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HEXAPOD HERALD

Vol. 31, No. 1

Entomology Department, University of Nebraska-Lincoln

February 2019

Welcome

Dr. John Ruberson joined UNL on January 1 as head of the Department of Entomology. John had been at Kansas State since 2012. Prior to Kansas State, from 1994-2012, he was at the University of Georgia coming through the ranks of research scientist, assistant professor, associate professor, and professor with appointments in research, teaching and extension. His professional expertise is in biological control, integrated pest management, and sustainable crop production. John earned his B.S. degree in biology teaching and his M.S. degree in zoology from Brigham Young University. He earned his Ph.D. degree in entomology from Cornell University, where he also served as a graduate research assistant and postdoctoral research associate. IANR Senior Associate Vice Chancellor Ron Yoder stated, "We are pleased to welcome Dr. Ruberson to IANR to lead the Department of Entomology. His leadership and professional experience in the field will be of great benefit to our teaching, research and outreach efforts."

Dr. Louise Lynch-O'Brien joined the Entomology Department January 1 as an assistant professor with a teaching and extension appointment. Louise's responsibilities include coordination of the insect science undergraduate program and providing instruction for undergraduate and graduate courses, including introductory insect biology, and a science literacy course. She will also develop citizen science, informal science, and other extension programming to support Nebraska One Health and provide practical extension and outreach training for undergraduate students. She received her B.S. degree in biological sciences from Fairleigh Dickinson University, and her M.S. and Ph.D. degrees in entomology, both from UNL.

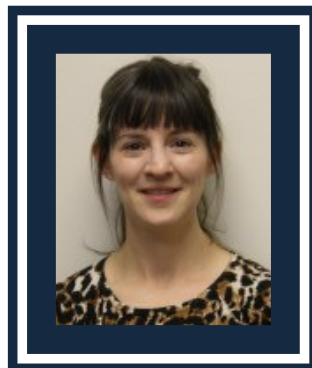
Dr. Matthew Smart, previously an adjunct assistant professor based in the Entomology Department as a wildlife biologist with the USGS Northern Prairie Wildlife Research Center in Jamestown, ND, joined the department January 1 as a research assistant professor with a research and teaching appointment. Matt's research focuses on the impacts of land use, habitat, nutritional resources and other biotic and abiotic stressors on pollinator health and productivity. Matt will be teaching an insect ecology course and honey bee biology and beekeeping. He received a B.A. degree in environmental, population, and organismal biology and anthropology from the University of Colorado, a M.S. degree in entomology from Washington State University, and a Ph.D. in entomology from the University of Minnesota.

"I very much look forward to sharing and fostering the already strong trajectory of this remarkable group of faculty, staff and students. And I'm very excited to be coming home to Nebraska to be a part of an organization that strengthens Nebraskans and the world".

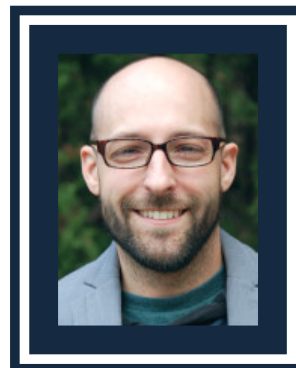
-Dr. John Ruberson



John Ruberson



Louise Lynch-O'Brien



Matthew Smart

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Welcome con't.

Elliot Knoell is a research project coordinator working with **Dr. Justin McMechan** at the Eastern Nebraska Research and Extension Center. Elliot is responsible for a wide range of activities in the lab such as monitoring and uploading the black light trap data, coordinating a number of insect cover crop research projects throughout central and eastern Nebraska, assisting with agronomy centered projects such as ear formation issues in corn and plant recovery from hail damage, as well as new and emerging issues with soybean gall midge. Elliot received his B.S. in insect science in 2015, and his M.S. degree in entomology in 2018, both from UNL. Elliot worked under the supervision of **Dr. Gary Hein** during his master's program.

Timothy Dang is a new master's student working under the supervision of **Dr. Lance Meinke**. His research project will be on Western corn rootworm Bt trait resistance management. Timothy received his B.S. degree in entomology from the University of California, Riverside in 2017. He is from Westminster, CA.

Alex Lehmann is a new master's student working under the supervision of **Drs. Gary Brewer** and **Jerry Zhu**. His research project will involve the push-pull system to manage stable flies in Nebraska pastures. Alex had worked in **Dr. Lance Meinke's** lab the past nine months. Alex received his B.S. degree in insect science from UNL in 2017. He is from La Plata, MD.

