



**Pacific Branch
ENTOMOLOGICAL SOCIETY
OF AMERICA
Eighty-Eighth
Annual Meeting**



**Diane Alston
President**

**Grantree Inn
Bozeman, MT
June 20-23, 2004**

**PACIFIC BRANCH
ENTOMOLOGICAL SOCIETY OF AMERICA**

President

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Dept. of Biology
Utah State University, Logan, UT

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USDA-ARS
San Joaquin Valley Agri. Sci. Ctr., Parlier, CA

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Ross H. Miller, University of Guam (2004)
Lisa Neven, USDA-ARS, Yakima Agri. Res. Lab (2005)
John J. Brown, Washington State University (2005)
Dave Bragg, Washington State University (2006)
Peter B. Goodell, Cooperative Extension, University of California (2006)

Future Meetings

Asilomar Conference Center, Monterey, CA – 2005
Wailea Resort, Maui, HI – 2006

PROGRAM

Sunday Afternoon, June 20

Registration

Foyer

3:00 p.m. – 9:00 p.m.

Executive Committee Meeting

Aspen

5:00 p.m. – 7:00 p.m.

Monday, June 21

Registration

Foyer

8:00 a.m. – 4:00 p.m.

Exhibits

Atrium

8:30 a.m. – 5:00 p.m.

Student Poster Competition

Atrium

9:00 a.m. – 5:00 p.m.

Opening Session and Preliminary Business Meeting

Hyalite & Clark

Monday, 8:30 a.m. – 11:00 a.m.

- 8:30** **Welcome and Opening Remarks,**
Diane Alston, President, Pacific Branch, Entomological Society
of America.
- 8:40** **Report from the National Organization,**
Kevin Steffey, President, Entomological Society of America,
University of Illinois, Urbana, IL.

- 9:00** **Report from the Governing Board,**
John Stark, Representative, Pacific Branch.
- 9:10** **Introduction of the C. W. Woodworth Award:**
 “C. W. Woodworth, the Entomologist We Honor”,
Diane Alston, President.
- 9:15** **“Memories of C. W. Woodworth”, Brian Holden,**
 Great-Grandson of C. W. Woodworth, and Joann Wilfert.
- 9:25** **2004 C. W. Woodworth Award Winner Presentation,**
 “Exotic Pests in the West and Their TKOs for Exports”,
Victoria Y. Yokoyama, USDA-ARS, San Joaquin Valley
 Agricultural Sciences Center, Parlier, CA.
- 10:00** **2004 John Henry Comstock Award Winner Presentation,**
 “Factors Limiting Conservation Biological Control by Carabids
 and Staphylinids”, **Renee Priya Prasad**, Washington State
 University, Pullman, WA.
- 10:25** **Preliminary Business Meeting, Diane Alston**, President, Pacific
 Branch, Entomological Society of America.

11:00 Adjourn

Lunch on your own from 11:00 a.m. – 1:00 p.m.

Student Poster Competition Posters

Atrium

Monday, 9:00 a.m. – 5:00 p.m.

MS Student Poster Competition

- P-1** Molecular phylogenetic analysis of the Gomphocerinae grasshoppers.
Daniel A. Contreras and William Chapco, Dept. of Biology, University
 of Regina, Regina, SK.
- P-2** Plastron studies of *Abedus herberti* eggs (Hemiptera: Belostomatidae).
Christine L. Goforth¹ and Art Woods², ¹University of Arizona, Tucson,
 AZ, ²University of Texas, Austin, TX.
- P-3** Sex attraction in *Polistes dominulus* (Hymenoptera: Vespidae)
 demonstrated using y-tube and parallel tube olfactometers. **John K.**
MacKenzie¹, Peter J. Landolt², and Richard S. Zack¹, ¹Dept. of

Entomology, Washington State University, Pullman, WA, ²USDA-ARS, Wapato, WA.

- P-4** Increased growth vigor of the mustard *Lepidium draba* L. provides support for the enemy release hypothesis. **Jessica L. McKenney**¹, Michael G. Cripps¹, Harriet L. Hinz², and Mark Schwarzlaender¹, ¹Dept. of Plant, Soil, and Entomological Sciences, University of Idaho, Moscow, ID, ²CABI Bioscience Switzerland Centre, Delémont, Switzerland.
- P-5** Conserving natural enemies to control Lygus in alfalfa seed production fields in Washington State. **Ann E. Jorgensen** and William E. Snyder, Dept. of Entomology, Washington State University, Pullman, WA.
- P-6** Indirect effects of an ant-aphid mutualism on the tritrophic interactions of *Rhabdophaga strobiloides*. **Amy M. Savage** and Merrill A. Peterson, Dept. of Biology, Western Washington University, Bellingham, WA.
- P-7** Benefits of polyandry in the blue milkweed beetle, *Chrysochus cobaltinus* (Coleoptera: Chrysomelidae). **Steven K. Schwartz** and Merrill A. Peterson, Biology Dept., Western Washington University, Bellingham, WA.
- P-8** Green peach aphid responses to *Potato leafroll virus*-induced volatiles produced during disease progression in potato. **Brent J. Werner**¹, Thomas M. Mowry², Sanford D. Eigenbrode¹, Nilsa A. Bosque-Pérez¹, Hongjing Ding¹, and Karla J. Medina Ortega¹, ¹Dept. of Plant, Soil & Entomological Sciences, University of Idaho, Moscow, ID, ²Parma Research & Extension Center, Parma, ID.
- P-9** Tracking non-residential pesticide use in urban areas of California. **Nila I. Kreidich**¹, Cheryl Wilen², Mary Lou Flint³, and Minghua Zhang⁴, ¹Dept. of Land, Air, and Water Resources, University of California, Davis, CA, ²University of California Cooperative Extension, San Diego County, CA, ³IPM Education and Publications and Dept. of Entomology, University of California, Davis, CA, ⁴Dept. of Land, Air, and Water Resources, University of California, Davis, CA.
- P-10** The dreaded Colorado potato beetle (*Leptinotarsa decemlineata* Say, Coleoptera: Chrysomelidae) or is it? A novel approach to IPM of Solanaceous weeds. **Chase Metzger**¹, Richard Boydston², Timothy Waters¹, Holly Ferguson¹, Martin Williams³, and Douglas Walsh¹, ¹Washington State University, Irrigated Agriculture Research and Extension Center, Prosser, WA, ²USDA-ARS, Irrigated Agriculture Research and Extension Center, Prosser, WA, ³Dept. of Crop Sciences, University of Illinois, Urbana, IL.

PhD Student Poster Competition

- P-11** Toxicological impacts of the pollutants selenium and mercury at the bottom of the food web. **Peter D. Jensen** and John T. Trumble, Dept. of Entomology, University of California, Riverside, CA.
- P-12** The effects of competitive interactions between two *Chaetorillia* species and their impact on yellow starthistle. **F. Brent Young** and Mark Schwarzlaender, Dept. of Plant Soil and Entomological Sciences, University of Idaho, Moscow, ID.
- P-13** Efficiency of Champ and plastic McPhail traps in monitoring the olive fruit fly (*Bactrocera oleae*) in California. **Hannah J. Burrack** and Frank G. Zalom, Dept. of Entomology, University of California, Davis, CA.
- P-14** Influences of chlorpyrifos and sulfur on wine grape mites (Tetranychidae, Phytoseiidae). **D. A. Prischmann**¹, W. E. Snyder¹, and D. G. James², ¹Dept. of Entomology, WSU, Pullman, WA, ²IAREC, WSU, Prosser, WA.

10-Minute Paper Session

Student Competition

Tamarack & Ponderosa

Monday, 1:00 p.m. – 4:18 p.m.

Moderator: **Sujaya Rao**, Dept. of Crop and Soil Science, Oregon State University, Corvallis, OR

MS Oral Presentations

- 1:00** **1** Screening candidate fungicides for control of chalkbrood disease in alfalfa leafcutting bees (*Megachile rotundata*). **Craig Huntzinger**, Rosalind James, Jordi Bosch, and William P. Kemp, USDA-ARS, Dept. of Biology, Utah State University, Logan, UT.
- 1:12** **2** Environmental safety of a weed biological control agent of houndstongue in regard to endangered Boraginaceae species. **Jennifer E. Andreas** and Mark Schwarzlaender, Dept. of Plant, Soil, and Entomological Sciences, University of Idaho, Moscow, ID.
- 1:24** **3** Effects of spotted knapweed invasion on ground beetle (Carabidae) assemblages in Rocky Mountain savannas. **Allison K. Hansen** and Diana L. Six, College of Forestry and Conservation, University of Montana, Missoula, MT.
- 1:36** **4** Host specificity testing for classical biological control of weeds using the environmental risk assessment paradigm. **Kenneth P.**

Puliafico and Robert K. D. Peterson, Dept. of Entomology, Montana State University, Bozeman, MT.

