

# HEXAPOD HERALD

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Entomology Department, University of Nebraska-Lincoln

May 2018

## Congratulations

**Sanjay Basnet** received his Ph.D. degree on May 4, 2018. Sanjay worked under the supervision of **Dr. Shripat Kamble**. His dissertation title was “RNAi-Mediated Gene Silencing in Bed Bugs.” Sanjay is now a post-doctoral research associate in the Department of Entomology and Plant Pathology at North Carolina State University, working with Dr. Dorith Rotenberg. Sanjay’s research will be on RNAi induced knockdown in western flower thrips. Sanjay is originally from Tanahun, Nepal.

**Elliot Knoell** was awarded his M.S. degree on May 4, 2018. Elliot worked under the supervision of **Dr. Gary Hein**. His thesis title was “Transmission Characteristics of *Triticum mosaic virus* by the Wheat Curl Mite (*Aceria tosichella* Keifer) and Ecology of the Wheat-Mite-Virus Complex on Field Corn.” Elliot will be staying on in the Entomology Department as a research technician working with **Drs. Gary Hein, Lance Meinke, and Justin McMechan**. Elliot is from La Vista, NE.

**Makenzie Diehl** received her B.S. degree on May 5, 2018. Her capstone project was entitled “Response of the Adult Western Corn Rootworm (Coleoptera: Chysomelidae) to visible and non-visible wavelengths.” Makenzie is from North Platte, NE.

The following students, who also graduated May 4, 2018, were in the online masters degree program:

**Jerry Heath** was an unconventional online student, beginning the program late in his career and completing it at retirement age. He received B.S. degrees from Penn State and Washington State in agriculture and entomology, respectively. Jerry did some commercial-scale beekeeping and spent seven years on the Extension Entomology staff at Cornell University. Since 2000, he has been employed as a key technical resource at The Industrial Fumigant Co. (IFC). Jerry’s degree project was “Revision of Nebraska Pesticide Applicator Training Manual, Category 11, Fumigation for the Commercial/Noncommercial Pesticide Applicator.” Jerry lives in Olathe, KS.

**Margaret Pendleton Jordan Heumann** plans on staying in her current job position as a buyer for an outdoor store in Jackson Hole, WY, but is also starting her own insect education and taxidermy business. Through her current job, Maggie teaches several aquatic entomology clinics a year as they relate to fly-fishing. Maggie’s degree project was a guidebook called “Macroinvertebrates of the Teton River Drainage” which was a compilation of all the aquatic arthropods that live in her local river, the Teton. (See the salmonfly on her hat on the next page.)



Pictured left— Sanjay Basnet, Lauren Segreto, Makenzie Diehl, Elliot Knoell, and Jonathan McGhee. Pictured middle— Dr. Gary Brewer and McGhee with coveted insect pillowcase. Pictured right—Jerry Heath.

## Congratulations con't.

**Bryon Kacprzyk** is currently a Pest Management Supervisor at Moody AFB in Georgia. Bryon retired from the Air Force in 2014 after serving 18 and a half years on active duty. With his degree, Bryon looks forward to opportunities to further his career in teaching, research, or as a pest management consultant. His master's degree project was "An Integrated Pest Management Plan."

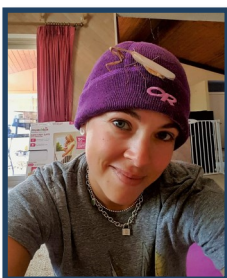
**Jonathan McGhee** will be working for the Food and Drug Administration (FDA) as an entomologist after graduating in record time - one year - from UNL. Jonathan is from Long Beach, CA. His master's degree project was "Let's Go Find a Bug" which was a video guide to insects of southern California. (Jonathan is pictured on the front page.)

**Merrie Schultz** will continue to teach field study classes in Costa Rica. At some point, she is interested in settling permanently back in her home state of Washington, where she would like to work in forestry pest management. The title of Merrie's masters degree project was "Mimicry in Insects: An illustrated guide to mimicry and cryptic coloration in insects."

