Sisson, and David Wright). The second award was the Entomology Educational Project Award: *Bulletin, Field crop insects management compendium* (other authors: Adam Sisson, Daren Mueller, and David Wright).



Fred Baxendale (2012 NCB-ESA President), Erin Hodgson, and Phil Sloderbeck (BCE Representative)

Did you know?

Sharron Quisenberry has returned to the Entomology Department! Dr. Quisenberry has been Vice President for Research and Economic Development at ISU since 2009. Her leadership helped the university reach significant gains in external research funding, with more than \$360 million successfully generated in 2012. Sharron will rejoin the department starting in January 2013, and has an office in Science II. She will be working on special initiatives, such as the Committee on Institutional Excellence, Health Research Initiative, and the NSF Strengthening the Professoriate programs.

A Busy Year for ISU Entomology

It has been a busy year as we continue to develop a joint office business model with the Natural Resource Ecology and Management (NREM) Department. One change was to combine the Information Technology (IT) operations of both departments, with **John VanDyk** as the director. He has a new office suite for the IT team, converted and renovated a computer server room in Science II, completed a backup 'private cloud' for the department, and hired Bill Shoemaker dedicated to web design for both departments. Bill has been busy developing individual faculty and center web pages, and planning a complete remodeling of the NREM website. The workload for the group has increased dramatically in the last year as they have fielded over 1,700 work requests, which average seven per day. The IT group has saved over \$29,000 by refurbishing 30 laptops and saved over \$130,000 in software licensing fees through offering concurrent licenses where appropriate.

Combining the greenhouse resources of the two departments has provided more flexibility (read space) for research projects. The joint committee is co-chaired by **Aaron Gassmann** and Jesse Randall.

The Entomology Department held a retreat at Reiman Gardens in January 2012 for strategic planning. After a lively discussion, we completed and adopted a strategic plan in the fall of 2012. Currently we are working on updating the departmental governance document. An external review of the department is due in 2014-2015 and having these documents updated will help to guide that process. Our last departmental review is dated 2002.

There are references throughout the newsletter to the outstanding accomplishments of faculty, staff, students, and alumni. ISU had a very successful mixer at the national meetings in Knoxville this year (see page 24) and hope to see you again next year in Austin. We continue to build on the foundation of excellence that has long been a tradition/expectation of those affiliated with the Entomology Department. The continued loyalty and dedication of the ISU Entomology alumni cannot be overstated. I hope you will continue to keep the Entomology Department in your thoughts and plans in the future.



Sue Blodgett

Did you know?

Of the 10 standard grants awarded by the USDA AFRI (Agriculture and Food Research Initiative) Insects and Nematodes Program in 2012, three were awarded to ISU!

1. Amy Toth, Bryony Bonning and W. Allen Miller "Interactions between honey bee nutrition and viral infection: An integrative approach to CCD" \$494,000.

2. Thomas Baum, Department of Plant Pathology and Microbiology, "Dissecting the network of plant targets for nematode effector proteins" \$466,000.

3. Bryony Bonning and Nanasaheb Chougule "Modification of a Bt toxin for soybean aphid resistance" \$435,000.

New Virus-Insect Interactions Initiative

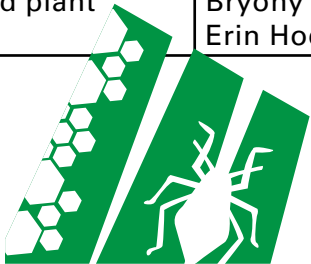
Following a Phase I (\$40,000) award provided to **Bryony Bonning** and W. Allen Miller (Department of Plant Pathology and Microbiology) in 2010, the ISU Plant Sciences Institute (PSI) provided Phase II funding (\$250,000 per year for up to four years) to support the Virus-Insect Interactions (VII) Initiative (www.ent.iastate.edu/cvii). VII consists of 26 faculty and staff from 16 ISU departments. The purpose of Phase II funding is to 1) develop a functional team, 2) produce trans-disciplinary research publications, 3) provide a significant return on PSI investment, and 4) establish an extramurally-funded center.

Phase II funding is used for workshops and seminars at ISU, symposia at international meetings, and seed money for new collaborative research in the area of virus-arthropod interactions. In 2012, VII-funding was used toward the planning meeting for the proposed NSF Center for Arthropod Management Technologies (see article on page 5). Bonning also led the effort to submit a \$3.75 million proposal for a USDA NIFA Coordinated Agricultural Project, along with 19 co-PIs from nine institutions. The proposal was ranked fourth out of 13, but not funded.

The popular VII workshops have been held once or twice per year. At the 2012 workshop, Drs. Santosh Pandey and Liang Dong from the ISU Department of Electrical and Computer Engineering presented their work on application of microfluidics and “lab on a chip” to biological science questions. To coin a phrase, the crowd went wild and several new collaborations were established. Because the workshops were so successful, VII along with the Departments of Entomology and Plant Pathology and Microbiology will be hosting a series of seminars in 2013 to highlight engineers with interest in applying their technologies to the biological sciences.

Funding is provided in a competitive process within VII, and thus far, the investment in new projects has seen considerable return in acquisition of external funding (see Table below). Funding recipients in 2012 included “Genetic determinants of virus host specificity” (Bradley Blitvich, **Lyric Bartholomay**, W. Allen Miller), and “Virus discovery for development of novel disease mitigation strategies in the Pacific white shrimp” (Lyric Bartholomay, Bryony Bonning).

**See page 16 for a comic book related to VII!*

Seed Funding		External Funding		
VII-Funded Project	VII-Project PIs	Funding Source	Project Title	Funded PIs
Aphids and aphid-vectored plant viruses	Matt O’Neal, Bryony Bonning, Erin Hodgson	Iowa Soybean Association (\$145,083)	Exploiting viruses to control the soybean aphid	W. Allen Miller, Bryony Bonning
		North Central Soybean Research Program (\$75,000 to Bryony Bonning, Matt O’Neal)	Soybean aphid management, resistance and outreach in the North Central Region	Kelly Tilmon, Brian Diers, Andy Michel, George Heimpel, Erin Hodgson
	Protection of pollinators	W. Allen Miller, Bryony Bonning, Amy Toth, Julie Dickerson	USDA NIFA Foundational Project (\$494,000)	Interacting effects of nutrition and viral infection on honey bee colony collapse
Insect and plant virus control strategies	Bryony Bonning, W. Allen Miller, Sijun Liu	Consortium for Plant Biotechnology and Industry (\$115,000)	Capsoid mediated delivery of silencing RNAs for pest control	Bryony Bonning, W. Allen Miller
Effects of virus infection on plant-insect interactions	Steve Whitham	National Science Foundation (\$381,094)	Manipulation of plant defenses by an insect-vectored virus	Steve Whitham, Georg Jander

