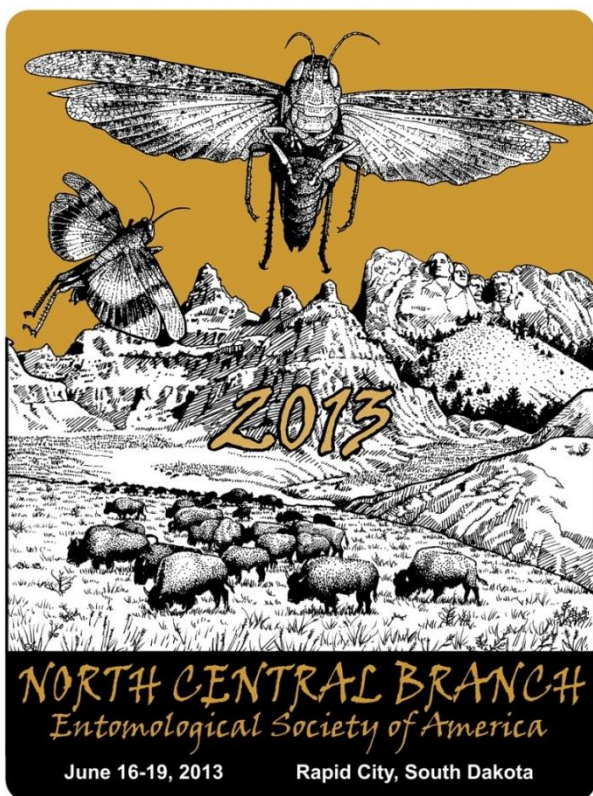


NORTH CENTRAL BRANCH

ENTOMOLOGICAL SOCIETY OF AMERICA

68TH ANNUAL MEETING

PRESIDENT: BILLY FULLER



BEST WESTERN RAMKOTA HOTEL
2111 N. LACROSSE STREET
RAPID CITY, SD 57701

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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 in the foyer area of Convention Center II. Registration will be open for check-in (pre-registered attendees) and for on-site registration at the following times:

Sunday	11:00 AM – 6:00 PM
Monday	7:30 AM – 5:00 PM
Tuesday	7:30 AM – 12:00 PM 1:30 PM – 5:00 PM
Wednesday	7:30 AM – 10:00 AM

REFRESHMENTS

Complimentary hot breakfast will be available (only while supplies last) on Monday and Tuesday from 7:00-8:00 AM, in the Rushmore Room. Please wear your meeting badge for admission. Coffee breaks will be held in the poster display room on Monday and Tuesday at 10:00 AM and 3:00 PM, and morning coffee on Wednesday at 7:30 AM. Light snacks will be served at the Welcome Reception and the Student Mixer. The Awards Luncheon is included with registration for all participants, and the Student Career Opportunity Luncheon is included with student registration.

MESSAGES, PROGRAM CHANGES, LOST & FOUND

A message board for posting announcements will be displayed near the NCB Meeting Registration Desk. 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 Roosevelt Room, which is also the A/V room. Please bring enough copies of your documents for distribution (no photocopy service provided).

POSTER PRESENTATIONS

Posters will be displayed in the Pactola Room for the duration of the meeting. All posters (both Student Competition and

regular submissions) should be set up Sunday, June 16, between 3:00 PM and 8:00 PM. All posters will remain up until takedown on Wednesday from 10:00 AM to 12:00 PM. Presenters for Student Competition posters should stand by their poster on Monday, June 17 between 2:00 PM – 3:00 PM (odd numbers) and 3:00 – 4:00 PM (even numbers). Submitted poster presenters should be present on Tuesday, June 18 from 10:00 – 11:00 AM (odd numbers) and 2:00 – 3:00 PM (even numbers). Posters will be mounted on the walls according to the signage provided. Presenters must use the special poster-mounting strips provided to avoid damaging wall surfaces. Poster dimensions should not exceed 46x46 inches (117x117cm).

MODERATOR AND STUDENT COMPETITION JUDGE TRAINING

A Moderator and Student Competition Judge training session will be held on Sunday at 4:00 PM in the Badlands Room. Moderators may sign out pointers and timers in the A/V room (Roosevelt Room) before their sessions.

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. If there are problems with the computer/projector, or other equipment, please come to the A/V room (Roosevelt Room) to request assistance.

Creating and Uploading Presentations: Presentations should be created in a format compatible with MS Office 2007 or 2010 PowerPoint (.pptx). We cannot accept presentations created using MS Office 2003 or 2013. All presenters (10-minute papers and symposia) should bring their presentation file to the A/V room on a USB memory stick/flash for uploading at least two hours before their session begins. Volunteers will be present to provide technical assistance.

To facilitate smooth transitions between presentations, each file must be saved using the following filename format: PaperNumber – PresenterSurname.pptx. Presenters are encouraged to AVOID using embedded audio and video in

presentations, which could cause the computers to lock up during presentation.

AUDIO/VISUAL EQUIPMENT

All meeting rooms will be equipped with an LCD projector, projector screen, computer, and microphone. The A/V room (Roosevelt Room) will be equipped with laptops throughout the conference for presenters to load and preview presentations. The A/V room will be open during the NCB Registration Desk hours. All meeting room computers are PCs, so a presenter who creates a presentation using a Macintosh computer should test the file on a PC computer prior to the conference.

NO PHOTOGRAPHS PLEASE

NCB-ESA requests that attendees not take photographs or videos during sessions because they are disruptive to the presenters. If you wish to take photographs of a poster, please contact the poster presenter for permission. NCB-ESA reserves the right to use photographs and videos taken during the meeting for informational and promotional purposes.

TOURISM INFORMATION

A representative from the Rapid City Convention and Visitors Bureau will be at the registration desk on Sunday, June 16 from 2:00 to 5:00 PM, and on Monday, June 17 from 7:30 to 10:30 AM. The representative will have Visitor Guides for the area and will be happy to answer tourism questions and direct visitors to points of local interest. Addition information is available at www.visitrapidcity.com or call 605-718-8487.

**2012 NORTH CENTRAL BRANCH
MEETING ORGANIZERS**



Billy Fuller
President



Kelley Tilmon
Program Chair



Janet Knodel

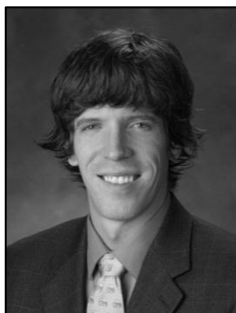


Louis Hesler

Local Arrangements Co-chairs



Mark Boetel
*Secretary and
Local Arrangements*



Mitch Stamm
*Student Rep –
Executive Committee*

2013 NORTH CENTRAL BRANCH SPECIAL ACKNOWLEDGEMENTS

ADDITIONAL MEETING ORGANIZERS

- Buyung Hadi: A/V Coordinator
- Erin Hodgson: Student Competition Judging Coordinator
- Adrianna Szczepaniec and Sue Blodgett: Moderator Coordinator and Undergraduate Recruitment
- Ken Ostlie: Meeting Sponsorship Coordinator
- Bradley McManus, Wade French, Venkata Chapara, Ashton Walter and Phil Glogoza: Signage and Local Setup

SPECIAL THANKS

- ESA Central Staff: Chris Stelzig, Richard Levine, Pamela Reid, Alexis Lyons, Neil Willoughby
- Confex Staff, especially Tori Daigle for Program assistance
- Meeting photographer: Richard Levine
- Ramkota Facility Staff, especially Gloria Roseland and Jan Gustin
- Rapid City Convention and Visitors Bureau, especially Lindsey Beasley and Lisa Storms
- SDSU Plant Science Department Staff for A/V assistance: Julia Fausti and Darrell Deneke
- All of our moderators, Student Competition judges, and student volunteers
- All of our meeting sponsors

ABOUT THE MEETING LOGO

James Kalisch of the University of Nebraska-Lincoln created this beautiful artwork and donated it for use as our 2013 NCB Annual Meeting logo. Its entomological composition includes the specklewinged grasshopper, *Arphia conspersa* (top center), and the threebanded grasshopper, *Hadrotettix trifasciatus* (left).

2012-2013 NCB-ESA OFFICERS AND COMMITTEES

PRESIDENT

Billy Fuller

PRESIDENT-ELECT

Sue Blodgett

IMMEDIATE PAST PRESIDENT

Fred Baxendale

SECRETARY-TREASURER

Mark Boetel

GOVERNING BOARD REPRESENTATIVE

John Obrycki

EXECUTIVE COMMITTEE MEMBERS-AT-LARGE

Eileen Cullen, Erin Hodgson, Linda Mason,
and Mitchell Stamm (Student Rep.)

PROGRAM COMMITTEE

Kelley Tilmon (Chair), Bob Wright
and Laura Steele (Student Rep.)

LOCAL ARRANGEMENTS COMMITTEE

Louis Hesler (Co-chair), Jan Knodel (Co-chair),
Mark Boetel, Venkata Chapara, Julia Fausti, Wade French,
Billy Fuller, Phil Glogoza, Buyung Hadi, Bradley McManus,
Ken Ostlie, Mitchell Stamm, Adrianna Szczepaniec
and Ashton Walter (Student Rep.)

NOMINATING COMMITTEE

Matt O'Neal (Chair), Ian MacRae and Susan Moser

AUDIT COMMITTEE

Sue Blodgett (Chair), Von Kaster and Jonathan Lundgren

STUDENT AWARDS COMMITTEE

Erin Hodgson (Chair), Jason Harmon (Co-chair),
Robert Koch, Joliene Lindholm (Student Rep.), Bradley
McManus, Lisa Meihls, Patti Prasifka
and Preston Marshall-Schrader

HONORARY AWARDS COMMITTEE

Kelly Tindall (Chair), John C. Reese (Co-chair),
Buyung Hadi, Brian McCornack, Bradley McManus
and Rob Morrison (Student Rep.)

