THE ENTOMOLOGICAL FOUNDATION

Fall 2009 Newsletter, Volume 6, Issue 3

In This Issue

Pollinator Project

A project is being developed to educate children about the importance of pollinators, specifically the role of solitary bees.

Material will include an introduction to pollinators, types of pollinators, bee conservation, plants and pollination, and much more.

Stay tuned for more information from the Entomological Foundation.

Creating a Buzz about Science
Educators Encouraged to Sign-Up for Free Entomological Foundation Workshop

Exciting youth about science is a critical element of preparing the future workforce. Educators working with youth ages K-12 can take advantage of a free training session that will enable them to create a buzz about learning with their students. On Saturday, December 12, 2009, a full-day seminar to be held at the Indiana State Fairgrounds will provide a variety of workshops where those who work with youth in classrooms, enrichment organizations, and home schools can experience and take away learning activities that can help their students understand the life sciences through insects.

With Dow AgroSciences as a premier sponsor and additional support from Gylling Data Management, Inc., the day's programming is free. Local educators are encouraged to sign up before November 6 as space is limited to the first 60 participants. Educators can sign-up by sending an e-mail to April Gower april@entfdn.org

Speakers and topics for this "train the trainer" event are industry leaders and experts from around the United States including:

- Rebecca Baldwin, University of Florida/IFAS; Martha Lutz, Bluegrass Community and Technical College; Michelle Smith, Dow AgroSciences; and Tom Turpin, Purdue University: *Introduction to Teaching Science through Insects*
- Rebecca Baldwin: *ABCs of Insect Communication: Termite Trails*
- Brian Bret, Dow AgroSciences: *Using Everyday Objects to Demonstrate Insect Mouth Parts, Biological Diversity, and Natural Selection*
- M.O. Way, Texas AgriLife Research and Extension Center: *Using Agriculture and Entomology to Teach Science and Math to K-12 Students*
- Martha Lutz: *Earth Without Insects?*
- John Losey, Cornell University: *The Lost Ladybug Project*
- Ronda Hamm, Dow AgroSciences: *Escaping Predation*

The educational activities, which are aligned with Indiana Science Standards, can be used for all grades and will teach educators how to integrate the study of insects into other disciplines including art, math, and reading. More details on the seminar can be found at http://www.entfdn.org

RECIPIENT HIGHLIGHTS

Why I Love Bugs
By Savannah Scollar

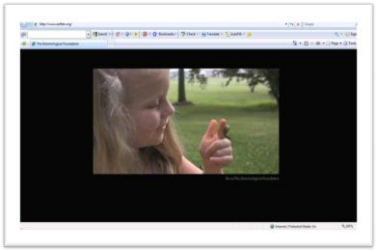
My name is Savannah Scollar. I am seven years old and am in the second grade. I have loved bugs all of my life. I really started to like bugs when a caterpillar I raised became a moth and I let it go and it came back to me. Ever since then I have loved bugs.

My favorite bugs are caterpillars and butterflies. I like to read books about how to take care of them. I am taking care of a ladybug. I do not give her aphids but she is still alive. I give her water with sugar on it.

I have 14 caterpillars. They eat fast! Every day they walk in the morning and eat in the night. They make a lot of noise when they eat. I will take care of them until they are butterflies and then I will let them go. I will let them out at a place with flowers.

Once there was a praying mantis at my school but I didn't get to see it. Once I had one and took care of it but then had to let it out. It couldn't find its way out so I had to put my hand in its home and had to take it out. Then, I let it go back outside. I like to watch all kinds of bugs and learn about them. I like all of the bugs. When I grow up I want to be an entomologist!

Savannah is one of the Foundation's Outreach Program recipients. Our Outreach Program provides educational materials to educators and students to encourage the study of science through insects. Support from our individual funding partners helps to cover the cost of this program. Thank you for your support.



