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HEXAPOD HERALD

Vol. 30, No. 1

Entomology Department, University of Nebraska-Lincoln

February 2018

Welcome

Jennifer Albrecht is a new master's student who will be working under the supervision of **Dr. Judy Wu-Smart**. Jennifer received her bachelor's degree in Park Management and Conservation from Kansas State University in 2013 and was a zookeeper at the Sunset Zoological Park in Manhattan, KS. Jennifer's research will focus on helping to develop an integrated pesticide management program for bee-keepers. This includes improved pesticide incidence monitoring as well as finding ways to reduce pesticide residue accumulation in the hives. Jennifer is from Salina, KS.

Courtney Brummel has joined the UNL Bee Lab to assist in the overwhelming demands for outreach and extension efforts. Courtney will help coordinate K-12 educational events, develop curriculum, and update the Bee Lab website. She is also helping us coordinate wild bee surveys across the state in collaboration with our partner organizations and private landowners. Courtney graduated from UNL with a bachelor's degree in Fisheries and Wildlife this past spring. Courtney is from Gretna, NE.

Molly Darlington, a new masters student working under the supervision of **Dr. Ana Velez**, will also be supporting departmental teaching. Molly received her bachelor's degree in biology from UNL this past fall. Her research will focus on the mode of action of RNAi in the western corn rootworm. Molly is from Lincoln, NE.

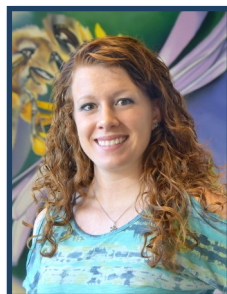
Nicole Luhr is a new master's student working under the supervision of **Dr. Tom Hunt**. Nikki joined Tom at the UNL Haskell Agricultural Laboratory near Concord, NE, as his research technologist early in 2017, and she will continue in that position. She received her bachelor's degree in Agricultural Business from South Dakota State University in 2012. Her research will involve some area of applied insect ecology. Nikki lives near Wakefield, NE.

William Noundou is a new master's student working under the supervision of **Dr. Troy Anderson**. William received his bachelor's degree in biomedical engineering from Florida International University in 2016. He had been in the United States Air Force Reserve in Homestead, FL since 2013 as a full time air transportation specialist. He is here on a scholarship from the United States Armed Forces. William's research will focus on how water management practices influence the pathogen distribution of vector mosquitoes. William is originally from Cameroon, Africa, and he has lived in Florida the past 10 years.

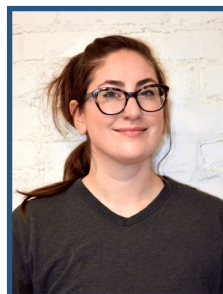
Emily Reinders is a new master's student working under the supervision of **Dr. Ana Velez**. Emily graduated with a bachelor's degree in biology from Northwestern University in Orange City, IA in 2016. She worked as a lab technician for **Dr. Lance Meinke** the past year and a half. Emily will be on a Hatch multistate grant aiming to characterize stressors affecting monarch larval survival. She is from Forest Hill, MD.



Jennifer Albrecht



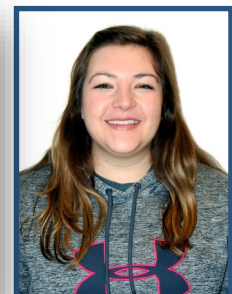
Courtney Brummel



Molly Darlington



William Noundou



Emily Reinders

Congratulations

Kyle Koch received his Ph.D. degree on December 15, 2017. Kyle worked under the supervision of **Drs. Jeff Bradshaw** and **Tiffany Heng-Moss**. His dissertation title was “Analysis of cereal aphid feeding behavior and transcriptional responses underlying switchgrass-aphid interactions”. Kyle is now a post-doctoral research associate at Texas A&M’s AgriLife Research and Extension Center in Weslaco, TX. Kyle is from Scottsbluff, NE.

