Entomological Foundation names 2010 award winners

EurekAlert

The Entomological Foundation (http://www.entfdn.org [1]), a non-profit organization whose mission is to build a future for entomology by educating young people about science through insects, has announced the winners of its 2010 student and professional awards, which are as follows:

PROFESSIONAL AWARDS

- Award for Excellence in Integrated Pest Management—Sponsored by Syngenta Crop Protection, this award is given for outstanding contributions to integrated pest management (IPM). Dr. Frank Zalom is a professor of entomology, an extension agronomist, and an entomologist in the Agricultural Experiment Station at the University of California, Davis. His current research focuses primarily on California specialty crops, including tree crops (almonds, olives, prunes, peaches), small fruits (grapes, strawberries, caneberries), and fruiting vegetables (tomatoes), as well as international IPM programs. The IPM strategies and tactics he has developed include monitoring procedures, thresholds, pest development and population models, biological controls and use of less toxic pesticides, which have become standard in practice and part of the University of California IPM Guidelines for these crops. His lab has responded to six important pest invasions in the last decade, with research projects on glassy-winged sharpshooter, olive fruit fly, a new biotype of greenhouse whitefly, invasive saltcedar, light brown apple moth, and the spotted wing Drosophila. The results of these studies are reflected in Dr. Zalom's 290 authored/co-authored, refereed journal articles or book chapters and 340 extension publications. He was director of the University of California's Statewide IPM Program for 16 years, and is co-chair of the APLU National IPM Committee.
- Henry and Sylvia Richardson Research Grant—This award provides research funds to postdoctoral ESA members who have at least one year of promising work experience, are undertaking research in selected areas, and have demonstrated a high level of scholarship. David Crowder is a postdoctoral associate in the Department of Entomology at Washington State University. Dave's research is on the community ecology of biocontrol systems, examining the relationship between natural enemy biodiversity and natural control of the Colorado potato beetle. The central focus of his research is to determine whether the conservation of beneficial predators is most influenced by in-field strategies, such as the planting of wildflower insectaries, or instead is primarily determined by the composition of surrounding habitats at the landscape level, and to determine how predator abundance affects pest control. The results will be used to educate regional

growers on conserving beneficial insects through local habitat modification, and/or strategies to engineer whole farms to maximize predator movement among crops. He has more than 20 papers published, some in PNAS, Journal of Animal Ecology and Nature Biotechnology.

- President's Prize for Outstanding Achievement in Primary Education—This award recognizes educators who have gone beyond the traditional teaching methods by using insects as educational tools. Maureen Murphy-Foelkl is a third-grade teacher at Chapman Hill Elementary in Salem, Oregon. Maureen's task in teaching entomology is to move the students toward making closer observations and gaining more sophisticated understanding of insects by connecting or differentiating them. She invites local scientists to share their expertise and knowledge with her students. In her lesson plan What's for Dinner? An Inquiry Lesson on Insect Food Sources, students are introduced to the walking stick, an unfamiliar insect. Students focus on the process of scientific investigation while increasing their understanding of how harmful non-native species become when they alter the natural native environment. Books on walking sticks are introduced, and students chart their inquiries, observations, and conclusions. Students prepare mini habitats for their walking sticks. Data is collected, results are graphed and journaled, and then conclusions are presented to the class.
- President's Prize for Outstanding Achievement in Secondary Education—This award recognizes educators who have gone beyond the traditional teaching methods by using insects as educational tools. Jennifer Chong Claudio is the science department chairperson and a biology and anatomy/physiology teacher at Saint Lawrence Academy High School in Santa Clara, California. Jennifer began using insects as educational tools four years ago when she realized her biology students underappreciated insects as animals. She uses insects over other models for biology because they are easily observed in their natural environments. By the end of her lesson, Invertebrate Investigation: An Entomological Lesson, students are able to identify and describe at least four characteristics of insects, explain how genetic variation affects organisms, and present oral statements about their observations. This lesson includes playing her adapted version of "I am a Tree" and having students send postcards to their friends explaining what they have learned.
- Recognition Award in Urban Entomology—Sponsored by S.C. Johnson & Son, Inc., this award recognizes and encourages outstanding extension, research, and teaching contributions in urban entomology. Dr. Richard Redak is a professor and chair with the Department of Entomology at the University of California, Riverside. His recent research has emphasized developing disinfestation treatments and quarantine procedures for commercial nursery crops grown in California. This research is directed at preventing the movement of the glassy-winged sharpshooter from areas of its current urban distribution to areas where it threatens both additional urban landscapes as well as a variety of California's agricultural commodities, especially those involving grapes, almonds, and olives. Dr. Redak and members of his lab developed a comprehensive research program to describe various aspects of the life history of this insect and have developed quarantine strategies for its management and containment. The research

set biological- and cost-effective protocols that allowed California's multi-billion-dollar, urban-based nursery industry to ship plant material to the markets throughout the country with minimal risk of introducing a dangerous insect-disease vector. As this insect is a serious vector of many Xylella bacterial diseases (e.g. Pirece's disease of grapes, leaf scorch diseases of oleander, olive, almond, alfalfa, as well as multiple scorch diseases of urban trees and shrubs), Redak's research results have not only prevented the movement of the insect vector, but have also likely prevented numerous episodes of serious crop failures and further urban tree declines due to these diseases.

