

**NORTH CENTRAL BRANCH**

# Entomological Society of America

**March 15-18, 2009**

*Steve Yaninek, NCB President*



**Hilton St. Louis at the Ballpark**

**1 South Broadway  
Saint Louis, MO 63102**

# Annual Branch Meeting Sponsors

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**Michigan State University** (*Department of Entomology*)  
**Kansas State University** (*Department of Entomology*)  
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# Schedule

**Sunday, March 15, 2009**

**NCB Executive Committee Meeting**

2:00 – 5:00 PM

Market St.

**Registration**

11:00 AM – 6:00 PM

Gateway Galley

**Photo Salon**

6:00 PM – 7:00 PM

Gateway Ballroom III

**Preliminary Linnaean Games**

7:00 – 10:00 PM

Gateway Ballrooms I & II

**A/V Room (Upload Presentations)**

11:00 AM – 6:00 PM

Broadway I

**Student Competition Poster Setup**

11:00 AM – 9:00 PM

Arch View Ballroom

**Program Symposium**

*Ecology and Impact of Spiders in  
Terrestrial Ecosystems*

2:00 PM – 4:45 PM

Gateway Ballroom III



# Schedule

**Monday, March 16, 2009**

**Continental Breakfast**

7:00 AM – 8:00 AM

Arch View Ballroom

**Registration**

8:00 AM – 5:00 PM

Grand Foyer

**A/V Room (Upload Presentations)**

8:00 AM – 5:00 PM

Broadway I

**Plenary Session**

8:00 AM – 10:00 AM

Gateway Ballroom I & II

**Student Competition Posters**

**Session 1**

10:00 AM – 5:00 PM

Arch View Ballroom

**B.S. Student Competition Papers**

**Session 1**

10:15 AM – 11:32 AM

Broadway II

**M.S. Student Competition Papers**

**Session 2**

10:15 AM – 12:08 AM

Gateway Ballroom III

**M.S. Student Competition Papers**

**Session 3**

10:15 AM – 11:58 AM

Gateway Ballroom IV

**Ph.D. Student Competition Papers**

**Session 4**

10:15 AM – 11:44 AM

Gateway Ballroom V

# Schedule

**Monday, March 16, 2009** [continued]

**Ph.D. Student Competition Papers**

**Session 5**

10:15 AM – 11:32 AM

Gateway Ballroom I & II

**Job Perspectives for Entomologists in Industry**

12:00 PM – 5:30 PM

Broadway II

**Program Symposium**

*Contributions Towards Understanding the Impact  
and Strategies for the Changing Sunflower Insect Pest  
Complex from Texas to Canada*

1:00 PM – 5:15 PM

Gateway Ballroom III

**General Oral**

**Session 1**

1:00 PM – 2:17 PM

Gateway Ballroom IV

**Poster Take Down/Setup**

5:00 PM – 8:00 PM

Arch View Ballroom

**Photo Salon**

6:00 PM – 7:00 PM

Gateway Ballroom III

**Final Linnaean Games**

7:00 – 9:00 PM

Gateway Ballrooms I & II

**Mixer/Reception**

9:00 PM – 10:00 PM

Arch View Ballroom



# Schedule

**Tuesday, March 17, 2009**

**Continental Breakfast**

7:00 AM – 8:00 AM

Arch View Ballroom

**BCE Meeting**

7:00 AM – 8:00 AM

Gateway Ballroom III

**A/V Room (Upload Presentations)**

8:00 AM – 12:00 PM

1:30 PM – 5:00 PM

Broadway I

**Registration**

8:00 AM – 12:00 PM

1:30 PM – 5:00 PM

Grand Foyer

**Submitted Posters**

**Session 1**

8:00 AM – 5:00 PM

Arch View Ballroom

**Program Symposium**

*Green Technology and Pest Management*

8:00 AM – 12:05 PM

Gateway Ballroom III

**General Oral**

**Session 2**

9:00 AM – 11:38 AM

Gateway Ballroom IV

**Awards Luncheon**

12:00 PM – 1:30 PM

Gateway Ballrooms I & II

# Schedule

**Tuesday, March 17, 2009** [continued]

**Program Symposium**

*More Biological Control Please: Extension and Outreach  
Efforts to Increase Awareness and Appreciation of  
Natural Enemies*

1:30 PM – 4:50 PM

Gateway Ballroom III

**General Oral**

**Session 3**

1:30 PM – 4:42 PM

Gateway Ballroom IV

**Poster Take Down**

5:00 PM – 8:00 PM

Arch View Ballroom

**Linnaean Games Masters: Winners vs. Old Timers**

6:30 PM – 7:00 PM

Gateway Ballrooms III & IV

**Branch Mixer**

7:00 PM – 9:00 PM

Arch View Ballroom





# Schedule

**Wednesday, March 18, 2009**

**Continental Breakfast**

7:00 AM – 8:00 AM

Arch View Ballroom

**NCB Business Meeting**

8:00 AM – 9:00 AM

Gateway Ballroom IV

**A/V Room (Upload Presentations)**

8:00 AM – 12:00 PM

Broadway I

**Registration**

8:00 AM – 10:30 AM

Grand Foyer

**Students Affairs Symposium**

*Invasive Insect Management: Are We Making Any  
Progress*

9:00 AM – 12:00 PM

Gateway Ballroom III

**Program Symposium**

*Applying Proteomic and Genomic Methodology To Pest  
Insect Control*

9:00 AM – 11:30 AM

Gateway Ballroom IV

**NCB Executive Committee**

12:00 PM – 2:00 PM

Market St.



# Welcome

## Registration

All participants and attendees must be registered and display their name badges for admission to all sessions and other functions. The registration area will be located in the Gateway Gallery on Sunday and in the Grand Foyer on Monday – Wednesday. Registration will be open at the following times:

Sunday	11:00 AM – 6:00 PM ( <i>Gateway Gallery</i> )
Monday	8:00 AM – 5:00 PM ( <i>Grand Foyer</i> )
Tuesday	8:00 AM – 12:00 PM and 1:30 PM – 5:00 PM ( <i>Grand Foyer</i> )
Wednesday	8:00 AM – 10:30 AM ( <i>Grand Foyer</i> )

## Messages, Program Changes, Lost & Found

A message board is available in the poster display room (Arch View Ballroom). Notices regarding program changes should be submitted to the A/V room (Broadway I). We will attempt to post last-minute changes on the easels outside each meeting room. Lost and found will be at the registration desk.

## Spouses and Guests

There is no organized spouse/guest program. Information about attractions in the downtown St. Louis area is available at the hotel registration desk.

## Employment Opportunity Center

Folders will be provided on a table in the poster display room (Arch View Ballroom) for submission of resumes, and a poster board will be available for posting job opportunities and contact information.

## Audio/Visual Equipment

The Broadway I Room will serve as A/V headquarters. It will be open Sunday 11:00 AM – 6:00 PM, Monday 8:00 AM – 5:00 PM, Tuesday 8:00 AM – 5:00 PM (except during the awards

luncheon) and Wednesday 8:00 AM – 12:00 pm. All meeting rooms will be equipped with a LCD projector and laptop computer.

All computers will be PCs, and presenters who use Macintosh computers/operating systems should pre-test their presentations for compatibility on a PC in advance. The computers will be running Office 2003. There will be one computer available in the A/V Room with Office 2007 so that PowerPoint 2007 presentations can be downgraded to a PowerPoint 2003 file. PowerPoint presentations should be brought to the meeting on a flash drive or CD-ROM, and should be brought to the A/V room as soon as possible after you arrive, and at least 24 hours before your talk (note open hours of A/V room). Computers for presentations will be handled exclusively by the A/V committee.

### **Guidelines for Speakers and Moderators**

Speakers and moderators will follow standard practice at professional meetings. Moderators and speakers are both responsible for maintaining the printed schedule for starting and ending presentations. Please be considerate.

### **Posters – Setup, Removal, When Authors Should Be Present**

Posters will be displayed in the Arch View Ballroom. Posters may be setup on Sunday 11:00 AM – 5:00 PM (for Monday display), Monday 5:00 PM – 8:00 PM (for Tuesday display) and Tuesday 5:00 PM – 8:00 PM (for Wednesday display). Posters should be removed by 6:00 PM Monday and Tuesday. Posters remaining after 12:00 PM Wednesday will be discarded. Presenters are requested to be at their posters 11:00 AM-12:00 PM on Monday and 4:00 PM – 5:00 PM on Tuesday. Presenters may attach their posters via push-pins or velcro. Space for each poster is 4' x 4'.