**Lauren Segreto** works as a Mosquito Identification Specialist for the Camden County Mosquito Commission. Lauren plans on using her degree and entomological knowledge to better mosquito control efforts and to participate in mosquito related peer reviewed research. She is also pursuing a promotion within the Parks Department to introduce beneficial insects and manage an integrated pest control program within their green houses. In the long term Lauren is interested in pursuing a doctorate degree and becoming a forensic entomologist. The title of her master's degree project was "A Children's Library Kit."

**Peter Taylor** plans to start his own pest control business, AKA "Mantis Services" and do some teaching. He recently retired as the Brevard County Florida Mosquito Control Director in Titusville, FL. Peter's master's degree project was "Managing the Economy of Public Mosquito Control Thresholds." Peter would like to give a shout out to his wife, as he said her sacrifices made this all possible.

**Joanna Tyszko** is currently working at Clarke in Roselle, IL, as the Bioassay Lab Supervisor and Biologist in the Environmental Science Department. In this role she will continue to oversee the rearing of mosquito colonies and conduct research on novel molecules along with evaluating potential formulations for mosquito control products. With obtaining this degree, a promotion plan is in progress. Her master's degree project was Mosquito 101: Training Modules - a series of four training modules on the basics of mosquito biology, ecology, physiology and behavior, and then species specific modules on *Aedes aegypti*, *Culex quinquefasciatus*, and *Anopheles quadrimaculatus*.



Heumann

Kacprzyk

Schultz

Segreto

Taylor

Tyszko

**Kait Chapman and Dr. Leslie Rault won second place of Judge's Choice at the Morrill Hall Science Festival during the 2018 Science Communication Conference for their "Insect Communication" outreach table.**

# MEETING NEWS

## North Central Branch ESA, International IPM Symposium

The North Central Branch, ESA meeting was held March 18-21, in Madison, WI.

**Dr. Scott O'Neal** received the Excellence in Early Career Award.

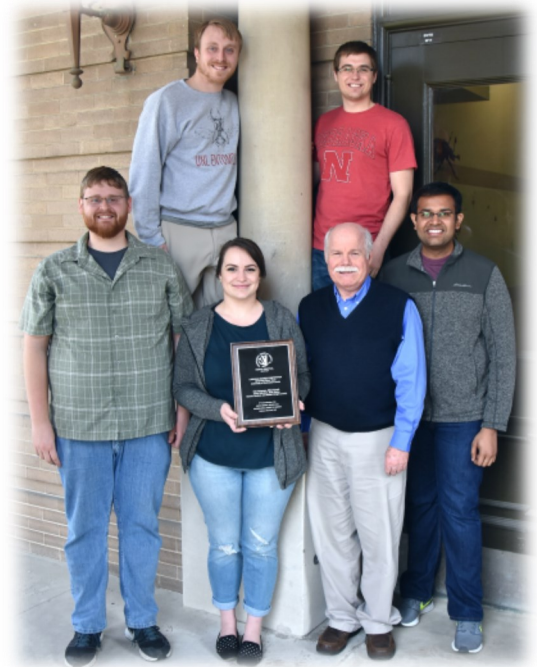
The UNL Linnaean Team - **Kait Chapman, Elliot Knoell, Jordy Reinders, Matt Welter**, and alternate **Suresh Varsani** - won the 2018 NCB Linnaean Games. **Dr. Bob Wright** was the team's coach.

**Kait Chapman** received the Graduate Student Scholarship Award and 1st Place in Ph.D. Student Ten-Minute Paper competition.

