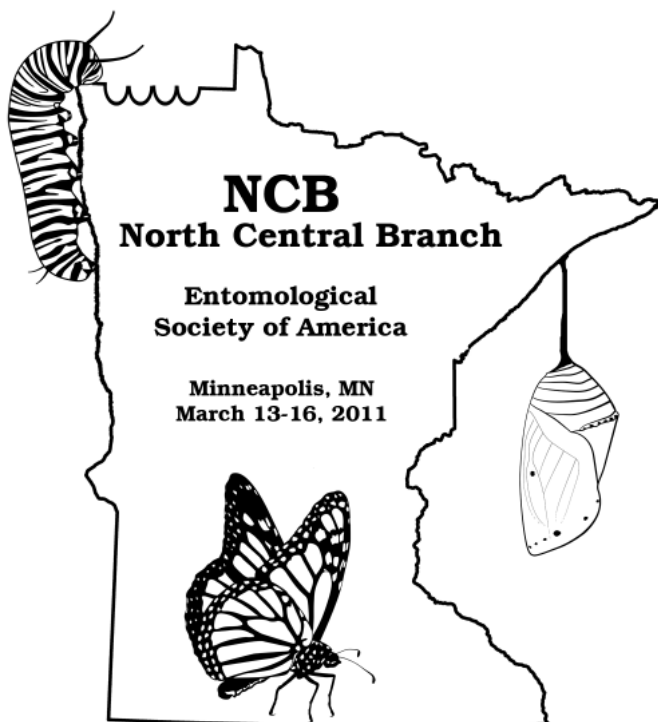


NORTH CENTRAL BRANCH

ENTOMOLOGICAL SOCIETY OF AMERICA

66th Annual Meeting

President: Rick Foster



The Radisson University Hotel
615 Washington Avenue S.E.
Minneapolis, MN 55414

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Registration

All participants must register for the meeting. Registration badges are required for admission to all conference functions. The meeting registration desk is located on the second floor of the Radisson University Hotel, near the top of the escalators. Registration will be open for check-in (pre-registered attendees) and for on-site registration at the following times:

Sunday	Noon -- 9:00 p.m.
Monday	7:30 a.m. -- 5:30 p.m.
Tuesday	7:30 a.m. -- 12:00 p.m. and 1:30 p.m. - 5:30 p.m.
Wednesday	7:30 a.m. -- 9:30 a.m.

Messages, Program Changes, Lost & Found

A message board for posting announcements will be displayed near the NCB Meeting Registration Desk (second floor, near the top of the escalators). Notices concerning program changes should be submitted to the Meeting Registration Desk. Also, lost and found items may be turned in and retrieved at the Registration Desk.

Employment Opportunity Center

Employers are invited to post job announcements and job seekers are encouraged to post their CVs in the Employment Opportunity Center in the Big Ten Room, which is also the A/V room (adjacent to NCB Registration Desk on the second floor of the Radisson Hotel).

Poster Presentations

Posters will be displayed in the Humphrey Ballroom. Posters for all *student competition* sections must be set up Sunday, March 13, between 3:00 p.m. and 8:00 p.m. Student competition posters must be removed Monday between 6:00 p.m. and 8:00 p.m. Posters to be displayed Tuesday (all remaining poster sessions) are to be set up Monday between 6:00 p.m. and 8:00 p.m. These posters must be removed Tuesday evening between 6:00 p.m. and 8:00 p.m. Authors for all (student competition and regular) poster sessions are requested to attend their poster between 2:00 p.m. and 3:00 p.m. on their respective poster session day. Presenters must bring their own pushpins or Velcro to attach posters to poster boards.

Guidelines for Speakers and Moderators

Speakers and moderators will follow standard procedures and practices for ESA meetings. Moderators are responsible for maintaining the printed schedule, by not starting any presentation prior to its scheduled time, and by not allowing a speaker to exceed the allotted time. If a presentation is cancelled, the moderator must wait to begin the next presentation until its scheduled time.

Moderator Training

Moderator training sessions will be held on Sunday and Monday evening, immediately following the Linnaean Games (Univ. C & D).

Audio/Visual Equipment

A/V (AUDIO/VISUAL) EQUIPMENT: All meeting rooms will be equipped with an LCD projector, projection screen, laptop computer, and microphone. The A/V Room (Big Ten room, adjacent to NCB Registration Desk on 2nd floor of Radisson Hotel) will be equipped with laptops throughout the conference for presenters to preview slides and upload presentations. The A/V room will be open during the same hours as the NCB Registration desk (please see Registration schedule above). Timers and pointers will be available in the A/V Room for check-out by moderators and symposium organizers. All computers used in meeting rooms will be PCs, so any presenter who creates a presentation using a Macintosh computer should test the file on a PC prior to the conference.

CREATING & UPLOADING PRESENTATIONS: Presentations should be created in a format that is compatible with MSOffice 2007 PowerPoint (*.pptx). Office 2003 (*.ppt) format is also acceptable, but we cannot accept presentations created using Office 2010 software. Presenters should bring their presentation file to the A/V room on a USB memory stick/flash drive for uploading onto the laptop labeled for their respective 10-minute paper session. Presentations should be uploaded the evening before they are to be presented. Otherwise, presenters should go to the room in which their session is scheduled at least 30 minutes before the session begins and load presentations on the laptop in the room. Student volunteers will be present to provide technical assistance.

IMPORTANT: To facilitate smooth transitions between presentations, each file must be saved on the session laptop as a PowerPoint show (*.pps) using the following filename format:

“PaperNumber – PresenterSurname.pps”.

Presenters are encouraged to AVOID using embedded video in presentations, which could place laptops at risk for locking up. Presenters are also encouraged to bring a back-up copy of their original presentation file to their session on a USB memory stick/flash drive in case there are problems with the session laptop or their uploaded file.

SYMPOSIUM ORGANIZERS & SPEAKERS: Symposium organizers have been directed to provide their own PC laptops and to gather their speakers' presentation files before the conference. Symposium presentations should NOT be loaded onto computers in the A/V room unless otherwise directed. Symposium speakers should check with their symposium organizers for special instructions or to coordinate uploading their presentations on symposium laptops.

About the Meeting Logo

The organism featured in this year's Branch Meeting logo is the monarch butterfly, *Danaus plexippus* (L.). The 2011 NCB-ESA Program and Local Arrangements committees chose the monarch because it is the official State Butterfly of Minnesota. The history of its adoption has an interesting, albeit coincidental, relationship to our branch meeting. The monarch was initially proposed to the Minnesota Legislature by a group of fourth-grade students from O.H. Anderson Elementary School in Mahtomedi, MN, as part of two school projects: 1) "Monarchs in the Classroom", a nationally taught grade school biology education program; and 2) a civics lesson on the legislative process. Inspired by a local legislator who visited the class and explained how a bill becomes a law, the students testified before the legislature in support of adopting the monarch. The resulting bill (S.F. No. 2326), proposing designation of the monarch as the state's official butterfly, was passed in Minnesota's 81st Legislative Session. It was presented to then-governor Jesse Ventura on March 28, 2000 (while the NCB-ESA meeting was being held in Minneapolis), and the governor signed it into law on March 31st.

Guest Tour Program

Event fees for individuals without pre-paid reservations must be paid onsite (cash or check please). Roundtrip transportation from the Radisson to the events is included in the fees.

Sunday, March 13, 2011:

Guthrie Theater – "Song of Extinction" 1:00–4:00 p.m. \$36.00

Max, a musically gifted high school student, is falling off the edge of the world, and his biology teacher is the only one who notices. This new play explores the science of life and loss, father/son relationships, Cambodian fields, Bolivian rainforests, and redemption.

Monday, March 14, 2011:

Mall of America 11:00 a.m.–4:00 p.m. \$10.00

The Mall of America has earned a national reputation for entertaining guests. From musical acts to celebrity book signings to fashion shows, Mall of America is touted as the Hollywood of the Midwest.

James J. Hill House Tour 1:00–4:00 p.m. \$18.00

Rugged stone, massive scale, fine detail, and ingenious mechanical systems recall the powerful presence of James J. Hill, builder of the Great Northern Railway. Guides help you imagine family and servant life in this Gilded-Age mansion which was completed in 1891.

Tuesday, March 15, 2011:

Mill City Museum & Gallery Adult Group Tour 1:00–4:30 p.m. \$20.00

- Hour-long guided walking tour of museum & Washburn A Mill
- Self-guided time in the museum exhibits
- Flour Tower multimedia show
- "Minneapolis in 19 Minutes Flat" movie

**2011 North Central Branch
Meeting Organizers**



Rick Foster
President



Mark Boetel
Program Chair



Bill Hutchison
Local Arrangements Co-chairs



David Ragsdale



Karrie Koch
Local Arrangements Cmte.



Julie Peterson
Program Committee

2010-2011 NCB-ESA Officers and Committees

President

Rick Foster

President-Elect

Fred Baxendale

Past President

John Obrycki

Secretary-Treasurer

David Ragsdale

Governing Board Representatives

Susan Weller, Wendy Johnson (student rep.)

Executive Committee Members-at-Large

Susan Ratcliffe, Tiffany Heng-Moss,
Rob Mitchell (student rep.)

Program Planning Committee

Mark Boetel (Chair), Julie Peterson (student rep.)

Local Arrangements Committee

Bill Hutchison and David Ragsdale (Co-chairs),
Eric Burkness, Felicia Horan, Steve Kells,
Karrie Koch (student rep.), Ken Ostlie, Rob Venette

Nominating Committee

Rob Venette (Chair), Douglas Richmond, Matt O'Neal

Audit Committee

Michael Melichar (Chair), Gary Hein, Sue Blodgett

Student Awards Committee

Diane Wood and Deirdre Prischmann-Voldseth (Co-
chairs), James Harwood, Erin Hodgson,
Jeffrey Holland, Anders Huseth (student rep.),
Jonathan Lundgren, Andy Michel

Honorary Awards Committee

Marion Harris and Susan Moser (Co-chairs),
John Reese, Joe Rinehart, Kelly Tindall,
Mike Tolley, Wendy Johnson (student rep.)

National ESA Awards Committee

Matt Ginzal (Chair), Jen White (Vice-chair),
Annie Ray, Mike McCarville (student rep.)

Kamble Award Committee

Susan Jones (Chair)

Membership Committee

Bob Wright (Chair), Aaron Gassmann, Robert Koch,
Xuguo "Joe" Zhou, Sarah Colvin (student rep.)

Photo Salon Committee

Tom Myers (Chair), Ric Bessin, Gary Hein, Dave Voegtlin

Student Affairs Committee

Rob Mitchell (Chair), Karrie Koch (Vice-chair), Julie
Peterson, Harit Bal, Patrick Beauzay, Sarah Colvin,
Tim Husen (NCB rep. to ESA), Anders Huseeth, Wendy
Johnson, Rob McCann, Mike McCarville, Scott Williams

Linnaean Games

Wyatt Hoback (Gamesmaster), Susan Weller (Chair),
Marianne Alleyne, Eileen Cullen, Marion Ellis, Dan
Herms, David Margolies, Blair Siegfried, Sean Whipple
(student rep.), Dan Young

Archivist

Rick Weinzierl

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

Webmasters

Vishal Lodha, John VanDyk, Suzanne Wold-Burkness

Cover Art/Meeting Logo Artists

Julie Peterson, Karrie Koch, Thelma Heidel

2011 ESA North Central Branch *C.V. Riley Achievement Award*

James E. Throne USDA-ARS-CGAHR, Manhattan, KS



This year's recipient of the C.V. Riley Achievement Award is Dr. James E. Throne. Dr. Throne is Research Leader of the USDA-ARS Stored-Product Insect Research Unit at the Center for Grain and Animal Health Research (CGAHR) in Manhattan, KS. In that role, he leads a team of seven scientists working on both basic and applied aspects of stored-product entomology. He is internationally recognized for his research program on ecology and management of stored-product insect pests, the application of simulation modeling to entomological research, and the development of statistical methods for life sciences research.

Dr. Throne joined ARS in 1985 as a Research Entomologist at the Stored-Product Insects Research and Development Laboratory in Savannah, Georgia, and he transferred to the CGAHR in 1994. He has served as Research Leader there since 1997. Dr. Throne was an editor of the *Journal of Economic Entomology* from 1997-2002, and he serves as President of the Permanent Committee of the International Working Conferences on Stored-Product Protection. He has been an adjunct professor of entomology at Kansas State University since 1995. He received a B.S. in Biology from Southeastern Massachusetts University in 1976, an M.S. in Entomology from Washington State University in 1978, and a Ph.D. in Entomology from Cornell University in 1983. He also worked as a postdoctoral research associate at North Carolina State University from 1983 to 1985.

2011 ESA North Central Branch Award of Merit

David W. Ragsdale

Texas A & M University, College Station, TX



The North Central Branch recipient of the 2011 Award of Merit is Dr. David W. Ragsdale. Dr. Ragsdale served as a Professor and Extension Entomologist in the University of Minnesota Department of Entomology, for over 29 years. He also served there as Department Head from 2009-2010 before accepting the

same position at Texas A&M University in September, 2010. He has been an ESA member since 1977. Dave has spent the majority of his professional life in ESA's North Central Branch, and his service to ESA has been outstanding. He has served the Branch in a variety of positions, including two consecutive terms (2007-2011) as NCB Secretary-Treasurer, an elected office that requires consistent attention to detail and dedication. Dave also has served as NCB Program Co-chair (2000) and NCB Local Arrangements Co-chair (2010-2011). His extensive knowledge of Branch finances and the logistics associated with planning successful meetings have been invaluable to the NCB leadership. In addition to his numerous contributions to the Branch, Dr. Ragsdale also has contributed to ESA at the national level through several other leadership and service roles, including the following: ESA Strategic Planning Committee (1998-2001); Section Cc Secretary, Vice-Chair, and Chair (1998-2000); and Section C representative to the ESA Membership Committee (2000-2002).

Dave has made significant contributions to the science of entomology, with many multi-state research impacts in the North Central region. His leadership was instrumental in developing the first soybean aphid IPM program, and he has also made many advances in potato IPM. Dave has been a valued mentor to many successful graduates who are engaged in careers at several regional and national research institutions, and they are positioned to continue his legacy of quality research, outreach, and teaching. Many others are working in agricultural industry or governmental agencies.

2011 ESA North Central Branch *Recognition Award in Entomology*

Dr. Kun Yan Zhu

Kansas State University, Manhattan, KS



Dr. Kun Yan Zhu is a nationally and internationally recognized leader in insect molecular toxicology. His group was the first to document an acetylcholinesterase paralogous gene in the greenbug. This discovery has led to the identification of the paralogous gene and many mutations of this gene associated

with insecticide resistance in several insect species by other scientists worldwide. This work was cited as "a breakthrough in this toxicological riddle" by other scientists in 2007. In addition, his research group documented for the first time that increased expression of the paralogous gene was an important mechanism of resistance to many commonly used organophosphate insecticides in the greenbug. In a project to study *Bt* and insect gut interactions, his team has revealed 52 candidate genes potentially involved in *Bt* toxicity and resistance in the European corn borer by using genomic approaches. More recently, Zhu's group developed a nanoparticle-based RNAi method via insect feeding. This research has significantly advanced technologies for RNAi in insects, and it is expected to have great potential for developing innovative RNAi technologies for insect control. Much of Zhu's innovative research has been widely highlighted by national and international media, including *Innovations*, *Nanowerk News*, *Science Daily*, and *Technology Daily*.

