

**NORTH CENTRAL BRANCH  
Entomological Society of  
America**

**57th Annual Meeting**

**March 24-27, 2002**



**President Jon J. Tollefson**

**Kellogg Hotel and Conference Center  
Michigan State University  
South Harrison Road  
East Lansing, Michigan 48824-1022**

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## Welcome to East Lansing, Home of Michigan State University

On behalf of the Michigan State University Department of Entomology, we are pleased to welcome you to the 57<sup>th</sup> Annual North Central Branch meeting of the Entomological Society of America in East Lansing. As usual, our meeting covers significant research and extension activities in major cropping systems, featuring symposia on Bt corn, extension entomology, and the recently released GAO report on integrated pest management. But we also highlight the many important minor crops grown in Michigan and the North Central region, with symposia on organic fruit production, beetle problems in small fruit, and biological control in the urban landscape.

Another focus of our meeting is entomology education of both children and adults. On Sunday, speakers — including public school teachers — share their experiences using insects in the classroom. The ‘Get-Bugged’ program on Tuesday morning brings 120 local elementary students into our main meeting room, where they will display entomology science projects. The graduate student symposium on Wednesday features a hands-on ‘Tubenrope’ workshop, designed to increase research efficiency of adult scientists.

The Program Committee would like to thank the speakers, donors, and volunteers who gave their time and energy to make this meeting possible. We hope you enjoy the 57<sup>th</sup> Annual Meeting, and have a productive visit to East Lansing and the Michigan State University Campus.

## **Michigan State University**

MSU was founded in 1855 as the nation’s first land-grant university. It was the first institution of higher learning in the nation to teach ‘scientific agriculture’, and became the prototype for the land-grant institutions established under the Morrill Act in 1862. Current enrollment on the MSU campus is 43,400 students — 34,342 undergraduates, 7,657 graduate students, and 1,367 professional students.

The MSU campus is located east of Michigan’s capital city, Lansing, in the aptly named city of East Lansing. The Campus has 5,200 acres of land, split between a 2,100-acre main campus to the north and 3,100 acres of research farms and natural areas to the south. The Red Cedar River flows through the center of the main campus. North of the river are older, more traditional buildings housing administration, the MSU Union, the library, museum, ten older residence halls, and several academic departments (including Entomology, in the Natural Science Building). South of the river are modern residence halls, sports arenas, the medical complex, the Wharton Center for Performing Arts, the Agricultural Pavilion, the Detroit College of Law, and sophisticated scientific research laboratories (including most of the departments in the College of Agriculture and Natural Sciences).

## **A few fast factoids about MSU:**

- ◆ MSU has several important collections of plantings, most famous the W. J. Beal Botanical Garden, the oldest continuously operated (128 years) university botanical garden in the country.
- ◆ Michigan State University operates the largest residence hall system in the U.S, housing over 17,000 students in 24 buildings.
- ◆ The world's largest non-military cafeteria is in the Brody Residence Hall Complex, across the street from the Kellogg Center.
- ◆ MSU has one of the largest study abroad programs in the country. Over a quarter of MSU students travel abroad during their degree program.
- ◆ MSU is the only university with three on-campus medical schools, graduating medical doctors, osteopathic physicians, and veterinarians.
- ◆ MSU is home to four national research facilities — The National Superconducting Cyclotron Laboratory (home of the world's highest energy continuous-wave accelerator), the Department of Energy Plant Research Laboratory, the Center for Microbial Ecology, and the National Center for Food Safety and Toxicology.

## **Registration**

Registration badges are required for admission to all functions. The registration desk is in the Big Ten Room A and will be open for check-in for those who pre-registered and for on-site registration during the following times:

Sunday	10:00 AM - 6:00 PM
Monday	7:30 AM - 5:00 PM
Tuesday	7:30 AM - 5:00 PM
Wednesday	7:30 AM - Noon

## **Messages, Program Changes, Lost & Found**

A message board and tacks will be available in the registration area for posting announcements. Changes in the scheduled program and other meeting news will also be posted here. Notices concerning changes in the scheduled program should be submitted to the meeting registration desk. Lost

and found articles may be turned in and retrieved at the registration desk.

### **For Spouses and Guests**

Please check at the registration desk for spouse/guest information.

### **Employment Opportunity Center**

The Employment Opportunity Center is located in the Heritage Room. Employers are invited to advertise available positions and job seekers are encouraged to distribute their vitae in the folders provided in the room.

### **Audio-Visual Equipment**

All rooms will be equipped with 35-mm slide projectors designed to use standard 80-slide carousels, an overhead transparency projector, an IBM compatible laptop (notebook) computer, and a LCD video projector. Each speaker **MUST** provide slides in a carousel, marked with his/her own name and paper number, to the projectionist a minimum of 10 minutes **BEFORE** the beginning of the session. Extra slide carousels will **NOT** be available in the meeting rooms. As for electronic presentations (95, 97, or 2000 PowerPoint, Windows **ONLY**), because of compatibility issues, we will **NOT** permit "hot-synch" swapping of laptops during the paper sessions. For presenters who did not successfully upload his/her presentation via the NCB-ESA website as requested, **ALL** presentations **MUST** be loaded onto a respective laptop the preceding day, with the exception of the opening day (Sunday); **NO EXCEPTIONS!** The Heritage Room in the Kellogg Hotel and Conference Center will serve as the Audio/Visual Room. This A/V room will be available between 5:00 - 6:30 p.m. each day, and from 11:00-12:30 p.m. on Sunday prior to the commencement of the first presentations. Your presentation **MUST** be on removable media such as ZIP (100 or 250 MB), 3.5" floppy disks, or CD (700 MB/80 MIN). We can **NOT** directly cable (link) two laptops for file transfer using software such as LapLink, because of software security and compatibility issues.

## **Poster Presentations**

Poster presentations (Student Competition & Submitted) will be set up throughout the meeting in the Big Ten Room A. Posters should be set up on Sunday, 4:00-8:00 PM and must be removed Tuesday afternoon between 4:30-6:00 PM. Authors (Student Competition and Submitted) are requested to be at their poster(s) to answer questions between 4:00-5:00 PM on Monday and 3:30-4:30 PM on Tuesday.

## **Guidelines for Speakers and Moderators**

Speakers and moderators will follow standard practices for ESA meetings. Moderators are responsible for maintaining the printed schedule, by not starting any presentation before the scheduled time and by not allowing any speaker to exceed the allotted time for his/her presentation. Speakers that exceed their allotted presentation time will be requested by the moderator to conclude their presentation immediately. Please be considerate of others. Moderators in each room should obtain a pointer and timer from the Audio-Visual Room (Heritage) prior to their session. Pointers and timers should be returned to the Audio-Visual Room immediately after the session concludes. The ESA guidelines state that no smoking is allowed in any meeting room.

**2001-2002  
Officers & Committees  
North Central Branch, ESA**

**President**

Jon Tollefson

**President-Elect**

Mike Gray

**Past President**

Dave Hogg

**Secretary-Treasurer**

Ric Bessin

**Governing Board Representative**

Scott Hutchins

**Executive Committee Members-at-Large**

Randy Higgins      Bob Wright      Fred Baxendale

**Program Planning Committee**

Fred Baxendale and Chris Williamson, Co-Chairs

Ric Bessin	Chris DiFonzo	Mike Gray
Dave Hogg	Rufus Isaacs	Dave Smitley
Jon Tollefson	Rob Wiedenmann	Bob Wright

**Local Arrangements Committee**

Chris DiFonzo, Chair

**Nominating Committee**

Larry Chandler, Chair

David Isenhour

Ed Grafius

**Auditing Committee**

Ken Holscher, Chair

Robert Behle

Denise Olsen

**Resolutions Committee**

Steve Yaninek, Chair

Ted Radcliffe

**Location and Time Committee**

Mark Hartlein, Chair

Mark Ascerno

Sonny Ramaswamy

**Student Awards Committee**

Ian MacRae, Chair

Billy Fuller

Elaine Backus

Tiffany Heng-Moss

Mark Boetel

Erin Hodgson

**C.V. Riley Award Committee**

Leon Higley, Chair

Mike Chippendale

Sonny Ramaswamy

Daniel Young

Gerald Wilde

Lowell "Skip" Nault

**NCB Award of Merit Committee**

C. Michael Smith, Chair

Shripat Kamble

John Sedlacek

Jeffrey Wyman

**National ESA Awards Committee**

Dan Mahr, Chair

David Onstad

David Isenhour

Jim Nechols

Tom Baker

Randy Higgins

**Public Information/Public Relations Committee**

Chris DiFonzo, Chair

Dan Mahr

## **Membership Committee**

Ken Ostlie, Chair

Larry Charlet (ESA)

Rich Hellmich

Joe Reed

Tom Hunt

## **Photo Salon Committee**

Tom Myers, Chair

Frank Peairs

Jerry DeWitt

Phil Sloderbeck

Jim Mertins

David Voegtlin

Ric Bessin

## **Student Affairs Committee**

Matt O'Neal, Chair

Matt Carrol

Patricia Anderson

Ryda Krell

Michael Roberts

## **Archivist**

Ken Holscher

## **Linnaean Games**

Marlin Rice, Chair and Gamesmaster

Barbara Nead-Nylander

Mike Gray

Jeremy Heath

J.R. Stewart

**NCB-ESA Website** (<http://esa.ent.iastate.edu>)

John VanDyk, Webmaster

## **Special Event Sponsors**

Aventis CropScience

BASF Corporation

FMC Agricultural Products Group

Syngenta Crop Protection

## **SPECIAL EVENTS**

### **“Get Bugged” Insect Exposition Tuesday, 10:00 - Noon Big Ten Room A**

Local grade school students will present their entomological projects to the ESA members during this 2-hour session. The “Get Bugged” Mentor Program was developed to take Michigan State University entomology students off campus and into community classrooms. Beginning in the fall of 1999, the Outreach office worked in concert with the Lansing School District to design a program that runs during the academic school year. The fall term was dedicated to providing teacher training workshops. In the spring term, participating classrooms were paired with a graduate student mentor. This partnership culminates with a “Get Bugged” Insect Exposition, where the mentor and students share their classroom projects and experiments. Those interested in this program and its outcomes are welcomed to visit this mini meeting within a meeting. To learn more visit <http://www.ent.msu.edu/dept/docs/mentorpro.html>.

### **Student Mixer Monday, 8:30-10:30 PM Big Ten Room B**

As usual, the **Student Affairs Committee** will sponsor an evening mixer (snacks and beverages provided). Potential employers and professors in search of graduate students will be invited to attend in an effort to facilitate meetings with interested students. The mixer will start immediately following the Linnaean games.

**Student Affairs Symposium: Tubenrope**  
**Wednesday, 9:00 - Noon**  
**Room 106**

The “Tubenrope” workshop is a hands-on exercise developed to increase the research efficiency of scientists regardless of their field or discipline of study. The workshop uses a unique physical puzzle to help burgeoning researchers use and communicate the “Strong Inference” approach to hypothesis testing. This workshop was developed and will be facilitated by Dr. Jim Miller, Professor of Entomology at Michigan State University. Dr. Miller leads the students in formalizing logical approaches to puzzle solving, focusing on how to move from observations, descriptions and eventually to the underlying mechanisms of any system; the value of constructing multiple conceptual models with distinct and explicit predictions; how to decide which experiments are most powerful in testing those models; and increasing research efficiency with logical research structures. For several years, Dr. Miller has taught this exercise as part of his course, “The Nature and Practice of Science”, that introduces these topics and more to graduate students interested in a career in the sciences.