**Elliot Knoell** received a 1st Place M.S. Student Ten-Minute Paper competition.

**Jordy Reinders** received a 1st Place Ph.D. Student Poster competition.

**Kait Chapman, Elliot Knoell, and Suresh Varsani** were awarded student travel scholarships from ESA.



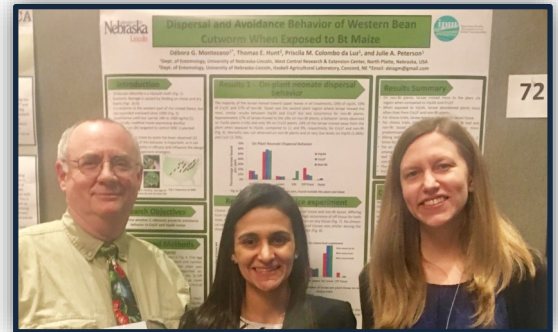
Linnaean Team Members, Front—Knoell, Chapman, Wright, Varsani, Back—Reinders, Welter

The 9th International IPM Symposium was held March 18th, 2018, in Baltimore, MD. Members of the Agroecosystems Entomology Laboratory hosted a symposium to improve understanding of the IPM issues surrounding western bean cutworm (WBC).

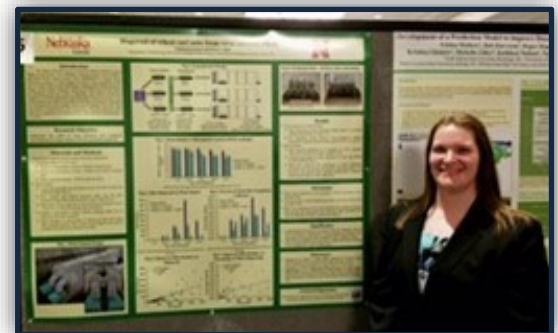
The symposium began with six invited presentations, including those by **Dr. Julie Peterson**; Ph.D. student **Débora Goulart Montezano**; and department alumna, **Dr. Silvana Paula-Moraes**; and ended with a poster and extension materials session. In addition to Dr. Peterson and Débora, **Dr. Tom Hunt**; postdoc **Katharine Swoboda Bhattarai**; Ph.D. student **Camila Oliveira Hofman**; and M.S. student **Samantha Daniel** contributed posters, while **Dr. Bob Wright** and Dr. Hunt talked about WBC extension materials.

**Lindsay Overmyer**, a M.S. student, received a 2nd place in the student poster competition, and **Samantha Daniel** received an honorable mention.

One objective of the symposium was to increase collaborations among multistate research and extension communities; although the UNL Entomology Department was well represented at the symposium, WBC researchers from Canada and Mexico, and from as far east as New York, participated. The symposium was taped and videos of the oral, poster, and extension presentations will be posted on the Agroecosystems Entomology lab website for general viewing.



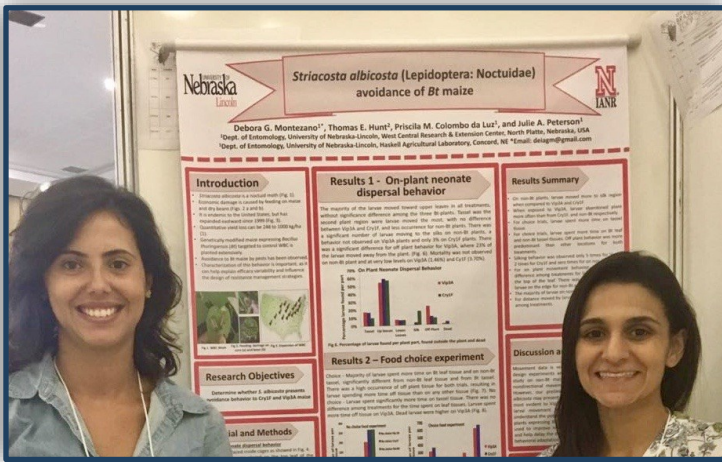
Hunt, Goulart Montezano, and Peterson in front of Débora's poster about WBC larval movement.



Lindsay Overmyer with her poster, "Dispersal of wheat curl mite from virus infected wheat".

## Meeting News con't.

**Débora Goulart Montezano** (pictured below on the right) attended the XXXII Brazilian Congress of Zoology held in Foz do Iguaçu. She and **Priscila Colombo da Luz**, (pictured below on the left) former research scholar in **Dr. Julie Peterson's** lab, presented two posters. One of the main speakers in this conference was Dr. Daniel Brooks, from UNL whose research focus is in the evolutionary biology of climate change and emerging diseases caused by mosquitos. Foz do Iguaçu is located in the extreme west of the State of Paraná, on the border with Paraguay and Argentina. The Iguazu Falls is there, which is the largest waterfalls system in the world. Yes, bigger than Niagara Falls.