Zhu received his B.S. degree in Plant Protection from Zhejiang Agricultural University in China in 1982, and he earned M.S. and Ph.D. degrees in Biology from Utah State University in 1989 and 1992, respectively. After completing his postdoctoral research at the University of Massachusetts at Amherst, he joined the Entomology faculty at Kansas State University in 1995. He was promoted to associate professor in 2002 and full professor in 2007. Zhu has authored or co-authored nearly 100 peer-reviewed journal manuscripts, 11 book chapters, and 247 presentations, including

80 invited. He has served as a subject editor for *Journal of Economic Entomology*, associate editor for *Pest Management Science*, and editorial board member for *Acta Entomologica Sinica*, *Archives of Insect Biochemistry and Physiology*, and *Insect Science*. Zhu also has been a peer reviewer of several hundred manuscripts for nearly 50 scientific journals. He is a member of American Chemical Society, Entomological Society of America, Gamma Sigma Delta Honor Society of Agriculture, and Sigma Xi. He also was the 2009 recipient of the C.V. Riley Achievement Award from the North Central Branch.

**2011 ESA North Central Branch
Distinguished Achievement Award
in Teaching**

Roger D. Moon

University of Minnesota, St. Paul, MN



Roger Moon is a Professor of Entomology at the University of Minnesota, Saint Paul. He earned his B.S. and Ph.D. degrees in Entomology from the University of California-Davis in 1979, and was hired to fill a new position in veterinary entomology at Minnesota in 1980. His research interests have involved the biology, ecology, and

management of muscoid flies, mosquitoes, lice, true bugs, and mites associated with animals and humans. He has advised 12 students to M.S. and Ph.D. degrees, and published more than 130 articles, reviews, and book chapters for scientists and the general public.

Dr. Moon's teaching program serves undergraduate, graduate, and professional students at the University of Minnesota. In the 1980s, he developed *Veterinary Entomology*, a course for undergraduate students in the College of Food, Agriculture, and Natural Resource Sciences. He also has co-taught *Insect Population Dynamics* and *Applied Experimental Design*, two graduate-level courses for students in entomology and related programs. Dr. Moon coordinates *Scientific Communication and Ethics*, a team-taught course for entomology graduate students, and he also contributes 2-3 weeks of lectures in *Medical Entomology* and in *Veterinary Parasitology*, a course in the College of Veterinary Medicine. Annual enrollment in these five courses regularly exceeds 150 students per year.

Roger is a strong proponent of student-centered learning, and relies on active and collaborative learning techniques to augment traditional teaching methods. He developed and uses group testing (and teaching) instead of anxiety-producing individual exams for students in *Veterinary Entomology*. He also employs active learning exercises in

his graduate-level courses, and integrative semester-long projects in all classes. Earlier, while Moon was Director of Graduate Studies in Entomology, he led a revision of degree program requirements for M.S. and Ph.D. students, and implemented innovative written preliminary exam procedures for graduate students to nurture their analytical and writing skills.

**2011 ESA North Central Branch
Distinguished Achievement Award
in Extension**

Michael E. Gray
University of Illinois, Urbana, IL



A native of southwestern Iowa, Mike graduated with a B.A. in biology from the University of Northern Iowa (1977), and with M.S. (1982) and Ph.D. (1986) degrees in entomology from Iowa State University. In 1988, he began his career at the University of Illinois at Urban-Champaign (UIUC). Mike has blended his research and extension programs

at UIUC for more than 20 years, emphasizing improved understanding of the biology, ecology, and management of western corn rootworms. Gray and his students have conducted extensive research on a variant western corn rootworm that evades the pest management practice of rotating corn with soybeans, an example of an insect adapting to a cultural management tactic. Mike has published numerous journal articles regarding western corn rootworms, including a 2009 paper in the *Annual Review of Entomology*.

Dr. Gray has served in several leadership roles, including IPM Coordinator, UIUC; Co-Director of the North Central Region IPM Center; and Panel Manager for the North Central Region IPM Grants Program. In 2008, he became a Program Leader with the Energy BioSciences Institute at UIUC, with the goal of evaluating the influence of insects, diseases, and nematodes on biomass production of biofuel crops.

Mike has served in many ESA leadership roles—Program Chair, North Central Branch (NCB) Meeting, 1994; Editorial Board, *American Entomologist*, 1990 –1995; Executive Committee, NCB, 1994 –1997; Editor, *Journal of Economic Entomology*, 1995 –1997; Program Co-Chair, ESA Annual Meeting, 2001; President, NCB, 2002 – 2003; Governing Board, Section E representative, 2004 – 2005; and ESA Executive Committee, 2004 – 2009. He also was Co-editor

of the *Handbook of Corn Insects* (1999). Mike served as President of the ESA during the first year of ESA's renewal and transition to four new Sections, working closely with Section leaders to encourage utilization of their new empowerment.

At the University of Illinois, Gray received both the Young (1994) and Senior (2002) *Faculty Award for Excellence in Extension*, as well as the *Paul A. Funk Recognition Award* (2007) for outstanding achievement and major contributions to the betterment of agriculture, natural resources, and human systems. In 2002, he received the NCB-ESA Award for *Excellence in Integrated Pest Management*.

**2011 ESA North Central Branch
Entomological Foundation Award for
Excellence in Integrated Pest Management**

**Rufus Isaacs
Michigan State University, East Lansing, MI**



Dr. Isaacs is a Professor and Extension Specialist in the Department of Entomology at Michigan State University where he has led the berry crop entomology program for 12 years. His group studies the biology and management of blueberry and grape insect pests, as well as pest phenology, biological control, mating disruption, and chemical control.

His contributions to development and implementation of IPM programs has helped berry crop industries adapt to FQPA-driven changes and improve pest control, especially development and delivery of degree-day models to ensure accurate application timing of new selective insecticides. His extension program emphasizes rapid delivery of scouting information to stakeholders during the summer through weekly emailed newsletters. Hands-on training sessions at growers' farms, organized with extension colleagues, have helped with broad adoption of new pest management tactics. On-farm demonstrations are used to gather data on the performance of new management programs and provide a venue for delivering information to growers.

In early 2010, Dr. Isaacs established a spotted wing *Drosophila* response team to monitor for this pest. In late 2010, his lab was the first to discover this invasive insect in the Midwest. Since then, he has led a coordinated response that is preparing Michigan fruit industries for this new challenge. In addition to his work in IPM, Dr. Isaacs' lab is actively exploring integrated crop pollination strategies from both research and extension perspectives, including the interaction between pest management programs and native bees. The implications of biofuel crops for insect pests and pollinators is a new area of study in Dr. Isaacs' lab as part of the Great Lakes Bioenergy Research Center.

2011 Entomology Educational Project Award

Presented by:

The Board Certified Entomologists of Mid-America

Extension Publication

"Insect Borers of Shade Trees and Woody Ornamentals"

James A. Kalisch and Frederick P. Baxendale
University of Nebraska, Lincoln, NE

This publication summarizes the identification, biology, seasonal occurrence, and management of 12 different borers commonly found in shade trees and woody ornamentals in Nebraska and neighboring states. High-quality photos are included to aid in diagnosis. Proper identification and an understanding of the seasonal phenology of these pests is critically important for selecting appropriate monitoring and management techniques to minimize injury from these borers. This publication can be found on the web at: <http://www.ianrpubs.unl.edu/live/ec1580/build/ec1580.pdf>.

2011 ESA North Central Branch *J.H. Comstock Award*

Todd M. Gilligan **Colorado State University**



The 2011 North Central Branch recipient of the J. H. Comstock Award is Todd M. Gilligan, a Ph.D. candidate at Colorado State University under the guidance of Dr. Paul Opler. Todd's research focuses on the systematics of tortricid moths, including the invasive light brown apple moth. Todd is keenly aware that entomological issues are not confined by human borders, but are a global concern. He also recognizes that accurate information and effective communication are essential for success, and is dedicated to bridging gaps among scientists in order to effectively manage invasive species. He uses both traditional and modern methods to answer basic and applied questions, and his goal is to engage in multidisciplinary collaborations that can help solve entomological issues of national and international importance.

Todd has made remarkable strides towards achieving this goals. He developed and maintains a comprehensive website on tortricid taxonomy (www.tortricid.net), is collaborating with scientists on six continents, has organized an international symposium on Tortricidae, is senior author of a 300+ page book on Olethreutine moths, and is working on a DNA barcoding library that will facilitate the identification of pest moths around the world. Todd was also awarded \$200K in grant monies from USDA/APHIS/PPQ/CPHST to develop identification tools for tortricid moths of agricultural importance. All of these accomplishments are in addition to more conventional scientific achievements, including: publishing seven peer-reviewed journal articles, presenting research at 13 meetings, serving as a teaching assistant, supervising and mentoring students, and serving the community and the profession.

2011 ESA North Central Branch Graduate Student Scholarship Award

Julie A. Peterson University of Kentucky, Lexington, KY



The recipient of the 2011 NCB-ESA Graduate Student Scholarship Award is Julie A. Peterson. Julie is completing her Ph.D. in the program of Dr. James Harwood at the University of Kentucky. Her research focuses on the ecology of generalist predators in agroecosystems, with an emphasis on food web interactions in transgenic crops.

Her academic record is excellent and has resulted in her being awarded several scholarships and fellowships. Julie's record of research in publications, grants and presentations reflects a woman of science that is well on her way to establishing a very productive career in the field of entomology.

With regard to service, Julie is actively involved with ESA. She is serving on the NCB Student Affairs Committee and was directly involved with local arrangements during the 2010 NCB-ESA meeting at Louisville, Kentucky. She also served on the 2011 Program Committee. Julie has not limited her service to just the entomological community. She also has been involved in many educational outreach programs in the Lexington community at large.

PROGRAM

March 13, 2011
Sunday Afternoon

Registration

12:00 noon – 9:00 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
12:00 noon – 9:00 p.m.
Big Ten Room

SYMPOSIUM

***Invaders to the North Central Region from
Eastern North America: Implications for
Biological Control***

1:30 p.m. – 3:15 p.m.
University Ballroom A

NCB Executive Committee Meeting

2:00 p.m. – 5:00 p.m.
Alumni Room

Student Competition Poster Setup

3:00 p.m. – 8:00 p.m.
Humphrey Ballroom

NCERA-125 Mixer

3:15 p.m. – 4:15 p.m.
University Ballroom B

NCERA-125 Business Meeting

4:15 p.m. – 5:45 p.m.
University Ballroom B

**March 13, 2011
Sunday Afternoon**

SYMPOSIUM

***Invaders to the North Central Region from
Eastern North America: Implications for
Biological Control***

1:30 p.m. – 3:15 p.m.
University Ballroom A

Organizers and Moderators:

George E. Heimpel, University of Minnesota, St. Paul, MN

Jennifer A. White, University of Kentucky, Lexington, KY

- 1:30 Introduction
George E. Heimpel, heimp001@umn.edu, University of Minnesota, St. Paul, MN; and Jennifer A. White, jenwhite.uk@gmail.com, University of Kentucky, Lexington, KY
- 1:35 001 The Potential for Biological Control of the Invasive Swede Midge using its Parasitoids from Europe
Paul Abram, pabram@connect.carleton.ca, Carleton University, Ottawa, ON Canada; Tim Haye, t.haye@cabi.org, CABI Europe, Delémont, Switzerland; Peter G. Mason, peter.mason@agr.gc.ca, Agriculture and Agri-Food Canada, Ottawa, ON Canada; Naomi Cappuccino, naomi_cappuccino@carleton.ca, Carleton University, Ottawa, ON Canada; Guy Boivin, guy.boivin@agr.gc.ca, Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, QC Canada; and Ulrich Kuhlmann, u.kuhlmann@cabi.org, CABI Europe, Delémont, Switzerland
- 1:55 002 Invasion of Viburnum Leaf Beetle in North America: Current Status and Research Directions
Gaylord A. Desurmont, gd53@cornell.edu, Cornell University, Ithaca, NY; Paul

A. Weston, pweston@csu.edu.au, Charles Sturt University, Wagga Wagga, NSW, Australia; and Anurag A. Agrawal, agrawal@cornell.edu, Cornell University, Ithaca, NY

- 2:15 003 Changes in Exotic and Native Lady Beetle Abundance and Diversity Across the North Central Region
Mary M. Gardiner, gardiner.29@osu.edu, The Ohio State University, Columbus, OH; Chelsea A. Smith, smith.7231@osu.edu, The Ohio State University, Wooster, OH; Douglas A. Landis, landisd@msu.edu, Michigan State University, East Lansing, MI; Matt E. O'Neal, oneal@iastate.edu, Iowa State University, Ames, IA; Claudio Gratton, gratton@entomology.wisc.edu, University of Wisconsin, Madison, WI; and George E. Heimpel, heimp001@umn.edu, University of Minnesota, St. Paul, MN
- 2:35 004 Phylogeography of Host Specificity of *Aphelinus certus* in Asia with Implications for Biological Control in North America
Keith R. Hopper, Keith.Hopper@ars.usda.gov, USDA-ARS Beneficial Insects Introduction Research Unit, Newark, DE
- 2:55 005 Natural Enemies of the Brown Marmorated Stink Bug: The Prospects for Biological Control
Kim A. Hoelmer, kim.hoelmer@ars.usda.gov, USDA-ARS Beneficial Insects Introduction Research Unit, Newark, DE

NCERA-125 Mixer

3:15 p.m. – 4:15 p.m.
University Ballroom B

NCERA-125 Business Meeting

Biological Control of Arthropods & Weeds

Convener: George E. Heimpel

4:15 p.m. – 5:45 p.m.
University Ballroom B

March 13, 2011
Sunday Evening

Registration

12:00 noon – 9:00 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
Big Ten Room

Student Competition Poster Setup

3:00 p.m. – 8:00 p.m.
Humphrey Ballroom

Photo Salon

Host: Gary Hein
6:00 p.m. – 7:00 p.m.
Nolte Room

Linnaean Games - Preliminary Rounds

Gamesmaster: W. Wyatt Hoback
7:00 p.m. – 8:30 p.m.
University Ballroom C & D

Moderator & Judge Training

(immediately following Linnaean Games)
University Ballroom C & D

Welcome Reception

8:30 p.m. – 10:30 p.m.
Pre-function Area
(adjacent to University Ballroom)

March 14, 2011
Monday Morning

Registration

7:30 a.m. – 5:30 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
7:30 a.m. – 5:30 p.m.
Big Ten Room

Opening Session & Business Meeting

7:45 a.m. – 9:15 a.m.
Nolte Room

Student Competition Posters

8:00 a.m. – 6:00 p.m.
Humphrey Ballroom
(authors present: 2:00 p.m. – 3:00 p.m.)

