



Personnel News

Shannon Ashmore, a participant in the Program for Women in Science and Engineering, conducted research in the Bonning lab during the summer. Shannon worked with Nina Richtman on the interaction between Bt toxins and baculoviruses in black cutworm larvae.

Nick Behrens joined the Coats lab as a Masters student in August. He is from Sioux City, Iowa. Nick recently graduated from our entomology undergraduate program.

Mariana Chiozza is majoring in Genetics, with Matt O'Neal and Gustavo MacIntosh as major advisors.

Aaron Gross is majoring in Toxicology in the Coats lab. He is from Minnesota and completed his BS degree in Biochemistry at St. Cloud State University in Minnesota.

Erica Hellmich joined the Bartholomay lab as a Masters student in August.

Ashley Jessick has transferred into the Coats lab in May, as an MS student majoring in Toxicology. Ashley is from Omaha, Nebraska and received her undergraduate degree from Wartburg College in Iowa, majoring in Chemistry and Biochemistry.

Ian Murphy joined the Coats lab in August, seeking an MS degree in Toxicology. Ian comes to us from Virginia Commonwealth University, where he received his BS degree in Forensic Sciences.

Graduations

Jeffrey Bradshaw graduated with a PhD in August with co-majors in both entomology and plant pathology. The title of his dissertation was, "Bean pod mottle virus biology and management in Iowa." He is currently employed as an Extension postdoc in the department. Marlin Rice was his major advisor.

Awards and Honors

Greg Courtney was promoted to Full Professor. Greg was also appointed a courtesy faculty member in the Department of Ecology, Evolution, and Organismal Biology, Iowa State University. The appointment is continuous.

Keri Henderson, won first place in the PhD Student Platform Competition, at the Ozark-Prairie Regional Meeting of the Society of Environmental Toxicology and Chemistry. Keri also received second place in the Student Poster Competition of the Agrochemicals Division of the American Chemical Society National Meeting in Boston, MA in August.

Junwei Zhu (MSTRS Technologies, Inc.) received an award in June from the Iowa Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program for Most Innovative SBIR Award.

David Dorhout graduated with an MS in Entomology in May. The title of his thesis was "Ecology and behavioral studies of the western bean cutworm (Lepidoptera: Noctuidae) in Iowa." He is currently employed as a research entomologist with Pioneer Hi-Bred International in Johnston, IA. Marlin Rice was his major advisor.

Lindsey Gereszek graduated in May with an MS in Toxicology and Biochemistry. She has been hired as a chemist at the Iowa Department of Agriculture and Land Stewardship Pesticide Laboratory in Ankeny, IA. Joel Coats was her advisor.

Dingfei Hu graduated from the Joel Coats lab in August with his PhD in Toxicology. He has accepted a postdoc position at the University of Iowa in the Environmental Engineering Department.



Hirofumi Kosaki graduated in August with his MS degree in Toxicology. He will be returning to Japan to look for employment in environmental sciences. **Joel Coats** was Hiro's major advisor.

Zhiyan Liu graduated with a doctorate in Genetics in May. Her dissertation was titled, "Subcellular location and function of a putative juvenile hormone esterase binding proteins in *Drosophila melanogaster*." Zhiyan has joined a lab at Harvard Medical School to conduct research on development of the eye, using *Drosophila* as a model organism. **Bryony Bonning** was her major advisor.

Kelsey Prihoda graduated in May with an MS in Toxicology. She has been hired to be an ecotoxicologist at Pioneer Hi-Bred's research center in Johnston, IA. **Joel Coats** was her advisor.

The following entomology undergraduates graduated in May: **Nicholas Behrens**, **Joseph Carson**, **Brendan Dunphy**, and **Melinda Thede**.

Publishing Activity

Newly Published

Bradshaw, J.D., **M.E. Rice**, and **J.H. Hill**. 2007. No-choice preference of *Cerotoma trifurcata* (Coleoptera: Chrysomelidae) to potential perennial host plants of Bean pod mottle virus (Comoviridae) in Iowa. *Journal of Economic Entomology* 100: 808-814.

Courtney, G.W. and **R.W. Merritt**. 2007. Aquatic Diptera: Part one: Larvae of aquatic Diptera. pp. 687-722. in **R.W. Merritt**, **K.W. Cummins**, & **M.B. Berg** (editors). *An Introduction to the Aquatic Insects of North America. Fourth Edition*. Kendall / Hunt Publishing Co. Dubuque, IA.