## Student News

**Blessing Ademokoya** has been awarded a 2018-2019 Milton E. Mohr Fellowship from The Center of Biotechnology in the amount of \$1,000. Blessing is a Ph.D. student working under the supervision of **Drs. Tom Hunt** and **Bob Wright**.

**Kait Chapman** and **Débora Goulart Montezano** were awarded travel grants from the Entomology Department Graduate Student Scholarship Fund.

**Matthew Grenier**, double majoring in Environmental Restoration Science and Water Science, has received a UCARE award for Summer 2018, working with **Dr. Ana Vélez** on the project, "Milkweed Characteristic in Nebraska Agricultural Land: A Focus on Monarch Butterflies Health."

**Whitney McDaniel**, a undergraduate in the Insect Science program, has received a UCARE award for Summer 2018, working with **Dr. Judy Wu-Smart** on the project, "Exploring the effects of pesticide residues in brood comb on the behaviors and development of the honey bee, *Apis mellifera*."

The Bruner Club was a finalist for the CASNR Outstanding Graduate Student Organization Award. **Kait Chapman**, Bruner Club President, received a certificate from CASNR Interim Dean, **Dr. Tiffany Heng-Moss** at the CASNR Awards Luncheon.

Bruner Club Officers for 2018-2019 are: President - **Matt Welter**, Vice President - **Lindsay Overmyer**, Secretary - **Mariana Sanchez**, Treasurer - **Jen Williams**, GSA Representative - **Kayla Mollet**, Seminar Committee - **Gabi Inveninato Carmona**, NCB Student Affairs Committee - **Sajjan Grover**. Faculty representatives for the club are **Drs. Troy Anderson** and **Justin McMechan**.

## Welcome

**Jeffrey Cluever** is a new Ph.D. student who will be working under the supervision of **Dr. Jeff Bradshaw**. Jeff received his B.S. degree in horticultural science in 2012, and his M.S. degree in entomology and nematology in 2015, both from the University of Florida. Jeff will be working on a component of "NC-246: Ecology & Management of Western Bean Cutworm in Nebraska". This project is funded, in part through the Hatch Act which is administered through the USDA-NIFA. Specifically, Jeff will be studying the augmentative biological control of the western bean cutworm using the egg parasitoid *Trichogramma ostriniae*.

**Dr. Gwang Hyun Roh** will be here through January of 2019, as a visiting scholar working with **Dr. Jerry Zhu**. Dr. Roh received his Ph.D. in entomology from Gyeongsang National University in South of Korea. His research here will be focused on the discovery and development of natural product based technologies for biting fly control.

**Julia Nogueira Duarte Campos** is a new M.S. student who will be working under the supervision of **Drs. Justin McMechan** and **Bob Wright**. Julia received her B.S. degree in agronomy from the Universidade Federal de Viçosa in 2017. Her research project will include cover crops and insects, timing of termination of cover crops and host range on wheat stem maggot (new cover crop to corn pest). Julia is from Para de Minas, Minas Gerais, Brazil.

Online M.S. students: Spring 2018 - **Matthew Halldorson**, Benton City, WA; Summer 2018 - **Thomas Nissen**, Carr, CO; **Caryl Showalter**, Ketchum, ID; **Carter Synhorst**, Grand Junction, CO



Cluever



Roh



Campos

## Blast from the Past

**Jeff Carstens** was featured in an article in the *Nebraska Farmer Magazine* recently. Jeff works at the North Central Regional Plant Introduction Station in Ames, IA. In his job as curator for the collection of woody landscape plants, Jeff is particularly interested in collecting ash seeds for the Ash Conservation Project. He said the damage from the Emerald Ash Borer (EAB) will be devastating to many windbreak trees on farms, streets, and parks in rural communities, including Randolph, NE, where he grew up. Jeff thinks once science catches up to the EAB, ash trees will be planted again, and his team is collecting seeds from native, high-quality and known-sourced specimens. They are collecting seeds from trees of all ages, seeds from wet and dry soils, seeds from trees that have early fall color and some with late fall color, seeds from trees that have no diseases and some that do, so that they are getting maximum genetic diversity, hoping that diversity will be beneficial in this era and perhaps 100 years from now. Jeff received his M.S. degree from UNL in 2003 under the supervision of **Drs. Fred Baxendale** and Terrance Riordan.