# 2008 – 2009 ESA NCB Officers and Committees

**President:** Steve Yaninek

**President-Elect:** John Obrycki

**Past President:** Rick Weinzierl

**Secretary-Treasurer:** Dave Ragsdale

**Governing Board Representative:** Larry Charlet and Susan Weller

**Executive Committee Members-at-Large:**

Shripat Kamble, Matt O'Neal, and Susan Ratcliffe

**Branch Archivist:** Rick Weinzierl

**Program Planning Committee:** Tom Coudron (*Co-Chair*), Holly Popham (*Co-Chair*), and Glene Mynhardt

**Local Arrangements Committee:** Bruce Barrett (*Chair*)  
Terrell Stamps, Tim Judd, and Lisa Meihls

**Nominating Committee:** Paula Davis, Ken Haynes, and Rob Venette

**Auditing Committee:** Bob Wright (*Chair*), Tom Phillips, and Michael Melichar

**Student Awards Committee:** Janet Knodel (*Co-Chair*), Elizabeth Owens (*Co-Chair*), Lyric Bartholomay, Doug Richmond, James Harwood, Diane Wood, Andy Michael, and Tim Husen

**Membership Committee:** Bill Hutchison (*Chair*), Bob Wright, Bob Koch, Aaron Gassmann, and Karrie Koch

**Student Affairs Committee:** David Coyle (*Chair*), Annie Ray (*Vice Chair*), Carl Redmond, Denise Markle, Glene Mynhardt, Nick Schmidt, Megan Woltz, Karrie Koch, Lisa Meihls, Rob Mitchell, Autumn Nance, and Tim Husen

**NCB Honorary Awards Committee (for the C.V. Riley Award & Award of Merit):** Michelle Smith (*Co-Chair*), Marion Harris (*Co-Chair*), Casey Burks, Lance Meinke, Changlu Wang, Mike Tolley, Joe Rinehart, and Annie Ray

**National ESA Awards Committee:** Rick Foster (*Co-Chair*), Sharon Dobesh (*Co-Chair*), Kelly Tillman, Chris Ranger, Matt Ginzal, Nick Schmidt

**Linnaean Games Committee:** Susan Weller (*Chair*), Wyatt Hoback, Mike Culy, Dan Herms, Marion Ellis, Doug Landis, David Margolies, Eileen Cullen, Roger Moon, Marianne Alleyne, Dan Young, Blair Siegfried, and Rob Mitchell

**Photo Salon Committee:** Tom Myers (*Chair*), Ric Bessin, Jim Mertins, Phil Sloderbeck, Dave Voegtlin, and Gary Hein

**NCB-ESA Website:** <http://www.esancb.org/>

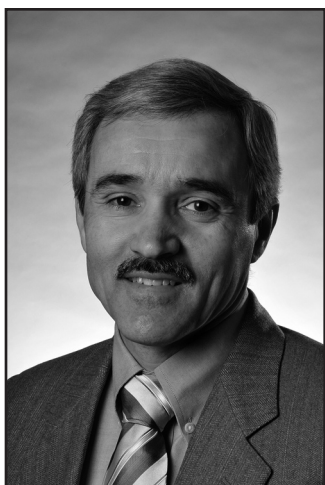
# 2008 – 2009 ESA NCB Meeting Organizers



Steve Yaninek  
*President*



Bruce Barrett  
*Local Arrangements Chair*



Tom Coudron  
*Program Co-Chair*



Holly Popham  
*Program Co-Chair*

# Special Events

## Awards Luncheon

**Tuesday 12:00 PM – 1:30 PM**

Gateway 1 & 2

The Branch will recognize award winners, the championship Linnaean Games team, and the many people who serve the North Central Branch and the ESA. Admission is included in your registration. A vegetarian option will be available; please ask your server.



## Two Mixers

**Monday 9:00 PM – 10:00 PM**

Arch View

**Tuesday 7:00 PM – 9:00 PM**

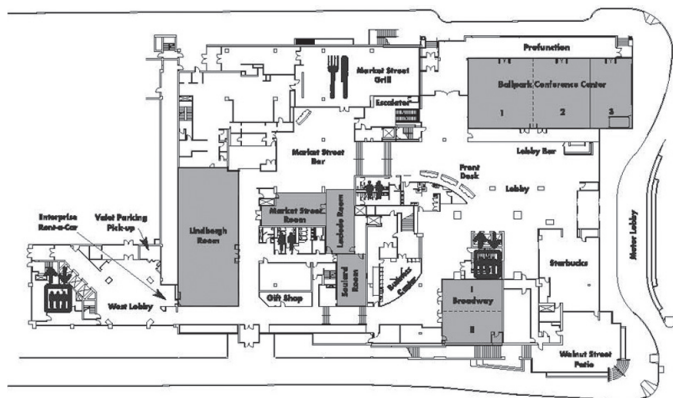
Arch View

The traditional “Branch Mixer” will be held following the Linnaean Games on Monday. Light snacks and a cash bar will be available as we mingle with new and old colleagues. On Tuesday evening there will again be a chance to mix and visit while joining in another NCB tradition, the annual Linnaean Games Challenge Match between the champions and the old-timers. To be sure, today’s students know a lot, but do not discount the wisdom and craftiness of the geezer! Once again, a cash bar and light refreshments will be available.

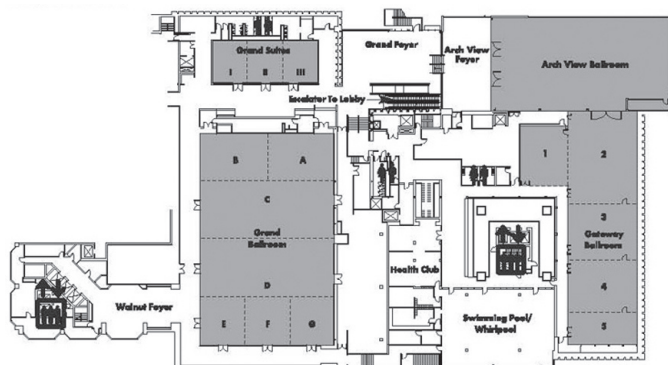


# Hilton St. Louis at the Ballpark

## Lobby Level



## Meeting Rooms



# 2009 North Central Branch C.V. Riley Award



**Kun Yan Zhu**, *Kansas State University*

The C.V. Riley Award recognizes Dr. Kun Yan Zhu's outstanding contributions to the science of entomology.

Dr. Zhu has contributed to the science of entomology through his teaching and training of graduate students. He has taught three entomology courses since 1996. The teaching evaluations provided by his students have been steadily high. He has served as a major or co-major professor for 15 graduate students. Many of his students have received prestigious awards and recognitions from the ESA and other professional organizations.

Dr. Zhu has established an internationally reputable insect toxicology research program, and developed cohesive research collaborations with at least 45 scientists within the U.S. and around the world. His lab first documented a paralogous acetylcholinesterase gene in the greenbug, which has led to the identification of the paralogous gene in many other insect species. This discovery was cited as "a breakthrough in this toxicological riddle" by other scientists in 2007. He has authored or co-authored 82 peer-reviewed manuscripts, 9 book chapters, and 196 presentations including 63 invited.

Dr. Zhu has provided outstanding services to the ESA and other professional organizations. In 2004-2008 alone, he served as a peer reviewer of 36 grant proposals, 114 manuscripts for more than 30 peer-reviewed scientific journals, and 48 manuscripts for his colleagues and students. He has served as a subject editor for *Journal of Economic Entomology* and processed over 120 manuscripts for the journal since 2001. In addition, he is currently serving as an editorial board member for other four peer-reviewed journals in insect sciences and toxicology.



## 2009 North Central Branch Award of Merit



**Bruce E. Hibbard, *USDA-ARS***

The North Central Branch Award of Merit recognizes outstanding contributions to the North Central Branch of the Entomological Society of America. This year's award winner is Dr. Bruce E. Hibbard, USDA-ARS, Columbia MO.

Dr. Hibbard has served on the NCB Student Awards Committee, the NCB ESA Nominating committee (chairing each), he has helped judge papers and posters a number of times and NCB and National ESA meetings, and he has served as Subject Editor for the *Journal of Economic Entomology* since 2005. He has also served on the USDA-CSREES-NRI Panel and the EPA's Scientific Advisory Panel. Dr. Hibbard is interested in all things *Diabrotica* (corn rootworms) including host-plant resistance, resistance management, behavior, ecology, and chemical ecology. He has worked primarily with the western corn rootworm, but also with the northern corn rootworm, and European corn borer, *Ostrinia nubilalis*. He has authored or coauthored 71 publications (including 2 germplasm releases, 2 patents, 4 book chapters, and 54 refereed publications), presented 41 invited talks (including five European trips paid by those issuing the invitation), and he has brought in more than \$2.6 million in outside funding excluding annual ARS funds.

# 2009 North Central Branch Graduate Student Scholarship Award



**Luke Dodd**, *University of Kentucky*

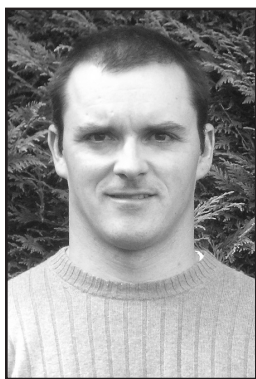
The 2009 NCB Graduate Student Scholarship Award winner is Luke Dodd, a Ph.D. student at the University of Kentucky. Luke is advised by Dr. Lynne Rieske-Kinney. Luke's research focuses on the effects of forest structure on insect prey and the activity of forest-dwelling bats in the central Appalachians.

Luke is investigating how foraging bats utilize their forest habitats and how habitat use is influenced by the insect forage base. Luke has developed a novel genetic method to identify dietary components from bat feces that improves resolution, which is lacking with traditional morphological identification. Luke is sequencing about 100 species of forest Lepidoptera to develop primers for screening of bat fecal material. This will provide precise data on prey species consumption by specific bat predators and lead to a better understanding of trophic linkages among bats, insects and their habitat. Luke has authored five peer-reviewed journal articles based on his research, and has given numerous poster and oral presentations.

In addition to his excellence in research, Luke is also distinguished as a teacher and mentor. Luke independently mentored an advanced undergraduate student for a research project last year, which added a new dimension to his teaching experience beyond the traditional role of graduate teaching assistant. Luke has actively pursued extramural funding for his research and has successfully procured a Sigma Xi Grant-in-Aid and a graduate research grant from Bat Conservation International. Luke has demonstrated academic excellence in his scholastic performance and in the breadth of his coursework. Luke is active in his professional societies, and in service work with other graduate students. He is also known for his broad knowledge, enthusiasm, humble character, good humor, and positive attitude in difficult situations, like working long hard days in the forest.

