

Ninety-Fourth Annual Meeting



**Pacific Branch  
Entomological Society of America**



Grove Hotel, Boise, Idaho  
April 11–14, 2010

**Entomology  
Sustainability**

**Environmental Quality**



The Officers, Committee Chairs, and Members of  
The Pacific Branch of the Entomological Society of America wish to thank our sponsors,  
without whom our annual meeting would not be possible.

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# 2009-2010 Pacific Branch Entomological Society of America



*Douglas B. Walsh, President*

## OFFICERS

President .....	Doug Walsh Washington State University, Prosser, WA
President-Elect .....	Roger Vargas USDA-ARS Pacific Basin, Hilo, HI
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### MEMBERS AT LARGE

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Alberto Pantoja.....	USDA-ARS, Fairbanks, AK (2007-2010)
Robin Rosetta .....	Oregon State University, Aurora, OR (2008-2011)
Mark Wright.....	University of Hawaii, Honolulu, HI (2008-2011)
Mark Sisterson .....	USDA-ARS, Parlier, CA (2009-2012)
Carolyn Pickel .....	University of California, Davis, CA (2009-2012)

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Auditing.....	Tad Gantenbein, Chair
Awards Canvassing.....	Jeb Owen, Chair
Employment Opportunities .....	David Cox, Chair
Graduate Student Symposium .....	Ashfaq Sial (Chair), Chris Goforth, Chrissy Mogren Eleanor Blitzer, Elizabeth Miller, Emily Symmes Marianna Szucs, Patrick Aldrich, Ross Winton
Linnaean Games .....	Michael Costello, Chair
Local Arrangements .....	James Barbour, Chair
On-Line Registration.....	Lucia Varela, Chair
On-Site Registration .....	Sharon Taff, Chair
Operations.....	Tim Waters, Dan Groenendale, Co-Chairs
Nominations.....	Frank Zalom, Chair
PBESA Representative to ESA Student Affairs Committee .....	Ashfaq Sial
Photo Salon .....	Marshall Johnson, Chair
Program .....	Sally O'Neal, Chair
Resolutions .....	Luis Espino, Chair
Site Selection (2012 Meeting) .....	Harvey Yoshida, Chris Clemens, Co-Chairs
Student Paper/Poster Competition.....	Holly Ferguson, Chair
Website .....	Sally O'Neal

# **PBESA 2010 LOGISTICS & BASICS**

## **REGISTRATION**

Everyone attending the Pacific Branch meeting must register. Those who have pre-registered on-line may pick up their registration packet at the registration desk. Those who have not yet registered may register on-site at the registration desk. On-site registration is \$165 for members, \$205 for non-members, and \$65 for students, honorary/emeritus members, and guests. Credit card payments cannot be accepted for on-site registration—cash or check only. There are ATMs in the hotel's business center, in Qwest arena adjoining the hotel, at Bank of America across the street from the hotel, and at US bank adjacent to the hotel. The registration desk will be open:

- Sunday, April 11, 3:00 to 7:00 p.m. in the hotel lobby.
- Monday, April 12, 8:00 a.m. to 4:00 p.m. on the 2nd floor landing.
- Tuesday, April 13, 8:00 a.m. to 4:00 p.m. on the 2nd floor landing.

## **HOTEL MAP**

A map of The Grove Hotel's meeting rooms is provided on the back cover of this program.

## **SCHEDULE**

The “meeting-at-a-glance” grid on page 8 shows the overall schedule. Full chronological program with details including speakers, times, and event locations, begins on page 9.

## **MEETING INFORMATION AND SCHEDULE CHANGES**

Schedule changes and other information of general interest will be posted throughout the conference at the Registration Desk.

## **ABSTRACTS**

Abstracts for PBESA 2010 paper and poster presentations are available on-line at [http://ipm.wsu.edu/PBESA/2010\\_PBESA\\_Abtracts.doc](http://ipm.wsu.edu/PBESA/2010_PBESA_Abtracts.doc). The abstracts that had been received and processed before March 12, 2010 are being provided in PBESA 2010 registration packets on a “PBESA 2010” commemorative flash drive. Hard copy abstracts are not provided at the meeting.

## **HOTEL INFORMATION**

The Grove Hotel is the site of the 2010 meeting. It is located at 245 S. Capitol Blvd., Boise, ID 83702 (208) 333-8000, FAX (208) 333-8800, <http://www.grovehotelboise.com>. A special reduced group rate is available through March 19 only (use GROUP NUMBER 70660 if reserving on-line).

## **TRANSPORTATION**

Taxi service from the Boise Airport to The Grove Hotel is approximately \$10-12.

## **WEATHER**

Boise's weather in April averages in the low 60°s F during April, with nighttime temperatures dipping just below 40°F. There is a slight chance of rain.

## **FUTURE PBESA MEETINGS**

2011: Waikoloa, Hawaii, March 27-30. 2012: Portland, Oregon, Date TBD.

# **SPECIAL MEETINGS AND EVENTS**

## **STUDENT COMPETITION JUDGES' MEETING**

Those who have volunteered to serve as judges for the student poster or paper competitions should attend an organizational meeting in the Clearwater Room on the 3rd floor on Sunday, April 11, from 5:00 to 6:00 p.m.

## **EXECUTIVE COMMITTEE**

The Pacific Branch Executive Committee will meet Sunday evening, April 11, from 6:00 to 8:00 p.m. in the Cedar Room on the 2nd Floor.

## **BUSINESS MEETINGS**

The preliminary business meeting will be held at the end of the opening session on Monday morning, April 12. The combination opening session/preliminary business meeting is scheduled from 9:00 to 11:30 a.m. in the Evergreen Room on the 2nd Floor. The final business meeting will be held from 7:30 to 8:30 a.m. on Wednesday, April 14 in the River Fork Room on the 3rd floor. Please plan to attend and make your voice heard regarding Pacific Branch officers and future meeting sites.

## **PBESA MIXER/PRESIDENT'S RECEPTION**

Pacific Branch 2009-2010 President Doug Walsh will host a reception for all registered PBESA 2010 attendees in the Evergreen Room on the 2nd floor on Monday, April 12, from 5:30 to 7:30 p.m.

## **LINNAEAN GAMES**

The Linnaean Games will be held on Monday evening, April 12, from 7:30 to 9:30 p.m. in the Cedar Room on the 2nd floor. The winning Pacific Branch team and runner-up team both qualify to represent the branch by competing in the national ESA Linnaean Games. The winning team also receives \$500 to offset their travel expenses to the national competition (San Diego, CA, Dec. 12-15, 2010).

## **AWARDS LUNCHEON**

The PBESA 2010 Awards Luncheon will be held on Tuesday, April 13, between noon and 1:30 p.m. In the combined Evergreen/Cedar banquet rooms on the 2nd floor. Your conference registration includes admission to the luncheon. (Note that the C.W. Woodworth and John Henry Comstock awards will be presented during the opening session on Monday, April 12, between 9:00 and 11:30 a.m.)

## **EVENING PLENARY SESSION**

We are pleased to present a Plenary Session on Economic Sustainability in Agriculture on Tuesday from 5:00 to 6:00 p.m. in the Cedar Room on the 2nd floor. Dr. Steven Blank joins us from the University of California at Davis. More information can be found on page 30 of this program.

## **EMPLOYMENT OPPORTUNITIES**

A session for students and other individuals seeking information on employment opportunities will be held Tuesday evening, April 13, from 8:00 to 9:00 p.m. on the 2nd floor landing.

# PRESENTER/MODERATOR INSTRUCTIONS

## POWERPOINT SLIDESHOW PRESENTATIONS

The presentation format will be PowerPoint files using laptop computers and projectors. Laptop computers with Microsoft Windows XP or Vista and projection equipment will be available on site. Please contact Tim Waters, (509) 554-0152 (mobile), [twaters@wsu.edu](mailto:twaters@wsu.edu), or Dan Groenendale, (509) 439-0361 (mobile), [dgroenendale@wsu.edu](mailto:dgroenendale@wsu.edu), for questions about Audio/Visual operations.

- Speakers who present submitted papers (Student Competition or General Session) should bring their PowerPoint files on a CD or flash drive (memory stick) to the Audio-Visual Room/Table by 6 p.m. the evening before their scheduled session. Mac users please make sure your presentation file has a .ppt file extension. The meeting Operations Committee will assist with transferring files. Speakers who are unavailable to turn in talks according to this schedule should have emailed their presentation in advance to Dan Groenendale, [dgroenendale@wsu.edu](mailto:dgroenendale@wsu.edu), to arrive no later than 5:00 p.m. (PST), Wednesday, April 7, 2010.
- Symposia speakers should deliver their presentations to the organizer of their symposium prior to the session. This should be done according to the timeline and instructions provided by the organizer of each symposium. Symposium organizers will then compile the talks onto their own laptop computers and bring them to the session.

## MODERATOR RESPONSIBILITIES

Session moderators are responsible for keeping speakers on schedule. If a presentation is completed early or cancelled, the moderator must ensure that the subsequent presentation begins at the scheduled time. Symposia organizers see additional information under PowerPoint Slideshow Presentations, above.

## POSTER DISPLAY PRESENTATIONS

Student competition posters should be hung in the Aspen Room on the 2nd floor on Monday, April 12, during the 11:30 a.m. to 1:30 p.m. lunch break. Student competition judging will take place between 1:30 p.m. and 5:00 p.m. on Monday, and student competitors are asked to vacate the poster room during that time. General session posters should be hung, also in the Aspen Room, between 5:00 and 7:00 p.m. on Monday. Student posters may be viewed by PBESA 2010 attendees during their display periods from 1:30 p.m. until 5:00 p.m. on Monday and from 8:00 a.m. to 4:00 p.m. on Tuesday. General posters may be viewed from 8:00 a.m. to 4:00 p.m. on Tuesday. There is no specific time scheduled for poster authors to be present at their posters on Tuesday, however mid-morning and mid-afternoon break times are typically popular times to view posters. Poster authors who would like to plan to attend their poster at a specific time on Tuesday are encouraged to attach a small note to their poster explaining the time they will be present. All posters should be removed after 4:00 p.m. on Tuesday.