**MSU Bug House Tour**  
**Wednesday, 10:00 - Noon**

MSU students will conduct a tour of the Bug House. A shuttle service will transport NCB-ESA members to visit this mini museum of live and pinned insects with an accompanying gift shop. Please indicate your interest in visiting the Bug House and using the shuttle service when you first sign-in at the Kellogg Center. For more info and pictures visit <http://www.ent.msu.edu/bughouse/index.html>

# **2002 NORTH CENTRAL BRANCH AWARD RECIPIENTS**

## **C. V. Riley Achievement Award**

**John E. Foster**

**University of Nebraska**

Dr. Foster is an outstanding scientist, whose record of over 100 research publications, book chapters, about \$3 million in grant support, and many, many speaking invitations all point to the strength of his academic record. He has made substantial contributions in small grain breeding, particularly wheat resistance to insects. His work on the genetics of Hessian fly resistance has proven a major contribution to the protection of wheat from this potentially devastating pest. In his many publications on these various crops, Dr. Foster has not only made important theoretical and practical contributions to our understanding of plant resistance to insects, but also he has developed and contributed to interdisciplinary teams working on multiple pest problems. Consequently, much of Dr. Foster's scientific background speaks to issues involving plant disease and agronomic issues in the development of new crop cultivars. To date Dr. Foster has either led or been part of the teams that have released 9 germplasm lines and 8 cultivars. Beyond his work as an individual scientist, Dr. Foster has served in many cooperative and administrative roles. Through his international work, Dr. Foster has had a significant impact on the plant resistance efforts of many research programs throughout the globe.

**John Henry Comstock Graduate Student Award**  
**Andrew B. T. Smith**  
**University of Nebraska**

Andrew B. T. Smith earned a B.Sc. with honors in biology (1994) from Carleton University (Ottawa, Canada), a M.Sc. in zoology (1997) from the University of Toronto (Canada). He is currently finishing a Ph.D. in entomology from the University of Nebraska-Lincoln (UNL) as a member of “Team Scarab” at the State Museum. His research involves the systematics, biogeography, and evolution of scarab beetles with emphasis on Neotropical Rutelinae. He has already produced over 10 scientific papers in the field of scarab systematics. During the course of his Ph.D., he has enhanced his research through field and museum work in Ecuador, Venezuela, Honduras, Nicaragua, El Salvador, and Brazil and museum work in France, Germany, and the United Kingdom. Andrew received the Keith Kevan Scholarship in recognition of high scholastic achievement and excellence in graduate studies in entomological systematics from the Entomological Society of Canada in 1999. He was elected as a counselor for the Coleopterists Society for the 2001-2002 term. He has also received four fellowships and scholarships and numerous grants to conduct research and attend meetings during his time at UNL. Andrew has provided many services to the scarab research community, including the development of the SCARABS-L listserve (with almost 100 subscribers worldwide), organizing the SOLA Scarab Workers Conference at the ESA annual meeting (2001, 2002), and co-organizing the “Systematics Studies in Scarabaeoidea” symposium at the International Congress of Entomology in Brazil (2000).

**NCB Graduate Scholarship Award**  
**Jason P. Harmon**  
**University of Minnesota**

Jason P. Harmon is currently completing his Ph.D. thesis, “Indirect interactions among a generalist predator and its multiple foods” at the University of Minnesota under Dr. David Andow. Jason’s skills and interests are centered in the study of community and population biology of natural enemies and their prey in agroecosystems. His thesis has focused on the direct and indirect effects that occur when a generalist predator has access to multiple prey items and how those interactions ultimately can affect predation of a target pest. Jason’s work has been funded primarily by an EPA Science to Achieve Results Fellowship as well as through two fellowships from the University of Minnesota Graduate School. His research experiences at Minnesota and as an undergraduate student at the University of Wisconsin have thus far resulted in six publications, four additional publications in review, and ten presentations at national and branch meetings. Jason has a strong interest in teaching, having co-developed and taught three new graduate level courses and given guest lectures in others. He has been active professionally and has served as Chair of the NCB Student Affairs Committee and has been a member of the Long Range Planning Committee.

# PROGRAM

**Sunday, March 24, 2002**

## **Registration**

10:00 AM - 6:00 PM

Big Ten Room A

## **NCB Executive Committee**

### **Business Meeting**

8:00 - Noon

Room 107

## **Symposium: Using Insects in Science Based Inquiry**

*Organizers:* Tiffany Heng-Moss and Marion Ellis

1:00 - 5:00 PM

John Willy Room

## **BCE Symposium: Future Trends in Cutting Edge**

### **Research in Entomology**

*Organizer:* Shripat T. Kamble

1:00 - 5:30 PM

Room 103AB

## **Insect Photo Salon**

6:30 - 7:45 PM

*Host:* Phil Sloderbeck

Room 103AB

## **Linnaean Games**

8:00 - 10:00 PM

*Gamesmaster:* Marlin Rice

Big Ten Room A

## **Poster Set Up**

**All Posters** (Student Competition & Submitted)

4:00 - 8:00 PM

Big Ten Room A

	<b>Sunday, 24 March</b>	<b>Monday, 25 March</b>
<b>Time</b>	Registration (10:00-6:00) Big Ten Room A	Registration (7:30-5:00) Big Ten Room A
<b>M O R N I N G</b>	NCB Executive Committee Business Meeting (8:00-noon) Room 107	Opening Session, Awards & Preliminary Business Meeting (8:30-10:30) Big Ten Room BC
		Student Competition Papers (Four Sections: 10:45-12:30) 1) Room 106 2) Lincoln Room 3) Room 103AB 4) Room 105AB
<b>A F T E R N O O N</b>	Insects for Scientific Inquiry (1:00-5:00) John Willy Room	U.S. GAO Report on IPM (President's Symposium) (1:30-4:30) Auditorium
	Future Trends in Entomology (1:00-5:30) Room 103AB	Systematics and Biodiversity (1:30-5:00) Lincoln Room
		Submitted Papers (Sections A, B & C: 1:30-4:45) Room 106
<b>E V E N I N G</b>	Insect Photo Salon (6:30-7:45) Room 103AB	Linnaean Games (6:30-8:30) Big Ten Room A
	Linnaean Games (8:00-10:00) Big Ten Room A	Student Recruitment & Employment Mixer (8:30-10:30) Big Ten Room B
	Poster Setup (4:00-8:00) Big Ten Room A	Poster Session Student Competition and Submitted (1:30 pm - 9:00 pm) (Authors present 4:00-5:00)

<b>Tuesday, 26 March</b>	<b>Wednesday, 27 March</b>
Registration (7:50-5:00) Big Ten Room A	Registration (7:30-noon) Auditorium/Lobby
Insect Photo Salon (6:45-8:00) Room 106	Continental Breakfast (6:30-8:00) Auditorium/Lobby
	Final Business Meeting (8:00-9:00) Auditorium
Organic Fruit Production (8:00-Noon) Auditorium	Tubenrope Workshop (9:00-noon) Room 106
Bt Corn and Corn Insects (8:30-noon) Lincoln Room	NCR-125: Biological Control (9:00-Noon) Lincoln Room
Get Bugged (10:00-noon) Big Ten Room A	Submitted Papers (Sections E & F: 9:00-noon) Auditorium
	SAC Bug House Tour (10:00-noon) Registration Area
Coleopteran Fruit Pests (1:00-4:45) Auditorium	NCB Executive Committee Business Meeting (1:00-5:00) Room 106
Extension Entomology (1:30-4:35) Lincoln Room	
Student Award Presentations (6:00-6:45) Big Ten Room A	<b>HAVE A SAFE TRIP HOME!</b>
Linnaean Games 2002 NCB Champs vs Old Timers (6:45 - 7:15) Big Ten Room A	
Branch Mixer (7:15-10:00) Big Ten Room BC	
Poster Session (8:00 am-4:30 pm) (Authors present 3:30-4:30)  Posters down 4:30-6:00	

**March 24, 2002**

**Sunday Afternoon**

**Symposium**

**Using Insects in Science Based Inquiry**

1:00 - 5:00 PM

John Willy Room

***Organizers and Moderators***

**Tiffany Heng-Moss and Marion Ellis**

Department of Entomology

University of Nebraska

Lincoln, NE 68583-0816

- 1:00 001 Introduction and opening remarks.  
**Tiffany M. Heng-Moss**, Department of Entomology, University of Nebraska, Lincoln, NE, 68583
- 1:05 002 Insects and science inquiry at the college level.  
**Daniel K. Young**, 445 Russell Laboratories, University of Wisconsin, Madison, WI, 53706
- 1:35 003 Our Zoo to You: Using insects in inquiry-based instruction with K-12 students.  
**Tiffany M. Heng-Moss**, 202 Plant Industry, University of Nebraska, Lincoln, NE, 68583, Mimi Wickless, 1222 South 27th Street, Folsom Children's Zoo and Botanical Gardens, Lincoln, NE, 68502, Lois Mayo, Lincoln Public Schools, Lincoln, NE
- 2:05 004 WOWBUGS - A model for inquiry - based instruction.  
**Robert Matthews**, Department of Entomology, University of Georgia, Athens, GA, 30602
- 2:35 005 Paying it Forward: Teaching teachers teaching kids.  
**Cathy Bristow**, 332 Natural Science, Michigan State University, East Lansing, MI, 48824, Connie Eisenhart, East Lansing, MI
- 3:05-3:20 Break**

- 3:20 006 Bumble Boosters: A community of learners investigating science with bumble bees.  
**Douglas A. Golick**, 208 Plant Industry Bldg., University of Nebraska, Lincoln, NE, 68583
- 3:50 007 An advanced bug camp for youth focused on teaching science process skills.  
**Maryann Frazier**, 501 Ag Science and Industries Bldg., Penn State University, University Park, PA, 16802
- 4:20 008 The moth of scientific literacy.  
**Martha R. Lutz**, 202 PI Bldg., University of Nebraska, Lincoln, NE, 68583-0816
- 4:50 009 Closing remarks.  
**Marion D. Ellis**, Department of Entomology, University of Nebraska, Lincoln, NE, 68583

**March 24, 2002**  
**Sunday Afternoon**

**BCE Symposium**  
**Future Trends in Cutting Edge Research in**  
**Entomology**  
1:00 - 5:30 PM  
Room 103AB

***Organizer and Moderator***

**Shripat T. Kamble**  
Department of Entomology  
University of Nebraska  
Lincoln, NE 68583-0816

- 1:00 010 Introduction: Future trends in cutting edge research in entomology.  
**Shripat T. Kamble**, 201A PI, Department of Entomology, University of Nebraska, Lincoln, NE, 68583-0816
- 1:05 011 Cutting edge research in insect genetics.  
**Jeff Stuart**, Department of Entomology, Purdue University, West Lafayette, IN, 47907

- 1:35 012 Future trends in insect toxicology research.  
**Ke Dong**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 2:05 013 Trends in insect physiology.  
**Russell Jurenka**, 407 Science II, Iowa State  
University, Ames, IA, 50011-3222
- 2:35 014 New research trends in corn rootworm  
management.  
**Lance Meinke**, Department of Entomology,  
University of Nebraska, Lincoln, NE, 68583-  
0816
- 3:05-3:20 Break**
- 3:20 015 Future trends in application of molecular  
techniques in urban entomology.  
**Michael Scharf**, Department of Entomology,  
Purdue University, West Lafayette, IN, 47907-  
1915
- 3:50 016 Future trends in cutting edge research in turf  
insect control.  
**Timothy Gibb**, Department of Entomology,  
Purdue University, West Lafayette, IN, 47907
- 4:20 017 Future trends in cutting edge research in  
transgenic entomology.  
**Ty Vaughn**, Agricultural Sector-Insect Control,  
Monsanto Inc, Chesterfield, MO, 63198
- 4:50 018 Cutting edge research in insect-host plant  
interaction.  
**Gary Felton**, Department of Entomology, The  
Pennsylvania State University, University Park,  
PA, 16802