Courtney, G.W., **R.W. Merritt**, **K.W. Cummins**, **M.B. Berg**, **D.W. Webb**, and **B.A. Foote**. 2007. Ecological and distributional data for larval aquatic Diptera. pp. 747-771 in **R.W. Merritt**, **K.W. Cummins**, & **M.B. Berg** (editors). *An Introduction to the Aquatic Insects of North America. Fourth Edition*. Kendall / Hunt Publishing Co. Dubuque, IA.

Henderson, K.L., **J.B. Belden**, and **J.R. Coats**. 2007. Fate of atrazine in grassed phytoremediation systems: mass balance and plant uptake. *Environ. Toxicol. Chem.* 26:1836-1842.

Henderson, K.L., **J.B. Belden**, and **J.R. Coats**. 2007. Mass balance of metolachlor in a grassed phytoremediation system. *Environ. Sci. Technol.* 41:4084-4089.

Liu, Z., **Pal, N.**, and **Bonning, B.C.** 2007. Potential ligands of DmP29, a putative juvenile hormone esterase binding protein of *Drosophila melanogaster*. *Insect Biochem Molec Biol* 37: 838-846

MacRae, T.C. and **M.E. Rice**. 2007. Biological and distributional observations on North American *Cerambycidae* (Coleoptera). *Coleopterists Bulletin* 61: 227-263.

Pal, N., **Boyapalle, S.**, **Beckett, R.**, **Miller, W.A.** and **Bonning, B.C.** 2007. A baculovirus-expressed dicistrovirus that is infectious to aphids. *J Virol.* 81 (17):9339-45

Philip, J., **Fitches, E.**, **Harrison, R.L.**, **Bonning, B.C.**, and **Gatehouse, J.A.** 2007. Characterisation of functional and insecticidal properties of a recombinant cathepsin L-like proteinase from flesh fly (*Sarcophaga peregrina*), which plays a role in differentiation of imaginal discs. *Insect Biochem. Molec. Biol.* 37(6): 589-600.

Platt, K.B., **Tucker, B.J.**, **Halbur, P.G.**, **Tiawsirisup, S.**, **Blitvich, B.J.**, **Fabiosa, F.G.**, **Bartholomay, L.C.**, **Rowley, W.A.** 2007. West Nile virus viremia in eastern chipmunks (*Tamias striatus*) sufficient for infecting different mosquitoes. *Emerg Infect Dis.* 13(6): 831-837.

Reardon, K.T., **R.L. Hellmich**, **D.V. Sumerford**, **L.C. Lewis**, **B.J. Reardon**; **D.D. Calvin**. 2007. Influence of Plant Severing on Movement of *Ostrinia nubilalis* Larvae in *Zea mays* Hybrid Seed Production Fields. *Journal of Economic Entomology*, 100:1129-1135.

Rice, M.E. and **C.M. Smith**. 2007. Randall A. Higgins (obituary). *American Entomologist* 53: 58.

Waterhouse, R.M., **Kriventseva, E.V.**, **Meister, S.**, **Xi, Z.Y.**, **Alvarez, K.S.**, **Bartholomay, L.C.**, **Barillas-Mury, C.**, **Bian, G.**, **Blandin, S.**, **Christensen, B.M.**, **Dong, Y.**, **Jiang, H.**, **Kanost, M.**, **Koutsos, A.C.**, **Levashina, E.A.**, **Li, J.**, **Ligoxygakis, P.**, **MacCallum, M.R.**, **Mayhew, G.F.**, **Mendes, A.**, **Michel, K.**, **Osta, M.A.**, **Paske-witz, S.**, **Shin, S.W.**, **Vlachou, D.**, **Wang, L.**, **Wei,**



W., Zheng, L., Zou, Z., Severson, D.W., Raikhel, A., Kafatos, F.C., Dimopoulos, G., Zdobnov, E.M., and Christophides, G.K. 2007. Evolutionary Dynamics of Immune-Related Genes and Pathways in Disease-Vector Mosquitoes. *Science*. 316: 1738-1743.

Jianing Wei, Lihong Wang, **Junwei Zhu**, Sufang Zhang, Owi Nandi, and Le Kang. Plants attract parasitic wasps to defend themselves against insect pests by releasing hexenol. PLoS ONE, Sept. 2007, Issue 9, e852

Publications in Press

Dahlin-Laborde, R.R., Scolaro, E.J., Romine, N.M., Ramer-Tait, A.E., Lei, S.M., and Beetham, J.K. Characterization of DNA sequences that confer complement resistance in *Leishmania chagasi*. *Ann. NY Acad. Sci.*

N.P. Schmidt, M.E. O'Neal, and P.M. Dixon. 2007. Aphidophagous predators in Iowa soybean: a community comparison across multiple years and sampling methods. *Ann. ESA.*

Henderson, K.L., T.B. Moorman, and J.R. Coats. Mobility of tylosin and enteric bacteria in soil columns. Chapter in *Fate of pharmaceuticals in the environment and water treatment systems*. D. Aga [Ed]. CRC Press.

