NORTH CENTRAL BRANCH

ENTOMOLOGICAL SOCIETY OF AMERICA

67TH ANNUAL MEETING

PRESIDENT: FRED BAXENDALE

NORTH CENTRAL BRANCH
Entomological Society of America
June 3-6, 2012 Lincoln, Nebraska

THE EMBASSY SUITES
1040 P STREET
LINCOLN, NE 68508

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University of Nebraska–Lincoln

CONTENTS

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 first floor of the Embassy Suites. 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 – 4:30 PM
Tuesday	7:30 AM – 12:00 PM
	1:30 PM – 4:30 PM
Wednesday	7:30 AM – 9:30 AM

Messages, Program Changes, Lost & Found

A message board for posting announcements will be displayed near the NCB Meeting Registration Desk (first floor Embassy Suites). 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 Chancellor I Room, which is also the A/V room.

Poster Presentations

Posters will be displayed in the Regents C Room. Posters for all Student Competition sections should be set up Sunday, June 3, between 3:00 PM and 8:00 PM. Student Competition posters must be removed Monday by 6:00 PM. Submitted posters to be displayed Tuesday are to be set up Monday between 6:00 PM and 8:00 PM. These posters must be removed Tuesday evening between 6:00 PM and 8:00 PM. Presenters for Student Competition posters should stand by their poster between 2:00 PM – 3:00 PM (odd numbers) and 3:00 – 4:00 PM (even numbers). Submitted poster presenters should be present from 10:00 – 11:00 AM (odd numbers) and 2:00 – 3:00 PM (even numbers). Presenters must bring their own 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. If there are problems with the computer/projector, or other equipment, please come to the A/V room (Chancellor I Room) to request assistance.

MODERATOR TRAINING
STUDENT COMPETITION JUDGES TRAINING

Moderator and Student Competition Judge training sessions will be held on Sunday at 5:00 PM immediately following the Photo Salon in Chancellor 2/3 Room.

AUDIO/VISUAL EQUIPMENT

All meeting rooms will be equipped with an LCD projector, projector screen, computer, and microphone. The A/V room (Chancellor 1 Room) will be equipped with laptops throughout the conference for presenters to preview presentations. The A/V room will be open during the NCB Registration Desk hours. All meeting room computers are PCs, so any presenter who creates a presentation using a Macintosh computer should test the file on a PC computer prior to the conference.

Creating and Uploading Presentations: Presentations should be created in a format compatible with MS Office 2007 PowerPoint (.pptx). We cannot accept presentations created using MS Office 2010. Presenters should bring their presentation file to the A/V room on a USB memory stick/flash drive for uploading to the computer for their respective 10-minute paper session. Otherwise, presenters should bring their presentations file on a USB memory stick/flash drive for uploading to the session room computer 45 minutes before the start of the session. 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.

Symposium organizers and speakers are 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 LOGO

This year's meeting logo, developed by Jim Kalisch, UNL Entomology Department, illustrates the 2012 NCB meeting theme — Amazing Insects and Awesome Prairies. It depicts a regal fritillary, *Speyeria idalia* (Lepidoptera: Nymphalidae) butterfly on a coneflower blossom.

SPECIAL THANKS AND ACKNOWLEDGEMENTS

- ESA Central Staff: David Gammel, Pamela Reid and Neil Willoughby
- Embassy Suites Staff, especially Courtney Barr and Cheryl Deiro
- Department of Entomology Support Staff: Marilyn Weidner, Jeri Cunningham, Marissa Young
- Logo for 2012 NCB Meeting – Jim Kalisch

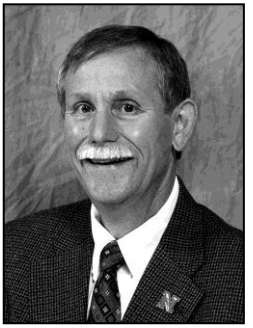
SPECIAL EVENTS

- Nebraska Museum Tour – Brett Ratcliffe
- Entomology Hall Open House – Gary Brewer, Entomology faculty, students, and staff
- Spring Creek Prairie Field Trip – Jessica Jurzenski, Lance Meinke, Tom Myers, Bill and Betsy Baxendale
- Saltdogs Baseball – Travis Prochaska and Ashley Yates

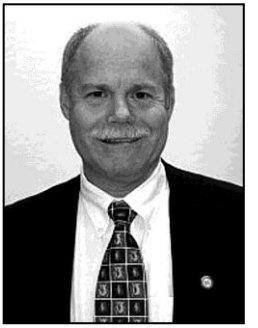
SPECIAL EXHIBIT

- A display by Kenneth Pruess, UNL Professor of Entomology Emeritus, on the history of beekeeping in the United States as illustrated by postal memorabilia will be exhibited in Regents Room C throughout the meeting.

2012 North Central Branch Meeting Organizers

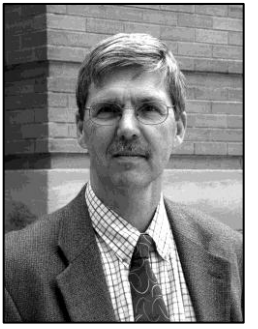


Fred Baxendale
President



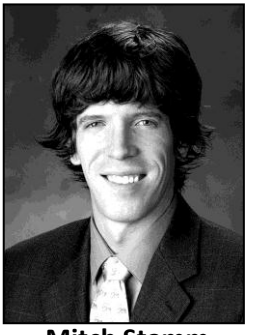
Bob Wright
Program Chair

Shripat Kamble



Gary Brewer

Local Arrangements Co-chairs



Mitch Stamm
Student Rep –
Local Arrangements

Laura Steele
Program Committee

2011-2012 NCB-ESA Officers and Committees

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Thomas Weissling, Laura Steele (student rep.)

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Travis Prochaska, Ralph Narain, Tim Husen,
Jeri Cunningham, Marissa Young,
and Lisa Silberman

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Doug Richmond (Chair), Ian MacRae, Matt O'Neal

Audit Committee
Gary Hein (Chair), Sue Blodgett, Von Kaster

Student Awards Committee
Deirdre Prischmann-Voldseth (Chair), Erin Hodgson
(Co-chair), Jason Harmon, Jeffrey Holland, Jonathan
Lundgren, Bradley McManus, Anders Huseth (student rep.)

HONORARY AWARDS COMMITTEE
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Buyung Hadi, Brian McCornack, John Reese,
Kelly Tindall, Alexandra Bryant (student rep.)

NATIONAL ESA AND ENTOMOLOGICAL FOUNDATION AWARDS COMMITTEE
Jen White (Chair), Annie Ray (Vice-chair),
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Xuguo "Joe" Zhou (Chair), Brian Aukema, Aaron Gassmann,
Marcello Ortigao, Neil Spomer, Zsofia Szendrei,
Amy Morey (student rep.)

PHOTO SALON COMMITTEE
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James Mertins, Phil Sloderbeck, Dave Voegtlin

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Mitch Stamm (Presiding Member), Harit Bal,
Alexandra Bryant, Alicia Leroux, Mike McCarville, Amy Morey,
Laura Steele, Jim Walker, Scott Williams, Amy Willmott

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Marianne Alleyne, Eileen Cullen, Michael Culy, Marion Ellis,
Dan Herms, Doug Landis, David Margolies, Blair Siegfried,
Dan Young, Amy Willmott (student rep.)

ARCHIVIST
Richard Weinzierl

PHOTOGRAPHER
Jim Kalisch

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

2012 ESA North Central Branch
C.V. Riley Achievement Award

Dr. Kenneth Haynes
University of Kentucky, Lexington, KY

Dr. Kenneth F. Haynes is a Professor of Entomology at the University of Kentucky. He received a Bachelor of Science degree in Biological Science at the State University of New York at Binghamton in 1976. At the University of California, Davis, he studied chemical communication in various species of moths, receiving his Ph.D. in 1982. After conducting postdoctoral research at the University of California, Riverside, he accepted a position as an Assistant Professor at the University of Kentucky, where he has been promoted through the ranks to Full Professor in 1995.

His research has been recognized with the Thomas Poe Cooper Research Award (College of Agriculture, University of Kentucky). He received the "High Impact Research / Extension Award" from the University of Kentucky's College of Agriculture in 2011 for his work on bed bugs with colleagues Michael Potter and Reddy Palli. He was elected Fellow of the American Association for the Advancement of Science in 2011.

Over his career he has written or edited three books, published over 85 research articles, authored or co-authored 20 book chapters or trade journal articles, and received over 3 million dollars of research support as a principal investigator or co-investigator. He has made over 65 invited presentations on topics ranging from bolas spiders to bed bugs. He has taught graduate seminars, an introductory class in insect biology, and an advanced class on insect behavior. He has served on the editorial board for the *Annals of the Entomological Society of America*, as a subject editor for

Environmental Entomology, Chemical Ecology. In the last seven years his research program has grown to include a new major focus on the behavior and biology of the bed bug.

2012 ESA North Central Branch
Recognition Award in Entomology

Dr. Franklin H. Arthur
USDA-ARS, Manhattan, KS

Dr. Franklin (Frank) H. Arthur received a B.S. in Forestry and Wildlife Ecology from the University of Florida (1976), and a M.S. (1982) and Ph.D. (1985) in Entomology from North Carolina State University. In March of 1986 he joined the USDA-ARS Stored Product Insects Research and Development Laboratory in Savannah, GA as a Research Entomologist. The Savannah Laboratory was closed in 1994, and Dr. Arthur was transferred to the Center for Grain and Animal Health Research (CGAHR) in Manhattan, KS.

Dr. Arthur is responsible for planning, coordinating, and developing an independent research program on insect pest management in stored raw agricultural commodities and processed food warehouses. Research interests include evaluation of new reduced-risk low-toxicity insecticides for use in post-harvest environments, identification of the physical, biological, and environmental factors that affect insecticide efficacy, determining how these factors affect control programs, and promoting integrated pest management strategies to manage insect pests in raw bulk grain and processing facilities. Dr. Arthur has authored or co-authored 162 research publications in peer-reviewed journals and has given 201 oral presentations at professional meetings, research symposia, and technology transfer meetings. He is recognized internationally for his research. Dr. Arthur is also an Adjunct Professor in the Department of Entomology at Kansas State University.

2012 ESA NORTH CENTRAL BRANCH
Distinguished Achievement Award in Teaching

Dr. Kirk J. Larsen
Luther College, Decorah, IA

Dr. Kirk Larsen is a professor of biology at Luther College in Decorah, Iowa. Originally from Michigan, he became interested in entomology in third grade, and was convinced by the sixth grade he would be an entomologist when he grew up. He earned a B.S. degree (1985) in biology from Calvin College (MI), an M.S. degree in entomology (1987) from Michigan State University, and in 1991 was awarded a Ph.D. in entomology from the Ohio State University. He then completed two years of postdoctoral work at the Miami University Ecology Research Center.

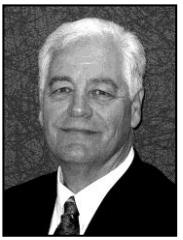
Since joining the biology department at Luther College in 1993, his teaching has emphasized the development of scientific research skills in undergraduates through the use of research projects, scientific writing, and poster presentations as integral parts of his courses. He teaches the introductory *Ecology, Evolution and Biodiversity* biology course, *Entomology*, *Invertebrate Zoology*, and a popular *Insects, Humans and the Environment* course for non-majors. He has led ten January study-abroad courses, including six trips to Ecuador and three to the Bahamas, where he has the opportunity to teach 24/7 “in the field,” what he considers the best classroom possible for an entomologist.

