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HEXAPOD HERALD

Vol. 29, No. 4

Entomology Department, University of Nebraska-Lincoln

August 2017

Welcome

Bethany Bergstrom, from Axtell, NE, is a new master's student working under the supervision of **Drs. Jeff Bradshaw** and **Gary Hein**. Bethany received her B.S. degree in Biology from Chadron State College in Chadron, NE this past May. Bethany will be working on pest-parasitoid interactions between the wheat stem sawfly, wheat, and common grass hosts within the wheat-production landscape in western Nebraska. Her project will involve an understanding of grasslands, grassland plants, insects, and wheat.

Justine LaViolette will be working under the supervision of **Dr. Troy Anderson** in her master's program. Justine is originally from Fenton, MO, and received her B.S. degrees in Insect Science and Forensic Science from UNL in May 2016. Justine will be examining the influence of water management practices on the spatiotemporal distribution and pathogen transmission of mosquitoes at the U.S. Meat Animal Research Center (Clay Center, NE).

Dr. Scott O'Neal has joined the lab of **Dr. Troy Anderson** as a postdoctoral research associate. Scott, originally from Columbus, IN, earned his B.S. in Genetics and Microbiology from Purdue University and a M.S. in Forensic Science from Virginia Commonwealth University. Scott remained at VCU for several years working as a lab manager in the Department of Pharmacology and Toxicology before resuming his graduate education at Virginia Tech, where he recently earned his Ph.D. in Entomology. At Virginia Tech, Scott's research focused on honey bee physiology, ion channel regulation of viral infections in honey bees, and the effect that exposure to in-hive acaricides has on the honey bee immune response. He will be building upon that work during his time at UNL, as well as investigating novel acaricide chemistries for the control of the honey bee pest *Varroa destructor*. In addition to conducting research, Scott will also be serving as an instructor for the biology lab, LIFE 120L.

New Insect Science majors for this fall include: **Aaron DeLay**, **James Patton**, and **Bobby Westmore**, Omaha, NE; **Makayla Burg**, Papillion, NE; **Emily Cumming**, St. Edward, NE

Online M.S. Students: Summer 2017: **Linda Rhys**, Jefferson, TX; Fall 2017: **Ariel Blackman**, Lincoln, NE; **Shannon Harris**, Coushatta, LA; **Moses McDaniel**, Elizabeth City, NC; **Daniel Murphy**, Lowell, MA

"The Department has proven to be very welcoming and supportive! I am excited about the opportunity to teach, conduct research, and build collaborative relationships in such an excellent environment."

*- Scott O'Neal
Ph.D.*



Bergstrom



LaViolette



O'Neal

In This Issue

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Brewer, Archibald



Clagg



Millsap



Brewer, Sikora

Congratulations Graduates

Westen Archibald received his M.S. degree on August 12, 2017. Westen worked under the supervision of **Drs. Julie Peterson** and **Bob Wright**. His masters thesis was entitled, "Conservation Biological Control of Western Bean Cutworm: Molecular gut content analysis of arthropod predators, feeding trial for key predators, and agricultural surveys for IPM". Westen is going to be an entomologist in the United States Navy and will be stationed at Norfolk, VA.

Dawn Sikora received her M.S. degree on August 12, 2017. Dawn worked under the supervision of **Drs. Gary Brewer** and **Jeff Bradshaw**. Her masters thesis was entitled, "Evaluation of host plant resistance against sunflower moth, *Homoeosoma electellum* (Hulst), in cultivated sunflower in western Nebraska". Dawn plans to pursue education and career opportunities while keeping bees.

Online Master's Degree Graduates:

Angela Clagg is currently a branch service manager for Orkin in Boise, ID. She also serves as an entomologist in the Air Force Reserves and has been doing so for the past 15 years. Angela aspires to complete her BCE with the ESA and teach college courses. Her master's degree project was entitled, "How To Do A Bedbug Inspection". Angela received her B.S. degree in Environment Studies from American Military University in 2011.