Little Friend Released

The Entomological Foundation on September 10, 2009, released its first video to the public in order to build awareness of the Foundation and to support its fundraising efforts. The 30-second video, entitled *Little Friend* is available on the Foundation's web site and on YouTube. This concept was selected by a focus group of 38 people ages 20 to 81. The video depicts Sadie and her new friend Charlie, a caterpillar, who she meets while playing outdoors. Since its release, more than 2,300 people have viewed the video on YouTube. Many of these viewers are sending comments to the Foundation's office through e-mail including the following:

I just viewed the video. I think it's really good. It's a great way to enlighten people on the insect world! Good Luck!

Very cute video. I passed the website along to our media specialist. I'll see if it can be posted on our schools website.

Very nice video- short, sweet and to the point-- I opened several links on your website. Very informative. I am raising Monarch butterflies in participation for the University of Kansas Monarch Watch program. A LOT of education about the role that insects play in our natural world is needed. Good luck!

Many thanks to BASF for supporting the creation of the concepts for the video and to Dr. and Mrs. Thomas E. Anderson, Mr. and Mrs. David Getz, Dr. S. Bradleigh Vinson, and Orkin, Inc. for sponsoring the creation of the final video.

Entomological Foundation's Awards Dinner and Dance Update

The Entomological Society of America directed the Entomological Foundation to present the Foundation's professional awards during its Awards Dinner and Dance instead of during the Plenary Session. This change offers an opportunity to celebrate not only Tom Turpin's distinguished work but also the accomplishments of the Foundation's awardees. Through these awards, the Foundation recognizes the special educators and entomologists who have advanced the field of entomology and the quality of entomological education. Come join us for dinner in the Indianapolis Union Station and celebrate the accomplishments of Tom and the Foundation's professional award winners:

Entomological Foundation's Medal of Honor
Dr. F. Tom Turpin, Purdue University

The Medal of Honor is the highest award presented by the Foundation and is given only to those who have attained preeminence in the field through outstanding contributions to the field of entomology.

Award for Excellence in Integrated Pest Management
Dr. Robert Peterson, Montana State University

ESA President's Prize for Outstanding Achievement in Primary Education
Ms. Vickie Weiss, City School, Michigan

ESA President's Prize for Outstanding Achievement in Secondary Education
Ms. Emily Torlak, Eau Gallie High School, Florida

Henry and Sylvia Richardson Research Grant
Dr. Karla Addesso, University of Florida

IPM Team Award
Soybean Aphid IPM Team: Drs. Eileen Cullen, University of Wisconsin-Madison; Christina DiFonzo, Michigan State University; Ronald Hammond, Ohio State University; Thomas Hunt, University of Nebraska; Brian McCornack, Kansas State University; Matthew O'Neal, Iowa State University; David Ragsdale, University of Minnesota; Kelley Tilmon, South Dakota State University; David Voegtlin, Illinois History Survey; and David Wright, Iowa Soybean Association.

Recognition Award in Urban Entomology
Dr. Whitney Cranshaw, Colorado State University

The Foundation's Annual Dinner pays tribute to individuals who have demonstrated outstanding support and commitment to entomology. The event also raises funds to support the Foundation's educational programs. Dress for the event is business casual. Contact April Gower, april@entfdn.org or see http://www.entfdn.org if you have questions concerning the event.

Many thanks go to the following sponsors of this event as of October 1- Dow AgroSciences; Iowa State University, Department of Entomology; Purdue University, College of Agriculture and the Department of Entomology; Sharron Quisenberry; Trece Inc.; and the University of Missouri College of Agriculture, Food and Natural Resources.

2009 AWARD RECIPIENT HIGHLIGHTS

Recognizing Excellence and Achievement in Education and Insect Science

The Entomological Foundation is pleased to announce its award winners for 2009. The Foundation's awards program recognizes outstanding students and professionals in entomology and recognizes educators who teach entomology in grades K-12. On the following pages you will learn more about these outstanding students and professionals along with outstanding educators working to excite young people about science through insects. The Awards Program is presented annually through support provided by our generous funding partners.

SUPPORTING EDUCATION IN INSECT SCIENCE

The Entomological Foundation recognizes excellence and supports continued education of students in entomology and related disciplines.