## Publications

**Basnet, Sanjay and Shripat T. Kamble.** 2017. Knockdown of the chromatin remodeling gene *brahma* by RNA interference reduces reproductive fitness and lifespan in Common Bed Bug (Hemiptera: Cimicidae). J. Med. Entomol., XX(X), 1-6 tjx234, <https://doi.org/10.1093/jme/tjx234>

**Basnet, Sanjay and Shripat T. Kamble.** 2018. RNAi-mediated knockdown of *vATPase* subunits affects survival and reproduction of bed bugs (Hemiptera: Cimicidae). J. Med. Entomol. XX(X), 1-7 <https://doi.org/10.1093/jme/tjy001>

Hergert, Gary W., Darapuneni, Murali K., Aqeel, Abdullah M., Wilson, Robert G., Harveson, Robert M., **Bradshaw, Jeff D.**, Nielsen, Rex A. 2017. Agronomic potential of using precipitated calcium carbonate on early plant growth and soil quality in the intermountain west - greenhouse studies. Journal of Sugar Beet Research, 54(1&2), 35-49. DOI: 10.5274/jsbr.54.1.35

Kiedrowicz, Agnieszka, Brian G. Rector, Suzanne Lommen, Lechosław Kuczyński, **Wiktoria Szydło**, and Anna Skoracka. 2017. Population growth rate of dry bulb mite, *Aceria tulipae* (Acariformes: Eriophyidae), on agriculturally important plants and implications for its taxonomic status. Exp. Appl. Acarol. 73: 1-10. DOI: 10.1007/s10493-017-0173-3

Le Tirant, S. and **B. C. Ratcliffe.** 2017 Georges Brossard, an advocate for insects. Scarabs 85: 10-17.

**Lynch, Louise I.**, Jenny M. Dauer, Wayne A. Babchuk, **Tiffany Heng-Moss**, and **Doug Golick.** 2018. In Their Own Words: The Significance of Participant Perceptions in Assessing Entomology Citizen Science Learning Outcomes Using a Mixed Methods Approach. Insects 9(1), 16, doi: 10.3390/insects9010016

**McMechan, A. J. and G. L. Hein.** 2017. Population dynamics of the wheat curl mite (Acari: Eriophyidae) during the heading stages of winter wheat. J. Econ. Entomol. 110(2): 355-361. <https://doi.org/10.1093/jeet/tox028>

**O'Neal, S. T.**, Swale, D., **Anderson, T.** 2017. ATP-sensitive inwardly rectifying potassium channel regulation of viral infections in honey bees. Scientific Reports (7), 8668-8677.

**O'Neal, Scott**, Daniel R. Swale, Jeffrey R. Bloomquist, **Troy D. Anderson.** 2017. ATP-sensitive inwardly rectifying potassium channel modulators alter cardiac function in honey bees. Journal of Insect Physiology (99), 95-100. Doi 10.1016/j.jinsphys.2017.04.005

**O'Neal, Scott T., Troy D. Anderson, and Judy Wu-Smart, 2018.** Interactions between pesticides and pathogen susceptibility in honey bees. Current Opinion in Insect Science 26: 57-62. <https://doi.org/10.1016/j.cois.2018.01.006>

**Rault L. C., B. D. Siegfried**, A.J. Gassmann, **H. Wang, G. J. Brewer, N. J. Miller.** 2018. Investigation of Cry3Bb1 resistance and intoxication in western corn rootworm by RNA sequencing. Journal of Applied Entomology. 2018; 00:1–16. <https://doi.org/10.1111/jen.12502>