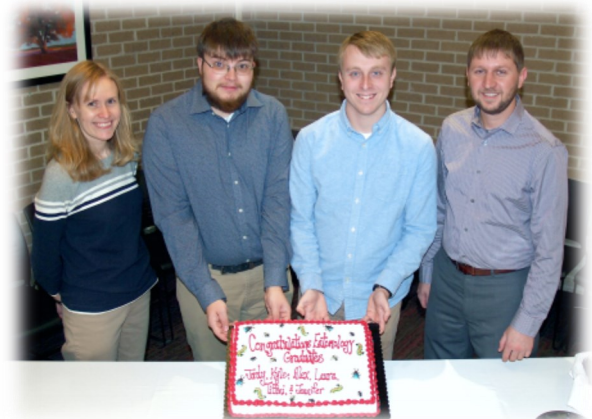
Jordan Reinders was awarded his M.S. degree on December 15, 2017. Jordy worked under the supervision of **Dr. Lance Meinke**. His thesis title was “Spatial Variation in Western Corn Rootworm (Coleoptera: Chrysomelidae) Susceptibility to *Bacillus thuringiensis* Corn Events in Nebraska”. Jordy is now pursuing his Ph.D. degree here in the Department with Dr. Meinke. His research will focus on western corn rootworm ecology and plant incorporated trait resistance management.

Alex Lehmann received his B.S. degree on December 16, 2017. Alex’s capstone project was “The Community of Carrion Beetles in Conventional and No-Till Agroecosystems of Western Nebraska”. He is working in **Dr. Lance Meinke’s** lab this semester and summer while applying for a master’s program. Alex is from La Plata, MD.

The following students, who also graduated December 15, were in the online masters degree program:

Jennifer Albrecht works for a company that primarily does contract work (e.g. R&D, manufacturing, compendial testing) for animal/human health companies. They also have a USDA-licensed facility, where vaccines are produced for niche markets. Jen plans to continue overseeing the Quality Control departments in the licensed and unlicensed facilities for the foreseeable future. Her master’s degree project was “Characterization of Arthropod Assemblages Attracted to Canine Feces Using Pitfall Traps and Rearing Experiments”. Jen lives in Waverly and did attend our department graduate reception where she received one of our coveted insect pillowcases.

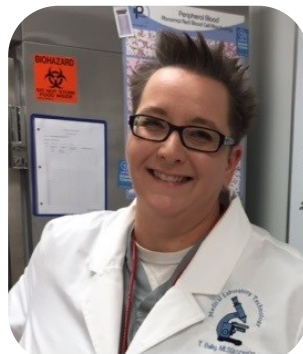
Tiffini Bailey plans to continue teaching Clinical Microbiology in the Medical Laboratory Technology program at Southeast Community College. One component of medical microbiology is parasitology and since there are a number of insect vectors of infectious diseases including bacterial, viral, and parasitic diseases, Tiffini plans on incorporating her knowledge of entomology into her courses. Her master’s degree project was developing an online introduction to an entomology course for college freshmen and sophomores interested in another biological science elective they could complete at SCC. The course she designed touched on aspects of insect anatomy, physiology, medical, forensic and veterinary entomology as



L-r, Albrecht, Lehmann, Reinders, Koch



Albrecht, Brewer



Bailey



Corbisier



Skinner



Congratulations con't.

well as entomophagy, insects in art, and cultural entomology. Tiffini said it's been a journey working on a masters degree at 47 years old while teaching full time, but she is so glad she completed the degree, as she has always had an interest in insect diversity, infectious diseases and environmental conservation as far back as she can remember. Tiffani would like to thank her professors at the University for being such incredible mentors.

Lena Corbisier is a Senior Instructional Designer in the private sector and hopes to build a portfolio for freelance work aimed at developing dynamic E-Learning resources for college level entomology courses. With her new master's degree, she is planning on creating more flipped-classroom or blended lesson plans for K-12 science teachers that use insects to teach larger concepts like biodiversity, conservation, ecosystem health, etc. Lena's Masters Degree Project was titled "Interdependent Relationships and Biodiversity" which can now be found on her website www.CorbisierCreative.com under the K-12 tab. Lena lives in Silverado, CA.