- 1:48** **5** Plant community impact on arthropod populations in disturbed and rehabilitated riparian buffers. **Timothy D. Waters**¹, Douglas B. Walsh¹, and Richard S. Zack², ¹Dept. of Entomology, Washington State University, Prosser, WA, ²Dept. of Entomology, Washington State University, Pullman, WA.
- 2:00** **6** Visual stimulus, and potential effects on mating disruption of the Western Poplar Clearwing Moth. **Neal T. Kittelson**, Eugene R. Hannon and John. J. Brown, Dept. of Entomology, Washington State University, Pullman, WA.
- 2:12** **7** Assessing the incidence of parasitoids of the Egyptian alfalfa weevil (*Hypera brunneipennis*) in California alfalfa. **Karey C. Windbiel**, Larry D. Godfrey, and Richard R. Lewis, Dept. of Entomology, University of California, Davis, CA.

PhD Oral Presentations

- 2:24** **8** Molecular phylogeny of Sympetrinae – Exposing the perils of using solely wing venation for systematics. **Erik M. Pilgrim** and Carol D. Von Dohlen, Dept. of Biology, Utah State University, Logan, UT.
- 2:36** **9** Phylogeny and classification of Iceryine scale insects (Hemiptera: Margarodidae). **Cory M. Unruh** and Penny J. Gullan, Dept. of Entomology, University of California, Davis, CA.
- 2:48** **10** Association of symbiotic fungi with development of the mountain pine beetle (*Dendroctonus ponderosae*). **Aaron S. Adams**, Diana L. Six, Dept. of Ecosystem and Conservation Sciences, University of Montana, Missoula, MT.
- 3:00** Break
- 3:30** **11** Use of olfactory cues for nest recognition: Behavioral and chemical evidence. **Christelle Guédot**¹, Theresa L. Pitts-Singer¹, James Buckner², Jordi Bosch¹, and William P. Kemp¹, ¹USDA-ARS, Dept. of Biology, Utah State University, Logan, UT, ²USDA-ARS Biosciences Research Laboratory, Fargo, ND.
- 3:42** **12** Role of hairy nightshade *Solanum sarrachoides* on *Potato leafroll virus* vector dynamics and disease epidemiology. **Rajagopalbabu Srinivasan**¹, Juan Manuel Alvarez², Nilsa A. Bosque-Pérez¹, and Sanford D. Eigenbrode¹, ¹Dept. of Plant, Soil & Entomological

Sciences, University of Idaho, Moscow, ID, ²Aberdeen Res & Ext Center, Aberdeen, ID.

- 3:54 13** Tillage across crops differentially affects the capture efficiency of pitfall traps for ground beetles. **Timothy D. Hatten**, Nilsa A. Bosque-Pérez, and Sanford D. Eigenbrode, Dept. of Plant, Soil & Entomological Sciences, University of Idaho, Moscow, ID.
- 4:06 14** Floral chemical lures for attract and kill systems to control alfalfa looper and corn earworm (Lepidoptera: Noctuidae). **Leonardo De A. Camelo**¹, Peter J. Landolt², Richard S. Zack¹, and Daryl L. Green², ¹Dept. of Entomology, Washington State University, Pullman, WA, ²USDA/ARS, Wapato, WA.
- 4:18** Adjourn

Symposium: Insect Injury and Plant Ecophysiology: Where Have We Been and Where are We Going?

Aspen

Monday, 1:00 p.m. – 3:45 p.m.

Organizer and Moderator: **Bob Peterson**, Dept. of Entomology, Montana State University, Bozeman, MT.

- 1:00** Introduction, **Bob Peterson**
- 1:05 15** Plant-insect ecophysiology: Where have we been and where are we now? **Robert K. D. Peterson**, Dept. of Entomology, Montana State University, Bozeman, MT.
- 1:25 16** Plant responses to biotic and abiotic stressors: Changes in plant tolerance and fitness from insect defoliation and moisture stress injuries. **Fikru Haile**, Dow AgroSciences, Western Research Center, Fresno, CA.
- 1:45 17** Mechanisms of tolerance to arthropod herbivory. John T. Trumble and **Peter D. Jensen**, Dept. of Entomology, University of California, Riverside, CA.
- 2:05 18** Leaves and stems: Potato response to insect and artificial defoliation. **Wyatt Hoback**, Dept. of Biology, University of Nebraska-Kearney, NE.

- 2:25 19** The role of source-sink manipulation by Russian wheat aphid in end-product inhibition of photosynthesis in wheat. **Tulio Macedo**¹ and Leon G. Higley², ¹ Dept. of Entomology, Montana State University, Bozeman, MT, ² Dept. of Entomology, University of Nebraska-Lincoln, NE.
- 2:45** Break
- 3:05 20** Insect-induced expression of plant secondary metabolites: Volatiles and their importance to ecophysiology. **David K. Weaver**¹, Wendell L. Morrill¹, Robert K. D. Peterson¹, Sharlene E. Sing², and Christian Nansen¹, ¹Dept. of Entomology, Montana State University, Bozeman, MT, ²USDA Forest Service, Rocky Mountain Research Station, Forestry Sciences Laboratory, Bozeman, MT.
- 3:25 21** Plant-insect ecophysiology: Where are we going? **Leon G. Higley**, Dept. of Entomology, University of Nebraska-Lincoln, Lincoln, NE.
- 3:45** Adjourn

Symposium: Stored Products Insects

Lewis

Monday, 1:00 p.m. – 5:00 p.m.

Organizers and Moderators: **Christian Nansen**, and **Joel Perez-Mendoza**,
Dept. of Entomology, Montana State University, Bozeman, MT.

- 1:00** Introduction, **Christian Nansen**
- 1:05 22** Semiochemical-based approaches to managing stored-product moths (Pyralidae). **Thomas W. Phillips**¹, Christian Nansen², Charles Konemann¹, and Manuel Campos¹, ¹Dept. of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK, ² Dept. of Entomology, Montana State University, Bozeman, MT.
- 1:25 23** Is there any reason for businesses not to adopt integrated pest management practices? The economics of IPM in stored grain. **Brian D. Adam**¹, Poh Mun Mah¹, Thomas W. Phillips², and Paul Flinn³, ¹Dept. of Agricultural Economics, Oklahoma State University, Stillwater, OK, ²Dept. of Entomology & Plant Pathology, Oklahoma State University, Stillwater, OK, ³ARS Grain Marketing Research Laboratory, Manhattan, KS.

- 1:45 24** Influence of immigration on the interpretation of pest monitoring programs in food processing facilities. **James F. Campbell**, USDA ARS Grain Marketing and Production Research Center, Manhattan, KS.
- 2:05 25** Monitoring red flour beetle in insecticide treated pilot scale warehouses. **Michael Toews**, James Campbell, and Frank Arthur, USDA-ARS Grain Marketing & Production Research Center, Manhattan, KS.
- 2:25 26** Detection of stored-grain insect infestation in wheat transported in railroad hopper-cars. **Joel Perez-Mendoza**¹, Paul W. Flinn², James F. Campbell², David W. Hagstrum², and James E. Throne², ¹Dept. of Entomology, Montana State University, Bozeman, MT, ²USDA-ARS Grain Marketing & Production Research Center, Manhattan, KS.
- 2:45 27** A GIS-based risk warning system of rusty grain beetle flight near grain elevators. **Christian Nansen**^{1,2}, Thomas W Phillips², and Albert Sutherland³, ¹Dept. of Entomology, Montana State University, ²Dept. Entomol. & Plant Pathology, Oklahoma State University, ³Oklahoma State University, Mesonet, OK.
- 3:05** Break
- 3:20 28** INSECTOR, the utility of an automated infestation monitoring tool. **Dennis Shuman**¹, Ron Larson², and David Crompton², ¹USDA-ARS, Gainesville, FL, ²OPIsystems Inc., Calgary, Alberta, Canada.
- 3:40 29** Spinosad and stored-product insects: Research accomplishments and data gaps. **Bhadriraju Subramanyam**, Dept. of Grain Science and Industry, Kansas State University, Manhattan, KS.
- 4:00 30** Mating disruption and population dynamics of the navel orangeworm in California dried fruit and nut crops. **Charles S. Burks**¹, Bradley S. Higbee², and David G. Brandl¹, ¹USDA-ARS, Parlier, CA, ²Paramount Farming, Bakersfield, CA.
- 4:20 31** Factors that influence pheromone monitoring programs and what works in field situations. **Jeffrey A. Weier**, Sprague Pest Solutions, Tacoma, WA.
- 4:40 32** Fauna of newly-stored wheat in Montana and the impact of automated aeration on community structure. **David K. Weaver**¹, Megan L. Johnson¹, Tracy L. Campbell¹, and Matthew J. D.