Sunday	Monday	Tuesday	Wednesday
<p style="text-align: center;"><b>2010 PBESA Meeting at a Glance</b></p>	Registration Desk Open 8:00am-4:00pm		
		(Student and non-student posters up all day)	7:30-8:30am Final Business Meeting
	9:00-11:30am Opening Session & Preliminary Business Meeting	8:00am-noon Water Quality Symposium Structural/ Vet/ Public Health Pests Symposium Pollinator Symposium 10-minute Paper Presentations	8:30am-noon Thrips Symposium New Control Technologies Symposium
	11:30am-1:30pm Lunch on your own Students post their competition posters	Noon-1:30pm Awards Luncheon	Adjourn
3:00-7:00pm Registration Desk Open	1:30-5:00pm Drosophila Symposium Cereal Leaf Beetle Symposium Masters Student Paper Competition, followed by General 10-minute Paper Presentations Undergraduate & PhD Student Paper Competition	1:30-5:00pm Water Quality Symposium, cont. Student Symposium Tree Fruit Symposium 10-minute Paper Presentations, cont. (Mealybug “mini-symposium” begins as a part of these paper presentations at 3:00)	<p style="text-align: center;"><b>This “Meeting-at-a-Glance” grid is provided for your convenience.</b></p> <p style="text-align: center;"><b>For more details, including location of each event, refer to the full program, starting on Page 9.</b></p>
5:00-6:00 pm Student Competition Judges’ Meeting 6:00-8:00pm Executive Committee Meeting	5:00-7:00pm General (non-student) Posters to be posted for Tuesday viewing 5:30-7:30pm Mixer/President’s Reception 7:30-9:30 Linnaean Games	5:00-6:00pm Plenary Session w/ Dr. Steven Blank 8:00-9:00pm Employment Opportunities Session	



# PBESA 2010 Program

*(See hotel meeting rooms map on back cover of program)*

## Sunday, April 11

**Registration • 3:00-7:00pm**

*Grove Hotel Lobby*

**Volunteer Student Competition Judges' Meeting • 5:00-6:00pm**

*Clearwater Room, 3rd Floor*

**Executive Committee Meeting • 6:00-8:00pm**

*Cedar Room, 2nd Floor*

## Monday, April 12

**Registration • 8:00am-4:00pm**

*2nd Floor Landing*

**Opening Session and Preliminary Business Meeting • 9:00-11:30am**

*Evergreen Room, 2nd Floor*

- 9:00 **Welcome and Opening Remarks**, Doug Walsh, President, Pacific Branch ESA
- 9:10 **National ESA Report**, Ernest "Del" Delfosse, Vice President, and Richard Levine, Communications Program Manager
- 9:40 **Governing Board Report**, Michael Parrella, Pacific Branch Representative
- 9:50 **ESA Plant-Insect Ecosystems Section Report**, Lisa G. Neven, P-IE Treasurer
- 10:00 **Introduction of the C.W. Woodworth Award**, Doug Walsh, PBESA President
- 10:05 **Update on the C.W. Woodworth Legacy**, Brian Holden, Great-grandson of Woodworth
- 10:15 **2010 C.W. Woodworth Award Winner Presentation**, Dr. Walter Leal, University of California, Davis, "The Subject of Mosquito Control Should Receive Our Most Careful Consideration"
- 10:45 **2010 John Henry Comstock Award Winner Presentation**, Ashfaq Sial, Washington State University, "Developing Sustainable IPM Programs for Tree Fruits Using Reduced-Risk Insecticides"
- 11:10 **Preliminary Business Meeting**, Doug Walsh, President, Pacific Branch ESA
- 11:20 **Business Report**, Mike Lees, Secretary-Treasurer, Pacific Branch ESA
- 11:30 **ADJOURN**

**11:30am-1:30pm - Lunch On Your Own**

**Posters for the Student Poster Competition should be posted in the Aspen Room (2nd Floor) during this timeframe.**

**Monday, April 12, continued**

**SYMPOSIUM: SPOTTED WING DROSOPHILA  
IN THE PACIFIC STATES**

**1:30-5:00pm**

*Cedar Room, 2nd Floor*

Organizers & Moderators: **Vaughn Walton** and **Amy Dreves**, Oregon State University, Corvallis, OR

**SUMMARY STATEMENT:** Spotted Wing *Drosophila* (Diptera: Drosophilidae; SWD) is an invasive pest that attacks Pacific Coast small and stone fruits including but not limited to blueberries, blackberries, grapes, strawberries, raspberries, cherries, apples and peaches. SWD is established throughout the west coast of the U.S., Canada, Florida and Hawaii. This pest caused significant economic damage to both fresh and processed fruit during 2008 and 2009. This symposium was organized to share current information and future management plans for this important pest in this region.

- 1:30 **Welcome and Introduction.** Vaughn Walton
- 1 1:35 **Insecticide Management of the Spotted Wing *Drosophila* on Small Fruits in Washington.** Lynell Tanigoshi and Doug Walsh, Washington State University
- 2 2:05 ***Drosophila suzukii*: In-lab Overwintering Data and Real-Time Area-Wide Management Tools.** Vaughn M. Walton<sup>1</sup>, Daniel T. Dalton, Wei Yang, Tom Peerbolt, <sup>1</sup>Oregon State University
- 3 2:35 **On-the-Fly Approaches to Tackling *D. suzukii*.** Amy J. Dreves, Oregon State University
- 4 3:05 **Laboratory Data on Spotted Wing *Drosophila* Oviposition, Olfaction, and Control.** Denny J. Bruck and Jana Lee, USDA-ARS, Corvallis, OR
- 3:35 **BREAK**
- 5 3:45 **Spotted Wing *Drosophila*: Potential Economic Impact of a Newly Established Pest.** Mark P. Bolda, Rachael E. Goodhue and Frank G. Zalom, University of California
- 6 4:15 **Spotted Wing *Drosophila* on Stone Fruit in California: Invasion History, Seasonal Trapping and 2010 Control Plans.** Robert A. Van Steenwyk<sup>1</sup>, J. L. Caprile, W. W. Coates and P. W. Shearer, <sup>1</sup>University of California
- 7 4:45 ***Drosophila suzukii*: Ground Zero.** Frank Zalom, Mark Bolda, University of California
- 5:15 **Conclusion**

**Monday, April 12, continued**

**SYMPOSIUM: BIOLOGICAL CONTROL AND IPM OF  
CEREAL LEAF BEETLE IN WESTERN NORTH AMERICA**

**1:30-5:00pm**

*Rapids Room, 3rd Floor*

Organizers & Moderators: **Barry Bai**, Oregon Department of Agriculture, and  
**Diana Roberts**, Washington State University Extension, Spokane/Lincoln Counties

**SUMMARY STATEMENT:** Cereal leaf beetle (CLB) expanded its distribution into western North America during the last two decades. Western states and Canadian provinces worked collaboratively to apply IPM technology, emphasizing biological control for this pest, ever since its detection in the Pacific Northwest. Parasitic wasps were reared, released and redistributed in cereal leaf beetle infested counties. Now biological controls are well established in most areas where CLB are found in the region. The western cereal leaf beetle team was awarded the IPM Team Award by PBESA at its 2009 annual meeting and also received the 2009 Multistate Team Award from the Western Extension Directors' Association. The purpose of this symposium is to showcase the achievements of the working group and to summarize the successful results of work conducted by collaborators.

- 1:30 **Welcome and Introduction.** Barry Bai and Diana Roberts
- 8 1:40 **Cereal Leaf Beetle Management in Montana.** Patricia Denke<sup>1</sup>, Gary Adams<sup>2</sup>, Ian Foley<sup>1</sup>, <sup>1</sup>Montana State Department of Agriculture, <sup>2</sup>USDA-APHIS-PPQ
- 9 2:00 **Biological Control of Cereal Leaf Beetle in Oregon.** Gary W. Brown<sup>1</sup>, Barry Bai<sup>2</sup>, Sujaya Rao<sup>3</sup>, <sup>1</sup>USDA-APHIS-PPQ, <sup>2</sup>Oregon Dept. of Ag., <sup>3</sup>OSU Corvallis
- 10 2:20 **Integrated CLB Management Program in Oregon: Economic Threshold, Host Range, and Pheromone Monitoring.** S. Rao, D. Walenta, OSU
- 11 2:40 **Foreign Exploration for Cereal Leaf Beetle Biological Control Agents in China.** B. Bai<sup>1</sup>, K. Pike<sup>2</sup>, T. Miller<sup>2</sup>, <sup>1</sup>Oregon Department of Agriculture, <sup>2</sup>WSU
- 12 3:00 **Breaking Diapause in the Cereal Leaf Beetle, *Oulema melanopus*: A Critical Step in Year-round Egg Production for Culturing Parasitoids.**  
Dan Bean and Colleen Jandreau, Colorado Department of Agriculture
- 3:20 **BREAK**
- 13 3:35 **Invasions of Western Canada by the Cereal Leaf Beetle and Strategies for Population Management.** Lloyd Dosedall<sup>1</sup>, Héctor Cáramo<sup>2</sup>, Owen Olfert<sup>3</sup>, Scott Meers<sup>4</sup>, Scott Hartley<sup>5</sup>, John Gavloski<sup>6</sup>, <sup>1</sup>University of Alberta, <sup>2</sup>Agriculture and Agri-Food Canada, Alberta, <sup>3</sup>Agriculture and Agri-Food Canada, Saskatchewan, <sup>4</sup>Alberta Agriculture and Rural Development, <sup>5</sup>Saskatchewan Agriculture and Food, <sup>6</sup>Manitoba Agriculture, Food, and Rural Initiatives
- 14 3:55 **Insecticide Toxicity Effects on Wasp Parasitoids of Cereal Leaf Beetle.**  
Keith S. Pike, Terry Miller, Diana Roberts, Washington State University
- 15 4:15 **Impacts of Early Season IPM on CLB.** David Bragg, WSU Extension
- 16 4:35 **Biological Control of CLB in Washington State.** Diana Roberts<sup>1</sup>, Terry Miller<sup>1</sup>, Keith Pike<sup>1</sup>, Steve Miller<sup>2</sup>, David Bragg<sup>1</sup>, Mike Klaus<sup>3</sup>, <sup>1</sup>Washington State University, <sup>2</sup>USDA-APHIS-PPQ, <sup>3</sup>Washington State Department of Agriculture
- 4:55 **Conclusion/Final Discussion.** Diana Roberts and Barry Bai

Monday, April 12, continued

## STUDENT POSTER COMPETITION

1:30-5:00pm

Aspen Room, 2nd Floor

Student posters will be on display Monday afternoon and Tuesday 8:00am-5:00pm. Students are requested to post their competition posters during the 11:30am-1:30pm lunch break on Monday and then vacate the room while judging is underway. Note that general (non-student) posters should be posted between 5:00 and 7:00pm on Monday for viewing on Tuesday. All poster authors should remove their posters Tuesday evening after 4:00.