Proposed NSF Center for Arthropod Management



Bryony Bonning

In 2010, the ISU Plant Sciences Institute provided **Bryony Bonning** and W. Allen Miller (Department of Plant Pathology and Microbiology) with funding to support the Virus-Insect Interactions Initiative (see article on page 4). One of the mandates for the interdisciplinary group was to establish a center that would be supported by extramural funding. To this end, Bonning teamed up with Dr. Subba Reddy Palli, University of Kentucky (UK), to establish a National Science Foundation Industry/University Cooperative Research Center (I/UCRC), the Center for Arthropod Management Technologies (CAMTech; www.ent.iastate.edu/camtech). The I/UCRC program was launched by the NSF more than 30 years ago as an initiative to stimulate nonfederal support of research and development, speed the delivery of technologies, and improve the industrial competitiveness of the U.S. There are about 60 active I/UCRCs with more than 1,000 industrial firms and government labs as members. Among these is the highly successful Center for Non-Destructive Evaluation based at ISU, which has been running for more than 25 years.

The vision for CAMTech is to streamline the efforts of industry, government and academia toward development of technologies for effective management of arthropod pests. The proposal for creation of CAMTech was endorsed by NSF through funding of a Planning Grant in 2012. A planning meeting, attended by 20 industry representatives from 15 different companies with pest control interests, was held in September at Reiman Gardens in Ames. During the

meeting, members from ISU and UK presented projects for potential funding within the center. These projects fell into five broad areas: 1) management of arthropod resistance to current control technologies, 2) deployment of pest-tolerant transgenic plants, 3) identification of novel targets for new pest control measures, 4) development of new and optimized methods associated with arthropod pest management, and 5) RNA interference. Industry representatives provided immediate feedback for modification and ranking of the proposed research projects.

The I/UCRC's are unique in that research conducted within the centers is driven by the interests of the industry members (rather than by the interests of the participating faculty members) with industry membership fees of \$50,000 per year, providing the primary funding source for the center. Industry member benefits include leveraging of research funds, a pipeline of well-qualified graduate students and postdoctoral researchers as prospective employees, and licensing rights.

With letters of commitment to membership from more than six companies in hand, Bonning and Palli will submit a proposal to NSF for full center funding in March 2013. If all goes to plan, CAMTech will be established in the fall of 2013, with Bonning as Center Director, and Palli as Co-Director at the UK research site.



Subba Reddy Palli (CAMTech Co-Director from Entomology, UK), Bryony Bonning, John Obrycki (Entomology Chair, UK), Sharron Quisenberry, and Sue Blodgett

Extensive Faculty Travel in 2012

Bryony Bonning presented a seminar and discussed potential research collaboration with personnel at The Food and Environmental Research Agency (FERA) in York, United Kingdom. Bonning also traveled to Guangzhou, China in September to give a plenary lecture at the Second International Symposium on Insect Midgut Biology. She then visited and presented a seminar at the Wuhan Institute of Virology, which has a large baculovirus research program.

Greg Courtney travelled to Edmonton, Alberta, from 2-11 November to attend the annual meeting of the Entomological Society of Canada, where he presented an invited lecture entitled "BugGuide: The community behind half a million submitted specimens" (co-authored by **John VanDyk**). After the meeting, Greg visited colleagues at the University of Alberta and searched for interesting flies at the Strickland Museum and Royal Alberta Museum.

Aaron Gassmann traveled to Buenos Aires, Argentina to attend the 45th annual meeting of the Society for Invertebrate Pathology. He presented a talk titled, "Resistance of western corn rootworm to Bt maize."

Russell Jurenka traveled to Vancouver, British Columbia and Calgary, Alberta to attend meetings associated with the TRIA project as a mem-

ber of the scientific advisory board. The TRIA project is a Genome Canada funded project to understand the biology of the mountain pine beetle, fungi, and pine tree interactions at the molecular level (www.thetriaproject.ca).

Sue Blodgett was part of an ISU team that traveled to several locations in Turkey. Nine universities/technical colleges, a private high school and Ministry of Education offices were visited. The intent of the trip was to develop relationships with faculty and administration, and also to assess interest in developing instructor and student exchanges with ISU faculty and staff. The committee continues communication, and two Turkish graduate students have been recruited to the Department of Natural Resource Ecology and Management since the trip.

Matt O'Neal travelled to Yunnan Agricultural University, in Kunming China as part of a two-year project investigating the pollinator community in soybean fields. During his two week visit, Dr. O'Neal also visited various agricultural systems around Yunnan province.

Joel Coats presented research results at the 6th World Congress of the Society of Environmental Toxicology and Chemistry (SETAC), in Berlin, Germany, in May.



Alumni Updates

Phil Mulder, Professor and Department Head of Oklahoma State University, was elected ESA National Vice President Elect. He earned his M.S. and Ph.D. from ISU (1981 and 1984). In addition to his administrative duties, Phil's current assignments include extension programs related to alfalfa, peanuts, fruit and nut trees, small fruits, and 4H/youth programs. In 2004, he received the Distinguished Achievement Award in Extension for the Southwestern Branch of ESA and the National ESA.



Gary Lechner (B.S. 1970) was involved in an international collaboration that resulted in a new discovery. He found populations of solitary hunting wasps, *Ammophila fernaldi* and *A. pictipennis*, parasitized by Strepsiptera. Gary collected the specimens from near his residence in Sioux City, IA. His work represents the first record of phoresy of *Paraxenos lugubris*, a strepsipteran. Kathirithamby, J., G. K. Lechner, D. P. McMahon, A. L. Bryson, and J. S. Johnston. 2012. A free ride and lunch: Stylopization in the solitary hunting wasp. *Proceedings of the Entomological Society of Washington* 114: 464-475.

Andrew (Andy) Alverson (M.S. 2000), presented a seminar in the ISU Ecology, Evolution, and Organismal Biology Department in October, titled "Genomic gigantism in plant mitochondria." Andy's lab at University of Arkansas is focused on identifying the ecological and genetic factors underlying the diversity and evolution of diatoms. Current research projects blend experimental and computational approaches to address questions in the areas of comparative genomics, molecular evolution, phylogeny, and systematics.