Student Competition Papers

9:30 a.m. – 12:00 noon

Session 1 (BS/MS) – University Ballroom A

Session 2 (MS) – University Ballroom B

Session 3 (MS) – University Ballroom C

Session 4 (PhD) – University Ballroom D

Session 5 (PhD) – Regents Room

Session 6 (PhD) – Nolte Room

Refreshment Break

10:00 a.m. – 10:45 a.m.
Humphrey Ballroom

Industry-Sponsored *Student Luncheon*

12:00 noon – 1:30 p.m.
McNamara Alumni Center
(students and Special Guests only)

March 14, 2011
Monday Morning

BS/MS STUDENT COMPETITION PAPERS
SESSION 1

UNIVERSITY BALLROOM A
9:30 a.m. – 11:23 a.m.

Moderators:

Kelly V. Tindall, University of Missouri, Portageville, MO
Steve Yaninek, Purdue University, West Lafayette, IN

- 9:30 Introduction
- 9:35 006 Efficacy of Selected Residual Acaricides Against the Mold Mite, *Tyrophagus putrescentiae*, in Retail Conditions
Jessica A. Freitag, frei0122@umn.edu, and Stephen A. Kells, kells002@umn.edu, University of Minnesota, St. Paul, MN
- 9:47 007 Odorous House Ants, *Tapinoma sessile*: “Drivers” or “Passengers” of Ecological Change?
Adam Salyer, asalyer@purdue.edu, and Grzesiek Buczkowski, gbuczkow@purdue.edu, Purdue University, West Lafayette, IN
- 9:59 008 Evidence for the Stratification of Hydrocarbons in the Epicuticular Wax Layer of Female *Megacyllene robiniae* (Coleoptera: Cerambycidae)
Gabriel P. Hughes, ghughes@purdue.edu, Annie E. Spikes, aspikes@purdue.edu, Jeffrey D. Holland, jdhollan@purdue.edu, and Matthew D. Ginzel, mginzel@purdue.edu, Purdue University, West Lafayette, IN
- 10:11 009 Hungry Beetles are Caught More Often: Implications for Surveys for the Endangered American Burying Beetle
Stephanie Butler, butlersr2@lopers.unk.edu, and W. Wyatt Hoback, hobackww@lopers.unk.edu, University of Nebraska at Kearney, Kearney, NE

- 10:23 010 Investigating Transcriptional Regulation of Mosquito Egg Development by RNA-seq
Patrick D. Jennings, patrick.d.jennings@gmail.com and Lyric C. Bartholomay, lyricb@iastate.edu, Iowa State University, Ames IA
- 10:35 011 Annotation of Metabolic and Biosynthesis Genes from Hessian Fly (Diptera: Cecidomyiidae)
Jacob T. Shreve, jtshreve@purdue.edu, Jeffrey J. Stuart, stuartjj@purdue.edu, Purdue University, West Lafayette, IN; and Richard H. Shukle, shukle@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN
- 10:47 012 Following Directions: A Test of Burying Beetle Navigation to Traps using a Modified Pitfall
Jess T. Lammers, lammersjt@lopers.unk.edu, and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE
- 10:59 013 The Known Range and Population Status of a Potentially Endangered Caddisfly
Lindsay A. Vivian, lindsayviv@yahoo.com, W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE; and Robert R. Harms, robert_harms@fws.gov, United States Fish and Wildlife Service, Grand Island, NE
- 11:11 014 Using Emerald Ash Borer "Purple Detection Traps" to Collect Indigenous Wisconsin Buprestidae (Insecta: Coleoptera)
Nathan R. Hoftiezer, hoftiezer@wisc.edu, and Daniel K. Young, young@entomology.wisc.edu, University of Wisconsin, Madison, WI

**March 14, 2011
Monday Morning**

MS STUDENT COMPETITION PAPERS

SESSION 2

UNIVERSITY BALLROOM B

9:30 a.m. – 11:35 a.m.

Moderators:

Paul W. Borth, Dow AgroSciences, LLC, Indianapolis, IN

Matthew W. Carroll, Monsanto Co., St. Louis, MO

- 9:30 Introduction
- 9:35 015 Differential Transmission of Triticum Mosaic Virus across Wheat Curl Mite, *Aceria tosichella* K., Colonies Collected within the Great Plains
Anthony J. McMechan, amcmechan@huskers.unl.edu, [Gary L. Hein](#), ghein1@unl.edu, University of Nebraska, Lincoln, NE; [Roy French](#), Roy.French@ars.usda.gov, and [Satyanarayana Tatineni](#), USDA-ARS, Lincoln, NE
- 9:47 016 Abundance and Distribution for Two Species of Corn Rootworm (*Diabrotica* spp.) and Prevalence of Rotation Resistance in Eastern Iowa
Michael W. Dunbar, dunbar@iastate.edu, and [Aaron J. Gassmann](#), aaronjg@iastate.edu, Iowa State University, Ames, IA
- 9:59 017 Evaluating Rag1 Soybean for Effects on Preference and Performance of Herbivorous Insects
Robert F. Bruner, rfbruner@iastate.edu, Matt E. O'Neal, oneal@iastate.edu, [Aaron J. Gassmann](#), aaronjg@iastate.edu, and [Erin W. Hodgson](#), ewh@iastate.edu, Iowa State University, Ames, IA

- 10:11 018 Evaluating Response of Northern and Western Corn Rootworm to Transgenic *Bt* Corn
Ryan S. Keweshan, keweshan@iastate.edu, Iowa State University, Ames, IA;
Graham P. Head, graham.p.head@monsanto.com, Monsanto Company, St. Louis, MO;
and Aaron J. Gassmann, aaronjg@iastate.edu, Iowa State University, Ames, IA
- 10:23 019 Interactions Among a Nematode, Fungus and Aphid: Implications for Soybean Management
Michael T. McCarville, mikemcc@iastate.edu, Matthew E. O'Neal, oneal@iastate.edu,
Gregory L. Tylka, gltylka@iastate.edu, and
Gustavo C. MacIntosh, gustavo@iastate.edu, Iowa State University, Ames, IA
- 10:35 020 The Distribution and Movement of Soybean Aphid Differs on Resistant and Susceptible Soybeans
Rebecca Whalen, r11w22@gmail.com, and
Jason Harmon, jason.harmon.ndsu@gmail.com, North Dakota State University, Fargo, ND
- 10:47 021 The Natural Enemy Community of the Soybean Aphid, and the Effects That Selective Insecticides Have on Its Populations
Adam J. Varenhorst, ajv@iastate.edu, and
Matthew E. O'Neal, oneal@iastate.edu, Iowa State University, Ames, IA
- 10:59 022 Seasonal Flight Dynamics of Aphid Vector Species: Relationship to Potato Virus Y
Natalie M. Hernandez, nhernandez@wisc.edu, Emily Mueller, eemueller@wisc.edu,
Brian Atkinson, Amy Charkowski, amyc@plantpath.wisc.edu, and Russell Groves, groves@entomology.wisc.edu, University of Wisconsin, Madison, WI

- 11:11 023 The True Story Behind Japanese Beetle, *Popillia japonica*, Populations in Soybean Fields: A Damaging Pest or a Petty Nuisance?
Andrew T. Morehouse, amoreho2@illinois.edu, University of Illinois, Urbana, IL; Kevin Steffey, KLSteffey@dow.com, Dow AgroSciences, LLC, Indianapolis, IN; Joseph L. Spencer, spencer1@illinois.edu, Ronald E. Estes, restes@illinois.edu, Nicholas A. Tinsley, tinsley@illinois.edu, and Michael E. Gray, megray@illinois.edu, University of Illinois, Urbana, IL
- 11:23 024 Multiple Species Threshold Recommendations in Sorghum—is a One-model-fits-all Strategy the Best Approach?
Alysha M. Soper, alyshaso@ksu.edu, Jeff R. Whitworth, jwhitwor@ksu.edu, and Brian P. McCornack, mccornac@ksu.edu, Kansas State University, Manhattan, KS

**March 14, 2011
Monday Morning**

**MS STUDENT COMPETITION PAPERS
SESSION 3**

UNIVERSITY BALLROOM C
9:30 a.m. – 11:23 a.m.

Moderators:

John J. Obrycki, University of Kentucky, Lexington, KY
Deirdre A. Prischmann-Voldseth,
North Dakota State University, Fargo, ND

- 9:30 Introduction
- 9:35 025 Evaluation of Straight-tube and Four-chambered Olfactometer for Measuring Walking Response of the Peach Bark Beetle to Volatile Semiochemicals
Nicole R. VanDerLaan-Hannon, nvanbd00@purdue.edu, and Matthew D. Ginzel, mginzel@purdue.edu, Purdue University, West Lafayette, IN
- 9:47 026 Sod-Forming Grass Impacts Burial Behavior of *Nicrophorus* spp.
Michelle M. McPherron, mcpherronmm@unk.edu, Marc A. Albrecht, albrechtm@unk.edu, Kerri M. Farnsworth-Hoback, farnsworthkm@unk.edu, and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE
- 9:59 027 Geographic Variation Among Cowpea Aphid Symbiont Communities
Cristina M. Brady, C.Brady@uky.edu, and Jen A. White, jenawhite@uky.edu, University of Kentucky, Lexington, KY
- 10:11 028 Influence of Season and Landscape on Pollinators of Wisconsin Cucumber
David M. Lowenstein, dmlowenstein@wisc.edu, and Russell L. Groves, groves@

entomology.wisc.edu, University of Wisconsin, Madison, WI

- 10:23 029 Predicting Oviposition by Corn Earworm, *Helicoverpa zea*, in Sweet Corn with Pheromone Traps
Jonathan M. Nixon, jmnixon@purdue.edu, and Ricky Foster, fosterre@purdue.edu, Purdue University, West Lafayette, IN
- 10:35 030 Optimizing Buffer Strips for Insect-derived Ecosystem Services
Kelly A. Seman, kaseman@iastate.edu, Matthew E. O'Neal, oneal@iastate.edu, and Lisa A. Schulte, Ischulte@iastate.edu, Iowa State University, Ames IA
- 10:47 031 Positive Impacts of Prairie Restoration on Native Insect Natural Enemy Communities within Agriculturally-dominated Watersheds
Rene J. Hessel, rene@iastate.edu, and Matthew E. O'Neal, oneal@iastate.edu, Iowa State University, Ames, IA
- 10:59 032 Oviposition Preference and Larval Host Range of the Sugarbeet Root Maggot (Diptera: Ulidiidae)
Kondwani R. Msango Soko, kondwani.msangos@ndsu.edu, and Mark A. Boetel, mark.boetel@ndsu.edu, North Dakota State University, Fargo, ND
- 11:11 033 Insect Pests in High Tunnel Vegetable Production
Sarah L. Thompson, slthomps@purdue.edu, and Ricky E. Foster, rfoster@purdue.edu, Purdue University, West Lafayette, IN

**March 14, 2011
Monday Morning**

PHD STUDENT COMPETITION PAPERS

SESSION 4

UNIVERSITY BALLROOM D

9:30 a.m. – 11:47 a.m.

Moderators:

David B. Taylor, USDA-ARS, AMRU, Lincoln, NE

Sandra J. Brogren, Metropolitan Mosquito Control District,
St. Paul, MN

- 9:30 Introduction
- 9:35 034 Antigenic Variation of the Tick-borne Bovine Pathogen *Anaplasma marginale* May Be Influenced by Host Cell Type
Adela S. Oliva Chavez, chave028@umn.edu, **Roderick F. Felsheim**, felsh001@umn.edu, **Timothy J. Kurtti**, kurttt001@umn.edu, and **Ulrike G. Munderloh**, munde001@umn.edu, University of Minnesota, St. Paul, MN
- 9:47 035 Eastern Subterranean Termite Response to Pentoxifylline-treated Diet
Timothy J. Husen, timhusen5@yahoo.com, and **Shripat T. Kamble**, skamble1@unl.edu, University of Nebraska, Lincoln, NE
- 9:59 036 Effects of Insect Growth Regulators on the Bed Bug
Mark H. Goodman, mark.goodman@uky.edu, **Michael F. Potter**, mpotter@email.uky.edu, and **Kenneth F. Haynes**, khaynes@email.uky.edu, University of Kentucky, Lexington, KY
- 10:11 037 Efficacy and Sub-lethal Effects of Methoprene and Pyrethrin Aerosol Treatments on *Tribolium castaneum*
Angela M. Tucker, nos7147@k-state.edu, Kansas State University, Manhattan, KS;

James F. Campbell, james.campbell@ars.usda.gov, Frank Arthur, Frank.Arthur@ars.usda.gov, USDA-ARS, CGAHR, Manhattan, KS; and Kun Yan Zhu, kzhu@k-state.edu, Kansas State University, Manhattan, KS

- 10:23 038 Generation of Transformed *Rickettsia montanensis* in Cell Culture
Chan C. Heu, heuxx012@umn.edu, Michael J. Herron, herro001@umn.edu, Nicole Y. Burkhardt, burkh032@umn.edu, Roderick F. Felsheim, felsh001@umn.edu, Timothy J. Kurtti, kurttt001@umn.edu, and Ulrike G. Munderloh, munde001@umn.edu, University of Minnesota Twin Cities, St. Paul, MN
- 10:35 039 Landscape-level Influences on the Spatial Distribution of Adult Malaria Vectors in Lowland, Western Kenya
Robert S. McCann, mccannr3@msu.edu, Michigan State University, East Lansing, MI; M. Nabie Bayoh, nbayoh@ke.cdc.gov, Centers for Disease Control and Prevention/Kenya Medical Research Institute; John M. Vulule, jvulule@kisian.mimcom.net, Kenya Medical Research Institute; John E. Gimnig, hzg1@cdc.gov, Mary Hamel, mhamel@usaid.gov, Centers for Disease Control and Prevention; Maurice Ombok, mombok@ke.cdc.gov, Centers for Disease Control and Prevention/Kenya Medical Research Institute; and Edward D. Walker, walker@msu.edu, Michigan State University, East Lansing, MI
- 10:47 040 The Effects of Historical Landscape Type on Subterranean Termite Invasions Into Subdivisions in Central Missouri
Paul S. Botch, psbz76@mizzou.edu, and Richard M. Houseman, housemanr@missouri.edu, University of Missouri, Columbia, MO

- 10:59 041 Fuscumol and Fuscumol Acetate are Attractants for Cerambycid Beetles in the Subfamily Lamiinae
Robert F. Mitchell, rmitch3@life.illinois.edu, University of Illinois, Urbana, IL; [Elizabeth E. Graham](mailto:graha139@msu.edu), graha139@msu.edu, Michigan State University, East Lansing, MI; [Joseph C.H. Wong](mailto:wong62@life.illinois.edu), wong62@life.illinois.edu, [Becca L. Striman](mailto:bstriman@life.illinois.edu), bstriman@life.illinois.edu, University of Illinois, Urbana, IL; [Jocelyn G. Millar](mailto:millar@ucr.edu), millar@ucr.edu, University of California, Riverside, CA; and [Lawrence M. Hanks](mailto:hanks@life.illinois.edu), hanks@life.illinois.edu, University of Illinois, Urbana, IL
- 11:11 042 Progress Towards a Continuous Cell Culture from Honey Bee, *Apis mellifera* L., Embryonic Tissues
Mike Goblirsch, goblirmj@umn.edu, [Tim Kurtti](mailto:kurttt001@umn.edu), kurttt001@umn.edu, and [Marla Spivak](mailto:spiva001@umn.edu), spiva001@umn.edu, University of Minnesota, St. Paul, MN
- 11:23 043 Varroacide Toxicity to Honey Bee Queens
Lizette A.P. Dahlgren, lizette.dahlgren@gmail.com, [Reed M. Johnson](mailto:rmjohns1@gmail.com), rmjohns1@gmail.com, [Marion D. Ellis](mailto:MELLIS3@unl.edu), MELLIS3@unl.edu, and [Blair D. Siegfried](mailto:bsiegfried1@unl.edu), bsiegfried1@unl.edu, University of Nebraska, Lincoln, NE
- 11:35 044 *Wolbachia*, Cytoplasmic Incompatibility, and a DNA Binding Protein
John F. Beckmann, beckm098@umn.edu, [Pang Xiong](mailto:xiong200@umn.edu), xiong200@umn.edu, and [Ann M. Fallon](mailto:fallo002@umn.edu), fallo002@umn.edu, University of Minnesota, St. Paul, MN

March 14, 2011
Monday Morning

PHD STUDENT COMPETITION PAPERS

SESSION 5

REGENTS ROOM

9:30 a.m. – 11:59 a.m.