Airene Millsap currently works at DuPont Pioneer in Johnston, IA as a senior research associate in the Crop Protection Department where she works on the Gene Efficacy Testing of plants against major lepidopteran pests of corn. Her master's degree project was "Biology and Management of Key Rice Pests of Asia". Airene hopes to be able to delve into various rice pests as much as she has with corn pests. She hopes the knowledge she has obtained will make a positive impact as she ventures out to different avenues of research and discovery within DuPont Pioneer. Airene received her B.S. degree in Agriculture from Central Mindanao University in the Philippines and credits her aunt, who is also an entomologist in the Department of Agriculture in the Philippines, with instilling her with a passion to study insects.

Department Meetings - Fall 2017

Monday, October 9 - 2 p.m.

Monday, November 13 - 2 p.m.

Monday, December 18 - 2 p.m.

All meetings will be in 110 Entomology Hall

Bridge number - 402-472-0060

Publications

Ali, N., J.S. Heslop-Harrison, H. Ahmad, R.A. Graybosch, **G.L. Hein**, and T. Schwarzacher. 2016. Introgression of chromosome segments from multiple alien species in wheat breeding lines with wheat streak mosaic virus resistance. *Heredity* 117(2): 114-123.

Basnet, Sanjay, Dina Richman, **Ralph B. Narain**, and **Shripat T. Kamble**. 2016. Efficacy of Transport Mikron Against Nuisance Ants When Applied Around Structures, 2015. *Arthropod Management Tests*, 41(1): doi:10.1093/amt.tws018, <https://doi.org/10.1093/amt/tsw018>

Byamukama, E., S. Tatineni, **G. Hein**, **J. McMechan**, and S.N. Wegulo. 2016. Incidence of *Wheat streak mosaic virus*, *Triticum mosaic virus*, and *Wheat mosaic virus* in Wheat Curl Mites Recovered from Maturing Winter Wheat Spikes. *Plant Dis.* 100: 318-323 <http://apsjournals.apsnet.org/doi/10.1094/PDIS-06-15-0692-RE>

Donze-Reiner, Teresa, Nathan A. Palmer, Erin D. Scully, **Travis J. Prochaska**, **Kyle G. Koch**, **Tiffany Heng-Moss**, **Jeffery D. Bradshaw**, Paul Twigg, Keenan Amundsen, Scott E. Sattler, and **Gautam Sa-rath**. 2017. Transcriptional analysis of defense mechanisms in upland tetraploid switchgrass to greenbugs. *BMC Plant Biology* 17: 46. DOI 10.1186/s12870-017-0998-2.

Heinrichs, E.A., Francis E. Nwilene, Michael J. Stout, Buyung A.R. Hadi, and Thais Freitas. 2017. Rice insect pests and their management. Sawston, Cambridge, UK: Burleigh Dodds Science Publishing.

Huang, H., **M.J. Paulsen**, C.-C. Chen. 2017. Notes on *Prosopocoilus inquinatus* Westwood, p. 63-65. *In: Huang, H. & Chen, C.-C. Stag Beetles of China III*. Formosa Ecological Company, Taiwan, pp. 524.

Larson, Jonathan L., Adam Dale, David Held, Bryan McGraw, Douglas S. Richmond, Kyle Wickings, and R. Chris Williamson. 2017. Optimizing pest management practices to conserve pollinators in turf landscapes: Current practices and future research needs. *Journal of Integrated Pest Management*, 8(1): 1-10.

Neita Moreno, J.C. and **B.C. Ratcliffe**. 2017. A new South American species of *Palaeophileurus* Kolbe (Coleoptera: Scarabaeidae: Dynastinae: Phileurini). *Zootaxa* 4286(4): 515-524.