Grieshop^{1,2}, ¹Dept. of Entomology, Montana State University,
Bozeman, MT, ²Dept. of Entomology, Kansas State University,
Manhattan, KS.

5:00 Adjourn

Pacific Branch Mixer and President's Reception

Monday Evening, June 21

5:30 p.m. – 7:00 p.m.

Hyalite & Clark

Linnaean Games

Monday Evening, June 21

7:00 p.m. – 9:00 p.m.

Moderator: Sujaya Rao, sujaya@oregonstate.edu

Madison

Tuesday, June 22

Registration

Foyer

8:00 a.m. – 12:00 noon

Exhibits

Atrium

8:30 a.m. – 5:30 p.m.

General Poster Session

Tuesday, 9:00 a.m. – 5:00 p.m.

Atrium

Section A

- P-15** Cladistic analysis and classification of the spider wasps (Hymenoptera: Pompilidae). **James P. Pitts**, Dept. of Biology, Utah State University, Logan, UT.

Section C

- P-16** Using SADIE (Spatial Analysis by Distance Indices) to evaluate biocontrol efficacy of *Mecinus janthinus* on Dalmatian toadflax. **Cale Davis**^{1,2}, Sharlene Sing¹, and David Weaver³, ¹USFS – Rocky Mountain Research Station, Forestry Sciences Lab, Bozeman, MT, ²Dept. of Mathematical Sciences, Montana State University, Bozeman, MT, ³Dept. of Entomology, Montana State University, Bozeman, MT.
- P-17** Primary and secondary metabolic responses of Dalmatian toadflax after injury by insect biological control agents. **Robert K. D. Peterson**, Sharlene E. Sing, and David K. Weaver, Dept. of Entomology, Montana State University, Bozeman, MT.
- P-18** Abundance and diversity of Araneae and Opiliones in Idaho alfalfa. **Mary M. Gardiner**¹, James D. Barbour¹, and James P. Pitts², ¹Dept. of Plant, Soil, and Entomological Sciences, University of Idaho, Parma, ID, ²Dept. of Biology, Utah State University, Logan, UT.
- P-19** Effects of insecticides on the nesting behavior of the alfalfa leafcutting bee. **Mary M. Gardiner** and James D. Barbour, Dept. of Plant, Soil and

Entomological Sciences, University of Idaho, Parma Res and Ext Center, Parma, ID.

- P-20** Effects of temperature and relative humidity on alfalfa leafcutting bee immature survival. **Theresa L. Pitts-Singer** and Rosalind James, USDA-ARS Bee Biology & Systematics Laboratory, Utah State University, Logan, UT.
- P-21** Seasonal mortality factors in the alfalfa leafcutting bee, *Megachile rotundata*. **R. P. O'Neill** and S. Blodgett, Dept. of Entomology, Montana State University, Bozeman MT.
- P-22** Host specificity testing of *Aceria drabae* (Eriophyidae) for the biological control of *Lepidium draba* (Brassicaceae). **J. L. Littlefield**¹ and J. Kashefi², ¹Montana State University, Dept. of Entomology, Bozeman, MT, ²USDA-ARS European Biological Control Laboratory, Thessaloniki, Greece.
- P-23** Biological control of red gum lerp psyllid in San Diego County. **David A. Shaw**¹, Karen L. Robb¹, Diane De Jong¹, and David L. Rowney², ¹University of California Cooperative Extension, San Diego, CA, ²Center for Biological Control, University of California, Berkeley, CA.
- P-24** California's avocado thrips, *Scirtothrips Perseae* Nakahara: Why is it a non-pest in its native home of Mexico and Guatemala? **Phil A. Phillips**, University of California, Cooperative Extension, Ventura, CA.
- P-25** Bionomics of pea pod weevil in dry peas. **David E. Bragg**, Washington State University Extension Entomology, Pomeroy, WA.
- P-26** Bark and woodboring beetles associated with western juniper and responses to host volatiles and wounding. **Jane L. Hayes**¹, Patricia L. Johnson¹, Andris Eglitis², Donald W. Scott³, Lia H. Spiegel³, Craig L. Schmitt³, Steve E. Smith⁴, ¹Pacific Northwest Res Station, La Grande, OR, ²Central Oregon Insect and Disease Service Center, Bend, OR, ³Blue Mountains Pest Management Service Center, La Grande, OR, ⁴School of Natural Resources University of Arizona, Tucson, AZ.
- P-27** Green peach aphid overwintering in Washington. **K. S. Pike**, D. Allison, and G. Graf, Washington State University, Irrigated Agriculture Research and Extension Center, Prosser, WA.

Section E

- P-28** Reducing pesticides and runoff through UCCE's ag water quality research and education program. **Valerie J. Mellano**, Karen L. Robb, David A. Shaw, and Diane C. DeJong, University of California Cooperative Extension, San Diego, CA.
- P-29** Phytosanitation of pears and apples using organosilicones and high pressure washing. **Lisa G. Neven** and James D. Hansen, USDA-ARS Yakima Agricultural Research Laboratory, Wapato, WA.

Section F

- P-30** Species distribution, regional assemblages, and parasitism of *Lygus* in Montana canola fields. **Rebecca A. Baril**¹, Andrew W. Lenssen², Sue Blodgett³ and Mark L. Taper¹, ¹Dept. of Ecology, Montana State University, Bozeman, MT, ²USDA-ARS-NPRL, Sidney, MT, ³Dept. of Entomology, Montana State University, Bozeman, MT.
- P-31** Resistance to chloronicotinyls in pear psylla, *Cacopsylla pyricola*. **John E. Dunley**, Bruce M. Greenfield and Tara Madsen, Washington State University, Tree Fruit Research and Extension Center, Wenatchee, WA.
- P-32** Attract-and-kill stations show promise for reducing spotted cutworm (*Xestia c-nigrum* (L.)) in Washington wine grape and mint. **Holly Ferguson**¹, Douglas Walsh¹, Tim Waters¹, Peter Landolt², and Ron Wight¹, ¹Dept. of Entomology, Washington State University, Prosser, WA, ²USDA-ARS, Wapato, WA.
- P-33** Pyrethroid spray barriers for cutworms in vineyards. **Ronald Wight**, Douglas Walsh, Holly Ferguson, and Tim Waters, Washington State University – IAREC, Prosser WA.
- P-34** Performance of Intrepid®, methoxyfenozide, against the Western Yellowstriped Armyworm, *Spodoptera praefica*. **Fikru Haile**, Randy Smith, Gary Thompson, and Jesse Richardson, Dow AgroSciences, Fresno, CA.
- P-35** Evaluation of IPM practices for controlling the spread of tomato spotted wilt virus in tomatoes. **Gregory Kund**, William Carson, and John Trumble, Dept. of Entomology, University of California, Riverside CA.
- P-36** Incidence of *Potato leafroll virus*: Within-field inoculum and vector control using degree-day triggers. **Thomas M. Mowry** and Noemi M. Fernandez, Dept. of Plant, Soil and Entomological Sciences, University of

Idaho, Parma Research and Extension Center, Parma, ID.

- P-37** Variable effects of wild fescue–fungal endophyte associations on bird cherry-oat aphid survival. **Steve Clement**¹, Leslie Elbertson¹, Blair Waldron², and Ted Kisha¹, ¹USDA-ARS, Washington State University, Pullman, WA, ²USDA-ARS, Utah State University, Logan, UT.
- P-38** Filth flies are not just for waste: cage pollination of *Allium* germplasm. **Steve Clement**¹, Barbara Hellier¹, Leslie Elbertson¹, Marc Evans², and Russell Staska¹, ¹USDA-ARS, Washington State University, Pullman, WA, ²Program in Statistics, Washington State University, Pullman, WA.
- P-39** Evaluation of soil applied insecticides for control of garden centipedes. **C. Fouché**, R. Mullen and D. Colbert, University of California Cooperative Extension, Stockton, CA.
- P-40** Evaluation of hot pink sticky traps to monitor pests of ornamental crops. **Karen L. Robb**¹, Julie P. Newman², Heather Costa³, and Diane DeJong¹, ¹University of California, Cooperative Extension, San Diego, CA, ²University of California, Cooperative Extension, Ventura, CA, ³ Dept. of Entomology, University of California, Riverside, CA.