### UNDERGRADUATE POSTERS

- 1SPO **The Effect of Age on the Egg-laying Capacity of Onion Thrips.** Lincoln Andreasen and Diane Alston, Utah State University, Logan, UT
- 2SPO **Pheromone Mating Disruption of *Cydia latiferreana* (Tortricidae), Filbertworm Moth, in Commercial Hazelnut Orchards.** Christopher Hedstrom<sup>1</sup>, Vaughn Walton<sup>1</sup>, Ute Chambers<sup>2</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>Washington State University, Wenatchee, WA
- 3SPO **Investigating the Endemicity of Aphonopelma Species (Araneae: Theraphosidae) in California's Southern Coast Ranges.** Clay Gunnell, Joseph Wilson, James Pitts, Utah State University, Logan, UT
- 4SPO **The Molecular Identification of Beetle Pest Larvae.** Sarah Maxfield-Taylor, Sujaya Rao, Aaron Liston, Todd Temple, Oregon State University, Corvallis, OR

### MASTER'S POSTERS

- 5SPO **Is *Sphaerophthalma arota* (Hymenoptera: Mutillidae) a Single Species?: Biogeography and Systematics of a Cryptic Species-Complex.** Sarah Clark, Joseph S. Wilson, James P. Pitts. Utah State University, Logan, UT
- 6SPO **Natural Enemies of *Gluphsia septentrionis* Walker (Lepidoptera:Notodontidae) on the Pacific Northwest Hybrid Poplars.** Alejandro I. Del Pozo, R. Andrew Rodstrom, John J. Brown, Washington State University, Pullman, WA
- 7SPO **Occurrence and Larval Development of Noctuid Pests on Potatoes.** Dax Dugaw<sup>1</sup>, Peter J. Landolt<sup>2</sup>, Andrew Jensen<sup>3</sup>, Alan Schreiber<sup>4</sup>, Richard S. Zack<sup>1</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>USDA-ARS, Wapato, WA, <sup>3</sup>Washington State Potato Commission, Moses Lake, WA, <sup>4</sup>Agriculture Development Group Inc., Eltopia, WA
- 8SPO **Potential for Managing the Cerambycid Beetle *Prionus californicus* in Hop Using Mass Trapping and Mating Disruption.** Elin Maki<sup>1</sup>, Jocelyn G. Millar<sup>2</sup>, Josh Rodstein<sup>2</sup>, Lawrence M. Hanks<sup>3</sup>, J. D. Barbour<sup>1</sup>, <sup>1</sup>University of Idaho, Parma, ID, <sup>2</sup>University of California, Riverside, CA, <sup>3</sup>University of Illinois, Urbana, IL
- 9SPO **Phenology, Symptomology and Control of Eriophyid Mites in Linden (*Tilia cordata*) in Ornamental Nurseries.** Betsey Miller<sup>1</sup>, Robin Rosetta<sup>2</sup>, Vaughn Walton<sup>1</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>Oregon State University, Aurora, OR
- 10SPO **Using Stable Isotopes to Determine the Importance of Seeds and Invertebrate Prey in the Diet of a Polyphagous Ground Beetle.** Laurel Moulton, Ed Peachey, Oregon State University, Corvallis, OR

Monday, April 12, continued

**STUDENT POSTER COMPETITION - MASTER'S POSTERS, continued**

- 11SPO **Laboratory Evaluation of Regional Hard and Soft Spring Wheat Genotypes for Resistance to Hessian Fly.** Steven I. Odubiyi<sup>1</sup>, Nilsa A. Bosque-Pérez<sup>1</sup>, Lana M. Unger<sup>1</sup>, Kim G. Campbell<sup>2</sup>, <sup>1</sup>University of Idaho, Moscow, ID, <sup>2</sup>USDA-ARS/WSU, Pullman, WA
- 12SPO **Population Genetics of *Pachycondyla chinensis*.** Andrew Tebeau<sup>1,2</sup>, Patricia Zungoli<sup>1</sup>, and Matt Turnbull<sup>1</sup>, <sup>1</sup>Clemson University, Clemson, SC, <sup>2</sup>Utah State University, Logan, UT
- 13SPO **To Bee or Not To Be? In Alfalfa Produced for Seed, There Is No Question: Pollinators Must Be Protected.** Amber Vinchesi<sup>1</sup>, Douglas Walsh<sup>1</sup>, Timothy Waters<sup>2</sup>, Sally O'Neal<sup>1</sup>, Holly Ferguson<sup>1</sup>, <sup>1</sup>Washington State University, Prosser, WA, <sup>2</sup>Washington State University, Pasco, WA
- 14SPO **Validation of Methyl Salicylate as a Means to Improve Conservation Biological Control in Oregon Hop Yards.** Joanna L. Woods<sup>1</sup>, David G. James<sup>2</sup>, Jana C. Lee<sup>3</sup>, David H. Gent<sup>3</sup>, <sup>1</sup>Oregon State University, Corvallis OR, <sup>2</sup>Washington State University, Prosser, WA, <sup>3</sup>USDA-ARS, Corvallis OR
- 15SPO **Identification of Lygus Bug Species by DNA Barcoding.** Changqing Zhou<sup>1</sup>, James D. Barbour<sup>2</sup>, Frank G. Zalom<sup>3</sup>, Douglas B. Walsh<sup>1</sup>, Laura Corley Lavine<sup>1</sup>, <sup>1</sup>Washington State University, Pullman WA, <sup>2</sup>University of Idaho, Parma, ID, <sup>3</sup>University of California, Davis, CA

**PhD POSTERS**

- 16SPO **Primary Sexual Characters as Useful Features to Distinguish Genera of Ageniellini (Hymenoptera, Pompilidae).** Cecilia Waichert, Carol von Dohlen, James P. Pitts, Utah State University, Logan, UT
- 17SPO **Expanding Theory in Push-Pull Manipulations of Pestiferous Insects.** Summer Lindzey<sup>1</sup>, Sanford Eigenbrode<sup>1</sup>, A. Nicholas Birch<sup>2</sup>, William Snyder<sup>3</sup>, Joyce Parker<sup>3</sup>, <sup>1</sup>University of Idaho, Moscow, ID, <sup>2</sup>Scottish Crop Research Institute, Dundee, Scotland, <sup>3</sup>Washington State University, Pullman, WA
- 18SPO **Determining the Impact of Six Vineyard Pesticides on the Predatory Mite *Typhlodromus pyri*.** Angela N. Gadino, Vaughn M. Walton, Amy J. Dreves. Oregon State University, Corvallis, OR
- 19SPO **Response of Bee Pollinators to Wildfire in Sagebrush Steppe.** Byron Love, Jim Cane, Utah State University, Logan, UT
- 20SPO **Historical Biogeography of Aporini (Hymenoptera: Pompilidae).** Juanita Rodriguez, Carol von Dohlen, James P. Pitts, Utah State University, Logan, UT
- 21SPO **Effects of Temperature on Development and Behavior of *Epeorus albertae* (Ephemeroptera: Heptageniidae) Nymphs.** Melissa A. Scherr<sup>1</sup>, David E. Wooster<sup>2</sup>, Sujaya Rao<sup>1</sup>, <sup>1</sup>Oregon State University, Corvallis OR, <sup>2</sup>Oregon State University, Hermiston OR
- 22SPO **Predator-Prey Interactions and Biological Control of *Lygus* spp. (Hemiptera: Miridae) in Alfalfa Seed.** Tieceura Traore, James Barbour, University of Idaho, Parma, ID
- 23SPO **A Vampire Tale of Tachinid Endoparasitic Competition.** Nik G. Wiman, Vincent P. Jones, and Eric Curry, Washington State University, Wenatchee, WA

Monday, April 12, continued

## 10-MINUTE STUDENT PAPER COMPETITION - MASTER'S PAPERS

1:30-3:54pm

White Water Room, 3rd Floor

Moderators: **Lisa G. Neven**, USDA-ARS, Wapato, WA and  
**Bradley Higbee**, Paramount Farming, Bakersfield, CA

- 17SP 1:30 **Native Bee Abundance and Floral Resource Availability in an Oregon Valley Ephemeral Wetland Prairie System.** J. E. Bergh, S. Rao, W. P. Stephen, Oregon State University, Corvallis, OR
- 18SP 1:42 **A Comparison of Bee Diversity Across Sand Dune Habitats at Ash Meadows National Wildlife Refuge.** Nicole F. Boehme, David A. Tanner, James P. Pitts, Utah State University, Logan, UT
- 19SP 1:54 **Impact of Potato Psyllid (Hemiptera: Triozidae) Density on Zebra Chip Potato Disease Incidence, Yield and Tuber Processing Quality.** Jeremy Buchman<sup>1</sup>, Joseph Munyanesa<sup>2</sup>, David Horton<sup>2</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>USDA-ARS, Wapato, WA
- 20SP 2:06 **Is the Endangered Plant *Astragalus phoenix* (Fabaceae) Pollinator Limited?** Catherine M. Clark and James P. Pitts, Utah State University, Logan, UT
- 21SP 2:18 **Evaluating the Effects of Agricultural Management on Ground Beetles (Coleoptera: Carabidae) in the PNW.** Jessica M. Green, Ed Peachy, Alysia Greco, and Laurel Moulton, Oregon State University, Corvallis, OR
- 22SP 2:30 **Working Out the Bugs in Sex Ratio Distortion in the Northern Fowl Mite (*Ornithonyssus sylviarum*).** John McCulloch, Washington State University, Pullman, WA
- 23SP 2:42 **Alternative Controls of Black Vine Weevil (*Otiorynchus sulcatus*) in Cranberries.** Betsey Miller<sup>1</sup>, Denny Bruck<sup>2</sup>, Linda White<sup>3</sup>, Kim Patten<sup>4</sup>, Vaughn Walton<sup>1</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>USDA Horticultural Crops Research Laboratory, Corvallis, OR, <sup>3</sup>Oregon State University Extension Service, Myrtle Point, OR, <sup>4</sup>Washington State University, Long Beach, WA
- 24SP 2:54 **Attraction of *Thaumatomyia glabra* (Meigen) (Diptera: Chloropidae) Males to Methyl Anthranilate from *Iris* Flowers.** B. Ohler<sup>1</sup>, C. Guédot<sup>2</sup>, R. Zack<sup>1</sup>, P. Landolt<sup>2</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>USDA-ARS Yakima Agricultural Research Laboratory, Wapato, WA
- 25SP 3:06 **Bumble Bees Versus Honey Bees: A Comparison of Pollination Success in Oregon Cranberries.** Kim Phillips<sup>1</sup>, Sujaya Rao<sup>2</sup>, Bill Stephen<sup>2</sup>, Linda White<sup>2</sup>, <sup>1</sup>Oregon State University Extension, Myrtle Point, OR, <sup>2</sup>Oregon State University, Corvallis, OR
- 3:18 **BREAK**