Paulsen, M.J. 2017. Correction of existing generic and species concepts in *Platyceroidini* (Coleoptera: Lucanidae: Lucaninae) and the description of four new species of *Platyceroides* Benesh. *Zootaxa* 4269(3): 346-378.

Pereira, Adriano E., **Newton P. Carneiro**, and **Blair D. Siegfried**. 2016. Comparative susceptibility of southern and western corn rootworm adults and larvae to *vATPase-A* and *Snf7* dsRNAs. *Journal of RNAi and Gene Silencing*. 12(1): 528-535.

Pereira, Adriano E., **Dariane Souza**, Sarah N. Zukoff, **Lance J. Meinke**, and **Blair Siegfried**. 2017. Cross-resistance and synergism bioassays suggest multiple mechanisms of pyrethroid resistance in western corn rootworm populations. *PloS One* 12(6): e0179311. <https://doi.org/10.1371/journal.pone.0179311>

Ratcliffe, B.C. 2017. Book Review. *Call of Nature: the Secret Life of Dung* by Richard Jones. *The American Entomologist* 63(2): 131-132, <https://doi.org/10.1093/ae/tmx034>

Ratcliffe, B.C. 2017. Scarabs: exploration and discovery in Ecuador. *The Mammoth* (University of Nebraska State Museum), Summer 2017: 8-9.

Spivak, Marla, Zac Browning, Mike Goblirsch, Katie Lee, Clint Otto, **Matthew Smart**, and **Judy Wu-Smart**. 2017. Why does bee health matter? The science surrounding honey bee health concerns and what we can do about it. *Council for Agricultural Sciences and Technology (CAST) Commentary QTA 2017-1*: 1-16.

Spomer, Stephen M. 2017. Discovery of a black morph of *Cicindela sexguttata* Fabr. from Nebraska, U.S.A., and a black morph of *C. denikei* Brown from Ontario, Canada. *Cicindela* 49(1): 1-4.

Faculty News

Dr. Jeff Bradshaw's duties now include Interim Associate Research and Extension Director for the Panhandle Research and Extension Center in Scottsbluff. Jeff will be assisting Director Jack Whittier with special projects as assigned.

Dr. Jonathan Larson has been appointed a Graduate Faculty Associate effective May 19, 2017.

Drs. Doug Golick, Wyatt Hoback, (Assistant Professor at Oklahoma State) and **Hartmut Doebel** (Assistant Professor at George Washington University) received a 2017 Innovative Teaching Award from the Association of Public Land-Grant Universities for \$1,750. The project title is "Engaging Undergraduates in Citizen Science to Enhance Systems Thinking and Science Process Understanding".

Dr. M. J. Paulsen completed three weeks of collecting in Taiwan and Hong Kong in June.

Dr. Brett Ratcliffe recently conducted research in the collections of the Canadian Museum of Nature and the Canadian National Collection of Insects in Ottawa, Canada.

Dr. Ana Vélez, a member of the 2016-2017 class of the Research Development Fellows Program, was featured in an article from the Office of Research and Economic Development about the benefits faculty members reap from traveling to Washington D.C. to meet with program officers.

Student News

Bruner Club officers for 2017-18 are: **Kait Chapman**, President; **Bryant Gabriel**, Vice President; **Sajjan Grover**, Secretary; **Matthew Welter**, Treasurer; **Jordan Reinders**, Faculty Representative; **Dr. Justin McMechan**, Faculty Advisor; and **Jen Williams**, GSA Representative.

Sanjay Basnet has received a MUVE (Medical, Urban, and Veterinary Entomology) student travel award from ESA to present research at the ESA Annual Meeting in Denver, CO in November. Sanjay was also awarded the Fred Clute Memorial Fellowship.

Kait Chapman has been awarded a Widaman Distinguished Graduate Assistantship in the amount of \$2,000.

Debora Goulart Montezano has been selected to receive a Shear-Miles Fellowship in the amount of \$2,000.

