

HEXAPOD HERALD

Vol. 32, No. 1

Entomology Department, University of Nebraska-Lincoln

February 2020

Welcome new Entomology Graduate Students!

The UNL Department of Entomology has seven new resident graduate students and nine new online MS students who started this spring. They are:

Juan Betancurt Cardona is a new master's student working with **Dr. Joe Louis**. Juan's research will be on understanding the genetic mechanisms involved in plant resistance to aphids. You may remember Juan as he worked in **Dr. Justin McMechan's** lab last summer. He is from Manizales, Colombia.

Courtney Brummel is a new master's student who is working under the co-advisement of **Dr. Judy Wu-Smart** and **Dr. Louise Lynch-O'Brien**. Courtney will be studying alternative honey bee hive types and their function with bee health and anthropogenic preference. Originally from Gretna, she will also develop outreach materials for secondary education, including how to teach beekeeping for youth.

Sheldon Brummel is also working with bees on his master's degree under the advisement of **Dr. Judy Wu-Smart**. He will be conducting research on the Great Plains Master Beekeeping program, developing guides for honey production, and creating educational material for beekeepers. Sheldon hails from the Omaha area.

Heena Puri is starting her Ph.D. studies with **Dr. Joe Louis**. Originally from Bala-chaur, Punjab, India, her focus will be on understanding the molecular and physiological mechanisms of plant responses to aphid infestation.

Ravneet Kaur is starting her MS in Entomology and will be co-advised by **Drs. Ana Vélez and Justin McMechan**. Ravneet's research will focus on the population genetics, identification of molecular markers, and development of insecticide bioassays for soybean gall midge, a new and emerging soybean pest.

Mia Luong is starting as a new master's student under the advisement of **Drs. Gary Hein and Joe Louis**. Her studies will characterize the stability of wheat curl mite populations to mite resistance genes in wheat and to understand the mechanisms involved in wheat resistance to wheat curl mites. Originally from Vietnam, Mia graduated with a UNL Horticulture Degree in December.

Andrea Rilaković is a Masters student with **Drs. Julie Peterson and Greg Kruger** (Dept. of Agronomy & Horticulture), focusing on the intersection between insect pest biology and pesticide application technology. Her project is funded by the Nebraska Corn Board to address growing concerns of inadequate chemical control for critical corn pests, such as western bean cutworm and European corn borer. She graduated with her bachelor's degree from the University of Belgrade in Serbia.

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Juan Betancurt Cardona



Courtney Brummel



Sheldon Brummel



Heena Puri



Ravneet Kaur



Mia Luong



Andrea Rilaković

CONGRATULATIONS DECEMBER GRADUATES!

Congratulations to nine Department of Entomology students who received degrees in December!

They are: **Erin Ingram**, Ph.D.; **Justine LaViolette**, MS; **Kelsey Larsen**, MS; **Mariana Sanchez**, MS; **Shelley Rekte**, MS; **Matthew Welter**, MS; **Eduardo Valentin Cruzado**, MS; **Xi Xian Ng**, BS in Insect Science; and **Nathan Wolfe**, BS in Forensic Science & Insect Science. A graduation reception was held to celebrate their achievement on Dec. 20 in the Nebraska East Union.

Erin Ingram received her Ph.D. degree working with **Dr. Doug Golick**. The title of her dissertation was “A Mixed-Methods Study of Entomology Incorporation in U.S. Secondary Science Instruction.”

Six students earned their Master’s of Science (M.S.) Degrees from Entomology:

1. **Kelsey Larsen**, Lincoln, worked with **Dr. Tom Weissling & Erin Bauer** and her project was on “Bug Basics.”
2. **Justine LaViolette** worked under the supervision of **Dr. Troy Anderson** for her master’s degree. Her thesis title was “From Field to Film: Mosquito Surveillance and Human Perceptions of Arthropod-Borne Disease Vectors.” Originally from St. Louis, Justine has secured funding to develop a pilot episode for “Learn with Justine LaVi,” featuring puppets, song and entomology. She hopes to become the Jim Henson of science!

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Pictured at the Graduation Reception are: (L-R front row) Erin Ingram, Mariana Sanchez, Matthew Welter, and (L-R back row) Justine LaViolette, Eduardo Valentin Cruzado, Kelsey Larsen & Xi Xian Ng. Each graduate at the reception received a special Entomology pillowcase because they can now “sleep well” since their degrees are completed!

3. **Shelley Rekte** is an online student who earned her MS degree under the advisement of **Dr. Tom Weissling** and **Erin Bauer**. Her project title was “Mapping Insect Diversity in an Urban Landscape — Plants by Genus and Attracted Insect Families.”