Cassandra Skinner is a high school biology teacher at Mentor High School in Mentor, OH, and uses insects in experiments often to convey all of the characteristics of life as well as enzyme function, cellular energetics and environmental conservation. She use Vernier Sensors to measure gas emitted by cellular energetics which she says is state of the art and very cool fun. Her master's degree project was titled "Lyme Disease Seminar" and was a community based hour program that she continues to use, collecting data on, in, and around the community as well as educating all students in their health classes when they study disease. Cassandra hopes to further educate the public on tick borne disease. She is thinking of using her degree to expand into a Lyme or tick borne disease diagnostics lab or perhaps teach a college level class on the evolution of insects.

Faculty News

Dr. Justin McMechan received the Innovative New Employee Award from Nebraska Extension at the Nebraska Extension Fall Conference held November 28 - 29 in Kearney, NE.

Drs. Lance Meinke, Tom Hunt, Julie Peterson, Justin McMechan, and Bob Wright participated in the annual meeting of NC 246, the USDA-NIFA Multistate Committee on Corn Insect Ecology and Management held January 23-25, 2018, at Williamsburg, VA.

Gamma Sigma Delta Awards

Dr. Tom Weissling received the Outstanding Teaching Award from the Nebraska Chapter of Gamma Sigma Delta, the honorary society of agriculture, at their annual awards and new member initiation reception on January 28.

Dr. Troy Anderson was initiated as a new member of Gamma Sigma Delta at the reception.

Kait Chapman was awarded the Outstanding Graduate Student Award and was also initiated as a new member.



Publications

Ademokoya, Blessing, Rammohan Balusu, Charles Ray, Jason Mottern and Henry Fadamiro. 2018. The First Record of *Ooencyrtus nezarae* (Hymenoptera: Encyrtidae) on Kudzu Bug (Hemiptera: Plataspidae) in North America. *Journal of Insect Science*, 18(1):1–7, <https://doi.org/10.1093/jisesa/iey105>

Archibald Westen R., Jeffrey D. Bradshaw, Douglas A. Golick, Robert J. Wright and **Julie A. Peterson**. 2017. Nebraska growers' and crop consultants' knowledge and implementation of integrated pest management of western bean cutworm. *Journal of Integrated Pest Management*, 9(1): 1-7.

Basu Saumik, Suresh Varsani, and Joe Louis. (2018). Altering plant defenses: Herbivore-associated molecular patterns and effector arsenal of chewing herbivores. *Molecular Plant-Microbe Interactions*, 31(1): 13-21.

Head, Graham P., Matthew P. Carroll, Sean P. Evans, Dwain M. Rule, Alan R. Willse, Thomas J. Clark, Nicholas P. Storer, Ronald D. Flannagan, Luke W. Samuel, and **Lance J. Meinke**. 2017. Evaluation of SmartStax and SmartStax PRO maize against western corn rootworm and northern corn rootworm: efficacy and resistance management. *Pest Manag. Sci.* 73:(9) 1883-1899, [doi:10.1002/ps.4554](https://doi.org/10.1002/ps.4554)

Koch, Robert L, Daniela T. Pezzini, Andrew P. Michel, and **Thomas E. Hunt**. 2017. Identification, Biology, Impacts and Management of Stink Bugs (Hemiptera: Heteroptera: Pentatomidae) of Soybean and Corn in the Midwestern United States. *J. Integrated Pest Manag.* 8(1): 1-14. [DOI: 10.1093/jipm/pmx004](https://doi.org/10.1093/jipm/pmx004)

LaLone, Carlie A., Daniel Villeneuvea, **Judy Wu-Smart**, Rebecca Milsk, Keith Sappington, Kristina Garber, Justin Housenger, and Gerald Ankley. 2017. Weight of evidence evaluation of a network of adverse outcome pathways linking activation of the nicotinic acetylcholine receptor in honey bees to colony death. *Science of The Total Environment*, 584–585: 751-775.

Le Tirant, S. and **B. C. Ratcliffe**. 2018. Insect bronzes of George Foster. *Scarabs* 86: 5–9.

Macedo, Jonas Victor de, **Kayla A. Mollet**, and **Julie A. Peterson**. 2017. Performance of Seed Treatments and in-Furrow at-Plant Insecticides for Protection Against Cry3Bb1-Resistant Western Corn Rootworm, 2015. *Arthropod Management Tests*, 42(1): 1-2.

