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Hexapod Herald - Vol. 28, No. 1, March 2016

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"Hexapod Herald - Vol. 28, No. 1, March 2016" (2016). *Hexapod Herald & Other Entomology Department Newsletters*. 64.
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March 2016

Department of Entomology
College of Agricultural Sciences and Natural Resources

Vol. 28, No. 1

Welcome

Off-Campus M.S. Students: Spring 2016: **Blake Harris**, Ofallon, IL; **Giancarlo Maddaloni**, Blaine, WA; **Anne Ramos**, Louisville, KY. **Carter Westerhold** is a new masters student in the Agronomy and Horticulture Department, who is working under the supervision of **Drs. Doug Golick** and Kim Todd. Carter received his bachelor's degree in insect science from UNL in December. New insect science majors this spring: **Ethan Hoffart**, Hastings, NE; **Alex Lehmann**, La Plata, MD.



Westerhold



Hoffart



Lehmann

Congratulations

Dr. Joe Louis and **Justin McMechan** were initiated as new members into the Gamma Sigma Delta Honor Society of Agriculture at their Initiation and Awards Banquet held in January. Dean Steve Waller of the College of Agricultural Sciences and Natural Resources (CASNR) presented **Hillary Fischer** (both pictured on the right) with the Arthur von Bergen Memorial Award, which is presented in recognition of a graduating senior in CASNR who has maintained a high academic record and is active in worthwhile student activities. Arthur von Bergen, alumnus of the University of Nebraska class of 1926, distinguished himself as a leader and a scholar devoted to the field of agriculture and in giving service to his fellow man.



Publications

Andow, David A., Steven G. Pueppke, Arthur W. Schaafsma, Aaron J. Gassmann, Thomas W. Sappington, **Lance J. Meinke**, Paul D. Mitchell, Terrance M. Hurley, Richard L. Hellmich, & R. Pat Porter. 2016. Early Detection and Mitigation of Resistance to Bt Maize by Western Corn Rootworm (Coleoptera: Chrysomelidae). *J Econ Entomol* 109(1): 1-12.

McMechan, Anthony J. and **Gary L. Hein**. 2016. Planting Date and Variety Selection for Management of Viruses Transmitted by the Wheat Curl Mite (Acari: Eriophyidae). *J Econ Entomol* 109(1): 70-77.

Miwa, Kentaro and **Lance J. Meinke**. 2015. Diel Patterns of *Colaspis brunnea* and *Colaspis crinicornis* (Coleoptera: Chrysomelidae) in Southeastern Nebraska. *Environ Entomol* 44(6): 1553-1561.

Pannuti, L. E. R., E. L. L. Baldin, T. E. Hunt, and S. V. Paula-Moraes. 2016. On-Plant Larval Movement and Feeding Behavior of Fall Armyworm (Lepidoptera: Noctuidae) on Reproductive Corn Stages. *Environ Entomol* 45(1): 192-200.

Ratcliffe, B. C. 2015. A revised catalog of *Stenocrates* species with description of three new species from Peru and Brazil and *Stenocrates inpai* Ratcliffe, 1978 placed in junior synonymy with *Stenocrates popei* Endrödi, 1971 (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini). *The Coleopterists Bulletin* 69(4): 773-779.

Publications, con't.

Ratcliffe, B. C., M. L. Jameson, L. Figueroa, R. D. Cave, M. L. Gimmel, **M. J. Paulsen,** Enio B. Cano, C. Beza-Beza, L. Jimenez-Ferbans, and P. Reyes-Castillo. 2015. Beetles (Coleoptera) of Peru. A survey of the families. Scarabaeoidea. Journal of the Kansas Entomological Society 88(3): 186–207.

Shaughney, J. M. and B. C. Ratcliffe. 2015. A monographic revision of the Neotropical genus *Hoplopyga* Thomson (Coleoptera: Scarabaeidae; Cetoniinae: Gymnetini). The Coleopterists Bulletin 69(4): 579–638.