4. **Mariana Sanchez-Londono**, Manizales, Colombia, also completed her MS degree. Her thesis title was, “Identification and Evaluation of Chemoreceptor Genes in Western Corn Rootworm, *Diabrotica Virgifera Virgifera* Leconte, as Potential Targets for Pest Management.” She was advised by **Drs. Ana Vélez** and **Joe Louis**.

5. **Eduardo Valentin Cruzado** received his MS degree in Entomology. His project title was, “Using Insects to Improve Seed Quality and Farming Profitability in *Phaseolus vulgaris*.” Eduardo worked with **Jeff Bradshaw** at the Panhandle Research & Extension Center in Scottsbluff.

6. **Matthew Welter** also received his MS degree in Entomology. Matthew’s thesis title was, “Using Adults to Monitor RNAi Susceptibility of Western Corn Rootworm (*Diabrotica virgifera virgifera* LeConte) Field Populations.” Matthew was advised by **Drs. Ana Vélez** and **Lance Meinke**. He has moved to Ankeny, Iowa, to seek a job in agriculture research.

Two undergraduate students received their bachelor’s of science (B.S.) degrees in December. **Xi Xian Ng** finished his major in Insect Science and **Nathan Wolfe** finished a double major of Insect Science and Forensics. Xi Xian’s project topic was “Effectiveness of the Essential Oils as Larvicide Against *Aedes aegypti* Mosquito (pyrethroid resistant strain in Puerto Rico).” Nathan was not required to complete a project because he had two majors.



Congratulations to all of our student winners at the Entomological Society of America (ESA) National Meeting Nov. 17-20, 2019, in St. Louis! Pictured above are all the University of Nebraska-Lincoln faculty, staff & student attendees. Student winners were: Andrea Rilaković, 1st Place Undergrad Virtual Poster; Sajjan Grover, 2nd Place Grad Infographic; Jeffrey Cluever, 2nd Place Grad Infographic; Genereuse Turabawe, 1st Place Undergrad Poster; Earl Agpawa, 2nd Place Undergrad Poster; Timothy Dang, 2nd Place Grad Poster; Annie Krueger, 1st Place Grad Poster and 2nd Place 3-Minute Competition; Jordy Reinders, 1st Place Oral paper; Gabriela Carmona, 2nd Place Oral paper; Molly Darlington, 1st Place Oral paper; and Kelly Willemssens (SNR student), 2nd Place 3-Minute Competition. Our group came in second in the number of awards won by one university.

Spring 2020 Beekeeping Workshops Planned

The UNL Bee Lab has announced its Spring 2020 Nebraska Beekeeping Workshops. There are two new locations this year: one at Nebraska Wesleyan University in Lincoln and one at the Extension office in Omaha, according to Dustin Scholl, Apiary Manager for the Bee Lab.

Workshops and field days are listed below. The lectures are between 9 a.m.-4 p.m. with check-in at 8:30 a.m. Between the lecture and lab days, beekeepers should build their equipment, select an apiary location, and order bees. See more at <https://entomology.unl.edu/bee-lab#tab3>.



Year 1 Beekeeping

1. Lecture Feb. 1/ Field April 25th, Extension office, 8015 W. Center Road, Omaha;
2. Lecture Feb. 15/Field April 4th, Kimmel Orchard, 5995 G. Rd., Nebraska City;
3. Lecture Feb. 21 and 28/Field April 17 and 24, Wesleyan University, 5000 St. Paul Ave., Lincoln; and
4. Lecture March 14/Field May 2, Raising Nebraska: 501 E. Fonner Park Road, Suite 100, Grand Island.

Year 2 Beekeeping

1. Lecture March 21/Field May 16, Extension Office, 8015 W. Center Road, Omaha.

Mead Making

1. Lecture March 28, Kimmel Orchard, 5995 G. Road, Nebraska City.



Student News & Activities

Mia Luong, a new Entomology master's student was awarded a Cooper-Sharpless Fellowship. This fellowship includes a \$3,000 stipend and is awarded based on academic and scholastic achievement or promise. The fellowship is named after Mary & Charles C. Cooper and Emma Sharpless. Mia (pictured right) is working with **Dr. Joe Louis**.



Mia Luong

Jennifer (Albrecht) Weisbrod is coordinating a departmental writing community. Every Thursday from 10 a.m.-noon in 204 ENTO Hall, graduate students, postdocs and faculty are invited to write, share their writing, and get feedback. The first hour will be spent writing while the second hour is used to obtain feedback. To join the group, email Jennifer at Jenifer.mai1998@gmail.com. This writing community is open to all interested students, staff, and faculty.