New online students for Spring 2019: **Jordan Fraterrigo**, Apple Valley, CA; **Lindsey McNaughton**, Aurora, CO; **Shelley Rekte**, Lincoln, NE



Knoell



Dang



Lehmann

Congratulations

Dr. Scott O'Neal was one of two post doctoral scholars who received an UNL 2018 Outstanding Post-Doctoral Scholar Award at the Postdoctoral & Mentor Awards Luncheon held in November. Scott joined **Dr. Troy Anderson's** lab in the fall of 2017.

The Backyard Farmer team received the Omtvedt Innovation Award for Team at an Institute of Agriculture and Natural Resources awards luncheon on Nov. 30. Going into its 67th season, the Backyard Farmer show is a cooperative production between Nebraska Extension and Nebraska Education Telecommunications (NET) and is considered to be the longest running educational program in broadcast television history. Team members from the Entomology Department include: **Fred Baxendale**, **Jody Green**, **Jim Kalisch**, **Jonathan Larson**, **Wayne Ohnesorg**, and **Tom Weissling**.



Anderson, O'Neal

Jeri Cunningham, office associate in the Department of Entomology, received the 2018 Exemplary Service Award at the IANR awards luncheon.

ESA National Meeting student award winners - **Jordy Reinders**, 1st Place—Ten Minute Talk; **Molly Darlington**, 2nd Place—Ten Minute Talk; **Jeff Cluever**, 2nd Place—Poster; **Justine LaViolette**, Honorable Mention—Video Contest; **Sara Salgado Astudillo**, 1st Place—Undergrad Virtual Poster; **Franklin Dubón Garcia**, 2nd Place—Undergrad Virtual Poster

Note from John Ruberson —

It's a great privilege and honor to be able to join the UNL Department of Entomology. I come here after six years as department head at Kansas State University, and 18 years as a faculty member at the University of Georgia. Honestly, I have loved everywhere that I have worked and I've worked with great folks everywhere, but this campus is a bit more special to me because of my family ties to Nebraska. Our great strength is our people, and we are a department of great students, staff, and faculty - full of purpose and promise.

I want to specially recognize Gary Brewer. Gary has been a terrific department head here for the past 12 years. And as a peer of Gary's for a number of years, I can attest to the high respect and esteem in which he is held among his administrative peers outside of Nebraska, as well as those within. I'm very glad he's sticking around to deservedly enjoy some science again. Thanks for all of your exceptional work, Gary!

There are many pressures in our world affecting how we are perceived and what we do: public mistrust of science, growing ideological polarization, declining enrollments, questions about the relevance and public funding of higher education, need for significantly increased food abundance and access, water quality and quantity concerns, climate change, and more. As a department of inspired and inspiring students, staff, and faculty we can make inroads in all of these areas in small and large ways. We will do this by continuing to grow the department's strengths in stress biology, pollinator and beneficial arthropod biology, and science literacy; by embracing the One Health initiative – health of humans, livestock, plants, and environment, and addressing the significant role of arthropods in all areas; by nurturing the department's deeply rooted commitment to high-quality teaching, mentoring, and public outreach/education, and to the professional and personal growth of our students. We'll continue building synergies across disciplinary boundaries, addressing the daunting challenges that face our planet and its occupants. In short, we'll continue growing what has been done so well for so long, and continue looking for new opportunities to stretch into a bright future. I look forward to getting to know and work with you!

Grants

McMechan, A. J., E. Hodgson, T. Hunt, B. Potter, A. Varenhorst, and R. Wright

North Central Soybean Research Program\$60,000
Soybean Gall Midge: Identifying management opportunities for an emerging pest of soybeans

McMechan, A. J., T. Hunt, R. Wright, A. Varenhorst, and E. Hodgson

North Central IPM Center\$50,000
IPM for Soybean Gall Midge: Understanding pest ecology and identifying management practices

McMechan, A. J., C. Proctor, R. Wright, K. Glewen, and L. Thompson

Nebraska Soybean Board\$110,595
Evaluating the impact of cover crop termination timing on insect pests and weed control in soybeans

Robert Wright

AMVAC Chemical Corp \$16,000
Insect Management Research

Faculty News

Dr. Gary Brewer is the president of Gamma Sigma Delta for 2019, after serving as president elect in 2018.

Dr. Justin McMechan is now an assistant professor, tenure leading as of January 1, 2019.

Dr. Brett Ratcliffe was featured in the article, “Longtime UNL beetle chronicler finds inspiration in ‘Game of Thrones’” in the *Lincoln Journal Star* in December.

Dr. Matthew Smart was initiated into Gamma Sigma Delta at their Initiation and Awards Reception on January 27, 2019.

Student News

Tuğçe Karaçoban was awarded her M.S. degree on December 14, 2018. Tuğçe worked under the supervision of **Dr. Judy Wu-Smart**. Her thesis title was “Viral Prevalence Among Social Bees in Different Landscapes”. Tuğçe has returned to Turkey and continues her work on diseases of bees as a research scientist at the Apiculture Research Institute of the Republic of Turkey Ministry of Food, Agriculture, and Livestock in Ordu, Turkey.