Congratulations Luke!

## 2009 North Central Branch J.H. Comstock Award



**David Coyle**, *University of Wisconsin*

The 2009 NCB J.H. Comstock Award winner is David Coyle. David is majoring in Entomology at the University of Wisconsin and is expecting to complete his Ph.D. in August. He is advised by Dr. Kenneth Raffa.

David's dissertation research involves the ecology and effects of root feeding by invasive weevils on the health and growth of trees in the northern hardwood ecosystem. David's dissertation research also involves invasive species management and pest management in production forestry. In addition to his dissertation research, David is collaborating on two other forestry research projects – one involving the use of *Populus* clones in phytoremediation plantings in northern Wisconsin, and a second long-term project determining the effects of resource amendments on tree growth, biomass and nutrient partitioning on a research plantation in South Carolina. David is the author of two book chapters and 22 refereed journal articles. He has also authored several extension publications and has given 11 invited and 25 submitted presentations and 15 posters. David has authored or co-authored successful grants, including a highly competitive EPA STAR fellowship. David has demonstrated excellence in teaching forest entomology courses and is active in several professional societies, including the ESA-NCB Student Affairs Committee. He has shown tremendous initiative in organizing and moderating symposia at regional and national meetings. He has also volunteered his time and expertise in reviewing manuscripts for ESA and other journals.

Because of his excellence in research, extension and teaching, we acknowledge David's overall effort with the 2009 NCB J.H. Comstock Award.

# ESA-NCB Award of Excellence in Integrated Pest Management



**Larry Gut**, *Michigan State University*

Dr. Gut grew up in northern California. He earned a B.A. in Biology from California State University, Chico in 1976, a M.S. and Ph.D. in Entomology from Oregon State University, Corvallis in 1980 and 1985. Larry completed a post-doctoral position at Washington State University's Tree Fruit Research and Extension

Center in Wenatchee, WA, where he help guide the Washington apple industry into pheromone mating disruption. He joined the Entomology faculty at Michigan State University in 1997 as the tree fruit entomologist. He served as the associate chair for three years.

Dr. Gut is internationally and nationally recognized for his wide range in research on pheromone based mating disruption and other selective insect controls in tree fruit production. His passion is working directly with growers in finding real solutions to pest management problems and believes on farm research is the best way to facilitate change.

# ESA-NCB Recognition Award in Entomology



**C. Michael Smith**, *Kansas State University*

Dr. C. Michael Smith is an internationally recognized leader in the field of plant resistance to arthropods whose accomplishments have had significant impacts on the study of plant - arthropod interactions and plant arthropod pest management. His research has encompassed the

identification and characterization of numerous genes controlling resistance to several key arthropod pests of wheat, resulting in the discovery of separate gene families in wheat controlling resistance to *Diuraphis noxia* and to *Schizaphis graminum*. Smith's group has identified several *D. noxia*-resistant bread wheat and barley lines, which has facilitated the development of aphid-resistant wheat and barley by researchers in many countries. In 2002, Smith was a Fulbright Scholar with the Czech Agricultural University and Czech Research Institute of Crop Production, and together with Czech and Ethiopian collaborators, identified the first *D. noxia* biotypes in North Africa and South America. This collaboration led to the development of biotype-sensitive molecular markers that have recently been used to demonstrate two distinct invasions of North America by different *D. noxia* biotypes. Smith's present research also includes investigation of expressed wheat and barley genes in resistance to aphids.

Smith has presented over 50 invited lectures in 16 countries and published over 90 refereed journals manuscripts and 15 book chapters. His review on the molecular bases of plant defense responses to aphid feeding, coauthored with Dr. Elena Boyko, was the most downloaded and most cited *Entomologia Experimentalis et Applicata* article in 2007. Smith is the author of two textbooks on plant resistance to insects and a coauthor

of a plant resistance techniques book. He has taught courses in plant resistance to arthropods in Louisiana and Idaho and at Kansas State University, coordinated the development of the interdisciplinary undergraduate course Plant Resistance to Pests, and developed the laboratory course Conventional and Molecular Methods of the Evaluation of Plant Resistance to Pests. He teaches General Entomology in rotation with colleagues, and has delivered his Bugs, Bugs, Bugs presentation to hundreds of youth, adults and instructors in classrooms and at state fairs.

Smith received Ph.D. (1976) and M.S. (1973) degrees in entomology from Mississippi State University and a B.S. in biology (1971) from Southwestern Oklahoma State University. From 1978 to 1988, he was a faculty member in the Department of Entomology at Louisiana State University, and from 1988 to 1990, served as Chair of the Division of Entomology at the University of Idaho. From 1990 to 1996 he served as Head of the Department of Entomology at Kansas State University, where he has since advised seven Ph.D. students, four M.S. students, and four post doctoral scientists. He serves as a subject editor for the Journal of Economic Entomology, and on the editorial boards of Biopesticides International and Arthropod Plant Interactions. Smith was named Fellow of the Entomological Society of America in 2006.

# ESA-NCB Distinguished Achievement Award in Teaching



**W. Wyatt Hoback**, *University of Nebraska at Kearney and University of Nebraska-Lincoln*

Dr. W. Wyatt Hoback, a Professor of Biology at the University of Nebraska at Kearney and adjunct Professor of Entomology at the University of Nebraska-Lincoln has taught 18 undergraduate and graduate courses ranging from the Biology and Classification of Insects, Introduction to Graduate Studies and General Biology. He has been a leader in developing distance education classes and serves as the Director of the Distance Biology MS program where he advises more than 300 students each semester. He serves on the university-wide Distance Education Committee and is Chair of the Department of Biology Graduate Committee.

Dr. Hoback is committed to undergraduate and graduate research securing more than \$1.5 million in external funded grants including two Higher Education Challenge grants to educate the public about the threats posed by exotic species and the use of biological control to reduce these threats. He incorporates novel hands-on laboratory activities using insects as models and has published 6 peer-reviewed teaching papers on topics including the testing of Bt on mosquitoes and non-target aquatic insects, the investigation of food for insect contamination, and the examination of flies transporting bacteria.

Dr. Hoback has received two educational project awards, the Pratt-Heins faculty award for research Excellence, and the Association of College and University Biology Educators' Out of this World Teaching Idea award. He is active in the Entomology Society serving as the current North Central Branch Linnaean Games master, and previously served as the Youth Education Committee's chair.

# 2009 Entomology Educational Project Awards

**Presented by: The Board Certified Entomologists of Mid-America**

## **1. Educational Video for Youth**

### **Catch the Reading Bug**

By Tom Turpin, Melissa Shepson, Jos Holman, Michele Farley, Gary Bennett and Rob Jackson,  
*Purdue University*

The video was used to introduce young people to entomological ideas and arthropods in a fun way through the summer reading program. Young people we encouraged to learn more about these creatures by reading books. DVDs of the video were distributed by the Indiana Pest Management Association and it was available for download on the Indiana Library website. The video was widely used in Indiana and other states.

## **2. Extension Publication**

### **Soybean Aphid Management Field Guide 2008**

By Marlin E. Rice, Matt O'Neal, and David Wright,  
*Iowa State University and the Iowa Soybean Association*

Eighteen thousand copies of the Soybean Aphid Management Field Guide were printed and distributed to Iowa growers, crop consultants, and Extension agronomists during early July, 2008, immediately prior to the soybean aphid outbreak. The publication emphasized the necessity of field scouting and using the economic threshold prior to the application of any rescue insecticide. We believe that the information contained in this publication helped advance the principles of integrated pest management.



### 3. Extension Website

#### **Soybean Insects Guide**

By Jeff Bradshaw, Marlin Rice, John VanDyke, and Derek Adams, *Iowa State University*

The Soybean Insects Guide/Website (<http://www.ent.iastate.edu/soybeaninsects/>) will provide information for anyone interested in soybean insects. It is hoped that as this site evolves it will collect a diverse community of users. Based on this community, the website will exploit modern web technologies to provide personalized experiences, real-time content, and facilitate social networking centered on topics regarding soybean insects.

### 4. Book

#### **The Grasshoppers of Nebraska**

By Mathew L. Brust, W. Wyatt Hoback, and Robert J. Wright, *University of Nebraska-Lincoln*

An up-to-date field guide on grasshopper identification will enable people to make more accurate identifications of grasshoppers in the field, and would be of benefit to state and federal survey workers, NRCS and Extension staff, ranchers and farmers. The species covered in this publication have wide applicability across the Western Region, and states bordering Nebraska. The publication is organized as a field guide, with lots of color pictures in a format suitable for use in the field.



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**NCB Executive Committee Meeting**

2:00 – 5:00 PM

Market St.