He receives both extramural and intramural funding to support collaborative research with undergraduates and has included eleven undergraduates as coauthors of some of his 31 published peer-reviewed research articles. To date, he has taken 21 undergraduates to various ESA meetings and is most proud of the 14 students that have continued on to graduate school in

entomology. One of his former students recently honored Dr. Larsen by naming a beetle species after him (*Nesocyrtosoma larsenii* Hopp and Ivie). Several of his students have received BioQuip Undergraduate scholarships or were runners-up in the student poster competition (before the undergraduate competition category was created). His current research interests include studying the effects of fire on prairie insects and the impacts of stream restoration and flooding on benthic macroinvertebrates. Dr. Larsen has been an active member of the ESA since 1986, serves as a judge for student poster competitions, and recently was co-chair for the P-IE Task Force on Exciting Undergraduates in Entomology.

2012 ESA North Central Branch
Distinguished Achievement Award in Extension

Dr. Doug Johnson
University of Kentucky, Lexington, KY



A native of western Kentucky, Doug received a B.S. in Biology from the University of Central Florida (1974) and M.S (1977) and Ph.D. (1980) degrees in Entomology from the University of Florida. In 1980 he joined the faculty of the Entomology Department at the University of Kentucky, stationed at the UK-Research and Education Center in Princeton, KY.

Dr. Johnson's major emphasis has been work in the area of environmentally sound crop protection, primarily in grain crops. He served as the UK-IPM Coordinator from 1982-2011, and served on the Advisory Committee for the Southern Region IPM center (2009-2012). He has served on grant review panels for the north central and northeastern regions, and the "Relevance" panel for the southern region. He has provided lectures and laboratory exercises to a variety of resident instruction classes such as, Plant Pest Management, Field Crops Entomology, Introduction to Sustainable Agriculture, and Plant Productions systems. He has conducted a diverse program in field research providing Kentucky clientele with information and education on subjects as diverse as insecticide efficacy to understanding pathogen / insect vector / plant interactions. Doug has also had the pleasure of working with and providing support to several entomology graduate students. Additionally, as the only entomology faculty located off campus, Doug serves a variety of clientele from homeowners, teachers to industry executives with general entomology expertise.

Doug has served in several roles providing leadership for the ESA. He was on the ESA Program Committee as: Student Competition Co-Chair (2007); Program Co-Chair

(2008); Poster Competition Co-Chair (2009); Section “E” Secretary (2006); ESA Annual Meeting, Local Arrangements Committee, Cincinnati, OH (2003); Publications Council (1990-93), (Chair 93); Editorial Board Environmental Entomology (1989-1990) (Chair 90); and Special Committee to the President on Fate of the Annals (Chair 1990).

2012 ESA North Central Branch
Entomological Foundation Award for Excellence in Integrated Pest Management

Dr. Bhadriraju Subramanyam
Kansas State University, Manhattan, KS

Dr. Bhadriraju Subramanyam (Subi) is currently a Professor in the Department of Grain Science and Industry at Kansas State University, Manhattan, KS. He received a B.S. degree in Agriculture from the Andhra Pradesh Agricultural University, Rajendranagar, Andhra Pradesh, India, in 1981, and his M.S. and Ph.D. degrees in stored-product entomology in 1984 and 1988, respectively, from the University of Minnesota, St. Paul, MN. From 1988-1989 he worked in the Dept. of Entomology at Kansas State University as a Postdoctoral Research Associate. In August of 1989 he joined the Department of Entomology, University of Minnesota as an Assistant Professor and Extension Educator. In 1996 he was promoted to an Associate Professor/Extension Educator. In May 1999 he moved to the Department of Grain Science and Industry, Kansas State University and became a full Professor in 2003.

Dr. Subramanyam has a wealth of experience in the management of insect pests associated with stored grain, food/feed processing facilities, warehouses, and retail environments. His research program straddles the research continuum, from the fundamental to the adaptive to the disseminative. Specific areas of focus include management of stored-product insects using alternatives to traditionally used pesticides, and development of pest management programs for the grain and food industry.

In 2004 he received the US EPA's Stratospheric Ozone Protection Award for his research and educational programs on the use of elevated temperatures, as an

alternative to methyl bromide, for management of insects in food-processing facilities. He teaches a course on Food and Feed Product Protection and was nominated by the students to receive the 2002 College of Agriculture's Outstanding Faculty Teaching Award. He also has vast consulting experiences with several companies in the United States and internationally on issues related to sanitation, food safety, and insect and pesticide contamination in food and feed products.

He has published 90 peer-reviewed papers, 61 extension bulletins, fact sheets, and popular articles; co-edited and published 4 books and 15 book chapters, 28 conference proceedings. He gave 135 presentations at professional conferences/meetings, and delivered 117 invited oral presentations and 99 other presentations at domestic and international short courses.

He has coordinated and moderated 33 sessions at international and national conferences in stored-product protection. He is active internationally, especially in India where he organized 15 short courses and workshops and gave presentations on pest management, food security and safety. In 2008 he was appointed for five years as the adjunct professor, Southwest University, Chongqing, China. In 2010 he received the Hodson Graduate Alumni Award from the Department of Entomology, University of Minnesota. In 2012, he was appointed as the first Don Wilbur, Sr. Endowed Professor of Stored-Product Protection at K-State. In March 2012, he received the Andersons Cereals and Oilseeds Award of Excellence.

2012 ESA North Central Branch
Entomological Foundation Recognition Award in Urban Entomology

Dr. Susan C. Jones
Ohio State University, Columbus, OH

Dr. Susan C. Jones is an Associate Professor and Extension Specialist in the Department of Entomology at The Ohio State University. She received her B.S. and M.S. in Entomology from Louisiana State University and her Ph.D. in Entomology from the University of Arizona.

Dr. Jones' research and extension program focuses on household and structural insect pests. Dr. Jones has spent ~35 years studying termite ecology and control, particularly termite baits and the efficacy of soil termiticides. Her research program also investigates the biology and control of bed bugs. Since 2004, she has worked extensively to educate the public and pest management industry about bed bugs, and she has served on the NPMA Blue Ribbon Bed Bug Task Force, the Ohio Bed Bug Workgroup, and two regional bed bug task forces in Ohio. Dr. Jones is frequently interviewed by the news media nationwide on the topic of termites and bed bugs. Dr. Jones has published >200 research and extension papers pertaining to urban insects. She has made more than 450 professional and extension presentations on urban insect pests.

2012 ESA North Central Branch
J.H. Comstock Graduate Student Award

Julie A. Peterson
University of Kentucky, Lexington, KY

The recipient of the 2012 NCB-ESA Comstock Award is Julie A. Peterson. Julie will be completing her Ph.D. at the University of Kentucky with Dr. James Harwood in 2012. Her research focuses on the ecology of generalist predators in agroecosystems, with an emphasis on food web interactions in transgenic crops. Her dissertation has three objectives: 1) Examining the potential for pollen consumption by linyphiid spiders; 2) Elucidating food webs and feeding biology of generalist predators in transgenic corn fields; and 3) Quantifying and tracking Bt-endotoxin uptake in non-target arthropods. Julie has maintained a perfect 4.0 grade point average and been awarded several fellowships and scholarships for her efforts. In addition, she has published three journal articles and one book chapter. Julie has been extremely active in ESA and other societies and has presented 28 posters and papers since 2006. She is an active leader in ESA, where she co-organizes five symposia and served on several committees (NCB-ESA Student Affairs, Program, and Local Arrangements). Julie is also a student leader in her department and participates in the UK Garman Entomology Club. She has participated in extension and outreach activities, served as a teaching assistant, and given guest lectures for the UK. Julie's successful record of research, teaching, and service as a Ph.D. student is impressive and well-deserving of the Comstock Award.

2012 ESA North Central Branch
Graduate Student Scholarship Award

Amy C. Morey
University of Minnesota, St. Paul, MN

The recipient of the 2012 NCB-ESA Graduate Student Award is Amy C. Morey. Amy is working on her Ph.D. at the University of Minnesota with Drs. William Hutchison and Robert Venette. Her research focuses on the cold hardiness of the light brown apple moth. More specifically, she is investigating the indirect effects of low temperature exposure to various developmental stages, and acclimation and adaption to cold temperature. Amy has maintained a 3.9 grade point average and was a recipient of a NSF Integrative Graduate Education and Research Traineeship (IGERT) Program at the UM. As a member of IGERT Program, she is working on a multi-disciplinary team to develop additional research. Amy is evaluating the potential ecological and social risks associated with genetically modified mosquitoes. She has published two journal articles and one extension publication since 2010. Amy has been actively participating in ESA since 2008, presenting five posters and papers, and serving on committees (ESA-EUGE and Student Affairs). She is also a student leader in her department and participates in the UM Frenatae Entomology Club. Amy has a strong record of research, teaching, and service as a Ph.D. student and is worthy of the Graduate Student Award.

2012 ENTOMOLOGY EDUCATIONAL PROJECT AWARDS

Presented by:
BCE and ACE Certified Entomologists of Mid-America

Extension Bulletin

Field Crop Insects Management Compendium

Erin Hodgson, Adam Sisson, Daren Mueller, and David Wright

Iowa State University/Iowa Soybean Association

This new publication (released January 2012) replaces and expands three out-of-date entomology publications at Iowa University. The 74-page compendium is filled with many full color photographs of beneficial and harmful insects, which can help identify insects in corn or soybean. In 2012-2013, this publication will be distributed to every participant of Pesticide Applicator Training, Integrated Crop Management Conference, Crop Advantage Series, and other established ISU Extension Programs.

Field Guide

Soybean Aphid Management Field Guide, 2nd Edition

Erin Hodgson, Adam Sisson, Daren Mueller, and David Wright

Iowa State University/Iowa Soybean Association

Twenty-seven thousand copies were made and distributed to farmers, agriculture professionals and members of industry throughout Iowa. This publication provides basic biology and life cycle information, and also highlights timely research-based recommendations for soybean aphid. The second edition was released (July 2011) after every section was expanded with full-color photographs.

Extension Video

Identifying and Enhancing Natural Enemies in Vegetable Crops

Mary Gardiner, Celeste Welty, Jim Jasinski, Zsofia Szendrei, Abby Seaman, Joe Kovach, Doug Landis, and Ben Phillips

The Ohio State University

This 25-minute video discusses how to identify a large diversity of natural enemies including beetles, true bugs, predatory and parasitoid flies, parasitoid wasps, lacewings, and spiders. For each natural enemy group the video discusses key characters of all life stages likely to be encountered by the viewer. Being able to view video of natural enemies provides a much better idea of what these arthropods look like, how they behave in the field, and where they can be found.

2012 NCB PRESIDENTIAL STUDENT TRAVEL SCHOLARSHIPS

Jennifer A. Breaux	Illinois State University
Caitlin E. Burkman	The Ohio State University
Rachael Fithian	Colorado State University
Trisha Franz	University of Minnesota
Kelly A. Gill	Iowa State University
Jeffrey M. Grabowski	Purdue University
Thelma T. Heidel	University of Minnesota
Devi Ram Kandel	South Dakota State University
Donghun Kim	Kansas State University
Katelyn A. Kowles	University of Kentucky
Mitchell C. Lettow	Michigan State University
Louise I. Lynch	University of Nebraska–Lincoln
Amy C. Morey	University of Minnesota
Emily Pochubay	Michigan State University
Diego F. Rincon	The Ohio State University
Blossom Sehgal	Kansas State University
Adam Varenhorst	Iowa State University
Nathaniel J. Walton	Michigan State University
Katie Westby	Illinois State University
Amy L. Willmott	Kansas State University

.