Stan Beck Fellowship
Adena Why is a Master's student at the University of California, Riverside. Her research project involves using the Arroyo chub, *Gila orcuttii*, as an alternative biological control agent to the non-native and highly invasive Mosquitofish, *Gambusia affinis*, to control larval mosquitoes in sensitive watersheds within Southern California. The Arroyo chub is endemic to watersheds throughout Southern California but due to anthropogenic factors, has been extirpated from much of its native range. The ultimate goal of this research is to provide local Vector Control Districts with a native alternative to *Gambusia* for use in watershed systems where Mosquitofish can no longer be introduced, due to federal mandates, while at the same time helping to restore local chub populations throughout their native range.

BioQuip Products Undergraduate Scholarship
Dale Halbritter is an undergraduate student in the Department of Entomology at the University of California, Riverside. His current research project involves the behavioral study of the northern fowl mite and the chicken body louse. His work focuses on determining the temperature at which the ectoparasites prefer to reside and compare it to where on the chicken they are most commonly encountered. Dale is also working on creating a humidity gradient using chambers with different saturated salt solutions. He hopes eventually to publish a paper on this research. Dale plans to continue on to graduate school and gain knowledge of insect-insect and insect-plant interactions in order to address the problems humans have encountered or created in our synthetic environment and in the planet's natural ecosystems.

Pioneer Hi-Bred International Graduate Student Fellowship
Pioneer Hi-Bred International has renewed its fellowship awarded to Kevin Johnson, a Ph.D. Entomology student at Iowa State University. His research focuses on better understanding plant responses to insect injury and the assessment of available control tactics for yield protection. Kevin's main research objectives include investigating new modeling techniques for the development of multi-pest economic injury levels and verifying the current soybean aphid economic injury levels in narrow-row soybean production. (Pioneer Hi-Bred International is a DuPont Company).

RECOGNIZING EXCELLENCE & ACHIEVEMENT IN EDUCATION & INSECT SCIENCE

Award for Excellence in Integrated Pest Management
(Sponsored by Syngenta)
Robert K. D. Peterson is an associate professor of Entomology in the Department of Land Resources and Environmental Sciences at Montana State University. His research program is primarily focused on agricultural and biological risk assessment, especially comparative risk assessment. The program seeks to qualitatively and quantitatively compare different environmental risks for the purpose of improved decision-making and cost-benefit analysis. Recent projects address the potential risks posed by biotechnology, invasive species, and pesticides. The research on biotechnology has focused on crop plants and includes glyphosate tolerance, transgenic plants expressing *Bacillus thuringiensis* toxins, and plant-based biopharmaceuticals. He has developed and evaluated approaches to optimize human health and minimize ecological risks associated with prominent vector-borne diseases along with characterizing human and ecological risks associated with introduced weed species.

Entomological Society of America's President's Prize for Outstanding Achievement in Primary Education
Vickie Weiss is an elementary school teacher at City School in Grand Blanc, Michigan. She shared her fascination about the problem of Colony Collapse Disorder with her students and developed a year- long lesson plan starting with having the students think about possible theories on why honeybees were disappearing. She then took the students on a field trip to a local bee farm where they saw an observation hive and watched honey being extracted and processed. They learned about the *Apis mellifera* habitat, life cycle, process of pollination, and habits within the hive. Later in the year, the students, in learning about entrepreneurship, decided to form a class business to sell honey while educating their customers. They created a name for their company, a logo, and a display booth where they sold the honey and increased community awareness. In the spring, the students hosted a theme related one-day restaurant. All recipes included honey as an ingredient and the students created bee costumes to wear. Vickie's goal for next year's students is to have them enter the essay contest sponsored by 4-H on "Is My Community Honey-Bee Friendly?"