NCB PROFESSIONAL AWARDS COMMITTEE

Annie Ray (Chair), Kelley Tilmon (Vice-chair),
Anitha Chirumamilla, Mary Gardiner, Adam Varenhorst
(Student Rep.) and Deane Zahn

NCB EDUCATION PROJECT AWARDS COMMITTEE

Phil Sloderbeck (Chair)

MEMBERSHIP COMMITTEE

Xuguo “Joe” Zhou (Chair), Brian Aukema, Aaron Gassmann,
Amy Morey (Student Rep.), Marcello Ortigao,
Neil Spomer and Zsafia Szendrei,

PHOTO SALON COMMITTEE

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

STUDENT AFFAIRS COMMITTEE

Mitchell Stamm (Chair), Amy Morey (Vice-chair),
Kacie Athey (Presiding Third Member),
Scott Williams (Treasurer), Alice Harris, Alicia Leroux, Joliene
Lindholm, Rob Morrison, Kayla Perry, Laura Steele, Adam
Varenhorst, Rita Velez and Ashton Walter

LINNAEAN GAMES COMMITTEE

Wyatt Hoback (Gamesmaster), Dan Young (Chair), Marianne
Alleyne, Eileen Cullen, Michael Culy, Marion Ellis,
Alice Harris (Student Rep.), Dan Herms, Doug Landis,
David Margolies, and Blair Siegfried

ARCHIVIST

Richard Weinzierl

PHOTOGRAPHER

Richard Levine

NCB-ESA WEBSITE – www.entsoc.org/northcentral

2013 NORTH CENTRAL BRANCH

AWARDS COMMITTEE CHAIRS



Ann Ray
*NCB Professional
Awards Chair*



Kelly Tindall
*NCB Honorary
Awards Chair*



Erin Hodgson
*NCB Student
Awards Chair*



Phil Sloderbeck
*NCB Educational
Project Awards Chair*

2013 ESA NORTH CENTRAL BRANCH
C.V. Riley Achievement Award

Dr. Michael E. Gray
University of Illinois, Urbana-Champaign, IL



Dr. Mike Gray is a native of southwestern, Iowa. He graduated from the University of Northern Iowa in 1977 with a BA in biology and MS and Ph.D. degrees in entomology from Iowa State University in 1982 and 1986, respectively. Following the completion of his Ph.D., he served as a postdoctoral research associate at South Dakota State University, Brookings, South Dakota. In March of 1988, he began his extension entomology career at the University of Illinois. His research and extension interests have revolved around the management of the western corn rootworm, especially its adaptation to crop rotation. Mike is frequently invited to discuss integrated pest management (IPM) issues on national and regional levels related to corn and soybean insect management. For 17 years, he was the IPM Coordinator at the University of Illinois, and also served as Co-Director for the North Central Region IPM Center from 2000 to 2008. In 2008, Mike began serving as a program leader in the Energy and BioSciences (EBI) Institute at the University of Illinois. His EBI team is focused on discovering pests that influence the biomass production of perennial grasses such as switchgrass and *Miscanthus* that may be used as feedstocks for biofuels in the future. In 2008, it was Mike's honor to serve as President of the Entomological Society of America. He is currently a Professor in the Department of Crop Sciences and Assistant Dean for the Agriculture and Natural Resources Extension Program, College of ACES, University of Illinois.

2013 ESA NORTH CENTRAL BRANCH
Award of Merit

Dr. Mark A. Boetel

North Dakota State University, Fargo, ND



Dr. Mark Boetel is a Professor of Entomology at North Dakota State University. He received his Ph.D. in Entomology from South Dakota State University in 1996. His research and extension efforts mostly involve integrated pest management in field

crop systems, and he is internationally recognized for his expertise in sugarbeet IPM. Mark has authorship on 30 refereed publications and book chapters, more than 200 nonrefereed publications, and well over 200 presentations. He has procured over \$3.5 million in grants.

Dr. Boetel has served ESA in the following leadership roles: Section F. Secretary, Vice-Chair, and Chair; Arthropod Management Tests Editorial Board (2006 Chair); and Plant–Insect Ecosystems Governing Council. In 2005, he served on the ad hoc strategic planning group for restructuring ESA to its current section format. Mark has also served on the following ESA standing committees: Ethics and Rules (two terms); Common Names (two terms); Program; Student Affairs, and an ad hoc committee on "Attracting Undergraduates to Careers in Entomology." He also has been a panelist for several ESA and Entomological Foundation award selections. Mark has co-organized two ESA meeting symposia, and he has served as a judge in student presentation competitions and/or moderated paper presentation sessions at most NCB and annual ESA meetings during the past 20 years. His service to the NCB-ESA includes the following: Secretary-Treasurer (current); Program Chair (2011); Audit Committee (2007 Chair); Executive Committee at-large member; Student Awards Committee (2003/2004 Chair); Linnaean Games Committee; Local

Arrangements Committee (2 NCB meetings); and the 2005 ad hoc “Operations and Standardization Committee.”

Mark’s other contributions to the profession of entomology have included serving as Chair, Vice-Chair, and Secretary of NCCC-046 (the multi-state committee on “Rootworms and Other Soil Insects of Maize”), membership on S-1024 (the multi-state committee on “Discovery and Integration of Entomopathogens into Pest Management Systems”), and service on the North Dakota Water Quality Advisory Committee. He has contributed to other professional societies as well, such as being a Session Leader for the International Symposium on Agricultural Research in Athens, Greece, and serving as Program Committee member, Poster Chair, and Session Leader at three American Society of Sugarbeet Technologists conferences.

2013 ESA NORTH CENTRAL BRANCH
Distinguished Achievement Award in Teaching

Dr. Christina D. DiFonzo

Michigan State University, East Lansing, MI



Dr. Chris DiFonzo is a graduate of University of Minnesota, where she worked in integrated pest management of aphids and potato viruses. In 1996, she was hired as the field crops entomologist at Michigan State University. In addition to

responsibilities for field crops research and extension, she teaches the introductory entomology course for the MSU College of Agriculture and Natural Resources. She also teaches an upper level course on 'Pesticides in Pest Management,' plus an occasional graduate seminar entitled 'Insects in the Cinema.' She is a frequent guest lecturer in courses in the Department of Crop and Soil Sciences, and is involved in a series of summer ag short courses for international participants. In 2007, Chris became an advisor and coordinator for the MSU Entomology Department's undergraduate program, which was revived from a single student in the mid-2000s to a healthy crop of 47 majors and minors in 2012. She serves on department and college-level curriculum committees, participates in student recruitment and outreach, and serves on numerous graduate student committees. In 2012, she worked with the University of Peradeniya in Sri Lanka to develop a month-long study abroad course on sustainable tropical agriculture. The second offering of that course just ended last week with 14 undergraduates.

2013 ESA NORTH CENTRAL BRANCH
Distinguished Achievement Award in Extension

Dr. Linda Mason

Purdue University, West Lafayette, IN



Dr. Linda Mason has an internationally recognized integrated pest management program that provides innovative post-harvest storage solutions for farmers, homeowners, and the food processing industry. Dr. Mason is the “go to extension entomologist” for extension educators, food pest management companies, and their clientele. Her efforts have resulted in savings of over \$2 million and a 20% reduction in pesticide applications for the food industry.

Dr. Mason was a founding member of the interdisciplinary grain storage group that received both the Purdue University Cooperative Extension Specialists Association and Dean’s Team Awards in 1999. S.L.A.M., the innovative training approach they developed, is now widely used in by Extension Educators in over 12 states. It emphasizes management strategies to control insect pests and reduce residual pesticides in food.

Dr. Mason’s research on proactive, non-residual management strategies such as grain chilling and ozonation, that capitalize on pest biology and behavior vulnerabilities and her educational programs have resulted in numerous publications, including two self-directed correspondence courses, post-harvest IPM training materials, fact sheets, and articles for trade journals and newsletters. Dr. Mason has written a bi-monthly column (Stored Grain Management) for the Grain Journal since 1993. She has provided nearly 500 presentations to audiences ranging from farmers to business managers to home owners and government regulators on topics ranging from pest biology to fumigation management.

2013 ESA NORTH CENTRAL BRANCH
Award for Excellence
in Integrated Pest Management

Dr. James F. Campbell
USDA-ARS, Manhattan, KS



Dr. James F. Campbell is a Research Entomologist with the USDA Agricultural Research Service, Center for Grain and Animal Health Research in Manhattan, KS. Dr. Campbell received a B.S. in Environmental Sciences in 1986 and an M.S. in

Entomology in 1997 from Rutgers University, and a Ph.D. in Entomology from the University of California-Davis in 1999. He joined ARS in 1999 and works primarily in the area of stored-product entomology. Recent research has focused on the spatial distribution and movement patterns of stored-product insects in food facility landscapes, improving the implementation and interpretation of monitoring programs, and determining the impact of different management tactics such as structural fumigation on pest populations within commercial food facilities. Dr. Campbell is also an Adjunct Professor in the Department of Entomology at Kansas State University, where he has co-supervised eight graduate students and served on 17 other graduate student committees. Dr. Campbell has published 101 peer-reviewed journal articles and 35 other publications. He has given more than 150 invited presentations in seminars, symposia, and training conferences. Dr. Campbell serves as Secretary/Treasurer for the Permanent Committee of the International Working Conference on Stored Product Protection and as an Editorial Board Member of the Journal of Stored Product Research. He has served as ESA Section Cd Secretary, Vice-Chair, and Chair (2001-2003). Dr. Campbell received the USDA ARS NPA Early Career Research Scientist of the Year Award (2004).

2013 ESA NORTH CENTRAL BRANCH
Recognition Award in Urban Entomology

Dr. Steven R. Sims

Blue Imago Consulting, Maryland Heights, MO



Dr. Steven Sims received a PhD in Entomology from the University of California, Davis in 1978 with a focus on the ecology and evolution of Lepidoptera. He had Research Associate positions at the University of Notre Dame and North Carolina State

University. From 1982-1985, Steve was a Research Scientist with the USDA, studying overwintering biology of the fall armyworm in Florida. In 1985 Steve began his career in industry with Monsanto in St. Louis. Notable achievements there involved participating in the discovery, development, and registration of the first generation of insect-resistant plants. He studied potential insect resistance to transgenic proteins, ultimately leading to industry-wide resistance management policies. From 1996-2012, Steve was a Senior Research Entomologist at Whitmire Micro-Gen. There he discovered and evaluated new technology for professional pest control including novel active ingredients (natural products and conventional pesticide chemistry), aerosol, concentrate, and bait formulations, and was the lead contact for university cooperators. Steve discovered and developed > 15 new products including ant, cockroach, fly, and termite formulations. He invented the products in the “reduced risk” product line specializing in botanical active ingredients and their synergistic combinations. Steve has 75 professional and trade publications and 8 patents. He is currently an Affiliate Professor of Entomology at Auburn University and formed Blue Imago LLC, a consulting company specializing in pest control product discovery and development.

2013 ESA NORTH CENTRAL BRANCH
J.H. Comstock Graduate Student Award

Nicholas M. Teets

Ohio State University, Columbus, OH



The recipient of the 2013 NCB-ESA Comstock Award is Nicholas M. Teets. Nicholas earned his Ph.D. in entomology at Ohio State University in 2012. He was advised by Dr. David Denlinger and his dissertation was titled “Cellular and molecular

mechanisms of environmental stress tolerance in insects.” His research is focused in insect physiology to better understand the mechanisms by which insects combat environmental stress. Nicholas participated in two NSF-funded projects on the environmental physiology of insects, one investigating rapid responses to low temperature in temperate Diptera, and the other exploring the molecular mechanisms of stress tolerance in the Antarctic midge, *Belgica antarctica*. He participated in two field seasons at Palmer Station in Antarctica, and for his efforts he was awarded the Antarctic Service Medal from the National Science Foundation. Nicholas has 12 peer-reviewed papers published or in press, and presented his research at 15 professional meetings. Nicholas is currently a post-doctoral researcher in the Department of Entomology at Ohio State University and will begin a new post-doctoral position at the University of Florida to develop transgenic Caribbean fruit flies that are more tolerant of UV irradiation. Dr. Teets has a successful record of research, teaching and service as a Ph.D. student.