Moderators:

Kelley J. Tilmon,

South Dakota State University, Brookings, SD

Jeff D. Bradshaw,

University of Nebraska, PREC, Scottsbluff, NE

- 9:30 Introduction
- 9:35 045 Gene Expression Profiles of *Bt*-resistant and Susceptible European Corn Borer Larvae, *Ostrinia nubilalis*, After Ingestion of Transgenic Cry1Ab Corn Leaves
Jianxiu Yao, jianxiuy@ksu.edu, Kansas State University, Manhattan, KS; Lawrent L. Buschman, lbuschma@ksu.edu, Kansas State University, Garden City, KS; and Kun Yan Zhu, kzhu@ksu.edu, Kansas State University, Manhattan, KS
- 9:47 046 Examining Potential Differences Between Rotation-Resistant and Rotation-Susceptible Populations of Western Corn Rootworms
Nicholas A. Tinsley, tinsley@illinois.edu, Michael E. Gray, megray@illinois.edu, Joseph L. Spencer, spencer1@illinois.edu, Ronald E. Estes, restes@illinois.edu, University of Illinois, Urbana, IL; Thomas E. Hunt, University of Nebraska, thunt@unlnotes.unl.edu, Concord, NE; and Andrew T. Morehouse, amoreho2@illinois.edu, University of Illinois, Urbana, IL

- 9:59 047 Incidence of Mycotoxins in *Bt* and Conventional Corn Hybrids in Relation to Insect Pest Abundance
Rosemary Gutierrez, rosemaryguti@yahoo.com, [Billy W. Fuller](mailto:Billy.W.Fuller@sdstate.edu), Billy.Fuller@sdstate.edu, and [Bradley L. McManus](mailto:Bradley.L.McManus@sdstate.edu), Bradley. McManus@sdstate.edu, South Dakota State University, Brookings, SD
- 10:11 048 Interactions Among an Entomopathogenic Fungus, an Insect Predator, *Mallada signatus* (Neuroptera: Chrysopidae), and the Host, *Helicoverpa armigera* (Lepidoptera: Noctuidae), on *Bt* Cotton
Md. H. Bahar, mbahar2@une.edu.au, [John N. Stanley](mailto:John.N.Stanley@une.edu.au), jstanle2@une.edu.au, [David Backhouse](mailto:David.Backhouse@une.edu.au), dbachou@une.edu.au, [Peter C. Gregg](mailto:Peter.C.Gregg@csiro.au), Peter.Gregg@csiro.au, [Alice Del Socorro](mailto:Alice.Del.Socorro@une.edu.au), adelsoc2@une.edu.au, University of New England, Armidale, NSW, Australia; and [Robert Mensah](mailto:robert.mensah@industry.nsw.gov.au), robert.mensah@industry.nsw.gov.au, Australian Cotton Research Institute, Narrabri, NSW, Australia
- 10:23 049 Pollen and Prey Consumption as Routes for Uptake of *Bacillus thuringiensis* Proteins by Generalist Predators (Araneae)
Julie A. Peterson, julie.peterson@uky.edu, [John J. Obrycki](mailto:John.J.Obrycki@uky.edu), john.obrycki@uky.edu, and [James D. Harwood](mailto:James.D.Harwood@uky.edu), james.harwood@uky.edu, University of Kentucky, Lexington, KY
- 10:35 050 Biological Control of Insect Pests in Winter Wheat: Potential Role of Spiders in Reducing Transmission of Barley Yellow Dwarf Virus
Katelyn A. Kowles, katelyn.kowles@uky.edu, [Douglas W. Johnson](mailto:douglas.w.johnson@uky.edu), doug.johnson@uky.edu, and [James D. Harwood](mailto:James.D.Harwood@uky.edu), james.harwood@uky.edu, University of Kentucky, Lexington, KY

- 10:47 051 Host Plant Species Affects the Preference and Performance of the Generalist Aphid Predator *Aphidoletes aphidimyza*
Emily K. Mohl, mohlx006@umn.edu, and George E. Heimpel, heimp001@umn.edu, University of Minnesota, St. Paul, MN
- 10:59 052 Predator Identity Not Diversity Influences the Top-down Control of an Important Insect Vector of a Plant Pathogen in Wheat
Elizabeth Y. Long, eylb75@mail.missouri.edu, and Deborah L. Finke, finked@missouri.edu, University of Missouri, Columbia, MO
- 11:11 053 Relative Susceptibility of Soybean Aphid Morphs to a Fungal Pathogen
Karrie A. Koch, kochx141@umn.edu, University of Minnesota, St. Paul, MN; and David W. Ragsdale, DWRagsdale@ag.tamu.edu, Texas A&M University, College Station, TX
- 11:23 054 Response of Natural Enemies and Their Ecosystem Services to Wildflower Patch Size
Brett R. Blaauw, blaauwb1@msu.edu, and Rufus Isaacs, isaacsr@msu.edu, Michigan State University, East Lansing, MI
- 11:35 055 Responses of Coccinellid Populations to Food Abundance in Corn and Soybean Habitats Differ by Species
Kristina K. Prescott, Presc030@umn.edu, and David A. Andow, Dandow@umn.edu, University of Minnesota, St. Paul, MN
- 11:47 056 Unexpected Risk: How Parasitoid Induced Maternal Effects May Upset Biological Control
Matthew C. Kaiser, kais0101@umn.edu, and George E. Heimpel, heimp001@umn.edu, University of Minnesota, St. Paul, MN

**March 14, 2011
Monday Morning**

PHD STUDENT COMPETITION PAPERS

SESSION 6

NOLTE ROOM

9:30 a.m. – 11:47 a.m.

Moderators:

Brian H. Aukema, University of Minnesota, St. Paul, MN

Richard A. Weinzierl, University of Illinois, Urbana, IL

- 9:30 Introduction
- 9:35 057 Cabbage Cover Crops: Better Early or Late? The Impact of Cover Crop Kill Date on Herbivore and Natural Enemy Communities
Alexandria N. Bryant, bryant30@msu.edu, [Zsofia Szendrei](mailto:Zsofia.Szendrei@msu.edu), szendrei@msu.edu, and [Daniel Brainard](mailto:Daniel.Brainard@msu.edu), brainar9@msu.edu, Michigan State University, East Lansing, MI
- 9:47 058 Census of Kentucky's Cucurbit Crop Pollinators: Survey Results and Future Directions
Logan M. Minter, log_mint@yahoo.com, University of Kentucky, Lexington, KY; [Amy Sue Alesch](mailto:Amy.Sue.Alesch@iastate.edu), aalesch@iastate.edu, Iowa State University, Ames, IA; [Delia W. Scott](mailto:Delia.W.Scott@uky.edu), dwscot0@uky.edu, and [Ricardo T. Bessin](mailto:Ricardo.T.Bessin@email.uky.edu), rbessin@email.uky.edu, University of Kentucky, Lexington, KY
- 9:59 059 Comparative Life-history of *Frankliniella occidentalis* (Thysanoptera: Thripidae) on Ethylene-insensitive and Wild-type Petunias: Can Plant Tissue Affect Thrips Response?
Claudia H. Kuniyoshi, kuniyoshi.1@osu.edu, and [Luis A. Canas](mailto:Luis.A.Canas@osu.edu), canas.4@osu.edu, The Ohio State University, Wooster, OH

- 10:11 060 Edge Effects on Blue Cross Vane Traps
Wayne J. Ohnesorg, wohnesorg2@unl.edu, Marion D. Ellis, mellis3@unl.edu, Thomas E. Hunt, thunt2@unl.edu, and Robert J. Wright, rwright2@unl.edu, University of Nebraska, Lincoln, NE
- 10:23 061 Effects of Varying Ratios of N, P, and S on *Neotyphodium* Endophyte-mediated Resistance in Tall Fescue
Victoria A. Caceres, vcaceres@purdue.edu, and Douglas S. Richmond, drichmond@purdue.edu, Purdue University, West Lafayette, IN
- 10:35 062 Management of a Whitefly (Homoptera: Aleyrodidae) Transmitted Carlavirus on Soybeans in Puerto Rico
Difabachew K. Belay, difabachewbelay@yahoo.com, University of Nebraska, Lincoln, NE; Randy M. Huckaba, rmhuckaba@dow.com, Dow AgroSciences, LLC, Puerto Rico; Jose C.V. Rodrigues, jose_carlos@mac.com, University of Puerto Rico, San Juan, PR; and John E. Foster, jfoster1@unl.edu, University of Nebraska, Lincoln, NE
- 10:47 063 Numbers and Species Diversity of Dung Beetles are Higher on Organically Managed Rangelands in Western Nebraska
Sean D. Whipple, whip5@hotmail.com, University of Nebraska, Lincoln, NE; and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE
- 10:59 064 Something Old or Something New? Host Choice as a Function of Insect Population Density and Host Availability
Fraser R. McKee, mcke0620@umn.edu, and Brian H. Aukema, brianaukema@umn.edu, University of Minnesota, St. Paul, MN

- 11:11 065 The Defensive Potential of the Bacterial Endosymbiont *Arsenophonus* in the Soybean Aphid
Jason A. Wulff, jasonwulff@uky.edu, and Jen A. White, jenawhite@uky.edu, University of Kentucky, Lexington, KY
- 11:23 066 A Phylogenetic Analysis of the Higher-level Relationships within the Lichen Moth Tribe Lithosiini (Lepidoptera: Erebidae: Arctiinae)
Clare H. Scott, scottch7@ufl.edu, and Marc A. Branham, marcbran@ufl.edu, University of Florida, Gainesville, FL
- 11:35 067 Opossums and Leopard Frogs Consume the Federally Endangered American Burying Beetle (Coleoptera: Silphidae)
Jessica Jurzenski, jurzenskij@alumni.unk.edu, University of Nebraska, Lincoln, NE; and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE

March 14, 2011
Monday Morning

STUDENT COMPETITION POSTERS
ALL BS, MS, AND PHD POSTERS

Humphrey Ballroom
8:00 a.m. – 6:00 p.m.
(authors present: 2:00 – 3:00 p.m.)

- D01 A Comparison of Chemoattractants: Carbon Dioxide and Octenol for *Culex* spp. Mosquitoes in Lancaster County, Nebraska
Julianne N. Matczyszyn, Julianne.Matczyszyn@gmail.com, University of Nebraska, Lincoln, NE; Annette Bredthauer, annette.bredthauer@dhhs.ne.gov, Nebraska Department of Health and Human Services, Lincoln, NE; Kathy Hanford, khanford2@unlnotes.unl.edu, and Roberto Cortinas, rcortinas@unlnotes.unl.edu, University of Nebraska, Lincoln, NE
- D02 Filth Fly Production and Parasitism in Heifer Rearing Pens Bedded with Straw, Hardwood Sawdust, and Pine Shavings
Jessica L. Starcevich, star0334@umn.edu, Roger D. Moon, rdmoon@umn.edu, University of Minnesota, St. Paul, MN; Bill Clymer, bclymer@Spalding-Labs.com, Spalding Labs, Arroyo Grande, CA; Hugh Chester-Jones, chest001@umn.edu, and David Ziegler, ziegl005@umn.edu, University of Minnesota, St. Paul, MN
- D03 Kazal-type Serine Protease Inhibitors in *Phlebotomus papatasi* Midgut
Leah T. Sigle, ltc@ksu.edu, Maricela Robles-Murguia, mroblesm@ksu.edu, Narinder Sharma, nksharma@ksu.edu, and Marcelo Ramalho-Ortigao, mortigao@ksu.edu, Kansas State University, Manhattan, KS
- D04 A New Assay to Measure Mite Grooming Behavior
Gladys K. Andino, gandino@purdue.edu, and Greg J. Hunt, ghunt@purdue.edu, Department of Entomology, Purdue University, West Lafayette, IN

- D05 Bioefficacy of Talstar® Xtra EZ, Talstar® EZ, Talstar® Xtra PL, and Deltagard® 0.1 G Granular Insecticides Against Selected Nuisance Ants in Nebraska, 2010
Ralph Narain, ralph@huskers.unl.edu, Abdul Hafiz Ab-Majid, ahafiz@huskers.unl.edu, Timothy J. Husen, timhusen5@yahoo.com, Shripat T. Kamble, skamble1@unl.edu, University of Nebraska, Lincoln, NE; Brian Mount, brian.mount@fmc.com, FMC Corp., Richardson, TX; and Dina Richman, dina.richman@fmc.com, FMC Corporation, Philadelphia, PA
- D06 Genetic Variation in Stable Fly (Diptera: Muscidae) Sampled From Nebraska, Denmark, and Australia
Kate M. Kneeland, herplvr@aol.com, University of Nebraska, Lincoln, NE; Steven R. Skoda, Steve.Skoda@ARS.USDA.GOV, USDA-ARS, Knippling-Bushland LIRL, Kerrville, TX; and John E. Foster, jfoster1@unl.edu, University of Nebraska, Lincoln, NE
- D07 Properties of Tick-borne Langat Virus During Growth in *Ixodes scapularis* ISE6 Cells
Jeff Grabowski, jgrabows@purdue.edu, Rushika Perera, perera@purdue.edu, Catherine Hill, hillca@purdue.edu, and Richard Kuhn, kuhnr@purdue.edu, Purdue University, West Lafayette, IN
- D08 *Tribolium castaneum* (Herbst) Movement and Distribution Patterns in Response to Decreasing Levels of Sanitation
Scott B. Williams, willi324@purdue.edu, Linda J. Mason, lmason@purdue.edu, and Jeffrey D. Holland, jdholan@purdue.edu, Purdue University, West Lafayette, IN
- D09 Reverse Fertilization by Sucrose Reduces Growth of Poplar, (*Populus nigra*) Clone NC5271
Samuel A. Discua, discua.1@osu.edu, and Daniel A. Herms, herms.2@osu.edu, The Ohio State University, Wooster, OH
- D10 Studying the Effects of Corn Defenses on Western Corn Rootworm
Zixiao Zhao, zhao_zju@yahoo.com.cn, and Nicholas J. Miller, nmiller4@unl.edu, University of Nebraska, Lincoln, NE