Marchi-Werle, Lia, Renata Ramos Pereira, John C. Reese, Tiffany M. Heng-Moss, and **Thomas E. Hunt**. 2017. Yield Response of Tolerant and Susceptible Soybean to the Soybean Aphid. *Agron. J.* 109 (4): 1663-1669. [Doi: 10.2134/agronj2016.11.0631](https://doi.org/10.2134/agronj2016.11.0631)

Miwa, Kentaro and **Lance. J. Meinke**. 2017. Seasonality of *Colaspis crinicornis* (Coleoptera: Chrysomelidae) and its injury potential to corn in southeastern Nebraska. *Journal of Economic Entomology*, <https://doi.org/10.1093/jee/tox325>

Blast from the Past

Stephanie (Brown) Darnell (M.S. 1997) is a Pollinator Safety scientist, responsible for forage habitat initiatives of the North American Bee Team with Crop Science, a division of Bayer. She is also the Pollinator Safety science communicator, serving as a liaison between company scientists and others in the bee community to share important technical information. “Forage and nutrition are key factors affecting bee health,” Stephanie said. “The better we understand the needs of honey bees and other pollinators, and the ways that agriculture and apiculture can work together for mutual benefit, the better equipped we will be to meet the challenges of a growing world.” After graduate school, she was the assistant programming director at Monarch Watch. She joined Crop Science in 1999 as a research biologist. In 2006, Stephanie moved to Raleigh, NC, and became a product development manager for consumer and professional ornamental insecticides. She moved to her current role in 2014.

(Courtesy of Bee Health.bayer.us)



Publications con't.

Mondal, Hossain A., **Joe Louis**, Lani Archer, Monika Patel, Vamsi J. Nalam, Sujon Sarowar, Vishala Sivapalan, Douglas D. Root, and Jyoti Shah. 2018. Arabidopsis *ACTIN-DEPOLYMERIZING FACTOR3* is required for controlling aphid feeding from the phloem. *Plant Physiology*, 176(1): 879-890.

Pan, Huipeng, Xiaowei Yang, Keith Bidne, Richard L. Hellmich, **Blair D. Siegfried**, and Xuguo Zhou. 2017. Dietary risk assessment of *v-ATPase A* dsRNAs on Monarch Butterfly Larvae. *Front. Plant Sci.* 8:242. Doi: 10.3389/fpls.2017.00242

Paulsen, M.J. 2017. Revision of the endemic Madagascan stag beetle genus *Ganelius* Benesh, and description of a new, related genus (Coleoptera: Lucanidae: Lucaninae: Figulini). *Insecta Mundi* 0592: 1–16.

Petzold-Maxwell, J.L., **B.D. Siegfried**, R.L. Hellmich, C.A. Abel, B.S. Coates, **T.A. Spencer**, R.J. Horikoshi, and A.J. Gassmann. 2017. Fitness costs associated with Cry1F resistance in the European corn borer. *J. Appl. Entomol.* 141: 67-79. Doi:10.1111/jen.12356

Prado-Rebolledo, Omar Francisco, **Jaime Molina-Ochoa**, Roberto Lezama-Gutierrez, Luis Jorge Garcia-Marquez, Yureida B. Minchaca-Llerenas, Eduardo Morales-Barrera, Guillermo Tellez, Billy Hargis, **S. R. Skoda**, and **John E. Foster**. 2017. Effect of *Metarhizium anisopliae* (Ascomycete), Cypermethrin, and D-Limonene, Alone, and Combined, on Larval Mortality of *Rhipicephalus sanguineus* (Acari: Ixodidae). *J Med Entomol.* 1-5. [Doi: 10.1093/jme/tjx092](https://doi.org/10.1093/jme/tjx092)

Ratcliffe, B.C. 2017. Case 3733 – *Cetonia marmorea* Olivier, 1789 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini): proposed conservation of the specific name by giving it precedence over the senior subjective synonym *Scarabaeus pulcher* Swederus, 1787. *Bulletin of Zoological Nomenclature* 74: 42–45.

Ratcliffe, B.C. 2017. The fourteenth *Amithao* Thomson, 1878: a remarkable new species from Ecuador (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). *The Coleopterists Bulletin* 71(4): 655–660.