- Integrated Pest Management Team Award—Sponsored by Dow AgroSciences, this award recognizes the successful pest-control efforts of a small, collaborative team consisting of entomologists from the private and public sectors. This year's winner, the Urban Pest Ant Management Alliance Team (Michael Rust, Donald Reierson, John Klotz, and Les Greenberg, UCR; Mark Robertson, CA DPR; John Kabashima, UCCE Orange County; Cheryl Wilen, UCCE Statewide IPM, Patrick Copps, Orkin Pest Control; Herb Field, Lloyd Pest Control; and Keith Willingham, Western Exterminator Company) implemented and demonstrated the least toxic IPM strategies to control ants in urban environments by pest management professionals. Three additional pest management companies participated as affiliate team members. They reduced the amount of pyrethroids used to control ants by at least 50% and developed strategies that prevent or significantly reduce the amount of insecticide in water runoff. Ants are one of the major pests around structures in urban environments. Commercial pest management companies throughout California report that 65-80% of their pest control services deal with ants. The use of pyrethroid insecticides has dramatically increased in the last ten years, causing unacceptable amounts of these insecticides to be detected in urban waterways. Reducing the frequency of applications, intentionally avoiding unnecessary application of pyrethroid insecticides, and using alternative low-impact treatments significantly reduced the insecticide runoff while still providing customers with outstanding service. Members of the Pest Management Alliance held two statewide conferences to demonstrate their findings and developed an ant website incorporating the latest information on ant identification and biology, and IPM techniques.

STUDENT AWARDS

- BioQuip Undergraduate Scholarship—Each year BioQuip Products sponsors a $2,000 undergraduate scholarship to assist students in the upcoming academic year to achieve their goal of obtaining a degree in entomology or pursuing a career as an entomologist. Samantha Taylor is an undergraduate student at the Pennsylvania State University. Samantha has been fascinated with insects since she was a little girl. She is currently conducting research related to her honors thesis to determine if a synergistic effect exists between Bt corn pollen and the neonicotinoid clothianidin, when fed to honey bees, by measuring their mortality, weight, and development of their hypopharyngeal glands. The goal of this experiment is to provide any

possible explanations as to why the widespread loss of honey bee colonies, known as Colony Collapse Disorder, is occurring. After earning her degree in biology and entomology, she plans to attend graduate school to earn a Ph.D. in entomology.

- Larry Larson Graduate Student Award for Leadership in Applied Entomology—Sponsored by Dow AgroSciences, this award recognizes Dr. Larry Larson's role as a leader and pioneer in insect management and carries that legacy to the next generation of leaders in applied entomology. Diane Silcox is a master's student in entomology at North Carolina State University, soon to be entering the Ph.D. program. Her MS research focused on characterizing the behavioral responses of mole crickets —pests of turfgrass—that enable them to escape or minimize exposure to insecticides applied in turf systems. She devised a procedure for radio-tracking individual mole crickets in the soil using micro-transmitters to understand mole cricket behavior to improve pesticide performance and reduce unnecessary use in the environment while saving turf managers time and money. As the president of the NCSU Entomology Graduate Student Association, Diane is responsible for coordinating and overseeing the outreach activities of the department. She would like to work in academia with a teaching/extension appointment to teach students and the general public about basic and applied science relating to biology, insects, turfgrass, and integrated pest management.
- Lillian & Alex Feir Graduate Student Travel Award in Insect Physiology, Biochemistry, or Molecular Biology—This award encourages graduate students working with insects or other arthropods in the broad areas of physiology, biochemistry, and molecular biology to affiliate with ESA's Integrative Physiological and Molecular Insect Systems Section and to attend the ESA Annual Meeting or an International Congress of Entomology. Genet Tulgetske is a Ph.D. candidate in the Entomology Department at the University of California, Riverside. Her research focused on investigating sex determination in a small parasitoid wasp by identifying and manipulating contributing factors such as temperature, age, genetic background, and endosymbiotic Wolbachia bacteria. The results may contribute to the development of more effective biological control programs by providing an understanding of the effects of mass rearing and culture practices on the sex ratios of parasitoid wasps. She will be presenting a ten-minute paper entitled Wolbachia penetrance and its relationship to bacterial density in parthenogenetic Trichogramma at the 2010 ESA Annual Meeting. Genet has earned many awards, scholarships, and grants to help fund her education and attendance at professional conferences.
- Kenneth and Barbara Starks Plant Resistance to Insect Graduate Student Research Award—The grant is awarded to a graduate student in entomology or plant breeding/genetics for innovative research that contributes significantly to knowledge of plant resistance to insects. Godshen Pallipparambil is a doctoral student of Dr. Fiona Goggin in the Department of Entomology at the University of Arkansas. His research is titled "Interactions of the Mi-mediated resistance in tomato with the potato aphid, Macrosiphum euphorbiae and zoophytophagous predators, Orius insidiosus and O. pumilio." His study utilized the electrical penetration graph technique to