Kim, K.S., S.T. Ratcliffe, B.W. French, L. Liu, and T.W. Sappington. 2007. Suitability of EST-derived microsatellites as population genetics markers in a beetle. *J. Hered.*

Kim, K.S., B.S. Coates, R.L. Hellmich, D.V. Sumnerford, and T.W. Sappington. 2007. Isolation and characterization of microsatellite loci from the European corn borer, *Ostrinia nubilalis* (Hübner) (Insecta: Lepidoptera: Crambidae). *Mol. Ecol. Notes*

Li, H., Buschman, L.L., Huang, F., Zhu, K.Y., Bonning, B.C., and Oppert, B. 2007. Resistance to *Bacillus thuringiensis* Cry1Ab in *Ostrinia nubilalis* (Hübner) (Lepidoptera: Crambidae) is ineffective against transgenic corn. *Journal of Economic Entomology*.

Platt, K.B., Tucker, B.J., Halbur, P.G., Blitvich, B.J., Fabiosa, F.G., Mullin, K., Parikh, G.R., Kitikoon, P. Bartholomay, L.C., and Rowley, W.A. Fox Squirrels (*Sciurus niger*) Develop West Nile Virus Viremia Sufficient for Infecting Select Mosquito Species. *Emerg. Infect. Diseases*

Sparks, W.O., Bartholomay, L.C., and Bonning, B.C. Insect Immunity to Viruses. In: *Insect Immunity*. ed. Nancy Beckage. Academic Press.

Tang, H., Li, H., Lei, S., Harrison, R.L., and Bonning, B.C. Tissue specificity of a baculovirus-expressed, basement membrane-degrading protease in larvae of *Heliothis virescens*. *Tissue and Cell*.

Zhu, J., Polavarapu, S., Park, K.-C., Garvey, C., Mahr, D.L., Nojima, S., Roelofs, W.L., and Baker, T.C. Evidence of pheromone polymorphism in *Sparganothis sulfureana* (Clemens) discovered in two U.S. states, Wisconsin and New Jersey. *J. Asia-Pacific Entomology*.

Zhu, J., Zeng, X., O'Neal, M., Schultz, G., Tucker, B., Coats, J., Bartholomay, L., and Xue, R.-D. Can Botanical-based Mosquito Repellents be used as larvicides as well? *Journal of American Mosquito Control Association*.

Extension, Educational, and Technical Publications

Oliver, J., Holscher, K., Hutcheson, H.J., and Bartholomay, L.C. Ticks and tick-borne diseases in Iowa. 6 pp. *Iowa State University Extension Publications* PM2036.

Rice, M.E., M. O'Neal, and P. Pedersen. Soybean aphids in Iowa--2007. *Iowa State University Extension*, Ames, IA. SP-247.

Rice, M.E. 2007. Western bean cutworm and the invasion of Illinois corn: It's like deja vu all over again. *Proceedings 2007 Illinois Crop Protection Tech. Conference*, University of Illinois Extension, pp. 78-83.

Rice, M.E. and C. Pilcher. 2007. Regional pest alert--western bean cutworm (*Striacosta albicosta* (Smith)). *USDA-CSREES Integrated Pest Management Centers*, North Central IPM Center, Champaign-Urbana, Illinois.

Out-of-state Travel

Joel Coats, Keri Henderson, Gretchen Paluch, and Fan Tong traveled to Boston, MA, August 19-21 to present research at the American Chemical Society Meetings.



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Greg Courtney traveled to Oregon twice (17 May - 13 June, 19 July - 8 August), to conduct field work and meet with colleagues from Oregon State University and H.J. Andrews Experimental Forest.

Jessica Davis traveled to Ann Arbor, MI, and Cambridge, MA, July 22 to August 1 to study type specimens.

Jessica Davis and **Matt Peterson** traveled to the Western U.S. from June 12-July 4 on a research collecting trip to collect specimens and locate distribution points for their research with crane flies.

Keri Henderson traveled to Oklahoma State University, Stillwater, OK, from May 8 - 11 to train collaborators on use of radiolabelled sulfamethazine and erythromycin in an invertebrate uptake and metabolism study, as part of the large multi-year USDA-NRI grant awarded to Coats *et al.* last year.

Keri Henderson, **Dingfei Hu**, and **Ashley Jessick** traveled to St. Louis, MO, May 20-22 to present research in the Ozark-Prairie regional meeting of the Society of Environmental Toxicology and Chemistry.