Ratcliffe, B. C. and S. Le Tirant. 2017. A new species of *Golofa* Hope, 1837 (Coleoptera: Scarabaeidae: Dynastinae) from Peru. *The Coleopterists Bulletin* 71: 781–785.

Ratcliffe, B.C. and R.D. Cave. 2017. The dynastine scarab beetles of the United States and Canada (Coleoptera: Scarabaeidae). *Bulletin of the University of Nebraska State Museum* 30: 1–298.

Ratcliffe, B. C. 2018. U. S. National Collection of Scarabs at NSM. *The Mammoth* (University of Nebraska State Museum), Winter 2018: 10-11.

Ribeiro, Matheus G. P. de M., Thomas E. Hunt, and **Blair D. Siegfried** 2017. Acute-Contact and Chronic-Systemic In Vivo Bioassays: Regional Monitoring of Susceptibility to Thiamethoxam in Soybean Aphid (Hemiptera: Aphididae) Populations From the North Central United States, *Journal of Economic Entomology*, <https://doi.org/10.1093/jee/tox290>

Smart Matthew, Clint Otto, Robert Cornman, and Deborah Iwanowicz. 2018. Using colony monitoring devices to evaluate the impacts of land use and nutritional value of forage on honey bee health. *Agriculture* 8 (1), 2; [doi: 10.3390/agriculture8010002](https://doi.org/10.3390/agriculture8010002)

Tietjen, C.L., **T.E. Hunt**, D.D. Snow, D.A. Cassada, and **B.D. Siegfried**. 2017. Method development for monitoring bean leaf beetle, *Cerotoma trifurcata* (Forster) (Coleoptera: Chrysomelidae), susceptibility to thiamethoxam seed treatments on soybeans. *J. Agric. Urban Entomol.* 33(1): 32-43. <https://doi.org/10.3954/1523-5475-33.1.32>

Wu-Smart, Judy and Marla Spivak. 2017. Effects of neonicotinoid imidacloprid exposure on bumble bee (Hymenoptera: Apidae) queen survival and nest initiation. *Environmental Entomology*, nvx175, <https://doi.org/10.1093/ee/nvx175>

Baxendale Retirement Reception

Dr. Fred Baxendale retired from the University of Nebraska's Entomology Department on February 1, 2018, after 33 years of service to the University. Professional highlights included serving as president of the North Central Branch (NCB) of the Entomological Society of America, (ESA) from 2011– 2012 and receiving the CV Riley Award from the NCB of the ESA in 2014. Academic involvement included serving as Interim Department Head from 2005-2006, and directing the Forensic Science Program from 2013-2014. Fred was also a "Backyard Farmer" panelist from 1985 - 2016.



Above, Fred with his worm cake. Top right - Fred receives his retirement certificate and UNL pin from Department Chair, **Dr. Gary Brewer**. Bottom right- Fred receives a plaque of appreciation for exemplary service from Dr. Dave Varner, Assoc. Dean/ Assoc. Director for Nebraska Extension.



Intro Beekeeping Classes, Year 1 in February, Year 2 in March

Year 1— February 24. This is an introductory-level course that focuses on everything you need to start beekeeping, including topics on beekeeping equipment, protective gear, honey bee biology, stressors, and management basics. Part I of the course includes lectures as well as hands-on activities. Part II of the course is a field day that gets you in the hives and takes the lessons from Part I into practice.

Year 2— March 24. This course builds upon the basic management practices covered in Year 1 and focuses on how to maintain healthy honey bee colonies. Meant for beekeepers with at least one year of experience. Topics include swarm management, splitting colonies, reversals, pest and pathogen management, honey production, and value-added products.

To register, send your name, address, phone number, email, and registration fee of \$70 (plus \$35 for each additional family member) to Jeri Cunningham, Entomology Department, University of Nebraska-Lincoln, Lincoln, NE 68583-0816. Registration deadlines are February 16 for Year 1, and March 16 for Year 2. Checks should be payable to the University of Nebraska. Please let us know if you need a meatless option for the lunch. More information is at www.entomology.unl.edu