- D11 Development of a *Drosophila* Epac Antibody
Joliene R. Lindholm, jstanford@wisc.edu, Jeffery M. Lorch, jmlorch@wisc.edu, and Walter G. Goodman, goodman@entomology.wisc.edu, University of Wisconsin, Madison, WI
- D12 A Preliminary Comparison of Organic and Spray Planting Methods in a Roadside Prairie Planting on Plant, Butterfly, and Ground Beetle Communities
Tyler Zinnecker, zinnty01@luther.edu, Fran Fairfield, fairma02@luther.edu, and Kirk Larsen, larsenkj@luther.edu, Luther College, Decorah, IA
- D13 Cold Tolerance of the Light Brown Apple Moth: Assessment and Overwintering Potential in the Midwest
Lindsey D.E. Christianson, chri1203@umn.edu, University of Minnesota, St. Paul, MN; R.C. Venette, rvenette@fs.fed.us, USDA Forest Service, St. Paul, MN; R.L. Koch, robert.koch@state.mn.us, Minnesota Dept. of Agriculture, St. Paul, MN; and W.D. Hutchison, hutch002@umn.edu, University of Minnesota, St. Paul, MN
- D14 Comparative Effects of Cage Type on Corn Rootworm Emergence
Elizabeth A. Schacht, schac064@umn.edu, Kenneth Ostlie, ostlie001@umn.edu, Trisha Franz, franz218@umn.edu, Jared Goos, goosx004@umn.edu, and Aaron Zimmel, zimme309@umn.edu, University of Minnesota, St. Paul, MN
- D15 Geographical Variation in Selection on Gall Morphology in *Eurosta solidaginis* (Diptera: Tephritidae)
Matthew M. Noll, nollx026@d.umn.edu, Tim P. Craig, tcraig@d.umn.edu, Joanne Itami, jitami@d.umn.edu, Wil Licht, licht072@d.umn.edu, Annelie Lindberg-Livingston, lind1020@d.umn.edu, Nathan Zarnstorff, zarn0015@d.umn.edu, and Emily Kalkbrenner, kalk0026@d.umn.edu, University of Minnesota-Duluth, Duluth, MN

- D16 Modeling Spring Emergence of the Cucumber Beetles, *Acalymma vittatum* and *Diabrotica undecimpunctata howardi* in Southern Ohio, Preparatory to Establishing Degree Day Predictors
Camron T. Clark, clarkc3@mymail.shawnee.edu, Shawnee State University, Portsmouth, OH; Logan M. Minter, log_mint@yahoo.com, University of Kentucky, Lexington, KY; Amanda Bachmann, acb220@psu.edu, Pennsylvania State University, University Park, PA; and Robert Deal, bdeal@shawnee.edu, Shawnee State University, Portsmouth, OH
- D17 Non-target Non-consumptive Effects of a Natural Enemy on the Abundance of a Non-prey Herbivore
Andrew Fill, af6v4@mail.mizzou.edu, and Deborah L. Finke, FinkeD@missouri.edu, University of Missouri, Columbia, MO
- D18 A Walk Through the Woods: Host-searching Behaviour of Warren Root Collar Weevil, *Hylobius warreni* Wood (Coleoptera: Curculionidae)
Laura A. Machial, machi011@tc.umn.edu, Staffan B. Lindgren, lindgren@unbc.ca, University of Northern British Columbia, Prince George, BC, Canada; and Brian H. Aukema, bhaukema@umn.edu, University of Minnesota, St. Paul, MN
- D19 Assessment and Modification of Western Bean Cutworm Degree-Day Models for Forecasting Moth Fights
Anthony A. Hanson, hans4022@umn.edu, Roger D. Moon, rdmoon@umn.edu, University of Minnesota, St. Paul, MN; Robert J. Wright, rwright@unlnotes.unl.edu, Thomas E. Hunt, thunt@unlnotes.unl.edu, University of Nebraska, Lincoln, NE; and William D. Hutchison, hutch002@umn.edu, University of Minnesota, St. Paul, MN
- D20 Degree Day Model for Emergence of Wheat Stem Sawfly, *Cephus cinctus* Norton, in North Dakota
Joseph H. Stegmiller, joseph.stegmiller@ndsu.edu, Patrick B. Beauzay, patrick.beauzay@ndsu.edu, and Janet J. Knodel, janet.knodel@ndsu.edu, North Dakota State University, Fargo, ND

- D21 Effects of Nitrogen on Corn Rootworms, Root Injury, and Corn Yield
Trisha M. Franz, franz218@umn.edu, Kenneth Ostlie, ostli001@umn.edu, and Daniel Kaiser, dekaizer@umn.edu, University of Minnesota, St. Paul, MN
- D22 Impact of Rag1 Aphid-resistant Soybeans on *Binodoxys communis* (Gahan) (Hymenoptera: Braconidae), a Parasitoid of Soybean Aphid (Hemiptera: Aphididae)
Kiran Ghising, kiran.ghising@ndsu.edu, Jason Harmon, jason.harmon@ndsu.edu, Patrick Beauzay, patrick.beauzay@ndsu.edu, and Janet J. Knodel, janet.knodel@ndsu.edu, North Dakota State University, Fargo, ND
- D23 Rain Related Mortality in Soybean Aphid Populations
Caitlin C. Krueger, krueg451@umn.edu, Ken Ostlie, ostli001@umn.edu, and Ian MacRae, imacrae@umn.edu, University of Minnesota, St. Paul, MN
- D24 The Impact of Commercially-available Rhizobial Inoculants on Soybean Aphid Density (*Aphis glycines*)
Samantha M. Brunner, samantha.brunner@ndsu.edu, Deirdre A. Prischmann-Voldseth, Deirdre.Prischmann@ndsu.edu, and R. Jay Goos, RJ.Goos@ndsu.edu, North Dakota State University, Fargo, ND
- D25 What Doesn't Kill You Only Makes you Stronger... Unless It Is More Bark Beetles
Ewing Teen, teen@unbc.ca, University of Northern British Columbia, Prince George, BC, Canada; Brian H. Aukema, brianaukema@umn.edu, University of Minnesota, St. Paul, MN; and Allan L. Carroll, allan.carroll@ubc.ca, University of British Columbia, Vancouver, BC, Canada
- D26 Binomial Sequential Sampling Plans for Managing *Striacosta albicosta* (Smith) (Lepidoptera: Noctuidae) in Corn
Silvana V. Paula-Moraes, silvana.moraes@huskers.unl.edu, University of Nebraska, Lincoln, NE and Brazilian Agricultural Research Corporation, Embrapa

Cerrados, Brazil; Eric C. Burkness, burkn001@umn.edu, University of Minnesota, St. Paul, MN; Thomas E. Hunt, thunt@unlnotes.unl.edu, University of Nebraska, NEREC, Concord, NE; Robert J. Wright, rwright@unlnotes.unl.edu, Gary L. Hein, ghein@unlnotes.unl.edu, University of Nebraska, Lincoln, NE; and William D. Hutchison, hutch002@umn.edu, University of Minnesota, St. Paul, MN

- D27 Ecoregion-Level Distributions and Correlations for Common Nebraska Rangeland Grasshoppers (Orthoptera: Acrididae)
Muhammad Irfan Ullah, mirfanullah@uos.edu.pk, University of Nebraska, Lincoln, NE; Mathew L. Brust, mbrust@csc.edu, Chadron State College, Chadron, NE; W. Wyatt Hoback, hobackww@unk.edu, and Kerri Farnsworth-Hoback, farnsworthkm@unk.edu, University of Nebraska-Kearney, Kearney, NE
- D28 Grasshopper Herbivory Reduces Leaf Area and Photosynthesis in Wild Sunflower, *Helianthus annuus* L.
Fatima Mustafa, fatima1817@gmail.com, University of Nebraska, Lincoln, NE; William Wyatt Hoback, hobackww@unk.edu, University of Nebraska-Kearney, Kearney, NE; and Muhammad Irfan Ullah, mirfanullah@uos.edu.pk, University of Nebraska, Lincoln, NE
- D29 Greater Abundance and Diversity of Native Coccinellids in Agricultural Grass-Dominated Habitats than Natural Tallgrass Prairies
Lauren M. Hart, Lmhd74@mizzou.edu, and Deborah L. Finke, finked@missouri.edu, University of Missouri, Columbia, MO
- D30 Host Choice Really Matters: Tritrophic Interactions Between Oleander Aphids and Parasitoids
Sarah M. Colvin, sm.colvin@uky.edu, and Kenneth V. Yeargan, kyeargan@uky.edu, University of Kentucky, Lexington, KY

- D31 Non-target Impacts in Transgenic Corn Versus Conventional IPM Systems: Comparison of Natural Enemy Mortality in Insecticide-Treated and *Bt-11* Sweet Corn
Amy C. Morey, morey041@umn.edu, William D. Hutchison, hutch002@umn.edu, and Eric C. Burkness, burkn001@umn.edu, University of Minnesota, St. Paul, MN
- D32 The Effects of Soybean Aphid Management Tactics on Survival of the Soybean Aphid Natural Enemy, *Orius insidiosus*
Thelma T. Heidel, heide067@umn.edu, University of Minnesota, St. Paul, MN; and David W. Ragsdale, DWRagsdale@ag.tamu.edu, Texas A&M University, College Station, TX
- D33 The Impact of Sugar Beet Variety and Tillage Management on the Root aphid, *Pemphigus betae*, and its Predators
Johan Pretorius, rooivlei@gmail.com, Jeff Bradshaw, jbradshaw2@unl.edu, University of Nebraska, PREC, Scottsbluff, NE; and Gary L. Hein, ghein@unl-notes.unl.edu, University of Nebraska, Lincoln, NE
- D34 The Parasitoid Community of the Asparagus Miner (Diptera: Agromyzidae) in Commercial Asparagus Fields in Michigan
William R. Morrison III, morri362@msu.edu, and Zsofia Szendrei, szendrei@msu.edu, Michigan State University, East Lansing, MI
- D35 A Preliminary Phylogeny of Nearctic *Virbia* (Lepidoptera: Erebidae: Arctiinae) Based on Molecular Data
Kendra Casanova, casank25@uwosh.edu, **Stacey Coy**, coys15@uwosh.edu, Katherine Habanek, habank51@uwosh.edu, University of Wisconsin Oshkosh, Oshkosh, WI; Chris Schmidt, schmidtcb@inspection.gc.ca, Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, ON, Canada; and Jennifer M. Zaspel, zaspelj@uwosh.edu, University of Wisconsin Oshkosh, Oshkosh, WI

- D36 More Females in Fall, Bigger Beetles in June: American Burying Beetle Sex Ratios and Sizes Differ Between Seasons
Jeremiah T. Carlson, carlsonjt@lopers.unk.edu, University of Nebraska at Kearney, Kearney, NE; Jessica Jurzenski, jurzenskij@unk.edu, University of Nebraska, Lincoln, NE; and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE
- D37 Differentiation in a Gall Inducing Fly, *Eurosta solidaginis* (Diptera: Tephritidae), Across the Prairie-forest Boundary in Southern Minnesota
Annelie J. Lindberg-Livingston, lind1020@d.umn.edu, and Timothy P. Craig, tcraig@d.umn.edu, University of Minnesota-Duluth, Duluth, MN
- D38 Eggs and Egg Loads of Field-collected Ctenopelmatinae (Hymenoptera: Ichneumonidae)
Heather M. Cummins, cummi344@umn.edu, University of Minnesota, St. Paul, MN; Robert A. Wharton, rawbaw2@tamu.edu, and Aubrey M. Colvin, amcolvin@tamu.edu, Texas A&M University, College Station, TX
- D39 Genetic Variation Within and Between Populations of Isopods, *Armadillidium vulgare*, in Nebraska
Monludée Luecha, luecham2@lopers.unk.edu, University of Nebraska at Kearney, Kearney, NE; **Kate Kneeland**, herplover@aol.com, University of Nebraska, Lincoln, NE; Kerri M. Farnsworth-Hoback, farnsworthkm@unk.edu, William W. Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE; and John E. Foster, jfoster@unlnotes.unl.edu, University of Nebraska, Lincoln, NE
- D40 Predation by the Giant Water-bug, *Lethocerus americanus*, on Western Mosquitofish, *Gambusia affinis*
David A. Schumann, schumannnda@lopers.unk.edu, and W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE

- D41 Recruitment and Recolonization by Protura in Hardwood Mulch Microhabitats
Michael C. Cavallaro, CavallaroMC@hotmail.com, W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney, Kearney, NE; and Christopher Tipping, Christopher.Tipping@delval.edu, Delaware Valley College, Doylestown, PA
- D42 Genetic Variability of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) in the Western Hemisphere
Difabachew K. Belay, difabachewbelay@yahoo.com, University of Nebraska, Lincoln, NE; Pete L. Clark, pete.l.clark@monsanto.com, Monsanto Company, St. Louis, MO; Steven R. Skoda, steve.skoda@ars.usda.gov, USDA-ARS, Knippling-Bushland LIRL, Kerrville, TX; David J. Isenhour, dave.isenhour@channelbio.com, Channel Bio, LLC, Anderson, IN; and John E. Foster, jfoster1@unl.edu, University of Nebraska, Lincoln, NE
- D43 Genetic Variability of Bean Leaf Beetle, *Cerotoma trifurcata* (Forster), in Midwestern United States
Bamphitlhi Tiroesele, University of Nebraska, Lincoln, NE; Steven R. Skoda, LIRL, Kerrville, TX; Thomas E. Hunt, University of Nebraska-Lincoln, Concord, NE; Donald J. Lee, and John E. Foster, University of Nebraska, Lincoln, NE

March 14, 2011
Monday Afternoon

Registration

7:30 a.m. – 5:30 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
7:30 a.m. – 5:30 p.m.
Big Ten Room

Student Competition Posters

8:00 a.m. – 6:00 p.m.
Humphrey Ballroom
(authors present: 2:00 p.m. – 3:00 p.m.)

