10-2015

Hexapod Herald - Vol. 27, No. 4, October 2015

IANR

Hexapod Herald

University of Nebraska Lincoln

October 2015

Department of Entomology
College of Agricultural Sciences and Natural Resources

Vol. 27, No. 4

Welcome

Dr. Judy Wu-Smart joined the Entomology Department on October 1 as an assistant professor. Her research/extension emphasis will be pollinator health. Judy received her M.S degree in entomology from Washington State University and her Ph.D. degree in entomology from the University of Minnesota. Judy will focus on developing a pollinator health program to help understand the underlying stressors in bee health and their interactions with environmental toxicants contributing to global pollinator decline. Judy is joined by husband, Matthew Smart, and their daughter Nora.

Dr. Matthew Smart is a Wildlife Biologist with the USGS Northern Prairie Wildlife Research Center in Jamestown, ND who is now based in the Entomology Department. Matthew received his M.S. degree in entomology from Washington State University and his Ph.D. in entomology from the University of Minnesota. Matthew's general research is quantifying the influence of land use in the Northern Great Plains on the health, productivity, and survival of commercial honey bees. At UNL, he hopes to further elucidate mechanisms by which large-scale land use exerts influence on colonies, and individual bees within colonies, that ultimately impacts the health and survival of overwintering honey bee colonies.

Elliot Knoell is a new masters student who will be working under the supervision of **Dr. Gary Hein.** Elliot, a graduate of our insect biology program, received his B.S. degree this past May. Elliot was also the president of the Insect Science Club. In Dr. Hein's program, Elliot will be working to characterize interactions between wheat curl mite ecology and epidemiology of its vectored viruses.

Off-Campus M.S. Students: Spring 2015: **Kendall Behnke**, Milwaukee, WI; Fall 2015: **Anastacia Books,** Ames, IA; **Melissa Greene**, Belmond, IA; **Sylvia Kenmuir,** Cypress, CA, **Jason Thompson**, Sommerville, MA.

New insect science majors for this fall include: **Gage Boyce**, Bellevue, NE; **Ben Bradley**, Columbia, MD; **Ellis Johnson**, Logan, IA; **Michael Krueger**, Trumbull, NE; **Kendra Nelson**, Lincoln, NE; **Samantha Northon**, Farwell, MI; and **Tristan VanLaningham**, Omaha, NE.


Wu-Smart


Smart


Knoell


Boyce


Northon


VanLaningham

Congratulations

Karen Ferreira da Silva received her M.S. degree this past August. Her thesis title was "Assessment of variation in susceptibility of the Fall Armyworm (*Spodoptera frugiperda*) (J.E. Smith) (Lepidoptera: Noctuidae)." Karen's advisor was **Dr. Blair Siegfried**. Karen is now a Ph.D. student in the Plant Pathology Department at UNL this fall.

Jenny (Freed) Enchayan, who worked under the supervision of **Drs. Tiffany Heng-Moss** and **Tom Hunt,** received her M.S. degree in August. Jenny's thesis title was "Investigation of Reduced Agent and Area Treatments for *Aphis glycines* Management and its Effects on Key Predators." Jenny is working on home renovations with her new husband, Ryan and will also concentrate on her African violet business, Violets and More, LLC.

Congratulations con't.

Travis Prochaska was awarded his Ph.D. degree in August and had worked under the supervision of **Drs. Tiffany Heng-Moss** and **Gautam Sarath.** His dissertation title was "Biochemical, physiological, and anatomical insights into aphid-bioenergy grass interactions." Travis is interested in a position in industry or extension. Pictured left to right are da Silva, Prochaska, and Enchayan.

The following online masters degree students graduated August 15, 2015:

Jessica Cancelliere earned her masters degree while working for the New York State Department of Environmental Conservation as an assistant entomologist in the Forest Health Program. With a masters degree, Jessica was promoted to a research scientist and manages the Forest Health Diagnostic lab, where she identifies agents of declined or mortality in our forests, such as invasive or native pest insects, and fungal and bacterial pathogens. She is currently focused on the southern pine beetle, which was newly discovered in New York last year. Jessica's masters degree project was entitled, "Effects of minimum winter temperatures on southern pine beetle (*Dendroctonus frontalis*) mortality on Long Island, N.Y."