**March 25, 2002**

**Monday Morning**

**Registration**

7:30 AM - 5:00 PM

Big Ten Room A

**Opening Session, Awards Session and  
Preliminary Business Meeting**

8:00 - 10:30 AM

Big Ten Room BC

**Welcome**

**Call to Order**

**Jon J. Tollefson, President**

North Central Branch

Entomological Society of America

**Local Arrangements Update**

**Chris D. DiFonzo**

Chair, Local Arrangements Committee

**Opening Remarks**

**J. E. McPherson, President**

Entomological Society of America

**ESA Governing Board Report**

**Scott Hutchins**

NCB Representative to the Governing Board

**Entomological Foundation - Comments**

**Paul Borth**

**Award Presentations**

**C. V. Riley Achievement Award**

**John E. Foster**

University of Nebraska

*Presented by: Sonny Ramaswamy*

**National ESA Awards**

*Presented by: Dan Mahr*

**ESA Distinguished Achievement Award  
in Extension**

**Gary Hein**

University of Nebraska

**ESA Distinguished Achievement Award in Teaching**

**Walter Goodman**

University of Wisconsin

**Award For Excellence in Integrated Pest  
Management**

(sponsored by Entomological Foundation and  
Syngenta Crop Protection)

**Mike Gray**

University of Illinois

**John Henry Comstock Graduate Student Award**

**Andrew B. T. Smith**

University of Nebraska-Lincoln

*Presented by: Ian MacRae*

**NCB Graduate Scholarship Award**

**Jason P. Harmon**

University of Minnesota

*Presented by: Ian MacRae*

**Entomology Educational Project Awards**

Sponsored by The Board Certified Entomologists  
of Mid-America

*Presented by: Phil Sloderbeck*

**WWW-Site**

**Marine Insects**

(<http://www.unk.edu/marineinsects>)

**W. Wyatt Hoback**, Department of Biology, University of  
Nebraska-Kearney

**Leon G. Higley**, Department of Entomology, University of  
Nebraska-Lincoln

**Lanna Cheng**, Scripps Oceanographic Institute, San Diego,  
California

**Notebook**  
**Exploring Urban Integrated Pest Management:  
Activities and Resources for Teaching K-6**

**Erica Jenkins**  
Michigan State University

**Insect Photo Salon Winners**  
*Presented by: Phil Sloderbeck*

**President's Address**  
**Jon Tollefson**

**Preliminary Business Meeting**

**March 25, 2002**  
**Monday Morning**

**Submitted Papers**  
**Student Competition**  
**Ph. D.**

Sections A, B & Cb-f  
10:45 AM - 12:30 PM  
Room 106

**Moderator: Tiffany Heng-Moss**  
Department of Entomology  
University of Nebraska  
Lincoln, NE 68583

- 10:45 019 Host race formation in a species of gall wasp (Hymenoptera: Cynipidae: *Antistrophus rufus*) feeding on native prairie forbs (Asteraceae: *Silphium*).  
**John F. Tooker** and Lawrence M. Hanks, 320 Morrill Hall, 505 S. Goodwin Ave., University of Illinois at Urbana-Champaign, Urbana, IL, 61801

- 10:57 020 Evaluation of a management tactic for bean pod mottle virus.  
**Rayda K. Krell**, Larry P. Pedigo, John H. Hill and Marlin E. Rice, Department of Entomology, 103 Insectary, Iowa State University, Ames, IA, 50011
- 11:09 021 Site-specific management of green peach aphids in seed potato—Windows of opportunity for targeted application.  
**Matthew W. Carroll**, Ian V. MacRae, Robert A. Suranyi, Edward B. Radcliffe and David Ragsdale, 1980 Folwell Ave, 219 Hodson Hall, University of Minnesota, St. Paul, MN, 55108
- 11:21 022 Temporal and spatial variation in the relative abundance of the grape berry moth (*Endopiza viteana*).  
**Natalia Botero-Garces** and Rufus Isaacs, 243 Natural Science Building, Michigan State University, East Lansing, MI, 48824
- 11:33 023 Frequency and distribution of anthers on milkweed plants in cornfields.  
**Patricia L. Anderson**, 103 Genetics Lab, Iowa State University, Ames, IA, 50010, Richard L. Hellmich and Leslie C. Lewis, Iowa State University, 102 Genetics Lab, USDA-ARS Corn Insects and Crop Genetics Unit, Ames, IA, 50011
- 11:45 024 Cuticular hydrocarbons as contact pheromones of longhorned beetles.  
**Matthew D. Ginzl** and Lawrence M. Hanks, 505 S. Goodwin Avenue, 320 Morrill Hall, University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 11:57 025 Climatic suitability for the gypsy moth pathogen *Entomophaga maimaiga* in the North Central region.  
**Nathan W. Siegart**, Deborah G. McCullough and Jeff A. Andresen, Department of Geography, 417 Natural Science Building, Michigan State University, East Lansing, MI, 48824, Robert C. Venette, Department of Entomology, 219 Hodson Hall, University of Minnesota, St. Paul, MN, 55108

- 12:09 026 Sex-linked pupal size, weight, and emergence timing in the sugarbeet root maggot (Diptera: Otitidae) and observations on oviposition behavior.  
**Ayanava Majumdar**, Mark A. Boetel and Robert J. Dregseth, Department of Entomology, 202 Hultz Hall, North Dakota State University, Fargo, ND, 58105
- 12:21 027 Prediction of future dispersion of corn rootworm based on spatio-temporal consistency.  
**Yong-Lak Park** and Jon J. Tollefson, Department of Entomology, Iowa State University, Ames, IA, 50010

**March 25, 2002**

**Monday Morning**

**Submitted Papers  
Student Competition**

**Ph. D.**

Sections Ca & F

10:45 AM - 12:30 PM

Lincoln Room

**Moderator: Mark Boetel**

Department of Entomology  
North Dakota State University  
Fargo, ND 58105

- 10:45 028 Alfalfa blotch leafminer in Illinois.  
**Jonathan G. Lundgren**, 320 Morrill Hall; 505 S. Goodwin Avenue, University of Illinois, Urbana, IL, 61802, Robert N. Wiedenmann, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL, 61820
- 10:57 029 Conservation biological control of evergreen bagworms (Lepidoptera: Psychidae): Relative roles of vertebrate and invertebrate natural enemies.  
**Jodie A. Ellis** and Lawrence M. Hanks, 320 Morrill Hall, 505 S. Goodwin Avenue, University of Illinois, Urbana, IL, 61801

- 11:09 030 Development of phenological models for *Apthona* spp. introduced to control leafy spurge. **Luke C. Skinner** and David W. Ragsdale, Department of Entomology, 1980 Folwell Ave, University of Minnesota, St. Paul, MN, 55108, Monika Chandler, 90 West Plato Blvd, Minnesota Department of Agriculture, St. Paul, MN, 55107
- 11:21 031 Resistance to methamidophos of the green peach aphid (Homoptera: Aphididae) from potato seed production and commercial potato areas in the Pacific Northwest. **David Mota-Sanchez**, 243 Natural Science Building, Department of Entomology and CIPS, Michigan State University, East Lansing, MI, MI, 48824, Mark E. Whalon, B-11 Center for Integrated Plant Systems, Department of Entomology and CIPS, Michigan State University East Lansing, MI, 48824, Keith S. Pike and George Graf, 24106 N. Bunn Road, Washington State University, Prosser, WA, 99350-9687
- 11:33 032 Movement of southwestern and European corn borer (Lepidoptera: Crambidae) moths from refuge fields into large Bt-corn fields. **Jawwad A. Qureshi**, Lawrent L. Buschman, Randall A. Higgins, Phillip E. Sloderbeck, James E. Throne and Sonny B. Ramaswamy, 123 West Waters Hall, Department of Entomology, Kansas State University, Manhattan, KS, 66506
- 11:45 033 Sublethal effects of transgenic corn on the dispersal and fecundity of western corn rootworms. **Ted A. Wilson** and Jon J. Tollefson, 17 Insectary, Iowa State University, Ames, IA, 50011
- 11:57 034 Control of potato tuber moth in field and storage in Egypt with Bt-transgenic potato lines. **Francisco Santos-Gonzalez**, Edward J. Grafius, Walter L. Pett and Dave S. Douches, Department of Crop and Soil Science, Michigan State University, East Lansing, MI, 48823, Madgi A. Madkour and Taymour El-Nasr, 9 Gamaa Street, Agricultural Genetic Engineering Research Institute, Giza, Giza, Egypt, 12619

- 12:09 035 Is popcorn a suitable refuge plant for resistance management of *Ostrinia nubilalis* (Hübner) and the *Diabrotica* complex?  
**Colothdian D. Tate**, 103 Genetics Lab, Iowa State University, Ames, IA, 50014, Richard L. Hellmich and Leslie C. Lewis, Iowa State University, 106 Genetics Lab, USDA-ARS Corn Insects and Crop Genetics Research Unit, Ames, IA, 50011
- 12:21 036 A GIS study of the influence of landuse on Japanese beetle trap catches.  
**CANCELLED**  
 Randy M. Hamilton, Bill R. Foster, Timothy J. Gibb and Cliff S. Sadof, 1158 Smith Hall, Purdue University, West Lafayette, IN, 47907

**March 25, 2002**

**Monday Morning**

**Submitted Papers  
 Student Competition  
 Undergraduate and M. S.**

Sections Ca-c & Ce-f  
 10:45 AM - 12:30 PM  
 Room 103AB

**Moderator: Ian MacRae**  
 Department of Entomology  
 University of Minnesota  
 Crookston, MN 56716

- 10:45 037 Effect of six insecticides on survival of *Macrocentrus linearis* (Nees.) (Hymenoptera: Braconidae) a parasitoid of the obliquebanded leafroller, *Choristoneura rosaceana* (Harris) (Lepidoptera: Tortricidae).  
**Tammy K. Wilkinson** and Larry J. Gut, 204 Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824, William C. Kauffman, 2534 South 11th St., USDA APHIS Niles, Plant Protection Center, Niles, MI, 49120, Douglas A. Landis, 204 Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824

- 10:57 038 Host density and agricultural landscape complexity: impacts on parasitoid community responses to *Pseudaletia unipuncta* Haworth in Michigan.  
**Alejandro C. Costamagna**, 204 Center of Integrated Plant Systems, Department of Entomology, Michigan State University, East Lansing, MI, 48824, Fabián M. Menalled, 308 National Tilth Laboratory, Department of Agronomy, Iowa State University, Ames, IA, 50011, Paul C. Marino, Department of Biology, University of Charleston, Charleston, SC, 29424, Doug A. Landis, 204 Center of Integrated Plant Systems, Department of Entomology, Michigan State University, East Lansing, MI, 48824
- 11:09 039 Mark, release and recapture of *Harmonia axyridis* (Pallas) (Coleoptera: Coccinellidae) in Wisconsin soybeans.  
**Bob A. Ellingson** and David B. Hogg, 437 Russell Labs, 1630 Linden Dr., Department of Entomology, University of Wisconsin-Madison, Madison, WI, 53706
- 11:21 040 Mid-season foliar and ground-dwelling natural enemies: impact on soybean aphid, *Aphis glycines* Matsumura, populations.  
**Tyler Fox** and Douglas A. Landis, 204 Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824
- 11:33 041 The effect of bean pod mottle virus inoculation at various growth stages on soybean seed discoloration and yield.  
**David L. Dorhout**, Rayda K. Krell, Larry P. Pedigo and John H. Hill, Department of Plant Pathology, 403B Bessey Hall, Iowa State University, Ames, IA, 50011