Symposium: Progress Towards IPM of Wheat Stem Sawfly

Tamarack & Ponderosa

Tuesday, 8:00 a.m. – 11:30 a.m.

Organizers and Moderators: **David Weaver**, Dept. of Entomology, Montana State University, Bozeman, MT and **Thomas Shanower**, USDA-ARS, Sidney, MT.

- 8:00** Introduction, **David Weaver**
- 8:05 33** Impact of sheep grazing on overwintering wheat stem sawfly, *Cephus cinctus* Norton, populations. **Sue Blodgett**¹, Theresa Spezzano², P.L. Hatfield², and H.B. Goosey², ¹Dept. of Entomology and ²Dept. of Animal and Range Sciences, Montana State University, Bozeman, MT.
- 8:25 34** Inoculative releases of *Bracon* spp. for control of wheat stem sawflies (Hymenoptera: Cephidae). **Wendell L. Morrill**, David K. Weaver, and S. Meers, Dept. of Entomology, Montana State University, Bozeman, MT.

- 8:45 35** Wheat primary metabolic responses to wheat stem sawfly injury: From basic understandings to management. **Robert K. D. Peterson**, Tulio B. Macedo, and David K. Weaver, Dept. of Entomology, Montana State University, Bozeman, MT.
- 9:05 36** Mycosis of the wheat stem sawfly (Hymenoptera: Cephidae) by *Fusarium* spp. **William E. Grey**¹, Anna Wenda-Piesik², Wendell L. Morrill³, and David K. Weaver³, ¹Dept. of Plant Sciences and Plant Pathology, Montana State University, Bozeman, MT, ²Dept. of Soil and Plant Cultivation, University of Technology and Agriculture, Bydgoszcz, Poland, ³Dept. of Entomology, Montana State University, Bozeman, MT.
- 9:25 37** Identification of microsatellite markers associated with a stem solidness locus in wheat. **J. P. Cook**, D. M. Wichman, J. M. Martin, P. L. Bruckner, and L. E. Talbert, Dept. of Plant Sciences and Plant Pathology, Montana State University, Bozeman, MT.
- 9:45** Break
- 10:10 38** Use of hyperspectral technology for ground-based remote sensing of wheat stem sawfly infestations. **Christian Nansen**¹, Rand Swanson², Casey Smith², Rick Lawrence³, and David K. Weaver¹, ¹Dept. of Entomology, Montana State University, Bozeman, MT, ²Resonon Inc., Bozeman, MT, ³ Dept. of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT.
- 10:30 39** Characterization of sawfly spatial distribution in wild oat-infested, solid-stem spring wheat. **Sharlene E. Sing**¹, Bruce D. Maxwell², Greg Johnson³, and Wendell L. Morrill³, ¹USFS Rocky Mountain Research Station, Forestry Sciences Lab, Bozeman, MT, ²Dept. of Land Resources and Environmental Sciences and ³Entomology, Montana State University, Bozeman, MT.
- 10:50 40** Effects of tillage on wheat stem sawfly survival and emergence in the central high plains. **Gary L. Hein**¹, John A. Thomas¹, Walt Stroup², ¹University of Nebraska-Lincoln, Panhandle Research and Extension Center, Scottsbluff, NE, ²Dept. of Statistics, University of Nebraska-Lincoln, Lincoln, NE.
- 11:10 41** Role of host plant volatiles in the spatial orientation of wheat stem sawfly adults. **David K. Weaver**¹, Justin B. Runyon^{1,2}, Wendell L. Morrill¹, Dariusz Piesik^{1,3}, and Micaela L. Buteler¹, ¹Dept. of Entomology, Montana State University, Bozeman, MT, ²Dept. of Entomology, Penn State University, University Park, PA, ³Dept. of

Applied Entomology, University of Technology and Agriculture,
Bydgoszcz, Poland.

11:30 Adjourn until the afternoon session

Symposium: Graduate Student Symposium

Madison

Tuesday, 8:00 a.m. – 11:00 a.m.

Organizer and Moderator: **Leonardo Camelo**, Washington State University,
Pullman WA

8:00 Introduction, **Leonardo Camelo**

8:05 42 Morphological and molecular phylogeny of the Clitellariinae (Diptera: Stratiomyidae). **Colin A. Brammer** and Carol D. von Dohlen, Dept. of Biology, Utah State University, Logan, UT.

8:35 43 Cloning and characterization of the *Copidosoma floridanum* Hedgehog gene. **Michael A. White** and Laura S. Corley, Dept. of Entomology, Washington State University, Pullman, WA.

9:05 44 Electrophysiological recordings and scanning electron microscopic study of the anal styli of *Homalodisca coagulata*. **N. A. Hummel**, W. S. Leal, C. Y. S. Peng, F. G. Zalom, Dept. of Entomology, University of California, Davis, Davis, CA.

9:35 Break

9:50 45 Comparative analysis of the insect community structure on *Lepidium draba* in its indigenous and introduced ranges. **Michael G. Cripps**¹, Jessica L. McKenney¹, Harriet L. Hinz², and Mark Schwarzlaender¹, ¹Dept. of Plant Soil and Entomological Sciences, University of Idaho, Moscow, ID, ²CABI Bioscience Switzerland Centre, Delémont, Switzerland.

10:20 46 Ecological stoichiometry of *Culex* mosquitoes and their larval foods. **George W. Peck** and William E. Walton, Dept. of Entomology, University of California, Riverside, CA.

10:50 Adjourn

**Symposium: Impact of the Loss of Organophosphate Insecticides on
Agricultural Systems**

Aspen

Tuesday, 8:00 a.m. – 11:00 a.m.

Organizer and Moderator: **Robert A. Van Steenwyk**, Dept. of Environmental Science, Policy and Management, University of California, Berkeley, CA

- 8:00 47** Introduction, **Robert Van Steenwyk**. Introduction to the impact of the loss of organophosphate insecticides on California agriculture.
- 8:15 48** The impact of the loss of organophosphate insecticides on California agriculture: The impact on alfalfa. **Larry D. Godfrey**, Dept. of Entomology, University of California, Davis, CA.
- 8:35 49** Impact of organophosphate insecticides on cotton insect management. **Peter B. Goodell**, University of California, Kearney Agricultural Center, Parlier, CA.
- 8:55 50** The impact of the loss of organophosphate insecticides on California agriculture: The impact on broccoli. **William E. Chaney**, University of California Cooperative Extension, Salinas, CA.
- 9:15 51** Potential impact of the cancellation of organophosphate insecticides on lettuce production in California. **Eric T. Natwick**, University of California Cooperative Extension, UC Desert Research and Extension Center, Holtville, CA.
- 9:35** Break
- 9:55 52** The impact of the loss of organophosphates on grape production. **Lucia G. Varela**, University of California Cooperative Extension & Statewide IPM Program, Santa Rosa, CA.
- 10:15 53** The impact of the loss of organophosphate insecticides on citrus. **Elizabeth E. Grafton-Cardwell**, Dept. of Entomology, University of California, Riverside, CA.
- 10:35 54** The impact of loss of organophosphate insecticides on almonds. **C. Pickel**, University of California Cooperative Extension and Statewide IPM Project, Yuba City, CA.
- 10:55** Adjourn



Tuesday, June 22
AWARDS LUNCHEON
12:00 noon – 1:00 p.m.
Hyalite & Clark



Symposium: Progress Towards IPM of Wheat Stem Sawfly

Tamarack & Ponderosa

1:30 p.m. – 4:35 p.m. (continued from the morning session)

Organizers and Moderators: **David Weaver**,

Dept. of Entomology, Montana State University, Bozeman, MT and

Thomas Shanower USDA-ARS Sidney, MT.