Tatineni, S., **McMechan, A. J., Hein, G. L.** 2018. *Wheat streak mosaic virus* coat protein is a determinant for vector transmission by the wheat curl mite. Virology, 514, 42-49. <https://doi.org/10.1016/j.virol.2017.10.018>

**Wangila, D.S. and L.J. Meinke.** 2017. Effects of adult emergence timing on susceptibility and fitness of Cry3Bb1-resistant western corn rootworms. J. Appl. Entomol. 141: 372-383. Doi: 10.1111/jen.12346

## Publications con't.

**Wosula, E. N., McMechan, A. J., Knoell, E.,** Tatineni, S., Wegulo, S., **Hein, G. L.** 2018. Impact of timing and method of virus inoculation on the severity of wheat streak mosaic disease. *Plant Disease*. <https://doi.org/10.1094/PDIS-08-17-1227-RE>

**Wosula, E. N.,** Tatineni, S., Wegulo, S. N., **Hein, G. L.** 2017. Effect of temperature on wheat streak mosaic disease development in winter wheat. *Plant Disease*, 101(2), 324-330. <http://dx.doi.org/10.1094/PDIS-07-16-1053-RE>

## Faculty News

**Dr. Elane Fishilevich** is an adjunct associate professor in the Entomology Department, effective April 1, 2018. Dr. Fishilevich is a Principal Scientist, Research and Biology with Aynlam in Cambridge, MA.

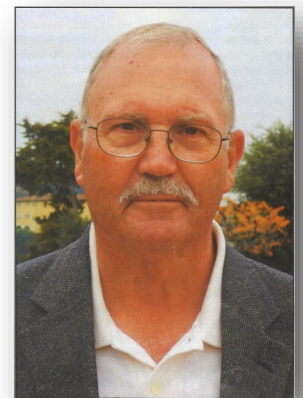
**Dr. Doug Golick** has been promoted to Associate Professor and granted tenure in 2018. The University of Nebraska–Lincoln awarded promotion and/or tenure to 89 faculty, who were honored April 24 during a celebration at the Rococo Theatre.

**Dr. Shripat Kamble** received an Award of Distinction at the Nebraska Urban Pest Management (UPM) Conference held in February, for many years of meritorious service to the UPM Conference and Pest Control Industry. Shripat is pictured holding the plaque with Clyde Ogg on his right, **Dr. Bob Davis** on his immediate left, and **Dr. Tim Husen**.



## Condolences

**Dr. Z B Mayo Jr**, 74, of Lincoln passed away March 25, 2018. Z B was born in Lubbock, TX to Z B Mayo Sr. and Sibyl (Morris) Mayo and graduated from Spur High School. He received his B.S. from Texas Tech and his M.S. and Ph.D. from Oklahoma State University. He married Lois Zentarski in 1971. Z B retired from the University of Nebraska-Lincoln in 2010 and had a distinguished career as a researcher, teacher, student mentor, and administrator. He served as the Entomology Department Head, ARD Interim Dean & Director, and Interim Assistant Vice-Chancellor. Some of his professional activities included Entomological Society of America president, vice president, and member of the governing board, the American Registry of Professional Entomologist's first president, American Society of Agronomy & Crop Science Board of Directors, Council for Agricultural Science & Technology, National Association of Colleges & Teachers of Agriculture, University of Nebraska Academic Senate, Sigma XI president, and Gamma Sigma Delta Historian. Our sincerest sympathy to Lois and family.



Terrance "Terry" Dukes, 75, of Lincoln, passed away April 12, 2018. He was born September 19, 1942. Terry grew up and graduated from Culbertson High School in 1960 and went on to study at the University of Nebraska-Lincoln. Terry was retired from the University of Nebraska where he worked as a shop technician in the Department of Entomology for over 30 years. Terry had a love of woodworking and created many fine articles over time. Terry and Helen spent many days traveling the Midwest and wintering in Tucson, AZ, after retiring. Our sincerest sympathy to Terry's family.