- 11:45 042 Soybean aphid host range and virus transmission efficiency.  
**Robbie J. Alleman**, Room 237 1630 Linden Drive, University of Wisconsin, Madison, WI, 53706, Craig R. Grau, 1630 Linden Drive, University of Wisconsin-Madison, Madison, WI, 53706, David B. Hogg, Room 237, 1630 Linden Drive, University of Wisconsin, Madison, WI, 53706
- 11:57 043 Ground beetle species differ in their use of wet meadow-cottonwood forest ecotone along the Platte River in south central Nebraska.  
**Justin R. Krahulik** and W. Wyatt Hoback, Department of Biology, Bruner Hall of Science, 905 West 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- 12:09 044 Lignin-based formulations to encapsulate *Beauveria bassiana* for protection against simulated solar energy.  
**Katherine M. Girsch** and Robert W. Behle, 1815 N. University St., USDA-ARS, Peoria, IL, 61604-3999
- 12:21 045 Development of bioinsecticide methodology for sugarbeet root maggot (Diptera: Otitidae) management.  
**Nyle B. Jonason** and Mark A. Boetel, Department of Entomology, 202 Hultz Hall, North Dakota State University, Fargo, ND, 58105, Larry G. Campbell, Northern Crop Science Laboratory, USDA-ARS, Fargo, ND, 58105, Larry J. Smith, Northwest Research and Outreach Center, University of Minnesota, Crookston, MN, 56716, Stefan T. Jaronski, Northern Plains Agricultural Research Center, USDA-ARS, Sidney, MT, 59270

**March 25, 2002**

**Monday Morning**

**Submitted Papers**

**Student Competition**

**Undergraduate and M.S.**

Sections Cd & F

10:45 AM - 12:30 PM

Room 105AB

**Moderator: Billy Fuller**

Department of Plant Science

South Dakota State University

Brookings, SD 57007

- 10:45 046 Flies in the soup and maggots in the marmalade: A laboratory exercise to investigate food contamination by insects.  
**Megan Jehorek** and W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- 10:57 047 New records of carrion beetles in Nebraska reveal increased range of American burying beetle.  
**Daniel G. Snethen**, Little Wound High School, Colome, SD, 57528, Andrew A. Bishop and W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- 11:09 048 The effect of corn phenology on establishment success of western corn rootworm larvae.  
**Yvonne M. Schweikert**, 204 Curtis Hall, University of Missouri, Columbia, MO, 65211-7020, Bruce E. Hibbard, 204 Curtis Hall, University of Missouri, USDA-ARS, Columbia, MO, 65211
- 11:21 049 Potential tritrophic interactions in a decomposition food chain.  
**Erin E. Hladilek** and David A. Andow, 1980 Folwell Ave. , 219 Hodson Hall, University of Minnesota, St. Paul, MN, 55108

- 11:33 050 Adult habitat utilization by four *Diabrotica* species at prairie-corn interfaces.  
**Laura A. Campbell** and Lance J. Meinke, 202 Plant Industry, University of Nebraska-Lincoln, Lincoln, NE, 68583-0816
- 11:45 051 Second generation European corn borer damage reduces potato yield of some varieties in south central Nebraska.  
**Jesse R. Ziems** and W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849, Thomas E. Hunt, Haskell Agricultural Laboratory, 57905 866 Road, University of Nebraska at Lincoln, Concord, NE, 68728
- 11:57 052 Sand chafer phenology in south central Nebraska may reveal control options.  
**Ben J. Zechmann**, Jesse Ziems and W. Wyatt Hoback, Department of Biology, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- 12:09 053 Relationships among potato leafhoppers, glandular-haired alfalfa, and timing of insecticide application.  
**Reid B. Durtschi**, David B. Hogg and John L. Wedberg, 237 Russell Labs, 1630 Linden Dr., University of Wisconsin-Madison, Madison, WI, 53706
- 12:21 054 Host plant phenology effects on seasonal abundance and activity of tarnished plant bugs (Heteroptera: Miridae) in the Red River Valley.  
**Justin O. Knott**, Phillip A. Glogoza and Mark A. Boetel, Department of Entomology, 202 Hultz Hall, North Dakota State University, Fargo, ND, 58105

**March 25, 2002**  
**Monday Afternoon**

**President's Symposium**  
**U.S. GAO Report on IPM: A North Central**  
**Response**

1:30 - 4:30 PM  
Auditorium

*Organizers and Moderators*

**Susan T. Ratcliffe** and **Michael E. Gray**

University of Illinois  
Department of Crop Sciences  
1102 S. Goodwin Avenue  
S-316 Turner Hall  
Urbana, IL 61801

- 1:30    055    Introduction and opening remarks.  
**Susan T. Ratcliffe** and Michael E. Gray,  
Department of Crop Sciences, University of  
Illinois, Urbana, IL, 61801
- 1:45    056    The GAO report on IPM: Successes and  
failures.  
**Chuck Barchok**, 441 G. Street N.W., Room  
2078, U.S. GAO Office, Washington, D.C.,  
20548
- 2:15    057    Vegetable IPM: Implementation without  
documentation?  
**Rick Weinzierl**, 1102 S. Goodwin Avenue,  
University of Illinois, Urbana, IL, 61801
- 2:30    058    Regional IPM: The center approach.  
**Larry Olsen**, B18 National Food Safety &  
Toxicology Building, Michigan State  
University, East Lansing, MI, 48824
- 2:45    059    Fruit IPM: Alive and well in the North Central  
region.  
**David Epstein**, B18 National Food Safety &  
Toxicology Building, Michigan State  
University, East Lansing, MI, 48824
- 3:00-3:15    Break**

- 3:15 060 Urban IPM: Progress and challenges.  
**Clifford S. Sadof**, Department of Entomology,  
 1158 Smith Hall, Purdue University, West  
 Lafayette, IN, 47906-1158
- 3:30 061 Field Crop IPM: The GMO debate.  
**Kevin Steffey**, 1102 S. Goodwin Avenue,  
 University of Illinois, Urbana, IL, 61801
- 3:45 062 Weed IPM: Herbicide use or abuse?  
**Michael Owen**, 2104 L Agronomy, Iowa State  
 University, Ames, IA, 50011
- 4:00 063 Questions and panel discussion.  
**Michael E. Gray** and Susan T. Ratcliffe,  
 Department of Crop Science, University of  
 Illinois, Urbana, IL, 61801

**March 25, 2002**

**Monday Afternoon**

**Symposium**

**Systematics and Biodiversity Research in the  
 Northcentral Region**

1:30 - 5:00 PM

Lincoln Room

***Organizer and Moderator***

**Daniel K. Young**

Department of Entomology

445 Russell Laboratories

University of Wisconsin

Madison, WI 53706

- 1:30 064 Symposium overview.  
**Daniel K. Young**, Department of Entomology,  
 University of Wisconsin, Madison, WI, 53706
- 1:35 065 The ground beetles (Coleoptera: Carabidae) of  
 northeastern Iowa: Habitat utilization patterns.  
**Kirk J. Larsen**, 700 College Drive, Luther  
 College, Decorah, IA, 52101

- 1:55 066 The Scarabaeoidea (Coleoptera) of Wisconsin: Species inventory, taxonomic keys, distributions, and natural histories.  
**Nadine L. Kriska**, 445 Russell Labs, 1630 Linden Drive, University of Wisconsin-Madison, Madison, WI, 53706
- 2:15 067 A generic level revision of the Macroductylini (Coleoptera: Scarabaeidae, Melolonthinae).  
**Kerry Katovich**, 445 Russell Labs, 1630 Linden Drive, University of Wisconsin-Madison, Madison, WI, 53706
- 2:35 068 The sap and short-winged flower beetles (Coleoptera: Nitidulidae and Kateretidae) of Wisconsin.  
**Michele B. Price**, Rm. 445, Russell Labs, 1630 Linden Dr., University of Wisconsin - Madison, Madison, WI, 53706
- 2:55-3:15 Break**
- 3:15 069 The tumbling flower beetles (Coleoptera: Mordellidae) of Wisconsin: A faunistic survey in progress.  
**Anneke E. Lisberg**, 445 Russell Labs, 1630 Linden Dr., University of Wisconsin, Madison, WI, 53706
- 3:35 070 The Lamiinae (Coleoptera: Cerambycidae) of Wisconsin: Survey approach and current status.  
**Krista L. Lambrecht**, 538 West Main St. #206, University of Wisconsin-Madison, Madison, WI, 53703
- 3:55 071 Partitioning species diversity across scales: Insights into local and regional patterns of forest insect biodiversity.  
**Thomas O. Crist**, Department of Zoology, Miami University, Oxford, OH, 45056
- 4:15 072 Midwest Mutillidae: A preliminary survey of the velvet ants of Wisconsin.  
**Craig M. Brabant**, 445 Russell Labs, 1630 Linden Drive, University of Wisconsin-Madison, Madison, WI, 53706

- 4:35 073 Airplanes, sand dunes, and moths (Insecta: Lepidoptera).  
**Eric Metzler**, 1241 Kildale Square North, Columbus, OH, 43229
- 4:55 074 An introduction to the milkweed fauna of Wisconsin.  
**Andrew H. Williams**, 445 Russell Labs, 1630 Linden Dr., Department of Entomology, University of Wisconsin, Madison, WI, 53706

**March 25, 2002**  
**Monday Afternoon**

**Submitted Papers**  
**Sections A, B & C**  
1:30 - 4:45 PM  
Room 106

**Moderator: W. Wyatt Hoback**  
Department of Biology  
University of Nebraska-Kearney  
Kearney, NE 68849

- 1:30 075 Systematics of Eastern Hemisphere Micronectinae (Heteroptera: Corixidae): A progress report on studies in the Indomalaysian and Oceania realms.  
**Paul P. Tinerella** and David A. Rider, 202 Hultz Hall, University Station, North Dakota State University, Fargo, ND, 58105
- 1:42 076 Differential counts within novel-association host-parasitoid combinations.  
**Marianne Alleyne**, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL, 61820, James B. Nardi, Department of Entomology, 320 Morrill Hall, University of Illinois at Urbana-Champaign, Urbana, IL, 61801, Robert N. Wiedenmann, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL, 61820

- 1:54 077 A general, bottom-up model for predicting outcomes in classical biological control of insect pests.  
**Paul Gross**, 2840 Sheridan Road, National-Louis University, Evanston, IL, 60201,  
Bradford A. Hawkins, Department of Ecology and Evolutionary Biology, University of California-Irvine, Irvine, CA, 92697, Howard V. Cornell, Department of Biological Sciences, University of Delaware, Newark, DE, 19716, Balakrishna Hosmane, Department of Statistics, Northern Illinois University, DeKalb, IL, 60115
- 2:06 078 Conservation biological control of pine needle scale (Homoptera: Diaspididae) in Christmas tree plantations.  
**Peter F. Reagel** and Lawrence M. Hanks, 320 Morrill Hall 505, South Goodwin Ave., University of Illinois at Urbana-Champaign, Urbana, IL, 61801
- 2:18 079 Biological control of purple loosestrife (*Lythrum salicaria* L.) in Michigan.  
**Douglas A. Landis**, Donald C. Sebolt and Michael Klepinger, 334 Natural Resources Building, Michigan State University, East Lansing, MI, 48824
- 2:30 080 Cost-effective crop oil can reduce PVY spread in seed potatoes.  
**Robert A. Suranyi**, Matthew W. Carroll, David W. Ragsdale, Edward B. Radcliffe and Ian V. MacRae, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul, MN, 55108
- 2:42 081 Advances in factors responsible for host plant resistance in elms (*Ulmus* spp.) for defoliating insect pests.  
**Fredric D. Miller**, 1215 Houbolt Road, Joliet Junior College, Joliet, IL, 60431, George Ware, 4100 Illinois Route 53, The Morton Arboretum, Lisle, IL, 60532