- 1:30** Introduction, **Thomas Shanower**
- 1:35 55** Wheat stem sawfly population dynamics in southern Alberta: Host effects, overwintering and parasitism. **Héctor A. Cárcamo**¹, Brian L. Beres¹, J. Robert Byers¹, Fran R. Clarke², and Ron M. DePauw², ¹Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, ²Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada.
- 1:55 56** Simplification of inheritance of resistance to wheat stem sawfly in hard red spring wheat. **Taing Aung**¹, F.R. Clarke², and R.M. DePauw², ¹Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, MB, Canada, ²Agriculture and Agri-Food Canada, Semiarid Prairie Agricultural Research Centre, Swift Current, SK, Canada.
- 2:15 57** Chaos to reduce risk: Assessing alternative farming strategies to mitigate wheat stem sawfly damage on the southern prairies of Canada. **Brian L. Beres**¹, Hector A. Carcamo¹, Robert J. Byers¹, Fran R. Clarke², and Ron M. DePauw², ¹Lethbridge Research Centre, Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada, ²Semi-Arid Prairie Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, Canada.
- 2:35 58** Recent progress towards classical biological control of the wheat stem sawfly. **Kim A. Hoelmer**¹, Thomas G. Shanower², and Marie-Claude Bon¹, ¹USDA-ARS European Biological Control Laboratory, Campus International de Baillarguet, Montferrier-sur-Lez, France, ²USDA-ARS, Sidney, MT.
- 2:55 59** Canadian perspective on WSS. **Scott Hartley**¹ and Scott Meers², ¹Saskatchewan Agriculture, Food and Rural Revitalization, Regina,

SK, Canada, ²Crop Diversification Centre South, Alberta
Agriculture, Food and Rural Development, Brooks, AB, Canada.

3:15 Break

3:35 60 Impact of harvest practices on wheat stem sawfly parasitoids. **Scott Meers**, Crop Diversification Centre South, Alberta Agriculture, Food and Rural Development, Brooks, AB, Canada.

3:55 61 Development of solid-stem winter wheat cultivars for Montana. **Phil L. Bruckner**, Dept. of Plant Sciences & Plant Pathology, Montana State University, Bozeman, MT.

4:15 62 Relative capture of male and female adult wheat stem sawflies by pheromone and host plant attractant lures in field traps. **William G. Meikle**¹, David K. Weaver², Christian Nansen², Justin B. Runyon^{2,3}, Gavin E. Peck², and Wendell L. Morrill², ¹European Biological Control Laboratory, USDA-ARS, Campus International de Baillarguet, CEDEX, France, ²Montana State University, Dept. of Entomology, Bozeman, MT, ³ Dept. of Entomology, Penn State University, University Park, PA.

4:35 Adjourn

Symposium: The Contributions of IPM Towards Sustainable Management Systems in Greenhouse/Nursery Production

Madison

Tuesday, 1:10 p.m. – 3:15 p.m.

Organizer and Moderator: **Michael P. Parrella**,
Dept. of Entomology, University of California, Davis, CA

1:10 Introduction, **Michael Parrella**

1:15 63 Changing greenhouse cut rose production systems altered the course of IPM practices and sustainability. **Steven A. Tjosvold**, University of California Cooperative Extension, Watsonville CA.

1:35 64 Reduced risk, reduced toxicity and biorational pesticides: Their roles in greenhouse IPM systems. **Richard Lindquist**, Olympic Horticultural Products, Wooster, OH.

1:55 65 Meeting the challenge of diversity: Implementing IPM in the Oregon greenhouse/nursery industry. **Robin L. Rosetta**¹, ¹Oregon State

University, NWREC, Aurora, OR.

- 2:15 66** Heat treatments in sustainable management systems. **Arnold H. Hara**, Dept. of Plant and Environmental Protection Sciences, University of Hawaii, Hilo, HI.
- 2:35 67a** Enhancing the sustainability of biological control in Gerbera. **Roy Kaspi** and Michael P. Parrella, Dept. of Entomology, University of California, Davis, CA.
- 2:55 67b** Sustainable biological control based IPM in greenhouse grown ornamentals. **Kevin M. Heinz**, Department of Entomology, Texas A&M University, College Station, TX.
- 3:15** Adjourn

Symposium: GPS, GIS, Geostatistics, GIS-Web: The “G” Wiz about Acquisition, Management, Analysis, and Delivery of Spatially-Related Data
Madison

Tuesday, 3:30 p.m. – 5:35 p.m.

Organizer and Moderator: **Thomas Perring**,
Dept. of Entomology, University of California, Riverside, CA

- 3:30** Introduction, **Thomas Perring**
- 3:35 68** Remote monitoring of salt cedar biological control dynamics in Lovelock, Nevada. **G. L. Anderson**, USDA, ARS, Northern Plains Agricultural Research Laboratory, Sidney, MT.
- 4:00 69** Utilizing geospatial technologies in USDA’s national tick surveillance program. **Angela James**¹, Jerome Freier¹, James Keirans², Lance Durden², Jack Schlater³, and James Mertins³,
¹USDA, APHIS, VS, CEAH, Fort Collins, CO, ²Georgia Southern University, IAP, Statesboro, GA, ³USDA, APHIS, VS, NVSL, Pathobiology Laboratory, Ames, IA.
- 4:25 70** A GIS-based approach to Pierce’s disease vector (GWSS) reduction. **Thomas M. Perring**¹, Carmen Gispert², and Charles A. Farrar¹,
¹Dept. of Entomology, University of California, Riverside, CA,
²University of California Cooperative Extension, Indio, CA.
- 4:50 71** Spatial dynamics of insects in crop systems at the landscape scale: How can we make use of spatial information in IPM? **Jon C. Allen**¹

and Carlyle C Brewster², ¹Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA, ²Dept. of Entomology, Virginia Polytechnic University, Blacksburg, VA.

5:15 72 More than pretty maps: Geostatistics in insect ecology and pest management. **Yong-Lak Park**, Dept. of Entomology, University of California, Riverside, CA.

5:35 Adjourn

10-Minute Oral Presentation Session

Aspen

Tuesday, 1:30 p.m. – 5:15 p.m.

Moderators: **David Haviland**, University of California Cooperative Extension, Kern County, CA and **Todd Anderson**, Dept. of Integrative Biology, Brigham Young University, Provo, UT

Section A

1:30 73 The diversity of the dance flies (Diptera: Empididae) of Utah, USA. **Todd Anderson** and C. Riley Nelson, Dept. of Integrative Biology, Brigham Young University, Provo, UT.

Section B

1:42 74 Investigating aphidophagy in Montanan carabids using PCR. **S.K. Wallace** and S. Blodgett, Dept. of Entomology, Montana State University, Bozeman, MT.

Section C

1:54 75 Spatio-temporal distribution patterns of the cabbage seedpod weevil and its parasitoids in canola crops. **Lloyd M. Dosdall**¹, Bryan J. Ulmer¹, Héctor A. Cárcamo², and Dan L. Johnson³, ¹ Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Agriculture-Forestry Centre, Edmonton, AB, ²Agriculture and Agri-Food Canada, Lethbridge, AB, ³Dept. of Geography, University of Lethbridge, Lethbridge, AB.

2:06 76 Cereal leaf beetle: Host range and field evaluation of aggregation pheromone. **Sujaya Rao**, Dept. of Crop & Soil Science, Oregon State University, Corvallis, OR.

2:18 77 Temperature and chalkbrood incidence in the alfalfa leafcutting bee. **Rosalind R. James** and Craig Huntzinger, USDA-ARS Bee Biology

and Systematics Laboratory, Logan, UT.

- 2:30 78** Ovipositional responses of navel orangeworm to ground almond, walnut and pistachio kernels. **Bradley S. Higbee**, Paramount Farming Company, Bakersfield, CA.
- 2:42 79** Moths trapped with the feeding attractant acetic acid and 3-methyl-1-butanol. **P. J. Landolt**, USDA-ARS, Wapato, WA.

Section E

- 2:54 80** Developing and applying a protocol for weed biological control risk assessment for invasive *Linaria*. **Sharlene E. Sing**¹, Robert K.D. Peterson², and David K. Weaver², ¹USFS Rocky Mountain Research Station – Forestry Sciences Lab, Bozeman, MT, ²Dept. of Entomology, Montana State University, Bozeman, MT.

3:06 Break

Section F

- 3:30 81** Cockroach gel bait aversion and the development of a new gel bait formula. **Michael Chapman**¹, Gary Braness², Nonggang Bao³, Tom Macom³, and Joe Barile⁴, Bayer Environmental Science, ¹Placentia, CA, ²Kansas City, MO, ³Clayton, NC, ⁴Mansfield, MA.
- 3:42 82** *Trionymus haancheni* McKenzie – a new pest of barley in Idaho. **Juan M. Alvarez**, Aberdeen Research & Extension Center, University of Idaho, Aberdeen, ID.
- 3:54 83** Management of seed pod weevil in dry peas using softer insecticides to replace “OP” compounds. **David E. Bragg**, Washington State University Extension Entomology, Pomeroy, WA.
- 4:06 84** Areawide organic pear pest management: Two-years of organic-ish IPM. **John E. Dunley**, Tara M. Madsen, and Bruce M. Greenfield, Washington State University, Tree Fruit Research and Extension Center, Wenatchee, WA.
- 4:18 85** Efficacy of Intrepid®, methoxyfenozide, against peach twig borer, *Anarsia lineatella*, and navel orangeworm, *Amyelois transitella* in almond and pistachio. **Fikru Haile**, Barat Bisabri, and Mark Hertlein, Dow AgroSciences, Fresno, CA.
- 4:30 86** Suppression of melon fly is as simple as 1, 2, and 3. **R.F.L. Mau**, R. Pandey, and M.Y. Chou, Dept. of Plant and Environmental

Protection Sciences, University of Hawaii at Manoa, Honolulu, HI.