**Registration**

11:00 AM – 6:00 PM

Gateway Galley

**Photo Salon**

6:00 PM – 7:00 PM

Gateway Ballroom III

**Preliminary Linnaean Games**

7:00 – 10:00 PM

Gateway Ballrooms I & II

**A/V Room (Upload Presentations)**

11:00 AM – 6:00 PM

Broadway I

**Student Competition Poster Setup**

11:00 AM – 9:00 PM

Arch View Ballroom

**Program Symposium**

*Ecology and Impact of Spiders in  
Terrestrial Ecosystems*

2:00 PM – 4:45 PM

Gateway Ballroom III



# Program Symposium

## Ecology and Impact of Spiders in Terrestrial Ecosystems

**Sunday, March 15, 2009**

2:00 PM – 4:45 PM

Gateway Ballroom III

### *Moderators:*

Susan A. Romero, and Kelton D. Welch, *University of Kentucky*

2:00

- 1 Spider communities in soybean are influenced by the surrounding agricultural landscape**  
Mary M. Gardiner, *The Ohio State University*  
Doug A. Landis, *Michigan State University*

2:25

- 2 Seasonal variation in the consumption frequency of Diptera determined by an order-specific monoclonal antibody**  
Jason M Schmidt, *Miami University*  
James D Harwood, *Department of Entomology*  
Ann L Rypstra, *Miami University, Department of Zoology*

2:50

- 3 Predator diet breadth and the impact of natural enemy diversity on herbivore suppression: Implications for the role of spiders in biological control**  
Deborah L. Finke, *University of Missouri*

3:15

**Break**

3:30

**4      How an herbicide influences epigeal intraguild predator activity in agroecosystems**

Kerri M. Wrinn, Samuel C. Evans, and Ann L. Rypstra, *Miami University, Department of Zoology*  
Emma M. Shaw, *Manchester Metropolitan University, Department of Environmental and Geographic Sciences*

3:55

**5      Epigeal spider responses to large-scale manipulations of plant litter and nutrients in a temperate grassland**

L. Brian Patrick, *Kent State University-Tuscarawas*

4:20

**6      Niche partitioning and resource utilization by spiders in terrestrial agroecosystems**

James D. Harwood, Susan Romero, and Kelton D. Welch, *Department of Entomology, University of Kentucky*



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**Session 1**

10:00 AM – 5:00 PM

Arch View Ballroom

**B.S. Student Competition Papers**

**Session 1**

10:15 AM – 11:32 AM

Broadway II

**M.S. Student Competition Papers**

**Session 2**

10:15 AM – 12:08 AM

Gateway Ballroom III

**M.S. Student Competition Papers**

**Session 3**

10:15 AM – 11:58 AM

Gateway Ballroom IV

**Ph.D. Student Competition Papers**

**Session 4**

10:15 AM – 11:44 AM

Gateway Ballroom V

# Schedule

**Monday, March 16, 2009** (continued)

**Ph.D. Student Competition Papers**

**Session 5**

10:15 AM – 11:32 AM

Gateway Ballroom I & II

**Job Perspectives for Entomologists in Industry**

12:00 PM – 5:30 PM

Broadway II

**Program Symposium**

*Contributions Towards Understanding the Impact  
and Strategies for the Changing Sunflower Insect Pest  
Complex from Texas to Canada*

1:00 PM – 5:15 PM

Gateway Ballroom III

**General Oral**

**Session 1**

1:00 PM – 2:17 PM

Gateway Ballroom IV

**Poster Take Down/Setup**

5:00 PM – 8:00 PM

Arch View Ballroom

**Photo Salon**

6:00 PM – 7:00 PM

Gateway Ballroom III

**Final Linnaean Games**

7:00 – 9:00 PM

Gateway Ballrooms I & II

**Mixer/Reception**

9:00 PM – 10:00 PM

Arch View Ballroom



# Student Competition Posters

## Session 1

**Monday, March 16, 2009**

10:00 AM – 5:00 PM

Arch View Ballroom

### B.S. Posters

- D1 Preying mantids prefer solid colored mealworms to striped mealworms**  
Lacey M. Keeten and W. Wyatt Hoback, *University of Nebraska at Kearney*
- D2 It Mite Be the Right Host: Phoretic Mite Selection of Burying Beetles Host**  
Andrew Prososki and W. Wyatt Hoback, *University of Nebraska at Kearney*
- D3 Effects of Artemisia extracts on feeding in Cydia pomonella**  
Kevin Durden, Samantha Sellars, and Maciej Pszczolkowski, *Missouri State University*
- D4 Differences in sugar preferences in several populations of the termite Reticulitermes flavipes during different seasons**  
Bruce A. Wallace and Timothy M. Judd,  
*Department of Biology, Southeast Missouri State University*
- D5 Survey of Black Light Captures in an Illinois Agricultural Landscape**  
Caitlin M. Allen, Kelly A. Estes, Ronald E. Estes,  
and Nicholas A. Tinsley, *University of Illinois*
- D6 When to flash? The effects of halogen and LED light on Photinus pyralis (Coleoptera: Lampyridae)**  
Danielle M. Brandt and Sarah A. Vordtriede,  
*St. Ambrose University*

## M.S. Posters

- D7 Effects of different volatiles on *Telenomus remus* (Hymenoptera:Scelionidae) behavior**  
Lindsay A. Vivian and W. Wyatt Hoback,  
*University of Nebraska at Kearney*  
Dr. Odair Fernandes and Alexandre C. Menezes  
Netto, *Universidade Estadual Paulista-Jaboticabal, SP, Brasil*
- D8 Occurrence of entomopathogenic fungi and nematodes in cornfields: survey of pathogens attacking western corn rootworm *Diabrotica virgifera virgifera***  
Melissa L Rynerson and Aaron J Gassmann, *Iowa State University*
- D9 Diversity and population dynamics of bees on sunflower (*Helianthus annuus* L.) fields in eastern Nebraska**  
Kentaro Miwa, *University of Nebraska-Lincoln*
- D10 Classical biological control of the soybean aphid in Wisconsin: Release of an exotic soybean aphid parasitoid**  
Camila Botero and David Hogg, *University of Wisconsin-Madison*
- D11 Soybean Aphid**  
Julie Hochhalter and Janet J. Knodel, *North Dakota State University*
- D12 Assessing Risk to Rotated Corn in Iowa from Western Corn Rootworms**  
Michael W. Dunbar and Aaron J. Gassmann, *Iowa State University*
- D13 Spatial and Ecological Patterns of Tent Location in the Eastern Tent Caterpillar, *Malacosoma americanum* (Lepidoptera: Lasiocampidae)**  
Jennifer Pleasant, Ann Fritz, and Eric Bollinger,  
*Eastern Illinois University*



- D14 Dominance hierarchy and nutrient acquisition in the slave-making ant *Protomognathus americanus***  
Jason R. Carbaugh and Timothy M. Judd,  
*Department of Biology, Southeast Missouri State University*

## **Ph.D. Posters**

- D15 The ambrosia beetle community and its habitat use in oak-hickory forests**  
Sharon E. Reed and Dr. Rose-Marie Muzika,  
*University of Missouri, Department of forestry*
- D16 Aquatic Insect, Amphipod, and Isopod Communities and Habitat Gradients in Missouri Spring Systems**  
Megan M. Zeller, Richard M. Houseman, and Robert W. Sites, *University of Missouri*
- D17 Habitat Management Techniques to Control Maize Stem Borers in Ethiopia**  
Difabachew Belay and J.E. Foster, *Department of Entomology, University of Nebraska-Lincoln*  
Fritz Schulthess  
Charles Omega
- D18 Interaction effects of habitat fragmentation, patch connectivity and spatial configuration: Implications for metapopulation persistence and stability**  
Byju Nambidiyattil Govindan, *Purdue University*
- D19 Spider web site selection: patterns in vertical web placement**  
Kelton Welch, *University of Kentucky*
- D20 Evolution of baridine weevils (Coleoptera: Curculionidae: Baridinae)**  
Steve Davis, *University of Kansas*
- D21 The effects of soil micronutrients on the foraging behavior of the termite *Reticulitermes flavipes***  
Paul S. Botch, *University of Missouri*  
Timothy M. Judd, *Southeast Missouri State University*

- D22 Preliminary Genetic Analysis of Selected WBC Populations**  
Erica Lindroth, Thomas E. Hunt, Donald Lee, and John E. Foster, *University of Nebraska*  
 Steven R. Skoda, *USDA-ARS-SPASRU*  
 Michael D. Culy, *Dow AgroSciences*
- D23 Genetic variation of a local population of Stable fly, *Stomoxys calcitrans* (L.) (Diptera: Muscidae)**  
Kate M. Kneeland and John E. Foster, *University of Nebraska-Lincoln*  
 Steven R. Skoda, *USDA-ARS*  
 S.S.A. El Shall, *Biological Application Department, Nuclear Research Center, Egyptian Atomic Energy Authority, Cairo, Egypt*
- D24 Host plant resistance to *Dectes* stem borer in soybean plant introductions**  
Terutaka Niide, C. Michael Smith, and Robert J. Whitworth, *Department of Entomology, Kansas State University*  
Lawrent L. Buschman, *KSU South Western Research and Extension Center*
- D25 Evaluation of Hard Red Spring Wheat Varieties for Wheat Stem Sawfly Resistance in North Dakota**  
Patrick B. Beauzay, Janet J. Knodel, Eric D. Eriksmoen, and Neil R. Riveland, *North Dakota State University*  
 William A. Berzonsky, *South Dakota State University*
- D26 Thiamethoxam seed treatments are compatible with soybean aphid fungal entomopathogens**  
Karrie A. Koch and David W. Ragsdale, *University of Minnesota*
- D27 Soybean aphid (*Aphis glycines* Matsumura) on edamame (*Glycines max*) soybean in Nebraska**  
 Bamphitlhi Tiroesele, Dr. Thomas E. Hunt,  
 Dr. John E. Foster, Dr. Robert J. Wright,  
 Dr. Stephen Mason, and Dr. Erin E. Blankenship,  
*University of Nebraska-Lincoln*