Marlin Rice was presented with a Stinger Award for his "Ants Africa" video in the Open Category of the ESA YouTube Your Entomology Contest in Knoxville, TN. The winning videos from 2012 were featured in a New York Times article in November. Marlin is currently a senior research scientist with Pioneer Hi-Bred International in Johnston, IA. Marlin is nationally recognized for his work in extension entomology. He worked at ISU for nearly 20 years and is currently a collaborator with the department.



Predatory ponerine ants in Africa. Photo by Marlin Rice.

Gretchen Paluch was named Pesticide Bureau Chief for Iowa Department of Agriculture and Land Stewardship in April 2012. Gretchen earned her Ph.D. (2009) in entomology and toxicology under the direction of Joel Coats and Lyric Bartholomay. She also has a B.S. (2002) and M.S. (2005) in entomology from ISU.

Keep in touch!

Please let us know if you have information to share with Department of Entomology friends and alumni. Items could include job changes, honors and awards, and personal notes. Kindly direct information to Erin Hodgson, Iowa State University, Department of Entomology, 103 Insectary, Ames, IA 50011-3140 or via e-mail: ewh@iastate.edu.

The ISU Department of Entomology Newsletter is for Alumni and Friends, and is produced by ISU entomology faculty and staff. This newsletter and previous issues are available online at www.ent.iastate.edu/alumni.

Carey Delivers Three Seminars

Dr. James Carey, Professor in the Department of Entomology at University of California-Davis received two degrees from ISU, including his B.S. in Fisheries and Wildlife Biology (1973) and M.S. in Entomology (1975). He was awarded his Ph.D. in entomology from UC-Berkeley in 1980, and accepted a position at UC-Davis.

Carey made a return visit to ISU in September 2012 to present two research seminars titled “The slow motion invasion of California by multiple species of tropical fruit flies” in the entomology seminar series, and “Longevity and its consequences: Insights from an experimental insect biology program” in the Gerontology Colloquium. During his visit, Carey also gave a presentation on “Electronic teaching” to highlight the potential for use of the web in student learning. Carey was instrumental in establishing UC online seminars (seminars.uctv.tv) and a similar program is now being implemented by the ISU Department of Entomology.

Carey is a Fellow in four professional societies including the ESA, the American Association for the Advancement of Science, the Gerontological Society of America, and the California Academy



of Science. He is the author of over 220 scientific publications on insect invasion biology, demography, and aging, and three books: Demography for biologists (1993), Longevity (2003), and Longevity records: Life spans of mammals, birds, amphibians and reptiles (2000).

Pittendrigh Gives Dahm Lecture for 2012

The 21st Paul A. Dahm Memorial Lecture was presented in April by Barry Pittendrigh from the University of Illinois at Urbana-Champaign. He holds the C.W. Kearns, C.L. Metcalf, and W.P. Flint Endowed Chair of Insect Toxicology. Dr. Pittendrigh’s laboratory focuses on genomic, proteomic and metabolomic responses of insects to insecticides and secondary plant compounds. In addition to basic research, he conducts a strong program in extension and international development, especially in Africa; his production of videos for computers and hand-held devices address pesticide safety, sustainable development, and many other topics, and the cartoon videos are translated into many different languages for use in Africa and the Caribbean. Barry presented two seminars while he was here. The Dahm lecture was titled “Molecular basis of insect responses to xenobiotics.” He also presented “Emerging opportunities for international development,” which was followed by a discussion with numerous enthusiastic audience members from ISU Extension and the Sociology Department.



Fleisher Presents 2012 Gunderson Lecture

Dr. Shelby Fleisher, Professor of Entomology at Pennsylvania State University, presented the 2012 Harold Gunderson Memorial Lecture on "Pest lepidopterans in our agroecosystems: Current and future patterns." Dr. Fleisher received his B.S. from St Mary's College, MD (1977), M.S. from Virginia Tech (1982), and Ph.D. from Auburn University (1987). Dr. Fleisher was Subject Editor for *Environmental Entomology* from 2002-2011, and received the Distinguished Achievement Award in Extension from the ESA Eastern Branch in 2011. He has served as a panel member for regional and national IPM grants programs, as well as the Methyl Bromide Transitions Program and the Biotechnology Risk Assessment Grants Program, and was an invited speaker at the French Association of Plant Biotechnology.

Dr. Fleisher's 72 research publications focus on the structure, dynamics, and management of insect populations and communities in agroecosystems, and he has advised, co-advised, and served on graduate committees of 46 graduate students from 6 graduate programs. Current projects are working with wild bee populations, and using agent-based modeling to advance insect phenology modeling. His extension activities deal with IPM in vegetable crops, with a priority on advancing economically feasible management that improves worker and envi-



ronmental safety. Shelby's education programs integrate fundamental scientific principles with problem-solving and natural history of arthropods in settings that also provide pesticide certification credits. His sampling plans to advance IPM have been adopted in alfalfa, hardwood forests, and leafy greens in the Caribbean, and the *PestWatch* monitoring platform he initiated in 1998 was used by >25 states and >750 locations in 2011. Recent efforts are coupling aerobiology models with haplotype monitoring from this network to advance modeling of migratory species. He co-teaches a semester course on "Issues in Biotechnology in Agroecosystems" and an intensive field course in "Insect Natural History."

EGSO Sponsors Two Speakers

The entomology graduate students (EGSO) sponsored two guest lectures in 2012. Dr. Scott is Professor and Chair of Entomology at Cornell University in Ithaca. Jeffrey discussed his current research two seminars: "Mechanisms of resistance to spinosad" and "The mechanisms of resistance to pyrethroid insecticides in mosquitoes and their associated fitness costs." Later in the spring, Angela Douglas, also from Cornell, shared her research in insect symbioses and its role in nutrition for phloem feeding insects. Dr. Douglas is the Daljit S. and Elaine Sarkaria Professor of Insect Physiology and Toxicology. Her seminar was titled "Sweet problems and symbiotic solutions: How insects cope with the extreme diet of plant phloem sap."



Jeffrey Scott



Angela Douglas

Student Awards

The Wayne A. Rowley Scholarship in Entomology, which provides \$1,800 to students with preference given to applicants concentrating on medical entomology, was awarded to **Paul Airs**. Paul is supervised by Lyric Bartholomay.