- 4:42 87** Evaluation of postharvest treatments to bulk citrus for control of the glassy-winged sharpshooter, *Homalodisca coagulata*. **David R. Haviland**¹ and Nick Sakovitch², ¹University of California Cooperative Extension, Bakersfield, CA, ²University of California Cooperative Extension, Ventura, CA.
- 4:54 88** Evaluation of surround kaolin clay film as a management tool for root weevils in strawberries. **Diane Kaufman**¹, Wei Yang¹, Judy Kowalski¹, and Glenn Fisher², ¹Oregon State University, North Willamette Research and Extension Center, Aurora, OR, ²Dept. of Crop and Soil Science, Oregon State University, Corvallis, OR.
- 5:06** Adjourn

Dinner on your own

Wednesday, June 23

Exhibits

Atrium

8:30 a.m. – 11:30 a.m.

Final Business Meeting

8:00 a.m. – 8:30 a.m.

Hyalite

Symposium: Ants, Ants, Ants – What Have We Learned About Biology and Control in the Urban Landscape

Hyalite

Wednesday, 8:30 a.m. – 12:00 noon

Organizer and Moderator: **David Cox**, Syngenta, Madera, CA and **Michael Rust**, Dept. of Entomology, University of California, Riverside, CA

- 8:30** Introduction, **David Cox**
- 8:35 89** Carpenter ant: Behavior, species recognition and geographical distribution as it relates to control. **Laurel D. Hansen**, Dept. of Biology, Spokane Falls Community College, Spokane, WA.
- 8:55 90** Laboratory and field efficacy evaluations for the control of carpenter ants (*Camponotus modoc*, *C. vicinus*) in California. **William A.**

Donahue, Jr., Sierra Research Laboratories, Modesto, CA.

- 9:15** **91** Argentine ants – biology, behavior and control in the urban setting.
Michael K. Rust, Donald A. Reiersen, John H. Klotz, and Andrew Soepronon, Dept. of Entomology, University of California, Riverside, CA.
- 9:35** **92** Field evaluation and control of Argentine ants in agricultural environments: A contrast to urban settings. **Donald A. Reiersen**¹, M. K. Rust¹, and J. Klotz¹, ¹ Dept. of Entomology, University of California, Riverside, CA.
- 9:55** **93** Pharaoh's ant and odorous house ant behavior and control measures.
John H. Klotz, Dept. of Entomology, University of California, Riverside, CA.
- 10:15** Break
- 10:30** **94** Red imported fire ant (*Solenopsis invicta*) eradication (fact or fiction) in the urban and nursery settings. **John Kabashima**, University of California Cooperative Extension, Irvine, CA.
- 10:50** **95** Statistical analyses to determine efficacy of ant pesticide treatments.
Les Greenberg, Dept. of Entomology, University of California, Riverside, CA.
- 11:10** **96** Regulatory requirements and considerations during ant bait development in the urban setting. **David L. Cox**, Syngenta Crop Protection, Madera, CA.
- 11:30** Panel Discussion
- 11:50** Summary: **Michael Rust**
- 12:00 noon** Adjourn

Symposium: Population Biology and Interactions of Introduced and Native Ladybird Beetles

Madison

Wednesday, 8:45 a.m. – 11:30 a.m.

Organizer and Moderator: **Edward W. Evans**,
Dept. of Biology, Utah State University, Logan UT

- 8:45** Introduction, **Edward Evans**
- 8:50 97** Theoretical effects of multiple prey and habitats on interactions between ladybird beetles. **Gary C. Chang**, Dept. of Entomology, Washington State University, Pullman, WA.
- 9:10 98** Strength of tarsal attachment to leaves and the rates of predation on aphids: Contrasting the abilities of native and invasive coccinellid species. **Sanford D. Eigenbrode**¹, Hongjian Ding¹, Bill Snyder², and Stanislav Gorb³, ¹Dept. of Plant, Soil and Entomological Sciences, University of Idaho, Moscow, ID, ²Dept. of Entomology, Washington State University, Pullman, WA, ³Evolutionary Biomaterials Group, Max-Planck-Institut für Metallforschung, Stuttgart, Germany.
- 9:30 99** Habitat displacement of native ladybirds by the introduced species, *Coccinella septempunctata*. **Edward W. Evans**, Dept. of Biology, Utah State University, Logan, UT.
- 9:50 100** Vedalia beetle population response to pest management and environmental conditions. **Elizabeth E. Grafton-Cardwell**, Dept. of Entomology, University of California, Riverside, CA.
- 10:10** Break
- 10:30 101** Interactions between indigenous and introduced ladybirds in Japan. **Yukie Kajita**, Dept. of Agriculture, Yamagata University, Tsuruoka, Yamagata, Japan, and Dept. of Biology, Utah State University, Logan, UT.
- 10:50 102** Intraguild predation and successful invasion by exotic ladybird beetles. **William E. Snyder**¹, Garrett M. Clevenger¹, and Sanford D. Eigenbrode², ¹Dept. of Entomology, Washington State University, Pullman, WA, ²Dept. of Plant, Soil and Entomological Sciences, University of Idaho, Moscow, ID.
- 11:10 103** Asymmetric larval interactions between introduced and indigenous ladybirds in North America. **Hironori Yasuda**¹, Edward W. Evans², Yukie Kajita², Keiko Urakawa¹, Takizawa Takizawa¹, ¹Faculty of Agriculture, Yamagata University, Tsuruoka, Yamagata, Japan, ²Dept. of Biology, Utah State University, Logan, UT.
- 11:30** Adjourn
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Symposium: Approaches to Lygus Management

Aspen

Wednesday, 8:45 a.m. – 11:30 a.m.

Organizer and Moderator: **Peter Goodell**, University of California, Kearney Ag Center, Parlier, CA and **Sue Blodgett**, Dept. of Entomology, Montana State University, Bozeman UT

- 8:45** Introduction, **Peter Goodell**
- 8:50 104** Managing Lygus in an ecological context. **Peter B. Goodell**, University of California, Kearney Agricultural Center, Parlier, CA.
- 9:10 105** *Lygus hesperus* – studies in Washington State apple orchards. **Doug Walsh**¹, Mike Bush², Tim Waters¹, Holly Ferguson¹, and Ron Wight¹, ¹Dept. of Entomology, Washington State University, IAREC, Prosser, WA, ²Washington State University, County Extension, Yakima, WA.
- 9:30 106** Importation and establishment of Lygus parasitoids in California. **C. H. Pickett**¹, R. Rodriguez, D¹. Coutinot², L. Ertle³, K. A. Hoelmer², and K. Casanave¹, ¹California Dept. of Food & Agriculture, Biological Control Program, Sacramento, CA, ²European Biological Control Laboratory, USDA ARS, Montferrier, France, ³USDA ARS Beneficial Insects Research Laboratory, Newark, DE.
- 9:50 107** Parasitism of *Lygus* spp. (Heteroptera:Miridae) nymphs in the alfalfa seed growing region of the Pacific Northwest. **Jim Barbour**, Thomas Mowry, and Lorraine Seymour, Dept. of Plant, Soil, and Entomological Sciences, University of Idaho, Parma Research & Extension Center, Parma, ID.
- 10:10** Break
- 10:30 108** Impact of *Beauveria bassiana* on Lygus populations. **Michael R. McGuire**¹ and Jarrod Leland², ¹USDA-ARS, Shafter, CA, ²USDA-ARS, Stoneville, MS.
- 10:50 109** Northern Great Plains Lygus bug species complex and management. **Sue Blodgett**¹, Rebecca Baril¹, Ruth O'Neill¹, Cecil Tharp¹ and Ken Kephart², ¹Dept. of Entomology, Montana State University, Bozeman, MT, ²Southern Agricultural Research Center, MSU, Huntley, MT.
- 11:10 110** Nectar and honeydew sugars influence gustatory acceptance and longevity of *Anaphes iole*, an egg parasitoid of *Lygus*. **Livy**

Williams, III and J. Peirce Beach, USDA, ARS, Southern Insect Management Research Unit, Stoneville, MS.