PROGRAM

JUNE 3, 2012
SUNDAY AFTERNOON

Registration
11:00 AM – 6:00 PM

Symposium –
Protecting Food Supply from Insect Damage: Collaboration Between Research and Application in the North Central Branch
1:00 PM – 5:00 PM
Regents DE

Preliminary Executive Committee Meeting
1:30 PM – 5:00 PM
Executive Board Room

Poster Set-up
3:00 PM – 8:00 PM
Regents C

A-V Room & Employment Room
3:00 PM – 7:00 PM
Chancellor I

Photo Salon
4:00 PM – 5:00 PM
Chancellor 2/3

Student Competition Judge Training
Moderator Training
5:00 PM – 5:30 PM
Chancellor 2/3

SYMPOSIUM

PROTECTING FOOD SUPPLY FROM INSECT DAMAGE: COLLABORATION BETWEEN RESEARCH AND APPLICATION IN THE NORTH CENTRAL BRANCH

1:00 PM – 4:50 PM
REGENTS DE

ORGANIZERS AND MODERATORS:
JIM CAMPBELL, USDA-ARS-CGAHR
FRANK H. ARTHUR, USDA-ARS-CGAHR

1:00 PM	001	Emerging insect pests within the food industry **James Throne**, james.throne@ars.usda.gov, Center for Grain and Animal Health Research
1:25 PM	002	Pheromone-based pest suppression for value added foods: working with industry to develop new technologies **Thomas W. Phillips**, twp1@ksu.edu, Kansas State University
1:50 PM	003	Research with industry on developing new insecticide products **Frank H. Arthur**, frank.arthur@ars.usda.gov, USDA-ARS-CGAHR
2:15 PM	004	A pest management industry perspective on collaboration with researchers and emerging issues and research needs to be addressed **Chelle Hartzer**, CHartzer@indfumco.com, The Industrial Fumigant Company
2:40 PM	005	A food industry perspective on collaboration with researchers and

		emerging issues and research needs to be addressed **Tony Petersen**, tony.petersen@conagrafoods.com, ConAgra Foods
3:05 PM	006	Understanding what pheromone trapping data tells us about pest populations **Karrie Buckman**, karrie.buckman@ars.usda.gov, USDA-ARS-CGAHR
3:30 PM	007	Phosphine resistance in stored grain insects and its impact on stored grain protection **George Opit**, george.opit@okstate.edu, Oklahoma State University
3:55 PM	008	International collaboration in developing food protection programs in developing countries **Bhadriraju Subramanyam**, sbhadrir@ksu.edu, Kansas State University
4:20 PM	009	Research on evaluation of treatment efficacy in food facilities **James F. Campbell**, james.campbell@ars.usda.gov, USDA-ARS

JUNE 3, 2012
SUNDAY EVENING

POSTER SET-UP
3:00 PM – 8:00 PM
Regents C

A-V ROOM & EMPLOYMENT ROOM
3:00 PM – 7:00 PM
Chancellor I

LINNAEAN GAMES: PRELIMINARY ROUNDS
6:30 PM – 9:00 PM
Regents A

WELCOME RECEPTION
9:00 PM – 10:30 PM
Regents AB

JUNE 4, 2012
MONDAY MORNING

Registration
7:30 AM – 4:30 PM

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

Opening Session and Business Meeting
7:30 AM – 9:00 AM
Regents AB

Student Competition Posters
8:00 AM – 6:00 PM
Regents C

Student Competition Papers
9:15 AM – 12 Noon
Regents AB
Regents D
Regents E
Regents F
Alumni
Chancellor 2/3

STUDENT COMPETITION POSTERS

B.S. PLANT-INSECT ECOSYSTEMS

8:00 AM – 6:00 PM
REGENTS C

D01 Surviving without food: A test of how long burying beetles (Coleoptera: *Nicrophorus*) can withstand starvation
Dayana Rodriquez, rodriguezdn@unk.edu, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

D02 Digging deeper: Species and sex differences in burying beetles during periods of inactivity
Jess T. Lammers, lammersjt@unk.edu, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

D03 Effect of management on butterfly and ground beetle diversity in simple and diverse prairie plantings in a reconstructed prairie
Nikki McDermond-Spies, mcdeni01@luther.edu, Luther College; and Kirk J. Larsen, Luther College

D04 The development of host plant resistance in dry edible bean against Mexican bean beetle populations
Riley Smith, swim24smith@gmail.com, University of Nebraska–Lincoln; Susan Harvey, University of Nebraska–Lincoln; and Jeff Bradshaw, University of Nebraska–Lincoln

D05 Monitoring the brown marmorated stink bug (*H. halys*) with pyramid pheromone traps
Kira L. Albright, klalbrig@purdue.edu, Purdue University; and Rick Foster, Purdue University

D06 Evaluation of foliar-applied insecticides to control leaf-feeding insect pests of soybean
Preston M. Schrader, schrade1@illinois.edu, University of Illinois at Urbana-Champaign; Nicholas A. Tinsley, University of Illinois at Urbana-Champaign; Ronald E. Estes, University of Illinois at Urbana-Champaign; and Michael E. Gray, University of Illinois at Urbana-Champaign

D07 Evaluation of foliar-applied insecticides to control potato leafhoppers (*Empoasca fabae* Harris) and tarnished plant bugs (*Lygus lineolaris* Palisot) in alfalfa in Illinois, 2011
Nathan T. Gibbons, gibbons8@illinois.edu, University of Illinois at Urbana-Champaign; Nicholas A. Tinsley, University of Illinois at Urbana-Champaign; Ronald E. Estes, University of Illinois at Urbana-Champaign; and Michael E. Gray, University of Illinois at Urbana-Champaign

D08 Investigation of the effects of cattle diet and nutrition on dung beetle attraction and utilization in Nebraska rangelands
Jeanna Jenkins, jenkins.jeanna@yahoo.com, University of Nebraska–Lincoln; Sean D. Whipple, University of Nebraska–Lincoln; Karla H. Jenkins, University of Nebraska–Lincoln; and Jeffrey D. Bradshaw, University of Nebraska–Lincoln

B.S. Systematics, Evolution, and Biodiversity

Regents C

D09 Simplified methods for RNA interference in western corn rootworm
Kathryn M. O'Brien, katieo_505@hotmail.com, University of Nebraska–Lincoln; Haichuan Wang, University of Nebraska–Lincoln; and Nicholas J. Miller, University of Nebraska–Lincoln

D10 Does sound matter? The influence of stridulation in competition for carrion resources in burying beetles (Silphidea: *Nicrophorus*)
Adrienne L. Conley, alconley08@ole.augie.edu, Augustana College; Carrie L. Hall, Augustana

College; Daniel R. Howard, Augustana College; Andrew C. Mason, University of Toronto at Scarborough; and Rosemary J. Smith, Idaho State University

D11 Burning issues in conservation biology: The effect of reproductive season prescribed fire on an endangered insect species
Morgan D. DePerno, mddeperno11@ole.augie.edu, Augustana College; Brian D. Hokeness, Augustana College; Nicole L. Lindsey, Augustana College; Daniel R. Howard, Augustana College; and Carrie L. Hall, Augustana College

D12 The effect of wind-turbine induced vibration on the reproductive behavior of the endangered American burying beetle (*Nicrophorus americanus*)
Courtney L. Moore, clmoore10@ole.augie.edu, Augustana College; Christina H. Johnson, Augustana College; Carrie L. Hall, Augustana College; and Daniel R. Howard, Augustana College

D13 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; Anna B. Bahnson, Augustana College; Carrie L. Hall, Augustana College; and Daniel R. Howard, Augustana College

D14 Deliberate alteration of the elytra of *Nicrophorus americanus* Olivier (Coleoptera: Silphidae) during field surveys alters acoustic characters: Consequences for reproduction and conservation
Nicole L. Lindsey, nllindsey07@ole.augie.edu, Augustana College; Daniel R. Howard, Augustana College; and Carrie L. Hall, Augustana College

D15 Seismic signaling in the New Zealand *Deinacrida*: substrate-borne vibration mediates agonistic interactions in the Cook Strait giant weta (*D. rugosa*)
Ashley P. Schmidt, apschmidt10@ole.augie.edu, Augustana College; Claire E. Bestul, Augustana College; Courtney L. Moore, Augustana College; Andrew C. Mason, University of Toronto at Scarborough; Carrie L. Hall, Augustana College; and Daniel R. Howard, Augustana College

D16 Burying beetle bioacoustics: The role of sound in *Nicrophorus* intraspecific communication
Claire E. Bestul, cebestul10@ole.augie.edu, Augustana College; Ashley P. Schmidt, Augustana College; Courtney L. Moore, Augustana College; Nicole L. Lindsey, Augustana College; Andrew C. Mason, University of Toronto at Scarborough; Daniel R. Howard, Augustana College; and Carrie L. Hall, Augustana College

M.S. PLANT-INSECT ECOSYSTEMS

REGENTS C

D17 Nearly frozen: Overwintering behavior of burying beetles (Silphidae: *Nicrophorus marginatus*)
John J. Henderson, hendersonjj@lopers.unk.edu, University of Nebraska at Kearney; Gary Phillips, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

D18 Fungicide applications to disinfest the walnut twig beetle (*Pityophthorus juglandis*) of *Geosmithia morbida*
Rachael Fithian, rachael.fithian@colostate.edu, Colorado State University; Marcelo Zerillo, Colorado State University; Ned Tisserat, Colorado State University; and Whitney Cranshaw, Colorado State University

D19 Impact of wheat streak mosaic and Triticum mosaic viruses on transmission by the wheat curl mite, *Aceria tosichella* Keifer
Camila F. de Oliveira, oliveira-camila@live.com, University of Nebraska–Lincoln; and Gary Hein, University of Nebraska–Lincoln

D20 The effect of within-plant distribution on the reproductive potential of aphids (Hemiptera: Aphididae) on winter canola (*Brassica napus*)
Ximena Cibils-Stewart, xcibils@ksu.edu, Kansas State University; Brian P. McCornack, Kansas State University

D21 Cannibalism in the brown marmorated stink bug (Pentatomidae: *Halyomorpha halys*)? Quantifying the impact of early instar nymphs
Theresa M. Cira, cirax002@umn.edu, University of Minnesota; Robert L. Koch, Minnesota Department of Agriculture; Eric C. Burkness, University of Minnesota; and William D. Hutchison, University of Minnesota

D22 The effect of temperature treatments on the survival of *Pityophthorus juglandis* (Coleoptera: Scolytidae)
E. Peachey, emi.pea@hotmail.com, Colorado State University; R. Fithian, Colorado State University; N. Tisserat, Colorado State University; and W. Cranshaw, Colorado State University

D23 Impact on spring-wheat yield by cereal aphids preyed on by two lady beetle species
Ginger M. McNickle, ginger.mcnickle@sdstate.edu, South Dakota State University

D24 The impact of *Blastobasis repartella* (Dietz) (Lepidoptera: Coleophoridae) on switchgrass
Veronica Calles Torrez, veronica.callestorrez@sdstate.edu, South Dakota State University

D25 Flowering plant and pollinator responses to oak savanna restoration

M. C. Lettow, m.c.lettow@gmail.com, Michigan State University; L. A. Brudvig, Michigan State University; and D. A. Landis, Michigan State University

M.S. Systematics, Evolution, and Biodiversity

Regents C

D26 Size selective predation of fish by *Hydrophilis triangularis* (Coleoptera: Hydrophilidae) and *Lethocerus americanus* (Hemiptera: Belostomatidae)
David A. Schumann, schumannda@lopers.unk.edu, University of Nebraska at Kearney; Michael C. Cavallaro, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

D27 Land use change affects spider community structure in the urban ecosystem of Cleveland, Ohio
Caitlin E. Burkman, burkman.7@osu.edu, The Ohio State University, OARDC; and Mary M. Gardiner, The Ohio State University, OARDC

M.S. Medical, Urban, and Veterinary Entomology

Regents C

D28 Creepy crawlies in concrete: Is it possible to determine post mortem interval of bodies encased in concrete?
Gary Phillips, phillipsg1@unk.edu, University of Nebraska at Kearney; John (Moose) Henderson, University of Nebraska at Kearney; Marc Albrecht, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

M.S. Physiology, Biochemistry, and Toxicology

Regents C

D29 Efficacy of pesticide mixtures on the western flower thrips, *Frankliniella occidentalis* (Thysanoptera: Thripidae)
Amy L. Willmott, awillmot@ksu.edu, Kansas State University; Raymond A. Cloyd, Kansas State University; and Kun Yan Zhu, Kansas State University

