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Entomology Department, University of Nebraska-Lincoln

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CONGRATULATIONS

Débora Goulart Montezano received her Ph.D. degree on May 3, 2019. Débora worked under the supervision of **Drs. Tom Hunt** and **Julie Peterson**. The title of her dissertation was “Biology and Behavior of *Striacosta albicosta* (Smith) (Lepidoptera: Noctuidae) and Implications for Insect Pest Management.” Moving from the challenges of the *S. albicosta* to the challenges of the soybean gall midge, Débora will be staying in the Department working as a post doctoral associate with **Dr. Justin McMechan**. Débora is from Lajeado, Rio Grande do Sul, Brazil.

Dariane Souza was awarded her Ph.D. degree on May 3, 2019. Dariane worked under the supervision of **Dr. Lance Meinke**. Her dissertation title was “Characterization of pyrethroid resistance in the western corn rootworm, *Diabrotica virgifera virgifera* Le Conte”. Dariane is now a post doctoral associate at the University of Florida working with **Dr. Blair Siegfried** on gene editing (CRISPR/Cas9) and RNAi in stinkbugs. Dariane is from São Paulo, Brazil.

Suresh Varsani received his Ph.D. degree on May 3, 2019. Suresh worked under the supervision of **Dr. Joe Louis**. His dissertation title was “Physiological and Molecular Insights into Maize Responses to Phloem Sap-sucking *Rhopalosiphum maidis* (Fitch) (Hemiptera: Aphididae)”. Suresh is now at the University of California, Davis where he has joined the Dr. Clare Casteel lab as a post doctoral associate, working on plant-vector-virus interactions. Suresh is from Gujarat, India.

Katie Lamke received her M.S. degree on May 3, 2019. Katie worked under the supervision of **Dr. Judy Wu-Smart**. Her thesis title was “A Descriptive Study of Wild Bees (Hymenoptera: Apoidea: Apiformes) and Angiosperms in a Tallgrass Prairie Corridor of Southeastern Nebraska”. Katie plans to pursue jobs related to science communication, conservation, or museum work. She is from Petaluma, CA.

Kayla Mollet will officially receive her M.S. degree in August. Kayla worked under the supervision of **Dr. Judy Wu-Smart**. The title of her thesis was “Promoting Bee Communities through Habitat Enhancements on Public and Private Lands in Nebraska”. Kayla will be a research coordinator working with Dr. Mitchell Stevenson at the Panhandle Research and Extension Center in Scottsbluff, NE. She will be working on a project to engage livestock producers through a monitoring collaborative in western Nebraska.

“If someone would have told me in August 2014, the professional, educational and personal achievements I would reach journeying through a Ph.D., I would have said - impossible! The achievements and the long term benefits of this adventure have already changed the course of my life. Being a graduate student in the Department of Entomology at UNL has prepared me to be a great professional, and I can't wait for the next challenges the insect world has to offer.”

Dr. Débora Montezano



Pictured from left, Mollet, Lamke, Severn, Erskine, Montezano, Varsani

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CONGRATULATIONS con't.

The following students, who also graduated May 3, 2019, were in the online masters degree program:

Anastacia Books will continue research work at Corteva Agriscience in Johnston, IA, executing insect bioassays to test the efficacy of transgenic traits in maize (corn), targeting major pests of corn. She plans to eventually support research efforts in exploring the potential uses of CRISPR-Cas9 gene editing technology for insect pest management in agriculture. Her master's degree project was titled, "New Biotechnological Approaches to Insect Pest Management and Crop Protection; Gene Editing Approach (CRISPR-Cas system)". Anastacia is from Bissau, Guinea-Bissau (located in East Coast of Africa).

Johnnie Erskine has a pest control business and will continue to operate that after 26 years of experience as an exterminator. The title of his master's degree project was "How do entomologists use insects to determine PMI?" Johnnie is from Mount Vernon, NY. (He is pictured on the front page.)