11:30 Adjourn

MEETING NOTES

ABSTRACTS:

Abstracts will be available on the Pacific Branch web site at <http://pbsa.prosser.wsu.edu>.

AWARDS LUNCHEON:

The Awards Luncheon is scheduled for noon to 1:00 p.m. on Tuesday, June 22 in the *Hyalite & Clark* room. The luncheon cost is included in the registration fee. Extra lunch tickets can be purchased at the registration desk for \$20.00.

BRANCH MIXER AND PRESIDENT'S RECEPTION:

The Pacific Branch Mixer is scheduled for Monday evening, June 21, from 5:30-7:00 p.m. in the *Hyalite & Clark* room. Drinks and appetizers will be served. The mixer cost is included in the registration fee. Extra tickets can be purchased at the registration desk for \$15.00.

BUSINESS MEETINGS:

The preliminary business meeting will be held at the end of the opening session at 10:25 a.m. on Monday, June 21 in the *Hyalite & Clark* room. The final business meeting will be held from 8:00-8:30 a.m. on Wednesday, June 23 in the *Hyalite* room. Plan to attend to vote for officers and give input for future meeting sites.

EMPLOYMENT OPPORTUNITIES:

An employment opportunities desk will be located in the *Atrium*. Anyone seeking employment is invited to provide a résumé, and any employer seeking to fill a position is encouraged to provide a description of the position and the name of a contact person attending the Branch meeting.

EXECUTIVE COMMITTEE:

The Pacific Branch Executive Committee will meet Sunday evening, June 20, from 5:00-7:00 p.m. in the *Aspen* room.

EXHIBITOR DISPLAYS:

For a fee of \$200 vendors can set up an exhibit booth in the Atrium, adjacent to the poster displays and refreshments. Funds generated from exhibitors will be used to support the meeting program (student symposia speakers, speaker travel). Contact Bob Peterson for more information on exhibitor opportunities, bpeterson@montana.edu.

Atrium

Monday, June 21 8:30 a.m. – 5:00 p.m.

Tuesday, June 22 8:30 a.m. – 5:30 p.m.
Wednesday, June 23 8:30 a.m. – 11:30 a.m.

HOTEL INFORMATION:

Headquarters for the meeting will be the Grantree Inn, 1325 North 7th Avenue, Bozeman, Montana. Hotel room rates are \$91 (single or double) and \$101 for a suite. This special rate is offered, based on availability, 3 days before and 3 days after the meeting. To reserve a room, call the Grantree Inn at (406) 587-5261 or 1-800-624-5865. Tell the reservation desk operator that you are with the “Entomological Society of America” to receive the meeting room rate. This will also allow us to count the number of rooms reserved for the meeting, as we must meet a minimum level to receive complimentary conference facilities. **The cut-off date for reserving a room under the Pacific Branch ESA rate is June 1, 2004.**

Directions

From the North and South: If traveling on Highway 191, follow signs to Bozeman, take left at North 7th Avenue and continue for 1 mile to the Best Western Grantree Inn. From the East and West: Take Exit 306 off of Interstate 90 to the Best Western Grantree Inn.

LINNAEAN GAMES:

The Games will be held on Monday, June 21, from 7:00-9:00 p.m. in the *Madison* room. The winning Pacific Branch team will be able to compete in the National ESA Linnaean Games in Salt Lake City, UT. Contact Dr. Sujaya Rao at (541) 737-9038 (sujaya@oregonstate.edu) for more information.

MEETING INFORMATION AND SCHEDULE CHANGES:

Notices, meeting schedule changes and general information will be posted throughout the meeting at the Registration Desk. Information on points of interest, dining, and entertainment will be available from the hotel.

MEETING SCHEDULE:

Session moderators are responsible for keeping speakers on schedule. If a presentation is completed early, or cancelled, the moderator must ensure that the next presentation begins at the scheduled time.

POSTER DISPLAY PRESENTATIONS:

Student poster displays will be presented in the *Atrium* on Monday, June 21 from 9:00 a.m. to 5:00 p.m. The general poster session will be presented in the Atrium on Tuesday, June 22, from 9:00 a.m. to 5:00 p.m. The Atrium will be available for authors to set up their displays in advance on both days from 8:00-9:00 a.m. Displays should be taken down by 6:00 p.m. on the day of the presentation. Posters should not exceed 4 ft. x 4 ft. in size. Authors need to bring their own pushpins. **Authors are expected to be present at their posters from 9:00-10:00 a.m. and from 2:00-3:00 p.m. on the day of their presentation.**

POWERPOINT SLIDESHOW PRESENTATIONS:

The primary presentation format will be PowerPoint files viewed using laptop computers and LCD projectors. There will also be slide projectors available. We are asking session moderators to bring their own laptop computers for their session. A few extra laptops will be available. **PowerPoint files should be brought to the meeting on a CD-R or a USB memory bar/stick. If a CD is used, then it should be brought to the Session Preparation room (*Birch*) 24 hours in advance of the talk in order to be copied onto a session CD. If a memory bar/stick is used, then it should be checked on the moderator's laptop prior to the session and then loaded just prior to the presentation. The meeting Operations Committee chair, William Lanier (wlanier@montana.edu), will assist with preparing session CDs in the *Birch* room.**

Session Preparation Room – *Birch*

Monday, June 21: 8:00 a.m. – 5:00 p.m.

Tuesday, June 22: 8:00 a.m. – 5:30 p.m.

Wednesday, June 23: 8:00 a.m. – 12:00 noon.

POWERPOINT PRESENTATION GUIDELINES:

- Keep presentations **simple**. We will be using a number of different computers so the chances of problems are rather high.
- Name your presentation file: Paper#lastname.ppt; e.g.; 25Porter.ppt
- Bring your presentation on a CD to the presentation preview room (*Birch* room) 24 hours before your presentation. In the presentation room, place the CD in the appropriate folder provided and it will be transferred to the session CD. If your presentation is on a USB flashcard/memory stick, you may bring it directly to your session and load it just prior to your presentation. **Please bring a backup, second CD to your session in case your disk gets lost.**
- Write the following information with a waterproof marker onto your presentation CD: a) presentation number, b) date of presentation, c) AM or PM, d) presenter's name, e) local address or hotel and room number in case things go wrong.
- Use a standard closed session CD-R disk (not a CD-RW), and test the CD on several computers to make sure it works.
- Use basic fonts (Times New Roman and Arial). Not all computers will have the same fonts and this will cause alignment problems.
- Video clips are strongly discouraged (please contact Will Lanier <wlanier@montana.edu> well in advance if they are essential)
- Convert graphs and other images to low resolution JPEG format. Graphs linked to Excel or other programs are unlikely to work on another machine.
- Try to keep your presentation file under 15 MB.

Web links for the 2003 ESA meeting that have valuable information on PowerPoint presentations

http://www.entsoc.org/annual_meeting/2003/Infor

[mation/update_on_powerpoint_presentatio.htm](#) and
http://www.uky.edu/~gcbrown/FAQ/electronic_presentations_faq.htm

REGISTRATION:

Foyer

Sunday, June 20	3:00 – 9:00 p.m.
Monday, June 21	8:00 a.m. – 4:00 p.m.
Tuesday, June 22	8:00 a.m. – noon

Everyone attending the Pacific Branch meeting must register. The registration desk will be located in the *Foyer, Grantree Inn*. Those who are pre-registered may pick up registration materials there. On-site registration is \$100.00 for members, \$120.00 for non-members, and \$30.00 for spouses and guests. Registration is complimentary for honorary members, emeritus members, students, and invited participants from outside the Pacific Branch or outside the profession. Credit card payments cannot be accepted.

TRANSPORTATION:

Taxi or hotel courtesy van. Eight miles from Gallatin Field Airport, offering non-stop air service from Seattle, Denver, Salt Lake City and Minneapolis. Ninety miles from Helena Regional Airport.

WEATHER:

Weather in the Bozeman area in June is expected to be warm, 70-80°F during the day, and evenings may be cool, 50-60°F. Bozeman is a relaxed place to visit. Casual clothing is acceptable for most occasions. Sunscreen is recommended in the summer. A lightweight coat or jacket will usually suffice, unless you plan to visit higher mountain areas.

PACIFIC BRANCH OFFICER NOMINATIONS

The Pacific Branch Nominations Committee composed of Keith Pike (Chair), David Byrne, Wendell Morrill, and Frank Zalom recommend Dr. John Stark for President-Elect of the Pacific Branch and Drs. Edward Bechinski and Steve Clement for Pacific Branch Representative on the ESA Governing Board.