D30 RNA interference as a tool for the analysis of gene function in the Colorado potato beetle, *Leptinotarsa decemlineata*
Ashley D. Yates, yatesa@mail.ic.edu, University of Nebraska–Lincoln; and Nick Miller, University of Nebraska–Lincoln

D31 An investigation of carrion beetle (Coleoptera: Silphidae) swimming endurance and immersion tolerance as it relates to standard trapping protocol
Michael C. Cavallaro, CavallaroMC@hotmail.com, University of Nebraska at Kearney; and W. Wyatt Hoback, University of Nebraska at Kearney

Ph.D. Plant-Insect Ecosystems

Regents C

D32 Western corn rootworm and maize growth under varying soil moisture conditions
Mervat A. B. Mahmoud, mampr7@mail.missouri.edu, University of Missouri; Robert E. Sharp, University of Missouri; Melvin J. Oliver, University of Missouri; and Bruce E. Hibbard, University of Missouri

D33 Orientation behavior of the stored-product mite, *Tyrophagus putrescentiae* (Shrank) towards meat products with various treatments
Barbara A. Amoah, bamoah@ksu.edu, Kansas State University; Michael J. Aikins, Kansas State University; Salehe Abbar, Kansas State

University; and Thomas W. Phillips, Kansas State University

D34 Soybean aphid (*Aphis glycines*) feeding behavior on thiamethoxam-treated soybeans
Mitchell Stamm, mstamm3@unl.edu, University of Nebraska–Lincoln; Tiffany Heng-Moss, University of Nebraska–Lincoln; Frederick Baxendale, University of Nebraska–Lincoln; Blair Siegfried, University of Nebraska–Lincoln; Thomas Hunt, University of Nebraska–Lincoln; and John Reese, Kansas State University

D35 Life history of *Colaspis crinicornis* Schaeffer (Coleoptera: Chrysomelidae) in Nebraska
Kentaro Miwa, kmiwa@huskers.unl.edu, University of Nebraska–Lincoln; and Lance J. Meinke, University of Nebraska–Lincoln

D36 Parasitoid presence and predation of sugarcane borer (*Diatraea saccharalis* Fabricius) eggs in sugarcane and APP (area of permanent preservation) fragments
Jessica Jurzenski, jurzenskij@alumni.unk.edu, University of Nebraska–Lincoln; Odair A. Fernandes, Universidade Estadual Paulista; Audrey Konda, Universidade Estadual Paulista; and W. Wyatt Hoback, University of Nebraska at Kearney

D37 Using entomopathogenic nematodes to manage codling moth in Michigan apple orchards
Nathaniel J. Walton, waltonn2@msu.edu, Michigan State University; and Matthew Grieshop, Michigan State University

PH.D. MEDICAL, URBAN, AND VETERINARY ENTOMOLOGY

9:15 AM – 12:00 PM

REGENTS C

D38 Larval food stress influences adult immunity in *Aedes aegypti*
Jennifer A. Breaux, Jenniferbreaux@gmail.com, Illinois State University; and Steven A. Juliano, Illinois State University

D39 Subterranean termite (Isoptera: *Reticulitermes*) community dynamics along a gradient of urbanization: from undeveloped agriculture and forested landscapes to 20 year old subdivisions
Paul S. Botch, psbz76@mizzou.edu, University of Missouri–Columbia; and Richard M. Houseman, University of Missouri

D40 Relative frequency of two entomopathogenic fungi, *Beauveria* and *Metarhizium* (Hypocreales: Clavicipitaceae), from soils of forested and urban habitats
Tamra Reall, TRFY9F@mail.mizzou.edu, University of Missouri; and Richard M. Houseman, University of Missouri

D41 Different physiological roles of two dopamine receptors in isolated salivary glands of the blacklegged tick, *Ixodes scapularis*
Donghun Kim, kp5091@k-state.edu, Kansas State University; Ladislav Simo, Kansas State University; and Yoonseong Park, Kansas State University

STUDENT COMPETITION PAPERS

B. S./M.S. PLANT-INSECT ECOSYSTEMS

CHANCELLOR 2/3

MODERATORS:
PAUL BORTH, DOW AGROSCIENCES
DAVID MARGOLIES, KANSAS STATE UNIVERSITY

9:15 AM 030 The birds and the beetles: American burying beetle numbers correlate with Northern Bobwhite numbers in south-central Nebraska
Kari L. Page, k4l4p4@gmail.com, University of Nebraska at Kearney; Thomas (T.J.) Walker, Nebraska Game and Parks Commission; and W. Wyatt Hoback, University of Nebraska at Kearney

9:27 AM 031 Sublethal effects of plant defenses on Colorado potato beetle, *Leptinotarsa decemlineata*, larvae
Gabrielle B. Cooper, gabrielle.b.cooper@gmail.com, University of Nebraska–Lincoln; and Nicholas J. Miller, University of Nebraska–Lincoln

9:39 AM 032 Conophthorin enhances the efficacy of ethanol-baited traps for monitoring the granulate ambrosia beetle (Coleoptera: Curculionidae: Scolytinae)
Nicole R. VanDerLaan-Hannon, nvanbd00@purdue.edu, Purdue University; and Matthew D. Ginzel, Purdue University

9:51 AM 033 Selection and genetic analysis of behavioral traits of European corn borer (*Ostrinia nubilalis*), plant abandonment vs. plant establishment
Michael Allen Rausch, mrausch@iastate.edu, Iowa State University; Jeremy A. Kroemer, Iowa State University; Tyasning Kroemer,

Iowa State University; Susan E. Moser, Pioneer Hi-Bred International, Inc; and Richard L. Hellmich, USDA-ARS

10:03 AM 034 An evaluation of management tactics for the wheat curl mite (*Aceria tosichella* Keifer) and the wheat-mite-virus complex
Anthony J. McMechan, justin.mcmechan@gmail.com, University of Nebraska–Lincoln; and Gary L. Hein, University of Nebraska–Lincoln

10:15 AM 035 The effects of cropping systems on entomopathogenic fungi
Eric H. Clifton, eclifton@iastate.edu, Iowa State University; Erin W. Hodgson, Iowa State University; Stefan T. Jaronski, USDA-ARS; and Aaron J. Gassmann, Iowa State University

10:27 AM 036 Effects of temperature and host on the development of *Lysiphlebus testaceipes* (Hymenoptera:Braconidae)
Allison Dehnel, adehnel@wisc.edu, University of Wisconsin-Madison; and David B. Hogg, University of Wisconsin-Madison

10:39 AM 037 Protecting the good guys from the good guys: Optimizing multiple predator biological control systems
Emily Pochubay, pochubay@msu.edu, Michigan State University; Joseph Riddle, Michigan State University; Jeanne Himmelein, Michigan State University; Mark Elzinga, Elzinga and Hoeksema Greenhouses; and Matthew Grieshop, Michigan State University

10:51 AM 038 Evaluating interactions of western corn rootworm with Bt corn
Ryan S. Keweshan, keweshan@iastate.edu, Iowa State University; Graham Head, Monsanto

Company; and Aaron Gassmann, Iowa State University

11:03 AM 039 Nitrogen application effects on Bt gene expression in corn roots and trait performance against corn rootworms (*Diabrotica* spp.)
Trisha Franz, franz218@umn.edu, University of Minnesota; and Ken Ostlie, University of Minnesota

11:15 AM 040 Factors influencing soybean aphid mortality during rainstorm events
Caitlin C. Krueger, krueg451@umn.edu, University of Minnesota

STUDENT COMPETITION PAPERS

M.S. PLANT-INSECT ECOSYSTEMS

REGENTS D

MODERATORS:
KELLEY TILMON, SOUTH DAKOTA STATE UNIVERSITY
SUE BLODGETT, IOWA STATE UNIVERSITY

9:15 AM	041	Integrating biological control and chemical control for management of cole crops **Emily K. Linkous**, linkous.20@osu.edu, The Ohio State University; and Celeste Welty, The Ohio State University
9:27 AM	042	Cold tolerance of introduced emerald ash borer parasitoids **Anthony A. Hanson**, hans4022@umn.edu, University of Minnesota; and Robert C. Venette, USDA - Forest Service
9:39 AM	043	Survey of insect pollinators in soybean fields: community identification and sampling method analysis **Kelly Ann Gill**, kaseman@iastate.edu, Iowa State University; and Matthew O'Neal, Iowa State University
9:51 AM	044	Potential lethal effects of commonly applied turfgrass fungicides on the larvae of *Popillia japonica* (Coleoptera: Scarabaeidae) **Glen R. Obear**, obear@wisc.edu, University of Wisconsin-Madison; Robert Chris Williamson, University of Wisconsin-Madison; and Patrick J. Liesch, University of Wisconsin-Madison
10:03 AM	045	Evaluation of reproductive stage soybeans for resistance to the soybean aphid, *Aphis glycines* Matsumura (Hemiptera: Aphididae)

Travis J. Prochaska, Travis.Prochaska@gmail.com, University of Nebraska–Lincoln; Lanae M. Pierson, University of Nebraska–Lincoln; Thomas E. Hunt, University of Nebraska–Lincoln; Tiffany Heng-Moss, University of Nebraska–Lincoln; and John C. Reese, Kansas State University

10:15 AM 046 Evaluation of switchgrass for resistance to potential aphid pests
Kyle G. Koch, kylegkoch@gmail.com, University of Nebraska–Lincoln; Rachael Fithian, Colorado State University; Jeff Bradshaw, University of Nebraska–Lincoln; and Tiffany Heng-Moss, University of Nebraska–Lincoln

10:27 AM 047 Fitness costs of Bt resistance in western corn rootworm
Amanda M. Hoffmann, iahoff17@gmail.com, Iowa State University; and Aaron J. Gassmann, Iowa State University

10:39 AM 048 Effects of *Rag1* soybeans on the development and performance of noctuid larvae
Robert F. Bruner, rfbruner@iastate.edu, Iowa State University; Aaron Gassmann, Iowa State University; Erin Hodgson, Iowa State University; and Matt O'Neal, Iowa State University

STUDENT COMPETITION PAPERS

M.S. SYSTEMATICS, EVOLUTION, AND BIODIVERSITY; PHYSIOLOGY, BIOCHEMISTRY, AND TOXICOLOGY; MEDICAL, URBAN, AND VETERINARY ENTOMOLOGY

REGENTS E

MODERATORS:
KYLE JORDAN, BASF
MARION ELLIS, UNIVERSITY OF NEBRASKA–LINCOLN

9:15 AM	049	What's sex got to do, got to do with it? Hunger-dependent antipredator behavior, protandry, and size dimorphism of two *Aedes*mosquitoes **Jillian Chamberlain**, jillian.d.chamberlain@gmail.com, Illinois State University; and Steven Juliano, Illinois State University
9:27 AM	050	Local and landscape determinants for populations of pollinating bees and natural enemies within an agricultural landscape **Jason M. Nelson**, nelsonj7@miami.edu, Miami University; and Thomas O. Crist, Miami University
9:39 AM	051	Variation in susceptibility of laboratory and field strains of three stored product insect species to insecticides recommended for empty bin treatments **Blossom Sehgal**, blossom@ksu.edu, Kansas State University; Bhadriraju Subramanyam, Kansas State University; Mukti Ghimire, Kansas State University; and Frank Arthur, USDA-ARS
9:51 AM	052	Sublethal effects of hydroxamic acids on larvae of western corn rootworm, *Diabrotica virgifera virgifera* **Zixiao Zhao**, zxzhao5@gmail.com, University of Nebraska–Lincoln; and

Nick Miller, University of Nebraska–Lincoln

10:03 AM 053 Presence of flour can influence the efficacy of pyrethrin aerosol spray against flour beetles
Kabita Kharel, kabita01@ksu.edu, Kansas State University; Kun-Yan Zhu, Kansas State University; Frank H. Arthur, USDA-ARS; and James Campbell, USDA-ARS