**2013 ESA North Central Branch
Graduate Student Scholarship Award**

Mitchell D. Stamm

University of Nebraska, Lincoln, NE



The recipient of the 2013 NCB-ESA Graduate Student Award is Mitchell D. Stamm. Mitchell is currently working on his Ph.D. at the University of Nebraska-Lincoln with Drs. Frederick Baxendale and Tiffany Heng-Moss. His Ph.D. research focuses on (1)

investigating *Aphis glycines* feeding behavior on seed treated soybeans using electronic penetration graphs, (2) assessing the physiological effects of neonicotinoid seed treatments on soybean using transcriptional profiling, and (3) documenting the translocation of neonicotinoids insecticides within specific plant tissues. Mitch has authored three refereed papers, co-authored more than 30 technical papers and reports and has made 20 presentations at professional meetings. He is active within his department and the ESA, and often participates in extension workshops and field days.

2013 NCB EDUCATIONAL PROJECT AWARDS

Presented by:

BCE and ACE Certified Entomologists of Mid-America

Class Outline

Method of Instruction: A “how-to” guide for entomology professors who want to design and teach a course to prepare entomology graduate students for a future teaching in academe

Martha Victoria Rosett Lutz

This project fills a specific need that has not been satisfactorily addressed. Scientists who earn a Ph.D. in entomology are prepared to do research, but rarely prepared to design and teach entomology courses for undergraduates or graduate students. My *Methods* course was designed to remedy this situation by training graduate students to be professors. Providing this material to professionals can have a strong positive impact on the science of entomology, by improving the quality of entomology education.

Bringing Insects into the Classroom: An Interactive Lesson in Entomology

Christina Silliman and Catherine Dana
EnLiST Entomology Curriculum Developers
University of Illinois

EnLiST is an NSF funded program which promotes collaboration between educators and researchers to provide a scientifically accurate and educationally rigorous lesson. These lessons align with the new Next Generation Science Standards (NGSS) and provide a novel resource by integrating engineering design component into our design. Each lesson is research and inquiry based and allows for hands-on learning of entomological topics.

Urban & Structural/Industrial Entomology Course

Abdul Hafiz Ab Majid and Shripat T. Kamble
University of Nebraska

The course covers the latest update on biology, identification, and management of household/structural insect pests and management strategies. The laboratory will focus on identification of arthropod groups and species of major urban importance, and the methods of chemical and nonchemical control used in urban entomology, a field trip to research facilities and on-site training. The highest impact of this course is to produce students with a well-rounded educational program incorporating academics, laboratory, and field research.

Conference and Video

Let's Beat the Bug! Informational campaign against Bed Bugs

Amelia Shindelar and Stephen Kells
University of Minnesota

This project has actively developed and promoted information for helping the general public and other stakeholders find safe and quick relief from bed bugs. The project has offered multiple education experiences in different formats customized to the needs of the clientele. The project also has detected and responded to new ways that bed bugs affect people and companies.

Educational Presentation

Ecology and Forensic Science: Blow flies, Beetles, and Bad Guys

Amanda Fujikawa and Christian Elowsky
University of Nebraska

This project took a subject matter (carcass decomposition) that is generally viewed with disgust and made it intriguing to 332 people (50 % < 10 years old) through microscopy, video, and maggot painting. The more people learn about entomology, the less ‘scary’ and ‘gross’ it becomes, enabling people to pass on their knowledge to reach more people.

Educational Zoo Display

Inside the Hive

Tom Weissling, Doug Golick, Aimee Johns, Tiffany Heng-Moss, and Marion Ellis
University of Nebraska

“Inside the Hive” is a very successful cooperative outreach program between the Department of Entomology at the University of Nebraska-Lincoln (UNL) and the Lincoln Children’s Zoo that emphasizes the importance of arthropods, their abundance, diversity, and unique aspects of their biology and behavior; and provides visitors the opportunity to interact with and handle live arthropods.

Web-based App

The BugSpot

Brian McCornack
Kansas State University

In the past, collecting and sharing trap-catch data has been a complicated and often a “clunky” process. In most cases, there are too many steps in the process. The BugSpot incorporates 2D barcodes or “quick-read” or QR-codes into the mix; it removes much of the unnecessary steps. Now, network contributors only need to scan the QR-code, select “add new sample date,” add the data, and save, which is all accomplished while standing in the field. The data is then available to anyone viewing the network. The BugSpot can be used on any mobile device or desktop computer that is connected to the Internet.

***Special Recognition For
Outstanding Service to the NCB-ESA***

James Kalisch

University of Nebraska, Lincoln, NE



The North Central Branch is presenting a special appreciation plaque to James “Jim” Kalisch in acknowledgment of his dedicated service to create high-quality, professional logo art for both ESA and NCB-ESA meetings. Jim has served the Branch with his unique combination of scientific knowledge, artistic talent, and graphic arts proficiency to develop logos depicting regionally relevant entomological themes for several of our Society’s conferences during the past 20 years. His many artistic works which have benefitted our society include images used at the following meetings: 1996 NCB-ESA Meeting (Omaha, NE), 2003 ESA Annual Meeting (Cincinnati, OH), 2007 NCB-ESA Meeting (Winnipeg, MB), 2012 NCB-ESA Meeting (Lincoln, NE), and the 2013 NCB-ESA Meeting (Rapid City, SD). These images will be shown during the Awards Luncheon. Jim is an Extension Associate in the Department of Entomology at the University of Nebraska – Lincoln, and has contributed to Extension educational programming for over 28 years.

2013 NCB PRESIDENTIAL STUDENT TRAVEL SCHOLARSHIPS

Kacie J. Athey	University of Kentucky
Lindsey D. Christianson	University of Minnesota
Mike W. Dunbar	Iowa State University
Mahsa N. Fardisi	Purdue University
Mike Goblirsch	University of Minnesota
Alice Harris	Kansas State University
Devi R. Kandel	South Dakota State University
Cody Kuntz	Iowa State University
Jessica L. Mayry	University of Wisconsin
Michael McCarville	Iowa State University
Ralph B. Narain	University of Nebraska Lincoln
Hannah J. Penn	University of Kentucky
Emily Pochubay	Michigan State University
Joseph Riddle	Michigan State University
Derek Rosenberger	University of Minnesota
Rachael Sitz	Colorado State University
Mitchell D. Stamm	University of Nebraska Lincoln
Ximena Cibils Stewart	Kansas State University
Nicholas A. Tinsley	University of Illinois
Nathaniel J. Walton	Michigan State University

PROGRAM

JUNE 16, 2012

SUNDAY

Services	
11:00 AM – 6:00 PM	Registration; Convention Center II Foyer
3:00 PM – 7:00 PM	AV/Employment Opportunity Room; Roosevelt
Functions	
4:00 PM – 5:00 PM	Judge and Moderator training; Badlands
4:00 PM – 5:00 PM	Photo Salon; Harney Peak
5:00 PM – 8:00 PM	Linnaean Games preliminary round; Sheridan
8:00 PM – 10:00 PM	Welcome Reception; Rushmore
Scientific Program	
1:30 PM – 5:00 PM	Symposium: Mountain Pine Beetle: History, Ecology, and Management in the Black Hills; Sylvan I
3:00 PM – 8:00 PM	Poster setup – all posters (Student Competition and regular submission); posters will be displayed through Wednesday; Pactola
Private Meetings	
10:00AM – 12:00PM	NCB Executive Committee preliminary meeting; Lincoln

JUNE 16, 2013
SUNDAY AFTERNOON

SYMPOSIUM

**SYMPOSIUM: MOUNTAIN PINE BEETLE: HISTORY, ECOLOGY,
AND MANAGEMENT IN THE BLACK HILLS**

1:30 PM – 5:00 PM

SYLVAN I

ORGANIZERS AND MODERATORS:

JOHN BALL, SOUTH DAKOTA STATE UNIVERSITY

JOSE NEGRON, USDA - FOREST SERVICE

- | | | |
|---------|---|--|
| 1:30 PM | | Welcoming Remarks. |
| 1:35 PM | 1 | Forest management and mountain pine beetle (<i>Dendroctonus ponderosae</i>) on the Black Hills National Forest. Blaine Cook , bcook@fs.fed.us, United States Forest Service, Custer, SD |
| 2:05 PM | 2 | The "Black Hills" beetle (<i>Dendroctonus ponderosae</i>): A history of mountain pine beetle in the Black Hills. John Ball , John.Ball@sdstate.edu, South Dakota State Univ., Brookings, SD |
| 2:35 PM | 3 | Mountain pine beetle (<i>Dendroctonus ponderosae</i>) biology and outbreaks. Jose F. Negron , jnegron@fs.fed.us, USDA - Forest Service, Fort Collins, CO |
| 3:05 PM | | Break. |
| 3:15 PM | 4 | Uneven-age forest management in the Black Hills. Frederick Smith , skip@warnercnr.colostate.edu, Dept. of Forest, Rangeland and Watershed Stewardship, Fort Collins, CO |

- 3:45 PM 5 Fire history and the mountain pine beetle (*Dendroctonus ponderosae*). **Cody Wienk**, cody_wienk@nps.gov, Fire Ecologist, Omaha, NE
- 4:15 PM 6 Mountain pine beetle (*Dendroctonus ponderosae*) mitigation efforts. **Kurt Allen**, kallen@fs.fed.us, United States Forest Service, Rapid City, SD
- 4:45 PM Panel Discussion.

JUNE 17, 2013

MONDAY

Services	
7:30 AM – 5:00 PM	Registration; Convention Center II Foyer
7:30 AM – 7:00 PM	AV/Employment Opportunity Room; Roosevelt
Functions	
7:00 AM – 8:00 PM	Complimentary hot breakfast, while supplies last; Rushmore
8:00 AM – 9:00 AM	Opening Session and Preliminary Business Meeting; Lincoln
10:00AM–10:30 AM	Coffee Break; Pactola
12:00 PM – 1:30 PM	Lunch and Learn: Career Opportunities in Industry and the USDA for Entomology Graduates (sponsored by Monsanto and Pioneer); students and special guests only; Washington
3:00 PM – 3:30 PM	Coffee Break; Pactola
5:00 PM – 6:00 PM	Photo Salon; Harney Peak
6:30 PM – 9:00 PM	Linnaean Games final round; Sheridan
9:00 PM – 11:30 PM	Student Mixer; Washington
Scientific Program	
8:00 AM – 6:00 PM	Posters Display – all posters (Student Competition and regular submission) on display through Wednesday; Pactola
9:30 AM – 10:54 AM	Student Competition Papers, Undergraduate/MS Session I; Legion I
11:00AM – 12:12PM	Student Competition Papers, MS Session II; Legion II
9:30 AM – 11:06 AM	Student Competition Papers, PhD Session I; Sylvan I
<i>Table continues next page...</i>	

9:30 AM – 10:42 AM	Student Competition Papers, PhD Session II; Sylvan II
9:30 AM – 10:42 AM	Student Competition Papers, PhD Session III; Legion II
1:30 PM – 4:45 PM	Symposium: Innovation in Research and Extension in Wheat IPM; Legion I
1:30 PM – 4:45 PM	Symposium: Highlights in Insect Behavior; Legion II
Private Meetings	
3:00 PM – 6:00 PM	NCERA 220 Meeting; Badlands