Lindsay Overmyer has received the Mary and Charles C. Cooper/Emma I. Sharpless Fellowship for an additional academic year in the amount of \$3,000.

Carter Westerhold and **Natalia Bjorklund**, along with **Dr. Judy Wu-Smart**, were selected to attend the ESA P-IE Pollinator Field Tour that took place this month in Jackson, MS.

Insect Science Club officers for 2017-18 are: Lynn Hanson, President; **Alex Lehmann**, Vice President; **Makenzie Diehl**, Treasurer.

Ethan Hoffart received a scholarship from the Earl & Bertha Ramsey Memorial Fund. **Alex Lehmann** was awarded scholarships from the Ephriam and Veallon Hixson Memorial Fund and from the Warren and Una Emerson Fund. **Braden Wojahn** received scholarships from the Warren and Una Emerson Fund and the Insect Science Scholarship Fund.

North Central Branch Meeting News

The 72nd Annual Meeting of the North Central Branch (NCB) of the Entomological Society of America (ESA) was held in June at the Crowne Plaza Indianapolis Downtown-Union Station, Indianapolis, IN. **Dr. Ana Vélez** was elected as Member-At-Large for 2017-2020. **Dr. Joe Louis** will serve as the Program Chair for NCB Meeting in Wisconsin in March 2018.

Dr. Fred Baxendale, James Kalisch, and Dr. Wayne Ohnesorg were awarded the 2017 Entomology Educational Project Award for the Nebraska 4-H Entomology Manual. **James Kalisch, Dr. Shripat Kamble,** and **Dr. Ron Seymour** received the 2017 Entomology Educational Project Award for the extension bulletin, "Identification Guide to Common Spiders in Nebraska". Both awards were sponsored by the Certified Entomologists of MidAmerica (CEMA) and the Board Certified Entomologists (BCE).

Ph.D. Poster—3rd Place

Dariane Souza

M.S. Poster—3rd Place

Lindsay Overmyer

M.S. Oral Presentation—1st Place

Jordon Reinders

M.S. Oral Presentation—2nd Place

Elliot Knoell

Travel Scholarships of \$250 each were awarded to **Debora Goulart Montezano, Suresh Varsani, Sanjay Basnet, Dariane Souza,** and **Jordan Reinders.**

Univ. of Nebraska-Lincoln
Entomology



since 1887

Meet an Online Student

Patrick Natale

I remember so clearly the first time I heard the 17 year cicadas. It was 1979 and I was three years old. The East Coast Brood (Brood II) filled the air with their cacophony. It was magnificent. I found such peace in their discord. I collected them until my little hands were exhausted.

The years passed, each summer marked by the thrum of insect life. After graduating from high school, my next adventure was a long distance hike on the Appalachian Trail – a six-month bliss-filled experience. After that I needed to work, so I became a server in a restaurant. Everyone stepped on the cockroaches; I wanted to know more about them.



Even after working up to management, I knew it was not the life for me. When I found out that Rutgers University offered a degree in Plant Science with a minor in Entomology, I knew I *needed* to have that knowledge. I cut my restaurant hours and began working part-time for the State of New Jersey in their Phillip Alampi Beneficial Insect Rearing laboratory. I was busy but so happy and graduated from Rutgers Summa Cum Laude in 2009.

My first job using my shiny new degree was with the non-profit North Jersey Resource Conservation & Development (NJRCD) working with farmers to help them learn how to be better environmental stewards. I also began as an adjunct at Mercer County Community College and taught my first entomology lab in 2011. I was hooked. Teaching about the natural world is as fun as learning about it.

I worked my way up to full-time professional staff as a Biology Teaching Assistant. I love the work I am doing, but now I want to become faculty. There is so much I want to share with students. I want to retire an old professor having shared my knowledge with countless students helping them find their own passions as I have found mine. Earning my master's degree would open up this new world of possibilities. I was worried I would not be able to find a program flexible enough to allow me to keep working full time. I was thrilled to find the online Master's degree program at UNL, and it is all I hoped for and more. I am almost halfway to completing my goal and I am loving every minute of the journey.