10:15 AM 054 Evaluating the effects of insect growth regulators upon adult *Aedes aegypti* (Diptera: Culicidae)
Peter J. Brabant, pbrab001@gmail.com, University of Kentucky; Chris Stone, The Ohio State University; and Stephen L. Dobson, University of Kentucky

10:27 AM 055 Immunological effects of parental care in the beetle, *Nicrophorus marginatus*
Robert Stanton, rlstanton@unomaha.edu, University of Nebraska at Omaha; and Claudia Rauter, University of Nebraska at Omaha

10:39 AM 056 **Paper Withdrawn**

STUDENT COMPETITION PAPERS

PH.D. PLANT-INSECT ECOSYSTEMS I

REGENTS F

MODERATORS:
SHARON DOBESH, KANSAS STATE UNIVERSITY
BILL HUTCHISON, UNIVERSITY OF MINNESOTA

9:15 AM	057	Switchgrass (*Panicum virgatum* L.) biomass response to simulated insect defoliation **Fatima Mustafa**, fatima@huskers.unl.edu, University of Nebraska–Lincoln; Muhammad Irfan Ullah, University of Nebraska–Lincoln; Robert Mitchell, University of Nebraska–Lincoln; W. Wyatt Hoback, University of Nebraska at Kearney; and John E. Foster, University of Nebraska–Lincoln
9:27 AM	058	Effects of cover crop and extended rotation on insect taxa and plant disease pressure **Mike W. Dunbar**, dunbar@iastate.edu, Iowa State University; Aaron J. Gassmann, Iowa State University; and Matthew E. O'Neal, Iowa State University
9:39 AM	059	Seasonal patterns in generalist predator trophic interactions based on molecular gut-content analysis **Julie A. Peterson**, julie.peterson@uky.edu, University of Kentucky; Kacie J. Athey, University of Kentucky; Eric G Chapman, University of Kentucky; and James D. Harwood, University of Kentucky
9:51 AM	060	Interactions of biological control, host plant resistance, and seed treatment in soybean aphid management

Thelma Heidel, heide067@umn.edu, University of Minnesota; and David W. Ragsdale, Texas A&M University

10:03 AM 061 Spatial pattern of *Bemisia tabaci* biotype B (Hemiptera: Aleyrodidae) nymphs on tomato plants
Diego F. Rincon, rincon-rueda.1@osu.edu, The Ohio State University; Luis A. Cañas, The Ohio State University; and Casey W. Hoy, The Ohio State University

10:15 AM 062 The pentatomid hunters: molecular tracking of predation on stink bugs (Hemiptera: Pentatomidae) in cotton and soybeans
Kacie J. Athey, kacie.johansen@uky.edu, University of Kentucky; John R. Ruberson, University of Georgia; and James D. Harwood, University of Kentucky

10:27 AM 063 Validation of a nested error component model to estimate damage caused by corn rootworm larvae
Nicholas A. Tinsley, tinsley@illinois.edu, University of Illinois at Urbana-Champaign; Ronald E. Estes, University of Illinois at Urbana-Champaign; and Michael E. Gray, University of Illinois at Urbana-Champaign

10:39 AM 064 Colorado potato beetle (Coleoptera: *Leptinotarsa decemlineata*) diapause phenology and neonicotinoid resistance in Wisconsin
Anders Huseth, ashuseth@wisc.edu, University of Wisconsin-Madison; and Russell L. Groves, University of Wisconsin-Madison

10:51 AM 065 Evaluating selected yield parameters of glyphosate-tolerant sugar beet varieties subjected to sugar beet root

aphid (*Pemphigus betae* Doane) infestation

R. J. Pretorius, rjpretor@cut.ac.za, University of Nebraska–Lincoln; Jeff Bradshaw, University of Nebraska–Lincoln; and Gary Hein, University of Nebraska–Lincoln

STUDENT COMPETITION PAPERS

PH.D. PLANT-INSECT ECOSYSTEMS II

ALUMNI

MODERATORS:
TOM PHILLIPS, KANSAS STATE UNIVERSITY
MICHAEL CROSSLEY, UNIVERSITY OF WISCONSIN-MADISON

9:15 AM	066	A comparison of dung beetle (Coleoptera: Scarabaeidae) attraction to native and exotic mammal dung **Sean D. Whipple**, s-swhippl1@unl.edu, University of Nebraska–Lincoln; W. Wyatt Hoback, University of Nebraska at Kearney; and Jeffrey D. Bradshaw, University of Nebraska–Lincoln
9:27 AM	067	Rangeland grasshoppers (Orthoptera: Acrididae) consume less than their actual damage: A study to examine the clipping behavior in grasshoppers **Muhammad Irfan Ullah**, m.irfanullah@huskers.unl.edu, University of Nebraska–Lincoln; Fatima Mustafa, University of Nebraska–Lincoln; Mathew L. Brust, Chadron State College; W. Wyatt Hoback, University of Nebraska at Kearney; and Kerri M. Farnsworth-Hoback, University of Nebraska at Kearney
9:39 AM	068	Are two genes better than one for soybean aphid management? **Michael T. McCarville**, mikemcc@iastate.edu, Iowa State University; Matt O'Neal, Iowa State University; Kelley Tilmon, South Dakota State University; Bruce D. Potter, University of Minnesota; Brian P. McCornack, Kansas State University; Eileen M. Cullen, University of Wisconsin-Madison; and John F. Tooker, Pennsylvania State University

9:51 AM	069	What role do alate soybean aphids (*Aphis glycines)* play in the spread of *Soybean mosaic virus*? **Adam J. Varenhorst**, ajv@iastate.edu, Iowa State University; and Matthew O'Neal, Iowa State University
10:03 AM	070	Body size influences levels of pheromone production in the longhorned beetles (Coleoptera: Cerambycidae): a result of larval host quality? **Gabriel P. Hughes**, ghughes@purdue.edu, Purdue University; and Matthew Ginzel, Purdue University
10:15 AM	071	Using blue cross vane traps to collect insects other than bees **Wayne J. Ohnesorg**, wohnesorg2@unl.edu, University of Nebraska–Lincoln; Marion D. Ellis, University of Nebraska–Lincoln; Thomas E. Hunt, University of Nebraska–Lincoln; and Robert J. Wright, University of Nebraska–Lincoln
10:27 AM	072	Expression profiling of three defense-related buffalograss transcripts in response to chinch bug feeding **Crystal M. Ramm**, crystal.ramm2@huskers.unl.edu, University of Nebraska–Lincoln; Aaron J. Saathoff, USDA-ARS; Tiffany Heng-Moss, University of Nebraska–Lincoln; Fred Baxendale, University of Nebraska–Lincoln; Paul Twigg, University of Nebraska at Kearney; and Lisa Baird, University of San Diego
10:39 AM	073	Biological control in Kentucky winter wheat: using molecular tools to create sustainable management techniques **Katelyn A. Kowles**, katelyn.kowles@uky.edu, University of Kentucky; Douglas W. Johnson,

University of Kentucky; and James D. Harwood, University of Kentucky

STUDENT COMPETITION PAPERS

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

REGENTS AB

MODERATORS:
JOHN OBRYCKI, UNIVERSITY OF KENTUCKY
RACHAEL FITHIAN, COLORADO STATE UNIVERSITY

9:15 AM	074	Habitat characteristics and larval abundances of medically important mosquito species in central Illinois **Katie May Westby**, kmwest2@ilstu.edu, Illinois State University; and Steven Juliano, Illinois State University
9:27 AM	075	Properties of tick-borne Langat virus during growth in *Ixodes scapularis* ISE6 cells and host proteome change following infection **Jeffrey M. Grabowski**, jgrabows@purdue.edu, Purdue University; Rushika Perera, Purdue University; Catherine A. Hill, Purdue University; and Richard J. Kuhn, Purdue University
9:39 AM	076	Effect of alcohol concentrations in reconstituted human blood on fecundity of bed bugs (*Cimex lectularius* L.) **Ralph Narain**, ralph@huskers.unl.edu, University of Nebraska–Lincoln; Shripat Kamble, University of Nebraska–Lincoln; and Nicholas Miller, University of Nebraska–Lincoln
9:51 AM	077	A tale of two facilities: Impact of sanitation on the effectiveness and reliability of pest management programs in two food processing facilities; **Scott Williams**,

willi324@purdue.edu, Purdue University; and Linda Mason, Purdue University

10:03 AM 078 Colony genetic organization and pattern of subterranean termite (*Reticulitermes falvipes*) over the three years field season in Nebraska
Abdul Hafiz Ab Majid, ahafiz@huskers.unl.edu, University of Nebraska–Lincoln; and Shripat T. Kamble, University of Nebraska–Lincoln

10:15 AM 079 Current knowledge and predictions on the crepuscular bee genus *Ptiloglossa* (Colletidae: Diphaglossinae)
Rita Isabel Vélez-Ruiz, rita.velez@sdstate.edu, South Dakota State University

10:27 AM 080 Understanding mechanisms underlying predator induced wing polyphenism in the pea aphid (*Acyrthosiphon pisum*)
Swapna R. Purandare, swapna.purandare@huskers.unl.edu, University of Nebraska–Lincoln; Jennifer A. Brisson, University of Nebraska–Lincoln; and Brigitte Tenhumberg, University of Nebraska–Lincoln

10:39 AM 081 Effect of Cry1F corn on larval feeding and movement of susceptible and resistant fall armyworm (*Spodoptera frugiperda*)
Ana Maria Velez, anamaria.velez@gmail.com, University of Nebraska–Lincoln; Analiza P. Alves, Pioneer Hi-Bred International, Inc; Anthony J. McMechan, University of Nebraska–Lincoln; and Blair Siegfried, University of Nebraska–Lincoln

10:51 AM 082 Prostaglandin E_2 synthase in the blacklegged tick,*Ixodes scapularis*

Joshua R. Urban, josurb@ksu.edu, Kansas State University; and Yoonseong Park, Kansas State University

11:03 AM 083 Fitness effects of cold in the light brown apple moth (*Epiphyas postvittana*)
Amy C. Morey, morey041@umn.edu, University of Minnesota; Robert C. Venette, University of Minnesota; and William D. Hutchison, University of Minnesota

JUNE 4, 2012
MONDAY AFTERNOON

Registration
7:30 AM – 4:30 PM

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

Student Competition Posters
8:00 AM – 6:00 PM
Regents C

Symposium –
Insect Allergy
1:30 PM – 5:30 PM
Regents D

Symposium –
Researching the Rare, Threatened, or Endangered Insects in the North Central Region
1:30 PM – 3:30 PM
Regents E

Symposium –
Blending Some "New School" Approaches to Pest Management While Revisiting Some Key Vegetable Pests "Old School"
1:30 PM – 3:30 PM
Regents F

Industry Opportunities for Entomology Graduates
4:00 PM – 5:00 PM
Regents F

Photo Salon
4:00 PM – 5:00 PM
Chancellor 2/3

SYMPOSIUM

BLENDING SOME "NEW SCHOOL" APPROACHES TO PEST MANAGEMENT WHILE REVISITING SOME KEY VEGETABLE PESTS "OLD SCHOOL" STYLE

1:30 PM – 3:30 PM
REGENTS F

ORGANIZERS AND MODERATORS:
JAMES JASINSKI, THE OHIO STATE UNIVERSITY EXTENSION
MARY M. GARDINER, THE OHIO STATE UNIVERSITY, OARDC