Spomer, Stephen M. , Gary J. Brewer, Michael I. Fritz, Robert R. Harms, Kay A. Klatt, Aimee M. Johns, Sarah A. Crosier, and Joseph A. Palmer. 2015. Determining Optimum Soil Type and Salinity for Rearing the Federally Endangered Salt Creek Tiger Beetle, *Cicindela (Ellipsoptera) nevadica lincolniiana* Casey (Coleoptera: Carabidae: Cicindelinae). Journal of the Kansas Entomological Society 88(4): 444-449.

Strategic Pest Control Theme Runs Strong at UPM Conference

Preventing pests from entering buildings and structures – rather than trying to control them once they're in – was the key message from the 24th annual Urban Pest Management conference held in Lincoln in February.

Also at the Feb. 9-10 conference, longtime conference coordinator University of Nebraska-Lincoln entomologist **Dr. Shripat Kamble** announced this would be his last, in order to devote more time to research and other extension programs.

The annual conference is sponsored by UNL Extension and the Nebraska State Pest Control Association, in cooperation with the Nebraska Department of Agriculture.

Dr. Bobby Corrigan, RMC Pest Management Consulting of Richmond, IN, and part-time rodent researcher for New York City, is an annual presenter. This year his emphasis was on strategic pest control. "Pest management is a deep, deep science," Corrigan told the 133 participants. "Pests are complex." Understanding pest habitat can prevent pests from invading in the first place, and could radically change pest management. For example, biologists need to be involved when a building is designed and built, Corrigan said, because they know ways to avoid pest entry. And tools such as aerial maps can be useful in identifying places where pests may originate, such as in nearby forage or tree habitat. The finest restaurants and office buildings are not exempt from rodent invasion; Corrigan also showed how a 9 mm gap between doors is ample entry for mice, which he called the second most successful mammal on earth. Clients need to be willing partners to solve pest management problems, Corrigan said, and pest managers must keep educated through venues such as the UPM conference, and by reading trade and scholarly journals.

Dr. Bob Davis, market development specialist with BASF Pest Control Solutions in Pflugerville, TX, said the most dangerous known animal is the mosquito. Insects, he added, contribute to up to one-third or more food loss in Third World countries. Davis also explained new pesticide label wording.

Travis Aggson, vice president at American Pest Management in Manhattan, KS, discussed winning and retaining clients. The cost of obtaining new clients is 15 times more than keeping current clients, Aggson said. Being prompt, courteous, tidy and clean make favorable impressions, he said, adding correct diagnostics, a genuine interest in clients and involving them in decisions create business loyalty.

Several of this year's 52 topics were on bedbugs, which cause considerable anxiety and expense to control although aren't known to transmit disease to humans. Other topics included climate change and pest migration, insect biology, bee stings and allergies, bats, ticks, termites, roaches, new methods in products, and in procedures such as fumigation.

UNL's Pesticide Safety Education Program presented ways to keep applicators safe with protective gear.

Nebraska's UPM conference is nationally known for its targeted, quality education and its self-tutorial laboratory, said Kamble, who has coordinated the conference since 1997. He, too, is nationally known for his research in cockroaches, termites, ants and bedbugs. In 2012 Kamble received the Distinguished Achievement Award from the National Conference on Urban Entomology. He also is chair of the examining committee for Board Certified Entomologists offered by the Entomological Society of America.

Discussions will be underway to plan future conferences.

Designed for pest management professionals, sanitarians, food service and food processing plant workers, grain fumigation specialists, public health workers and termite inspectors, the conference also boasts an open laboratory with hundreds of insect exhibits and literature. By attending the lab and other sessions, participants earn credit toward their state certification or recertification in four areas: 08-Structural/Health Related Pest Control, 08W-Wood Destroying Organisms, 09-Public Health Pest Control and 11-Fumigation.

From 2000-2015, the conference has had more than 3,000 participants, Kamble said. Ninety-eight percent of participating pest management professionals report gaining knowledge and biology of pests. Sixty-six percent reported using non-chemical management as a result of the conference.