The Larry Pedigo Graduate Scholarship in Entomology was awarded to **Mike McCarville**. This scholarship of \$1,500, established to honor the many contributions of Larry Pedigo to the department and college, recognizes scholarly performance. Mike is mentored by Matt O'Neal.

The Entomology Alumni Scholarship for undergraduates or graduates in entomology was presented to **Adam Varenhorst**. This \$1,500 scholarship was awarded based on promise for a career in entomology. Adam is advised by Matt O'Neal.

The Jim Oleson Scholarship in Entomology, which provides \$1,000 to students who demonstrate academic promise and initiative, was awarded to **Mike Dunbar**. Mike is co-advised by Matt O'Neal and Aaron Gassmann.

The Jean L. Laffoon Memorial Scholarship for \$1,000 was presented to **Kelly (Seman) Gill**. This scholarship was established in 2012 in memory of Dr. Laffoon, who was a systematist and faculty member in entomology from 1946-1973. Kelly is mentored by Matt O'Neal.

The Henry and Sylvia Richardson Research Incentive Grant was awarded to **Aaron Gross**. This grant provides \$2,500 towards a research experience beyond those available in the student's degree program. Aaron is supervised by Joel Coats. See page 15 for his grant title.

The Entomology Student Scholarship for Student Excellence (\$1,500), funded by the Fred Clute Memorial Fund, was awarded to **Diveena Vijayendran**. This award recognizes undergraduate academic excellence, or excellence in research, teaching and/or extension at the graduate level. Diveena is mentored by Bryony Bonning.

Luke Linz was awarded the Print and Grace Hudson Powers Scholarship in Agriculture for \$1,000. Luke is supervised by Bryony Bonning.

Aaron Gross was awarded honorable mention for his masters thesis by MAGS (Midwestern Association of Graduate Schools) Thesis Award Competition. His thesis was titled "Expression of the *Periplaneta americana*'s alpha-adrenergic-like octopamine receptor in the yeast *Saccharomyces cerevisiae*: A high-throughput screening system in search of biorational insecticides."

Eric Clifton was awarded honorable mention for his poster, "Impact of conventional versus organic agriculture on entomopathogenic fungi," at the ISU Graduate Program in Sustainable Agriculture student competition. Eric is co-advised by Aaron Gassmann and Erin Hodgson.

Mike McCarville, won first place for "Are two genes better than one for soybean aphid management?" at the International Plant Resistance to Insects Workshop in Minneapolis, MN.

At the 2012 ESA North Central Branch meeting (Lincoln, NE), ISU students tied for the most competition prizes. The following students received awards: **Mike McCarville**, first place for "Are two genes better than one for soybean aphid management?"; **Adam Varenhorst**, runner-up for "What role do alate soybean aphids (*Aphis glycines*) play in the spread of *Soybean mosaic virus*?"; **Eric Clifton**, runner-up for "The effects of cropping systems on entomopathogenic fungi"; **Michael Rausch**, first place for "Selection and genetic analysis of behavioral traits of European corn borer (*Ostrinia nubilalis*), plant abandonment vs. plant establishment"; **Mike Dunbar**, honorable mention for "Effects of cover crop and extended rotation on insect taxa and plant disease pressure"; and **Robert Bruner**, runner-up for "Effects of *Rag1* soybeans on the development and performance of noctuid larvae." Michael is supervised by Rick Hellmich and Aaron Gassmann. Robert is co-advised by Aaron Gassmann and Erin Hodgson.

At the 2012 National ESA Meeting (Knoxville, TN), the following students received competition prizes: **Mike McCarville**, first place for "Is pyramiding resistance the answer for soybean aphid management?"; and **Eric Clifton**, runner-up for "Impact of conventional versus organic agriculture on entomopathogenic fungi."

2012 Entomology Graduates

Robert (Bob) Bruner received his M.S. with Aaron Gassmann and Erin Hodgson in the summer of 2012. His thesis was titled "Preference and performance of soybean pest insects using *Rag1* and susceptible soybean varieties." Bob is continuing to work on a Ph.D. at Texas Tech University in Lubbock, TX.

Michael Rausch graduated with an M.S. in entomology during the fall of 2012. Michael is co-advised by Rick Hellmich and Aaron Gassmann. His thesis was titled "Selection and genetic analysis of European corn borer (*Ostrinia nubilalis*): Plant abandonment vs. plant establishment." Michael is currently working on another M.S. degree in microbiology with Bryony Bonning.

Nathan Romine graduated with a Ph.D. in genetics under the supervision of Jeffrey Beetham. He is now working as a postdoctoral research associate with Richard Martin in Bio-Medical Sciences at ISU.

Ryan Keweshan completed his M.S. with Aaron Gassmann in the summer of 2012. His thesis was titled "Corn rootworm (*Diabrotica* spp.)

and Bt corn: Effects on pest survival, emergence and susceptibility." Ryan is working on his Ph.D. in mosquitoes at Utah State University.



Ryan Keweshan and his father, Charles

EGSO Commits to Service in 2012

In 2012, the Entomological Graduate Student Organization (EGSO) was very active in professional, outreach and social activities. The EGSO also sponsored two speakers for the entomology seminar series (see page 9). Members of the EGSO continued the tradition of putting together a Linnaean Games team for the ESA North Central Branch Meeting in Lincoln, NE. They practiced for weeks before the meeting and even got team shirts to represent ISU. The team fought valiantly and placed 4th in the tournament.

The entomology students continued its history of outreach to the local community in 2012. The EGSO sparked curiosity in the world of insects for 1st through 5th grade students at the Edward's Elementary School Science Night in Ames. They also hosted the annual Insect Film Festival at Reiman Gardens (see page 18), with live insect displays, crafts, and a movie. EGSO also hosted an insect-themed craft table at the annual Entomology Breakfast for VEISHEA in April.

In January, the EGSO sponsored the 2nd Annual Entomology Bowling Tournament. Unbelievably, the students were again victorious. Over 30 students, faculty, and staff participated in the event. In March, the EGSO sponsored a Relay for Life team, which raised more than \$500 for the American Cancer Society.



Linnaean Games team for the 2012 NCB-ESA Meeting in Lincoln, NE: Kelly (Seman) Gill, Eric Clifton, Mike McCarville, and Adam Varenhorst

Opportunities to Contribute to Entomology

With the severe budget constraints at Iowa State University, the Department of Entomology is increasingly dependent upon the generosity of alumni and friends. To support the department, please fill out this section and return it with your check or money order (made out to The ISU Foundation) to the Department of Entomology, Iowa State University, 110 Insectary, Ames, IA 50011. Alternatively, donations can be made online at www.foundation.iastate.edu/entomology.