When **Trace Hardin** started his masters degree program, he was the lead entomologist at the Henry Doorly Zoo in Omaha, NE. At the end of his first year in the program, he accepted a job for the USDA in the Sterile Insect Rearing Facility in Sarasota, FL, where he released 100 lbs. of sterilized male Mediterranean fruit flies every day out of airplanes in high risk areas. After his third semester, he took a promotion and still works in the Fruit Fly Monitoring program in Jacksonville, FL, where he is responsible for setting pheromone traps throughout the state. With degree in hand, Trace looks forward to applying for entomology identifier jobs or other federal positions dealing with invertebrates. Trace's masters degree project was entitled, "An AZA anthology of the natural history and captive husbandry of the Mexican red knee tarantula (*Brachypelma smithi).*"

Barbara Herther was an August graduate and is our "Meet an Online Student" - see page 5.

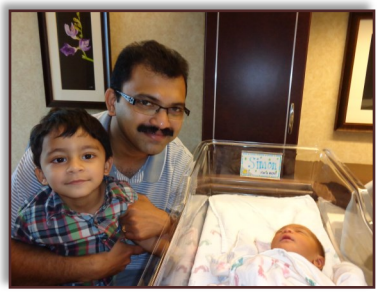
TJ McKenna has begun his Ph.D. studies at the University of Connecticut in science education, specifically curriculum and instruction. He continues to work with a national team working on the implementation of the Next Generation Science Standards (NGSS) which focuses on "figuring out" rather than "learning about" science, using the same practices real scientists use. TJ is also a scientist in residence at the Charles H. Barrows STEM Academy in Windham, CT, (http://www.norwichbulletin.com/article/20150520/NEWS/150529938) while maintaining his role at the Connecticut Science Center as a staff scientist where he does a little of everything - professional development, live exhibit curating, exhibit design, and a weekly television show called Science Sunday. TJ's masters degree project was entitled, "Exhibit Concept Plan for a Life Sciences Learning Center."

Dr. Joe Louis and wife, Rosemary, are happy to announce the birth of their baby boy, Simon J. Louis. Simon was born on September 6, 2015, at 10:20 a.m., weighing 6 lbs., 15 oz. Tom is a very excited big brother!

Cancelliere

Hardin

McKenna



Big brother Tom, Dad Joe, and Simon

Publications

Louis J., S. Basu, S. Varsani, L. Castano-Duque, V. Jiang, W.P. Williams, G.W. Felton, and D.S. Luthe. (2015). Ethylene contributes to *maize insect resistance1*-mediated maize defense against the phloem-sap sucking corn leaf aphid. Plant Physiology, 169(1): 313-324.

Nanoth Vellichirammal, N., **H. Wang**, S. Eyun, E. Moriyama, B.S. Coates, **N.J. Miller**, and **B.D. Siegfried**. Transcriptional analysis of susceptible and resistant European corn borer strains and its response to Cry1F protoxin. BMC Genomics 16:558 doi:10.1186/s12864-015-1751-6.

Publications con't.

Narain, Ralph B., Haichuan Wang and **Shripat T. Kamble. 2015.** Differential Gene Expression Profiling in Bed Bug (*Cimex lectularius* L.) Fed on Ibuprofen and Caffeine in Reconstituted Human Blood. Journal of Entomology, Ornithology and Herpetology. 4:160. DOI:10.4172/2161-0983.1000160.

Paulsen, M.J. 2015. A new species of *Platyceroides* Benesh (Coleoptera: Lucanidae) from Oregon. Insecta Mundi 0430: 1-5.

Prochaska, T.J., T. Donze-Reiner, **L. Marchi-Werle**, N.A. Palmer, **T.E. Hunt**, **G. Sarath** and **T. Heng-Moss**. 2015. Transcriptional responses of tolerant and susceptible soybeans to soybean aphid (*Aphis glycines* Matsumura) herbivory. Arthropod-Plant Interactions 9(4): 347-359.

Ratcliffe, B.C. and R.D. Cave. 2015. The dynastine scarab beetles of the West Indies (Coleoptera: Scarabaeidae). Bulletin of the University of Nebraska State Museum 28: 1–346.

Zubair, A. and **B.C. Ratcliffe**. 2015. New records of scarabaeoids (Coleoptera: Scarabaeidae and Lucanidae) from northern Pakistan. Entomological News 125(1): 43–46.

Faculty Changes, Part II

Unfortunately, we will soon say goodbye and wish the best to two departing faculty members. **Drs. Ashley Hall** and **Nick Miller** are leaving to join the University of Illinois at Chicago in November. Both will retain an association with the department as they continue to advise graduate students and post-docs and interact on research. Ashley joined us as an assistant professor of forensic science in 2010 with key roles in teaching and advising forensic science students. Since Ashley joined us the forensic science major grew from about 80 to 140 students and submitted an application for national accreditation. Ashley's research project was on the repair and recovery of low-copy DNA. Nick joined the department in 2010 as an assistant professor and had a key role in our Stress Biology effort. His work in molecular plant-insect interactions has had a number of successes including key grants. Nick assumed a leadership role as part of our resistance management group and led a team of 8 entomologists and plant pathologists in developing and securing the team Hatch project "Stress Responses, Adaptations and Management of Pests and Pathogens in Agroecosystems."