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION POSTERS

PRESENTERS FOR STUDENT COMPETITION POSTERS SHOULD STAND
BY THEIR POSTER ON MONDAY, JUNE 17
2:00 PM – 3:00 PM (ODD NUMBERS)
3:00 – 4:00 PM (EVEN NUMBERS)

UNDERGRADUATE (ALL SECTIONS)

8:00 AM – 6:00 PM

PACTOLA

- DS 1 Susceptibility of western corn rootworm (Coleoptera: Chrysomelidae) to tefluthrin. **Thaís Patrícia M. Teixeira**, thaismoreirat@hotmail.com¹, Adriano Pereira², Blair D. Siegfried² and Wade French³, ¹Univ. of Nebraska-Lincoln, Lincoln, NE, ²Univ. of Nebraska, Lincoln, NE, ³USDA-ARS, Brookings, SD
- DS 2 Does the presence of conspecifics alter defensive behavior of the soybean aphid (*Aphis glycines*)? **Jaclyn Eichele**, Jaclyn.Eichele@my.ndsu.edu and Jason Harmon, North Dakota State Univ., Fargo, ND
- DS 3 Glacier water insects of Greenland are affected by EuroAsian industrial pollution. **Kelly Willemssens**, willemssenska@lopers.unk.edu¹, Marjolein Van Ginneken², Tom De Dobbelaer², Jolien Verhelst² and W. Wyatt Hoback¹, ¹Univ. of Nebraska at Kearney, Kearney, NE, ²Univ. of Antwerp, Antwerp, Belgium,
- DS 4 Evaluation of a natural product for protection of roses from Japanese beetle (*Popillia japonica*). **Kate Russell**, krussell@iastate.edu, Matthew E. Oneal and Russell Jurenka, Iowa State Univ., Ames, IA
- DS 5 Effects of habitat fragmentation on plant-pollinator interactions on tallgrass prairie remnants. **Amy Moorhouse**, moorhousam@mnstate.edu, Rebecca Andres and Sara Anderson, Minnesota State Univ. Moorhead, Moorhead, MN

- DS 6 High G-Force tolerance in insect larvae is not correlated with ecological selection. **Adrianne Pursley**, pursleyac2@lopers.unk.edu¹, ²Leon G. Higley and W. Wyatt Hoback¹, ¹Univ. of Nebraska – Kearney, Kearney, NE, ²Univ. of Nebraska - Lincoln, Lincoln, NE
- DS 7 Possible factors influencing size variability in morphology of adult *Cyclotrachelus sodalis* (Coleoptera: Carabidae). **Austin Bauer**, baueau01@luther.edu and Kirk J. Larsen, Luther College, Decorah, IA
- DS 8 Chilean Acanthosomatidae: Host plants and economic importance. **Mariom Carvajal**, mariom.carvajal@gmail.com, David A. Rider and Eduardo Faundez, North Dakota State Univ., Fargo, ND
- DS 9 Acoustic communication in the Malaysian giant long-legged katydid (*Macrolyristes corporalis*). **Bailey Ketelsen**, bdketelsen10@ole.augie.edu, Natasha Wegner, Carrie L. Hall and Daniel R. Howard, Augustana College, Sioux Falls, SD

M.S. (ALL SECTIONS)

PACTOLA

- DS 10 Expression of transcripts encoding gap junctional proteins (innexins) in the yellow fever mosquito, *Aedes aegypti*. **Travis Calkins**, calkins.21@osu.edu and Peter M. Piermarini, The Ohio State Univ., Wooster, OH
- DS 11 Navel orangeworm (*Amyelois transitella*) detoxification mechanisms for various insecticides. **Mark Demkovich**, mdemkov3@illinois.edu¹, Catherine Dana¹, Joel Siegel² and May R. Berenbaum³, ¹Univ. of Illinois, Urbana, IL, ²USDA, Agricultural Research Service, Parlier, CA, ³Professor, Univ. of Illinois, Champaign-Urbana, Urbana, IL
- DS 12 Baseline susceptibility of *Spodoptera frugiperda* (Lepidoptera: Noctuidae) to Cry1F *Bacillus thuringiensis* toxin. **Karen F. da Silva**, kfdsilva@gmail.com¹, Terence A. Spencer², Andre Crespo³ and Blair D. Siegfried¹, ¹Univ. of Nebraska, Lincoln, NE, ²Univ. of Nebraska-Lincoln, Lincoln, NE, ³DuPont Pioneer, Johnston, IA

- DS 13 The persistence of *Steinernema feltiae* (Rhabditidia:Steinernematidae) by adding host cadavers and sentinel hosts to greenhouse soil. **Joseph Riddle**, riddlej2@msu.edu and Matthew Grieshop, Michigan State Univ., East Lansing, MI
- DS 14 Ground cover improves efficacy of spider mite predator releases in raspberry high tunnels. **Emily Pochubay**, pochubay@msu.edu and Matthew Grieshop, Michigan State Univ., East Lansing, MI
- DS 15 Ground beetle (Coleoptera: Carabidae) abundance and diversity in five Wisconsin agroecosystem trials. **Jessica Mayry**, mayry@wisc.edu¹, Daniel K. Young² and David B. Hogg², ¹Univ. of Wisconsin- Madison, Oregon, WI, ²Univ. of Wisconsin - Madison, Madison, WI
- DS 16 Run over by a truck: A test of burying beetle survival of off-road vehicle traffic. **Elisabeth Jorde**, jordee2@lopers.unk.edu and W. Wyatt Hoback, Univ. of Nebraska - Kearney, Kearney, NE
- DS 17 Effects of weed management on densities of subterranean collembola in soybean. **Ashton Hansen**, ashton.walter@ndsu.edu, Deirdre Prischmann-Voldseth and Amitava Chatterjee, North Dakota State Univ., Fargo, ND
- DS 18 Impact of wheat streak mosaic and Triticum mosaic viruses on transmission by *Aceria tosichella* and virus epidemiology. **Camila F. de Oliveira**, oliveira-camila@live.com and Gary L. Hein, Univ. of Nebraska - Lincoln, Lincoln, NE
- DS 19 A Survey of the Lepturinae of Wisconsin (Coleoptera: Cerambycidae). **Kari Gullickson**, kagullickson@wisc.edu and Daniel K. Young, Univ. of Wisconsin - Madison, Madison, WI
- DS 20 Investigating outgroup taxon sampling: empirical examples from Noctuoidea (Lepidoptera) and bees (Hymenoptera: Apoidea). **Andrew Debevec**, debevec2@illinois.edu¹, Sophie Cardinal², James B. Whitfield¹ and Bryan N. Danforth³, ¹Univ. of Illinois at Urbana-Champaign, Urbana, IL, ²Canadian National Collection of Insects, Ottawa, ON, Canada, ³Cornell Univ., Ithaca, NY

**PH.D. SYSTEMATICS, EVOLUTION, AND BIODIVERSITY;
MEDICAL, URBAN, AND VETERINARY ENTOMOLOGY;
PHYSIOLOGY, BIOCHEMISTRY, AND TOXICOLOGY**

PACTOLA

- DS 21 Relative frequency of two entomopathogenic fungi, *Beauveria* and *Metarhizium* (Ascomycota: Hypocreales), from soils of forested and urban habitats of different ages. **Tamra Reall**, TRFY9F@mail.mizzou.edu and Richard Houseman, Univ. of Missouri, Columbia, MO
- DS 22 Evaluation of low risk compounds as methyl bromide alternatives to manage the ham mite, *Tyrophagus putrescentiae* (Schränk). **Salehe Abbar**, abbar@ksu.edu¹, Thomas W. Phillips¹ and M. Wes Schilling², ¹Kansas State Univ., Manhattan, KS, ²Mississippi State Univ., Starkville, MS
- DS 23 Midgut microbial community plays a significant role in the vector competence of *Phlebotomus duboscqi* for *Leishmania major*. **Dinesh Erram**, derram@ksu.edu¹, David Sacks² and Ludek Zurek¹, ¹Kansas State Univ., Manhattan, KS, ²National Institute of Allergy and Infectious Diseases, National Institute of Health (NIAID, NIH), Bethesda, MD
- DS 24 Effects of diapause on the excretory physiology of the northern house mosquito, *Culex pipiens*. **Liu Yang**, yang.554@osu.edu¹, David Denlinger¹ and Peter M. Piermarini², ¹The Ohio State Univ., Columbus, OH, ²The Ohio State Univ., Wooster, OH
- DS 25 Review of the Pentatominae (Hemiptera: Heteroptera: Pentatomidae) of economic importance in Chile, with a pictorial key to the genera. **Eduardo Faundez**, ed.faundez@gmail.com and David A. Rider, North Dakota State Univ., Fargo, ND

- DS 26 Baseline susceptibility of western corn rootworm (*Diabrotica virgifera virgifera*) adults to pyrethroid insecticide bifenthrin. **Adriano Pereira**, aelias374@yahoo.com.br¹, Haichuan Wang¹, Thaís Patrícia M. Teixeira¹, Blair D. Siegfried¹ and Wade French², ¹Univ. of Nebraska, Lincoln, NE, ²USDA-ARS, Brookings, SD
- DS 27 Dam mosquitoes: Interferometric synthetic aperture RADAR to target site-specific mosquito control efforts. **Jacquelin Stenehjem**, jacquelin.stenehjem@my.willistonstate.edu, Mark A. Boetel and David A. Rider, North Dakota State Univ., Fargo, ND
- DS 28 *Varroa jacobsoni* haplotypes that differ in their reproductive success on the European honey bee (*Apis mellifera*) display differential gene expression. **Gladys Andino**, gandino@purdue.edu, Purdue Univ., West Lafayette, IN

PH.D. PLANT-INSECT ECOSYSTEMS

PACTOLA

- DS 29 Impact of potential prey availability on within field movement of spiders in agroecosystems. **Hannah J. Penn**, hannahjpenn@gmail.com and James D. Harwood, Univ. of Kentucky, Lexington, KY
- DS 30 Lady beetles (Coleoptera: Coccinellidae) of Minnesota soybean and small grains fields. **Anthony A. Hanson**, hans4022@umn.edu and R. L. Koch, Univ. of Minnesota, St. Paul, MN
- DS 31 The influence of tillage on beneficial, edaphic insect communities in sugar beets in western Nebraska. **RJ Pretorius**, rjpretor@cut.ac.za¹, Jeffrey Bradshaw² and Gary L. Hein¹, ¹Univ. of Nebraska - Lincoln, Lincoln, NE, ²Univ. of Nebraska - Lincoln, Scottsbluff, NE

- DS 32 Multistate validation of node-based sample units to estimate soybean aphid whole-plant density (Hemiptera: Aphididae). **Tavvs Alves**, alves011@umn.edu, Univ. of Minnesota, CNPq/Brazil, St. Paul, MN, Brian McCornack, Kansas State Univ., Manhattan, KS and Robert Koch, Univ. of Minnesota, St. Paul, MN
- DS 33 Impact of corn rootworm (*Diabrotica spp.*)- active Bt hybrids on beetle emergence. **Trisha M. Franz**, franz218@umn.edu and Ken Ostlie, Univ. of Minnesota, St. Paul, MN
- DS 34 Corn leaf aphid (Hemiptera: Aphididae) and mycotoxin threats in transgenic maize. **Rosemary Gutierrez**, Rosemary.Gutierrez@sdstate.edu, Billy Fuller and Bradley McManus, South Dakota State Univ., Brookings, SD