examine the impact of resistance on aphid feeding behavior and to analyze how the feeding behavior of resistance-breaking aphids differs from that of aphids that are effectively controlled by resistant cultivars. He also investigated the direct effects of Mi-mediated resistance on minute pirate bugs. His research also includes a study to localize Mi-mediated resistance in plant tissue using techniques like laser capture microdissection and in situ RT PCR.

- Pioneer Hi-Bred International Graduate Student Fellowship—Sponsored by Pioneer Hi-Bred International, this fellowship recognizes and encourages innovative research and graduate education in the area of entomology with a focus on key insects or complexes of insects that affect corn, soybeans, canola, alfalfa, or other significant commodity crops. J. Megan Woltz is a Ph.D. student at Michigan State University in the Department of Entomology. Her graduate research focuses on how insect predator-prey relationships and ecosystem services in agro-ecosystems are influenced by local vegetation and landscape characteristics. Specifically, she is examining how habitat management and landscape context impact predation on the soybean aphid, Aphis glycines. Megan's study involves the planting of flowering buckwheat strips along the edges of fields, then examining the diversity of predators and their impact on aphid numbers in the neighboring field. She is also studying how the presence and arrangement of key habitats in the landscape influence the movement of lady beetles through soybean fields, and the subsequent effects on biocontrol. Her goal is to develop sustainable agricultural methods that allow conventional farmers to receive the maximum ecosystem services benefit from the surrounding landscape while also maximizing yield on land they have in crops.
- Shripat Kamble Urban Entomology Graduate Student Award for Innovative Research—This award is provided to a doctoral student who is currently conducting research which demonstrates innovative and realistic approaches to urban entomology. Ameya Gondhalekar is a Ph.D. candidate in entomology at the University of Florida. He earned his B.S. in agriculture science (2003), and his M.S. in entomology (2005) from renowned agricultural universities in India. Before joining the Ph.D. program at the University of Florida, Ameya was working as a research assistant at the National Chemical Laboratory in Pune, India. His Ph.D research, under the guidance of Dr. Michael Scharf, examines insecticide toxicology and molecular physiology in the German cockroach. This work is important for understanding the basic physiology, toxicology, insecticide resistance evolution, and resistance management in cockroaches from urban environments. Ameya's project is being conducted in collaboration with and supported by DuPont, Inc.
- Snodgrass Memorial Research Award—This award recognizes outstanding research by graduate students who have completed investigations in selected areas of entomology. Seth Bybee is a postdoctoral researcher at Brigham Young University where his research focuses on higher level phylogenetics in Pancrustacea and the evolution of odonate visual systems. His doctoral dissertation was entitled "Phylogenetics, evolution and systematic of Holodonata with special focus on wing structure evolution: morphological, molecular and fossil evidence." It is a detailed study of the

group Holodonata (the extant odonata plus extinct fossil lineages). Dr. Bybee's research focused on the evolution of morphology associated with flight in the insect order Odonata and on producing a reliable classification scheme based on the integration of molecular and morphological data within a single phylogenetic analysis. A major portion of the dissertation investigated the evolution of the odonate wing and assessed homology among the morphological characters for the entire lineage. Four out of six chapters of his dissertation have been published in peer-reviewed journals. Since graduating, his postdoctoral research has focused on the evolution of visual systems in Heliconius butterflies as well as the phenotypic variation found among wing pigments.

- Stanley Beck Fellowship—This award assists needy students at the graduate or undergraduate level of their education in entomology and related disciplines at a college or university in the United States, Mexico, or Canada. W. Vanessa Aponte-Cordero is a Ph.D. candidate at Pennsylvania State University, where she also received her M.S. degree in entomology. Her research focuses on using chemical elicitors of induced resistance against pests of tomato plants in a commercial style high-tunnel production system. She is studying the behavioral response of Frankliniella occidentalis, thrips, on tomato plants whose defenses are activated at the seed level. Her research has shown that tomato plant defenses can be induced at the seed level and repel thrips from attacking them under greenhouse conditions. As a pest management alternative, she is trying to understand the thrip's behavioral response to plants treated at the seed level with different dosages of methyl jasmonate and to compare them to commercial seed treatments. During her master's graduate studies, she was diagnosed with Relapsing Remitting Multiple Sclerosis, an inflammatory disease of the central nervous system.

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