We are excited to announce that **Dr. Susan Weller** joined the Entomology Department on October 1. Susan moved from her position as curator of the J.F. Bell Museum of Natural History at the University of Minnesota to join us as Director of the University of Nebraska State Museum of Natural History and as Professor of Entomology.

In addition, we will soon begin reviewing candidates for the Insect Toxicologist position and by the next edition of the Hexapod Herald hope to be able to announce a new faculty hire.

Faculty News

Dr. Joe Louis received the 2015 Eric E. Conn Young Investigator Award for his significant contributions to the field of plant insect interactions, as well as for his demonstrated excellence in outreach, public service, mentoring and teaching. Dr. Louis received the award at Plant Biology 2015, the annual meeting of the American Society of Plant Biologists (ASPB) held in Minneapolis, MN, July 26—30, 2015. ASPB President, Dr. Julilan Schroeder presented the award to Joe.

Dr. Shripat Kamble presented an invited paper on "Termites as Decomposers Enriching Soil and the Environment" at the International Symposium and National Science Meeting of The Royal Entomological Society, September 2-4, 2015 in Dublin, Ireland. Shripat also participated in the North Central Regional IR-4 Meeting, August 24-25, 2015 in East Lansing, MI.

Dr. Blair Siegfried has been approved for Adjunct Professor, effective September 1, 2015.

Dr. Ana Marie Vélez has been promoted to a research assistant professor. Ana's previous position was a post doctoral research assistant working with **Dr. Blair Siegfried.** She is teaching ENTO 300, Toxins in the Environment, this semester. Ana also made an online presentation for the Plant Management Network entitled, "Developing RNAi Interference as Pest Management Tool for Western Corn Rootworm - https://www.plantmanagementnetwork.org/edcenter/seminars/corn/RNAInterference/

Dr. M. J. Paulsen collected in Taiwan for three weeks in late August and early September.

Grants

Shripat Kamble

FMC Corporation $10,000
"Industry Ant Research"

Robert Wright

DuPont Crop Protection $9,000
"*Crop Insect Management Research*"

Dow AgroSciences. $4,000
"*Crop Insect Management Research*"

Citizen Science Buzz

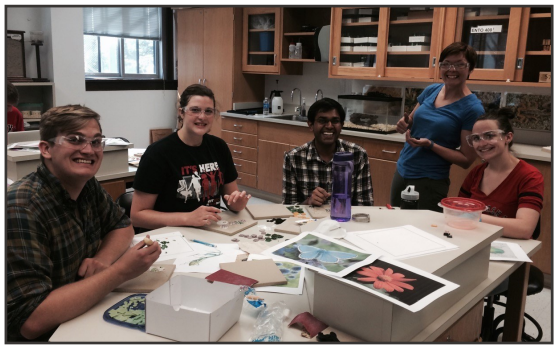
This past summer, **Louise Lynch** initiated a "Get Nebraska Data on the Map" campaign. Three Nebraska Chapters for the following national citizen science programs were started: Lost Ladybug Project, Backyard Bark Beetles, and The Pieris Project. **Dr. Doug Golick** and Louise also started a local chapter for Firefly Watch at the Sheridan Lutheran Church.

Natalia Bjorklund and **Louise Lynch** were invited guests on ARTHRO-POD, an insect podcast run by Nebraska Extension's Jonathan Larson. The podcast, which covers bees and citizen science, can be accessed at go.unl.edu/0e56.

Dr. Tom Weissling, **Natalia Bjorklund** and **Louise Lynch** broke ground and planted a milkweed garden at Lake Wanahoo State Park. This plot will serve as one of their "Living Milkweed Library" plots for their citizen science program, Milkweed Watch.

The Department of Entomology was represented at the Nebraska State Fair in Grand Island, NE by **Dr. Gary Brewer**, **Dr. Doug Golick**, **Erin Ingram**, **Chris McCullough** and **Louise Lynch**.

Under the guidance of **Dr. Doug Golick**, several Department of Entomology students and staff came together to make insect and plant-themed mosaic tiles. The tiles will be featured at the Department's Pollinator Plot.