Entomological Society of America's President's Prize for Outstanding Achievement in Secondary Education
Emily Torlak is a biology teacher at Eau Gallie High School in Melbourne, Florida. While discussing insects during a unit on invertebrates, she found that she and the students had very little knowledge of insects. When the students began asking questions, she offered extra credit to the students who found the answers to their questions before she could. The more research that was done, the more fascinated she and the students became about insects. This interest led Emily to earn a Master of Science degree from the University of Florida in Entomology while teaching full time. One of her lesson plans, Repellency Lab, is geared to grades 9-12. In this lab, the students become familiar with the difference between repellents and insecticides. The students become more familiar with lab report writing and understanding the importance of including a control in an experiment. Insect Trap, another lesson plan she created, is an inquiry activity in which students design and test a successful insect monitoring trap. The traps are designed to lure or entrap insects by using lights, pheromones, and sticky materials, and by trap placement. Emily hopes to start an entomology class for high school aged students or an insect club in the near future.

Lillian & Alex Feir Graduate Student Travel Award
Joe Louis is a Ph.D. candidate in the Department of Biological Sciences at the University of North Texas. His M.S. in Entomology was received at Kansas State University and his B.S. from the Kerala Agricultural University in India. His current research focuses on understanding the role of *Arabidopsis thaliana PHYTOALEXIN DEFICIENT4 (PAD4)* and *MYZUS PERSICAE INDUCED LIPASE1 (MPL1)* genes in plant defense against the green peach aphid (GPA). His research has helped to identify a lipid or lipid-derived product that is involved in providing plant defense against GPA. Joe hopes his research will help to identify genes homologous to *Arabidopsis* genes in other economically important crop plants that have a negative impact on aphid fecundity, growth, and development. He will be giving an oral presentation entitled "Green peach aphid - *Arabidopsis thaliana* interaction" at the December ESA meeting.

Integrative Pest Management Team Award (Sponsored by Dow AgroSciences)
Before the arrival of the soybean aphid in 2000, it was estimated that less than 1% of the soybean acreage in the North Central United States was treated with an insecticide. Since the arrival of this invasive pest, 8 to 10 million acres are treated annually, with 50 million acres at risk. Due to the Soybean Aphid IPM Team, growers in North America now have new recommendations and new pest management tools to use against the pest. The Soybean Aphid IPM team members include Drs. David Ragsdale, University of Minnesota; David Voegtlin, Illinois History Survey; and the following:

Dr. Eileen Cullen
Univ. of Wisconsin, Madison

Dr. Ronald Hammond
Ohio Stat Univ.

Dr. Thomas Hunt
Univ. of Nebraska

Dr. Brian McCornack
Kansas State Univ.

Dr. Kelley Tilmon
South Dakota State Univ

Dr. Matthew O'Neal
Iowa State Univ.

Dr. David Wright
Iowa Soybean Assoc.

Dr. Christina DiFonzo
Michigan State Univ.

International Congress on Insect Neurochemistry and Neurophysiology Student Recognition Award in Insect Physiology, Biochemistry, Toxicology, and Molecular Biology
Philip K. Morton received his B.S. in Entomology from Oklahoma State University. Most recently he received his Ph.D. in Entomology from Purdue University this past August. His research deals with population genetics of the Hessian fly, *Mayetiola destructor,* a major pest of wheat. The focus of his research includes addressing the number and origin of introductions of Hessian fly into the United States, the effects of agricultural variables on population structure and gene flow within the southeastern United States, and the study of the amount of genetic variation found in the Hessian fly throughout the

United States and worldwide. He has accepted a postdoctoral position in the Botany and Plant Pathology Department at Purdue University.

Jeffery P. LaFage Graduate Student Research Award
Nicola Gallagher is a Ph.D. student at Ohio State University, where she also earned her M.S. degree. Her research is an in-depth investigation of the physiological and behavioral mechanisms involved with water maintenance in subterranean termites. She is hoping her research will provide data that will help resolve how water is transported by termites, potentially leading to new termite control methods, either by directly manipulating the termites' ability to manage water or reinforcing the importance of a holistic approach to termite management. She has presented many posters and research talks and has five refereed publications to her name.