Grants

Lance Meinke

Sipcam Agro \$6,000
"Diabrotica biology and ecology"

Robert Wright

Syngenta Crop Protection \$7,000
"Insect Management Research"
 FMC Corporation \$8,000
"Insect Management Research"

Bee Fun Day 2017

Dr. Judy Wu-Smart's Bee Lab collaborated with the Nebraska Beekeepers Association to organize the 2017 BEE FUN DAY, held on June 25. Over 120 people attended this fun and informative event all about pollinators, pollination, and beekeeping to celebrate National Pollinator Week. Several expert speakers, including Gary Reuter (from University of Minnesota Bee Lab), Dr. Ron Fessenden (author of The Honey Revolution Series), and Mark Canny (from Lincoln Parks and Recreation), gave presentations on honey bees, the health benefits of honey, and how to improve landscapes for pollinators. NE extension educators and specialists were also there to share their knowledge about Monarchs and other wild bees. Highlights included the crowning of the Nebraska Honey Queen by the Nebraska Beekeepers Association and the live bee swarm demonstration with Herbie Husker.



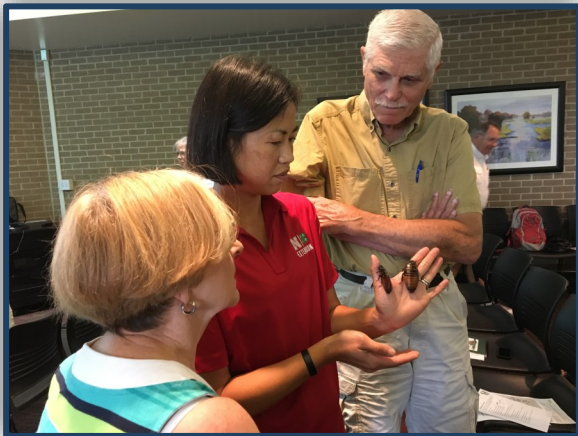
Herbee Husker

Busy as a Bee, er, BugMaster

Erin Bauer, lecturer and advisor for the Entomology Department's online master's degree program, along with Extension Educators, **Drs. Jody Green** and **Jonathan Larson** offered a Bugmasters Training Camp July 12-13, 2017 on the University of Nebraska's East Campus. The training camp prepares volunteers to work with either the Entomology Department or Nebraska Extension to conduct programs for all audiences. After training, participants can belong to one or more teams: 1) Educating Youth through Outreach, 2) Protecting Pollinators, 3) Emerald Ash Borer Education and 4) Bed Bug Mythbusters. As opportunities for programs arise, Bugmasters are informed and can indicate interest and availability. In 2016, they helped extensively with Bugfest and other Entomology Department youth programs.

In its second year, the two day training included presentations about basic insect biology, insect orders, pollinators, spiders, beneficial insects, structural pests, medical pests, and teaching insect programs. In addition, each day included a hands-on outdoor component. On the first day, participants visited various locations across East Campus to observe and collect insects. On the second day, the Bugmasters visited the pollinator garden and beehives where Entomology Department faculty members, **Drs. Judy Wu-Smart** and **Doug Golick** conducted tours.

Of the 30 participants, many were Master Naturalists wishing to increase their knowledge of insects. Others were former or current educators, nature enthusiasts, and one was a high school student interested in becoming an entomologist!



Dr. Jody Green shows off the Madagascar hissing cockroaches.



Sheldon Brummel, Bee Lab assistant, with bees in a top bar hive.



Left—Erin Bauer and Dr. Green in bee suits
Center—Dr. Golick in the Pollinator Garden discussing plant selection for butterfly larvae
Right—Dr. Wu-Smart explaining honey bee food storage in hive frames