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Cheryl Alberts, Pesticide Safety Education Program Office

Grants

Lance Meinke

AMVAC Chemical Corporation. \$4,000

"Diabrotica biology and ecology"

Sipcam Agro USA \$6,000

"Biology and ecology of Diabrotica"

Robert Wright

AMVAC Chemical Corporation \$12,500

"Crop Insect Management Research"

Dr. Joe Louis received a NSF Nebraska EPSCoR Award in the amount of \$20,000 for the proposal, "Long-distance defense signaling in maize-insect interactions".

Faculty News

Dr. Lance Meinke, Dr. Julie Peterson, Dr. Tom Hunt, Dr. Bob Wright, Dr. Doug Golick and Adriano Pereira attended the Monsanto Corn Academic Summit meeting in St. Louis, MO, Feb. 11-12.

Dr. Joe Louis attended the International Plant Physiology Congress held at New Delhi, India, December 11 - 14, 2015. Dr. Louis gave an invited talk at the symposium **Biotic Stress: Management and Interactions**. The title of his talk was "Maize defense signaling in response to aphid infestation". Dr. Louis also gave an invited seminar on "Plant defense and insect counter-defense: unraveling complex interactions" at the University of North Texas Department of Biological Sciences Seminar Series on February 19, 2016.



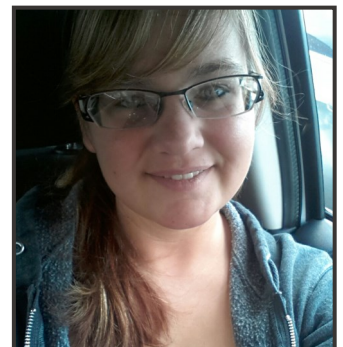
Dr. Joe Louis has been appointed as the Awards Committee member (2015 - 18) of the Plant-Insects Ecosystem (P-IE) section of the ESA.

Drs. Jarrad Prasifka and Matthew Smart have been appointed as Graduate Faculty Associates at the University of Nebraska effective February 2016.

Meet an Off-Campus Student

Cynthia Perkovich

I have always had a passion for the environment and the organisms that make our world what it is today. I spend every weekend hiking in the national and state parks in Northeast Ohio and enjoy the wildlife it has to offer. My B.S. was in cellular and molecular biology, where I became interested in the microbial world. Later in the degree, I took electives in entomology. I fell in love with the areas of science that looked into parts of the world that were visible to the naked eye, but most people ignore. I have since advanced my education studying invertebrates and how they affect their surrounding environments. I find the diversity and biomass of these organisms to be a fascinating topic. They are a crucial part of every ecological system, occupying niches that link the microscopic and macroscopic worlds together.



Insects opened up a door to a realm of ecology that I had never thought to explore. In my studies for my BS at Kent State, I studied arthropod populations in the Cuyahoga River to analyze the ecological succession and establishing health of the previously polluted and potentially hazardous aquatic system. I decided to add to my resume by continuing my education to the next level, and it was obvious that if I were going to dedicate years to studying, it should be in the field that interested me the most. UNL offered the distance education program that allowed me to stay close to my friends and family by completing courses

Meet an Off-Campus Student, con't.

online and receive a valid degree recognized by other institutions. In my M.S. work, I continued to study the health of strained ecosystems by surveying insect populations in the newly conserved Springfield Bog. I compiled data to see the seasonal and successional changes of the habitat throughout the year and was able to apply ecological statistics to analyze the health and development of the "Watch Me Grow" program.

I am graduating in May with a degree in a field that I am passionate about. Currently I am applying for doctoral programs at Kent State University and North Carolina State University. I hope to further my education and to become a researcher for a university or institution where I can continue to do ecological research and ignite curiosity in students.

Travel

Dr. Brett Ratcliffe traveled to Norway in January as an invited external examiner for a Ph.D. dissertation at the University of Oslo after which he spent several days engaged in collections research at the Institut Royal des Sciences Naturelles de Belgique in Brussels, Belgium.

Dr. M. J. Paulsen collected in Chile for three weeks in February.