Mosaic tile makers

Finished insect and plant/themed mosaic tiles

Student News

Kaitlin Chapman, **Lia Marchi Werle**, and **Katie O'Brien** have each been awarded a 2015-2016 Milton E. Mohr Fellowship in the amount of $3,000. Kait, Lia, and Katie will be officially recognized as recipients of this fellowship at a luncheon at the Nebraska East Union on October 13, 2015.

Louise I. Lynch, Erin Ingram and **Natalia Bjorklund** presented papers for "Invertebrate Outreach" and "Citizen Science" symposia at the Invertebrates in Education and Conservation Conference in Rio Rico, AZ. They organized and facilitated a round table discussion, "Working Towards a Definition of Invertebrate Literacy". Louise also organized the photography contest for the conference.

Student news, con't.

Suresh Varsani received the USDA-AFRI Student Travel Grant to attend the Entomological Society of America's Annual Meeting which will be held at Minneapolis, MN, November 15-18, 2015. Suresh also received a Hardin Distinguished Graduate Fellowship Award from the Agricultural Research Division, (ARD) at UNL. This fellowship is to support research in plant physiology with particular emphasis on genetic mechanisms influencing plant responses to stress conditions. Suresh will be officially recognized as a recipient of this fellowship at a luncheon at the Nebraska East Union on October 13, 2015.

Sanjay Basnet has been awarded the Ward A. and Helen W. Combs Scholarship for 2015. This scholarship was established by the Presto-X-Company and is awarded to an urban entomology student. Sanjay will also be presented with a Student Certification Award at the Entomological Society of America's (ESA) Annual Meeting in Minneapolis, MN this November. Sponsored by PestWest Environmental Science, this award recognizes and encourages outstanding entomology graduate students with an interest in the mission of the ESA Certification program and to promote the understanding and importance of the program.

Louise Lynch was invited to present teaching science in the classroom using citizen science, for preservice science education students at the University of Nebraska-Omaha and Creighton University. Louise also received a graduate certificate in Mixed Methods Research through the University of Nebraska-Lincoln's Department of Educational Psychology.

Meet an Off Campus Student

Barbara Herther

I am a high school Biology teacher in southeastern Wisconsin. In August, after nine years of work, I received my Masters degree in Entomology through the online distance education program at UNL. My masters degree project was entitled "Correlations between Engineering Principles and Entomology." I discovered information about UNL's Entomology program quite by accident and still today, feel like it found me more than I found it. I pondered entering the program for more than a year before taking my first class. Although I have always been intrigued by insects, I did have all of the recommended prerequisites to join the program and was not sure if the classes were organized in a manner that would allow me to do most of the work on weekends and during summer vacations. There were a few classes that I could not take due to timing issues, but overall, it was indeed a very flexible and workable program.

The work was certainly challenging, which to me, meant it was worth my time and effort. I did struggle through my first few classes and often could not give them the true attention that I wanted to give them. But the amount of material that I learned was immense, even when there was more left to do. Not only did I learn so much about specific insects, but my knowledge of ecological principles, agricultural practices, government protection agencies, medical concerns regarding invertebrates, and general anatomy and physiology has greatly increased. Plus, I believe that my students are benefiting by my own exposure to more scientific knowledge and high-level questioning skills.

The long-distance program fills a long-needed void. Advanced courses in specialty areas simply are not readily available for working adults, even those wanting to advance their education. I was amazed by the fact that, even though I was not able to meet them in person, I was able to take classes with exterminators, people in the armed services, and people from across the world with so many interesting stories to tell about their experiences that related to the course content.

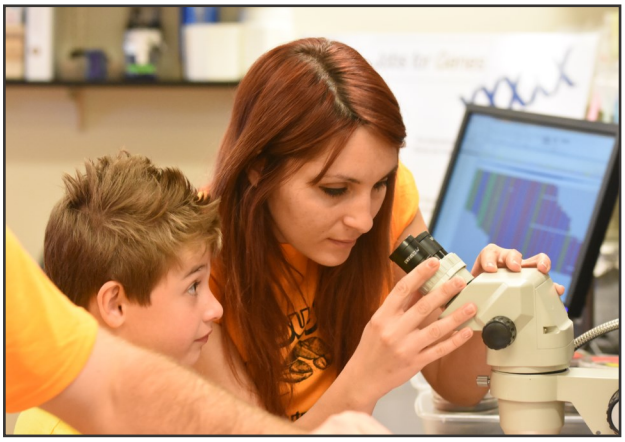
I am extremely grateful for the knowledge and kindness shared with me by my professors, my advisors, the technology experts and office personnel at UNL. Rarely was there an interaction with someone who was not extremely knowledgeable or not willing to help.