REGULAR SUBMITTED POSTERS (ALL SECTIONS)

SUBMITTED POSTER PRESENTERS SHOULD BE PRESENT ON

TUESDAY, JUNE 18

10:00 – 11:00 AM (ODD NUMBERS)

2:00 – 3:00 PM (EVEN NUMBERS)

PACTOLA

- DR 35 Molecular detection of *Nosema* from Kansas bumble bee queens. **Allen L. Szalanski**, aszalan@uark.edu and Amber D. Tripodi, Univ. of Arkansas, Fayetteville, AR
- DR 36 Larval movement of sugarcane borer, *Diatraea saccharalis* (F.) in a seed mixture: Implications for resistance management. **David Wangila**, dwangila2@huskers.unl.edu¹, B. Rogers Leonard¹, Graham P. Head² and Fangneng Huang¹, ¹Louisiana State Univ. Agricultural Center, Baton Rouge, LA, ²Monsanto Company, St. Louis, MO

- DR 37 Male longevity and mating success in relation to body size in northern corn rootworm. **Wade French**, wade.french@ars.usda.gov, USDA, ARS, NCARL, Brookings, SD and Leslie Hammack, USDA, ARS, NCARL, Keystone, SD
- DR 38 Bee diversity in planted grasslands on South Dakota, USA. **Rita Isabel Vélez-Ruiz**, rita.velez@sdstate.edu, Severin-McDaniel Insect Research Collection, Brookings, SD and Paul J. Johnson, South Dakota State Univ., Brookings, SD
- DR 39 Control of spider mite (*Tetranychus urticae*) in soybeans. **Logan A. Dana**, ldana3@unl.edu¹, Vania Xavier², Tomas E. Hunt³ and Aaron Franssen⁴, ¹Univ. of Nebraska, Concord, NE, ²Federal Univ. of Viçosa, Viçosa, Brazil, ³Univ. of Nebraska - Lincoln, Lincoln, NE, ⁴Syngenta, Pleasant Dale, NE
- DR 40 Evaluation of a new chemistry for rangeland grasshopper control. Jeffrey Bradshaw, Karla H. Jenkins and **Sean D. Whipple**, whip5@hotmail.com, Univ. of Nebraska-Lincoln, Scottsbluff, NE
- DR 41 Effects of inoculation method on host plant susceptibility to WSMV infection. **Nar Ranabhat**, oranabhat@gmail.com, Dawn Delaney-Falcon, Fabian Menalled, Mary Burrows and Zach Miller, Montana State Univ., Bozeman, MT
- DR 42 Chemical and biological control of the wheat curl mite (*Aceria tosichella*). **Carmen Pol**, daeroch@gmail.com, Zach Miller and Mary Burrows, Montana State Univ., Bozeman, MT
- DR 43 A domed functional response in the soybean aphid parasitoid *Binodoxys communis*. **Megan E. Carter**, carte544@umn.edu, George E. Heimpel and Mark K. Asplen, Univ. of Minnesota, St. Paul, MN
- DR 44 Evolution of larval host ranges in *Papilio* (Family: Papilionidae). **Allen V Lawrance**, alawran2@illinois.edu and May R. Berenbaum, Univ. of Illinois at Urbana-Champaign, Urbana, IL

- DR 45 Thermal suitability of the western great lakes region for persistence of mountain pine beetle (Coleoptera: Curculionidae). **Derek Rosenberger**, rose0675@umn.edu¹, Robert Venette² and Brian Aukema¹, ¹Univ. of Minnesota, St. Paul, MN, ²U.S. Forest Service, St. Paul, MN
- DR 46 Comparative performance of Bt-rootworm traits in Cry3Bb1 performance problem fields. **Ken Ostlie**, ostli001@umn.edu, Elizabeth Schacht and Jeremy Barta, Univ. of Minnesota, St. Paul, MN
- DR 47 Field trial performance of SmartStax[®] technology for control of corn earworm. **Dwain M. Rule**, ddrule@dow.com, Dow AgroSciences, LLC, Indianapolis, IN and Amanda Jacobson, Dow AgroSciences, LLC, West Lafayette, IN
- DR 48 Host synchrony effects on efficacy and performance of Bt-rootworm traits. **Elizabeth Schacht**, schac064@umn.edu, Jeremy Barta, Trisha M. Franz and Ken Ostlie, Univ. of Minnesota, St. Paul, MN
- DR 49 Dung beetles (Scarabaeidae: Aphodiinae, Scarabaeinae) associated with pastures on organic beef farms in southeastern Wisconsin. **Ann Marsh**, marsham22@uww.edu and Nadine Kriska, Univ. of Wisconsin-Whitewater, Whitewater, WI
- DR 50 Insects as educational tools: An online course teaching the use of insects as instructional tools. **Douglas Golick**, dgolick2@unl.edu and Tiffany M. Heng-Moss, Univ. of Nebraska - Lincoln, Lincoln, NE
- DR 51 Ecological analyses of adult mosquito (Diptera: Culicidae) communities in Iowa. **Mike W. Dunbar**, dunbar@iastate.edu and Lyric Bartholomay, Iowa State Univ., Ames, IA
- DR 52 Acute toxicity of terpenoids on the green lacewing *Chrysoperla externa*. **Rodolfo Castilhos**, rodolfoc@iastate.edu¹, Aaron Gross¹, Anderson Grutzmacher² and Joel Coats¹, ¹Iowa State Univ., Ames, IA, ²Universidade Federal de Pelotas, Pelotas, Brazil

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION PAPERS
UNDERGRADUATE AND M.S. SESSION I

**PLANT-INSECT ECOSYSTEMS;
SYSTEMATICS, EVOLUTION, AND BIODIVERSITY**

LEGION I

MODERATORS:

JONATHAN NIXON, DOW AGROSCIENCES

STEVE YANINEK, PURDUE UNIVERSITY

- 9:30 AM 7 Host influence on overwintering ability of the emerald ash borer (*Agrilus planipennis*). **Lindsey Christianson**, chri1203@umn.edu, Univ. of Minnesota, St. Paul, MN and Robert Venette, U.S. Forest Service, St. Paul, MN
- 9:42 AM 8 Effect of host plant resistance and seed treatments on soybean aphids and natural enemies. **Devi R. Kandel**, devi.kandel@sdstate.edu, Kelley J. Tilmon and Tiana L. Shuster, South Dakota State Univ., Brookings, SD
- 9:54 AM 9 The impact of surrounding landscape diversity on the seasonal abundance of Japanese beetle (*Popillia japonica*) in soybean. **Cody D. Kuntz**, cdkuntz@iastate.edu and Matthew E. O'Neal, Iowa State Univ., Ames, IA
- 10:06 AM 10 Burying beetles, *Nicrophorus*, survive two weeks without food. W. Wyatt Hoback and **Dayana Rodriguez**, rodriguezdn@lopers.unk.edu, Univ. of Nebraska - Kearney, Kearney, NE

- 10:18 AM 11 What is the effect of sheep grazing for cover crop termination on associated biodiversity? **Sean McKenzie**, smckenzie1986@gmail.com, Hayes Goosey, Kevin O'Neill and Fabian Menalled, Montana State Univ., Bozeman, MT
- 10:30 AM 12 European corn borer (*Ostrinia nubilalis*) pheromone-race hybrids: frequency, gene flow and host plant use in the Northeastern US. **Jing Sun**, jingsun@iastate.edu¹, Brad S. Coates², Shelby J. Fleischer³ and Thomas W. Sappington², ¹Iowa State Univ., Ames, IA, ²USDA - ARS, Ames, IA, ³Pennsylvania State Univ., State College, PA
- 10:42 AM 13 Treehopper trends: Phenological advancements in *Cyrtolobus* treehoppers (Hemiptera: Membracidae). **Brendan Morris**, brenolmorris@gmail.com, Univ. of Illinois, Champaign, IL

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION PAPERS

M.S. SESSION II

PLANT-INSECT ECOSYSTEMS;

MEDICAL, URBAN, AND VETERINARY ENTOMOLOGY

LEGION II

MODERATORS:

SHARON DOBESH, KANSAS STATE UNIVERSITY

ROBERT KOCH, UNIVERSITY OF MINNESOTA

- 11:00 AM 14 Detection of two maternally inherited endosymbionts new to solitary bees. **Abiya Saeed**, abiyasaheed@gmail.com and Jennifer A. White, Univ. of Kentucky, Lexington, KY
- 11:12 AM 15 Sanitation measures to control walnut twig beetle (*Pityophthorus juglandis*) emergence from felled black walnut logs. **Rachael Sitz**, rachael.fithian@colostate.edu, Emily Luna, Ned Tisserat and Whitney Cranshaw, Colorado State Univ., Fort Collins, CO
- 11:24 AM 16 Digging below the ice: Overwintering burying beetles (Coleoptera: Silphidae) survive when they are beneath the frost line. **Adrienne L. Conley**, conleya2@lopers.unk.edu and W. Wyatt Hoback, Univ. of Nebraska - Kearney, Kearney, NE
- 11:36 AM 17 Insect pollinators in Iowa cornfields: Community identification and trapping methods analysis. **Michael Joseph Wheelock**, wheelock@iastate.edu, Iowa State Univ., Ames, IA

- 11:48 AM 18 Protease inhibitors and other insights from the transcriptome of *Callosobruchus maculatus* the cowpea weevil. **Alice M. Vossbrinck**, vossbri2@illinois.edu and Barry R. Pittendrigh, Univ. of Illinois, Urbana, IL
- 12:00 PM 19 Genome-wide analysis of cytochrome P450 genes in the yellow fever mosquito *Aedes aegypti* (Diptera: Culicidae). **Moustapha Soumaila Issa**, msoumai@k-state.edu, Da Xiao and Kun-Yan Zhu, Kansas State Univ., Manhattan, KS

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION PAPERS

PH.D. SESSION I

**MEDICAL, URBAN, AND VETERINARY ENTOMOLOGY;
PHYSIOLOGY, BIOCHEMISTRY, AND TOXICOLOGY**

SYLVAN I

MODERATORS:

VENKAT CHAPARA, NORTH DAKOTA STATE UNIVERSITY

GARY BREWER, NORTH DAKOTA STATE UNIVERSITY

- 9:30 AM 20 Effect of various concentrations of the pain medication ibuprofen in reconstituted human blood on feeding and fecundity of bed bugs (*Cimex lectularius* L.). **Ralph Narain**, ralph@huskers.unl.edu¹, Shripat Kamble¹ and Nicholas J. Miller², ¹Univ. of Nebraska - Lincoln, Lincoln, NE, ²USDA-ARS, Ames, IA
- 9:42 AM 21 Using predicted *Anopheles gambiae* larval habitat locations to explain heterogeneity in adult *An. gambiae* spatial distribution. **Robert S. McCann**, rseanm@gmail.com¹, Joseph Messina¹, David MacFarlane¹, M. Nabie Bayoh², John M. Vulule², John E. Gimnig³ and Edward Walker¹, ¹Michigan State Univ., East Lansing, MI, ²Centers for Disease Control and Prevention/Kenya Medical Research Institute, Kisumu, Kenya, ³Centers for Disease Control and Prevention, Atlanta, GA
- 9:54 AM 22 Different physiological roles of two dopamine receptors in salivation of the blacklegged tick, *Ixodes scapularis* Say. **Donghun Kim**, kp5091@k-state.edu, Ladislav Simo and Yoonseong Park, Kansas State Univ., Manhattan, KS