Congratulations to six graduate students who earned the Myron H. Swenk Memorial Fund Travel Grants! **Blessing Ademokoya**, **Molly Darlington**, **Sajjan Grover**, **Jordan Reinders**, and **Jen Williams** attended the ESA meeting in St. Louis on Nov. 17-20, 2019. **Bridget Gross** attended the American Bee Research Conference in Schaumburg, IL, Jan. 8-11, 2020.

Gabi Carmona, Ph.D. student with **Justin McMechan**, was awarded a \$5,000 Asia Rice Foundation USA Global Rice Leadership Award. This is a national competition and Gabi will use the funds to travel to the International Rice Research Institute (IRRI) in the Philippines. She will learn about rice pest management in the developing world. Congratulations Gabi!

Julia Campos, MS student with **Justin McMechan** and **Bob Wright**, and **Sajjan Grover**, Ph.D. student with **Joe Louis**, were awarded the Larrick/Whitmore Travel Grant by IANR to support their travel to the national ESA meeting Nov. 17-20, 2019.

BugFest attendance increases last fall

BugFest was a great success last fall with 943 attendees going through the Entomology Hall. We also had an army of about 80 volunteers making it work, and we owe all of them our sincere gratitude and appreciation. The BugFest Committee did a terrific job and we owe a big thanks to: **Doug Golick**, **Louise Lynch-O'Brien**, **Bridget Gross**, **Leslie Rault** and **Judy Wu-Smart**. Thanks also to **Ellis Johnson** for the amazing t-shirt and promotion graphics and to **Tom Weissling** for taking photographs.

Below, **Molly Darlington** (left) works with a child on hand and face painting while **Kyle Koch** and **Courtney Wallner** (right) display an insect collection. More pictures are in Box at <https://unl.box.com/s/glz3b7ue93vr3pw2kcf6dj80nzz6o4y3> (sign in with your UNL credentials).



Faculty Awards & News

Joe Louis, associate professor in the Department of Entomology at the University of Nebraska–Lincoln has received an Early Career Innovation Award from the Entomological Society of America. Louis was presented the award at the ESA annual meeting Nov. 17-20, 2019, in St. Louis.

“I am extremely honored to receive this award from the Entomological Society of America,” Louis said. “This community of entomologists means a great deal to me and I credit much of my professional growth to my involvement in ESA.” Louis is the first Husker to receive this award since its inception in 2008.

Louis’ research interests are to identify the key components/genes/signaling mechanisms that are involved in modulating plant defenses upon insect herbivory and to understand the mechanisms by which insect salivary proteins/effectors alter the plant defense responses. In addition to his research, Louis is involved in multiple education and outreach projects focused on student populations underrepresented in science. He also teaches two graduate-level courses.

The Early Career Innovation Award honors young professionals working within the field of entomology who have demonstrated innovation through contributions in research, teaching or extension.



Joe Louis

The **Soybean Management Field Day (SMFD)** program was selected as the winner of the 2019 Excellence in Extension Team Award by UNL Extension. The team included **Tom Hunt, Justin McMechan,** and **Bob Wright**, as well as entomology trained extension educators **Wayne Ohnesorg** and **Ron Seymour**. Congratulations all!

Congratulations to **Dr. Troy Anderson** on being elected Vice President Elect for the Physiology, Biochemistry, and Toxicology Section of the Entomological Society of America!

Congratulations to our four faculty members who earned their service awards at UNL during 2019:

Lance Meinke — 35 years

Tom Hunt, Haskell Ag Lab — 20 years

Tom Weissling — 15 years

Julie Peterson, West Central Research & Extension Center — 5 years

Julie Peterson was selected as a member of the 2020 cohort of the North Central National Extension Leadership Development (NELD) program. NELD’s mission is to build leaders throughout Extension and provide leaders with vision, courage & tools to lead in a changing world. Congratulations Julie!

Ana Vélez was selected as a 2019 recipient of the CASNR Multicultural Alumna Award for a Homecoming event organized by the Chancellor’s Commission on the Status of People of Color. Congratulations Ana!

Doug Golick served as an artist-in-residence at Calvert Elementary School last fall, teaching “Science through Art” to 5th graders in Amy Allerheiligen’s art class. Students exhibited their artwork to friends & families on Dec. 3. Great work Doug!