Jennifer Furchak has worked for Hartz Mountain Corporation for 11 years, where her focus has been veterinary entomology. She is now a manager in the chemical lab at Hartz overseeing development of flea and tick products, grooming products, and training products. Her love for entomology developed after taking an entomology course her junior year in college and then interning for the State Department in New Jersey doing field work and bio-control releases. Her master's degree project was titled, "Companion Animal Ectoparasites, Understanding the Pests and the Prevention". Jennifer is from Manalapan, NJ.

Katherine Menge plans to pursue a forensic or entomological position, and in the meantime, she will continue working with the Oklahoma City Police Department in dispatch as the newly promoted Training Analyst. The title of her master's degree project was "Forensically important insects: A quick field guide for North America". Katherine is from Bethany, OK.

Evy Santiago will continue working with the Early Assay Development Team within the Trait Discovery group in Corteva Agriscience in Johnston, IA. The title of her master's degree project was "Integrated Pest Management Manual for Greenhouses with Agronomic Crops". Evy received her B.S. degree in Fisheries and Wildlife from UNL in 2011. She lives in Johnston, IA

Abigail Severn currently works in the genotyping lab at Syngenta and is hoping to transfer to the entomology area. She plans to raise bees and write children's books, specifically related to insects. It's her goal in life to teach the world about bugs. Her master's degree project was titled, "Teaching insect facts through fiction: K-5 lesson plans". She is from Des Moines, IA. (Abby is pictured on the front page.)

Insect science majors graduating in May were: **Noah Arthur** from Oakland, CA; **Annelyn Bateman** from Omaha, NE (double major, forensic science); **Ben Bradley** from Columbia, MD; **Emily Hintz**, from Gretna, NE (double major forensic science); **Ethan Hoffart** from Hastings, NE; **Whitney McDaniel** from Louisburg, KS (double major, forensic science); and **Taylor Pitzer** from Omaha, NE (double major, forensic science).



Books



Furchak (and Lacey)



Menge



Santiago



McDaniel, Pitzer

MEETING NEWS

Entomological Society of America—NCB Meeting

Student presentation winners (pictured below) at the ESA-NCB meeting held March 17-20, 2019, in Cincinnati, OH, were: **Kait Chapman** (Drs. **Joe Louis**, and **Tiffany Heng-Moss**), 1st Place Ph.D. poster session; **Mariana Sanchez** (Drs. **Joe Louis** and **Ana Vélez**), 1st Place M.S. paper session; **Jordy Reinders** (Dr. **Lance Meinke**), 2nd Place Ph.D. paper session; **Blessing Ademokoya** (Drs. **Tom Hunt** and **Bob Wright**), 3rd Place Ph.D. paper session; and **Lindsay Overmyer** (Dr. **Gary Hein**), 3rd Place M.S. paper session.

Sajjan Grover received the Graduate Student Scholarship Award. This \$1,000 scholarship recognizes graduate student members of the NCB of the ESA for their course work and research culminating in scholarship.

Student Travel Scholarship winners were **Kaitlin Chapman**, **Sajjan Grover**, **Gabriela Inveninato Carmona**, and **Jordy Reinders**. The NCB Student Travel Scholarships provide funds to help support student travel to present at the NCB meeting. Scholarships are for \$200.



L-R—Reinders, Chapman, Overmyer, Ademokoya, Sanchez, Grover

International Symposium at the Max Planck Institute for Terrestrial Microbiology

Mariana Sanchez, a M.S. student supervised by Drs. **Joe Louis** and **Ana Vélez**, was one of 20 students - selected from 1,200 worldwide - to give an invited presentation at the International Symposium at the Max Planck Institute for Terrestrial Microbiology, held April 24-27, 2019, in Marburg, Germany. Her paper was titled, "Evaluating CO2 receptor genes through parental RNAi as potential targets for the Western corn rootworm management".



Sanchez

WELCOME

Matthew Greiner is a new master's student working under the supervision of Dr. **Ana Vélez**. Matthew will continue the research he conducted during his undergraduate program on the effects of pesticides on the survival of monarch butterfly larvae. Matthew received his B.S. in Environmental Restoration Science from the University of Nebraska-Lincoln this May. He is from Columbus, NE.