PRESIDENT-ELECT

Dr. John Stark is a Professor/Research Scientist of Environmental Toxicology and Entomology at Washington State University. His research interests involve determining the impacts of pesticides and other toxicants on biological control agents associated with agricultural ecosystems and aquatic organisms inhabiting rivers and streams in the Pacific Northwest,

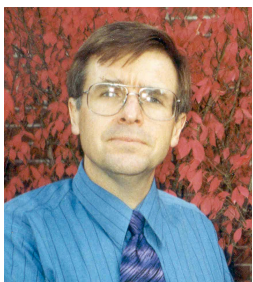
including salmon and the invertebrates that they feed upon.

He received a Bachelor of Science Degree in Environmental Science and Biology from Syracuse University in 1978, a Masters of Science degree in Entomology from Louisiana State University in 1981 and a Ph.D. in Pesticide Toxicology/Entomology from the University of Hawaii in 1987. John is the author or coauthor of over 100 scientific papers and book chapters. John team teaches Pesticide Topics at Washington State University.

John is a member of the ESA Governing Board. His term expires at the end of 2004. John has served on various Pacific Branch and ESA committees and panels including the Executive Committee of the Pacific Branch (1998-2000), the Program Chair for the 1999 Pacific Branch Entomological Society of America annual meeting, Chair of the Entomological Society of America “ESA Recognition Award in Entomology” award panel, 1996, Chair of the Pacific Branch ESA Student Paper Awards, 1996, Member of the Pacific Branch ESA Program Committee, 1996, Chair of the Pacific Branch ESA Site Selection Committee 1996, Chair of the Awards Selection Committee for the Pacific Branch of the Entomological Society of America, 1994, and Chair of the Awards Canvassing Committee Member for the Pacific Branch of the Entomological Society of America, 1992-1993.

REPRESENTATIVE ON THE GOVERNING BOARD

Dr. Ed Bechinski is a Professor of Entomology at the University of Idaho where he has served since 1989 as statewide coordinator for the Idaho Extension IPM program and more recently as state leader for the Pesticide Safety Education Program.



His outreach programs have provided training about IPM principles and practices in agricultural field crops and urban landscapes to tens of thousands of Idahoans. Ed teaches Economic Entomology for undergraduate non-majors, Principles of Insect Pest Management for graduate majors, and contributes as one of three instructors to Pesticides in the Environment. His research focus is the development of practical IPM decision tools, especially pest sampling programs,

forecasting models and economic thresholds for insect pests of potatoes, wheat, sugarbeets and dry beans.

Ed has been an active member of ESA since 1977 when he was admitted to Larry Pedigo's graduate program in entomology at Iowa State University. His

service to the Pacific Branch includes membership and chair of the Insect Detection, Evaluation and Prediction Committee (1989-1994), Executive Committee Member-at-Large (1997-1999), Resolutions Committee chair (2001-2003), and Awards Selection Committee. At the national level, he has served as member and chair of the Book and Media Reviews Editorial Board (1989-1994), as Section F representative to the Education & Youth Committee (2000-2003), and as a member of the Entomological Foundation Undergraduate Scholarship Judging Panel (2002-2003).



Dr. Steve Clement is a research entomologist at Washington State University in Pullman. Steve has devoted over 28 years to entomology and has served the profession and the ESA in a number of ways. Since joining the ESA (mid-1970s) as a graduate student at the University of California, Davis (UCD), he has served the Pacific Branch

as a member or chair of the Program Committee (1990), Registration Committee (1992-1993), Executive Committee (1993-1995), Resolution Committee (1994), Nomination Committee (1999), and Awards Committee. At the national level, Clement was Secretary, Chair-Elect, and Chair (1995-1997) of subsection Fa and Co-Chair of the Local Arrangements Committee (Montreal, 2000). He also served on the Resolutions Committee (1995), Program Committee (1996-1997), chaired the first Awards Selection Committee for the Graduate Student Award in Host Plant Resistance (1997), moderated numerous paper sessions, and judged student posters (1995, 2003). He has organized and participated in several symposia at national and branch meetings. After receiving his PhD (1976) from UCD, Clement held positions at UCD (postdoctoral entomologist), Ohio Agricultural Research and Development Center (The Ohio State University), and with the USDA-ARS in Rome, Italy, and Pullman, Washington. Since 1986, he has been Research Entomologist, Plant Germplasm Research, Pullman, Washington, and graduate faculty, Washington State University. Clement's projects over 28 years have been directed towards wild bees, rice, artichoke, corn, invasive weeds, alfalfa, grain legumes, temperate grasses, strawberries, grass fungal endophytes, and dryland cropping systems. He has authored or coauthored over 130 journal articles, abstracts, book chapters, and one co-edited book. If elected to the Governing Board, Steve will diligently serve the interests of Pacific Branch members and help govern the ESA.

AWARDS

The C. W. Woodworth and John Henry Comstock Awards will be presented during the opening session on Monday, June 21. All other awards will be presented during the awards luncheon on Tuesday, June 22.



JOHN HENRY COMSTOCK AWARD

This year's winner of the Comstock Award for the Pacific Branch of the ESA is **Renee Priya Prasad**. Renee is a PhD. candidate at Washington State University with Bill Snyder. Her PhD research dissertation title is "Factors Limiting Conservation Biological Control by Carabids and Staphylinids".

She has a Masters of Pest Management degree from Simon Fraser University and a Bachelor of Science from University of Victoria. Her MS project topic was "Effects of Temperature Acclimation on Field Performance of *Trichogramma* Wasps".



C. W. WOODWORTH AWARD

The C. W. Woodworth Award annually recognizes a person in the Pacific Branch of the Entomological Society of America who has made outstanding contributions to entomology during the past decade. The 2004 Woodworth Award goes to **Dr. Victoria Y. Yokoyama** of the USDA-ARS San Joaquin Valley Agricultural Sciences Center, Parlier, CA.

Dr. Yokoyama is a research scientist at the USDA-ARS, in Parlier (formerly Fresno), California since 1984 and specializes in the development of quarantine treatments and strategies to control pests of regulatory concern in commodities shipped to regions where the pests do not occur. Dr. Yokoyama received her B.S. degree from the University of California, Davis, and her M.S. and Ph.D. degrees from the University of California, Berkeley. Dr. Yokoyama served as a researcher at the Institute for Cancer Research, College of Physicians and Surgeons, Columbia University, New York, and as a faculty member in the Dept. of Biology, California State University, Long Beach, California prior to joining the USDA-ARS.

In the past 10 years, Dr. Yokoyama has gained international recognition for the development of quarantine treatments that have created new markets and safeguarded existing markets for commodities exported from the western states. She has developed a multiple quarantine treatment to control Hessian fly and cereal leaf beetle in hay for intrastate shipments and Asian markets. The unique concepts of a pest-free period and the poor host status of stone fruit for walnut husk fly, a native fruit fly, were adopted for stone fruit imports by New Zealand, Brazil, Colombia, Ecuador, Argentina, and Chile. Dr. Yokoyama developed a fumigation treatment for nectarines exported to Japan, and a combination treatment of low temperature storage and sulfur dioxide slow release fumigation for table grapes. She trained Chilean scientists in the development of quarantine treatments for exporting commodities into the U.S. Dr. Yokoyama is currently

conducting research on the control of olive fruit fly, a recently introduced exotic pest in California.

Dr. Yokoyama has been an active member of the Entomological Society of America and has served as an officer, committee member, and editorial board member at the national, branch, and sectional level. She has served as a 4-H project leader in entomology and ornamental horticulture, and as a FFA booster. Dr. Yokoyama's history of research and service contributions to the entomological sciences, and the economic importance of her work will bring distinction to the C. W. Woodworth Award.

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ENTOMOLOGICAL SOCIETY OF AMERICA COMMITTEES
2003-2004**

Local Arrangements

Sue Blodgett, Chair

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Site Selection

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Student Paper/Poster Competition

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AUTHOR INDEX
(click on hyperlink to view abstract)

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Weaver, David K.	32	SYMP	Mon. 4:40
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Key to Presentation Types:

PAPER	Submitted 10 minute Paper
SC-MS	Student Comp. Paper (M.S.)
SC-PHD	Student Comp. Paper (Ph.D.)
POSTER	Submitted Poster Display
DSC-MS	Student Comp. Poster Display (M.S.)
DSC-PHD	Student Comp. Poster Display (Ph.D.)
SYMP	Symposium Presentation
AWARD	Woodworth or Comstock Award Winner

Program Notes

Program Notes