- D28 Fitness comparisons of Bt-resistant and Bt-susceptible western corn rootworm colonies**  
Lisa Meihls and Georgia Davis, *University of Missouri*  
Bruce Hibbard, *USDA-ARS*
- D29 Western Corn Rootworm feeding damage is reduced by the brown midrib2 mutation**  
Kristen Leach and Dara Boardman, Theresa Musket, and Georgia Davis, *Division of Plant Sciences, University of Missouri*  
Kelli Barr, *Florida Gulf Coastal University*
- D30 A Wolbachia based population suppression strategy for controlling the lymphatic filariasis vector *Aedes polynesiensis***  
Corey L. Brelsfoard and Stephen L. Dobson, *University of Kentucky*



# **B.S. Student Competition Presentations**

## **Session 1**

**Monday, March 16, 2009**

10:15 AM – 11:32 AM

Broadway II

*Moderator: Brian McCornack, Kansas State University*

10:15

**7 Introduction**

Brian McCornack, *Kansas State University*

10:20

**8 Introduced western squitofish, *Gambusia affinis*, also consume Trichoptera larvae**

Morgan Kellogg, Lindsay Vivian, and W. Wyatt Hoback, *University of Nebraska at Kearney*

10:32

**9 Molecular identification of interaction pathways between carabid beetles and slugs in alfalfa agroecosystems**

Mark K. Adams and James D. Harwood,  
*Department of Entomology, University of Kentucky*

10:44

**10 Comparing four different pollinator regimes for oilseed crops: *Brassica napus* and *Brassica rapa***

Kelly Seman, *Iowa State University*

10:56

**11 Species identification of wood-boring beetles using mtDNA from gallery frass**

John Shukle and Jeff Holland, *Purdue University*

11:08

**12 Assessing the status of buffer zones in organic production for pest management: is there room for improvement?**

Rachael Ann Cox, *Iowa State University*

Matthew O'Neal, *Department of Entomology, Iowa State University*

Stephen Sapp, *Department of Sociology, Iowa State University*

11:20

**13 Non-target Coleoptera Caught by EAB Purple Traps**

Michael Skvarla, *Purdue University*



# M.S. Student Competition Presentations

## Session 2

**Monday, March 16, 2009**

10:15 AM – 12:08 PM

Gateway Ballroom III

*Moderator: Jennifer Zaspel, University of Minnesota*

10:15

**14 Introduction**

*Jennifer Zaspel, University of Minnesota*

10:20

**15 Overwintering habitat selection of the Colorado potato beetle, *Leptinotarsa decemlineata* (Say), in Wisconsin's Central Sands Production Region**  
*Anders Huseeth and Russell L. Groves, University of Wisconsin-Madison Department of Entomology*

10:32

**16 Macroinvertebrate Response to Buffer Zone Quality in the Rainwater Basin Wetlands of Nebraska**

*John Riens and Dr. W. Wyatt Hoback, University of Nebraska at Kearney*

10:44

**17 A look at *Telenomus Remus* behavior**

*Lindsay A Vivian, UNK*

10:56

**18 Range expansion of the sand fly, *Lutzomyia shannoni* (Dyar): climate change and a heat unit accumulation model**

*Logan M. Minter and Grayson C. Brown, University of Kentucky, Department of Entomology*

11:08

- 19 Relationship between amino acid composition and resistance to soybean aphid**  
Mariana Chiozza, Matthew O'Neal, and Gustavo MacIntosh, *Iowa State University*

11:20

- 20 Effect of low-linolenic acid soybean on soybean aphid population**  
Michael McCarville and Matthew O'Neal, *Department of Entomology, Iowa State University*  
Charles Kanobe and Gustavo MacIntosh, *Department of Biochemistry, Biophysics, and Molecular Biology, Iowa State University*  
Gregory Tylka, *Department of Plant Pathology, Iowa State University*  
Palle Pedersen, *Department of Agronomy, Iowa State University*

11:32

- 21 Impact of Foliar Fungicides on Soybean Aphid (Hemiptera: Aphididae) in Iowa**  
Rebekah M Ritson, Matthew O'Neal, Alison Robertson, Daren Mueller, and Nathan Bestor, *Iowa State University*

11:44

- 22 68Lure and kill68: A novel approach to controlling Japanese beetle (*Popillia japonica* Newman)**  
Elizabeth Erin Morris and Parwinder S. Grewal, *The Ohio State University*

11:56

- 23 Investigating the bioaccumulation of ethylmercury in Saskatchewan wetland food webs**  
Lara Michelle Bates and Britt D Hall, *University of Regina*



# M.S. Student Competition Presentations

## Session 3

**Monday, March 16, 2009**

10:15 AM – 11:58 PM

Gateway Ballroom IV

*Moderator: Michelle Smith, Dow Agro Sciences*

10:15

**24 Introduction**

Michelle Smith, Dow AgroSciences

10:20

**25 Comparison of an insecticidal seed-treatment and host-plant resistance for managing soybean aphids in Illinois and implications for predators**

Nicholas A. Tinsley, Kevin L. Steffey, Ronald E. Estes, Joshua R. Heeren, and Michael E. Gray,  
*University of Illinois at Urbana-Champaign*

10:32

**26 Horizontal Transfer of Methoprene through Cannibalization by *Tribolium castaneum***

Angela M. Tucker and Kun Yan Zhu, *Kansas State University*

Jim Campbell and Frank Arthur, *Grain Marketing and Production Research Center, Manhattan, KS*

10:44

**27 Role of pheromones in the mate location and recognition behavior of *Mallodon dasystomus* (Coleoptera: Cerambycidae)**

Annie Elizabeth Spikes and Matthew Ginzel,  
*Purdue University*

Nathan Schiff, *USDA Forest Service, Center for Bottomland Hardwoods Research*

Jocelyn G. Millar, *University of California Riverside*



10:56

- 28**    **Friend or Foe: a Study of Myrmecophilous Mites**  
Kaitlin A. Uppstrom and Hans Klompen, *The Ohio State University*

11:08

- 29**    **Survival of Three Stored Product Insects against Flameless Catalytic Infrared Radiation**  
Subramanyam Bhadriraju and Hulya Dogan, *Kansas State University*

11:20

- 30**    **Can methyl salicylate, an herbivore-induced plant volatile, enhance biological control of the soybean aphid in soybean fields?**  
Rachel Mallinger and David Hogg, *University of Wisconsin-Madison*

11:32

- 31**    **Thinking outside the Asclepias box: Oleander aphids and honeyvine milkweed**  
Sarah M. Colvin and Kenneth V. Yeargan, *University of Kentucky*

11:44

- 32**    **Ant-exclusion to promote conservation biological control of calico scale on woody landscape plants**  
Sarah J. Vanek and Daniel A. Potter, *University of Kentucky*



# Ph.D. Student Competition Presentations

## Session 4

**Monday, March 16, 2009**

10:15 AM – 11:44 AM

Gateway Ballroom V

**Moderator:** Louis Hesler, USDA-ARS

10:15

**33 Introduction**

Louis Hesler, USDA-ARS

10:20

**34 Utilizing Remote Sensing to Track Wheat Streak Mosaic Virus in Wheat**

Abby R. Stilwell, Gary L Hein, and Donald C. Rundquist, *University of Nebraska - Lincoln*

10:32

**35 Degradation of Fipronil in Aqueous Solution Stored in Polyethylene Tanks in Sun and Shade Conditions**

Timothy J. Husen, Neil A. Spomer, Shripat T. Kamble, *University of Nebraska-Lincoln*

10:44

**36 Persistence of Indoxacarb and Chlorantraniliprole in Four Midwestern Soils and Their Bioavailability to the Eastern Subterranean termites, Reticuliter**

Neil A. Spomer and Shripat T. Kamble, *University of Nebraska*

10:56

**37 Non-target Effects of Dimilin and Malathion on Burying Beetles (Coleoptera: Silphidae) May Explain American Burying Beetle Distribution in Nebraska**

Jessica Jurzenski, *University of Nebraska-Lincoln*  
Laura Vicentini and Maria Laura Giardini,  
*Department of Fitossanidade, FCAV/UNESP*  
W. Wyatt Hoback, *University of Nebraska at Kearney*

11:08

**38 Effect of host legacy on adult black vine weevil performance**

David R. Coyle and Kenneth F. Raffa, *University of Wisconsin-Madison*  
Katy E. Clark and Scott N. Johnson, *Scottish Crop Research Institute*

11:20

**39 Vertical stratification in a web-building spider community**

Kelton D. Welch, Susan A. Romero, and  
James D. Harwood, *University of Kentucky*

11:32

**40 Pollen interception by linyphiid spiders: effect of anthesis on dietary supplementation and prey availability**

Julie A. Peterson, Susan Romero, and James D.  
Harwood, *University of Kentucky*



# Ph.D. Student Competition Presentations

## Session 5

**Monday, March 16, 2009**

10:15 AM – 11:32 AM

Gateway Ballroom I & II

*Moderator: Ronda Hamm, Dow AgroSciences*

10:15

**41 Introduction**

Ronda Hamm, *Dow AgroSciences*

10:20

**42 Taxonomy and Phylogeny of leafhopper  
subfamily Idiocerinae (Hemiptera: Cicadellidae)  
from Madagascar**

Sindhu Krishnankutty, *University of Illinois*

10:32

**43 Probability of Cost-effective Management of  
Soybean Aphid (Hemiptera: Aphididae) in  
North America**

Kevin D. Johnson, Matthew E. O'Neal, and Philip  
M. Dixon, *Iowa State University*