New online master's student: Summer 2019 - **Mohamad Fayez Bayasi**, San Diego, CA



PUBLICATIONS

Athey, K, **J.R. Ruberson**, D. Olson, and J. D. Harwood. 2019. Predation on stink bugs (Hemiptera: Pentatomidae) in cotton and soybean agroecosystems. *PLoS ONE* 14(3):e0214325. DOI: 10.1371/journal.pone.0214325

Basnet, S. and **S.T. Kamble**. 2019. Advances in Molecular Research on Bed Bugs (Hemiptera: Cimicidae). *Journal of Entomological Science* 54(1): 43-53. <https://bioone.org/journals/journal-of-entomological-science/volume-54/issue-1/JES18-30/Advances-in-Molecular-Research-on-Bed-Bugs-Hemiptera-Cimicidae/10.18474/JES18-30.full>

Gagné, Raymond J., Junichi Yukawa, Ayman K. Elsayed, and **Anthony J. McMechan**. "A New Pest Species of Resseliella (Diptera: Cecidomyiidae) on Soybean (Fabaceae) in North America, with a Description of the Genus," *Proceedings of the Entomological Society of Washington* 121(2), (30 April 2019). <https://doi.org/10.4289/0013-8797.121.2.168>

Genoways, H.H., **B.C. Ratcliffe**, C.R. Falk, T.E. Labeledz, P.R. Picha, and J.R. Bozell. 2018. Chapter 11. Natural History Studies. 11.1 Science at Engineer Cantonment, pp. 261–274. In: Bozell, J. R., G. F. Carlson, and R. E. Pepperl (Editors), *Archeological Investigations at Engineer Cantonment: Winter Quarters of the 1819-1820 Long Expedition, Eastern Nebraska*. History Nebraska. Publications in Anthropology 12: 1–394.

Grover, Sajjan, Braden Wojahn, Suresh Varsani, Scott E. Sattler, and Joe Louis (2019). Resistance to greenbugs in the sorghum nested association mapping population. *Arthropod-Plant Interactions*, DOI: 10.1007/s11829-019-09679-y

Gupta, A.K., **G.L. Hein**, R.A. Graybosch, and S. Tatineni. 2018. Octapartite negative-sense RNA genome of *High Plains wheat mosaic virus* encodes two suppressors of RNA silencing. *Virology*, 518, 152-162.

Mallinger, R. E., **J. Bradshaw**, A.J. Varenhorst, and **J.R. Prasifka**. 2018. Native Solitary Bees Provide Economically Significant Pollination Services to Confection Sunflowers (*Helianthus annuus* L.) (Asterales: Asteraceae) Grown Across the Northern Great Plains. *J. Econ. Entomol.* XX(X), 1-9. Doi: 10.1093/jeet/toy322

O'Neal, S.T., E.J. Johnson, T.D. Anderson, and L.C. Rault. 2019. Vapor delivery of plant essential oils alters pyrethroid efficacy and detoxification enzyme activity in mosquitoes. *Pesticide Biochemistry and Physiology*. DOI: 10.1016/j.pestbp.2019.03.0

Paucar-Cabrera, A. and **B.C. Ratcliffe**. 2018. The *Ancognatha* Erichson (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini) of Ecuador. *The Coleopterists Bulletin* 74: 665–687.

Paulsen, M.J. 2019. Three new Madagascan species of *Ochodaeus* Dejean (Coleoptera: Scarabaeoidea: Ochodaeidae). *Insecta Mundi* 0684: 1–14.

Pretorius, R.J., G.L. Hein, E. Blankenship, F.F. Purrington, R. Wilson Jr., and **J. Bradshaw**. 2018. Comparing the Effects of Two Tillage Operations on Beneficial Epigeal Arthropod Communities and Their Associated Ecosystem Services in Sugar Beets. *J. Econ. Entomol.* 11(6), 2617–2631.