1:30 PM	010	Development of a new school biocontrol curriculum for vegetable growers and gardeners in the Midwest **Mary M. Gardiner**, gardiner.29@osu.edu, The Ohio State University, OARDC; James Jasinski, The Ohio State University Extension; Celeste Welty, The Ohio State University; Zsofia Szendrei, Michigan State University; Abby Seaman, Cornell University; Alexandria N. Bryant, Michigan State University; Brett R. Blaauw, Michigan State University; J. Megan Woltz, Michigan State University; Ben Phillips, The Ohio State University; Chelsea Smith, The Ohio State University, OARDC; Caitlin Burkman, The Ohio State University, OARDC; Scott P. Prajzner, The Ohio State University, OARDC; and Sarah Rose, Ohio State University
1:50 PM	011	Developing online image-based insect identification systems **Hang-Kwang Luh**, luhh@onid.orst.edu, Oregon State University

2:10 PM	012	The ScoutPro Soy app: working through private companies to develop "extension" resources **Daren Mueller**, dsmuelle@iastate.edu, Iowa State University
2:30 PM	013	Is Ohio the gateway for brown marmorated stink bug into the north central region? **James Jasinski**, jasinski.4@osu.edu, The Ohio State University Extension; and Celeste Welty, The Ohio State University
2:50 PM	014	Corn earworm management in sweet corn: pheromone traps, insecticides, and *Bt* toxins **Richard Weinzierl**, weinzier@illinois.edu, University of Illinois at Urbana-Champaign
3:10 PM	015	Are insects important pests in high tunnels? **Sarah L. Thompson**, slthomps@purdue.edu, Purdue University; and Rick Foster, Purdue University

JUNE 4, 2012
MONDAY AFTERNOON

SYMPOSIUM

INSECT ALLERGY

1:30 PM – 4:40 PM
REGENTS D

ORGANIZER AND MODERATOR:
SHRIPAT T. KAMBLE, UNIVERSITY OF NEBRASKA–LINCOLN

1:30 PM	016	General background - Allergy to arthropods **Shripat T. Kamble**, skamble1@unl.edu, University of Nebraska–Lincoln
1:45 PM	017	Venom cross-reactivity **James Tracy**, jmtracy@cox.net, Allergy, Asthma Immunology Associates
2:15 PM	018	Venom immunotherapy **Vinay Mehta**, drvinaymehta@gmail.com, Allergy, Asthma Immunology Associates
3:00 PM		Break
3:15 PM	019	Human allergy and treatment of Hymenopteran venoms **Lizette Dahlgren**, lizette.dahlgren@gmail.com, University of Nebraska–Lincoln
3:45 PM	020	Allergy to bed bug bites **Susan Jones**, jones.1800@osu.edu, The Ohio State University
4:15 PM	021	Cockroach allergens **Shripat T. Kamble**, skamble1@unl.edu, University of Nebraska–Lincoln
4:35 PM		Concluding Remarks

JUNE 4, 2012
MONDAY AFTERNOON

SYMPOSIUM

RESEARCHING THE RARE, THREATENED, OR ENDANGERED INSECTS IN THE NORTH CENTRAL REGION

1:30 PM – 5:30 PM
REGENTS E

ORGANIZER AND MODERATOR:
JESSICA JURZENSKI, UNIVERSITY OF NEBRASKA–LINCOLN

1:30 PM	022	American burying beetles in Nebraska: predicting occurrence, updated distribution data, and habitat association **Jessica Jurzenski**, jurzenskij@alumni.unk.edu, University of Nebraska–Lincoln; W. Wyatt Hoback, University of Nebraska at Kearney; Andy Bishop, US Fish and Wildlife Service; and Roger Grosse, US Fish and Wildlife Service
2:00 PM	023	Minimizing take: conservation strategies for the American burying beetle, a highly mobile habitat generalist **W. Wyatt Hoback**, hobackww@unk.edu, University of Nebraska at Kearney
2:30 PM	024	Contributions of hibernal emergence of Chironomidae (Diptera) to documented biodiversity from Nebraska streams **Barbara Hayford**, bahayfo1@wsc.edu, Wayne State College; and William Mausbach, Wayne State College
3:00 PM	025	Regal fritillary populations and nectar plants at four eastern Nebraska prairies

Theodore Burk, tedburk@creighton.edu, Creighton University

3:30 PM 026 Range extensions for the beautiful tiger beetle, *Cicindela pulchra* Say, using remote sensing and bedrock geology
Mathew Brust, mbrust@csc.edu, Chadron State College

4:00 PM 027 Spotting lost lady beetles in the North Central Region
Louis S. Hesler, Louis.Hesler@ars.usda.gov, USDA-ARS; Pamela B. Bartlett, South Dakota State University; John Losey, Cornell University; Michael A. Catangui, IVESCO; Ginger M. McNickle, South Dakota State University; Danielle M. Brandt, South Dakota State University; and Janet H. Gritzner, South Dakota State University

4:30 PM 028 Current status and conservation update on the Salt Creek tiger beetle, *Cicindela nevadica lincolniana*
Stephen M. Spomer, sspomer1@unl.edu, University of Nebraska–Lincoln

5:00 PM 029 The current conservation status of the Platte River caddisfly (*Ironoquia plattensis* Alexander & Whiles) and potential factors influencing its decline
Michael C. Cavallaro, cavallaromc@hotmail.com, University of Nebraska at Kearney; Lindsay A. Vivian, U.S. Fish and Wildlife Service; and W. Wyatt Hoback, University of Nebraska at Kearney

JUNE 4, 2012
MONDAY EVENING

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

Submitted Poster Set-up
6:00 PM – 9:00 PM
Regents C

Linnaean Games: Finals
7:00 PM – 8:30 PM
Regents AB

Student Mixer
9:00 PM – midnight
Regents AB

JUNE 5, 2012
TUESDAY MORNING

Registration
7:30 AM – 4:30 PM

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

NCERA-222 Meeting
7:30 AM – 12 Noon
Executive Board Room

Submitted Posters
8:00 AM – 6:00 PM
Regents C

Symposium –
Innovative Educational Outreach via Zoos, Museums, and Partnership Programs
8:00 AM – 11:00 AM
Regents E

Symposium –
Stress Biology Research: Genetic, Molecular, and Population Level Approaches
8:00 AM – 11:30 AM
Regents F

Symposium –
Flies, Microbes, and Health
8:00 AM – 12 Noon
Regents D

Awards Luncheon
12 Noon – 1:30 PM
Regents AB

SUBMITTED POSTERS

8:00 AM – 6:00 PM

PLANT-INSECT ECOSYSTEMS
REGENTS C

D42 Differences in rate of gene flow in pheromone races of European corn borer (Lepidoptera: Crambidae) in the northeastern US: Greater isolation of E-race populations
Jing Sun, jingsun@iastate.edu, Iowa State University; Brad S. Coates, USDA-ARS; Nicholas J. Miller, University of Nebraska–Lincoln; Shelby J. Fleischer, Pennsylvania State University; and Thomas W. Sappington, USDA-ARS

D43 Pioneer's IRM plans for corn rootworm management
David Onstad, david.onstad@pioneer.com, Dupont Agricultural Biotechnology; Zaiqi Pan, Dupont Agricultural Biotechnology; Bruce Stanley, Dupont Agricultural Biotechnology; Laura Higgins, Pioneer Hi-Bred International, Inc; Rachel R. Binning, Pioneer Hi-Bred International, Inc; Clint Pilcher, Pioneer Hi-Bred International, Inc; and Lindsey Flexner, Dupont Agricultural Biotechnology

D44 Modeling resistance evolution to Bt toxins in pests of transgenic crops
Haridas Chirakkal, npharidas@gmail.com, University of Nebraska–Lincoln; and Brigitte Tenhumberg, University of Nebraska–Lincoln

D45 Evaluation of cross-resistance between mCry3A and Cry3Bb1-selected western corn rootworm colonies
Sarah N. Zukoff, snztz7@mail.missouri.edu, University of Missouri; Daniel L. Frank, West Virginia University; Anthony Zukoff, USDA -ARS; Julie Barry, USDA-ARS; and Bruce E. Hibbard, USDA-ARS

D46 Catch my drift? Bt pollen dispersal and the integrity of non-Bt refugia for lepidopteran resistance management in maize
Eric C. Burkness, University of Minnesota; and **William D. Hutchison**, hutch002@umn.edu, University of Minnesota

D47 Comparative susceptibility of laboratory and field-collected populations of fall armyworm (*Spodoptera frugiperda*) to Cry1F Bt protein
Mary Kubiszak, MKubiozak@dow.com, Dow AgroSciences

D48 Impact of Refuge Advanced® powered by SmartStax® on the movement of the European corn borer, *Ostrinia nubilalis*, 2009-2011
Patti Prasifka, plprasifka@dow.com, Dow AgroSciences; Bradley W. Hopkins, Dow AgroSciences; Dwain M. Rule, Dow AgroSciences; Deane Zahn, Dow AgroSciences; William H. Hendrix, Dow AgroSciences; and Nick Storer, Dow AgroSciences

D49 Field trial performance of Refuge Advanced® powered by SmartStax® for control of western corn rootworm in the U.S. corn belt
Kevin Johnson, djohnson@dow.com, Dow AgroSciences; Patti Prasifka, Dow AgroSciences; Dwain M. Rule, Dow AgroSciences; William H. Hendrix, Dow AgroSciences; Nick Storer, Dow AgroSciences; and Deane Zahn, Dow AgroSciences

D50 Yield Response of insecticide application to Bt rootworm corn in Northeast Nebraska
Keith Jarvi, kjarvi@unlnotes.unl.edu, University of Nebraska–Lincoln; Thomas Hunt, University of Nebraska–Lincoln; and Logan Dana, University of Nebraska–Lincoln

D51 Male reproductive competition and components of female fitness in northern corn rootworm in relation to body size

B. Wade French, wade.french@ars.usda.gov, USDA-ARS; and Leslie Hammack, USDA-ARS-NCARL (RETIRED)

D52 The interactive effects of temperature and plant resistance on the soybean aphid (*Aphis glycines*)
Rebecca Whalen, North Dakota State University; and **Jason P. Harmon**, jason.harmon@ndsu.edu, North Dakota State University

D53 Soybean KS-4202 tolerance to soybean aphid under field conditions
Edson L. L. Baldin, elbaldin@fca.unesp.br, University of Nebraska–Lincoln; Thomas E. Hunt, University of Nebraska–Lincoln; Tiffany Heng-Moss, University of Nebraska–Lincoln; Lia S. Marchi, University of Nebraska–Lincoln; Travis J. Prochaska, University of Nebraska–Lincoln; and John C. Reese, Kansas State University

D54 Inheritance of soybean aphid virulence to *Rag1* resistance
Anitha Chirumamilla, anithac@illinois.edu, University of Illinois at Urbana-Champaign; Curtis B. Hill, University of Illinois at Urbana-Champaign; Rosanna Giordano, University of Illinois at Urbana-Champaign; and Glen L. Hartman, USDA-ARS and University of Illinois at Urbana-Champaign

D55 Inventory and assessment of natural enemies of the soybean aphid in eastern South Dakota
Louis S. Hesler, Louis.Hesler@ars.usda.gov, USDA-ARS

D56 Effect of nitrogen source on parasitization of soybean aphids by *Lysiphlebus testaceipes*
Deirdre Prischmann-Voldseth, Deirdre.Prischmann@ndsu.edu, North Dakota State University; Stephanie Swenson, North Dakota State University; Samantha Brunner, North Dakota State University; and R. Jay Goos, North Dakota State University

D57 Hard times for soybean aphid parasitoids? Factors contributing to the poor performance of

Binodoxys communis on a resistant soybean cultivar
Elissa S. Ballman, elissa.ballman@ndsu.edu, North Dakota State University; Kiran Ghising, North Dakota State University; Deirdre A. Prischmann-Voldseth, North Dakota State University; and Jason P. Harmon, North Dakota State University

D58 Effects of winter cover crops on ground beetle abundances
Laura A. Campbell, lacampbell@siu.edu, Southern Illinois University Carbondale; and Bryan G. Young, Southern Illinois University Carbondale