- 2:54 082 Distribution and behavior of the multicolored Asian lady beetle, *Harmonia axyridis* (Pallas).  
**Mark E. Headings**, 1328 Dover Road, The Ohio State University, Agric. Tech. Institute, Wooster, OH, 44691
- 3:06-3:21 Break**
- 3:21 083 Remotely sensing potential overwintering habitat of the soybean aphid, *Aphis glycines* (Homoptera: Aphididae).  
**Ian V. MacRae**, Robert Venette and Matthew Carroll, Dept. of Entomology, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul, MN, 55108
- 3:33 084 Visual and chemical factors influencing oviposition by *Anopheles gambiae*.  
**Alicia S. King**, Department of Entomology, 243 Natural Science Building, Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824, James R. Miller, Department of Entomology, 203 Center for Integrated Plant Systems, Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824, Edward D. Walker, Department of Entomology, 243 Natural Science Building, Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824
- 3:45 085 A laboratory exercise to teach students about microbial pesticides and nontarget effects.  
**Julie J. Shaffer** and W. Wyatt Hoback, 905 W. 25th, University of Nebraska at Kearney, Kearney, NE, 68849
- 3:57 086 Effects of elevated CO<sub>2</sub> across three trophic levels.  
**David N. Karowe**, 3155 Wood Hall, Western Michigan University, Kalamazoo, MI, 49008
- 4:09 087 Patterns in the magnitude of stream insect drift: A meta-analysis.  
**Steven L. Kohler**, 3938 Wood Hall, Western Michigan University, Kalamazoo, MI, 49008

- 4:21 088 Venereal transmission of mites influences mating behavior in a hunting wasp.  
**David P. Cowan**, Department of Biological Sciences, Western Michigan University, Kalamazoo, MI, 49008
- 4:33 089 Single-locus complementary sex determination in the solitary wasp, *Euodynerus foraminatus*.  
**Julie K. Stahlhut** and David P. Cowan, Biological Sciences, Wood Hall, 1903 W. Michigan Ave., Western Michigan University, Kalamazoo, MI, 49008
- 4:45 090 Effects of *Wolbachia* on host evolutionary genetics.  
**David D. Shoemaker** and Caroline Militzer, 3149 Wood Hall, Department of Biological Sciences, Western Michigan University, Kalamazoo, MI, 49008, John Jaenike, Department of Biology, University of Rochester, Rochester, NY, 14627
- 4:57 091 Effect of plant chemical defense on gregarious larvae of the milkweed specialist *Euchetes egle*.  
**Stephen B. Malcolm** and Betsy Goodrich, 3151 Wood Hall, Dept. Biological Sciences, Western Michigan University, Kalamazoo, MI, 49008, David Ruff II, Dept. Biological Sciences, Oakwood College, Huntsville, AL, 35896

**March 25, 2002**  
**Monday Afternoon**

**Submitted Posters**  
**Student Competition**  
**Ph.D., M.S. and Undergraduate**

All Sections  
1:30 PM - 9:00 PM  
(Authors present 4:00 - 5:00 PM)  
Big Ten Room A

- D092 Genetic variation in native and introduced populations of soybean aphid.  
**Erin Hodgson**, Carrie Casmey, Alex Helm, Susan Weller and David Ragsdale, 219 Hodson, 1980 Folwell Ave., University of Minnesota, St. Paul, MN, 55108
- D093 The aquatic and semiaquatic true bugs (Heteroptera: Gerromorpha, Nepomorpha, and Leptopodomorpha) of North Dakota.  
**Paul P. Tinerella**, 202 Hultz Hall, University Station, North Dakota State University, Fargo, ND, 58105
- D094 Changes in midgut proteinase activity of European corn borer (Lepidoptera: Crambidae) resistant to *Bacillus thuringiensis* toxin.  
**Hua Rong Li**, Department of Entomology, Kansas State University, Manhattan, KS, 66506, Brenda Oppert, 1515 College Avenue, Grain Marketing and Production Research Center, USDA-ARS, Manhattan, KS, 66502, Randall A. Higgins, Fangneng Huang and Lawrent L. Buschman, Department of Entomology, Kansas State University, Manhattan, KS, 66506
- D095 Corn pollen expressing the coleopteran-specific Cry3Bb toxin does not affect the fitness of *Coleomegilla maculata*.  
**Jonathan G. Lundgren**, 320 Morrill Hall, 505 S. Goodwin Avenue, University of Illinois, Urbana, IL, 61802, Robert N. Wiedenmann, 607 East Peabody Drive, Illinois Natural History Survey, Champaign, IL, 61820

- D096 Potential North American range for an invasive exotic coccinellid.  
**Robert L. Koch**, Robert C. Venette and William D. Hutchison, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul, MN, 55108
- D097 Spatial variation in species diversity and composition of forest Lepidoptera: Patterns and implications for conservation.  
**Keith S. Summerville**, Department of Zoology, Miami University, Oxford, OH, 45056, Michael J. Boulware, 2101 East River Terrace, Minneapolis, MN, 55414, Joseph A. Veech and Thomas O. Crist, Department of Zoology, Miami University, Oxford, OH, 45056
- D098 What role does the phenological asynchrony of corn and soybean development play in the egg-laying behavior of the western corn rootworm variant in east central Illinois?  
**Christopher M. Pierce** and Michael E. Gray, Department of Crop Sciences, S-318 Turner Hall, MC-046; 1102 S. Goodwin Avenue, University of Illinois, Urbana, IL, 61801
- D099 Biodiversity of nocturnal Cerambycidae in a hardwood forest.  
**Jeffrey D. Bradshaw** and Marlin E. Rice, 110 Insectary, Iowa State University, Ames, IA, 50010
- D100 Impact of weeds and crop residues on black cutworm damage in Ontario no-till corn fields.  
**Sigrun A. Kullik**, Arthur W. Schaafsma and Mark K. Sears, Bovey Building, University of Guelph, Guelph, ON, N1G 2W1
- D101 Effect of transgenic corn for corn rootworm control on nontarget microarthropods and nematodes.  
**Mohammad A. Al-Deeb** and Gerald E. Wilde, 123 Waters Hall, Kansas State University, Manhattan, KS, 66506

- D102 Comparison of chlorophyll and carotenoid contents in 'Betta' wheat isolines.  
**Tulio B. Macedo** and Tiffany M. Heng-Moss, 202 Plant Industry Building, Department of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583, Xinzhi Ni, Department of Entomology, Montana State University, Bozeman, MT, 59717, John P. Markwell and Frederick P. Baxendale, 202 Plant Industry Building, Department of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583, Sharron S. Quisenberry, Department of Entomology, Montana State University, Bozeman, MT, 59717
- D103 Effect of cultural practices on Japanese beetle in Michigan blueberries.  
**Zsofia Szendrei**, Nikhil Mallampalli and Rufus Isaacs, 201 CIPS, Michigan State University, East Lansing, MI, 48824
- D104 Seasonal variation of nepetalactone isomers found in catnip, *Nepeta cataria*.  
**Gretchen E. Schultz**, Department of Entomology, 115 Insectary, Iowa State University, Ames, IL, 50010, Chris Peterson, 101 Forestry Sciences Lab, 201 Lincoln Green, USDA Forest Service, Starkville, MS, 39759, Jason B. Belden and Joel Coats, Department of Entomology, 116 Insectary, Iowa State University, Ames, IA, 50011
- D105 Characterization of Bt resistance inheritance in *Ostrinia nubilalis*.  
**Analiza P. Alves**, Blair D. Siegfried and Terence Spencer, 202 Plant Industry, Department of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583-0816
- D106 Detection and quantification of fluvalinate resistance in *Varroa* mites in Nebraska.  
**Paula A. Macedo**, Marion D. Ellis and Blair D. Siegfried, 202 Plant Industry Bldg, University of Nebraska-Lincoln, Lincoln, NE, 68583

- D107 White-lined sphinx (*Hyles lineata*) host range tests reveal specificity to purple loosestrife (*Lythrum salicaria*) compared to crops and native hosts.  
**Brian C. Peterson** and Harold Nagel, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- D108 New host plant and vector relationships for BPMV.  
**Brent J. Werner**, Rayda K. Krell and Larry P. Pedigo, 117 Insectary, Iowa State University, Ames, IA, 50011
- D109 Comparative toxicities of three insecticides to the soybean stem borer, *Dectes texanus texanus* (Coleoptera, Cerambycidae) adults.  
**Michelle Kaczmarek**, Kun Yan Zhu, Randy Higgins and Phil Sloderbeck, 1415 Normandy Pl, Apt 118, Kansas State University, Manhattan, KS, 66502
- D110 The effects of artificial light on carrion beetles, Coleoptera: Silphidae.  
**Jonathan Doyle**, P.O. Box 500, University of Nebraska at Kearney, Kyle, SD, 57752, Daniel G. Sneath, RR 3, Box 67, University of Nebraska-Lincoln, Colome, SD, 57528, W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- D111 Dark feeding by *Cicindela fulgida* (Coleoptera: Cicindelidae) reveals use of alternative senses by a visual predator.  
**John J. Riggins** and W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849

- D112 Improved method for assaying transgenic pollen effects on *Ostrinia nubilalis* larvae.  
**Kate T. Kronback**, Genetics Laboratory c/o Insectary, Iowa State University, USDA, ARS Corn Insects and Crop Genetics Research Unit, Ames, IA, 50011, Patricia L. Anderson, Iowa State University, Department of Entomology, 118 Genetics Laboratory, Ames, IA, 50011, Richard L. Hellmich, Jeanette M. Dyer and Leslie C. Lewis, Genetics Laboratory c/o Insectary, Iowa State University, USDA, ARS Corn Insects and Crop Genetics Research Unit, Ames, IA, 50011
- D113 Microhabitat preference of the dominant members of the coccinellid complex in an agricultural landscape.  
**Charles H. McKeown**, Manuel Colunga-Garcia and Stuart Gage, 235 Natural Science, Michigan State University, E. Lansing, MI, 48824
- D114 Temporal niche separation in two exotic coccinellids.  
**Charles H. McKeown**, Manuel Colunga-Garcia and Stuart Gage, 931 Horton, Michigan State University, E. Lansing, MI, 48824
- D115 Bacterial inhibition by carrion beetle secretions track phylogenetic relationships.  
**Randall L. Goldfish**, W. Wyatt Hoback and Julie J. Shaffer, 905 W. 25th, University of Nebraska at Kearney, Kearney, NE, 68849
- D116 Evaluation of some surface-active agents for their synergistic/additive effects on the efficacy of *Beauveria bassiana* against *Tribolium castaneum*.  
**Waseem Akbar**, 1605 Roof Dr. 31, Kansas State University, Manhattan, KS, 66502, Jeff Lord, 1515 College Avenue, USGMPRC, Manhattan, KS, 66502, James Nechols, Dept. of Entomology, Kansas State University, Manhattan, KS, 66502