My support this year is in the amount of _____

Please designate my gift to the area(s) in the amount(s) shown below:

- Biosystematics Travel Fund for travel costs associated with biosystematics research
- Bug Guide: an online resource for insect identification
- Entomology Alumni Scholarship for undergraduate scholarships
- Entomology General Account
- Entomology Memorial Fund for various expenses, including graduate student travel and merit awards
- Iowa State University Insect Zoo
- Fred Clute Memorial Entomology Fund for general support for the Department of Entomology, including The Entomology Student Scholarship for Student Excellence
- Jean L. Laffoon Memorial Scholarship for graduate students in Entomology
- Jim Oleson Scholarship in Entomology for students who demonstrate academic promise
- Larry Pedigo Graduate Scholarship in Entomology for scholarly performance
- Henry and Sylvia Richardson Research Incentive Grant provides funding for graduate research experiences beyond their degree program
- Wayne A. Rowley Scholarship in Entomology for graduate and undergraduate scholarships, with preference given to those with an interest in medical entomology

For more information about these funds, please contact us at the departmental address above or call 515.294.7400. For more information about other gift designations, please contact Ray Klein via phone: 515.294.3303 or e-mail: rklein@iastate.edu.



Dunphy Hosts Discovery Channel Series



Brendan Dunphy is a research associate in the Medical Entomology Lab and works for Lyric Bartholomay. There he takes part in and oversees mosquito rearing and mosquito/arbovirus surveillance throughout Iowa, and he also contributes to a number of research projects, including the current effort to develop molecular mosquitoicides to fight malaria. See page 17 for a summary of mosquito activity in 2012.

Brendan has been an actor and producer of theater and film for years, and he's now accomplishing a lifelong aspiration of blending his entertainment and entomological passions. He has been working with Discovery Communications through 2012 to host some television shows for the Science Channel and the BBC. His network debut was with the show *Insects & the City*, which aired December 8 on the Science Channel. More programs will be released soon.

To learn more about Brendan's acting career, including a list of his credentials, visit his website: www.brendandunphy.com.

Continued from front page

10 times lower than traditional synthetic chemistries. The Clarke Group has been awarded the United States EPA Presidential Green Chemistry Challenge Award for Natular. This award recognizes outstanding chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use, and that have been or can be utilized by industry in achieving their pollution prevention goals. This was the first time the award has been given to anyone in the mosquito control industry.

With the discovery and spread of West Nile virus in the U.S. in the late 1990s, The Clarke Group has been involved in suppressing major outbreaks in New York, Chicago, Colorado, Arizona and California.

Clarke also serves as chairman of the Clarke Cares Foundation, a nonprofit organization with a mission to save lives and reduce suffering from mosquito-borne disease for the world's poorest people. Clarke and his wife, Kathy, have five children: Robert, Katy, John, and two young boys, Joe and Tim (adopted from Russia). The family lives in St. Charles, IL, near where they own more than 30 acres of farmland that has been converted to native prairie and wetlands with more than 9,000 trees and shrubs.



Featured Alumnus: David Shapiro-Ilan

The following is taken with permission from an article published in the Winter 2010 issue of WorldView magazine by the National Peace Corps Association. Eric F. Frazier lives and writes in Kernersville, North Carolina. David I. Shapiro-Ilan, Research Entomologist at USDA-ARS, completed his Ph.D. in entomology (1994) with Dr. Leslie C. Lewis. His dissertation was titled "The effects of fertilizers and earthworms on entomopathogenic nematodes."

Identical twins Daniel (Dany) Kim-Shapiro and David Shapiro-Ilan have more in common than matching DNA. Both 53-year olds are high-level research scientists. Both credit Peace Corps volunteer service 25 years ago with helping to launch their professional careers, and both are still making a difference in people's lives through advanced research and education.

From childhood, the twins shared an interest in nature and science. Born and raised in New York City, they spent weekends at their grandparents' country home, where their grandfather encouraged them to collect and study insects and amphibians. The mischievous youngsters performed "household experiments" such as starting fires using rubbing alcohol and dissecting things for a peek inside. They enjoyed switching places and fooling schoolteachers.

As they grew older, they followed separate but strikingly similar paths. Both brothers qualified for honors science programs, but in different high schools. Both headed west for top colleges, but in different states. After earning undergraduate degrees in physics and biology, both volunteered for Peace Corps and went to Africa, but to different countries. Following Peace Corps, they earned masters and doctorate degrees at four different universities and completed post-doctoral fellowships in 1996 - David as a Fulbright Scholar in Israel, while Dany was a National Institutes of Health Fellow in California. Each married and attached his spouse's surname to his own.

David served as an agricultural volunteer in Niger from 1985 to 1987. Today, he is a research entomologist with the U.S. Department of Agriculture Southeastern Fruit and Tree Nut Laboratory in Byron, GA. He focuses on controlling crop pests using natural enemies such as nematodes.

"I was already interested in a scientific career oriented toward improving agriculture



David in Bazaga, circa 1985

by decreasing chemical inputs to the environment," David says. "Peace Corps was kind of a 'testing ground' to see if I really wanted to go in that direction. In the end, Peace Corps definitely reinforced my career aspirations." Dany taught physics at a teachers college in Zaire, now the Democratic Republic of Congo, from 1984 to 1986. Today he is a physics professor at Wake Forest University in Winston-Salem, NC, where his hemoglobin research focuses on curing sickle cell disease and making stored blood safer.

After more than a decade working in separate fields, David asked Dany to apply his physics expertise to a study of how electromagnetism influences the movement of nematodes in soil. In 2009, they published a paper together in the *Journal of Invertebrate Pathology* titled "Directional movement of steinernematid nematodes in response to electrical current."

They speak about their Peace Corps days as if it were yesterday. Experiencing dramatically different cultures and helping people with acute mate-

Continued on page 15

Featured Graduate Student: Aaron Gross

My name is Aaron Gross, and I completed my B.S. (2007) in Biochemistry and Biomedical Sciences at St. Cloud State University, MN. During my undergraduate studies, I was first exposed to research, in particular toxicology, which led me to graduate studies at ISU. In the fall 2007, I started a masters degree with Dr. Joel Coats in the Pesticide Toxicology Laboratory. My research focused on understanding the insecticidal mechanism of action of natural terpenoids at an American cockroach octopamine receptor. I received an M.S. in toxicology with a minor in entomology in 2010. My thesis was runner-up at ISU for the Midwestern Association of Graduate Schools 2011 Distinguished Thesis Award.