David W. Ragsdale, *University of Minnesota*

Christina D. DiFoonzo and Scott M. Swinton,  
*Michigan State University*

10:44

**44 Rangeland grasshopper numbers and species  
composition in Nebraska: A comparison of  
fields, fences, and roadside ditches**

Sean D. Whipple, *University of Nebraska at Lincoln*

Mathew L. Brust, *Chadron State University*

W. Wyatt Hoback, *University of Nebraska at Kearney*

10:56

**45 Chemical signals in communities of longhorned beetles**

Robert F. Mitchell, Elizabeth E. Graham, Peter F. Reagel, and Lawrence M. Hanks, *University of Illinois at Urbana-Champaign*

Jocelyn G. Millar, *University of California at Riverside*

11:08

**46 Mitochondrial DNA in North American Lygus (Hemiptera: Miridae) Species: Analysis of Intra- and Inter-specific Relationships**

Prasad S. Burange and Mark A. Boetel, *North Dakota State University*

Richard L. Roehrdanz, *USDA-ARS*

11:20

**47 Effects of habitat fragmentation, patch connectivity and spatial configuration on metapopulation persistence and stability**

Byju Nambidiyattil Govindan and Robert K Swihart, *Purdue University*

Bryan D Price



# Job Perspectives for Entomologists in Industry

**Monday, March 16, 2009**

12:00 PM – 5:30 PM

Broadway II

***Moderator:** Tederson Galvan, Monsanto, Inc.*

12:00

**48 Introduction and transport to Chesterfield**  
Ted Galvan, Monsanto, Inc.



# Program Symposium

## Contributions Towards Understanding the Impact and Strategies for the Changing Sunflower Insect Pest Complex from Texas to Canada

**Monday, March 16, 2009**

1:00 PM – 5:15 PM

Gateway Ballroom III

*Moderators: Janet J. Knodel, North Dakota State University and Larry D. Charlet, USDA, ARS*

1:00

- 49 Welcome & Introduction and Review of  
Sunflower Insect Pests from NSA Survey  
2001 – 2008**

*Janet J. Knodel, Entomological Department, NDSU*

1:30

- 50 Update on insect pest situation in the Central  
Plains States**

*Phil Sloderbeck, Entomological Department, KSU*

2:00

- 51 Update on insect pest situation in Manitoba,  
Canada**

*Brent Elliott, Canada*

2:30

- 52 Ecology of *Dectes texanus* on sunflowers and  
novel tactics for mitigating yield losses**

*J.P. Michaud, Entomological Department, KSU*

3:00

**Break**

3:15

- 53     **Developing pest management strategies for an emerging sunflower insect pest, sunflower seed maggot (*Neotephritis finalis* (Loew))**  
*Mangala Ganeshiarachchi, Entomological Department, NDSU*

3:45

- 54     **Review of host plant resistance studies on sunflower insect pests**  
*Larry D. Charlet, USDA ARS*

4:15

- 55     **Mechanisms of host plant resistance against banded sunflower moth in selected sunflower accessions**  
*Anitha Chirumanmilla, Entomological Department, NDSU & USDA ARS*

4:45

- 56     **Pollinators, Pests and Sunflower Yield Management**  
*Gary Brewer, Entomological Department, UNE*





# General Oral

## Session 1

**Monday, March 16, 2009**

1:00 PM – 2:17 PM

Gateway Ballroom IV

**Moderator:** Russell L. Groves, *University of Wisconsin-Madison, Department of Entomology*

1:00

**57 Introduction**

Russell L. Groves, *University of Wisconsin-Madison, Department of Entomology*

1:05

**58 Sustainable Management Solutions for the Cucumber beetle-bacterial wilt complex**

Russell L. Groves and Scott A. Chapman, *University of Wisconsin-Madison, Department of Entomology*  
Bill Halfman, *University of Wisconsin, Cooperative Extension*

1:17

**59 Recruit HD, a new termite bait from Dow AgroSciences: product concept overview and bait matrix development**

Mike Tolley, Joe DeMark, Joe Eger, Ronda Hamm, Matt Messenger, Mike Lees, Ellen Thoms, Marc Fisher, Mike Melichar, and Jackie McKern, *Dow AgroSciences*

1:29

**60 Recruit HD, a new termite bait from Dow AgroSciences: termite hit rate, bait consumption, durability, and colony elimination**

Ronda L. Hamm, Joe Eger, Mike Tolley, Matt Messenger, Ellen Thoms, Mike Lees, Joe DeMark, Marc Fisher, Mike Melichar, and Jackie McKern, *Dow AgroSciences*

1:41

- 61 **Landscape Factors Associated with Subterranean Termite Infestations in Missouri Neighborhoods**  
Richard M. Houseman, *University of Missouri*

1:53

- 62 **Nosema and tracheal mite prevalence in honey bee colonies in the North Central Region of the U.S.**  
Marion D. Ellis, *University of Nebraska*  
Louis Chapon, *University of Avignon, France*  
Alan Szalanski, *University of Arkansas*

2:05

- 63 **Genetic variation of Africanized honey bees in the United States**  
Allen L. Szalanski and Roxane A. Magnus,  
*University of Arkansas*



# Schedule

**Tuesday, March 17, 2009**

**Continental Breakfast**

7:00 AM – 8:00 AM

Arch View Ballroom

**BCE Meeting**

7:00 AM – 8:00 AM

Gateway Ballroom III

**A/V Room (Upload Presentations)**

8:00 AM – 12:00 PM

1:30 PM – 5:00 PM

Broadway I

**Registration**

8:00 AM – 12:00 PM

1:30 PM – 5:00 PM

Grand Foyer

**Program Symposium**

*Green Technology and Pest Management*

8:00 AM – 12:05 PM

Gateway Ballroom III

**Submitted Posters**

**Session 1**

8:00 AM – 5:00 PM

Arch View Ballroom

**General Oral**

**Session 2**

9:00 AM – 11:38 AM

Gateway Ballroom IV

**Awards Luncheon**

12:00 PM – 1:30 PM

Gateway Ballrooms I & II

# Schedule

**Tuesday, March 17, 2009** (continued)

**Program Symposium**

*More Biological Control Please: Extension  
and Outreach Efforts to Increase Awareness  
and Appreciation of Natural Enemies*

1:30 PM – 4:50 PM

Gateway Ballroom III

**General Oral**

**Session 3**

1:30 PM – 4:42 PM

Gateway Ballroom IV

**Poster Take Down**

5:00 PM – 8:00 PM

Arch View Ballroom

**Linnaean Games: Winners vs. Old Timers**

6:30 PM – 7:00 PM

Gateway Ballrooms III & IV

**Branch Mixer**

7:00 PM – 9:00 PM

Arch View Ballroom



# Program Symposium

## Green Technology and Pest Management

**Tuesday, March 17, 2009**

8:00 AM – 12:05 PM

Gateway Ballroom III

**Moderators:** Shripat T. Kamble, *University of Nebraska  
Department of Entomology*

8:00

**64 Opening Remarks - Going Green**

Shripat T. Kamble, *Department of Entomology,  
University of Nebraska*

8:05

**65 Developing Green Pest Management Solutions:  
An Industry Perspective**

Christopher J. Voglewede, James E. Dripps, Luis  
E. Gomez, and Mike Tolley, *Dow AgroSciences LLC.*

8:35

**66 Federal Grant Research and Needs for Green  
Technologies in Pest Management**

Mary Purcell-Miramontes, *USDA-NIFA*

9:05

**67 Managing Insect Pests of Turfgrass: What Does  
the Future Hold?**

Daniel A. Potter and Carl T. Redmond, *Department  
of Entomology, University of Kentucky*

9:35

**68 Green Approaches to Pest Management in Stored  
Product Protection**

Thomas W. Phillips, *Department of Entomology,  
Kansas State University*

10:05

**69 The Impact of Transgenic Plants in a Changing  
Environment**

Ty T. Vaughn, *Monsanto Inc*

10:35

**70    Discovery, Development and Commercialization  
of Natural Products for Pest Management**

Pam Marrone, *Marrone Organic Innovations, Inc.*  
(MOI)

11:05

**71    Easy being Green? Perspectives from Industry  
on Green Technology & Pest Management**

Keri Henderson and Laura Higgins, *Pioneer  
Hi-Bred International*

11:35

**72    Integrating Insect, Stress, and Output Traits for a  
Green Tomorrow**

Von Kaster, *Syngenta Seeds*



# Submitted Posters

## Session 1

**Tuesday, March 17, 2009**

D31 – D62

8:00 AM – 5:00 PM

Arch View Ballroom

**D31 Biology, Entomology, or Both: Distance MS Degree Options from the University of Nebraska System**

Brian Peterson, Elizabeth Wethington, and W. Wyatt Hoback, *University of Nebraska at Kearney*  
John Foster, *University of Nebraska- Lincoln*

**D32 After Ten Years: A Look at Distance Delivery of an Entomology MS Degree Program**

Tom Weissling, John Foster, and Ousmane Youm, *Department of Entomology, University of Nebraska-Lincoln*  
Wyatt Hoback, *Department of Entomology, University of Nebraska-Kearney*

**D33 Potential and Opportunities for Distance Education Delivery to Sub-Saharan Africa**

Ousmane Youm and John E. Foster, *Department of Entomology University of Nebraska-Lincoln*  
W. Wyatt Hoback, *Department of Biology, University of Nebraska-Kearney*

**D34 Arthropod Ecology and Biodiversity in Agroforestry versus Conventional Cropping Practices**

W. Terrell Stamps and Terryl L. Woods, *University of Missouri*

**D35 Biotic and Abiotic Factors Affect Green Ash Volatile Production and Emerald Ash Borer Adult Feeding Pre**

Yigen Chen, *Department of Entomology, Michigan State University*  
Therese Poland, *USDA Forest Service*