- D117 A comparison of sampling methods for integrated pest management of insects associated with potato.  
**Kurt Olmer**, Jesse R. Ziems and W. Wyatt Hoback, 905 W. 25th Street, University of Nebraska at Kearney, Kearney, NE, 68849
- D118 Tolerance of Croatian commercial corn hybrids to larval feeding and damage by corn rootworm (Coleoptera: Chrysomelidae).  
**Stephanie N. Miller**, SPO 1571, Luther College, 700 College Dr., Luther College, Decorah, IA, 52101
- D119 Growth and yield for conventional and added-value soybeans experiencing multiple defoliation.  
**Rodney A. Madsen**, Thomas E. Hunt and Leon G. Higley, Dept. of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583-0816
- D120 Soybean aphid (*Aphis glycines*) survival and fecundity when feeding on dry bean.  
**Kaci J. Agle** and Chris Difonzo, B18 National Food Safety & Toxicology Building, Michigan State University, East Lansing, MI, 48823
- D121 Tarnished plant bug management in June-bearing strawberries.  
**Suzanne J. Wold**, William D. Hutchison and Eric C. Burkness, Department of Entomology, 219 Hodson Hall, 1980 Folwell Avenue, University of Minnesota, St. Paul, MN, 55108
- D122 Grass hosts of the chinch bug, *Blissus occiduus*.  
**Thomas E. Eickhoff**, Frederick P. Baxendale and Terrance P. Riordan, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE, 68583
- D123 Influence of buffalograss management practices on the chinch bug, *Blissus occiduus* (Barber), and its natural enemies.  
**Jeffrey D. Carstens**, Frederick P. Baxendale and Tiffany M. Heng-Moss, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE, 68583

- D124 Extended repellency of catnip and osage orange fruit to the American cockroach.  
**Erica J. Simbro** and Joel R. Coats, 112  
Insectary, Iowa State University, Ames, IA,  
50014
- D125 Invasion of Lyme disease into southwest Michigan: A regional risk assessment.  
**Erik S. Foster**, Edward D. Walker and William T. Morgan, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824, Marta A. Guerra, Special Pathogens  
Branch, Centers for Disease Control and  
Prevention, Atlanta, GA, Uriel Kitron, College  
of Veterinary Medicine, Department of  
Veterinary Pathobiology, University of Illinois,  
Urbana, IL, 61801

**March 25, 2002**  
**Monday Afternoon**

**Submitted Posters**

All Sections

1:30 - 9:00 PM

(Authors present 4:00 - 5:00 PM)

Big Ten Room A

- D126 Effects of salinity and pH on life-history parameters of larval *Aedes* mosquitoes (Insecta: Diptera).  
**Thomas M. Clark** and Benjamin J. Flis, 1700  
Mishawaka Ave., Indiana University, South Bend,  
IN, 46634, Susanna K. Remold, Michigan State  
University, E. Lansing, MI, 48824
- D127 Physiological aspects of the broad pH tolerance of larval *Aedes aegypti* (Insecta: Diptera).  
**Thomas M. Clark** and Benjamin J. Flis, 1700  
Mishawaka Ave., Indiana University, South  
Bend, IN, 46634

- D128 Alternative splicing of the *para* gene generates functionally and pharmacologically distinct sodium channels.  
**Jianguo Tan**, Zhiqi Liu and Yoshiko Nomura, 106 CIPS, Department of Entomology, Michigan State University, East Lansing, MI, 48824, Alan M. Goldin, Department of Microbiology and Molecular Genetics, University of California, Irvine, CA, 92697, Ke Dong, 106 CIPS, Department of Entomology, Michigan State University, East Lansing, MI, 48824
- D129 Sodium channel mutations and pyrethroid resistance.  
**Jianguo Tan** and Zhiqi Liu, Department of Entomology, 106 CIPS, Michigan State University, East Lansing, MI, 48824, Steven M. Valles, Center for Medical, Agricultural and Veterinary Entomology, 1600 SW 23rd Dr., USDA-ARS, Gainesville, FL, 32608, Alan L. Goldin, Department of Microbiology and Molecular Genetics, 240 Medical Science Building B, University of California, Irvine, CA, 92697, Ke Dong, Department of Entomology, 106 CIPS, Michigan State University, East Lansing, MI, 48824
- D130 Survey of Asian longhorned beetle natural enemies in China and North America.  
**Leah S. Bauer**, 1407 S. Harrison Rd., 220 Nisbet Building, USDA Forest Service and Michigan State University, E. Lansing, MI, 48823, Houping Liu, Center for Integrated Plant Systems, Michigan State University, E. Lansing, MI, 48824, Deborah L. Miller, 1407 S. Harrison Rd., 220 Nisbet Building, USDA Forest Service and Michigan State University, E. Lansing, MI, 48823
- D131 Soybean aphid in Indiana.  
**Claire E. Rutledge** and Robert J. O'Neil, 102 Smith Hall, Purdue University, Lafayette, IN, 47907

- D132 Corn flea beetle populations and Stewart's wilt in sweet corn in Illinois in 2001.  
**Kelly A. Cook**, Jerald K. Pataky and Richard A. Weinzierl, Turner Hall, 1102 S. Goodwin Avenue, University of Illinois, Urbana, IL, 61801
- D133 Comparison of community structure of arboreal caterpillars (Lepidoptera) in four tree species of the eastern deciduous forest.  
**Jonathan K. Kahn**, Keith S. Summerville and Thomas O. Crist, Department of Zoology, Miami University, Oxford, OH, 45056, Jon C. Gering, Division of Sciences, Truman State University, Kirksville, MO, 63501
- D134 Chemical ecology of *Oryzaephilus surinamensis* (L). (Coleoptera: Silvanidae) mating behavior and response to food.  
**Gurunanth M. Suryavanshi** and Damon J. Crook, 123 Waters Hall, Kansas State University, Manhattan, KS, 66506, James F. Campbell, 1515 College Ave., USDA ARS, Grain Marketing and Production Research Center, Manhattan, KS, 66502, Sonny B. Ramaswamy, 123 Waters Hall, Kansas State University, Manhattan, KS, 66506
- D135 Using a GIS to illustrate the spatial and temporal dynamics of adult corn rootworms in the South Dakota areawide management site.  
**Bryan W. French**, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006, Laurence D. Chandler, 1307 N. 18th Street, USDA, ARS, RRVARC, Fargo, ND, 58105, Amber A. Beckler and Dave A. Beck, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006
- D136 Dispersal of northern and western corn rootworms in relation to sex, size, and reproductive status in the South Dakota areawide management site.  
**Bryan W. French**, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006, Laurence D. Chandler, 1307 N. 18th Street, USDA, ARS, RRVARC, Fargo, ND, 58105, Leslie Hammack and Dave A. Beck, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006

- D137 Use of transgenic plants to measure insect herbivore movement.  
**Joseph L. Spencer**, Center for Economic Entomology, Natural Resources Bldg, 607 E. Peabody Drive, Champaign, IL, 61820-6917, Timothy R. Mabry, University of Illinois, Department of Crop Sciences, Urbana, IL, 61801, Ty T. Vaughn, 700 Chesterfield Parkway North, Monsanto Company, St. Louis, MO, 63198
- D138 Ground beetle occurrence in rotated fields of Bt corn and soybean in the South Dakota corn rootworm areawide management site.  
**Bryan W. French**, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006, Laurence D. Chandler, 1307 N. 18th Street, USDA, ARS, RRVARC, Fargo, ND, 58105, Dave A. Beck and Michael M. Ellsbury, 2923 Medary Ave., USDA, ARS, NGIRL, Brookings, SD, 57006
- D139 Community structure of soil microarthropods on decomposing Bt- and non-Bt corn residues.  
**Edmond R. Zaborski**, 607 E. Peabody Drive, Illinois Natural History Survey, Champaign, IL, 61821
- D140 Insect ecology and evolution at Western Michigan University.  
**David N. Karowe**, 3155 Wood Hall, Western Michigan University, Kalamazoo, MI, 49008
- D141 Modeling insect dispersal in the landscape.  
**Liyang Zhou**, Beth Bishop, Walter Pett and Edward Grafius, 243 Natural Science Building, Dept. of Entomology, Michigan State University, E. Lansing, MI, 48824
- D142 Pesticides from the past: Using old pesticide containers in teaching and extension.  
**Chris D. DiFonzo**, B18 FSTB, Pesticide Education Program Office, Michigan State University, East Lansing, MI, 48824

- D143 Children learn about pesticide safety in the classroom and at an airport.  
**Rebecca Thompson**, B18 Food Safety and Tox., Michigan State University, East Lansing, MI, 48824, Bruce MacKellar, Michigan State University Extension, Paw Paw, MI, Erica Jenkins, Michigan State University, East Lansing, MI, Rich Hodupp, Michigan State University Extension, Ithaca, MI, Chris DiFonzo, Michigan State University, East Lansing, MI
- D144 Farmer's concerns and perceptions of biotechnology for the corn rootworm.  
**Ted A. Wilson**, Marlin E. Rice and Jon J. Tollefson, 17 Insectary, Iowa State University, Ames, IA, 50011
- D145 The soybean aphid in Iowa: Observations from 2001.  
**Brian Lang**, 911 S. Mill St., Iowa State University Extension, Decorah, IA, 52101, Marlin E. Rice, 103 Insectary, Iowa State University, Ames, IA, 50011
- D146 The effects of high intensity winter grazing of corn residue on the European corn borer.  
**Mark W. Hoard**, 4112 North Water Tower Place, University of Illinois, Mt. Vernon, IL, 62864
- D147 Using synchronous and asynchronous distance learning to teach entomology.  
**Barbara A. Nead-Nylander**, William M. Hendrix and Larry L. Larson, 9330 Zionsville Road, Indianapolis, IN, 46268
- D148 The multicolored Asian lady beetle (*Harmonia axyridis*) as a nuisance pest in households throughout Ohio.  
**Bruce Eisley**, Margaret F. Huelsman, Joe Kovach, Jim Jasinski and Curtis E. Young, 1219 W. Main Cross St., Suite 202, The Ohio State University, Findlay, OH, 45840

- D149 Management of late-season bean leaf beetles in Iowa soybean.  
**Ken Pecinovsky** and Marlin E. Rice, 103 Insectary, Iowa State University, Ames, IA, 50011
- D150 Soybean aphid control and predator preservation.  
**John R. Hinz**, William W. DeWeese, John A. Francis and John D. Wollam, 8400 Corporate Dr., Bayer Corporation, Kansas City, Mo, 64120
- D151 Influence of western corn rootworm larval injury on corn yield.  
**Robert J. Wright** and Terry A. DeVries, P.O. Box 66, University of Nebraska, Clay Center, NE, 68933
- D152 Seasonal emergence of western corn rootworms (Coleoptera: Chrysomelidae) in rotated and continuous cornfields.  
**Matthew E. O'Neal**, 204 CIPS, Michigan State University, East Lansing, MI, 48824, David Meek, 1200 Academy St., Kalamazoo College, Kalamazoo, MI, 49006, Christina DiFonzo and Douglas Landis, 204 CIPS, Michigan State University, East Lansing, MI, 48824
- D153 In-field labeling of western corn rootworm adults with Rubidium.  
**Bradley T. Niimi**, Timothy M. Nowatzki, Blair D. Siegfried, Lance J. Meinke, Thomas E. Hunt and David C. Gosselin, 202 Plant Industry Bldg, University of Nebraska, Lincoln, NE, 68583-0816, Edwin F. Harvey, 113 Nebraska Hall, University of Nebraska-Lincoln, School of Natural Resources, Lincoln, NE, 68583-0517, Kelli Warren, 113 Nebraska Hall, University of Nebraska-Lincoln, School of Natural Resources, Lincoln, NE, 68583-0517