Currently, I'm pursuing a Ph.D. in toxicology (minors in entomology and neuroscience) under the direction of Drs. Joel Coats and Michael Kimber (Department of Biomedical Sciences, College of Veterinary Medicine). My Ph.D. will focus on identifying new targets for the development of biorational acaricides against the southern cattle tick. These studies will be done in collaboration with the USDA-ARS Knippling-Bushland U.S. Livestock Insect Research Laboratory in Kerrville and Edinburg, TX. This research is being performed with funding from a U.S. Environmental Protection Agency Science to Achieve Results (STAR) Fellowship Program. My research will focus on a target-based strategy for natural acaricide development against G-protein-coupled receptors (GPCRs) in the tick's nervous system.

During my time at ISU, I have been fortunate to present my research at professional meetings, including the American Chemical Society, ESA,



Joel Coats and Aaron Gross

Society of Toxicology, and Society of Vector Ecology. My involvement has led to continued collaborations in setting up a symposium on biorational insecticides at the 246th National ACS meeting in Indianapolis, IN. I'm also assisting in organizing a section symposium at the next ESA Meeting in Austin, TX (November 2013). During my time at Iowa State, I've also been active in the Graduate and Professional Student Senate where I served as President 2009-2010 and Treasurer 2010-2012.

I was recently awarded the Henry and Sylvia Richardson Research Incentive Grant (see page 10). The grant was titled "Validation of a GABAB receptor for acaricide development from the southern cattle tick."

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rial needs produced indelible memories. David was the first Peace Corps volunteer to serve a village of about 200 families in Bazaga. When he arrived, he found the mud house where he was to live full of grain. "I think they didn't believe I was coming," he says. David acclimated himself to life without electricity or running water and led projects digging wells and planting trees for firewood and to slow desertification. "The best part was how rewarding the job felt," David says. "The people there were extremely happy to have me there and grateful for the things we were doing." Subsequent volunteers told him his village became a model for others.



New Plant Sciences Comic Inspires Students

As a public university with a land-grant mission, partnering with our citizens with respect to scientific discovery is vital. Linking scientific concepts to images, personalities, and icons already well known in popular culture, is an emerging avenue for popularizing science, and helps bring scientific understanding to the public.

In 2011, the ISU Plant Sciences Institute (PSI) published the comic book "Astonishing Tales of the New Biology" to highlight its interdisciplinary New Biology program toward changing biological science from an observational to a predictive science. Within the comic book are four images created by Iowa native and comic book artist Jason Wright. His interviews each research project leader provided the scientific basis that fed his creative imagination. Each drawing depicts Wright's artistic vision of four major ongoing PSI research projects, including the use of viruses to kill insect pests by the Virus-Insect Interactions group (see page 4). They capture what could be, not what is: Art, rooted in scientific fact with a dash of science fiction. Accompanying each graphic is a brief summary outlining the basic premises of the corresponding project. What high school students and undergraduate readers are asked to do is to write a narrative or tell a story visually based in any aspect of the science presented in the comic book that appeals to them, be it graphic arts, creative writing, journalism, comedy, or politics.

Similar use of comic books for increasing accessibility of science is under evaluation within the National Science Foundation-funded Course, Curriculum and Laboratory Improvement program (B. Somers. 2008. *Science* 321:1792). "Undergraduate courses are usually the last chance we get to help citizens understand the nature of science and the importance of science, technology, engineering and mathematics (STEM) to their lives – as individuals and as members of the larger society," said AAAS's Education and Human Resources Director Shirley Malcom. "We can't emphasize enough how important it is to improve education at this level." The hope is that comics will guide imaginative minds into a growing interest in and understanding of genuine science.

More information about the comic can be found at www.plantsciences.iastate.edu/outreach/.



Front cover of the first New Biology comic designed by artist Jason Wright

Stay connected!

We have more departmental news to share with our alumni and friends! Visit the ISU Entomology website, www.ent.iastate.edu/alumni/, to see our seminar schedule, social events, and a departmental photo. Also, stay in touch with alumni and hear about other fun entomological news by "liking" us on our Facebook page, www.facebook.com/ISU.Entomology.



Iowa is West Nile Virus Hotspot

Mosquitoes were very sparse in Iowa in 2012 because of a serious regional drought. The average annual statewide precipitation was 23.71" – the driest year since 1988. With a few localized exceptions, Iowans have now experienced two consecutive years of very low mosquito activity. Even the ubiquitous nuisance mosquito, *Aedes vexans*, was not common enough to be a significant pest. However, it was a very important year for West Nile virus (WNV). Isolations of the virus from mosquitoes and sentinel chickens were greater this year than in recent years as 31 people, 40 mosquito pools (the highest on record) and 17 chickens across Iowa tested positive. The activity period of WNV continues to be from mid-June to early October, and western Iowa is still a hotspot. The widespread detection of WNV from birds, mosquitoes, and people across Iowa and the country underscore the importance of continued surveillance of this virus.



Ubiquitous nuisance mosquito. Photo by Pete DeVries.

New and Forgotten Field Crop Pests

The first specimen of brown marmorated stink bug in Iowa was confirmed in 2011 in Cedar Rapids. Since then, several other dead samples were confirmed by our ISU Insect Diagnostician, **Laura Jesse**. But in the fall of 2012, there were live detections near Davenport and Bettendorf, Iowa. Brown marmorated stink bugs have been established along the east coast for several years and proved to be a significant economic pest. Adults and nymphs have a wide host range that includes corn and soybean, fruits, and vegetables. They are also a nuisance pest that enters structures in the fall.



Brown marmorated stink bug

Some of you may remember the dreadful summer of 1988, when hot and dry weather ravaged the midwest. Our field crops suffered from a horrible twospotted spider mite outbreak and farmers lost a lot of yield. Corn and soybean fields all over Iowa were again impacted by this pest in 2012. The drought conditions were ideal for spider mites. The first reports of spider mite detections started in June and continued throughout the growing season. The ongoing drought exacerbated mite development and constant movement into fields. Some crops were treated multiple times to protect yield.