Industry-Sponsored *Student Luncheon*

12:00 noon – 1:30 p.m.
McNamara Alumni Center
(students and special guests only)

Symposium

Trends in Corn IPM Research

1:30 p.m. – 5:30 p.m.
University Ballroom A

Symposium

***Bringing Insect Diversity to Your Backyard:
Understanding the Importance of Biodiversity
in Temperate Climates***

2:00 p.m. – 4:50 p.m.
University Ballroom B

Refreshment Breaks

3:00 p.m. – 3:45 p.m.
Humphrey Ballroom &
Pre-function Area
(adjacent to University Ballroom)

March 14, 2011
Monday Afternoon

SYMPOSIUM

Trends in Corn IPM Research

1:30 p.m. – 5:30 p.m.
University Ballroom A

Organizers and Moderators:

Thomas E. Hunt, University of Nebraska, Concord, NE

David W. Onstad, University of Illinois, Urbana, IL

- 1:30 Introductory remarks
- 1:35 068 How to Build the Non-Host Plant for IPM and IRM
Lawrent L. Buschman, lbuschma@ksu.edu
Kansas State University, Garden City, KS;
and Sonny B. Ramaswamy, Sonny.Ramaswamy@oregonstate.edu, Oregon State University, Corvallis, OR
- 2:05 069 Western Bean Cutworm: New Interest in an Old Pest
Silvana V. Paula-Moraes, silvana.moraes@huskers.unl.edu, University of Nebraska, Lincoln, NE, and Brazilian Agricultural Research Corporation, Embrapa Cerrados, Brazil
- 2:35 070 Consequences of Seed Mixtures for IPM and IRM
David W. Onstad, onstad@illinois.edu, University of Illinois, Urbana, IL
- 3:05 Break
- 3:20 071 Solving the RIDL of Sustainable *Bt* Corn Use: Stepping Off the Biotechnology Treadmill
Paul D. Mitchell, pdmitchell@wisc.edu, and Zhe Dun, dun@wisc.edu, University of Wisconsin, Madison, WI

- 3:50 072 Current Status and Future Directions in Corn Lepidoptera Genomics
Brad S. Coates, brad.coates@ars.usda.gov,
[Tom W. Sappington](mailto:Tom.W.Sappington@ars.usda.gov), tom.sappington@ars.usda.gov,
[Richard L. Hellmich](mailto:Richard.L.Hellmich@ars.usda.gov), richard.hellmich@ars.usda.gov, and [Craig A. Abel](mailto:Craig.A.Abel@ars.usda.gov),
craig.abel@ars.usda.gov, USDA-ARS, Ames, IA
- 4:20 073 Developments in Western Corn Rootworm Genomics
Nicholas J. Miller, nmiller4@unl.edu,
University of Nebraska, Lincoln, NE
- 4:50 074 Evolutionary Response of Corn Rootworm to Current Pest Management Practices
Aaron J. Gassmann, aaronjg@iastate.edu,
[Michael W. Dunbar](mailto:Michael.W.Dunbar@iastate.edu), dunbar@iastate.edu,
[Jennifer L. Petzold](mailto:Jennifer.L.Petzold@iastate.edu), jpetzold@iastate.edu,
and [Ryan S. Keweshan](mailto:Ryan.S.Keweshan@iastate.edu), keweshan@iastate.edu,
Iowa State University, Ames, IA
- 5:20 Concluding remarks

**March 14, 2011
Monday Afternoon**

SYMPOSIUM

***Bringing Insect Diversity to Your Backyard:
Understanding the Importance of Biodiversity in
Temperate Climates***

2:00 p.m. – 4:50 p.m.
University Ballroom B

Organizers and Moderators:

Robert F. Mitchell, University of Illinois, Urbana, IL
Sarah M. Colvin, University of Kentucky, Lexington, KY
and
members of the Student Affairs Committee

- 2:00 Introductory remarks
- 2:05 075 Surrounded by a Lot of Insects: What We
Can Learn about Biodiversity without Leav-
ing Home
David J. Horn, davehorn43@columbus.
rr.com, The Ohio State University,
Columbus, OH
- 2:25 076 Appreciation and Augmentation of
Backyard Insect Life
Whitney S. Cranshaw, bugbooksdirect@
yahoo.com, Colorado State University,
Fort Collins, CO
- 2:45 077 Insects of the North Woods: Public Percep-
tion of Biodiversity
Jeffrey Hahn, hahnx002@umn.edu, Uni-
versity of Minnesota, St. Paul, MN
- 3:05 Break

- 3:20 078 Manipulating Broad and Local Scale Landscape Variables to Improve Arthropod Conservation in Residential Landscapes
Ashley B. Bennett, abennett@illinois.edu, University of Illinois, Urbana, IL
- 3:40 079 Enhancing Arthropod Biodiversity in Landscapes and Gardens
Raymond A. Cloyd, rcloyd@ksu.edu, Kansas State University, Manhattan, KS
- 4:00 080 Assessing Wisconsin's Beetle Diversity: A Strategy
Daniel K. Young, young@entomology.wisc.edu, University of Wisconsin, Madison, WI
- 4:20 081 Lady Beetles, Buckthorn, and Bees: Enlisting the Public to Answer Ecological Research Questions in Their Own Landscape
Mary M. Gardiner, gardiner.29@osu.edu, The Ohio State University, Wooster, OH; Doug A. Landis, landisd@msu.edu, Michigan State University, East Lansing, MI; Andrew P. Michel, michel.70@osu.edu, Ohio State University, Wooster, OH; Matt E. O'Neal, oneal@iastate.edu, Iowa State University, Ames, IA; J. Megan Woltz, woltz@msu.edu, Michigan State University, East Lansing, MI; and Scott P. Prajzner, prajzner@msu.edu, The Ohio State University, Wooster, OH.
- 4:40 Concluding remarks

March 14, 2011
Monday Evening

Registration

7:30 a.m. – 5:30 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
7:30 a.m. – 5:30 p.m.
Big Ten Room

Student Competition Posters

8:00 a.m. – 6:00 p.m.
Humphrey Ballroom

Poster Removal/Setup

6:00 p.m. – 8:00 p.m.
Humphrey Ballroom

Photo Salon

Host: Gary Hein
6:00 p.m. – 7:00 p.m.
Nolte Room

Linnaean Games Finals

Gamesmaster: W. Wyatt Hoback
7:00 p.m. – 8:30 p.m.
University Ballrooms C & D

Moderator Training

(immediately following Linnaean Games)
University Ballrooms C & D

Student Mixer

9:00 p.m. – midnight
University Ballrooms A & B
(students-only please)

**March 15, 2011
Tuesday Morning**

Registration

7:30 a.m. – noon & 1:30 p.m. – 5:30 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
7:30 a.m. – 12:00 noon
1:30 p.m. – 5:30 p.m.
Big Ten Room

Refreshment Break

10:00 a.m. – 10:45 a.m.
Humphrey Ballroom
&
Pre-function Area
(adjacent to University Ballroom)

Poster Session

8:00 a.m. – 6:00 p.m.
Humphrey Ballroom
(authors present: 2:00 p.m. – 3:00 p.m.)

Symposium

***Management of Soybean Aphid in North
America: Current Research and Future Prospects***

8:00 a.m. – 11:25 a.m.
Nolte Room

Symposium

***Research Updates on Pests of
Public Health Significance***

8:00 a.m. – 11:50 a.m.
Faculty Room

Awards Luncheon

12:00 noon – 1:30 p.m.
University Ballrooms A-D

**March 15, 2011
Tuesday Morning**

SYMPOSIUM

***Management of Soybean Aphid in North
America: Current Research and Future Prospects***

8:00 a.m. – 11:25 a.m.
Nolte Room

Organizers and Moderators:

Raman Bansal, Ohio State University, Wooster, OH
Andrew P. Michel, Ohio State University, Wooster, OH

- | | | |
|-------|-----|---|
| 8:00 | | Introductory remarks |
| 8:05 | 082 | Soybean Aphids (2001-2011): Past Challenges-Approaches-Results
Matthew E. O'Neal , oneal@iastate.edu, Iowa State University, Ames, IA |
| 8:30 | 083 | Do Aphid-resistant Soybeans Need Insecticide for Optimal Yield?
Brian P. McCornack , mccornac@ksu.edu, Kansas State University, Manhattan, KS |
| 8:55 | 084 | Classical Biological Control of the Soybean Aphid
George E. Heimpel , heimp001@umn.edu, <u>Keith R. Hopper</u> , Keith.Hopper@ars.usda.gov, and <u>Mark K. Asplen</u> , asple001@umn.edu, University of Minnesota, St. Paul, MN |
| 9:20 | 085 | Sustainable Soybean Aphid Management for the Next Decade
Erin W. Hodgson , ewh@iastate.edu, Iowa State University, Ames, IA |
| 9:45 | 086 | The Role of Biological Control in Soybean Aphid Management
Kelley J. Tilmon , ewh@iastate.edu, South Dakota State University, Brookings, SD |
| 10:10 | | Break |

- 10:25 087 Syngenta's AMS Technology
Virgil D. Sparks, virgil.sparks@syngenta.com, Keith Bilyeu, keith.bilyeu@syngenta.com, Mitch Meehan, mitch.meehan@syngenta.com, and Ju-Kyung Yu, ju-kyung.yu@syngenta.com, Syngenta Seeds, Inc., Minnetonka, MN
- 10:50 088 Potential of Transcriptomic Studies in Soybean Aphid Management
Raman Bansal, bansal.67@osu.edu, and Andrew P. Michel, michel.70@osu.edu, Ohio State University, Wooster, OH
- 11:15 Concluding remarks

**March 15, 2011
Tuesday Morning**

SYMPOSIUM

***Research Updates on Pests of Public
Health Significance***

8:00 a.m. – 11:50 a.m.
Faculty Room

Organizer and Moderator:

Shripat T. Kamble, University of Nebraska, Lincoln, NE

- 8:00 Introductory remarks – Pests and Public Health
Shripat T. Kamble, skamble1@unl.edu,
University of Nebraska, Lincoln, NE
- 8:05 089 West Nile Virus and Integrated Mosquito Management in Wisconsin
Patrick M. Irwin, epiento@gmail.com,
and **Susan M. Paskewitz**, paskewit@entomology.wisc.edu, University of Wisconsin, Madison, WI
- 8:30 090 Chiggers: Envenomization and Management
Mitchell D. Stamm, mstamm3@unl.edu,
and Frederick P. Baxendale, fbaxendale1@unl.edu, University of Nebraska, Lincoln, NE
- 8:55 091 Current Status of Newly Emerging Ehrlichioses and Other Tick-Borne Pathogens in Wisconsin
Susan M. Paskewitz, paskewit@entomology.wisc.edu, University of Wisconsin, Madison, WI
- 9:20 092 Bee Venom: Human Allergy and Treatment
Lizette A. Dahlgren, lizette.dahlgren@gmail.com, University of Nebraska, Lincoln, NE

- 9:45 093 Role of Semiochemicals in Off-Host Aggregation Behavior of the Bed Bug, *Cimex lectularius*
Joelle F. Olson, fili0030@umn.edu, Roger D. Moon, rdmoon@umn.edu, and Stephen A. Kells, kells002@umn.edu, University of Minnesota, St. Paul, MN
- 10:10 Break
- 10:25 094 Cockroach Allergens
Shripat T. Kamble, skamble1@unl.edu, University of Nebraska, Lincoln, NE; and Coby Schal, coby_schal@ncsu.edu, North Carolina State University, Raleigh, NC
- 10:50 095 Role of Filth Flies in Contamination of Fresh Produce
Astri Wayadande, a.wayadande@okstate.edu, and Justin Talley, justin.talley@okstate.edu, Oklahoma State University, Stillwater, OK
- 11:15 096 *Stomoxys* and the City
David B. Taylor, dave.taylor@ars.usda.gov, USDA-ARS, AMRU, Lincoln, NE
- 11:40 Closing remarks

**March 15, 2011
Tuesday Morning**

SUBMITTED POSTERS

Humphrey Ballroom
8:00 a.m. – 8:00 p.m.

(authors present: 2:00 p.m. – 3:00 p.m.)

- D44 Long-term Non-Target Monitoring for Larval Black Fly Control Operations in the Mississippi River
Carey LaMere, clamere@mmcd.org, and John Walz, johnwalz@mmcd.org, Metropolitan Mosquito Control District, St. Paul, MN
- D45 The Potential for Select Insecticides as Post-Application Inspection Tools
Marc J. Eaton, eato0052@umn.edu, and Stephen A. Kells, kells002@umn.edu, University of Minnesota, St. Paul, MN
- D46 Effects of Antinutrient and Toxic Proteins on Hessian Fly (Diptera: Cecidomyiidae) Larvae: Potential for Transgenic Resistance in Wheat to Complement Native Resistance
Richard H. Shukle, shukle@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN; Subhashree Subramanyam, shubha@purdue.edu, Purdue University, West Lafayette, IN; and Christie E. Williams, cwilliams@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN
- D47 Genotyping Virulence to H13 Wheat in Field Collections of Hessian Fly from the Southeastern United States
Alisha J. Johnson, johnso27@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN; G. David Buntin, gbuntin@uga.edu, University of Georgia, Griffin, GA; Kathy L. Flanders, flandkl@auburn.edu, Auburn University, Auburn, AL; Francis P. F. Reay-Jones, freayjo@clemson.edu, Clemson University, Florence, SC; Dominic Reisig, dominic_reisig@ncsu.edu, North Carolina State University, Plymouth, NC;

Brandi J. Schemerhorn, bschemer@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN; Jeffrey J. Stuart, stuartjj@purdue.edu, Purdue University, West Lafayette, IN; and **Richard H. Shukle**, shukle@purdue.edu, USDA-ARS/Purdue University, West Lafayette, IN

- D48 Plant Defense Response during Hessian Fly–Wheat Interactions
Chitvan Khajuria, chitvan@ksu.edu, Xuming Liu, xmliu@k-state.edu, and Ming-Shun Chen, mchen@ksu.edu, Kansas State University, Manhattan, KS
- D49 Thermocouple Design for Emerald Ash Borer Parasitoids
Anthony A. Hanson, hans4022@umn.edu, University of Minnesota, St. Paul, MN; and Robert C. Venette, rvenette@fs.fed.us, USDA Forest Service, St. Paul, MN
- D50 Balancing Crop Protection and Refugia for Lepidopteran Pests: Implications of Pollen Movement Between *Bt* and Non-*Bt* Corn
Eric Burkness, burkn001@umn.edu, and Bill Hutchison, hutch002@umn.edu, University of Minnesota, St. Paul, MN
- D51 Effects of Bt Maize and Entomopathogens on Survival of Western Corn Rootworm
Jennifer L. Petzold, jpetzold@iastate.edu, and Aaron J. Gassmann, aaronjg@iastate.edu, Iowa State University, Ames, IA
- D52 Establishing a Baseline Data Set Before the Arrival of Several Invasive Pests of Kentucky Field Crops
Doug W. Johnson, doug.johnson@uky.edu, University of Kentucky, UKREC, Princeton, KY; Ric T. Bessin, rbessin@uky.edu, University of Kentucky, Lexington, KY; Jerry Brown, gdbrown@uky.edu, University of Kentucky, Boone Co. CES; Carla Harper, carla.harper@uky.edu, University of Kentucky, Carlisle Co. CES; Clint Hardy, chardy@uky.edu, University of Kentucky, Daviess Co. CES; Tim Hendrick, tim.hendrick@uky.edu, University of Kentucky, Carroll Co. CES; Darian Irvan, dirvan@uky.edu, University of Ken-

tucky, Hickman Co. CES; Cam Kenimar, ckenimer@uky.edu, University of Kentucky, Fulton Co. CES; Tom Miller, ckenimer@uky.edu, University of Kentucky, Ballard Co. CES; Andy Mills, amills@uky.edu, University of Kentucky, Meade Co. CES; Traci Missun, traci.missun@uky.edu, University of Kentucky, Oldham Co. CES; and Diane Perkins, dmperkin@uky.edu, University of Kentucky, Hancock Co. CES