**Monday, April 12, continued**

**10-MINUTE STUDENT PAPER COMPETITION - MASTER'S PAPERS, continued**

- 26SP 3:30 **Economic Injury Levels for Pea Aphid on Dry Peas.** Brad S. Stokes, Edward J. Bechinski, University of Idaho, Moscow, ID
- 27SP 3:42 **Exploring the Effects of Host Immune Response on Factors that Lead to Population Dynamics and Pathogen Transmission.** Ann Vander Vliet<sup>1</sup>, Glen Scoles<sup>2</sup>, Jeb Owen<sup>1</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>USDA-ARS, Animal Disease Research Unit, Pullman, WA

***PhD and Undergraduate Student Paper Competition runs concurrently to Master's Student Paper Competition— see next page following for details***

**10-MINUTE ORAL PAPER PRESENTATIONS**

**3:54-5:06pm**

*White Water Room, 3rd Floor*

Moderators: **Lisa G. Neven**, USDA-ARS, Wapato, WA and **Bradley Higbee**, Paramount Farming, Bakersfield, CA

- 28P 3:54 **Inhibition of *Lygus hesperus* Egg Development at High and Low Temperature Extremes: Use of a Biophysical Model.** W. Rodney Cooper and Dale W. Spurgeon, USDA-ARS, Shafter, CA
- 29P 4:06 **The Fate of Codling Moth in Apples Exported to Tropical Countries.** Lisa G. Neven, USDA-ARS, Wapato, WA
- 30P 4:18 **Effects of Egg Load on the Oviposition Behavior of the Glassy-Winged Sharpshooter.** Mark Sisterson, USDA-ARS, Parlier, CA
- 31P 4:30 **Laboratory Rearing Alters the Diapause Response of *Lygus hesperus*.** Dale W. Spurgeon<sup>1</sup>, Colin Brent<sup>2</sup>, <sup>1</sup>USDA-ARS, Shafter, CA, <sup>2</sup>USDA-ARS, Maricopa, AZ
- 32P 4:42 **Two for the Price of One: Non-target Effect of Dimilin on Horn Fly Emergence.** Bryan Stevens and Alexandre Latchininsky, University of Wyoming, Laramie, WY
- 33P 4:54 **Dancing in the Dark: Does Courtship Complexity Increase with Evolutionary Time?** David A. Tanner and James P. Pitts, Utah State University, Logan, UT

***Remaining 10-minute Oral Paper Presentations will be made on Tuesday, April 13, from 8:00am-5:00pm***

**Monday, April 12, continued**

**10-MINUTE STUDENT PAPER COMPETITION:  
UNDERGRADUATE & PhD PAPERS**

**1:30-4:42pm**

*River Fork Room, 3rd Floor*

Moderators: **Carol Anelli**, Washington State University, **Alberto Pantoja**, USDA-ARS, Fairbanks, AK

**UNDERGRADUATE PAPER**

- 34SP 1:30 **Survey of Rhizosphere Competent Entomopathogenic Fungi on Small Fruits and Christmas Trees in the Willamette Valley, OR.** Joanna Fisher<sup>1</sup>, Denny J. Bruck<sup>2</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>USDA-ARS, Corvallis, OR

**PhD PAPERS**

- 35SP 1:42 **Effects of Insecticides on Potato Psyllid (Hemiptera: Psyllidae) Behavior.** Casey D. Butler, Frank J. Byrne, John T. Trumble, University of California, Riverside, CA
- 36SP 1:54 **Behavioral Response of the Predatory Mite *Typhlodromus pyri* (Acari: Phytoseiid) to Methyl Salicylate.** Angela N. Gadino<sup>1</sup>, Vaughn M. Walton<sup>1</sup>, Jana Lee<sup>2</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>USDA-ARS, Corvallis, OR
- 37SP 2:06 **Bird Cherry-Oat Aphid Behavior in Response to Barley Yellow Dwarf Virus Disease Progression.** Laura L. Ingwell, Nilsa A. Bosque-Pérez, Lana M. Unger, Hongjian Ding, Alexander V. Karasev, Robert S. Zemetra, Sanford D. Eigenbrode, University of Moscow, ID
- 38SP 2:18 **Response of Bee Pollinators to Wildfire in Sagebrush Steppe.** Byron Love, Jim Cane, Utah State University, Logan, UT
- 39SP 2:30 **Insect Communities of Pacific Northwest Hybrid Poplars and Adjacent Natural Areas.** R. Andrew Rodstrom, John J. Brown, John Stark, Emma Smith. Washington State University, Pullman, WA
- 40SP 2:42 **Agricultural Land Use and Conservation Easement Effects on Macroinvertebrate Community Structure in an Arid-Land River.** Melissa A. Scherr<sup>1</sup>, David E. Wooster<sup>2</sup>, Sujaya Rao<sup>1</sup>, <sup>1</sup>Oregon State University, Corvallis, OR, <sup>2</sup>Oregon State University, Hermiston, OR
- 41SP 2:54 **Developing a Mouse Model to Determine the Effect of Sand Fly Saliva on the Visceralization of *Leishmania chagasi*.** Melody Schmid<sup>1</sup>, Claudio Meneses<sup>2</sup>, Dia-Eldin Elnaïem<sup>2</sup>, and Greg Lanzaro<sup>1</sup>, <sup>1</sup>University of California, Davis, CA, <sup>2</sup>National Institutes of Health, Rockville, MD
- 42SP 3:06 **No Food, No Brood: Unique Larval Ejection Behavior in a Native Bumble Bee Colony.** Kimberly M. Skyrn, Sujaya Rao, William P. Stephen, Oregon State University, Corvallis, OR



## Monday, April 12, continued

### 10-MINUTE STUDENT PAPER COMPETITION - PhD PAPERS, continued

- 3:18 **BREAK**
- 43SP 3:30 **Natural Enemy Responses to Various Ratios of Aphid Sex Pheromone Components in Prune Orchards.** Emily J. Symmes, Frank Zalom, University of California, Davis, CA
- 44SP 3:42 **Rapid Evolution of the Biological Control Agent *Longitarsus jacobaeae* (Coleoptera: Chrysomelidae).** Marianna Szücs, Mark Schwarzländer, University of Idaho, Moscow, ID
- 45SP 3:54 **Mimicry Confuses Taxonomy: Lessons from the *Dasymutilla bioculata* Species-Group (Hymenoptera: Mutillidae).** Kevin A. Williams, Carol D. von Dohlen, James P. Pitts, Utah State University, Logan, UT
- 46SP 4:06 **How Did California's Geologic History Affect Velvet Ants (Hymenoptera: Mutillidae)?** Joseph S. Wilson, James P. Pitts, Utah State University, Logan, UT
- 47SP 4:18 **Study on *Aedes aegypti* Odorant Binding Protein-1.** Ney Ribeiro Leite<sup>1</sup>, Wei Xu<sup>2</sup> (student presenter), Yuko Ishida<sup>2</sup>, Jorge Iulek<sup>3</sup>, Renata Krogh<sup>1</sup>, Walter S. Leal<sup>2</sup>, Glaucius Oliva<sup>1</sup>, <sup>1</sup>Universidade de São Paulo, São Carlos, São Paulo, Brazil, <sup>2</sup>University of California, Davis, CA, <sup>3</sup>Universidade Estadual de Ponta Grossa, Ponta Grossa, Paraná, Brazil
- 48SP 4:30 **The Effectiveness of Entomopathogenic Fungi and *Bacillus thuringiensis* against Avocado Thrips in the Laboratory.** Deane K. Zahn, Joseph G. Morse, University of California, Riverside, CA

## Monday Evening, April 12

**5:00-7:00pm**

**General (non-student) posters should be posted in the Aspen Room (2nd Floor) for Tuesday viewing.**

**5:30-7:30pm**

**PBESA Mixer/President's Reception in the Evergreen Room (2nd Floor)**

**7:30-9:30pm**

**The LINNAEAN GAMES student competition will be held in the Cedar Room (2nd Floor). Stop by and cheer for your favorite team. Winner and runner-up team qualify to represent the Pacific Branch and the next national ESA meeting.**