Effective Feb. 1, 2020, all **travel reservations** now go through **Fox World Travel Inc.**, which is the university’s new travel management company. More details may be found at <https://news.unl.edu/newsrooms/today/article/fox-world-travel-named-nus-travel-agency/>.

Publications & Books

DeGrandi-Hoffman, G., H. Graham, F. Ahumada, **M. Smart**, & N. Ziokowski. (2019). The economics of honey bee (*Hymenoptera: Apidae*) management and overwintering strategies for colonies used to pollinate almonds. *Journal of Economic Entomology*, 112(6), 2524-2533. <https://doi.org/10.1093/jeet/toz213>

Heinrichs, E.A., F.E. Nwilene, M.J. Stout, B.A.R. Hadi. & T. Freitas. (2017). *Rice Insect Pests and their Management*. Burleigh Dodds Science Publishing, UK. ISBN: 978-1-78676-196-5 (print); ISBN: 978-1-78676-198, online: www.bdspublishing.com.

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Heinrichs, E.A. (2019). Sustainable rice pest management: the role of agricultural policies. In Zeigler, R.S. (ed.), *An introduction to global food security; the nexus of science and policy*, CSIRO Publishing, Australia. pp. 324-351. <http://www.publish.csiro.au/book/7734/>.

Heinrichs, E.A. & J.E. Foster. (2019). Advances in breeding crops resistant to insects: rice as a paradigm. In M. Kogan & E.A. Heinrichs (eds.): *Integrated Management of Insect Pests: Current and future developments*, Burleigh Dodds Science Publishing, Cambridge, UK, 2020, Chapter 7. (ISBN 97-8-1-78676-260-3; www.bdspublishing.com).

Heinrichs, E.A. (2019). Introduction to the special issue of "IPM for Tropical Crops" for the Crop Protection journal. *Crop Protection*, 0261-2194. <https://doi.org/10.1016/j.cropro.2019.104936>.

Kogan, M. & **E. A. Heinrichs** (eds.). (2019). *Integrated Management of Insect Pests: Current and future developments*, Burleigh Dodds Science Publishing, Cambridge, UK, 2020, (ISBN 97-8-1-78676-260-3; www.bdspublishing.com).

Montezano D.G., A. Specht, D.R. Sosa-Gómez, V.F. Roque-Specht, J.V. Malaquias, S.V. Paula-Moraes, **J.A. Peterson & T.E. Hunt.** (2019). Biotic Potential and Reproductive Parameters of *Spodoptera frugiperda* (J.E. Smith, 1797) (Lepidoptera: Noctuidae), *Journal of Agric. Science (Toronto)*. 11(13), 240-252.

Montezano D.G., A. Specht, D.R. Sosa-Gómez, V.F. Roque-Specht, S.V. Paula-Moraes, **J.A. Peterson & T.E. Hunt.** (2019). Developmental parameters of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) immature stages under controlled and standardized conditions. *Journal of Agric. Science*. 11(8), 76-89.

Montezano, D.G., T.E. Hunt, A. Specht, P.M.C. Luz & J.A. Peterson. (2019). Survival and development of *Striacosta albicosta* (Smith) (Lepidoptera: Noctuidae) immature stages on dry beans, non-Bt, Cry1f and Vip3a maize. *Insects*. 10(10), 343. <https://doi.org/10.3390/insects10100343>

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Palmer, N.A., **B. Saumik, T. Heng-Moss, J. Bradshaw, G. Sarath & J. Louis** (2019). Fall armyworm (*Spodoptera frugiperda* Smith) feeding elicits differential defense responses in upland and lowland switchgrass. *PLoS ONE*, 14(6): e0218352. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0218352>

Paulsen, M.J. (2019). New species of Ochodaeus Dejean from Madagascar II (*Coleoptera: Scarabaeoidea: Ochodaeidae*). *Insecta Mundi* 0706: 1-8.

"The beautiful thing about learning is that no one can take it away from you."

- B.B. King,
American singer & songwriter

Staff News & Activities



Congratulations to **Jeri Cunningham** (center) on retiring from the University of Nebraska -Lincoln last fall! Jeri has been a wonderful part of the Department of Entomology since 2001 (nurturing countless students and hornworms!). A retirement celebration was held Sept. 5 where Jeri was presented with a notebook of appreciation letters, puzzles, and other gifts. At left, Jeri is recognized by **Gary Brewer** (left), **John Ruberson** (right), and faculty, staff and students!