- D36 Detection of low-density emerald ash borer infestations: evaluating trap design, placement and ash distribution**  
Nathan W. Siegert, *Michigan State University*  
 Deborah G. McCullough, *Michigan State University*  
 Therese M. Poland, *US Forest Service*
- D37 Assessing the influence of clusters of girdled trees on the spread of emerald ash borer in forested areas**  
Nathan W. Siegert and Deborah G. McCullough, *Michigan State University*  
 Therese M. Poland, *US Forest Service*  
 Robert L. Heyd, *Michigan Department of Natural Resources*
- D38 Molecular cloning of mariner-like elements from emerald ash borer**  
Loren Jackeline Rivera Vega and Omprakash Mittapalli, *Department of Entomology, The Ohio State University/OARDC*
- D39 Organization of aminopeptidase N genes in the genomes of Lepidoptera**  
Brad Coates and Douglas V. Sumerford, *USDA-ARS, Corn Insects & Crop Genetics Research Unit*
- D40 Tandem duplication of the Lepidopteran aminopeptidase gene family**  
Brad Coates and Douglas V. Sumerford, *USDA-ARS, Corn Insects & Crop Genetics Research Unit*
- D41 Soybean Arthropod Response to Glyphosate-Resistant Soybean Management**  
 Meinhardt, Clinton G. and Wayne C. Bailey,  
 Division of Plant Sciences, *University of Missouri*  
 Thomas L. Clark, *Monsanto, Inc.*
- D42 Mites as predators of immature corn rootworms (*Diabrotica* spp.)**  
Deirdre A. Prischmann-Voldseth, *North Dakota State University*  
 Jonathan G. Lundgren, Kenton E. Dashiell, *USDA-ARS North Central Agricultural Research Lab*



- D43 Field Trial Performance Of SmartStax For Protection Against Above-Ground Corn Insects And Corn Rootworms**  
Ed King, Bill Hendrix, Patricia Prasifka, Eric Scherder, Sam Ferguson, and Melissa Willrich Siebert, *Dow AgroSciences*
- D44 The effect of volunteer corn in soybean on corn rootworm**  
Bruce D. Potter and Kenneth R. Ostlie, *University of Minnesota, Department of Entomology*
- D45 Diabrotica Emergence Patterns in mCry3Aa Maize in South Dakota**  
Bradley McManus and Billy Fuller, *South Dakota State University*
- D46 Performance of Transgenic Rootworm Resistant Corn in Minnesota**  
Kenneth R. Ostlie, *University of Minnesota, Department of Entomology*
- D47 Optimum AcreMax1 Insect Protection: Assessing Field Performance of an Insect Control Trait Deployed with Blended Refuge**  
Timothy Nowatzki, Murdick McLeod, Herb Eichenseer, Mel Peters, and Laura Higgins, *Pioneer Hi-Bred International*
- D48 Ovarian Development of Irradiated Screwworms *Cochliomyia hominivorax* (Coquerel) (Diptera: Calliphoridae): Effects of Strain and Age**  
Samira Sayed Ahmed Elshall, *Univeristy of Nebraska*  
 Steven R. Skoda, *USDA- ARS Screwworm Research Unit*  
 Dennis Berkebile, *USDA-ARS*  
John E. Foster, *University of Nebraska-Lincoln, Department of Entomology*
- D49 Ultrastructural changes in the midgut of Hessian fly larvae feeding on resistant wheat**  
Richard H. Shukle and Christie E. Williams, *USDA-ARS*  
 Subhashree Subramanyam, *Purdue University*

- D50 Analyzing the diversity of secreted salivary gland transcripts in Hessian fly populations from Israel and the United States**  
Alisha Johnson, Sue Cambron and Richard H. Shukle, *USDA-ARS/Purdue University*  
Ming S. Chen, *USDA-ARS/Kansas State University*  
Philip K. Morton, *Purdue University*
- D51 A Preliminary Study of the Biogeography of the dwarf honey bees, *Apis florea* and *A. andreinii* forms**  
Jason Palikij and Deborah Smith, *University of Kansas*
- D52 Longhorned Beetle (Coleoptera: Cerambycidae) Species Diversity and Community Structure in a Fragmented Temperate Forest Landscape**  
Daniel M. Pavuk, *Michigan State and Ohio State Universities Extension*  
Andrea M. Wadsworth, *Department of Biological Sciences, Bowling Green State University*
- D53 Prey utilization by a linyphiid spider community: variation across diel and seasonal gradients**  
Susan A. Romero and James D. Harwood, *University of Kentucky*
- D54 Distribution and Pest status of the Dectes Stem Borer (Coleoptera: Cerambycidae) in Kansas**  
Lawrent L. Buschman and Phillip E. Sloderbeck, *Kansas State University*
- D55 A brief history of the eastern subterranean termite in Wisconsin**  
Rachel A. Arango, Frederick Green III, Glenn R. Esenther, *USDA Forest Products Laboratory*

- D56 Detached Leaf Assay for Soybean Aphid Biotype Diagnostics**  
Nelson Horacio Davila Olivas and Jane Todd,  
*USDA/ ARS Insectary, OARDC, The Ohio State University*  
 MA Rouf Mian, *USDA/ARS Corn and Soybean Research*  
 Andy Michel, *Department of Entomology, OARDC, The Ohio State University*
- D57 Nosema and tracheal mite levels in honey bee colonies in the North Central Region**  
Louis Chapon, *University of Avignon, France*
- D58 The Coccinellidae of South Dakota: Images and Morphology**  
Louis Hesler and Eric Beckendorf, *USDA-ARS-NCARL*  
 Guy Hanley, *Minot St. University*  
 Robert Kieckhefer, *USDA-ARS*  
 Michael Catangui, *South Dakota St. University*
- D59 mtDNA Barcoding for taxonomic identification within the genus *Agrilus***  
John Shukle and Jeff Holland, *Purdue University*
- D60 The efficacy of high concentrations of ozone on adult maize weevil (*Sitophilus zeamais* (Motsch.)) and rice weevil (*S. oryzae* (L))**  
Marissa McDonough and Linda Mason, *Purdue University*
- D61 Efficacy of Miticides for Control of Spider Mites in Corn 2008**  
Ankush Joshi, *KSU-SWREC*  
Lawrent L. Buschman, *Department of Entomology, Kansas State University*
- D62 Field Efficacy Of Deltamethrin Against American Cockroaches, *Periplaneta americana* (L.) (Dictyoptera: Blattidae) In The Sewer System**  
ABDUL HAFIZ AB MAJID, *Univeristy of Nebraska-Lincoln*  
 ABU HASSAN AHMAD, *University Sains Malaysia*



# General Oral

## Session 2

**Tuesday, March 17, 2009**

9:00 AM – 11:38 AM

Gateway Ballroom IV

**Moderators:** Mike Culy, *Dow Agro Scinces*  
and Mark Boetel, *North Dakota State University*

9:00

**73 Introduction**

Mike Culy, *Dow AgroSciences*

Mark Boetel, *North Dakota State University*

9:05

**74 Western bean cutworm in corn in the Texas Panhandle**

Roxanne Fegley, *Texas AgriLife Extension Service*

Jerry Michels, *Texas AgriLife Research*

Bonnie B. Pendleton, *West Texas A&M University*

9:17

**75 Taste discrimination in codling moth neonates**

Maciej A. Pszczolkowski, *Missouri State University*

9:29

**76 A Field Evaluation of Tycoon Granules Against Selected Nuisance Ants in Residential Area**

Timothy J. Husen, Shripat T. Kamble,

Ralph Narain, and Neil A. Spomer, *Department of Entomology, University of Nebraska*

9:41

**77 Requiem, a new insecticide/miticide for use in US specialty crop fruit and vegetable production**

H. Brett Highland, *AgraQuest, Inc.*

9:53

**78 Effect of silicon-based fertilizer applications on insect pests of greenhouses**

Raymond A. Cloyd, *Kansas State University*

Brian K. Hogendorp, *University of Illinois*

10:05

- 79 Spiders in agroecosystems**  
Ann Rypstra, *Miami University*

10:17

**Break**

10:30

- 80 Pan trapping of soybean aphids (*Aphis glycines* Matsumura) and how it can relate to an outbreak**  
Nick Behrens and Dr. Joel Coats, *Iowa State University, Department of Entomology*  
Junwei Zhu, *USDA-ARS AMRU*

10:42

- 81 Are we making a bad situation worse? Anthropomorphic aspects of soybean aphid outbreaks**  
Matthew O'Neal and Nicholas Schmidt, *Iowa State University*

10:54

- 82 Recent efforts to understand the *Dectes* stem borer in Missouri soybean**  
Kelly V. Tindall, *University of Missouri, Division of Plant Sciences*  
Kent Fothergill, *Conservation Seeding and Restoration, Inc*  
Jeff House, *University of Missouri-Extension*

11:06

- 83 Developing a web-based decision support system to manage soybean aphid**  
Brian P. McCornack, *Kansas State University*



# Program Symposium

## More Biological Control Please: Extension and Outreach Efforts to Increase Awareness and Appreciation of Natural Enemies

**Tuesday, March 17, 2009**

1:30 PM – 4:50 PM

Gateway Ballroom III

*Moderators: Kelley Tilmon, South Dakota State University*

1:30

**84 Introduction**

Kelley Tilmon, South Dakota State University

1:35

**85 Engaging the public in biocontrol: The power of pretty plants**

Anna K. Fiedler, Michigan State University

Doug A. Landis, Michigan State University

2:00

**86 The lost ladybug project: Increasing awareness and appreciation of lady beetles through recruitment of citizen scientists**