- D53 Evaluation of Resistant Soybean Lines and Foliar Insecticides to Control Soybean Aphid in Illinois
Ronald E. Estes, restes@illinois.edu, Nicholas A. Tinsley, tinsley@illinois.edu, Andrew T. Morehouse, amoreho2@illinois.edu, and Michael E. Gray, megray@illinois.edu, University of Illinois, Urbana, IL
- D54 Exploring the Milkweed Jungle: Associated Fauna of the Oleander Aphid
Sarah M. Colvin, sm.colvin@uky.edu, and Kenneth V. Yeargan, kyeargan@uky.edu, University of Kentucky, Lexington, KY
- D55 Female Mating, Fecundity, and Longevity in Northern Corn Rootworm
B. Wade French, wade.french@ars.usda.gov, USDA-ARS, NCARL, Brookings, SD; and Leslie Hammack, hammackl@mt-rushmore.net, USDA-ARS, NCARL
- D56 Fitness Cost of Resistance to *Bt* in Western Corn Rootworm
Amanda M. Hoffmann, iahoff17@gmail.com, and Aaron J. Gassmann, aaronjg@iastate.edu, Iowa State University, Ames, IA
- D57 Impact of Adult Diet on Predation of Northern Corn Rootworm Eggs by Soil-dwelling Mites
Deirdre A. Prischmann-Voldseth, Deirdre.Prischmann@ndsu.edu, North Dakota State University, Fargo, ND
- D58 Intraspecific Alkaloid Variation in Ladybird Eggs
Yukie Kajita, yka222@uky.edu, **John J. Obrycki**, john.obrycki@uky.edu, Kenneth F. Haynes, khaynes@uky.edu, University of Kentucky, Lexington, KY; and John J. Sloggett, johnsloggett@yahoo.

co.uk, Tramsingel, The Netherlands

- D59 Novel Vip3A *Bacillus thuringiensis* (Bt) Maize Approaches High-dose Efficacy Against *Helicoverpa zea* (Lepidoptera: Noctuidae) Under Field Conditions: Implications for Resistance Management
Eric Burkness, burkn001@umn.edu, University of Minnesota, St. Paul, MN; Galen Dively, galen@umd.edu, Terry Patton, tpatton@umd.edu, University of Maryland, College Park, MD; Amy Morey, mo-rey041@umn.edu, and Bill Hutchison, hutch002@umn.edu, University of Minnesota, St. Paul, MN
- D60 Potential Impact of VT Triple PRO Sweet Corn (MON 89034 x MON 88017) on Pest Management in the Midwest and Northeast United States
Wilmar Morjan, wilmar.e.morjan@monsanto.com, Monsanto Company, Waterman, IL; Roberto Cordero, roberto.cordero@monsanto.com, and Anabella Fabellar, anabella.c.fabellar@monsanto.com, Monsanto Company, St. Louis, MO
- D61 Psyllid Populations and the Incidence of Zebra Chip Disease in Kansas Potato Fields
Ankush Joshi, ajoshi@ksu.edu, Phil Sloderbeck, psloderb@ksu.edu, and Larry Buschman, lbuschma@ksu.edu, Kansas State University, SWREC, Garden City, KS
- D62 Season Extension Pest Management Webinar Series
James R. Jasinski, jasinski.4@osu.edu, Ohio State University Extension, Urbana, OH; Loretta Ortiz-Ribbing, loretta.ortiz-ribbing@uwrf.edu, University of Wisconsin-River Falls, River Falls, WI; and Elizabeth Maynard, emaynard@purdue.edu, Purdue University, Valparaiso, IN
- D63 Soybean Aphid Efficacy Evaluation Program for the North Central Region
Erin W. Hodgson, ewh@iastate.edu, Matthew E. O'Neal, oneal@iastate.edu, **Gregory R. Van-
Nostrand**, gregvn@iastate.edu, Iowa State University, Ames, IA; and Kevin D. Johnson, KDJohnson@dow.com, Dow AgroSciences, LLC, Barnesville, MN

- D64 Comparison of Entomopathogenic Fungi in Organic and Conventional Farms
Eric H. Clifton, eclifton@iastate.edu, Aaron J. Gassmann, aaronjg@iastate.edu, Erin W. Hodgson, ewh@iastate.edu, Iowa State University, Ames, IA; Stefan T. Jaronski, stefan.jaronski@ars.usda.gov, USDA-ARS, NPARR, Sidney, MT
- D65 Recently Found Lady Beetles: Lessons Learned and Future Work
Louis S. Hesler, louis.hesler@ars.usda.gov, USDA-ARS-NCARL, Brookings, SD; and Robert W. Kieckhefer, USDA-ARS (ret.), Brookings, SD
- D66 Biological Response of Adult *Tribolium castaneum* to Stereoisomers of Its Aggregation Pheromone
Yujie Lu, luyujie@ksu.edu, Kansas State University, Manhattan, KS; Richard W. Beeman, Richard.Bee-man@ARS.USDA.GOV, James F. Campbell, James.Campbell@ARS.USDA.GOV, USDA, CGAHR, Manhattan, KS; Yoonseong Park, ypark@ksu.edu, Michael J. Aikins, mja8338@k-state.edu, Kansas State University, Manhattan, KS; Kenji Mori, kjk-mori@arion.ocn.ne.jp, Toyo Gosei Co., Ltd., Chiba, Japan; Kazuaki Akasaka, akasaka@shokei.ac.jp, Shokei Gakuin University, Miyagi, Japan; and Thomas W. Phillips, twp1@ksu.edu, Kansas State University, Manhattan, KS

March 15, 2011
Tuesday Afternoon

Poster Session

8:00 a.m. – 6:00 p.m.
Humphrey Ballroom
(authors present: 2:00 p.m. – 3:00 p.m.)

Awards Luncheon

12:00 noon – 1:30 p.m.
University Ballrooms A-D

Registration

1:30 p.m. – 5:30 p.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
1:30 p.m. – 5:30 p.m.
Big Ten Room

Symposium

Insect Photography: A Hands-On Workshop

Lectures: 2:00 – 4:25 in Faculty Room
Breakouts: 4:35 – 6:00 in University B

Refreshment Break

3:00 p.m. – 3:45 p.m.
Humphrey Ballroom
&
Pre-function Area
(adjacent to University Ballroom)

**March 15, 2011
Tuesday Afternoon**

SYMPOSIUM

Insect Photography: A Hands-On Workshop

Lectures: 2:00 – 4:25 p.m., Faculty Room

Breakouts: 4:35 – 6:00 p.m., University B

Organizers and Moderators:

Patti L. Prasifka, Dow AgroSciences, LLC, Champaign, IL

Julie A. Peterson, University of Kentucky, Lexington, KY

Thelma T. Heidel, University of Minnesota, St. Paul, MN

Timothy J. Husen, University of Nebraska, Lincoln, NE

- 2:00 Introduction
- 2:05 097 Improving Your Image – Applying Photography to Scientific Research
Gene D. White, genewhite@earthlink.net,
Rose Pest Solutions, Troy, MI
- 2:30 098 Tips and Tricks for Insect Photography
Robert K. Peterson, bpeterson@montana.edu, Montana State University,
Bozeman, MT
- 2:55 099 Lights, Camera, Action: Equipment for Insect Photography
Tom Myers, tvmyers@juno.com,
All-Rite Pest Control & TomMyersPhoto.com, Lexington, KY
- 3:20 Break
- 3:35 100 Challenges of Insect Photography in the Lab and Field
Ric T. Bessin, rbessin@email.uky.edu,
University of Kentucky, Lexington, KY
- 4:00 101 Manipulating Digital Images for Use in Presentations & Publications
Brian P. McCornack, mccornac@ksu.edu,
Kansas State University, Manhattan, KS

4:25 Break (reconvene in University Ballroom B)

4:35 – 6:00 p.m. Hands-on Photography Session. Instructors will be set up at 5 individual stations. Attendees are encouraged to bring their cameras, ask questions, and practice what they've just learned. Instructors will also have camera equipment and insects on hand for demonstration.

**March 15, 2011
Tuesday Afternoon**

SUBMITTED PAPERS

1:45 p.m. – 4:41 p.m.

Regents Room

Moderators:

Timothy P. Craig, University of Minnesota, Duluth, MN

Eileen M. Cullen, University of Wisconsin, Madison, WI

- 1:45 Introductory remarks
- 1:50 102 Evaluation of Trapping Methods for Use in
Managing Pest Vespids
Whitney Cranshaw, bugbooksdirect@
yahoo.com, Colorado State University, Fort
Collins, CO
- 2:02 103 The Expanding Distribution of *Aedes*
japonicus in Minnesota
Alexander L. Johnson, alexander.john-
son@st.bemidjistate.edu, Bemidji State
University, Bemidji, MN; and **Kirk A.**
Johnson, kjohnson@mmcd.org, Metropoli-
tan Mosquito Control District, St. Paul, MN
- 2:14 104 Effects of Temperature on the Transmission
Efficiency of *Yersinia pestis* by *Xenopsylla*
cheopis
Anna M. Schotthoefer, Schotthoefer.
Anna@mcrf.mfldclin.edu, Marshfield Clinic
Research Foundation, Marshfield, WI; **Scott**
W. Bearden, zyv3@cdc.gov, **Sara M. Vetter**,
gsz6@cdc.gov, **Jennifer Holmes**, gul6@cdc.
gov, **John A. Monteneri**, jam3@cdc.gov,
Shanna Williams, isa5@cdc.gov, **Christine B.**
Graham, hyb4@cdc.gov, CDC, Fort Collins,
CO; **Michael E. Woods**, woods21@lrl.gov,
Lawrence Livermore National Laboratory,
Livermore, CA; **Rebecca J. Eisen**, dyn2@cdc.
gov, and **Kenneth L. Gage**, klg0@cdc.gov,
CDC, Fort Collins, CO

- 2:26 105 Lone Star Ticks in Nebraska: A Retrospective Summary
Roberto Cortinas, rcortinas@unl.edu, Matthew Yans, myans@neb.rr.com, and Stephen Spomer, sspomer1@unl.edu, University of Nebraska, Lincoln, NE
- 2:38 106 Ticks in the Agricultural Landscape: Windbreaks and Tick Phenology
Matthew Yans, myans@neb.rr.com, and Roberto Cortinas, rcortinas@unl.edu, University of Nebraska, Lincoln, NE
- 2:50 107 A Polypipe Survey for *Tetracha carolina* in Southeastern Missouri
Kent Fothergill, kent@csr-inc.com, Kelly V. Tindall, tindallk@missouri.edu, Cory B. Cross, crosscb@missouri.edu, University of Missouri, Portageville, MO; Ted C. MacRae, ted.c.macrae@monsanto.com, Monsanto Co., Chesterfield, MO; and Christopher R. Brown, christopher.r.brown@monsanto.com, Monsanto Co., St. Louis, MO
- 3:02 108 A Tritrophic Geographic Mosaic of Coevolution and Local Adaptation in *Eurosta solidaginis*
Timothy P. Craig, tcraig@d.umn.edu, and Joanne K. Itami, jitami@d.umn.edu, University of Minnesota-Duluth, Duluth, MN
- 3:14 Break
- 3:29 109 Sexual Selection in Tiger Beetles: Correlation of Female Elytral Pitting Patterns and Male Tarsal Setae
Mathew L. Brust, mbrust@csc.edu, Adeline Denniston, adocho@eagles.csc.edu, Matthew Nielsen, matt57_07@hotmail.com, and Brady Baker, brbake1@eagles.csc.edu, Chadron State College, Chadron, NE

- 3:41 110 The Effects of Feeding Time, Feeding Status, and Specific Nutrients on *Tribolium castaneum* Oviposition
Meng Xue, xuemeng@k-state.edu, **Bhadriraju Subramanayam**, sbhadrir@ksu.edu, Kansas State University, Manhattan, KS; James F. Campbell, james.campbell@ars.usda.gov, USDA-ARS, CGAHR, Manhattan, KS; and Yong-Cheng Shi, ycshi@ksu.edu, Kansas State University, Manhattan, KS
- 3:53 111 Effectiveness and Costs of Three Heat Treatments in a Pilot Flour Mill
Monika Brijwani, monikab@ksu.edu, Bhadriraju Subramanyam, sbhadrir@ksu.edu, Kansas State University, Manhattan, KS; Paul W. Flinn, paul.flinn@ars.usda.gov, USDA-ARS, CGAHR, Manhattan, KS; and Michael R. Langemeier, mlange@k-state.edu, Kansas State University, Manhattan, KS
- 4:05 112 Effectiveness of Commercial Heat Treatment in Food Processing Facilities
Bhadriraju Subramanyam, sbhadrir@ksu.edu, Monika Brijwani, monikab@ksu.edu, **Michelle Hartzler**, chellehartzler@yahoo.com, Kansas State University, Manhattan, KS; Paul W. Flinn, paul.flinn@ars.usda.gov, and James F. Campbell, james.campbell@ars.usda.gov, USDA-ARS, CGAHR, Manhattan, KS
- 4:17 113 Factors Affecting Spinosad Toxicity to Stored Product Insects
Bhadriraju Subramanyam, sbhadrir@ksu.edu, Prasad Telovrolu, sbhadrir@ksu.edu, Michelle Hartzler, chellehartzler@yahoo.com, **Dhana Raj Boina**, drboina@ksu.edu, and Kimondo Mutambuki, sbhadrir@ksu.edu, Kansas State University, Manhattan, KS

4:29 114 Field Validation of Subterranean Termite (Isoptera: Rhinotermitidae) Control with Recruit® HD, a New Termite Bait from Dow AgroSciences
Michael W. Melichar, mwmelichar@dow.com, Joseph E. Eger, jeeger@dow.com, Joseph J. DeMark, jjdemark@dow.com, Jackie A. Lee, JALee5@dow.com, Michael P. Tolley, mtolley@dow.com, Michael D. Lees, MDLees@dow.com, Marc M. Fischer, MFischer@dow.com, Ronda L. Hamm, RLHamm@dow.com, and Ellen M. Thoms, emthoms@dow.com, Dow AgroSciences, LLC, Indianapolis, IN

March 15, 2011
Tuesday Afternoon

SUBMITTED PAPERS

1:45 p.m. – 4:29 p.m.
Nolte Room

Moderators:

Daniel J. Moellenbeck, DM Crop Research Group,
Granger, IA

Tom W. Sappington, USDA-ARS, Ames, IA

- 1:45 Introductory remarks
- 1:50 115 Corn Rootworm Adult Emergence Patterns
as Affected by *Bt*-RW Corn and Crop Rota-
tion
Bruce D. Potter, bpotter@umn.
edu, University of Minnesota, SWROC,
Lamberton, MN; Kenneth R. Ostlie,
ostli001@umn.edu, and Jared M. Goos,
goosx004@umn.edu, University of
Minnesota, St. Paul, MN
- 2:02 116 Performance Problems with Transgenic
Rootworm Traits in Minnesota, 2009-2010
Kenneth R. Ostlie, ostli001@umn.edu,
University of Minnesota, St. Paul, MN; and
Bruce D. Potter, bpotter@umn.edu, Univer-
sity of Minnesota, SWROC, Lamberton, MN
- 2:14 117 Field Trial Performance of SmartStax®
Refuge-in-a-bag Concept for Above-
ground Corn Insects in the U.S. Corn Belt
Dwain M. Rule, ddrule@dow.com, William
H. Hendrix, wmhendrix@dow.com,
Nickolas P. Storer, nstorer@dow.com,
Patricia L. Prasifka, PLPrasifka@dow.com,
and Eric F. Scherder, EFScherder@dow.com,
Dow AgroSciences, LLC, Indianapolis, IN

- 2:26 118 IRM Considerations for a Seed Mix Refuge Strategy
Matthew W. Carroll, matthew.carroll@monsanto.com, and Graham Head, graham.p.head@monsanto.com, Monsanto Co., St. Louis, MO
- 2:38 119 Formulation Frontiers: What's on the Horizon?
Paul W. Borth, pwborth@dow.com, Dow AgroSciences, LLC, Indianapolis, IN
- 2:50 120 Efficacy of Transform™, a Novel Sulfox-amine Insecticide from Dow AgroSciences, Against Soybean Aphid and Other Sap-feeding Insects
Neil A. Spomer, naspomer@dow.com, Dow AgroSciences, LLC, Brookings, SD; James Thomas, Dow AgroSciences, LLC, Indianapolis, IN; Patricia Prasifka, Dow AgroSciences, LLC, Champaign, IL; Brian Olson, Dow AgroSciences, LLC, Geneva, NY; Kevin Johnson, Dow AgroSciences, LLC, Barnesville, MN; Eric Scherder, Dow AgroSciences, LLC, Huxley, IA; Dave Ruen, Dow AgroSciences, LLC, Lanesboro, MN; and Scott Ditmarsen, Dow AgroSciences, LLC, Madison, WI
- 3:02 Break
- 3:17 121 Podcasting for Dummies: Or How We Learned to Use iTunes to Deliver Soybean Aphid Recommendations
Matthew E. O'Neal, oneal@iastate.edu, Erin W. Hodgson, ewh@iastate.edu, and John K. VanDyk, jvandyk@iastate.edu, Iowa State University, Ames, IA
- 3:29 122 Taking IPM to the Field: Crop Scouting School
Kelly V. Tindall, tindallk@missouri.edu, Jason W. Weirich, weirchj@missouri.edu, and Kent Fothergill, kent@csr-inc.com, University of Missouri, Portageville, MO

- 3:41 123 Behavior of the Winter Honey Ant, *Prenolepis imparis* (Hymenoptera: Formicidae), and Its Sugar Food Sources
Mark E. Headings, headings.1@osu.edu, The Ohio State University, Wooster, OH
- 3:53 124 Mars and Venus Revisited: Divergent Sex-specific Dispersal Patterns in an Imported Biological Control Agent
Mark K. Asplen, asple001@umn.edu, Jeremy M. Chacón, jeremymchacon@gmail.com, and George E. Heimpel, heimp001@umn.edu, University of Minnesota, St. Paul, MN
- 4:05 125 Cold Tolerance of Emerald Ash Borer (Coleoptera: Buprestidae)
Robert C. Venette, rvenette@fs.fed.us, USDA Forest Service, St. Paul, MN; and Mark Abrahamson, Mark.Abrahamson@state.mn.us, Minnesota Department of Agriculture, St. Paul, MN
- 4:17 126 What Goes Up Does Not Always Come Down: Mountain Pine Beetle in Western Canada
Brian H. Aukema, BrianAukema@umn.edu, University of Minnesota, St. Paul, MN; Kishan R. Sambaraju, sambara@unbc.ca, and Allan L. Carroll, allan.carroll@ubc.ca, University of British Columbia, Vancouver, BC, Canada

March 15, 2011
Tuesday Evening

Poster Removal
6:00 p.m. – 8:00 p.m.
Humphrey Ballroom

Linnaean Games:
Branch Champions vs. Masters
Gamesmaster: W. Wyatt Hoback
6:00 p.m. – 6:45 p.m.
University Ballrooms C & D

March 16, 2011
Wednesday Morning

Registration

7:30 a.m. – 9:30 a.m.
Foyer: top of escalators

A/V Room & Employment Room

(upload presentations)
7:30 a.m. – 9:30 a.m.
Big Ten Room

NCB Final Business Meeting

7:30 a.m. – 9:00 a.m.
Nolte Room

Symposium

***Diabrotica Populations & Control Tactics:
A Continuum or Rapidly Changing Situation?***

8:30 a.m. – 12:20 p.m.
University Ballroom B

Symposium

***Potato Entomology In The NCB:
Recent Work and Future Directions***

9:00 a.m. – 12:00 noon
University Ballroom A

Refreshment Break

10:00 a.m. – 10:45 a.m.
Pre-function Area
(adjacent to University Ballroom)

NCB Executive Committee

10:30 a.m. – 12:00 noon
Alumni Room

**March 16, 2011
Wednesday Morning**

SYMPOSIUM

***Diabrotica Populations & Control Tactics:
A Continuum or Rapidly Changing Situation?***

8:30 a.m. – 12:20 p.m.
University Ballroom B

Organizers and Moderators:

Brad W. Hopkins, Dow AgroSciences, LLC, Westerville, OH
William H. Hendrix, Dow AgroSciences, LLC, Indianapolis, IN

- 8:30 Introductory remarks
Brad W. Hopkins, BWHopkins@dow.com, Dow AgroSciences, LLC, Westerville, OH
- 8:35 127 Corn Rootworm Population Management: Who is Ahead in the Contest?
Jon J. Tollefson, tolly@iastate.edu, Iowa State University, Ames, IA
- 8:55 128 *Bt* Adoption by Illinois Producers and Refuge Management: Cause for Concern?
Michael E. Gray, megray@illinois.edu, University of Illinois, Urbana, IL
- 9:15 129 Current and Future use of Insecticide Seed Treatments in Corn Refuge
Palle Pedersen, palle.pedersen@syngenta.com, Syngenta Crop Protection, LLC, Ames, IA; and Cliff G. Watrin, clifford.watrin@syngenta.com, Syngenta Crop Protection, LLC, Wyoming, MN
- 9:35 130 Genetics and Genomics of Western Corn Rootworm: What We're Trying to Do, Where We Hope to Get to, and Why it Matters
Thomas W. Sappington, Tom.Sappington@ars.usda.gov, USDA-ARS, Ames, IA; and Nicholas J. Miller, nmiller4@unl.edu, University of Nebraska, Lincoln, NE

- 9:55 131 Why Use Corn Rootworm Insecticides over a Corn Rootworm Treated Corn?
Caydee Savinelli, caydee.savinelli@syngenta.com, [Craig Abell](mailto:craig.abell@syngenta.com), craig.abell@syngenta.com, Syngenta Crop Protection, LLC, Greensboro, NC; and [Patti L. Prasifka](mailto:plprasifka@dow.com), plprasifka@dow.com, Dow AgroSciences LLC, Dow AgroSciences, LLC, Champaign, IL
- 10:15 Break
- 10:30 132 History of Western Corn Rootworm Resistance Breeding Program by French Agricultural Research, Inc. and Dow AgroSciences
Lee K. French, lfrench@rrcnet.org, [Peter Goertz](mailto:Peter.Goertz@frenchagri.com), [John A. Mihm](mailto:John.A.Mihm@frenchagri.com), French Agricultural Research, Inc., Lamberton, MN; and [Frank K. Roeber](mailto:Frank.K.Roeber@dow.com), FRoeber@dow.com, Dow AgroSciences, LLC, Rastatt, Germany
- 10:50 133 Potential for *Diabrotica* Population Suppression with Area-wide Adoption of Bt Corn
Nicholas P. Storer, nstorer@dow.com, [Kevin L. Steffey](mailto:Kevin.L.Steffey@dow.com), KLSteffey@dow.com, Dow AgroSciences, LLC, Indianapolis, IN; and [William D. Hutchison](mailto:William.D.Hutchison@umn.edu), hutch002@umn.edu, University of Minnesota, St. Paul, MN
- 11:10 134 Refuge in the Bag: A Viable Option for CRW Management and IRM
Todd A. DeGooyer, todd.a.degooyer@monsanto.com, [Chism Craig](mailto:Chism.Craig@monsanto.com), chism.craig@monsanto.com, and [Charles T. Foresman](mailto:Charles.T.Foresman@monsanto.com), charles.t.foresman@monsanto.com, Monsanto Company, St. Louis, MO
- 11:30 135 Developing Methods for RNA Interference in Western Corn Rootworms
Blair D. Siegfried, bsiegfried1@unl.edu, University of Nebraska, Lincoln, NE; [Murugesan Rangasamy](mailto:Murugesan.Rangasamy@dow.com), MRangasamy@dow.com, Dow AgroSciences, LLC, Indianapolis, IN; [Analiza P. Alves](mailto:Analiza.P.Alves@unl.edu), analiza.alves@unl.edu

pioneer.com, Pioneer Hi-Bred International, Inc., Johnston, IA; Haichuan Wang, hwang4@unl.edu, and Hong Chen, hchen4@unl.edu, University of Nebraska, Lincoln, NE

- 11:50 136 Future Trends for Corn Rootworm Management
Analiza P. Alves, analiza.alves@pioneer.com, Andre Luiz B. Crespo, andre.crespo@pioneer.com, Timothy M. Nowatzki, tim.nowatzki@pioneer.com, Laura S. Higgins, laura.higgins@pioneer.com, Pioneer Hi-Bred International, Inc., Johnston, IA; and John L. Flexner, lindsey.flexner@pioneer.com, Pioneer Hi-Bred International, Inc., Wilmington, DE
- 12:10 Concluding remarks
William H. Hendrix, wmhendrix@dow.com, Dow AgroSciences, LLC, Indianapolis, IN

**March 16, 2011
Wednesday Morning**

SYMPOSIUM

***Potato Entomology in The NCB:
Recent Work and Future Directions***

9:00 a.m. – 12:00 noon
University Ballroom A

Organizer and Moderator:

Ian V. MacRae, University of Minnesota, St. Paul, MN

- 9:00 Introductory remarks
- 9:05 137 Recent Research and Future Directions in
 Minnesota Potato Entomology
 Ian V. MacRae, imacrae@umn.edu, Univer-
 sity of Minnesota, St. Paul, MN
- 9:35 138 Modeling Potato Virus Y Aphid Vector
 Flights
 Russell L. Groves, groves@entomology.
 wisc.edu, Natalie Hernandez, nhernandez@
 entomology.wisc.edu, and Emily Mueller,
 eemueller@wisc.edu, University of Wiscon-
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- 10:05 BREAK
- 10:20 139 Monitoring Colorado Potato Beetle Insecti-
 cide Resistance
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- 10:50 140 Colorado Potato Beetle Diapause Pheno-
 logy and Neonicotinoid Resistance
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- 11:20 141 Design, Construction, and Installation of a
Novel Aerial Sampling Device
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NE
- 11:50 Concluding remarks

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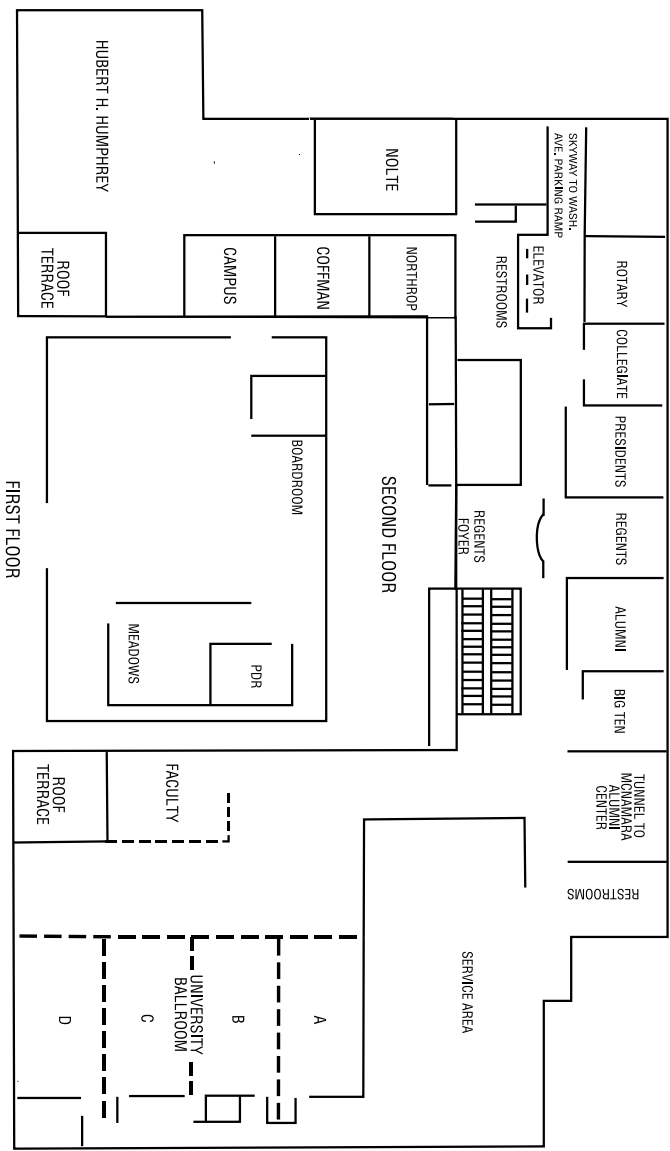
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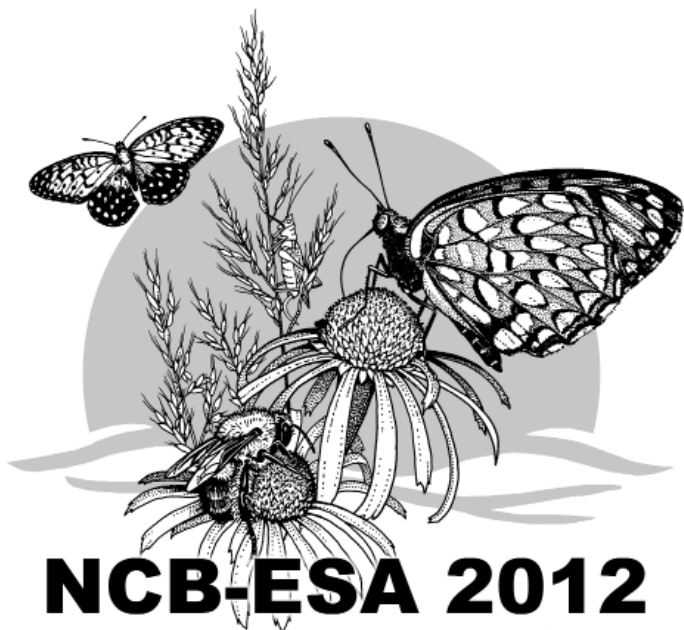
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