Student News

Matheus Ribeiro was an invited speaker for the symposium, "The Gamut of Resistance Management for Soybean Insect Pests: Issue and Prospects" at the 2016 ESA Southeastern Branch Meeting in Raleigh, NC held in March. His presentation was entitled "Monitoring for Neonicotinoid Resistance in Soybean Aphid".

Leslie Rault received a Warren F. and Edith R. Day Dissertation Travel Award in the amount of \$500.

STUDENTS SWARM TO UNL ENTOMOLOGIST FOR CLASS PROJECT

Erin Ingram has always believed that the best learning comes when students make connections with class material to their daily lives. And recently, the University of Nebraska-Lincoln doctoral student got to see that notion in motion. Ingram, an entomologist, worked with second-graders at Evelyn Hamlow Elementary School in Waverly on a project about the disappearing honeybee population. Ingram became involved when Hamlow teacher Missy Schere came across a research article on honeybees written by her. Schere wanted to implement project-based learning in her classroom and needed a real-world question that her students could explore. Project-based learning is a teaching method in which students explore and respond to real-world problems and challenges to reach a deeper level of learning. The focus of the project became how to save honeybees.

For several years, scientists have been working to solve the mystery of Colony Collapse Disorder, a syndrome defined as a dead colony with no adult bees or dead bee bodies but with a live queen and usually honey and immature bees still present. Also, honeybees and beekeepers over the last 30 years have experienced new pathogens, parasites and other pests, nutrition problems and possible sub-lethal effects of pesticides – all serving to weaken or kill honeybee colonies. Schere incorporated the honeybee issue throughout the school day and used it as a theme for student research, while Ingram's insight and involvement guided the learning process.

"The students were going home and telling their parents that they needed to plant more flowers to save the honeybees," Ingram said. "Presenting them with a problem facing their community that they could own resulted in some of the most motivated students I've ever seen."

Ingram visited their classroom, answered questions through a weblog and provided resources from UNL's Department of Entomology. The department loaned a microscope, iPad, demonstration hive, beekeeping suit and reading materials to Schere's classroom.

The Department of Entomology's increased science literacy efforts ensured plenty of resources were available. Ingram said the project was a prime example of the university's outreach and engagement mission. "Even if we don't have the manpower to support, many times there are physical resources that can be checked out to the public," she said.

At the conclusion of the project, the students presented their findings to classmates, family and the public. Much of what they shared was discovered using UNL resources and through interactions with Ingram.

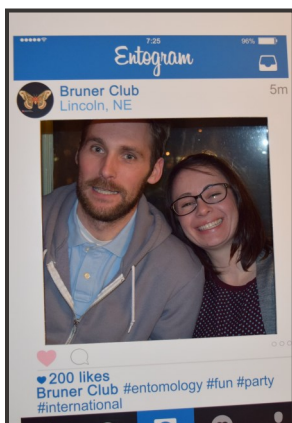
Schere said she plans to implement another project-based learning program in her classroom soon. "The students became so enthusiastic and curious about the project that they didn't even realize when we missed recess," she said.

WRITER: Haley Steinkuhler, IANR Media.

This article was an IANR news release in February. Erin Ingram is a doctoral student in the Entomology Department, working under the supervision of **Dr. Doug Gollck**.

Bruner Club's International Dinner

The Entomology Department shared a pleasant time together at The Ferguson House on Friday, March 4th for the Annual International Dinner sponsored by the Bruner Club. Faculty, staff, and students shared their culinary specialties by bringing homemade food (so delicious) that represented their heritage. The Entogram frame captured the best of everyone, and a very entertaining Bingo game brought laughs out of everybody with three winners receiving very nice prizes! At the end of the party, a tour of the Ferguson House was given where we learned all the interesting historical features. Thanks for attending! For those that could not be there, see you next time! ---- **Dariane Souza, Social Committee of the Bruner Club**



The Ferguson House in downtown Lincoln was constructed as a private residence by William Henry and Myrtle Ferguson between 1909 and 1911. It is one of the finest examples of Second Renaissance Revival architecture in the area and is listed on the National Register of Historic Places. Faculty, staff, and students from the Entomology Department were given a tour of this historical home during the visit.