- 10:06 AM 23 Vulnerability of a mixed diet of DDGS with different proportions of flour/yeast and commercial animal feed containing DDGS to *T. castaneum* infestation.. **Mahsa Fardisi**, mfordisi@purdue.edu¹, Linda J. Mason¹ and Klien Ileleji², ¹Purdue Univ., West Lafayette, IN, ²Purdue Univ., W. Lafayette, IN
- 10:18 AM 24 Towards IPM of the mold mite, *Tyrophagus putrescentiae* (Schrank) (Acari: Acaridae): Trapping and monitoring mite populations in ham processing facilities. **Barbara Amoah**, bamoah@ksu.edu and Thomas Phillips, Kansas State Univ., Manhattan, KS
- 10:30 AM 25 (S)-fuscumol and (S)-fuscumol acetate produced by a male *Astyleiopus variegatus* (Coleoptera: Cerambycidae). **Gabriel P. Hughes**, ghughes@purdue.edu¹, Yunfan Zou², Jocelyn G. Millar³ and Matthew D. Ginzel¹, ¹Purdue Univ., West Lafayette, IN, ²Univ. of California, Riverside, Riverside, CA, ³Univ. of California,, Riverside, CA
- 10:42 AM 26 RNA interference in the blacklegged tick, *Ixodes scapularis*: Disappointment and success. **Joshua R. Urban**, josurb@ksu.edu, Ladislav Simo and Yoonseong Park, Kansas State Univ., Manhattan, KS
- 10:54 AM 27 Infestation behavior of *Rhyzopertha dominica* (F.) (Coleoptera: Bostrichidae) first instars on hard red winter wheat kernels: Preliminary observations. **Mario Andrada**, mandrada@ksu.edu and Bhadriraju Subramanyam, Kansas State Univ., Manhattan, KS

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION PAPERS

PH.D. SESSION II

PLANT-INSECT ECOSYSTEMS

SYLVAN II

MODERATORS:

JOHN OBRYCKI, UNIVERSITY OF KENTUCKY

PAUL JOHNSON, SOUTH DAKOTA STATE UNIVERSITY

- 9:30 AM 28 Reduced insecticide use in soybean fields: A look into the development of site-specific strategies to manage *Dectes texanus*. **Alice Harris**, alice3@k-state.edu, Kansas State Univ., Manhattan, KS
- 9:42 AM 29 The double-edged sword of biological control: The bean plataspid (*Megacopta cribraria*) and its predators in cotton and soybeans. **Kacie J. Athey**, kacie.johansen@uky.edu¹, John Ruberson² and James D. Harwood¹, ¹Univ. of Kentucky, Lexington, KY, ²Kansas State Univ., Manhattan, KS
- 9:54 AM 30 The dangers of diet and exercise: Movement and feeding interruption in the soybean aphid, *Aphis glycines*. **James Kopco**, jk729@cornell.edu, North Dakota State Univ., Fargo, ND
- 10:06 AM 31 Induced susceptibility: A density dependent response that explains *Aphis glycines* populations on resistant soybean in field research plots. **Adam J. Varenhorst**, ajv@iastate.edu and Matthew E. O'Neal, Iowa State Univ., Ames, IA
- ~~10:18 AM~~ 32 Presentation withdrawn

10:18 AM 33 Soybean aphid feeding affects soybean cyst
nematode reproduction. **Michael T.
McCarville**, mikemcc@iastate.edu, David Soh,
Gregory L. Tylka, Gustavo C. MacIntosh, Erin
W. Hodgson and Matthew E. O'Neal, Iowa
State Univ., Ames, IA

JUNE 17, 2013
MONDAY MORNING

STUDENT COMPETITION PAPERS

PH.D. SESSION III

PLANT-INSECT ECOSYSTEMS

LEGION II

MODERATORS:

JESSICA JURZENSKI, UNIVERSITY OF NEBRASKA-LINCOLN

SUE BLODGETT, IOWA STATE UNIVERSITY

- 9:30 AM 34 Impacts of rye cover crop on ground-dwelling beneficial arthropods. **Mike W. Dunbar**, dunbar@iastate.edu, Aaron J. Gassmann and Matthew E. O'Neal, Iowa State Univ., Ames, IA
- 9:42 AM 35 Effect of cutting prairie on movement of beneficial arthropods into adjacent crop fields. **Wayne J. Ohnesorg**, wohnesorg2@unl.edu¹, Robert J. Wright², Marion D. Ellis² and Thomas E. Hunt³, ¹Univ. of Nebraska - Lincoln, Norfolk, NE, ²Univ. of Nebraska - Lincoln, Lincoln, NE, ³Univ. of Nebraska - Lincoln, Concord, NE
- 9:54 AM 36 Characterizing responses of rotation-resistant and rotation-susceptible populations of the western corn rootworm to Bt corn using a greenhouse bioassay. **Nicholas Tinsley**, tinsley@illinois.edu, Ronald Estes, Michael Gray, Joseph Spencer and Preston Schrader, Univ. of Illinois, Urbana, IL
- 10:06 AM 37 Wild parsnip pollination in the absence of herbivory: A tale of two hemispheres. **Tania Jogesh**, tjogesh@life.illinois.edu¹, Arthur Zangerl¹, Margaret Stanley² and May R. Berenbaum¹, ¹Univ. of Illinois, Urbana, IL, ²Univ. of Auckland, Auckland, New Zealand

- 10:18 AM 38 Fifth instar codling moth natural enemies in organic apple orchards. **Nathaniel J. Walton**, waltonn2@msu.edu and Matthew Grieshop, Michigan State Univ., East Lansing, MI
- 10:30 AM 39 The risk of mapping risk: Effect of selection on the lower lethal temperature and geographical range predictions of light brown apple moth (*Epiphyas postvittana*). **Amy C. Morey**, morey041@umn.edu¹, Robert Venette² and William D. Hutchison¹, ¹Univ. of Minnesota, St. Paul, MN, ²U.S. Forest Service, St. Paul, MN

JUNE 17, 2013
MONDAY AFTERNOON

SYMPOSIUM

INNOVATION IN RESEARCH AND EXTENSION IN WHEAT IPM

1:30 PM – 4:45 PM

LEGION I

ORGANIZERS AND MODERATORS:

JEFFREY BRADSHAW, UNIVERSITY OF NEBRASKA-LINCOLN

GARY HEIN, UNIVERSITY OF NEBRASKA-LINCOLN

- | | | |
|---------|----|--|
| 1:30 PM | | Introductory Remarks |
| 1:40 PM | 40 | Wheat production in the Great Plains. Merle Vigil , Merle.Vigil@ars.usda.gov, USDA, Akron, CO |
| 2:05 PM | 41 | The Hessian fly, impact and management challenges in the Great Plains. Kirk Anderson , kirk.anderson@ndsu.edu, North Dakota State Univ., Fargo, ND |
| 2:30 PM | 42 | Biology and management of Russian wheat aphid. Frank B. Peairs , Frank.Peairs@colostate.edu, Colorado State Univ., Fort Collins, CO |
| 2:55 PM | 43 | Pest status of wheat stem sawfly in North America. Jeffrey Bradshaw , jbradshaw2@unl.edu, Univ. of Nebraska - Lincoln, Scottsbluff, NE |
| 3:20 PM | | Break |
| 3:30 PM | 44 | Wheat streak mosaic virus and the wheat curl mite: Recent progress in research, extension, and education. Mary Burrows , mburrows@MONTANA.EDU, Montana State Univ., Bozeman, MT |

- 3:55 PM 45 Wheat curl mite interactions with wheat and wheat viruses. **Gary L. Hein**, GHEIN1@unl.edu¹, Anthony J. McMechan¹, Camila F. de Oliveira¹, Roy French² and Everlyne Nafula Wosula¹, ¹Univ. of Nebraska - Lincoln, Lincoln, NE, ²USDA - ARS, Lincoln, NE
- 4:20 PM 46 Getting wheat growers to go digital. **Brian McCornack**, mccornac@ksu.edu, Kansas State Univ., Manhattan, KS

JUNE 17, 2013
MONDAY AFTERNOON

SYMPOSIUM

HIGHLIGHTS IN INSECT BEHAVIOR

1:30 PM – 4:45 PM

LEGION II

ORGANIZER AND MODERATOR:

DANIEL HOWARD, AUGUSTANA COLLEGE

CARRIE HALL, AUGUSTANA COLLEGE

- | | | |
|---------|----|--|
| 1:30 PM | 47 | Sex, bugs, and rock and roll: Evolutionary patterns and ecological significance of insect behavior. Daniel R. Howard , daniel.howard@augie.edu, Augustana College, Sioux Falls, SD |
| 1:50 PM | 48 | Acoustic behavior in the microphorine burying beetles (Coleoptera: Silphidae): A comparison of eight North American species. Carrie L. Hall , carrie.hall@augie.edu, Augustana College, Sioux Falls, SD |
| 2:10 PM | 49 | Killing in the dark and getting between rocks and hard places: How behavioral investigations correct assumptions. W. Wyatt Hoback , hobackww@unk.edu, Univ. of Nebraska - Kearney, Kearney, NE |
| 2:30 PM | 50 | The 'what' and 'where' of finding a host in the acoustic parasitoid fly <i>Ormia ochracea</i> . Norman Lee , leen@umn.edu, Univ. of Minnesota, St. Paul, MN and Andrew C. Mason, Univ. of Toronto at Scarborough, Scarborough, ON, Canada |
| 2:50 PM | | Break |

- 3:10 PM 51 Uptake and translocation of neonicotinoid insecticides in soybean and its influence on soybean aphid, *Aphis glycines* (Hemiptera: Aphididae), feeding behavior. **Mitchell Stamm**, mstamm3@unl.edu¹, Frederick Baxendale¹, Tiffany Heng-Moss¹, Blair Siegfried¹, Thomas Hunt² and Ralf Nauen³, ¹Univ. of Nebraska-Lincoln, Lincoln, NE, ²Univ. of Nebraska-Lincoln, Concord, NE, ³Bayer CropScience Aktiengesellschaft, Monheim, Germany
- 3:30 PM 52 Vibrational signaling mediates intrasexual aggression in the Cook Strait giant weta (*Deinacrida rugosa*). **Ashley P. Schmidt**, apschmidt10@ole.augie.edu, Augustana College, Sioux Falls, SD
- 3:50 PM 53 Reproductive trade-offs in the burying beetle *Nicrophorus marginatus*: Does parental competitive environment influence offspring sex ratio or brood size dynamics? **Brooke K. Woelber**, bkwoelber10@ole.augie.edu, Augustana College, Sioux Falls, SD
- 4:10 PM 54 Male display patterns and female choice in a lek-mating subsoil insect. **Daniel R. Howard**, daniel.howard@augie.edu, Augustana College, Sioux Falls, SD
- 4:30 PM Concluding Remarks