# Tuesday, April 13

Registration • 8:00am-4:00pm

*2nd Floor Landing*

## SYMPOSIUM: INVESTIGATING THE CONNECTIONS BETWEEN IPM AND WATER QUALITY

8:00am-5:00pm

*Ivy Room, 2nd Floor*

Organizer & Moderator: **Ronda Hirnyck**, University of Idaho, Boise ID

- 49 8:00 **Keynote Speaker: The Role of IPM in Water Quality—Agency Perspective.**  
Bob Nowierski, USDA National Institute of Food and Agriculture (NIFA)
- 50 8:30 **Pesticides: Do They Have a Negative Effect on Aquatic Ecosystems?**  
John Stark, Washington State University, Puyallup, WA
- 51 9:00 **Targeting Adoption of BMPs to Farmlands Adjacent to Impaired Waterways Using GIS Mapping and Grower Visits.** Parry Klassen, CURES, East San Joaquin Water Quality Coalition, Modesto, CA
- 52 9:30 **Effect of Riparian Vegetation on Surface Water Loading of Ground and Aerially Applied Pesticides in Cherry Production.** Jeff Jenkins, Kelly Wallis, Phillip K. Janney (presenting), Helmut Riedl, Oregon State University, Corvallis, OR
- 10:00 **BREAK**
- 53 10:30 **Approaches and Tools for Effective Water Quality Monitoring Programs: Focus on BMP Assessment for Stream Systems.** Ginger Paige<sup>1</sup>, Nancy Mesner<sup>2</sup>,  
<sup>1</sup>University of Wyoming, Laramie, WY, <sup>2</sup>Utah State University
- 54 11:00 **IPM Case Study in California Almond Production.**  
Frank Zalom, University of California, Davis, CA
- 55 11:30 **The Social Science behind Water Quality Programming.**  
Bob Mahler, University of Idaho, Moscow, ID
- 12:00 **LUNCH** (Pacific Branch ESA Awards Luncheon, see opposite)
- 1:30 **Group Brainstorming Session, Ivy Room**  
Identify 3-4 Potential IPM/Water Quality Projects for the Western Region
- 2:00 **Breakout Groups** Resulting from Group Brainstorming Session  
*Ivy Room, Executive Suite 217, Executive Suite 218*
- 3:15 **BREAK**
- 3:45 **Discussion**  
Reconvene in Ivy Room for a discussion on the results from breakout sessions
- 4:00 **Speaker Panel: EPA, USDA, NRCS, Western IPM Center**  
Funding opportunities for multi-state projects
- 4:30 **Closing Comments.** Harold Coble, Office of Pest Management Policy

**Tuesday, April 13, continued**

## **POSTER PRESENTATIONS**

**8:00am-4:00pm**

*Aspen Room, 2nd Floor*

Student competition and general posters will be on display all day.

Poster authors should remove their posters after 4:00pm.

Student posters listed on pp 12-13; general posters listed on pp. 25-27

# **PBESA 2010 Awards Luncheon**

**Tuesday, April 13**

**12:00noon-1:30pm**

**Evergreen/Cedar Banquet Room (2nd Floor)**

**Your conference registration includes admission to the luncheon.**

### **C.W. WOODWORTH AWARD**

Dr. Walter Leal

University of California, Davis

### **ENTOMOLOGICAL FOUNDATION**

#### **PROFESSIONAL AWARD WINNERS 2010**

### **PBESA PROFESSIONAL AWARD WINNERS 2010**

#### **Distinguished Achievement Award in Extension**

Dr. Larry Godfrey

University of California, Davis

#### **Excellence in Integrated Pest Management**

Dr. Frank Zalom

University of California, Davis

#### **Distinguished Achievement in Horticultural Entomology**

Dr. Michael Parrella

University of California, Davis

#### **Henry & Sylvia Richardson Research Grant**

Dr. Shawn Steffan

Washington State University

#### **Integrated Pest Management Team Award**

"Urban Ant Pest Management Alliance"

Michael Rust, Les Greenberg, John Klotz, and Don Reiersen, University of California, Riverside  
Patrick Copps, Orkin

#### **Distinguished Achievement Award in Teaching**

Dr. Sujaya Rao

Oregon State University

Herb Field, Lloyd Pest Control

John Kabashima, UC Extension, Orange County

Mark Robertson, CA Dept of Pesticide Regulation

Cheryl Wilen, UC Extension Statewide IPM

Program

Keith Willingham, Western Exterminator Co.

Clark Pest Control

Corky's Pest Control

A-PRO Pest Control Inc.

### **PBESA STUDENT AWARD WINNERS 2010**

#### **Comstock Student Award**

Mr. Ash Sial, Washington State University

#### **Larry Larson Graduate Student Award for Leadership in Applied Entomology**

Andrew Pederson

University of California, Davis

#### **Student Activity Award**

Mr. Andrew Rodstrom, Washington State University

Tuesday, April 13, continued

**SYMPOSIUM: NEW DIRECTIONS IN IPM FOR STRUCTURAL,  
VETERINARY, AND PUBLIC HEALTH PESTS**

**8:00am-12noon**

*River Fork Room, 3rd Floor*

Organizer & Moderator: **George W. Peck**, Washington State University,  
Irrigated Agriculture Research and Extension Center, Prosser, WA

- 8:00 **Opening Remarks.** George Peck, Washington State University, Prosser, WA
- 56 8:05 **The Sacramento-Yolo Mosquito and Vector Control District's Evolving Integrated Pest Management Program.** Marcia Reed, Sacramento-Yolo Mosquito and Vector Control District, Elk Grove, CA
- 57 8:25 **Controlling Yellowjackets in Southern California.** Michael K. Rust, Richard S. Vetter (presenting), Donald A. Reiersen, University of California, Riverside, CA
- 58 8:45 **Estimation of Horn Fly Abundance with Digital Photography.** Holly Ferguson, Doug Walsh, Sally O'Neal, Washington State University, Prosser, WA
- 59 9:05 **Field Validation of Subterranean Termite (*Isoptera: Rhinotermitidae*) Control with Recruit<sup>®</sup> HD, A New Termite Bait from Dow Agrosciences.** Mike Lees<sup>1</sup>, Joe Eger<sup>2</sup>, Joe DeMark<sup>3</sup>, Jackie McKern<sup>4</sup>, Mike Tolley<sup>5</sup>, Marc Fisher<sup>6</sup>, Ronda Hamm<sup>5</sup>, Mike Melichar<sup>5</sup>, Ellen Thoms<sup>7</sup>. Dow AgroSciences, <sup>1</sup>Granite Bay, CA, <sup>2</sup>Tampa, FL, <sup>3</sup>Fayetteville, AR, <sup>4</sup>Christianburg, VA, <sup>5</sup>Indianapolis, IN, <sup>6</sup>Fresno, CA, <sup>7</sup>Gainesville, FL
- 60 9:25 **Do Anti-tick Vaccines Have a Place in an Integrated Cattle Fever Tick Control Program?** Glen A. Scoles<sup>1</sup>, Reginaldo G. Bastos<sup>1</sup>, Massaro W. Ueti<sup>1</sup>, Felix D. Guerrero<sup>2</sup>, Carlos E. Suarez<sup>1</sup>, Donald P. Knowles<sup>1</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>USDA-ARS, Kerrville, TX
- 9:45 **BREAK**
- 61 10:00 **Runoff of Insecticides Used for Ant Control from Individual Residences: Correlating Technique with Runoff and Efficacy.** Les Greenberg, Michael K. Rust, University of California, Riverside, CA
- 62 10:20 **The Role of Fish as Biological Control Agents as Part of Integrated Mosquito Management.** Jennifer A. Henke, University of California, Riverside, CA
- 63 10:40 **Population Genetics of the Northern Fowl Mite (*Ornithonyssus sylviarum*): Looking for Management Tools among Patterns of Infestation and Adaptation.** Jeb P. Owen, John McCulloch, Jeremiah W. Busch, Washington State University, Pullman, WA
- 64 11:00 **IPM and Insecticide Resistance Management for Horn Flies on Pastured and Range Cattle.** Michael G. Fletcher, Y-TEX Corporation, Cody, WY
- 65 11:20 **Insecticide-Treated Netting for Filth Fly Control: Effect of Photodecomposition on Netting Effectiveness.** George W. Peck, Holly J. Ferguson and Douglas B. Walsh, Washington State University, Pullman, WA
- 11:40 **Closing Remarks.** George Peck, Washington State University, Prosser, WA

**Tuesday, April 13, continued**

**SYMPOSIUM: PROTECTING AND PRESERVING  
WESTERN BEE POLLINATORS**

**8:00am-12noon**

*White Water Room, 3rd Floor*

Organizers & Moderators: **Sujaya Rao**, Oregon State University, Corvallis, OR and  
**James P. Strange**, USDA-ARS/Utah State University, Logan, UT

- 8:00 **Introduction.** Sujaya Rao, Oregon State University, Corvallis, OR
- 66 8:10 **Pollinators of Palouse Prairie: Survey of Native Bee Fauna in a Fragmented Ecosystem.** Timothy D. Hatten<sup>1,2</sup>, Chris Looney<sup>2</sup>, James P. Strange<sup>3</sup>, Terry Griswold<sup>3</sup>, Sanford D. Eigenbrode<sup>2</sup> and Nilsa A. Bosque-Pérez<sup>2</sup> <sup>1</sup>Invertebrate Ecology Inc., Moscow, ID, <sup>2</sup>University of Idaho, Moscow, ID, <sup>3</sup>USDA-ARS, Logan, UT
- 67 8:35 **A Buzzworthy Cause: Evaluating Factors Affecting Native Bumble Bee Pollinators in Oregon Agroecosystems.** Kimberly M. Skyrn, Sujaya Rao, William P. Stephen, Oregon State University, Corvallis, OR
- 68 9:00 **The Importance of Entomological Collections in Assessing the Status of the Western Bumble Bee *Bombus occidentalis* Greene.** Jonathan B. Koch<sup>1</sup>, James P. Strange<sup>2</sup>, Harold Ikerd<sup>2</sup>, Terry Griswold<sup>2</sup>, <sup>1</sup>Utah State University, Logan UT, <sup>2</sup>USDA-ARS, Logan UT
- 69 9:25 **Peculiar Factors Enable Sustained Mass-Production of Native Alkali Bees for Alfalfa Pollination.** James H. Cane, USDA-ARS, Utah State University, Logan, UT
- 9:50 **BREAK**
- 70 10:05 **Effects of Pollen Diversity on Honey Bee Nutrition and Development.** Ramesh Sagili, Carolyn Breece, Oregon State University, Corvallis, OR
- 71 10:30 **Honey Bee Health.** Walter S. Sheppard, Judy Wu, Matthew Smart, Tim Lawrence, Washington State University, Pullman, WA
- 72 10:55 **The Great Sunflower Project: Harnessing the Power of Citizen Science to Accelerate Pollinator Conservation.** Gretchen LeBuhn, San Francisco State University, San Francisco, CA
- 73 11:20 **A Novel Approach to Food Security: The Xerces Society's Successful Three Tiered Strategy for Pollinator Conservation on Farms.** Scott Hoffman Black, Xerces Society for Invertebrate Conservation, Portland OR
- 11:45 **Concluding Remarks.** James P. Strange, USDA-ARS/Utah State University, Logan, UT