Larry Larson Graduate Student Award for Leadership in Applied Entomology (Sponsored by Dow AgroSceinces)
Cheri Abraham is a Ph.D. candidate at the University of Georgia, Department of Entomology. He earned his M.S. from Mississippi State University and his B.S. from the Kerala Agricultural University in India. While attending Mississippi State University he worked with Dr. David Held on augmenting populations of *Larra bicolor*, the ectoparasitoid wasp, on *Scapteriscus* mole crickets. Currently working with Dr. Kris Braman at the University of Georgia, he is investigating biological control of key pests in cut flower production. This study seeks to increase the competiveness of the cut flower industry by developing effective management strategies to control secondary pests like thrips, mites, aphids, and whiteflies, which disrupt the successful control of leafminers in greenhouses.

Recognition Award in Urban Entomology (Sponsored by S.C. Johnson & Son)
Whitney Cranshaw is a professor of Entomology at the Colorado State University. His teaching, extension, and research efforts span the entomology of turfgrass, ornamental plants, trees, vegetable gardens, and many other aspects of urban landscapes, as well as insects and arachnids in the home. He is in high demand as a presenter at professional turf and landscape conferences giving about 40 talks per year. He has also been a judge for 4-H entomology projects at the Colorado State Fair and an advisor for the Odyssey of the Mind program. Whitney also manages two active listservers- PestTalk for regional landscape pest management and OrnaEnt a national discussion group for entomology professionals. He has been recognized by Organic Gardening Magazine, National Gardening Association, and Garden Writers of America.

Henry and Sylvia Richardson Research Grant
Karla Addesso is a postdoctoral research associate at the University of Florida. She received her Ph.D. in Entomology from the University of Florida and her B.S. in Biology from the College of New Jersey. Her dissertation research focused on host plant utilization by the pepper weevil, *Anthonomus eugenii* Cano. She found that the pepper weevil secretes an oviposition deterring pheromone on the fruit it infests, causing other females to reject the marked fruit as an oviposition site. Her postdoctoral work is focused on isolating, identifying, and testing this oviposition deterring pheromone in small and large scale trials. Field tests of the deterrent will be done in

combination with an improved version of the commercially available pepper weevil aggregation pheromone trap in a push-pull management design with the goal of alleviating growers' heavy reliance on pesticides. The push-pull management strategy combines two technologies for use in controlling pest populations. The 'push' component is applied to the marketable crop and may be a feeding, oviposition or pheromone deterrent that repels insects from the field. The 'pull' component, which can be a volatile and/or pheromone lure or other attractant, is used to draw the insects away from the field to trap out or kill them. When used in combination, the system is more effective than either technology alone.

Snodgrass Memorial Research Award

Jennifer Zaspel, a postdoctoral research associate at the University of Minnesota, earned her Ph.D. from the University of Florida. Her M.S. and B.S. degrees were received from the University of Minnesota. Her research "Systematics, biology, and behavior of fruit-piercing and blood-feeding moths in the subfamily Calpinae (Lepidoptera: Noctuidae)" was awarded the University of Florida, College of Agriculture and Life Sciences Best Dissertation Award of Excellence in Graduate Research for 2008. This research focuses on the evolutionary relationships and adult feeding behaviors of moths in the tribe Calpini, vampire moths in the genus *Calyptra*, and their gut symbionts. Jennifer has given both national and international research presentations and has co-authored 10 research publications.

Starks Plant Resistance to Insects Graduate Student Research Award

Alexzandra Murphy is pursuing her Ph.D. from Purdue University's Department of Entomology. Her B.S. was received from Oregon State University. Her research project involves characterizing the population dynamics and mating behavior of the western corn rootworm (*Diabrotica virgifera* Le Conte) under different refuge structures in a *Bt* corn -refuge system. Transgenic *Bt* (*Bacillus thuringiensis* Berliner) corn (*Zea mays* L.) provides an alternative control tactic for the western corn rootworm and is being used by growers. Her research investigates the insect resistance management plan for rootworm-resistant corn, which requires that a refuge of susceptible crop plants be planted with the transgenic plants. For the refuge strategy to successfully manage western corn rootworm resistance to *Bt* corn, susceptible adults emerging from the refuge must disperse and mate randomly with any resistant adults emerging from transgenic corn. She hopes her research will have implications for resistance management of the western corn rootworm in *Bt* corn.

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