Angela Anthony received her M.S. degree on December 14, 2018. Her master’s degree project was entitled, “The Endangered Insects of North American: A Brief Survey”. Angela is pursuing admission into a doctoral program in education, in hopes of teaching the sciences at either the secondary or college level. In the meantime, she will continue in environmental education as a nature writer, beekeeper, and volunteer trail guide. Angela lives in Dewey, OK.

Daryl Goodaker was awarded his M.S. degree on December 14, 2018. His master’s degree project was entitled, “Ticks of human medical importance in Kentucky”. Daryl is a Medical Service Officer in the Army Reserves and a management analyst on the civilian side. Now that he has a master’s degree, Daryl currently plans to attend the Army Entomology Captain’s Career Course (CCC) to become an Army entomologist.

Jennifer Albrecht was one of four apiculture graduate students to be awarded a scholarship for \$3,000 through the Foundation for the Preservation of Honey Bees, Inc., scholars program. At the American Beekeeping Federation Conference & Tradeshow in January, Jennifer presented two short speeches about pesticide residue accumulation and how it impacts bees, helping to garner interest in the research taking place at UNL.

Gabi Inveninato Carmona and **Blessing Ademokoya** were initiated into Gamma Sigma Delta at their Initiation and Awards Reception in January.

Jordy Reinders was a finalist for Outstanding Graduate Student at the Gamma Sigma Delta Initiation and Awards Reception.

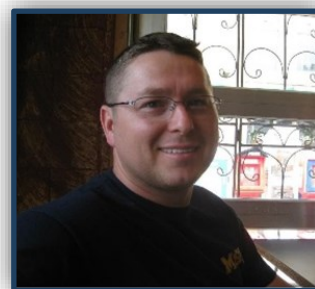
Whitney McDaniel, an undergraduate student, presented her research “Exploring the effects of pesticide residues in brood comb on the behaviors and development of the honey bee” at the American Bee Research Conference in Tempe, AZ. McDaniel won first place across the Conference for “Best Student Research Poster.”



Wu-Smart, Karaçoban



Anthony



Goodaker

Publications

Baldin, E.L.L., Mitchell D. Stamm, Jose P.F. Bentivenha, Kyle G. Koch, Tiffany M. Heng-Moss, and Thomas E. Hunt. 2018. Feeding behavior of *Aphis glycines* (Hemiptera: Aphididae) on soybeans exhibiting antibiosis, antixenosis, and tolerance resistance. *Florida Entomologist* 101(2): 223-229.

Bally, Julia, **Elane Fishilevich**, Andrew J. Bowling, Heather E. Pence, Kenneth E. Narva, and Peter M. Waterhouse. 2018. Improved insect-proofing: expressing double-stranded RNA in chloroplasts. *Pest Manag Sci* 74(8): 1751-1758.

Camargo, Carolina, Ke Wu, Elane Fishilevich, Kenneth E. Narva, and Blair Siegfried. 2018. Knockdown of RNA interference pathway genes in western corn rootworm, *Diabrotica virgifera virgifera*, identifies no fitness costs associated with *Argonaute 2* or *Dicer-2*. *Pestic Biochem Physiol* 148: 103-110.

Deloya, C., **B.C. Ratcliffe**, H.J. Gasca-Álvarez, and G. Aguirre-León. 2018. Escarabajos Cetoniinae (Coleoptera: Scarabaeidae) de América, pp. 129–151. In: Deloya, C. and H.J. Gasca-Álvarez (Coordinators), *Escarabajos del Neotrópico (Insecta: Coleoptera)*. Corporación Sentido Natural. S y G Editores, Ciudad de México, Mexico. 264 pp.

Gasca-Álvarez, H.J., M. López-García, and **B.C. Ratcliffe.** 2018. Dynastinae de Colombia (Coleoptera: Scarabaeidae): Estado actual del conocimiento, pp. 95–128. In: Deloya, C. and H.J. Gasca-Álvarez (Coordinators), *Escarabajos del Neotrópico (Insecta: Coleoptera)*. Corporación Sentido Natural. S y G Editores, Ciudad de México, Mexico. 264 pp.

Montezano, Débora G., Alexandre Specht, Daniel Ricardo Sosa-Gómez, Vânia F. Roque-Specht, Jose Carlos Sousa-Silva, Silvana V. de Paula-Moraes, Julie A. Peterson, and Thomas Hunt. 2018. Host Plants of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in the Americas. *African Entomol.* 26 (2): 286-300.

Paulsen, M. J. 2018. Generic changes in the stag beetle tribe Aesalini (Coleoptera: Lucanidae: Aesalinae) with the description of two new species. *Insecta Mundi* 0666: 1-10.