Tuesday, April 13, continued

## 10-MINUTE ORAL PAPER PRESENTATIONS

8:00am-5:00pm

Rapids Room, 3rd Floor

Morning Session Moderators: **Barat Bisabri**, Dow AgroSciences, Orinda, CA and  
**Pete Goodell**, University of California, Parlier, CA

### 8:00 Opening Remarks

- 74P 8:06 **The Potential for Using Spinosad, Spinetoram, and Methoxyfenozide to Manage *Lobesia botrana* in the United States.** B. Bisabri<sup>1</sup>, A. Chloridis<sup>2</sup>, J. Dripps<sup>3</sup>, L. Gomez<sup>3</sup>, V. Jacquet<sup>4</sup>, M. Lysandrou<sup>5</sup>, A. Martin<sup>6</sup>, C. Mavrotas<sup>5</sup>, E. Tescari<sup>7</sup>, M. Torne<sup>6</sup>, Dow AgroSciences, Crop Protection R&D: <sup>1</sup>Orinda, CA, USA; <sup>2</sup>Thessaloniki, Greece; <sup>3</sup>Indianapolis, IN, USA; <sup>4</sup>Saint Quentin et Yvelines, France; <sup>5</sup>Lavrion, Greece; <sup>6</sup>Madrid, Spain; <sup>7</sup>Padova, Italy
- 75P 8:18 **Evaluation Of Dow Agrosciences' New Sulfoximine Insecticide to Manage Cotton Aphids.** Boris A. Castro, Larry C. Walton, Melissa W. Siebert, Jamey Thomas, Ralph Lassiter, Robert Haygood, Jesse Richardson, Bo Braxton, John Richburg, Fikru Haile and Larry Godfrey<sup>1</sup>, Dow AgroSciences LLC, Indianapolis, IN, <sup>1</sup>University of California, Davis, CA
- 76P 8:30 **Targeted Lepidopteran Management in Alfalfa: A New Use Pattern for Intrepid®.** Marc L. Fisher, Jesse M. Richardson, Jim Mueller, Barat Bisabri, and Luis Gomez, Dow AgroSciences LLC, Indianapolis, IN
- 77P 8:42 **Evaluation of Management Programs for Pacific Spider Mite in Almonds in the Southern San Joaquin Valley of California.** Stephanie M. Rill<sup>1</sup>, David R. Haviland<sup>1</sup>, Bradley S. Higbee<sup>2</sup>, <sup>1</sup>University of California Extension, Bakersfield, CA, <sup>2</sup>Paramount Farming Company, Bakersfield, CA
- 78P 8:54 **Control of *Lygus hesperus* with Dow Agrosciences' Sulfoxaflor Insecticide in Cotton.** Jesse M. Richardson<sup>1</sup>, Boris A. Castro<sup>1</sup>, James D. Thomas<sup>1</sup>, Peter C. Ellsworth<sup>2</sup>, Larry D. Godfrey<sup>3</sup>, David L. Kerns<sup>4</sup>, <sup>1</sup>Dow AgroSciences LLC, Indianapolis, IN, <sup>2</sup>University of Arizona, Maricopa, AZ <sup>3</sup>University of California, Davis, CA <sup>4</sup>Texas AgriLife Extension, Lubbock, TX
- 79P 9:06 **Response Of Hessian Fly to a Potential New Fumigant for Exported Hay.** Victoria Y. Yokoyama<sup>1</sup>, Sue Cambron<sup>2</sup>, and Jeanette Muhareb<sup>3</sup>, <sup>1</sup>USDA-ARS, Parlier, CA, <sup>2</sup>USDA-ARS/Purdue University, West Lafayette, IN, <sup>3</sup>Dried Fruit Association of California, Fresno, CA
- 80P 9:18 **A New Host and Overwintering Site for the Mealybug *Trionymus haancheni* McKenzie (Homoptera: Pseudococcidae) in Idaho.** Juan Manuel Alvarez<sup>1</sup>, Fabian Menalled<sup>2</sup>, <sup>1</sup>University of Idaho, Aberdeen, ID, <sup>2</sup>Montana State University, Bozeman, MT

**Tuesday, April 13, continued**

**10-MINUTE ORAL PAPER PRESENTATIONS, continued**

- 81P 9:30 **Pest Status of an Exotic Cutworm, the Large Yellow Underwing (*Noctua pronuba*), in Idaho.** Edward John Bechinski<sup>1</sup>, Larry Smith<sup>2</sup>, Frank Merickel<sup>1</sup>, <sup>1</sup>University of Idaho, Moscow, ID, <sup>2</sup>University of Idaho, Lewiston, ID
- 82P 9:42 **Rice Water Weevil within Field Distribution in California Rice.** Espino, L., University of California, Colusa, CA
- 83P 9:54 **Ground Beetle Assemblages from Conservation Reserve Program Land in Delta Junction, Alaska.** Alberto Pantoja<sup>1</sup>, Aaron M. Hagerty<sup>1</sup>, Susan Y. Emmert<sup>1</sup>, Derek Sikes<sup>2</sup>, Silvia I. Rondon<sup>3</sup>, <sup>1</sup>USDA-ARS, Fairbanks, AK, <sup>2</sup>University of Alaska Museum, Fairbanks, AK, <sup>3</sup>Oregon State University, Hermiston, OR
- 10:06 **BREAK**
- 84P 10:18 **The Affect of Biodiversity of Nematodes and Fungus on the Colorado Potato Beetle.** Elizabeth Aultman, Randa Jabbour, David Crowder, William Snyder, Washington State University Pullman, WA
- 85P 10:30 **Volatile Profile of Four Potato Varieties and the Response of Green Peach Aphid.** Hongjian Ding, Sanford D. Eigenbrode, University of Idaho, Moscow, ID
- 86P 10:42 **White Grubs Management in California Blueberries.** Natalie Hernandez, David Haviland, University of California, Bakersfield, CA
- 87P 10:54 **Chumming for Predators: HIPV Lures as Monitoring Tools for Natural Enemies.** Shawn A. Steffan, Vincent P. Jones, Callie C. Baker, Tawnee D. Melton, Washington State University, Wenatchee, WA
- 88P 11:06 **Improving a Cultural Tactic Utilized for Management of Navel Orangeworm in Almonds.** Elizabeth A. Boyd<sup>1</sup>, Justin E. Nay<sup>2</sup>, Kent M. Daane<sup>3</sup>, <sup>1</sup>California State University Chico, CA, <sup>2</sup>Integral Ag. Inc., Chico, CA, <sup>3</sup>University of California, Berkeley, CA
- 89P 11:18 **Mating Disruption for Control of Navel Orangeworm in Almonds in Central California.** Charles S. Burks<sup>1</sup>, Bradley S. Higbee<sup>2</sup>, Kent M. Daane<sup>3</sup>, Joel P. Siegel<sup>1</sup>, and David G. Brandl<sup>1</sup>, <sup>1</sup>USDA-ARS, Parlier, CA, <sup>2</sup>Paramount Farming Company, Bakersfield, CA, <sup>3</sup>University of California, Berkeley, CA
- 90P 11:30 **Tree Cages, Plumes and Vertical Distribution of Navel Orangeworm: Can We Optimize Mating Disruption?** Bradley S. Higbee<sup>1</sup> Ring T. Cardé<sup>2</sup>, <sup>1</sup>Paramount Farming Company, Bakersfield, CA, <sup>2</sup>University of California, Riverside, CA
- 91P 11:42 **Influence of Fragmenting Environment on Lygus Management in Cotton.** P.B. Goodell, D.A. Cary, N.C. Cannell, University of California, Parlier, CA
- 12:00 **AWARDS LUNCHEON.** See page 19.

## Tuesday, April 13, continued

### 10-MINUTE ORAL PAPER PRESENTATIONS, continued

*Rapids Room, 3rd Floor*

Afternoon Session Moderators: **Brian Bahder**, Washington State University, Prosser, WA  
and **Tunyalee Martin**, University of California, Davis, CA

- 1:30 **Opening Remarks**
- 92P 1:36 **Sky Island Bees of The Mojave Desert.** Terry Griswold<sup>1</sup>, <sup>1</sup>USDA-ARS Bee Biology & Systematics Laboratory, Utah State University, Logan UT
- 93P 1:48 **Citizen Scientists without Voting Rights: Beekeeping Practice and Research in Washington State Prisons.** Samuel D. Hapke<sup>1</sup>, Daniel Travatte<sup>2</sup>, Nalini M. Nadkarni<sup>3</sup>, <sup>1</sup>SpringStar Inc., Woodinville, WA, <sup>2</sup>Cedar Creek Corrections Center, Littlerock, WA, <sup>3</sup>The Evergreen State College, Olympia, WA
- 94P 2:00 **Predicting Pollen Balls in Alfalfa Leafcutting Bees.** Theresa L. Pitts-Singer, USDA ARS, Logan, UT
- 95P 2:12 **Year-Round IPM Programs Connect UC IPM Environmental Quality Resources.** Tunyalee Martin, Barbara Ohlendorf, Jodi Azulai, Carolyn Pickel, Pete Goodell, Joyce Strand, University of California, Davis, CA
- 96P 2:24 **Integrated Pest Management vs Grower's Standard Pest Control Practice for Managing the Insect Pests on Cabbage in Guam.** Gadi V.P. Reddy, University of Guam, Mangilao, Guam
- 97P 2:36 **Cutting Failure and Damage Characterization in Pacific Northwest Hybrid Poplars.** R. Andrew Rodstrom, John J. Brown, John R. Rodstrom, Martin E. Fortney, Washington State University, Pullman, WA
- 2:48 **BREAK**