Congratulations to **Dustin Scholl** (center right) on being named 2019 Beekeeper of the Year by the Nebraska Beekeepers Association (NBA)! Dustin is the Apiary Manager at the UNL Bee Lab and Information Director for the Nebraska Beekeepers Association.

Ron Babcock (left), NBA president, and Brian Nilson (right), NBA vice president, presented the award to Dustin at the group's annual meeting Sunday, Jan. 19, in Seward.

Learn more about the Nebraska Beekeepers Association online at <https://nebraskabeekeepers.org>.



Lana Johnson, second from right, attended the Guild of Natural Science Illustrators Conference in Brisbane, Australia, last July. Lana was able to meet three of her former students from the ENTO 828 Scientific Illustration class that she teaches.

Pictured from left to right are: Emma Scheltema, Tierney Brosius (Ph.D. from UNL Entomology), Lana, and Holly Gilliard.

ONLINE MS IN ENTOMOLOGY CONTINUES GROWTH

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The Entomology Online Master's of Science Degree has nine new students starting the program this spring who are advised by **Tom Weissing & Erin Bauer**.

The online MS students are: **Kateri Cavanagh**, Minneapolis, MN; **Lynda Elaine**, Aloha, OR; **Ivy Grob**, Gainesville, FL; **Darcey Hickey**, Omaha, NE; **Meghan Manhatton**, St. Paul, MN; **Katie Ostlund**, Bellevue, NE; **Tess Peterson**, Houghton, MI; **Sydney Stoopes**, San Diego, CA; and **Angelic Werlein**, Newport News, VA.

Welcome to all our new students!

Publications & Books

- Continued from Page 6.

Pezzini, D.T., C.D. DiFonzo, D.L. Finke, **T.E. Hunt**, J.J. Knodel, C.H. Krupke, B. McCornack, A.P. Michel, R.D. Moon, C.R. Philips, A.J. Varenhorst, **R.J. Wright** & R.L. Koch. (2019). Spatial Patterns and Sequential Sampling Plans for Estimating Densities of Stink Bugs (*Hemiptera: Pentatomidae*) in Soybean in the North Central Region of the United States. *Journal of Economic Entomology*, 112(4), 1732–1740, <https://doi.org/10.1093/jee/toz100>

Ruberson, J.R. (2019). Will Whitcomb: Entomologist and old-school naturalist. *Florida Entomologist* 102(3),660-664. <https://journals.flvc.org/flaent/article/view/116466>

Saumik, B., A.E. Pereira, D.H. Pinheiro, **H. Wang**, **A. Valencia**, **B.D. Siegfried**, **J. Louis**, **X. 'Joe' Zhou** & **A.M. Vélez**. (2019). Evaluation of reference genes for real-time quantitative PCR analysis in southern corn rootworm, *Diabrotica undecimpunctata howardi* (Barber). *Scientific Reports*. 9(1), 1-10.

Simanonok, M.P., Otto, C.R.V., **Smart, M.D.** (2019). Do the quality and quantity of honey bee-collected pollen vary across an agricultural land-use gradient? *Environ. Entomol.* <https://doi:10.1093/ee/nvz139>

Tavares, C.S., S.V. Paula-Moraes, **A. Valencia-Jimenez**, **T.E. Hunt**, **A.M. Vélez**, & E.J.G. Pereira. (2019). Egg Albumin as a Protein Marker to Study Dispersal of Noctuidae in the Agroecosystem. *Environmental Entomology* 48(6): 1260-1269. <https://doi.org/10.1093/ee/nvz118>

Tetreault, H.M., **S. Grover**, E.D. Scully, T. Gries, N. Palmer, **G. Sarath**, **J. Louis** & S.E. Sattler. (2019). Global responses of resistant and susceptible sorghum (*Sorghum bicolor*) to sugarcane aphid (*Melanaphis sacchari*). *Frontiers in Plant Science*, 10, 145, <https://doi.org/10.3389/fpls.2019.00145>

Smart, M.D., Otto, C.R. & Lundgren, J.G. (2019) Nutritional status of honey bee (*Apis mellifera* L.) workers across an agricultural land-use gradient. *Scientific Reports* 9(1), 11-10. <https://doi.org/10.1038/s41598-019-52485-y>

Smart, M.D., Otto, C.R.V. & Lundgren, J.G. (2019). Nutritional status of honey bee (*Apis mellifera* L.) workers across an agricultural land-use gradient dataset. *US Geological Survey Data Release*, <https://doi.org/10.5066/P9NND336>

Wright, R.W. (2019). David Lee Keith. *American Entomologist*, 204. <https://doi.org/10.1093/ae/tmz040>

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