- D154 Evaluating the impact of transgenic corn hybrids developed for insect control on non-target organisms.  
**Laura S. Higgins** and Deanne L. Wright, 7250 NW 62nd Ave., Pioneer Hi-Bred International, Inc., Johnston, IA, 50131
- D155 Assessment of western corn rootworm survival, biology, and emergence when presented a leading transgenic event alone and in combination with selected grassy cornfield weeds.  
**Thomas L. Clark** and Bruce E. Hibbard, Department of Entomology, 1-87 Agriculture Building, University of Missouri, Columbia, MO, 65211
- D156 Development and validation of models predicting the occurrence and spread of organophosphate resistance in Nebraska western corn rootworm populations.  
**Michael A. Caprio**, Department of Entomology, PO Box 9775, Mississippi State University, Starkville, MS, 39762-9775, Timothy M. Nowatzki, Blair D. Siegfried, Lance J. Meinke and Robert J. Wright, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE, 68583-0816, Laurence D. Chandler, PO Box 5677, University Station, USDA ARS RRVARC, Fargo, ND, 58105-5677
- D157 Development of western corn rootworm resistance to PennCap-M and effects on management: Survey of crop consultants from the Phelps County, Nebraska area.  
**Timothy M. Nowatzki**, Robert J. Wright, Blair D. Siegfried and Lance J. Meinke, 202 Plant Industry Building, Dept. of Entomology, University of Nebraska-Lincoln, Lincoln, NE, 68583-0816, Michael A. Caprio, PO Box 9775, Dept. of Entomology, Mississippi State University, Starkville, MS, 39762-9775, Laurence D. Chandler, PO Box 5677, University Station, USDA ARS RRVARC, Fargo, ND, 58105-5677

- D158 Development and maintenance of European corn borer (Lepidoptera: Crambidae) resistance to *Bacillus thuringiensis* Cry9C protein in the lab.  
**Mitch Meehan** and Von Kaster, 2369 330th Street, Garst Seed Company, Slater, IA, 50244, Jon Fischer, 5315 Indigo Way, Aventis Crop Science, Middleton, WI, 53562
- D159 Effect of mulch and chemical treatments on population densities of striped cucumber beetle (Coleoptera: Chrysomelidae), percentages of bacterial wilt, and yield in early-planted muskmelons.  
**Wai-Ki F. Lam**, Rick E. Foster and Sara L. Barber, 4369 North Purdue Road, Southwest Purdue Agricultural Program, Purdue University, Vincennes, IN, 47591
- D160 pH and its effects on key new insecticide formulations: Potential guidelines for the field.  
**Larry L. Larson**, Margaret S. Kempe, Bill H. Hendrix and Barb A. Nead-Nylander, 9330 Zionsville Rd., Dow AgroSciences, Indianapolis, IN, 46268
- D161 INTREPID\* 2F: A Registration and performance update.  
**Gary D. Thompson**, Larry G. Thompson and Jon M. Babcock, 9330 Zionsville Rd, Dow AgroSciences, Indianapolis, IN, 46268
- D162 Proposed changes in the agricultural uses of Lorsban: A North Central perspective.  
**William H. Hendrix, III** and Barb A. Nead-Nylander, 9330 Zionsville Road, Dow AgroSciences, Indianapolis, IN, 46268
- D163 Use of Lorsban 4-E to control the soybean aphid, *Aphis glycines*: A global perspective.  
**William H. Hendrix, III** and Scott C. Ditmarsen, 9330 Zionsville Road, Dow AgroSciences, Indianapolis, IN, 46268, Zhen Wei Yao, Oriental Plaza, No. 1, East Chang An Avenue, Dow AgroSciences China Ltd., Beijing, China, 100738

- D164 Comparison of tebufenozide and methoxyfenozide with broad spectrum insecticides for control of grape berry moth, *Endopiza viteana* (Lepidoptera: Tortricidae). **Keith S. Mason**, Rufus Isaacs and Elly Maxwell, 201 Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824
- D165 Evaluation of systemic insecticides for control of the Asian longhorned beetle. **Therese M. Poland**, Robert A. Haack and Toby R. Petrice, 1407 S. Harrison Rd. Rm. 220, USDA Forest Service, E. Lansing, MI, 48823, RuiTong Gao, Wan Shou Shan, Chinese Academy of Forestry, Beijing, PRC, 100091
- D166 Characterization of protein changes in sorghum challenged by greenbug feeding. **Dana Novak**, Tiffany Heng-Moss, Shauna Bose, Gautam Sarath, Frederick Baxendale and Z B Mayo, 202 Plant Industry, University of Nebraska, Lincoln, NE, 68583
- D167 Insect pest response to glucosinolate-rich varieties of broccoli and cabbage in Illinois. **Catherine E. Eastman**, 172 Natural Resources, 607 E. Peabody, Illinois Natural History Survey, Champaign, IL, 61820, John B. Masiunas, Mosbah M. Kushad and Elizabeth A. Wahle, 260 E.R. Madigan Laboratory, 1201 West Gregory Drive, University of Illinois at Urbana-Champaign, Dept. of Natural Resources and Environmental Sciences, Urbana, IL, 61801

**March 25, 2002**  
**Monday Evening**

**Linnaean Games**

6:30 - 8:30 PM

*Gamesmaster: Marlin Rice*

Big Ten Room A

**Student Affairs Committee**

**Student Recruitment and Employment Mixer**

8:30 - 10:30 PM

Big Ten Room B

**March 26, 2002**  
**Tuesday Morning**

**Registration**

7:30 AM - 5:00 PM

Big Ten Room A

**Insect Photo Salon**

6:45 - 8:00 AM

*Host: Phil Sloderbeck*

Room 106

**Poster Session**

8:00 AM - 4:30 PM

(Authors present 3:30 - 4:30 PM)

Big Ten Room A

**March 26, 2002**

**Tuesday Morning**

**Symposium**

**Organic Fruit Production**

8:00 - Noon

Auditorium

***Organizers and Moderators***

**Mark Whalon** and **Rufus Isaacs**

Department of Entomology

Michigan State University

East Lansing, MI 48824

- 8:00 168 Introduction and opening remarks.  
**Mark Whalon**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 8:10 169 Evaluation of organic pest management tools.  
**Rick E. Foster**, 1158 Smith Hall, Purdue  
University, W. Lafayette, IN, 47907
- 8:30 170 Organic insect management practices in Iowa.  
**Kathleen Delate** and Heather Friedrich, Depts.  
of Horticulture & Agronomy, 106 Horticulture  
Hall, Iowa State University, Ames, IA, 50011
- 8:50 171 Organic tea project at Michigan State  
University.  
**Mark Whalon**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 9:10 172 Pheromone disruption and organic tree fruit  
production in the Midwest.  
**Larry Gut**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 9:30 173 Use of particle film technology for fruit insect  
pest management in Michigan.  
**John C. Wise**, 205 CIPS, Michigan State  
University, East Lansing, MI, 48824

**9:50-10:20 Break**

- 10:20 174 Enhancing soil quality to optimize beneficial nematode community structure in Michigan fruit orchards.  
**George Bird**, Department of Entomology, Michigan State University, East Lansing, MI, 48824
- 10:40 175 A companion planting approach to stable organic pest management.  
**Mark W. Brown** and Clarissa R. Mathews, 45 Wiltshire Road, USDA, ARS, Kearneysville, WV, 25430
- 11:00 176 Efforts to foster organic production for processing in the Midwest.  
**John M. Aselage**, Gerber Products Company, PO Box 10010, Ft. Smith, AR, 72917-0010
- 11:20 177 Organic consultants and growers panel discussion.  
**Mark Whalon**, Department of Entomology, Michigan State University, East Lansing, MI, 48824

**March 26, 2002**

**Tuesday Morning**

**Symposium**

**Bt Corn and Corn Insects: Current Issues**

8:30 - Noon

Lincoln Room

***Organizers and Moderators***

**Thomas Hunt**

University of Nebraska  
Haskell Agricultural Lab  
Concord, NE 68728

and

**Rick Hellmich**

USDA, ARS Corn Insects &  
Crop Genetics Research Unit  
Genetics Lab c/o Insectary  
Department of Entomology  
Iowa State University  
Ames, Iowa 50011

- 8:30 178 Introduction: Past, current, and emerging issues associated with Bt corn.  
**Thomas E. Hunt**, Haskell Agricultural Laboratory, 57905 866 Road, University of Nebraska, Concord, NE, 68728
- 8:45 179 Summary of Bt corn and monarch butterfly research: Where do we go from here?  
**Richard L. Hellmich**, Genetics Laboratory, Insectary, USDA ARS Corn Insects and Crop Genetics Research Unit, Department of Entomology, Ames, IA, 50011
- 9:10 180 IRM in areas of frequent insecticide use.  
**Thomas E. Hunt**, 57905 866 Road, University of Nebraska, Concord, NE, 68728, Randall Higgins, Lawrent Buschman and Phillip Sloderbeck, 4000 E. Mary St., Kansas State University, Garden City, KS, 67846
- 9:35 181 Monitoring susceptibility: Current issues.  
**Blair D. Siegfried**, Department of Entomology, 202 Plant Industry Bldg., University of Nebraska, Lincoln, NE, 68583
- 10:00 182 Combining ECB and CRW resistance: A challenge for IRM.  
**Kenneth R. Ostlie**, Department of Entomology, 219 Hodson Hall, 1980 Folwell Ave., University of Minnesota, St. Paul, MN, 55108
- 10:25-10:45 Break**
- 10:45 183 Corn rootworm transgenics and non-targets.  
**Graham P. Head**, Monsanto Company, GG3A, 700 Chesterfield Parkway, St. Louis, MO, 63198
- 11:10 184 Bt corn after 5 years of commercial use: A grower's perspective.  
**Jeff King**, 1728 E. 3rd St., Fremont, NE, 68025
- 11:35 185 What have we learned and what is next: An industry perspective.  
**Eric S. Sachs**, Monsanto Company, 700 Chesterfield Parkway, Monsanto Company, St. Louis, MO, 63198

**March 26, 2002**

**Tuesday Morning**

**“Get Bugged” Insect Exposition**

10:00 - Noon

Big Ten Room A

**March 26, 2002**

**Tuesday Afternoon**

**Symposium**

**Biology and Management of Beetles**

**in Fruit Crops**

1:00 - 4:45 PM

Auditorium

***Organizers and Moderators***

**Rufus Isaacs and Mark Whalon**

Department of Entomology

Michigan State University

East Lansing, MI 48824

- |      |     |   |
|------|-----|---|
| 1:00 | 186 | Beetles as fruit pests - a global perspective.<br><b>Michael G. Klein</b> , 1680 Madison Ave.,<br>OARDC, USDA/ARS, Wooster, OH, 44691               |
| 1:30 | 187 | Using electrophysiology to explore beetle<br>olfaction.<br><b>Allard A. Cossé</b> , 1815 N. University Street,<br>USDA/ARS/NCAUR, Peoria, IL, 61604 |
| 1:50 | 188 | Managing the rose chafer with an attractant.<br><b>Roger N. Williams</b> , 1680 Madison Ave., The<br>Ohio State University, Wooster, OH, 44691      |