D59 Run over by a truck: Buried burying beetles survive off road traffic
W. Wyatt Hoback, hobackww@unk.edu, University of Nebraska at Kearney; Silviane Santiago, University of Nebraska at Kearney; Ana Mijone, University of Nebraska at Kearney; Camila C. Rosim, University of Nebraska at Kearney; Jess Lammers, University of Nebraska at Kearney; and Jessica Jurzenski, University of Nebraska–Lincoln

D60 Autumn insecticide applications as a control measure against spring alfalfa weevil (*Hypera postica*) infestations
Alysha M. Soper, alyshaso@ksu.edu, Kansas State University; R. Jeff Whitworth, Kansas State University; Holly Davis, Kansas State University; and Brian P. McCornack, Kansas State University

D61 Pest management of insects and diseases in crops used for nutritional supplements
Jaime Molina-Ochoa, jmolina18@hotmail.com, Nutrilite S. de R. L. de C. V; Agustín Gonzaléz-Ortiz, Nutrilite S. de R. L. de C. V; Alberto Novela-Chávez, Nutrilite S. de R. L. de C. V; Gerardo Gordillo-Sobrino, Nutrilite S. de R. L. de C. V; Kathleen M. Kneeland, University of Nebraska–Lincoln; and John E. Foster, University of Nebraska–Lincoln

D62 Impact of prescribed burning on Cerambycidae in mixed-oak forests of southern Ohio
David J. Horn, horn.1@osu.edu, Ohio State University

SYSTEMATICS, EVOLUTION, AND BIODIVERSITY

REGENTS C

D63 DNA methylation of the wing polyphenism in the pea aphid (*Acyrthosiphon pisum)*
Mary Chaffee, m.e.chaffee@gmail.com, University of Nebraska–Lincoln; and Jennifer Brisson, University of Nebraska–Lincoln

D64 Male acoustic advertisement patterns and female mate choice in the lek-mating prairie mole cricket *(Gryllotalpa major* Saussure)
Courtney L. Moore, Augustana College; Claire E. Bestul, Augustana College; Ashley P. Schmidt, Augustana College; Brooke K. Woelber, Augustana College; Christina H. Johnson, Augustana College; Carrie L. Hall, Augustana College; and **Daniel R. Howard**, daniel.howard@augie.edu, Augustana College;

D65 Spatial distribution, habitat preference, and population estimate of the endangered American burying beetle (*Nicrophorus americanus*) in a highly disturbed grassland-forest mosaic
Daniel R. Howard, Augustana College; and **Carrie L. Hall**, carrie.hall@augie.edu, Augustana College

D66 Pollinator preferences and their potential effects on floral trait diversity
Margaret W. Thairu, thairu@wisc.edu, University of Wisconsin-Madison

D67 Using genotype to determine phenotype: Genetic markers that differentiate *Ostrinia nubilalis E*- and *Z*-pheromone races
Brad S. Coates, Brad.Coates@ars.usda.gov, USDA-ARS; Holly Lynn Johnson, University of Delaware; Charles Mason, University of

Delaware; Richard Hellmich, USDA-ARS; and Thomas W. Sappington, USDA-ARS

D68 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.com, Iowa State University; Graham Head, Monsanto Company; and Aaron J. Gassmann, Iowa State University

D69 Genetic variation of the large carpenter bees, *Xylocopa virginica* and *X. micans*
Amber D. Tripodi, University of Arkansas; and **Allen L. Szalanski**, aszalan@uark.edu, University of Arkansas

MEDICAL, URBAN AND VETERINARY ENTOMOLOGY

REGENTS C

D70 Proactive Bed Bug Management: Pilot Protocol for Hotel Settings
Sharon M. Dobesh, sdobesh@ksu.edu, Kansas State University; Jason M. Meyers, BASF; Travis Aggson, American Pest Management, Inc; Joey Hoke, American Pest Management, Inc

D71 Warble? What's a warble? A recap of the human bot fly, *Dermatobia hominis.*
K. Kneeland, herplvr@aol.com, University of Nebraska–Lincoln; Steven R. Skoda, USDA-ARS; and John E. Foster, University of Nebraska–Lincoln

D72 Analyzing population genetics data: a comparison of the software
Kathleen M. Kneeland, University of Nebraska–Lincoln; Steven R. Skoda, USDA-ARS; and **John E. Foster**, jfoster1@unl.edu, University of Nebraska–Lincoln

D73 Switchgrass (*Panicum virgatum*) peroxidases and their potential role in insect resistance
Nathan Palmer, nathan.palmer@ars.usda.gov, University of Nebraska–Lincoln; Gautam Sarath, USDA-ARS; and Tiffany Heng-Moss, University of Nebraska–Lincoln

D74 Population growth of the mite *Tyrophagus putrescentiae* (Schrank) on cured ham treated with food-safe materials
Salehe Abbar, abbar@ksu.edu, Kansas State University; M. Wes Schilling, Mississippi State University; and Thomas W. Phillips, Kansas State University

D75 Effect of host plant on cold hardiness of *Epiphyas postvittana*
Laurel A. Mosca, mosca011@umn.edu, University of Minnesota; Amy C. Morey, University of Minnesota; Robert C. Venette, USDA - Forest Service; and William D. Hutchison, University of Minnesota

SYMPOSIUM

STRESS BIOLOGY RESEARCH: GENETIC, MOLECULAR, AND POPULATION LEVEL APPROACHES

8:00 AM – 11:30 AM

REGENTS F

ORGANIZERS AND MODERATORS:
LARAMY ENDERS, UNIVERSITY OF NEBRASKA–LINCOLN
NICHOLAS J. MILLER, UNIVERSITY OF NEBRASKA–LINCOLN

8:00 AM 084 What is stress and how do we measure it?: Response to stress in the Soybean Aphid
Laramy Enders, lenders2@unl.edu, University of Nebraska–Lincoln; Tiffany Heng-Moss, University of Nebraska–Lincoln; Jennifer Brisson, University of Nebraska–Lincoln; Ryan Bickel, University of Nebraska–Lincoln; Blair Siegfried, University of Nebraska–Lincoln; Anthony Zera, University of Nebraska–Lincoln; and Nick Miller, University of Nebraska–Lincoln

8:20 AM 085 Fitness costs of insect resistance to *Bacillus thuringiensis*
Aaron J. Gassmann, aaronjg@iastate.edu, Iowa State University; Jennifer L. Petzold-Maxwell, Iowa State University; Amanda Hoffmann, Iowa State University; Yves Carriere, University of Arizona; and Bruce E. Tabashnik, University of Arizona

8:40 AM 086 Pesticide exposure and stress in honey bees
Reed Johnson, johnson.5005@osu.edu, The Ohio State University–OARDC

9:00 AM	087	Plant fatty acids and oxylipins: their role in defense against aphids **Carlos Avila**, cavila@uark.edu, University of Arkansas
9:20 AM	088	Using RNA-seq to dissect the transcriptomic response of *Belgica Antarctica* to dehydration **Justin Peyton**, peyton.37@osu.edu, The Ohio State University
9:40 AM	089	Reduced larval viability decreases the liklihood of population replacement by *Wolbachia* **Philip Ray Crain**, philip.crain@gmail.com, University of Kentucky; and Stephen Dobson, University of Kentucky
10:00 AM	090	Transcriptomics of stress response in soybean aphid fed with resistant (Rag1) soybean **Jacob Wenger**, wenger.93@osu.edu, The Ohio State University, OARDC; Raman Bansal, The Ohio State University, OARDC; and Andrew Michel, The Ohio State University, OARDC
10:20 AM	091	Biogenic amines and polyphenism in pea aphids: is there a link? **Neetha Nanoth Vellichirammal**, neethav@yahoo.com, University of Nebraska–Lincoln; DaiTrang Le, University of Nebraska–Lincoln; Nandakumar Madayiputhiya, University of Nebraska–Lincoln; and Jennifer Brisson, University of Nebraska–Lincoln

JUNE 5, 2012
TUESDAY MORNING

SYMPOSIUM

INNOVATIVE EDUCATIONAL OUTREACH VIA ZOOS, MUSEUMS, AND PARTNERSHIP PROGRAMS

8:00 AM – 11:05 AM

REGENTS E

ORGANIZERS AND MODERATORS:
TOM WEISSLING, UNIVERSITY OF NEBRASKA–LINCOLN
TIFFANY HENG-MOSS, UNIVERSITY OF NEBRASKA–LINCOLN

8:00 AM	092	Introductory remarks **Tiffany Heng-Moss**, thengmoss2@unl.edu, University of Nebraska–Lincoln
8:05 AM	093	Discovering the world of bees **Louise Lynch**, lilynch777@yahoo.com, Hudson Highland Nature Museum
8:27 AM	094	Involving the public in citizen science with BeeSpotter **Terry Harrison**, tharriso@illinois.edu, University of Illinois at Urbana-Champaign; and Michael McKelvey, University of Illionois
8:49 AM	095	Supporting integration initiatives in Minneapolis schools with a museum insect pollination curriculum **Susan J. Weller**, welle008@umn.edu, University of Minnesota; Kevin Williams, Bell Museum of Natural History; Shoghig Berberian, Bell Museum of Natural History; Anita Cholewa, University of Minnesota; and Barbara Coffin, University of Minnesota
9:11 AM		Break

9:26 AM	096	Endangered invertebrate conservation and our efforts at the Henry Doorly Zoo **Trace Hardin**, tracehardin@yahoo.com, Omaha's Henry Doorly Zoo & Aquarium
9:48 AM	097	KSU Insect Zoo: Building and maintaining a campus destination **Kiffnie Holt**, kiffnie@ksu.edu, Kansas State University
10:10 AM	098	The Lincoln Children's Zoo is crawling with bugs **Thomas Weissling**, tweissling2@unl.edu, University of Nebraska–Lincoln; Aimee Johns, Lincoln Children's Zoo; and Tiffany Heng-Moss, University of Nebraska–Lincoln
10:32 AM	099	Panel discussion **Thomas Weissling**, tweissling2@unl.edu, University of Nebraska–Lincoln; and Tiffany Heng-Moss, University of Nebraska–Lincoln

JUNE 5, 2012
TUESDAY MORNING

SYMPOSIUM

FLIES, MICROBES, AND HEALTH

8:00 AM – 12:00 PM

REGENTS D

ORGANIZERS AND MODERATORS:
DAVID TAYLOR, USDA-ARS
KRISTINA FRIESEN, USDA-ARS
DANA NAYDUCH, USDA-ARS

8:00 AM	100	Introduction **David B. Taylor**, Dave.Taylor@ars.usda.gov, USDA-ARS
8:10 AM	101	Microbial processes, substrates, and diversity in the manure environment **Dan Miller**, Dan.Miller@ars.usda.gov, USDA-ARS
8:30 AM	102	Microbial dynamics relative to stable fly development in winter hay feeding sites **Kristina Friesen**, Kristina.Hale@ars.usda.gov, USDA-ARS
8:50 AM	103	Microbial ecology of stable flies: Effect of bacterial community of aging horse manure on stable fly oviposition and development **Ludek Zurek**, lzurek@ksu.edu, Kansas State University
9:10 AM	104	Volatiles associated with filth fly attraction and oviposition selection: Microbio-chemoecological aspects **Jerry Zhu**, Jerry.Zhu@ars.usda.gov, USDA-ARS-NPA