### MINI-SYMPOSIUM: MEALYBUG MANAGEMENT UPDATE

*Rapids Room, 3rd Floor*

- 98P 3:00 **Mealybug Pheromones: Moving from Discovery to Applications.** Jocelyn Millar<sup>1</sup>, Steve McElfresh<sup>1</sup>, Yunfan Zou<sup>1</sup>, Rebeccah Waterworth<sup>1</sup>, Kent Daane<sup>2</sup>, Walt Bentley<sup>3</sup>, <sup>1</sup>University of California, Riverside, CA, <sup>2</sup>University of California, Berkeley, CA, <sup>3</sup>Kearney Agricultural Center, Parlier, CA
- 99P 3:17 **2009 Grape Mealybug GMB) (*Pseudococcus maritimus*) and Vine Mealybug (VMB) (*Planococcus ficus*) (PSEUDOCOCIDAE) Survey in Idaho Vineyards.** Ben Simko, Darcy Heckathorne, Martin Fujushin, Idaho State Department of Agriculture, Boise, ID



## Tuesday, April 13, continued

### 10-MINUTE ORAL PAPER PRESENTATIONS, continued

- 100P 3:34 **Pheromone Monitoring of Four Mealybug Species in Oregon Vineyards.** Richard Hilton<sup>1</sup>, Vaughn Walton<sup>2</sup>, Marcus Buchanan<sup>1</sup>, Amy Dreves<sup>2</sup>, Steve Castagnoli<sup>3</sup>, Clive Kaiser<sup>4</sup>, Jocelyn Millar<sup>5</sup>, Steve Renquist<sup>6</sup>, Philip VanBuskirk<sup>1</sup>, <sup>1</sup>Oregon State University, Central Point, OR, <sup>2</sup>Oregon State University, Corvallis, OR, <sup>3</sup>Oregon State University, Hood River, OR, <sup>4</sup>Oregon State University, Milton-Freewater, OR, <sup>5</sup>University of California, Riverside, CA, <sup>6</sup>Oregon State University, Roseburg, OR
- 101P 3:51 **Monitoring and Management of Grape Mealybugs in Washington State.** Brian Bahder, Dan Groenendale, Deborah Brooks, Naidu Rayapati, Doug Walsh, Washington State University, Prosser, WA
- 102P 4:06 **Mating Disruption for the Vine Mealybug: Can Sex Pheromones Control Relatively Sessile Hemipteran Pests?** Kent M. Daane, Monica L. Cooper, Jocelyn G. Millar, Walter J. Bentley, Glenn Y. Yokota, Vaughn M. Walton, Betsy Boyd
- 103P 4:23 **Refinement of IPM Programs for Vine Mealybug in San Joaquin Valley Table Grapes.** David R. Haviland, Stephanie M. Rill, and Jennifer Hashim-Buckey, University of California, Bakersfield, CA
- 104P 4:40 **Challenges Associated with Development and Commercialization of a Non-Lepidopteran Pheromone for Mating Disruption Use in Western Vineyards.** Carlos C. Reyes, Suterra LLC, Bend, OR

### GENERAL POSTER SESSION

8:00am-5:00pm

*Aspen Room, 2nd Floor*

- 24PO **Effects of Newer Insecticides on the Natural Enemy *Deraeocoris brevis* (Uhler) (Hemiptera: Miridae).** Kaushalya G. Amarasekare, Peter W. Shearer, Amanda A. Borel, Oregon State University, Hood River, OR
- 25PO **Identifying Molecular Markers Associated with Hessian Fly Resistance in the Spring Wheat Cultivar 'Louise'.** Arron H. Carter<sup>1</sup>, Nilsa A. Bosque-Pérez<sup>2</sup>, Lana M. Unger<sup>2</sup>, Susan E. Cambron<sup>3</sup>, Herbert W. Ohm<sup>4</sup>, Kim K. Kidwell<sup>1</sup>, <sup>1</sup>Washington State University, Pullman, WA, <sup>2</sup>University of Idaho, Moscow, ID, <sup>3</sup>USDA-ARS, West Lafayette, IN, <sup>4</sup>Purdue University, West Lafayette, IN
- 26PO **WSU-DAS: The Online Pest Management Support System for Tree Fruits in Washington.** Ute Chambers, Brad Petit, Vincent P. Jones, Washington State University, Wenatchee, WA
- 27PO **The Microbial Insecticide *Chromobacterium subsugae*.** L.J. Chanbusarakum, A. Murray, R. Asolkar, D. Wallner, H. Huang, E. Tan, R. Lam, T. Johnson, M.E. Koivunen, P.G. Marrone, Marrone Bio Innovations, Inc., Davis, CA

**Tuesday, April 13, continued**

**GENERAL POSTER SESSION, continued**

- 28PO **Western Integrated Pest Management Center.** Diane Clarke, Rick Melnicoe, Linda Herbst. Western IPM Center, University of California, Davis, CA
- 29PO **Improved Greenhouse Assays to Assess Lygus Hesperus Injury to Cotton Fruit.** W. Rodney Cooper, Dale W. Spurgeon, USDA-ARS, Shafter, CA
- 30PO **Grapevine Genetic Response to Sulfur And Pacific Spider Mite (*Tetranychus pacificus*).** Michael J. Costello, Jeffrey C. Wong, California Polytechnic State University, San Luis Obispo, CA
- 31PO **Responses of *Myzus persicae* to Headspace Volatiles of *Nicotiana benthamiana* Infected with Artificial Mutants of *Potato Leaf Roll Virus*.** Sanford D. Eigenbrode, Hongjian Ding, Alex V. Karasev, Joseph Kuhl, University of Idaho, Moscow, ID
- 32PO **Can the Postharvest Treatment Metabolic Stress Disinfection and Disinfestation (MSDD) Control Quarantine Pests in Fresh Commodities?** Peter Follett<sup>1</sup>, Lourdes Arévalo-Galarza<sup>2</sup>, <sup>1</sup>USDA-ARS, Hilo, HI, <sup>2</sup>Colegio de Postgraduados, Montecillo, Mexico
- 33PO **Integrating Classical Taxonomy and Information Technologies in Bee Systematics: The American Species of *Anthidium*.** Victor H. Gonzalez<sup>1</sup>, Kimberly Huntzinger<sup>1</sup>, Sam Droege<sup>2</sup>, Terry Griswold<sup>1</sup>, <sup>1</sup>USDA-ARS, Logan, UT, <sup>2</sup>U.S. Geological Survey, Beltsville, MD
- 34PO **Adaptations of Bees and Wasps for Pollen Collecting from Nototribic Flowers.** Victor H. Gonzalez, Terry Griswold, Molly Rightmyer, USDA-ARS, Logan, UT
- 35PO **Sensory Studies on the Effects of Mite, Aphid, and Powdery Mildew Injury on the Flavor Components of Single-Hopped Pale Ales.** Dan Groenendale<sup>1</sup>, Mark Nelson<sup>1</sup>, Deborah Brooks<sup>1</sup>, Wilson Peng<sup>1</sup>, Sally O'Neal<sup>1</sup>, James Barbour<sup>2</sup>, Doug Walsh<sup>1</sup>, <sup>1</sup>Washington State University, Prosser, WA, <sup>2</sup>University of Idaho, Parma, ID
- 36PO **Efficacy of Spirotetramat against Aphids, Mealybugs, Thrips and Whiteflies on Anthurium and Floral Ginger.** Arnold H. Hara, Susan K. Cabral, Ruth Y. Niino-DuPonte, Kris L. Aoki, University of Hawaii, Hilo, HI
- 37PO **The Prevalence of Codling Moth in Ornamental Pear Trees and the Implication for Horticultural Pest and Disease Boards.** Gwen-Alyn Hoheisel<sup>1</sup>, Tom Wilson<sup>2</sup>, <sup>1</sup>Washington State University, Prosser, WA, <sup>2</sup>Franklin County Horticultural Pest and Disease Board, Pasco, WA

Tuesday, April 13, continued

GENERAL POSTER SESSION, continued

- 38PO **A Novel Automated Trap Design is Developed from Initial Tests of Codling Moth and Oriental Fruit Moth Traps.** Brian Lehman<sup>1</sup>, Larry Hull<sup>1</sup>, Vince Jones<sup>2</sup>, Johnny Parks<sup>3</sup>, Katie Ellis<sup>4</sup>, <sup>1</sup>Pennsylvania State University, Biglerville, PA, <sup>2</sup>Washington State University, Wenatchee, WA, <sup>3</sup>Purdue University, West Lafayette, IN, <sup>4</sup>Pennsylvania State University, Gettysburg, PA
- 39PO **Evaluating Novaluron Mortality of Immature Alfalfa Leafcutting Bees, *Megachile rotundata*.** Theresa L. Pitts-Singer<sup>1</sup>, Erin W. Hodgson<sup>2</sup>, James D. Barbour<sup>3</sup>, <sup>1</sup>USDA-ARS, Utah State University, Logan, UT, <sup>2</sup>Iowa State University, Ames, IA, <sup>3</sup>Parma Research and Extension Center, Parma, ID
- 40PO ***Bombus huntii* (Hymenoptera: Apidae): A Western North American Bumble Bee as a Potential Commercial Pollinator.** James P. Strange, USDA-ARS Utah State University, Logan, UT
- 41PO **Insecticide Control of Vine Mealybug in California Vineyards.** Lucia G. Varela, Rhonda J. Smith, University of California, Santa Rosa, CA
- 42PO **First Report in the United States of European Grapevine Moth, *Lobesia botrana* (Lepidoptera: Tortricidae) in Napa Valley Vineyards.** Lucia G. Varela, University of California, Santa Rosa, CA
- 43PO **Odor Discrimination in Two Conditioned Solitary Bees, *Osmia lignaria* and *Megachile rotundata* (Hymenoptera: Megachilidae).** Cory A. Vorel<sup>1</sup>, Theresa L. Pitts-Singer<sup>2</sup>, <sup>1</sup>Utah State University, Logan, UT, <sup>2</sup>USDA-ARS, Logan, UT
- 44PO **Identification of Codling Moth Genes by Degenerate PCR.** Steven Weaver<sup>1</sup>, Stephen F. Garczynski<sup>2</sup>, Laura Corley Lavine<sup>1</sup>, <sup>1</sup>Washington State University, Pullman WA, <sup>2</sup>USDA-ARS, Wapato WA
- 45PO **The Potential of Extensive Green Roofs to Provide Urban Arthropod Habitat.** Tammy Winfield, John Lambrinos, Oregon State University, Corvallis, OR
- 46PO **Species Composition of Cutworm Larvae (Lepidoptera: Noctuidae) in South Central Washington Vineyards.** Larry Wright<sup>1</sup>, David James<sup>1</sup>, Victor Reyna<sup>1</sup>, Sandra Castle del Conte<sup>1</sup>, Stacy Gingras<sup>2</sup>, Peter Landolt<sup>3</sup>, Tora Brooks<sup>1</sup>, <sup>1</sup>Washington State University, Prosser, WA <sup>2</sup>Yakima Community College, Grandview, WA <sup>3</sup>USDA-ARS, Wapato, WA
- 47PO **Insecticide Induced Resurgence of Brown Planthopper, *Nilaparvata lugens*, in the Temperate Rice Ecosystem.** Yoohan Song<sup>1</sup>, Hong-Hien Pham<sup>2</sup>, <sup>1</sup>Gyeong-Sang National University, Jinju, Korea, <sup>2</sup>Plant Protection Research Institute, Dongngac, Tuliem, Hanoi, Vietnam