- 2:10 189 Novel approaches to managing plum curculio.  
**Mark Whalon**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 2:30 190 Nematodes for weevil control in strawberries.  
**Richard S. Cowles**, P. O. Box 248, 153 Cook  
Hill Rd., Connecticut Agricultural Experiment  
Station, Windsor, CT, 06095
- 2:50-3:15 Break**
- 3:15 191 Gregarine pathogens of scarab pests: a new  
class of natural enemy?  
**David L. Cappaert** and David R. Smitley,  
Dept. of Entomology, Natural Science Bldg,  
Michigan State University, East Lansing, MI,  
48824
- 3:35 192 Establishing grub predators and parasites in  
Michigan.  
**Dave Smitley**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 3:55 193 Reduced-risk approaches to Japanese beetle  
control in small fruit crops.  
**Rufus Isaacs** and Zsofia Szendrei, 201 CIPS,  
Michigan State University, East Lansing, MI,  
MI 48824
- 4:15 194 Evaluating performance of new beetle  
insecticides.  
**John Wise**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824
- 4:35 195 Closing remarks.  
**Rufus Isaacs**, Department of Entomology,  
Michigan State University, East Lansing, MI,  
48824

**March 26, 2002**  
**Tuesday Afternoon**

**Symposium**  
**Extension Entomology: Current Issues in**  
**Technology, Graduate Education and Partnerships**

1:30 - 4:35 PM  
Lincoln Room

***Organizers and Moderators***

**Robert J. Wright**  
University of Nebraska  
South Central Research & Extension Center  
Clay Center, NE 68933-0066

and

**Phil Sloderbeck**  
Kansas State University  
Southwest Area Extension Office  
4000 E. Mary St.  
Garden City, KS 67846

- 1:30    196    Introduction and overview.  
**Robert J. Wright**, South Central Research &  
Extension Center, University of Nebraska, Clay  
Center, NE, 68933
- 1:35    197    Use of the internet in extension program delivery.  
**Phillip E. Sloderbeck** and Randall A. Higgins,  
Department of Entomology, 239 Waters Hall,  
Kansas State University, Manhattan, KS,  
66506-4027
- 1:55    198    Use of the internet in distance diagnosis of pest  
problems.  
**Randall A. Higgins**, Phillip Sloderbeck, and  
Bobby Brown, Department of Entomology, 239  
Waters Hall, Kansas State University, Manhattan,  
KS, 66506-4027; Will Baldwin, Judy O'Mara,  
Joy Pierzynski, Doug Jardine, C. Marr,  
W. Upham, D. Buchholz, and R. Terry,  
Departments of Communications, Plant  
Pathology, Horticulture, Forestry, and Recreation  
Resources, and Administration.

- 2:15 199 The Soybean Aphid Watch: A regional response.  
**Susan T. Ratcliffe**, 1102 S. Goodwin Avenue,  
University of Illinois, Urbana, IL, 61801
- 2:35 200 Graduate training in extension entomology at  
Purdue University.  
**Rick E. Foster**, 1158 Smith Hall, Purdue  
University, W. Lafayette, IN, 47907
- 2:55 201 Graduate training in extension entomology:  
View from a county office.  
**Barbara P. Ogg**, 444 Cherrycreek Rd; Suite A,  
University of Nebraska, Lincoln, NE, 68528-1507
- 3:15-3:35 Break**
- 3:35 202 ACORN: A web-based Alternative Control  
Outreach Network for master gardeners.  
**Clifford S. Sadof** and Robert J. O'Neil,  
Department of Entomology, 1158 Smith Hall,  
Purdue University, West Lafayette, IN, 47906-  
1158, Robert N. Wiedenmann, 607 E. Peabody  
Drive, Illinois Natural History Survey, Center  
for Economic Entomology, Champaign, IL,  
61820-6917
- 3:55 203 Developing public-private partnerships to  
promote biological control of purple loosestrife.  
**Robert N. Wiedenmann** and Susan L. Post,  
607 E. Peabody, Illinois Natural History  
Survey, Champaign, IL, 61820
- 4:05 204 Collaborative on-farm research...Return to the  
extension model.  
**Andrew P. Christiansen**, Chuck A. Burr,  
Roger W. Elmore, Terrence A. Hejny and Gary  
L. Zoubek, University of Nebraska, P.O. Box  
308, Aurora, NE, 68818

**March 26, 2002**

**Tuesday Evening**

**Student Award Presentations**

*Presented by: Ian MacRae*

6:00 - 6:45 PM

Big Ten Room A

**Linnaean Games**

6:45 - 7:15 PM

*Gamesmaster: Marlin Rice*

2002 NCB Champions vs. the "Old Timers"

Big Ten Room A

**NCB-ESA Mixer**

7:15 - 10:00 PM

Big Ten Room BC

**March 27, 2002**

**Wednesday Morning**

**Registration**

7:30 AM - Noon

Auditorium/Lobby

**Continental Breakfast**

6:30 - 8:00 AM

Auditorium/Lobby

**Final Business Meeting**

8:00 - 9:00 AM

Auditorium

**March 27, 2002**  
**Wednesday Morning**

**Student Affairs Committee Symposium**  
**Tubenrope Workshop: An Exercise**  
**in Hypothesis Testing**

9:00 - Noon  
Room 106

*Organizers*

**James R. Miller** and **Matthew E. O'Neal**

Department of Entomology  
Michigan State University  
East Lansing, MI 48824

**March 27, 2002**  
**Wednesday Morning**

**NCR-125 Symposium**  
**Biological Control in Urban Environments and**  
**Interior Plantscapes**

9:00 - Noon  
Lincoln Room

*Organizer and Moderator*

**Raymond Cloyd**

384 National Soybean Research Laboratory  
1101 West Peabody Drive  
University of Illinois  
Urbana, IL 61801

- 9:00 205 Introduction and opening remarks.  
**Raymond Cloyd**, University of Illinois,  
Urbana, IL, 61801
- 9:10 206 Conservation biological control in urban  
landscapes.  
**Lawrence Hanks**, 505 South Goodwin Ave.,  
University of Illinois, Urbana, IL, 61801
- 9:40 207 Opportunities for implementing biological  
control in conservatories.  
**Steve Stauffer**, 2400 North Stockton Drive,  
Lincoln Park Conservatory, Chicago, IL, 60614

- 10:10 208 Challenges related to using biological control in greenhouses.  
**Raymond Cloyd**, 384 National Soybean Research Laboratory, 1101 West Peabody Drive, University of Illinois, Urbana, IL, 61801
- 10:40-11:00 Break**
- 11:00 209 Biological control of the Asian longhorned beetle, *Anoplophora glabripennis*.  
**Leellen Solter**, 140 National Soybean Research Laboratory, 1101 West Peabody Drive, Illinois Natural History Survey, Urbana, IL, 61801
- 11:30 210 Effects of imidacloprid treated plants on beneficial organisms.  
**Vera Krischik**, Department of Entomology, 219 Hodson Hall, 1980 Folwell Avenue, University of Minnesota, St. Paul, MN, 55108

## March 27, 2002 Wednesday Morning

### Submitted Papers Sections E & F

9:00 - Noon  
 Auditorium

**Moderator: Mark Boetel**  
 Department of Entomology  
 North Dakota State University  
 Fargo, ND 58105

- 9:00 211 Evaluation of four insecticide impregnated ear tags for control of horn flies on Nebraska cattle.  
**John B. Campbell**, David J. Boxler and Don C. Adams, 461 West University Dr., University of Nebraska, West Central Research & Extension Center, North Platte, NE, 69101,  
 Terry J. Klopfenstein, Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, 68583

- 9:12 212 Efficacy of spinosad (Tracer 4SC) for the control of European and southwestern corn borer in field corn.  
**Larry G. Thompson**, Jon M. Babcock and Gary D. Thompson, 9330 Zionsville Road, Dow AgroSciences, Indianapolis, IN, 46268
- 9:24 213 Zeta-cypermethrin - A new insecticide for major crops.  
**Kathy A. Leiferman**, Keith Evans, Howard Guscar, Robert Hooten, Terry Mize, Brent Neuberger, Robert Perry, Joseph Reed, Gail Stratman and Samuel Tutt, 1735 Market Street, FMC Corporation, Philadelphia, PA, 19103
- 9:36 214 Insecticide use strategies for European corn borer and southwestern corn borer Bt-corn refugia.  
**Joseph P. Reed**, Robert S. Hooten, Howard L. Guscar, Samuel F. Tutt, Gail G. Stratman, Brent A. Neuberger, Galen B. Wilson and Terry W. Mize, POB 214, Seymour, IL, 61875
- 9:48 215 Utilizing sprinkler irrigation to apply bifenthrin for control of western corn rootworm larvae in corn.  
**Gail G. Stratman**, Robert S. Hooten and Terry W. Mize, 7502 Dreyfuss, FMC Ag Products, Amarillo, TX, 79121
- 10:00 216 Consistency of corn rootworm (*Diabrotica* spp.) control using clothianidin seed treatments under a variety of pest pressures.  
**Michael R. Schwarz**, William B. Rose and Christopher K. Niebrugge, 8400 Hawthorn Rd., Bayer Corporation, Kansas City, MO, 64120-0013
- 10:12 217 Control of non-rootworm pests of field corn with clothianidin seed applied insecticide.  
**Ray P. Knake**, 8309 Hammontree, Gustafson LLC, Urbandale, IA, 50322, Bill Hairston, P.O. Box 660065, Dallas, TX, 75266
- 10:24-10:40 Break**

- 10:40 218 Does Cry3Bb transgenic corn play a role in western corn rootworm larval movement?  
**Bruce E. Hibbard**, 109 Curtis Hall, University of Missouri, USDA-ARS, Columbia, MO, 65211-7020, Ty T. Vaughn, 700 Chesterfield Parkway N., Mail Zone GG3E, Monsanto Corporation, Chesterfield, MO, 63198, Thomas L. Clark, 187 Agriculture Bldg, Department of Entomology, University of Missouri, Columbia, MO, 65211
- 10:52 219 Cuphea, a new crop for rotation to control corn rootworm beetles  
**Robert W. Behle**, Terry A. Isbell and Bliss S. Phillips, 1815 N. University St., USDA-ARS, Peoria, IL, 61604-3902
- 11:04 220 Organism resistance to xenobiotics: What do we learn from each other's science  
**John E. Kaufmann**, Philip J. Boeve and Rod Stevenson, 6511 West B Avenue, Monsanto Company, Plainwell, MI, 49080
- 11:16 221 A toolbox for studying mating disruption: Use of aging chambers and gas chromatography to answer specific questions about pheromone longevity and movement  
**Piera Y. Giroux** and James R. Miller, 203 Center for Integrated Plant Systems, Michigan State University, East Lansing, MI, 48824
- 11:28 222 Southwestern corn borer cannibalism and corn stalk girdling: Expressions of competition for the best winter site to survive the winter  
**Lawrent L. Buschman**, Jose G. Guzman, Phillip E. Sloderbeck and Sonny B. Ramaswamy, 123 Waters Hall, Kansas State University, Manhattan, KS, 66506
- 11:40 223 Potatoes in south central Nebraska tolerate high levels of artificial mid-season defoliation  
**W. Wyatt Hoback** and Jesse R. Ziems, Department of Biology, 905 W. 25th Street, University of Nebraska-Kearney, Kearney, NE, 68849, Leon G. Higley, Department of Entomology, 202 Plant Industry Building, University of Nebraska-Lincoln, Lincoln, NE, 68583

11:52 224 Damage by and control of European chafer infesting field-grown rhododendrons.  
**Michael E. Reding**, Michael G. Klein and Ross D. Brazee, 1680 Madison Avenue, USDA-ARS, Wooster, OH, 44691

**March 27, 2002**  
**Wednesday Morning**

**MSU Bug House Tour**  
10:00 - Noon

*Organizers*  
**MSU students**

**March 27, 2002**  
**Wednesday Afternoon**

**NCB Executive Committee**  
1:00 - 5:00 PM  
Room 106

**HAVE A SAFE TRIP HOME!**

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# Kellogg Hotel and Conference Center Map