Ratcliffe, B.C. and L. Figueroa. 2018. A new species of *Stenocrates* Burmeister from Peru (Coleoptera: Scarabaeidae: Dynastinae: Cyclocephalini). *The Coleopterists Bulletin* 74: 797–800.

Reinders, J.D., B.D. Hitt, W.W. Stroup, B.W. French, and L.J. Meinke. 2018. Spatial variation in western corn rootworm (Coleoptera: Chrysomelidae) susceptibility to Cry3 toxins in Nebraska. *PLoS ONE*, 13 (e0208266). <https://doi.org/10.1371/journal.pone.0208266>

Westerhold, C., S. Wortman, K. Todd, and D. Golick. 2018. Knowledge of Pollinator Conservation and Associated Plant Recommendations in the Horticultural Retail Industry. *HortTechnology* 28, 529-535.

Drs. Leslie Rault and Scott O'Neal, postdoctoral researchers working with **Dr. Troy Anderson**, have both been named recipients of USDA-NIFA Postdoctoral Fellowships.

GRANTS

Robert Wright

FMS Corporation \$11,000
"Research Insect Management"

The team of **Drs. Doug Golick** (lead), **Troy Anderson**, **Gary Brewer**, **Jenny Dauer** (School of Natural Resources), **Joe Louis**, **Justin McMechan**, **Julie Peterson**, **Matt Smart**, **Ana Maria Vélez Arango**, **Tom Weissling** and **Judy Wu-Smart** have been awarded a \$344,767 USDA-NIFA Research and Extension Experiential Learning for Undergraduate Fellowships (REEU) grant.

FACULTY NEWS

Dr. Gary Brewer has been one of a group of UNL faculty working for over the last two and half years in providing leadership in curriculum development and technical advising for the Rwanda Institute for Agricultural Conservation (RICA) located in Gashora, Rwanda. Opening in July 2019, the RICA is an English language institution dedicated to educating and inspiring a new generation of innovators in agriculture in Rwanda.

Dr. Shripat Kamble was recognized as the Outstanding Advisor for the India Students Association, one of the 2019 Student Impact Awards from UNL.

Dr. Joe Louis was promoted to Associate Professor and granted tenure at the UNL Promotion and Tenure celebration in April. Joe also received a five-year, \$1.5 million Faculty Early Career Development Program award from the National Science Foundation. He is investigating ways to help sorghum naturally resist sugarcane aphids, the crop's most damaging pest in the United States. His research was featured on *Nebraska Today* - <https://news.unl.edu/newsrooms/today/article/study-of-sorghum-munching-aphids-earns-nsf-award/>. In addition, Joe had an article on IANR news earlier this spring on his research on corn chemicals deterring corn leaf aphids <https://ianrnews.unl.edu/experiments-underscore-overlooked-aspect-defending-corn-pest>

Dr. Ana Vélez was an invited guest expert for the Organization for Economic Cooperation and Development (OECD) meeting in Paris, France on April 10-12, addressing RNAi-based pesticides. The purpose of the meeting was to begin developing a global guidance document for policymakers and regulators of RNAi pesticides.

Dr. Tom Weissling and **Lisa Silberman** were honored for their support to students during the annual Parents' Recognition Awards held in March, sponsored by the UNL Parents Association.

Dr. Susan Weller was recently recognized as a nominee for UNL Women of Character, Courage and Commitment, Susan was also featured in a recent Faculty 101 podcast about the new *Cherish Nebraska* exhibit in Morrill Hall. You can check it out here - <https://news.unl.edu/newsrooms/today/article/faculty-101-learns-to-cherish-nebraska-at-the-nu-state-museum/>.



Elliot Knoell, Terry DeVries, and Dr. Bob Wright talked about insect diversity and pollinators to 900 4th graders at the Hall County Ag Day in March at Fonner Park, Grand Island, NE.

Outreach...



The Plant-Insect Interactions Lab hosted 14 LPS Science Focus Program high school students for hands-on lab activities for the 2019 Fascination of Plants Day on May 17.