Beth Minner, **Linda Naeve**, **Carol Pilcher**, **Kristine Schaefer**, and **Mark Shour** (staff in the Extension Pest Management and the Environment group) attended the North American Pesticide Applicator Certification and Safety Education Workshop in Portland, ME, August 19-23.

Carol Pilcher traveled to Urbana, IL, from June 19-22 to work with NC IPM Center Vegetable Working Group on program evaluation. She also traveled to San Diego, CA, to present at the American Phytopathological Society meeting from July 29 to August 3.

Patti Prasifka traveled to San Diego, CA, August 21-24 for an Entomological Society of America planning meeting.

Marlin Rice traveled to Baltimore, MD, June 4-6 to participate in the Publications Council meeting of the Entomological Society of America. He also traveled to San Diego, CA, August 19-22 to attend the Governing Board meeting of the Entomological Society of America.

Tom Sappington drove through 8 central and southern states May 30-June 6 to collect European corn

borer adults at ~250-mile intervals for a population genetics study. Tom also participated in the inaugural meeting of LAMS (Lepidopteran Aerobiology Modeling System), a new working group of NCERA-148, which was held June 27-29 at State College, PA.

Kristine Schaefer traveled to Malvern, PA, from July 17-19 to attend a water quality workshop: Blue-Green Summit: Clean Water through Residential IPM.

Angela Tague traveled to Sioux Falls, SD, to visit the Sertoma Butterfly House and work with their educational coordinator from June 7-12.

Vera Williams traveled to Vandalia, MO, from May 15-18 for field work and training for her research and to Columbia, MO, from June 19-21 to attend a water quality coordinating meeting.

John VanDyk traveled to Finland, MN, July 20-22 to meet with significant contributors to the BugGuide.net community and discuss improvements to the website. The meeting was held in conjunction with Minnesota Odonatologists and included field trips to diverse northwoods habitats. VanDyk maintains <http://bugguide.net>, which includes more than 115,000 insect images and receives over 2 million hits per day.

Junwei Zhu gave an invited talk in June at USDA-ARS-CMAVE, in Gainesville, FL, on "Discovery and development of botanical-based insect repellents and larvicides for integrated mosquito management." In August, he also spoke at USDA-ARS-NPA, Lincoln, NE, and USDA-ARS-ALARC, Maricopa, AZ, on "Research and Development of novel technologies for modern integrated pest management."

International Travel

Bryony Bonning and **Huarong Li** traveled to the Society of Invertebrate Pathology meeting in Quebec, Canada, to present research August 12-17.

Rick Hellmich attended the European Food Safety Authority (EFSA) Scientific Colloquium: Environmental Risk Assessment of Genetically Modified Plants - Challenges and Approaches, held June 20 - 21 in Tabiano, Italy.



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Russell Jurenka traveled to Tel Aviv, Israel, July 14-21 to meet with Ada Rafaeli about a collaborative research project funded through BARD. He then traveled to Jena, Germany, to attend the International Society of Chemical Ecology annual meeting, held July 22-24.

Elliot Krafzur traveled to London, England, to meet with collaborators at the London School of Hygiene and Tropical Medicine to plan genetic and ecological research on trypanosomiasis.

Matt O'Neal traveled to Toronto, Canada, May 29-30 where he served as an external reviewer of a PhD dissertation at the University of Guelph.

Marlin Rice lead the International Field Trip in Biology Class (BIOL394 Natural History of the Serengeti) to Arusha in northern Tanzania during May 7-23. Seventeen students, including 2 alumni, participated in the field trip and **Brendan Dunphy** and **Matt Wilhelm** served as teaching assistants for the class. This was the third field trip that Marlin has lead to east Africa.

Eric Scolaro gave an oral presentation on Complement Lysis in *Leishmania chagasi*, at the biennial meeting of the Society of Tropical Veterinary Medicine held in Merida, Mexico, in June.

Other

Angela Tague and **Greg Courtney** held an informational meeting about the Insect Zoo on May 2, in part to discuss alternative ideas for future financial support of the zoo.

On August 11-12 and 18-19 **Angela Tague**, along with **Joel Coats**, **Derek Graven**, **Ken Holscher**, **Russell Jurenka**, **Kelly Kyle**, **Donald Lewis**, **Maegan Olemann**, **Matt O'Neal**, **Gretchen Paluch**, **Marlin Rice**, **Wendy Sparks**, **Tonya Ward**, and **Matt Wilhelm**, took the Insect Zoo to the Iowa State Fair.

Rick Hellmich organized and moderated a session "Honey Bee Colony Collapse Disorder" at the 9th International Pollination Symposium on Plant-Pollinator Relationships - Diversity in Action. The meeting was held June 24 – 28 in Ames, IA.