MONDAY NOTES

JUNE 18, 2013

TUESDAY

Services	
7:30 AM – 12:00 PM 1:30 PM – 5:00 PM	Registration; Convention Center II Foyer
7:30 AM – 7:00 PM	AV/Employment Opportunity Room; Roosevelt
Functions	
7:00 AM – 8:00 PM	Complimentary hot breakfast, while supplies last; Rushmore
10:00AM–10:30 AM	Coffee Break; Pactola
12:00 PM – 1:30 PM	Awards Luncheon; Rushmore
3:00 PM – 3:30 PM	Coffee Break; Pactola
Scientific Program	
8:00 AM – 6:00 PM	Posters Display – all posters (student and regular submission) on display through Wednesday; Pactola
8:00 AM – 11:20 AM	Symposium: Communicating Research to the Public: Strategies Then, Now, and for the Future; Sylvan I
8:00 AM – 11:30 AM	Symposium: IRM – the Road to Resistance is Paved with Good Intentions; Sylvan II
8:30 AM – 11:20 AM	Symposium: Revolutionizing IPM: Novel Pest Control Strategies for a Changing World (Student Affairs Committee); Legion I
2:00 PM – 4:00 PM	Symposium: Spider Mite Management in the North Central US; Sylvan I
3:30 PM – 5:15 PM	Symposium: Shut Your Trap: Quantifying Biocontrol Services (NCERA 220); Legion I

JUNE 18, 2013
TUESDAY MORNING

SYMPOSIUM

**COMMUNICATING RESEARCH TO THE PUBLIC: STRATEGIES
THEN, NOW, AND FOR THE FUTURE**

8:00 AM – 11:20 AM

SYLVAN I

ORGANIZER AND MODERATOR:

AMANDA BACHMANN, SOUTH DAKOTA STATE UNIVERSITY

- | | | |
|---------|----|---|
| 8:00 AM | | Welcoming Remarks |
| 8:05 AM | 55 | Can volunteer training methods affect the accuracy of direct citizen science arthropod data? Mary M. Gardiner ,
gardiner.29@osu.edu ¹ , Mary Griffith ² , John E. Losey ³ , Rebecca Rice-Smyth ³ , Leslie L. Allee ³ , Helen Roy ⁴ and Peter Brown ⁵ , ¹ Ohio State Univ., Wooster, OH, ² Ohio State Univ., Columbus, OH, ³ Cornell Univ., Ithaca, NY, ⁴ Natural Environment Research Council (NERC), Centre for Ecology and Hydrology, Wallingford, United Kingdom, ⁵ Animal and Environmental Research Group, Cambridge, United Kingdom |
| 8:35 AM | 56 | Animated bugs: How effective is animation in communicating a message in extension entomology. Buyung Hadi ,
buyung.hadi@sdstate.edu, South Dakota State Univ., Brookings, SD |
| 9:05 AM | | Break |
| 9:20 AM | 57 | Ladybugs, citizen science, and measures of success. Louis Hesler ,
louis.hesler@ars.usda.gov ¹ , John Losey ² , Rebecca Rice-Smyth ² and Leslie Allee ² , ¹ USDA-ARS, Brookings, SD, ² Cornell Univ., Ithaca, NY |

- 9:50 AM 58 Delivering research findings to the public: How extension entomologists help the public solve bed bug phobia. **Changlu Wang**,
cwang@AESOP.Rutgers.edu, Rutgers, The State Univ. of New Jersey, New Brunswick, NJ
- 10:20 AM 59 Connecting gardens and children: Hands-on ways to introduce children to science and nutrition. **Mary Roduner**,
mary.roduner@sdstate.edu, South Dakota State Univ., Rapid City, SD
- 10:50 AM 60 Getting growers to go digital: The power of a positive user experience. **Wendy A. Johnson**,
wendyann@ksu.edu and Brian McCornack, Kansas State Univ., Manhattan, KS

JUNE 18, 2013
TUESDAY MORNING

SYMPOSIUM

***IRM – THE ROAD TO RESISTANCE IS
PAVED WITH GOOD INTENTIONS***

8:00 AM – 11:30 AM

SYLVAN II

ORGANIZERS AND MODERATORS:

CLINTON PILCHER, DUPONT PIONEER

TONY BURD, SYNGENTA CROP PROTECTION

CAYDEE SAVINELLI, SYNGENTA CROP PROTECTION

- | | | |
|---------|----|--|
| 8:00 AM | 61 | Introduction. Tony Burd ,
tony.burd@syngenta.com, Syngenta,
Greensboro, NC |
| 8:10 AM | 62 | Comparing and contrasting historical
highlights of Bt IRM regulation - Is a new
paradigm needed? Clinton D. Pilcher ,
clint.pilcher@pioneer.com, DuPont Pioneer,
Johnston, IA |
| 8:30 AM | 63 | Comparing and contrasting insecticide IRM
with Bt transgenics. Caydee Savinelli ,
caydee.savinelli@syngenta.com, Syngenta
Crop Protection, Greensboro, NC |
| 8:50 AM | 64 | What is IPM or IRM to a grower and what will
work for the future? Chad Blindhauer ,
clint.pilcher@pioneer.com, National Corn
Growers, Mitchell, SD |
| 9:10 AM | 65 | Incentivizing pest resistance management to
enhance the durability of Bt crops? Terrance
Hurley , tmh@umn.edu, Univ. of Minnesota,
St. Paul, MN |

- 9:45 AM 66 The importance of target pest biology and ecology when designing an IRM plan: Example, the western corn rootworm (*Diabrotica virgifera virgifera* LeConte). **Lance J. Meinke**, LMEINKE1@unl.edu, Univ. of Nebraska, Lincoln, NE
- 10:05 AM 67 Landscape management of challenging pests? Ideas for the future. **Russell L Groves**, groves@entomology.wisc.edu and Anders S. Huseth, Univ. of Wisconsin-Madison, Madison, WI
- 10:25 AM 68 Future IRM insect monitoring considerations for corn rootworm. **Ken Ostlie**, ostli001@umn.edu, Univ. of Minnesota, St. Paul, MN
- 10:45 AM 69 Balancing short- and long-term benefits of IRM: Ideas for future development. **Nicholas Storer**, nstorer@dow.com, Dow AgroSciences, Midland, MI
- 11:05 AM 70 Q & A for speakers and open discussion. **Tony Burd**, tony.burd@syngenta.com, Syngenta, Greensboro, NC

**JUNE 18, 2012
TUESDAY MORNING**

STUDENT AFFAIRS SYMPOSIUM

***REVOLUTIONIZING IPM: NOVEL PEST CONTROL STRATEGIES
FOR A CHANGING WORLD***

8:30 AM – 11:20 AM

LEGION I

**ORGANIZED BY:
NCB-ESA STUDENT AFFAIRS COMMITTEE**

**MODERATED BY:
MITCHELL STAMM, UNIVERSITY OF NEBRASKA-LINCOLN
AMY MOREY, UNIVERSITY OF NEBRASKA-LINCOLN**

- | | | |
|---------|----|--|
| 8:30 AM | | Introductory Remarks |
| 8:35 AM | 71 | Refining vegetable IPM - Limiting insecticide resistance and leaching. Russell L. Groves , groves@entomology.wisc.edu and Anders S. Huseeth, Univ. of Wisconsin-Madison, Madison, WI |
| 8:55 AM | 72 | Changing a negative into a positive: Ozone as part of post-harvest IPM. Linda Mason , lmason@purdue.edu, Purdue Univ., W. Lafayette, IN |
| 9:15 AM | 73 | Chemical ecology of belowground trophic webs: Potential and limitations for innovative IPM strategies of soil-dwelling pests. Ivan Hiltbold , hiltboldi@missouri.edu, Univ. of Missouri, Columbia, MO |
| 9:35 AM | 74 | Information delivery at a crossroads--the future of IPM in a digital world. Brian McCornack , mccornac@ksu.edu, Kansas State Univ., Manhattan, KS |

9:55 AM		Break
10:10 AM	75	The dirt beneath our feet: Optimizing floor management in perennial fruit systems. Matthew Grieshop , grieshop@msu.edu, Michigan State Univ., East Lansing, MI
10:30 AM	76	Protecting Darwin's finches from an invasive parasitic fly. George Heimpel , heimp001@umn.edu ¹ , Sarah Knutie ² and Dale H. Clayton ² , ¹ Univ. of Minnesota, St. Paul, MN, ² Univ. of Utah, Salt Lake City, UT
10:50 AM	77	Can spiders provide valuable biological control service? James D. Harwood , james.harwood@uky.edu, Univ. of Kentucky, Lexington, KY
11:10 AM		Concluding Remarks

JUNE 18, 2013
TUESDAY AFTERNOON

SYMPOSIUM

SPIDER MITE MANAGEMENT IN THE NORTH CENTRAL US

2:00 PM – 4:00 PM

SYLVAN I

ORGANIZERS AND MODERATORS:

THELMA HEIDEL-BAKER, IOWA STATE UNIVERSITY

ERIN HODGSON, IOWA STATE UNIVERSITY

- | | | |
|---------|----|--|
| 2:00 PM | | Introductory Remarks |
| 2:05 PM | 78 | Resistance in twospotted spider mites in soybean: The Minnesota experience. Ian V. MacRae , imacrae@umn.edu, Univ. of Minnesota, St Paul, MN and Bruce D. Potter, Univ. of Minnesota, Lamberton, MN |
| 2:27 PM | 79 | Managing Banks grass mite in irrigated field corn. Frank B. Peairs , Frank.Peairs@colostate.edu, Colorado State Univ., Fort Collins, CO |
| 2:49 PM | 80 | Using different strategies to manage outbreaks of spider mites on maple trees. Julia Prado , jpradobe@purdue.edu and Clifford S Sadof, Purdue Univ., West Lafayette, IN |
| 3:11 PM | | Break |
| 3:16 PM | 81 | Interactions of drought and drying on mite problems of turf and ornament plants. Whitney Cranshaw , Whitney.Cranshaw@ColoState.EDU, Colorado State Univ., Fort Collins, CO |

3:38 PM 82 Insecticides with bioactive properties meet
unsusceptible herbivores: Mechanisms behind
secondary outbreaks of spider mites. **Adrianna
Szczepaniec**,
adrianna.szczepaniec@sdstate.edu, South
Dakota State Univ., Brookings, SD

JUNE 18, 2013
TUESDAY AFTERNOON

NCERA-220 SYMPOSIUM

SHUT YOUR TRAP: QUANTIFYING BIOCONTROL SERVICES

3:30 PM – 5:15 PM

LEGION I

ORGANIZERS AND MODERATORS:

MATTHEW GRIESHOP, MICHIGAN STATE UNIVERSITY

MARY GARDINER, OHIO STATE UNIVERSITY

- | | | |
|---------|----|---|
| 3:30 PM | | Introductory Remarks |
| 3:35 PM | 83 | Indicator organisms to assess functional changes in altered urban greenspaces. Mary M. Gardiner , gardiner.29@osu.edu, Scott Prajzner and Caitlin E. Burkman, Ohio State Univ., Wooster, OH |
| 3:55 PM | 84 | Video methods to assess predator diversity-function relationships. Matthew Grieshop , grieshop@msu.edu, Michigan State Univ., East Lansing, MI |
| 4:15 PM | 85 | Molecular methods to build and compare predator food webs. James D. Harwood , james.harwood@uky.edu, Univ. of Kentucky, Lexington, KY |
| 4:35 PM | 86 | Measuring the impact of predators and parasitoids in integrated bioenergy cropping systems. Julie A. Peterson , petersja@umn.edu, James O. Eckberg, Karen E. Blaedow, Joe M. Kaser, Gregg A. Johnson and George E. Heimpel, Univ. of Minnesota, St. Paul, MN |

4:55 PM 87 Marking natural enemies without getting egg
on your face. **Brian P. McCornack**,
mccornac@ksu.edu, Ximena Cibils-Stewart
and Alice L. Harris, Kansas State Univ.,
Manhattan, KS

TUESDAY NOTES

JUNE 18, 2013

WEDNESDAY

Services	
7:30 AM – 10:00 AM	Registration; Convention Center II Foyer
Functions	
7:00 AM – 7:30 AM	Coffee; Pactola
8:00 AM – 9:00 AM	Final Business Meeting; Legion I
Scientific Program	
8:00 AM – 10:00 AM	Posters Display – all posters (student and regular submission) on display through Wednesday; Pactola
10:00AM – 12:00PM	Posters Takedown; Pactola
9:00 AM – 10:36 AM	Submitted Papers Session I; Sylvan I
9:00 AM – 11:00 AM	Submitted Papers Session II; Sylvan II
Private Meetings	
11:30AM – 12:30AM	NCB Executive Committee final meeting; Lincoln

JUNE 19, 2012
WEDNESDAY MORNING

SUBMITTED PAPERS

**SESSION I: MEDICAL, URBAN AND VETERINARY
ENTOMOLOGY; PHYSIOLOGY, BIOCHEMISTRY AND
TOXICOLOGY**

9:00 AM – 10:36 AM

SYLVAN I

MODERATORS:

GRAYSON BROWN, UNIVERSITY OF KENTUCKY
MARY RODUNER, SOUTH DAKOTA STATE UNIVERSITY

- 9:00 AM 88 Evaluation of pentoxifylline, a chitinase inhibitor, as a subterranean termite bait active ingredient. **Timothy J. Husen**, timhusen52@gmail.com and Shripat T. Kamble, University of Nebraska-Lincoln, Lincoln, NE
- 9:12 AM 89 Efficacy of partial treatment of wheat with spinosad against adults of the lesser grain borer, *Rhyzopertha dominica* (F.). **Blossom Sehgal**, blossom@ksu.edu, Bhadriraju Subramanyam, Dhana Raj Boina and Fernanda Lazzari, Kansas State Univ., Manhattan, KS
- 9:24 AM 90 Efficacy of a synthetic zeolite against five species of stored-product insects on concrete and wheat. **Kouame Yao**, kdyao@ksu.edu and Bhadriraju Subramanyam, Kansas State Univ., Manhattan, KS
- 9:36 AM 91 How do corn rootworms (*Diabrotica* spp.) cope with hydroxamic acids? **Nicholas Miller**, nmiller4@unl.edu, Zixiao Zhao and Jelfina Alouw, Univ. of Nebraska - Lincoln, Lincoln, NE

- 9:48 AM 92 Future potential of plant essential oils in the control of the medically relevant mosquito species *Aedes aegypti* and *Anopheles gambiae*. **Edmund Norris**, ejnorris@iastate.edu¹, Aaron D. Gross¹, Kornwika Suwansirisilp², Lyric Bartholomay¹ and Joel Coats¹, ¹Iowa State Univ., Ames, IA, ²Kasetsart Univ., Bangkok, Thailand
- 10:00 AM 93 Pathogenic and non-pathogenic microorganisms harbored by *Amblyomma americanum*, the lone star tick, in southeastern Nebraska. **Amanda Maegli**, amaegli27@gmail.com, Univ. of Nebraska-Lincoln, Lincoln, NE
- 10:12 AM 94 A cell line derived from honey bee (*Apis mellifera*) embryonic tissues. **Michael Goblirsch**, goblirmj@umn.edu, Marla Spivak and Tim Kurtti, Univ. of Minnesota, St. Paul, MN
- 10:24 AM 95 Chemistry of terpenes that kill *Varroa* but not the honey bees. **Joel Coats**, jcoats@iastate.edu¹, Carol Fassbinder-Orth¹, Marion Ellis² and Justin Grodnitzky¹, ¹Iowa State Univ., Ames, IA, ²Univ. of Nebraska, Lincoln, NE

JUNE 19, 2012
WEDNESDAY MORNING

SUBMITTED PAPERS

**SESSION II: PLANT-INSECT ECOSYSTEMS;
SYSTEMATICS, EVOLUTION, AND BIODIVERSITY**

9:00 AM – 11:00 AM

SYLVAN II

MODERATORS:

MIKE CULY, DOW AGROSCIENCES
KELLEY TILMON, SOUTH DAKOTA STATE UNIVERSITY

- 9:00 AM 96 Inheritance and fitness costs of Bt Resistance for a field-derived strain of western corn rootworm (*Diabrotica virgifera virgifera* LeConte). **David A. Ingber**, davidngbr@gmail.com¹, Graham P. Head² and Aaron J. Gassmann¹, ¹Iowa State Univ., Ames, IA, ²Monsanto Company, St. Louis, MO
- 9:12 AM 97 Field trial performance of SmartStax[®] technology for control of western corn rootworm. **Dwain M. Rule**, ddrule@dow.com¹, Kevin Johnson² and Amanda Jacobson³, ¹Dow AgroSciences, LLC, Indianapolis, IN, ²Dow AgroSciences, LLC, Danville, IL, ³Dow AgroSciences, LLC, West Lafayette, IN
- 9:24 AM 98 Influence of plant architecture on tritrophic interactions between canola, aphids and *Hippodamia convergens*. **Ximena Cibils Stewart**, xcibils@k-state.edu and Brian P. McCornack, Kansas State Univ., Manhattan, KS

- 9:36 AM 99 Studies of parasitic wasps (Hymenoptera: Braconidae) in association with mountain pine beetle outbreak. **Lawrence Haimowitz**, lhaimowi@uwyo.edu, Univ. of Wyoming, Laramie, WY
- 9:48 AM 100 Genetic characterization of turf infesting sod webworms and their host associations. **Devon Rogers**, rogers.781@osu.edu¹, David J. Shetlar¹ and Steven Passoa², ¹Ohio State Univ., Columbus, OH, ²USDA-APHIS, Columbus, OH
- 10:00 AM 101 Using ants (Hymenoptera: Formicidae) as indicators of restoration success in temperate grasslands. **Laura B. Winkler**, laura.winkler@sdstate.edu, South Dakota State Univ., Brookings, SD
- 10:12 AM 102 Assessing the risk of establishment of western cherry fruit fly (Diptera: Tephritidae) in commercial cherry-growing areas of California. **Sunil Kumar**, sunil@nrel.colostate.edu¹, Lisa G. Neven² and Wee Yee², ¹Colorado State Univ., Fort Collins, CO, ²USDA-ARS, Wapato, WA
- 10:24 AM 103 Impact of Triticum mosaic virus on the biology of the wheat curl mite (*Aceria tosichella* Keifer). **Anthony J. McMechan**, justin.mcmechan@gmail.com¹, Gary L. Hein¹, Satyanarayana Tatineni² and Roy French², ¹Univ. of Nebraska - Lincoln, Lincoln, NE, ²USDA - ARS, Lincoln, NE
- 10:36 AM 104 Impacts of conventional and organic agriculture on soil-borne entomopathogenic fungi. **Eric H. Clifton**, eclifton@iastate.edu¹, Stefan T. Jaronski², Erin W. Hodgson¹ and Aaron J. Gassmann¹, ¹Iowa State Univ., Ames, IA, ²USDA-ARS, Sidney, MT
- 10:48 AM 105 Response of *Armadillidium vulgare* to immersion in water. **Elisha Hinojosa**, hinojosaek@lopers.unk.edu, Univ. of Nebraska at Kearney, Enders, NE

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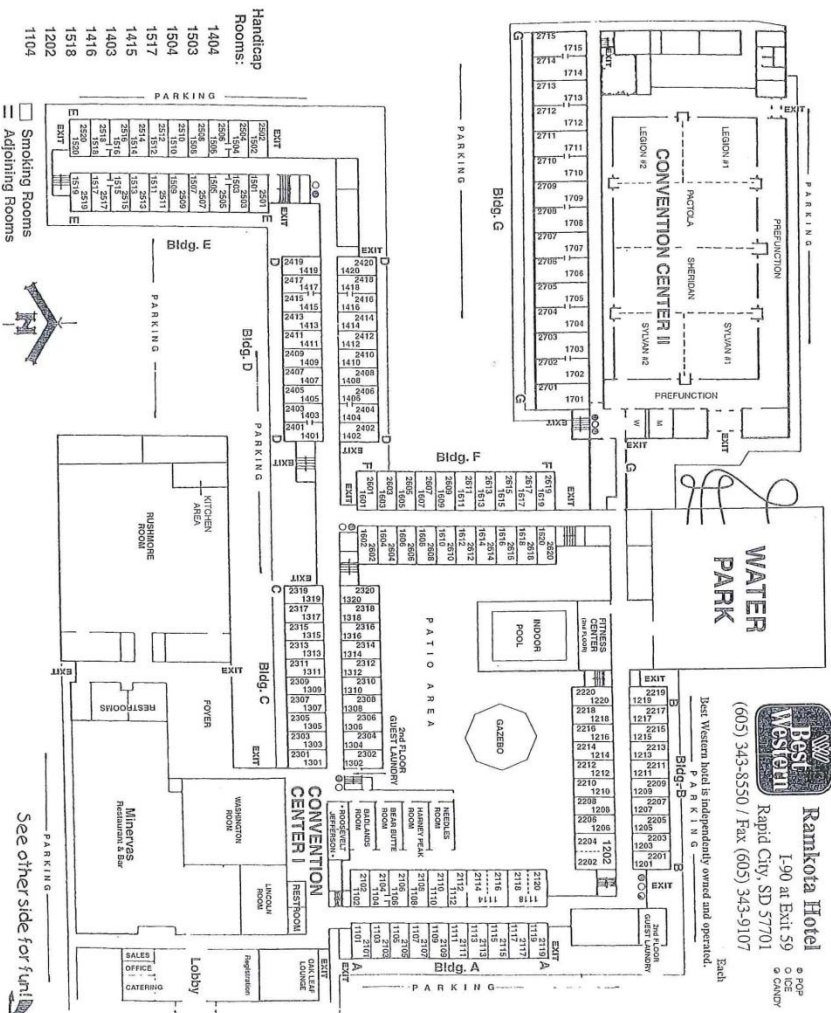
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