Ratcliffe, B. C., M. L. Jameson, and C. Zorn. 2018. *Ganganomala saltini* Ratcliffe, Jameson, and Zorn, a new genus and species of Anomalini (Scarabaeidae: Rutelinae) from Bangladesh and Nepal with a revised circumscription of the tribe Anomalini. *The Coleopterists Bulletin* 74: 717–735.

Siegfried, Blair D., Kenneth E. Narva, Arora Kanika, Sarah E. Worden, Chitvan Khajuria, Elane Fishilevich, Nicholas P. Storer, Meghan Frey, Ronda L. Hamm, and Ana Maria Vélez. 2018. Parental RNAi Suppression of Chromatin Remodeling Genes to Control Coleopteran Pests. U.S. Patent No.: US 10,053,706 B2

Varsani, Suresh, Sajjan Grover, Shaoqun Zhou, Kyle G. Koch, Pei-Cheng, Michael V. Kolomiets, W. Paul Williams, Tiffany Heng-Moss, Gautam Sarath, Dawn S. Luthe, Georg Jander and Joe Louis. 2019. 12-Oxo-phytodienoic acid acts as a regulator of maize defense against corn leaf aphid. *Plant Physiology*, DOI: 10.1104/pp.18.01472

Blast from the Past

Dr. Tierney Brosius (M.S. 2006, Ph.D. 2010) has been a biology professor at Augustana College in Rock Island, IL, for the past 8 years. She is also an accomplished illustrator, who combines her passion for entomology with beautifully detailed drawings. She recently did a radio interview with station WVIK, Quad Cities, about how the practice of drawing helps connect us to a subject matter more deeply, why scientists who are illustrators often portray insects in a truer light, and why in this time of increasing detachment from the natural world, we should foster and cultivate our connection to nature. While earning her doctorate at the University of Nebraska, she studied the endangered Salt Creek Tiger Beetle and published an article in the *American Entomologist*, in which she demonstrated how the visual arts can increase the public's awareness of and interest in an otherwise overlooked species. She is currently illustrating a book on insect conservation, and is co-authoring a book chapter on the connection between insects and modern art.



Dr. Tierney Brosius

(Courtesy of WVIK Quad Cities, 90.3 FM)

Brewer Appreciation Reception

Dr. Gary Brewer (pictured below with wife, Luming) resigned as Department Head of the Entomology Department and returned to a research and teaching appointment in the department. A reception was held on Friday, February 1, to show our appreciation for Gary's selfless service for the past 12 1/2 years. Gifts included a stable flies framed card and a sunflower red weevil glass etching. Gifts only an entomologist could love!



Intro Beekeeping Class—Year 1

The UNL Bee Lab started its 2019 workshop season on January 19th with Year 1 Introduction Beekeeping short course held at the August N. Christenson Research and Education Building near Ithaca, NE. There were 45 eager attendees who learned about honey bee life history, plants for bees, apiary locations, installing packages, honey production, and honey bee stressors, along with bee suit and equipment demos. An accompanying field day is set for Saturday April 13th in the pollinator garden. At the field day, participants will get to work with live honey bee colonies and see demonstrations on how to work a hive, how to install a package, do's and don'ts, and if it is warm enough, a live swarm demo! The UNL Bee Lab has a number of workshops coming up including: Year 1 & 2 Beekeeping, February 23-24 in Scottsbluff, NE; Year 2 Beekeeping, March 9, and Advanced Pest & Pathogen Diagnostics, May 18, both at the August N. Christenson Research and Education Building near Ithaca, NE. Go the UNL Entomology website at www.entomology.unl.edu for more information.

Condolences

David Lee Keith, retired professor & extension entomologist at UNL, dedicated husband, father, and friend, passed away February 4, at age 78, due to complications from diabetes. He was born to Wendell and Verdeen Keith of Amboy, Minn., on December 7, 1940. Survivors include Brenda, wife of 58 years, daughters Becky (Dr. Mark) Coffelt, Jennifer Keith, Melissa (Shawn) Michaud, Rachele Keith, granddaughters Hallie (Tyler) Eby, Polly and Piper Michaud, and sister Sandra Keith.

The Entomology Department extends our sincere sympathy to Brenda and family.



Retirement Reception for Kalisch and Roselle

Jim Kalisch (pictured below, left) and Bob Roselle, retiring from the UNL after 37 and 23 years respectively, were honored at a reception on December 7, 2018. Jim was an extension associate entomologist, who was also a panelist on Backyard Farmer, which celebrated its 65th year of broadcasts in 2017 (picture bottom right). Bob, an agricultural research technician, worked on many different research projects in the department.



SAVE THE DATE

Entomology Department Alumni Dinner, Fri., April 12, 2019, Wick Alumni Center, UNL City Campus