STUDENT NEWS

Blessing Ademokoya, Kait Chapman, Lindsay Overmyer, and Mariana Sanchez each received a Warren and Edith Day Travel award to present at the North Central Branch (NCB) - Entomological Society of America (ESA) meeting in March 2019.

Jeff Cluever, Gabriela Inveninato Carmona, Lindsay Overmyer, Jordy Reinders, and Matt Welter were recipients of David H. & Anne E. Larrick Memorial Travel funds to attend the NCB-ESA meeting in March 2019.

Ellis Johnson was awarded David H. & Anne E. Larrick Memorial Travel Funds from the Agricultural Research Division to attend the West Central Mosquito and Vector Control Association Annual Meeting in March 2019.

Julia Nogueira Duarte Campos, Gabriela Inveninato Carmona, and Jordy Reinders were each awarded travel support from the Myron H. Swenk Memorial Fund to attend the NCB-ESA meeting in March 2019.

Sajjan Grover was awarded a Milton E. Mohr Fellowship from the UNL Center for Biotechnology in the amount of \$1,000 for the 2019-2020 academic year. Sajjan also was selected to receive a Wirth/McGowen Memorial Fellowship from the College of Agricultural Sciences and Natural Resources in the amount of \$3,500 for the 2019-2020 academic year. Sajjan was recognized at the CASNR Awards Luncheon held in March. Sajjan was also a member of a team of graduate students that finished 1st in the "Best Use of External Data" category of the UNL Datapalooza (<https://hcc.unl.edu/datapalooza-2019>).

Gabi Inveninato Carmona received 1st Place in the poster competition at the Nebraska Plant Science Symposium held in March at the Nebraska Innovation Campus Conference Center.

The Lawrence Bruner Club received the CASNR Outstanding Graduate Student Organization Award at the CASNR Awards Luncheon held in March.

Mariana Sanchez (M.S. student) and **Surabhi Gupta** (Ph.D. student) were the inaugural winners of the Entomology Department's Graduate Student Mini Grant. Funding of \$750 per grant (one each for a M.S. and Ph.D. student) is to be used to support the thesis or dissertation research projects.

Earl Agpawa, an insect science major, has been awarded \$2,500 in funding from the Agricultural Research Division (ARD) for his IANR ARD Undergraduate Research Project entitled, "Characterization of Tolerance Mechanism in Nested Association Mapping Population Against Sugarcane Aphids, *Melanaphis sacchari*". Earl's advisor for this project will be **Dr. Joe Louis**. Earl also won the undergraduate poster competition at the UNL Research Fair held in April. Earl worked with **Dr. Eileen Hebets**, professor in the Biological Sciences Department and courtesy professor in the Entomology Department on the poster, "How Does Wind Exposure Affect Web Geometries?" Undergraduate winners received a \$250 award sponsored by their college.

Matthew Greiner was among the students whose 2018-19 Undergraduate Creative Activities and Research Experience (UCARE) poster was selected for the University of Nebraska-Lincoln Undergraduate Research at the Capitol breakfast and poster session April 16 at the Nebraska State Capitol Building. Matt's project was "Milkweed Characteristic in Nebraska Agricultural Land: A Focus on Monarch Butterflies Health". **Dr. Ana Vélez** was Matt's advisor for this project.

Bruner Club Officers for 2019-2020: President - **Sajjan Grover**; Vice President - **Gabriela Inveninato Carmona**; Secretary - **Julia Nogueira Duarte Campos**; Treasurer - **Molly Darlington**; Student Representative to Faculty Meetings - **Jen Williams**; Graduate Student Assoc. Representative - **Jordy Reinders**; Seminar Chair - **Blessing Ademokoya**; Faculty Advisors - **Drs. Louise Lynch-O'Brien** and **Tom Weissling**.

Insect Science Club Officers for 2019-2020: President - **Courtney Wallner**; Vice President/Primary Programmer - **Earl Agpawa**; Treasurer - **Kelsey Tarrell**. Students are welcome to join by contacting **Dr. Louise Lynch-O'Brien**.