Twospotted spider mites on corn

Greetings From the Insect Zoo

First let me introduce myself and then I will summarize an exciting year for the Insect Zoo. My name is Ginny Morgal, I am a Nebraska native and a graduate from the Insect Science program at the University of Nebraska-Lincoln. I have two wonderful children, Malachite and Poppy (see page 19). Our family is adjusting well to Ames since the move here in May, and has found the community and schools quite welcoming!



Ginny Morgal

Upon starting the position of the Insect Zoo Education Program Coordinator, my passion for arthropods inspired me to make the Insect Zoo the best it could be. We started by redesigning the Zoo's identity (new posters and flyers are on the 4th floor of Science II). We are also working on redeveloping the Insect Zoo's website which will include educational tools for teachers for before and after Insect Zoo visits.

After attending the Invertebrates in Education and Conservation Conference in Tucson, AZ in August, I felt well equipped to redevelop some of the Insect Zoo's programming. Students are given the opportunity to be an entomologist for the day and charged with the tasks of discovering the characteristics and behaviors of our arthropod friends. Allowing the students to form hypothesis on how insects breathe or why the termite follows one pen line but not the other, allows them to apply the scientific method to a fun, hands-on experience. They are learning without even knowing it!

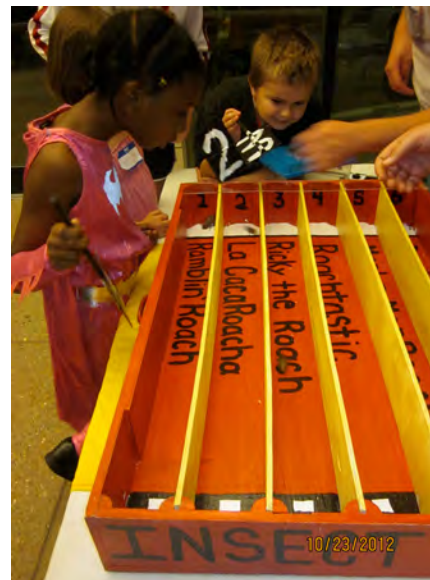
Of course the Insect Zoo has its regular patrons, coming back year after year for their new students to enjoy the world of arthropods, but we have had many new groups requesting

programs! One of the schools that requests programs every year are the Johnston Elementary Schools. During one of my visits to one of the 5 Johnston Elementary Schools I was interviewed for the school district's newsletter. The Insect Zoo received some publicity on Iowa Public Radio when we went to the "Creepy Crawlies in the Garden" event at Culvers Garden in Marion, IA. It was a surprise to me to hear the Insect Zoo's name broadcast on my favorite radio station.

The Insect Zoo was also a part of the STEM (science, technology, engineering, and mathematics) event at the Iowa State Fair. We did a "stage show" in front of about 75 people. It went very well considering they let me have a microphone and I was able to restrain myself from singing! From that event we received many new requests for programs, it was a great way to get the word out about the Insect Zoo.

The Insect Zoo has four new student workers as well. Without the hard work of Madison Schmitz, Ashley De Leon, Jaclyn Sanchez, and Drake Falcon, the Insect Zoo wouldn't function properly! I am looking forward to years of educating the public on our multi-legged, invertebrate friends, and creating new programs on how important arthropods are to our environment. It is also becoming easier to overcoming the daily obstacles that come with the day-to-day task of running the Insect Zoo (like an escaped Singapore Blue tarantula.....which was found!).

P.S. VEISHEA will be AWESOME this year!!!



Cockroach races at the Insect Film Festival

2014 North Central Branch Meeting in Iowa



The logo for the 2014 North Central Branch meeting

In 2011, the Executive Committee of the North Central Branch of the ESA was brainstorming locations for the 2014 location. It was pointed out Iowa has not hosted a meeting since 1999, and we were definitely overdue. With **Sue Blodgett** becoming President in 2014, it seemed logical to host the meeting.

Our department is in the preliminary planning stages of hosting the 2014 meeting. After some deliberation on where to have the meeting, it was decided Des Moines would be the best fit for a meeting of 300 people.

Sue also launched a logo design contest to support the marketing materials for the meeting. So in the fall of 2012, there was a department-wide contest, judged by Emily Morgan (Aaron Gassmann's wife) in the Art Department. **Erin Hodgson** ended up winning the competition (see left). Look for more meeting details on our departmental website, or the North Central Branch website: <http://entsoc.org/northcentral>.

Arrivals and Departures

Charles (Bill) Shoemaker started working with the IT group in July. He is a graphic designer and videographer.

Tamara (Tammy) Porter, Administrative Specialist III, started in July. Tammy worked at ISU Payroll for 22 years prior to this position.

Jessica Bell is an Administrative Specialist I, and started in November. She was previously employed at Meredith Corporation.

Nanasaheb (Nana) Chougule was promoted from a postdoc position to an Assistant Scientist III in July. Nana works in the Bonning lab.

Edmund Norris started as a Research Associate I in July. He works in the Coats lab.

Jean Dyer, scientist for Rick Hellmich's lab at the USDA-ARS, left to work for DuPont Pioneer. Jean worked at the USDA for 25 years.

Narinder Pal's new boss in Genetics, Development and Cell Biology is Julie Kuhlman.



Ginny Morgal, Program Assistant II, started as the Insect Zoo Program Coordinator in May (see page 18). Ginny and her two children, Malachite (5) and Poppy (3)

Selected Publications

- Ament, S.A., A.L. Toth, et al. 2012. New meta-analysis tools reveal common transcriptional regulatory basis for multiple determinants of behavior. *PNAS USA* 109: E1801-10.
- Blomquist, G.J., R. Jurenka, C. Schal, and C. Titiger. 2012. Pheromone production: Biochemistry and molecular biology, pp. 523-567. *In* (Gilbert, ed.), *Insect Endocrinology*, Elsevier, Oxford.
- Chougule, N.P., and B.C. Bonning. 2012. Toxins for transgenic resistance to hemipteran pests. Special issue of *Toxins "Insecticidal Toxins"* DOI: 10.3390/toxins4060405.
- Cheng, Y.X., L.Z. Luo, X.F. Jiang, and T.W. Sappington. 2012. Synchronized oviposition triggered by migratory flight intensifies larval outbreaks of beet webworm. *PLoS ONE* 7: e31562.
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- French, B.W., B.S. Coates, and T.W. Sappington. 2012. Inheritance of extended diapause traits in the northern corn rootworm. *J. of App. Entomol.* DOI: 10.1111/j.1439-0418.2012.01751.x.
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- Giri, L., M.G. Feiss, B.C. Bonning, and D.W. Murhammer. 2012. Production of baculovirus defective interfering particles during serial passage is delayed by removing transposon target sites in fp25k. *J. Gen. Virol.* 93: 389-399.
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- Hodgson, E.W., B.P. McCornack, K.J. Tilmon, and J. Knodel. 2012. Management of the soybean aphid, *Aphis glycines*, in the United States. *J. of IPM* DOI: 10.1603/IPM11019.
- Kuester, A.P., R.W. Jones, T.W. Sappington, K.S. Kim, N.B. Barr, R.L. Roehrdanz, P. Senechal, and J.D. Nason. 2012. Population structure and genetic diversity of the boll weevil on *Gossypium* in North America. *Ann. Entomol. Soc. Am.* 105: 902-916.
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New Federal Grants