I am starting my twenty-fifth year of teaching and plan on keeping my position as a high school Biology teacher well into the future. But now I am armed with insect stories for all occasions, which when properly told, can captivate any audience.

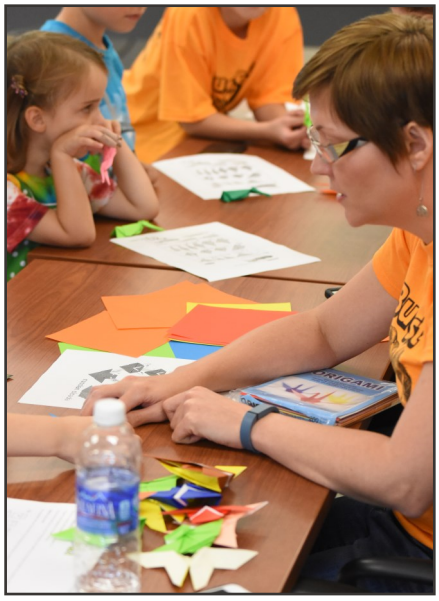
BUGFEST Success

BugFest! The Department of Entomology's annual open house was held on Sunday, September 20th. Over 325 people attended on a beautiful fall afternoon. New activities this year included Bronco Bugs, (see below) Insect Origami, Compost Critters, Citizen Scientists of Nebraska, and Insect Plinko, in addition to the lab tours, Insects of Nebraska, and everyone's favorite, the Insect Zoo.

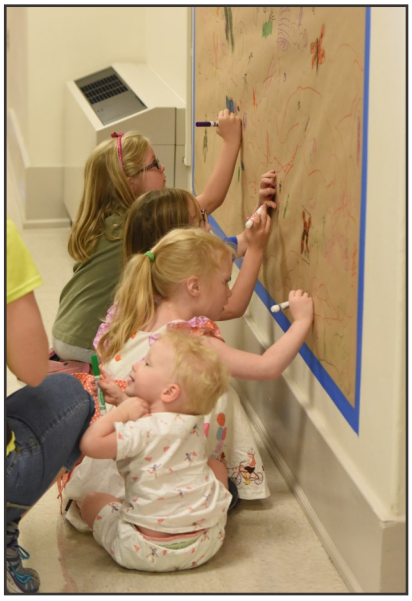
Bronco Bug riders



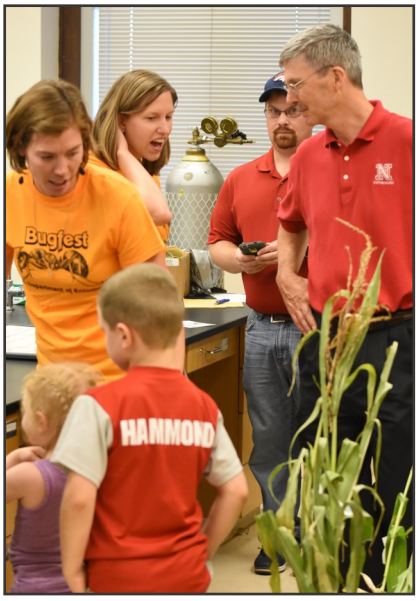
Resistance management



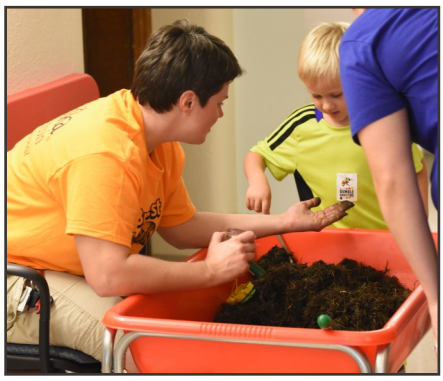
Insect Origami



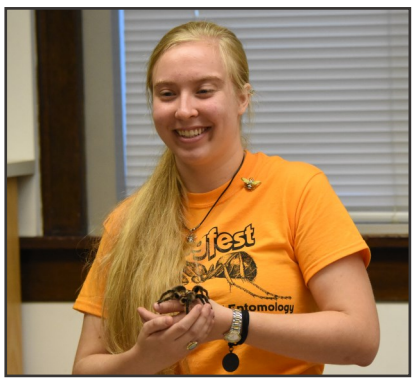
Draw your favorite bug



Down on the Farm



Compost Critters



Insect Zoo

Insects of Nebraska