Louis Hessler and Erik Beckendorf, USDA-ARS, North Central Agricultural Research Laboratory

John Losey, Leslie Allee, and Rebecca Smyth

Cornell University

Michael Catangui, South Dakota State University

2:25

**87 Integrated pest management in a closed system where the public runs wild**

Nathan Brockman, Rieman Gardens, Iowa State University

2:50

**88 Biological control at zoos and conservatories: a potential educational experience!**

Luis Canas, Entomology Department, Ohio State University/OARDC

3:15

**Break**

3:35

**89 Oofta! Selling biological control to Norwegian bachelor farmers in the Upper Midwest**

Kelley J. Tilmon, *Plant Science Department, South Dakota State University*

Matthew E. O'Neal, *Department of Entomology, Iowa State University*

4:00

**90 Purple loosestrife biocontrol: A cooperative rearing program that helped Minnesota conquer this invasive weed**

David Ragsdale, *Department of Entomology, University of Minnesota*

Luke Skinner, *Minnesota Department of Natural Resources*

4:25

**91 Short courses as a means for educating a diverse Institute for Biological Control and the IOBC Ed**

Jonathan Lundgren, *USDA-ARS North Central Agricultural Research Laboratory*



# General Oral

## Session 3

**Tuesday, March 17, 2009**

1:30 PM – 4:42 PM

Gateway Ballroom IV

**Moderator:** Bill Hendrix, *Dow Agro Sciences*  
and Jason Palikij, *North Dakota State University*

1:30

**92 Introduction**

Bill Hendrix, *Dow AgriSciences*

Jason Palikij, *University of Kansas*

1:35

**93 Field trial performance of SmartStax stacked Bt traits technology against above-ground corn insects: A two year summary**

William H. Hendrix, III, Eric Scherder, Patricia Prasifka, Mike Culy, Ed King, and Sam Ferguson, *Dow AgroSciences*

1:47

**94 Field trial performance of SmartStax stacked Bt traits technology against corn rootworms: A two year summary**

Patricia Prasifka, Michael Culy, Bill Hendrix, Sam Ferguson, Eric Scherder, and Ed King, *Dow AgroSciences*

1:59

**95 A Stochastic Population Genetics Model Designed to Assess the Durability of Genetic Traits for the Control of Damage By Nine Caterpillar Pests of Corn**

Bruce H. Stanley and Zaiqi Pan, *Du Pont Crop Genetics*

David W. Onstad, *University of Illinois at Urbana-Champaign*



2:11

**96 Smartstax: Comprehensive Insect Control for Corn**

Chism Craig, Clint Pilcher, Corby Jensen, Graham Head, and Ty Vaughn, *Monsanto, Inc.*  
Bill Hendrix, *Dow AgroSciences*

2:23

**97 Stress Mitigation with YieldGard B.t. Protected Hybrids**

Corby Jensen, Chism Craig, Ravi Sripada, Clinton Pilcher, Marcus Jones, and Jeff Coultas, *Monsanto, Inc.*

2:35

**98 Off with their heads!: Western corn rootworm egg laying is released by decapitation**

Joseph L. Spencer and Luis Orellana Jimenez, *Illinois Natural History Survey-University of Illinois*

2:47

**99 Optimum AcreMax1 Insect Protection: Field Measures of Adult Corn Rootworm (Coleoptera: Chrysomelidae) Production When Refuge is Deployed as a Seed**

Timothy Nowatzki, Murdick McLeod, Analiza Alves, Mel Peters, Stephen Thompson, and Laura Higgins, *Pioneer Hi-Bred International*

2:59

**100 Increased insecticidal activity and broadened control spectrum with Syngenta's Agrisure Viptera corn trait**

Andre Luiz Barreto Crespo, Ryan Kurtz, and David O'Reilly, *Syngenta Biotechnology*  
Von Kaster, Wayne Fithian, and Bruce Battles, *Syngenta Seeds*

3:11

**Break**

3:30

**101 Bean Extrafloral Nectaries, Sought by Insects, Exhibit Structural Uniformity Within the Genus *Vigna***

Mark E. Headings, *The Ohio State University*  
Leona E. Horst and Leslie A. Morris, *USDA-ARS*

3:42

**102 Differences in nutrient levels between castes of the paper wasp, *Polistes metricus***

Timothy M. Judd and Roxane M. Magnus,  
*Department of Biology, Southeast Missouri State University*  
Matthew P. Fasnacht, *Department of Chemistry, Southeast Missouri State University*

3:54

**103 Floral host plants of adult beetles of Central Illinois**

Elizabeth E. Graham and Lawrence M. Hanks,  
*University of Illinois at Urbana-Champaign*  
John F. Tooker, *Pennsylvania State University*

4:06

**104 Fire-colored beetles of the north-central branch region: taxonomy, natural history, and faunal affinities (Coleoptera: Pyrochroidae)**

Daniel K. Young, *University of Wisconsin, Department of Entomology*

4:18

**105 Tale of Three Tigers: Making Sense of the *Cicindela splendida* Hentz Group**

Mathew Louis Brust, *Chadron State College*

4:30

**106 Restoration of St. Anthony Dune Tiger Beetle Habitat**

Kent Fothergill, *Conservation Seeding and Restoration, Inc*  
Steve Bouffard, *Individual Researcher*  
Kelly V. Tindall, *University of Missouri*



# Schedule

**Wednesday, March 18, 2009**

**Continental Breakfast**

7:00 AM – 8:00 AM

Arch View Ballroom

**NCB Business Meeting**

8:00 AM – 9:00 AM

Gateway Ballroom IV

**A/V Room (Upload Presentations)**

8:00 AM – 12:00 PM

Broadway I

**Registration**

8:00 AM – 10:30 AM

Grand Foyer

**Student Affairs Symposium**

*Invasive Insect Management: Are*

*We Making Any Progress*

9:00 AM – 12:00 PM

Gateway Ballroom III

**Program Symposium**

*Applying Proteomic and Genomic Methodology*

*To Pest Insect Control*

9:00 AM – 11:30 AM

Gateway Ballroom IV

**NCB Executive Committee**

12:00 PM – 2:00 PM

Market St.



# Student Affairs Symposium

## Invasive Insect Management: Are We Making Any Progress

**Wednesday, March 18, 2009**

9:00 AM – 12:00 PM

Gateway Ballroom III

**Moderators:** David R. Coyle, *University of Wisconsin*;  
Ann M. Ray, and Lisa Miehl, *University of Missouri*

9:00

**107 Invasive Insect Management: Are We Making Any Progress?**

Brian McCornack, *Kansas State University*

Lynne Rieske-Kinney, *University of Kentucky*

Adam Silagyi, *Florida Department of Agriculture and Consumer Sciences*

Nathan Siegert, *Michigan State University Doctrine*

Patrick Tobin, *USDA Forest Service, Northern Research Station*

Andrew Suarez, *University of Illinois*

9:05

**108 What if the next one eats oak? Predicting the next exotic**

Dr. Jeff Holland, *Purdue University*

9:25

**109 The role of Allee effects in biological invasions**

Dr. Patrick Tobin, *USDA Forest Service, Northern Research Station*

9:45

**110 Update on the Soybean Aphid: Biology, Range, and Management**

Dr. Brian McCornack, *Kansas State University*

10:05

**111 Interactions Between the Soybean Aphid and Asian Ladybird Beetle**

Dr. George Heimpel, *University of Minnesota*

10:25

**Break**

10:40

**112 Hemlock Wolly Adelgid Ecology and Impact in the Appalachians**

Dr. Lynne Rieske-Kinney, *University of Kentucky*

11:00

**113 Emerald Ash Borer in North America: Is There Any Hope?**

Dr. Nathan Siegert, *Michigan State University*

11:20

**114 Status of western corn rootworm in Europe**

Lisa Meihls, *University of Missouri*

11:40

**115 Tracing historical patterns of invasion for the mealy plum aphid (*Hyalopterus prunif*) in North America**

Jeff Lozier, *University of Illinois*



# Program Symposium

## Applying Proteomic and Genomic Methodology To Pest Insect Control

**Wednesday, March 18, 2009**

9:00 AM – 11:30 AM

Gateway Ballroom IV

*Moderators:* Thomas Coudron, *USDA-ARS*

9:00

**116 Introduction**

Thomas Coudron, *USDA – ARS*

9:05

**117 Tentative steps into corn rootworm genomics**

Nick Miller, *USDA-ARS-CICGRU*

9:30

**118 The use of single nucleotide polymorphism (SNP) markers for genetic and genomic analyses of the European corn borer**

Brad Coates, *USDA-ARS-CICGRU*

9:55

**119 Unlocking the mystery of insect transformation by exploring protein kinases with molecular and proteomic approaches**

Yaning Sun and Qisheng Song, *University of Missouri, Division of Plant Sciences*

10:20

**Break**

10:40

**120 Heliobase - Jumpstarting Heliothine Genomics**

Kent Shelby, *USDA-ARS Biological Control of Insects Research Laboratory*

11:05

**121 Transcriptome analysis of the aquatic midge (Chironomus): A step toward toicogenomics**

Kun Yan Zhu, *Kansas State University*



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# Notes

## Notes

*Mark Your Calendars!*

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**NCB-ESA Meeting**

**March 13-17, 2010**

**The Brown Hotel**

**Louisville, KY**