BUSY AS A BEE

The Great Plains Master Beekeeping (GPMB) program launched this month. **Sheldon Brummel** is the project coordinator for the GPMB program, and he will be working with beekeeping associations in NE, KS, IA, and other Great Plains States to standardize education materials and field training activities, assist with extension programs, and review applications for certificate advancement. The program provides training, education, outreach, and mentoring for beginning and advanced beekeepers that will improve colony survival and drive economic success. The training program is structured with multiple tiers (exploratory, apprentice, journeyman, master) where participants may advance to higher levels at their own pace to refine their knowledge and management skills. The program contains online and in-person resources as well as hands on workshops in multiple states. For more information on the Master Beekeeping program, and how to join, visit gpmb.unl.edu.

The first GPMB Learning Series was held on Saturday April 20th at Kimmel Orchard in Nebraska City. It covered honey bee plants for home landscapes and gave the attendees another learning objective to work towards becoming journeyman beekeepers in the Great Plains Master Beekeeping program! There was a great turnout for the class, taught by **Natalia Bjorklund**, Entomology Department Ph.D. student, horticulture expert, and bee researcher. After the lecture by Natalia, the apprentice beekeepers moved into a hands-on portion where they learned proper installation and layout of home landscapes for bees, and installing a new bee education garden.



DISTINGUISHED ALUMNI RECOGNITION

The Lawrence Bruner Entomology Club presented **Dr. Sean Whipple** with their Distinguished Alumni Recognition award on April 12, 2019, at the Entomology Department Alumni Dinner. Sean received his doctoral degree from UNL in 2011, and was nominated by **Dr. John Foster**. Sean's innovation has bridged the gap between industry, government, and academia with international contributions to insecticide development, IPM/IRM policy, research, extension, teaching, and public/government service. He is currently the Head of Global Field Research and Biometrics for ArystaLifeScience. **Dr. John Ruberson**, Department Head, Bruner Club President, **Matt Welter**, along with Alumni Award Committee Co-chairs, **Gabi Inveninato Carmona** and **Lindsay Overmyer**, presented Sean with the plaque commemorating the award. His name will be added to the Lawrence Bruner Distinguished Alumni Recognition plaque.



Welter, Carmona, Whipple, Overmyer, Ruberson

ENTOMOLOGY DEPARTMENT ALUMNI DINNER

The second UNL Entomology Alumni Dinner was held on Friday, April 12th, 2019 at the Wick Alumni Center on UNL's City Campus with approximately 100 people in attendance.

During the day, tours were offered of the Entomology Department, the Museum Insect Collection, and University of Nebraska State Museum at Morrill Hall, including the new 4th floor expansion "Cherish Nebraska".

The evening included addresses from Department Head, **Dr. John Ruberson**, Bruner Club President, **Matt Welter**, Alumni Dinner Committee Co-Chair **Kait Chapman**, and CASNR Dean and Entomology Department faculty member, **Dr. Tiffany Heng-Moss**. A picture slide show of alumni and current members of the Entomology Department played in the background during the social hour. After dinner, the Entomology Department Distinguished Alumni Award was presented to **Dr. Sean Whipple**.

The night wrapped up with a couple rounds of Linnaean games between the graduate student team and the alumni/faculty team. The alumni/faculty team, with ALL THOSE YEARS of experience, ended up taking home the victory. Thanks (round of applause here) to Co-Chairs: **Kaitlin Chapman** and **Lindsay Overmyer**, and the Alumni Dinner Committee - **Erin Bauer**, **William Noundou**, **Matt Welter**, **Molly Darlington**, **Bridget Gross**, **Surabhi Gupta Vakil**, **Gabriela Inveninato Carmona**, and **Jen Williams**.



Graduate Student Linnaean team -
Grover, Welter, Reinders, Chapman



Alumni/Faculty Linnaean team -
Ruberson, Whipple, Brewer, Fischer