9:30 AM	105	Immature development and *E. coli* retention in house flies and stable flies **Kateryn Rochon**, kateryn_rochon@umanitoba.ca, University of Manitoba; Tim Lysyk, Lethbridge Research Centre; and L.B. Selinger, University of Lethbridge
9:50 AM	106	The ecology of STEC O157 in beef cattle feedlots within and between seasons: a role for flies in transmission? **David R. Smith**, dsmith8@unl.edu, University of Nebraska–Lincoln
10:10 AM	107	Potential interaction between pathogens and filth flies in cattle production systems **Lisa Durso**, Lisa.Durso@ars.usda.gov, USDA-ARS
10:30 AM	108	Filth flies and microbes: Is there more than just dressing on your salad? **Rebecca C. Pace**, rebecca.pace@okstate.edu, Oklahoma State University; and Astri Wayadande, Oklahoma State University
10:50 AM	109	Monitoring progression of ingested, GFP-expressing bacteria in the digestive tract of the adult stable fly **Pia U. Olafson**, Pia.Olafson@ars.usda.gov, USDA-ARS
11:10 AM	110	Innate immune responses during fly-microbe interactions: impact on microbe fate and vector potential **Dana Nayduch**, dana.nayduch@ars.usda.gov, USDA-ARS
11:30 AM	111	Summary and Discussion **Dana Nayduch**, dana.nayduch@ars.usda.gov, USDA-ARS

JUNE 5, 2012
TUESDAY AFTERNOON

Registration
7:30 AM - 4:30 PM

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

Submitted Posters
8:00 AM – 6:00 PM
Regents C

Awards Luncheon
12 Noon – 1:30 PM
Regents AB

Submitted Papers
2:00 PM – 5:00 PM
Regents E

NCERA-222 Symposium – Advancing the Quality and Applications of Volunteer-collected Data Using Technology and Social Engineering
2:00 PM – 4:00 PM
Regents D

Symposium – Odd Couples: Symbioses in Insects and their Consequences
2:00 PM – 4:45 PM
Regents F

JUNE 5, 2012
TUESDAY AFTERNOON

NCERA-222 SYMPOSIUM

ADVANCING THE QUALITY AND APPLICATIONS OF VOLUNTEER-COLLECTED DATA USING TECHNOLOGY AND SOCIAL ENGINEERING

2:00 PM – 3:40 PM

REGENTS D

ORGANIZERS AND MODERATORS:
BRIAN P. MCCORNACK, KANSAS STATE UNIVERSITY
MARY M. GARDINER, THE OHIO STATE UNIVERSITY, OARDC

2:00 PM	112	Building a social network around insect surveys **Jeff Bradshaw**, jbradshaw2@unl.edu, University of Nebraska–Lincoln
2:25 PM	113	Mobile apps and web-based decision support systems--thinking big on a limited budget **Brian P. McCornack**, mccornac@ksu.edu, Kansas State University
2:50 PM	114	Lessons from lady beetles; accuracy of citizen science data collected in the U.S. and U.K **Mary Gardiner**, gardiner.29@osu.edu, The Ohio State University
3:15 PM	115	Use of web-based support systems to cultivate new research ideas **Wendy A. Johnson**, wendyann@ksu.edu, Kansas State University; and Brian P. McCornack, Kansas State University

JUNE 5, 2012
TUESDAY AFTERNOON

SYMPOSIUM

ODD COUPLES: SYMBIOSES IN INSECTS AND THEIR CONSEQUENCES

2:00 PM – 5:00 PM

REGENTS F

ORGANIZED BY:
NCB-ESA STUDENT AFFAIRS COMMITTEE

MODERATOR:
JULIE A. PETERSON, UNIVERSITY OF KENTUCKY

2:00 PM		Introductory Remarks
2:05 PM	116	Defining host-symbiont collaboration in termite lignocellulose digestion **Michael E. Scharf**, mscharf@purdue.edu, Purdue University
2:30 PM	117	The importance of symbioses for defining insect diet and trophic position Ryan Schmid, USDA-ARS; Michael Lehman, USDA-ARS **Jonathan G. Lundgren**, jonathan.lundgren@ars.usda.gov, USDA-ARS
2:55 PM	118	Facultative bacterial symbionts and aphid evolution: inferences from patterns of geographic variation **Jen A. White**, jenawhite@uky.edu, University of Kentucky
3:20 PM		Break
3:35 PM	119	On the presence and generality of a defensive symbiosis in the cowpea aphid, *Aphis craccivora*

		Mark K. Asplen, asple001@umn.edu, University of Minnesota
4:00 PM	120	The complex interactions between symbionts and host immunity **Nicole Gerardo**, nicole.gerardo@emory.edu, Emory University
4:25 PM	121	Deception of a parasitic syrphid by honeydew-hungry ants in the urban landscape **Sarah J. Vanek**, sarah.vanek@uky.edu, University of Kentucky
4:50 PM		Concluding Remarks

JUNE 5, 2012
TUESDAY AFTERNOON

SUBMITTED PAPERS

2:00 PM – 5:00 PM

REGENTS E

MODERATORS:
SEAN WHIPPLE, UNIVERSITY OF NEBRASKA–LINCOLN
MIKE CULY, DOW AGROSCIENCES

2:00 PM 122 Cross-pollination between Bt and non-Bt plants in seed mix refugia
Matthew W. Carroll, matthew.carroll@monsanto.com, Monsanto Company; Graham P. Head, Monsanto Company; Christopher Schuster, Monsanto; Kate Turner, Monsanto; Iryna Nahirna, Monsanto; and Katie Niemeyer, Monsanto

2:12 PM 123 Interactions among Bt maize, entomopathogens and rootworm species in the field: effects on survival, yield and root injury
Jennifer Petzold Maxwell, jpetzold@iastate.edu, Iowa State University; Michael Dunbar, Iowa State University; Eric H. Clifton, Iowa State University; Stefan T. Jaronski, USDA-ARS; Mark A. Jackson, USDA-ARS; and Aaron J. Gassmann, Iowa State University

2:24 PM 124 Pheromone-based monitoring and management of the millet stem borer, *Coniesta ignefusalis* (Lepidoptera: Pyralidae)
Ousmane Youm, oyoum2@unl.edu, University of Nebraska–Lincoln; Yacouba Maliki, Formerly, ICRISAT Sahelian Centre; David R. Hall, University of Greenwich; Dudley I.

Farman, University of Greenwich; K. M. Kneeland, University of Nebraska–Lincoln; and John E. Foster, University of Nebraska–Lincoln

2:36 PM 125 Seasonal occurrence and field damage of corn blotch leafminer (*Agromyza parvicornis*) in south central Nebraska
Ronald C. Seymour, rseymour1@unl.edu, University of Nebraska–Lincoln; Robert J. Wright, University of Nebraska–Lincoln; and Terry A. DeVries, University of Nebraska–Lincoln

2:48 PM 126 Mechanisms of action for monoterpenoid botanical insecticides
Joel R. Coats, jcoats@iastate.edu, Iowa State University; Aaron D. Gross, Iowa State University; Fan Tong, Iowa State University; and Michael J. Kimber, Iowa State University

3:00 PM 127 Transform™, a novel sulfoxamine insecticide to control soybean aphid (*Aphis glycines*) from Dow AgroSciences
Neil Spomer, naspomer@dow.com, Dow AgroSciences; James Thomas, Dow AgroSciences; Scott Ditmarsen, Dow AgroSciences; Kevin Johnson, Dow AgroSciences; Patti Prasifka, Dow AgroSciences; Dave Ruen, Dow AgroSciences; and Eric Scherder, Dow AgroSciences

3:12 PM 128 Is the silver bullet of neonicotinoid seed treatments hitting an unintended target? Effects of neonicotinoids on plants, unsusceptible pests and natural enemies
Ada Szczepaniec, adrianna.szczepaniec@sdstate.edu, South Dakota State University; and Micky Eubanks, Texas A&M University

3:24 PM	129	How many insecticides can be formulated into a pre-mix? **Paul W. Borth**, pwborth@dow.com, Dow AgroSciences; and Ray E. Boucher, Dow AgroSciences
3:36 PM	130	Metamorphosis does not completely decouple developmental environments from the adult phenotype in the burying beetle, *Nicrophorus pustutlatus.* **Chris R. Effken**, creffk@gmail.com, University of Nebraska at Omaha; and Claudia M. Rauter, University of Nebraska at Omaha
3:48 PM	131	Using web-based key character and classification instruction for teaching undergraduate students insect identification **Douglas Golick**, dgolick2@unl.edu, University of Nebraska–Lincoln; Tiffany Heng-Moss, University of Nebraska–Lincoln; and Leon G. Higley, University of Nebraska–Lincoln
4:00 PM	132	Effect of the US-52 prairie planting on plant, butterfly, and ground beetle communities **Kirk J. Larsen**, larsenkj@luther.edu, Luther College
4:12 PM	133	Potential for methyl isothiocyanate to be used as a fumigant against stored product insects **Michael J. Aikins**, mja8338@k-state.edu, Kansas State University; and Thomas W. Phillips, Kansas State University
4:24 PM	134	Survey of tick prevalence on small mammal hosts in Southeast Nebraska **Timothy M. Hotaling**, thotaling85@gmail.com, University of Nebraska–Lincoln

4:36 PM	135	Seasonal population trends of pasture flies of cattle in West Central Nebraska with and without management **David Boxler**, djboxler1@unl.edu, University of Nebraska–Lincoln; and Gary Brewer, University of Nebraska–Lincoln

A-V Room & Employment Room
7:30 AM – 7:00 PM
Chancellor I

Special Event: Entomology Hall Open House
7:00 PM – 9:00 PM
UNL East Campus

Special Event: Nebraska State Museum Tour
7:30 PM – 9:00 PM
UNL City Campus; Nebraska Hall

Special Event: Lincoln Saltdogs Baseball Game
7:05 PM – 10:30 PM
Hawks Field, Lincoln

JUNE 6, 2012
WEDNESDAY

Registration
7:30 AM – 10:00 AM

Final Business Meeting
7:30 AM – 9:00 AM
Regents C

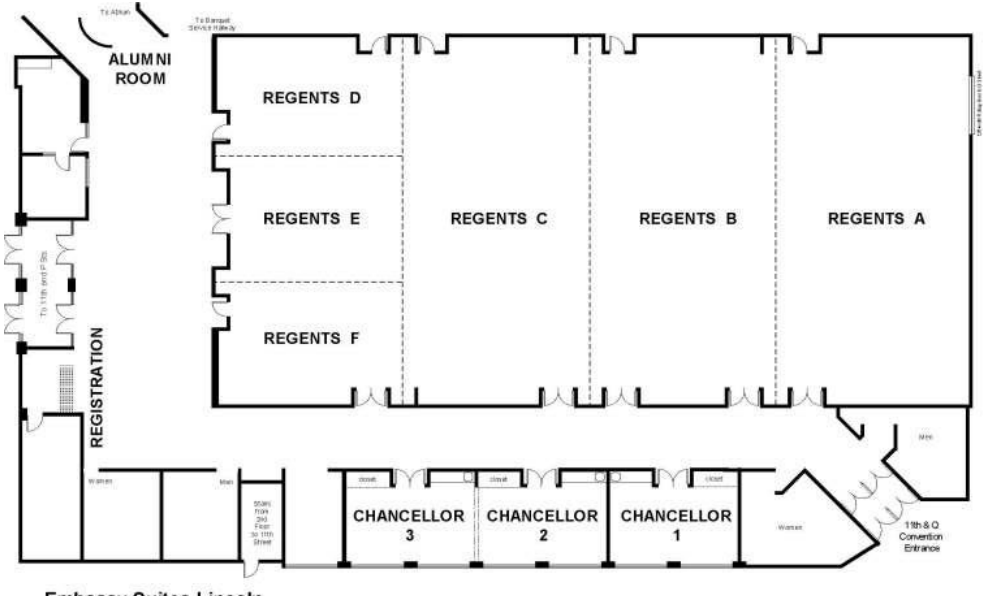
Final NCB Executive Committee Meeting
10:00 AM – 12 Noon
Executive Board Room

Special Event: Spring Creek Prairie Tour
1:30 PM – 4:30 PM
Denton, Nebraska

AUTHOR INDEX
(BY PRESENTATION NUMBER)

TAXONOMIC INDEX
(BY PRESENTATION NUMBER)

KEYWORD INDEX
(BY PRESENTATION NUMBER)



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MEETING FACILITY MAP

Mark Your Calendars!

Plan to attend