Interactions between honey bee nutrition and viral infection: An integrative approach to Colony Collapse Disorder. USDA NIFA, \$494,000. Co-PIs: A. Toth, W.A. Miller, B.C. Bonning.

A Bt toxin for soybean aphid resistance. USDA NIFA, \$435,000. Co-PIs: B.C. Bonning and N.P. Chougule.

Collaborative research, Digitization TCN: Invert-Net - an integrative platform for research on environmental change, species discovery and identification. National Science Foundation (Advancing Digitization of Biological Collections), \$213,523. Co-PIs: Greg Courtney and John VanDyk.

Enhancing the efficacy of pyrethroid insecticides against mosquitoes using plant essential oils and individual terpenoids. U.S. Department of Defense, Deployed War Fighter Protection Program, \$539,636. Co-PI: Lyric Bartholomay.

Musical Entomologists

Lyric Bartholomay writes: I had the pleasure of chatting with former department chair, **Tom Baker**, at the ISU alumni mixer at the ESA meeting in Knoxville. Seeing Tom reminded me of something I read about the late Dr. Thomas Eisner, a founding father of Chemical Ecology, who said he “had trouble trusting scientists who weren’t musicians” (Natalie Angier, *The New York Times* April 4, 2011). I knew that Tom had been active in the central Iowa music scene during his time in Ames, so wanted to pick his brain a bit about the synergy between the arts of making music and practicing entomology. I think he summed it up best in saying “Keep on giggin’, Lyric. Music plus science equals new syntheses.” I’ve since caught up with some trustworthy Entomologists to ask about how music enriches their professional lives.

As many of you know, **Larry Pedigo** has a rich history of musical memories. He was always in a band somewhere, playing clarinet or saxophone, in high school, the Navy, and during college. As he settled into his faculty position at ISU, he sought out musicians and found faculty and students keen to making music. This evolved into playing departmental functions and on into regular gigs with bands, including The High Society Big Band, The Dixie Slicks, the K & L duo, and The Heart of Iowa Senior Band. Larry observed that “it’s important to have these other diverse things, outside of work, to make you



Lyric Bartholomay is the lead singer of Echo 18

whole. Some people have golf as a social outlet, I always had music.” Further, we discussed that having this rich musical life, in addition to his academic career, eased the transition into retirement. In addition to Larry, there are a couple of students with very active band lives.

The Ames independent music scene is boiling up and over with extraordinary talent and creativity, and musicians who work in easy collaboration across bands - reminiscent of the collaborative spirit here at the university. **Trief Henze** (masters student in Matt O’Neal’s lab) played in a band called “People with Heads” that will



Larry Pedigo in the High Society Big Band



soon evolve into “The Cephalized” with the emigration of the lead singer. Trief and his band mates play what he calls a “garage rock-punk-rockabilly blend.” I had the pleasure of attending a recent show at Deano’s downtown during the Maximum Ames Music Fest. The experience was loud and fierce and funny - they put on a great show. Trief says “music is my morphine drip.” He went on to describe making music as a feel good creative outlet that exercises both sides of the brain and provides good camaraderie. Ask Trief for a listen to their new EP!

Our own **Donny Petersen** is another staple in the Ames music scene. Donny has long provided many of us with top-notch IT services while pursuing his masters degree in mathematics. He lends his saxophone to the horn sections of local bands Christopher the Conquered (a progressive soul band), and The Mumfords (psycho-funk-punk-folk-rap). These bands put on wild, fun theatrical shows who bring the music to visual life and awe their crowds. Donny can be seen leaping or lunging around the stage. Indeed, Donny says he’s learned to jump with the sax firmly in place so as not to chip his teeth.

Theatrics aside, Donny has put a lot of thought into the synergy between his two primary pursuits - math and music. He says that, for him, the draw of music is that it is an intrinsic, universal form of communication. A means to emote, and express pain, intelligence, and wit without words, like watching a master sculptor. It also captivates the mathematician in him – ask Donny



Treif Henze plays in People with Heads

to describe the 12-step scale in abstract algebraic terms. In the future, he may pursue the concept of the disposable band – a means to temporarily gather musicians and tap into the creative energy of the shared energy inherent in bringing together a new group.

May I suggest, Donny, that Larry could lend the sax or clarinet to your horn section, Elizabeth Asque plays drums, Trief plays guitar and banjo, Joel Coats and Bryony Bonning play the keys, Brendan Dunphy sings (as do !!) and Paul Airs and Edmund Norris play guitar.

Courtney heads Iowa Randonneurs

In 2012, Greg Courtney took over the reigns of the Iowa Randonneurs. This club is part of a network throughout the U.S. that organizes long-distance, unsupported, cycling events. As part of his role as a regional administrator, Greg organized several events in central Iowa in 2012, including rides that ranged in distance from 70 - 375 miles. Although non-competitive, these rides have time limits (e.g., 40 hours for the 375 miles) and are therefore challenging. Participants included cyclists from eight different states. For more information about the Iowa Randonneurs, see <http://iarando.drupalgardens.com/>.



Photos from the 2012 ESA Meeting in Knoxville



Joel Coats, Bryony Bonning, and Agenor Mafra-Neto



Wai-Ki Frankie Lam, Rayda Krell, and Yong-Lak Park



Robert Peterson, Wai-Ki Frankie Lam, and Scott Hutchinson



Kristi Gomez, Tom Baker, Julie Todd, Bryony Bonning, and Barbara Stay



Agenor Mafra-Neto and Rodolfo Vargas-Castilhos



Erin Hodgson and Lyric Bartholomay