**Tuesday, April 13, continued**

**STUDENT-SPONSORED SYMPOSIUM  
SUSTAINABILITY IN THE EVOLVING WORLD:  
INSECTS, ECOSYSTEM, AND ECONOMICS**

**1:30-4:40pm**

*River Fork Room, 3rd Floor*

Organizer & Moderator: **Ashfaq Sial**, Committee Chair, Washington State University, Wenatchee, WA

Committee Members: **Chris Goforth**, University of Arizona, **Chrissy Mogren**, University of California-Riverside, **Eleanor Blitzer**, University of California-Berkeley, **Elizabeth Miller**, Oregon State University, **Emily Symmes**, University of California-Davis, **Marianna Szücs**, University of Idaho, **Patrick Aldrich**, University of Hawaii-Manoa, **Ross Winton**, Montana State University

1:30 **Introduction.** Ashfaq Sial, Washington State University, Wenatchee, WA

105 1:35 **Linking Sustainable Production and Biodiversity Conservation: A Team-Based Interdisciplinary Graduate Student Program Experience.** Nilsa A Bosque-Pérez, University of Idaho, Moscow, ID

106 1:55 **An International Perspective on Factors Affecting the Expansion of Augmentative Biological Control in the Greenhouse Ecosystem.** Michael P. Parrella, University of California, Davis, CA

107 2:15 **Sustainable Integrated Pest Management Programs that Address Needs of Farmers, Consumers and the Environment: A Perspective.** Walter J. Bentley, University of California, Parlier, CA

108 2:35 **Practical Applications of Chemical Ecology: Know When to Hold 'Em, Know When to Fold 'Em.** Jocelyn G. Millar, University of California, Riverside CA

109 2:55 **Evaluating Establishment of Biological Control Agent Biotypes Using Molecular Methods.** Marianna Szücs<sup>1</sup>, John F. Gaskin<sup>2</sup>, Mark Schwarzländer<sup>1</sup>, <sup>1</sup>University of Idaho, Moscow, ID, <sup>2</sup>USDA-ARS, Sidney, MT

3:15 **BREAK**

110 3:30 **Keeping the Devil at Bay: Using the Idle Hands of Prisoners in Sustainability Practice and Research.** Samuel D. Hapke<sup>1</sup>, Nalini M. Nadkarni<sup>2</sup>, <sup>1</sup>SpringStar Inc., Woodinville, WA, <sup>2</sup>The Evergreen State College, Olympia, WA

111 3:50 **Agro-Ecosystems, Sustainability of Bumble Bee Pollinators, and Economic Crop Production: The Willamette Valley Experience.** Sujaya Rao, Oregon State University, Corvallis OR

112 4:10 **What Good Are Bugs? The Case for Invertebrate Conservation.** Scott H. Black, The Xerces Society for Invertebrate Conservation, Portland, OR

Tuesday, April 13, continued

## SYMPOSIUM

### ORGANIC TREE FRUIT PEST MANAGEMENT IN THE WEST: BRINGING NEW SCIENCE TO OLD PROBLEMS

1:30-4:50pm

*White Water Room, 3rd Floor*

Organizer & Moderator: **Elizabeth Beers**, Washington State University, Wenatchee, WA

1:30 **Introduction.** Elizabeth Beers, Washington State University, Wenatchee, WA

114 1:40 **Organic Tree Fruits and Nuts: Growing, Growing, Gone?** David Granatstein, Elizabeth Kirby, Washington State University, Wenatchee, WA

115 2:05 **Control of Direct Pests of Organic Apples: Successes and Challenges.** Jay F. Brunner, Mike D. Doerr, Washington State University, Wenatchee, WA

116 2:30 **Predation of Aphids in Organic Prunes: How Many Predators are Enough?** N. J. Mills, University of California, Berkeley, CA

2:55 **BREAK**

117 3:10 **Peach Orchard Ground Cover Management Mitigates Bug Damage.** Peter W. Shearer, Oregon State University, Hood River, OR

118 3:35 **Organic Stone Fruit Orchard Floor Management: Interactions among Insects, Weeds, Water Use, and Crop Nutrition and Quality.** Diane Alston, Andrew Tebeau, Jennifer Reeve, Brent Black, Corey Ransom, Marc Rowley, Ruby Ward, Silvana Martini, Utah State University, Logan, UT

119 4:00 **Who's Eating Whom? Evaluating Predators and Parasitoids and the Influence of the Farmscape Using Protein-Marking and Gut Content Analysis.** Tom Unruh, USDA-ARS, Wapato, WA

120 4:25 **Enhancing BC in Organic Orchards Using HIPV Lures to Characterize, Monitor and Manipulate Natural Enemies.** Vincent P. Jones<sup>1</sup>, Shawn A. Steffan<sup>1</sup>, David R. Horton<sup>2</sup>, Nicholas J. Mills<sup>3</sup>, Peter W. Shearer<sup>4</sup>, <sup>1</sup>Washington State University, Wenatchee, WA, <sup>2</sup>USDA-ARS, Wapato, WA, <sup>3</sup>University of California, Berkeley, CA, <sup>4</sup>Oregon State University, Hood River, OR

## Tuesday Evening, April 13

5:00-6:00pm • Cedar Room (2nd Floor)

Plenary Session with Dr. Steven Blank,  
Agricultural Economist, University of California at Davis (see next page)  
“Economic Sustainability in the Evolving World”

8:00-9:00pm • 2nd Floor Landing

Employment Information Session

# **Tuesday Evening, April 13**

## **“Economic Sustainability in the Evolving World: Implications for Agriculture and the Environment”**

**A Plenary Session Presentation by**

**Dr. Steven C. Blank  
Agricultural Economist  
University of California, Davis**

Both natural and social scientists have been focusing much attention on a new issue over recent years: “sustainability.” In American agriculture, the discussion became more intense in 1990 when Congress passed a “Farm Bill” that defined “sustainable agriculture.” Parts of that definition included the requirements of “economic viability” and enhanced environmental quality for true, long-run sustainability, thus linking the work of social and natural scientists in the quest for a production system that will serve both present and future generations. This presentation will summarize the evolution of agriculture to its current competition with environmental issues and suggest how this conflict might be turned into a complementary coexistence. American agriculture’s current struggle for profitability is shown to be a driver of the conflict, whereas growing public concerns for environmental issues offer an opportunity for social and natural scientists to jointly derive a sustainable solution.

**5:00-6:00pm**

**Cedar Room (2nd Floor)**

For more information about Dr. Steven Blank, Recipient of the 2007 Distinguished Scholar Award of the Western Agricultural Economics Association, visit his UC Davis website at <http://www.agecon.ucdavis.edu/people/faculty/page.php?id=23>



# Wednesday, April 14

## 7:30-8:30am - Final Business Meeting *River Fork Room, 3rd Floor*

### SYMPOSIUM: NEW DEVELOPMENTS IN CONTROL TECHNOLOGIES

8:30am-Noon  
*Rapids Room, 3rd Floor*

Organizer and Moderator: **Keith Dorschner**, IR-4, Rutgers University, Princeton, NJ

- 8:30 **Welcome and Introduction**, Keith Dorschner, Rutgers University, Princeton, NJ
- 121 8:35 **First Generation Codling Moth Control with Proclaim SG® (emamectin benzoate)**. Christopher Clemens<sup>1</sup>, Roy Boykin<sup>2</sup>, <sup>1</sup>Syngenta Crop Protection, Inc, Richland, WA, <sup>2</sup>Syngenta Crop Protection, Inc., Greensboro, NC
- 122 8:55 **A Little Dab'II Do Ya: Advances in Fruit Fly Bait Technology with SPLAT-MAT Spinosad ME**. Brian L. Bret<sup>1</sup>, Luis E. Gomez<sup>1</sup>, Agenor Mafra-Neto<sup>2</sup>, Roger I. Vargas<sup>3</sup>, <sup>1</sup>Dow AgroSciences, Indianapolis, IN, <sup>2</sup>ISCA Technologies, Inc., Riverside, CA , <sup>3</sup>USDA-ARS, Hilo HI
- 123 9:15 **Technology Transfer through the Hawaii Area-Wide Pest Management Program for Control of Fruit Flies**. Roger I. Vargas<sup>1</sup>, Ronald F. L. Mau<sup>2</sup>, Jaime Pinero<sup>2</sup>, Luc Leblanc<sup>2</sup>, <sup>1</sup>USDA-ARS, Hilo, HI, <sup>2</sup>University of Hawaii, Honolulu, HI
- 124 9:35 **Recent Innovations in Reduced-Risk Insecticides for Pest Management in Leafy Vegetables**. John C. Palumbo, University of Arizona, Yuma, AZ
- 125 9:55 **Pyrifluquinazon – Effective New Chemistry Against Whiteflies**. Steven Castle, Eric Hoffmann, USDA-ARS, Maricopa, AZ
- 10:15 **BREAK**
- 126 10:30 **Establishment of Baseline Toxicity Data against Key Agricultural Pests: A Component of Sustainable Management**. Nilima Prabhaker, University of California, Riverside, CA
- 127 10:50 **New Pesticides for Tree Fruit: Safer for Whom?** Elizabeth H. Beers, Washington State University, Wenatchee, WA
- 128 11:10 **Seed Treatment and Coating Technologies for Early Season Protection**. Alan Taylor, Cornell University, Geneva, NY
- 129 11:30 **Neonicotinoids, Package Mixes, Resistance, Integrated Pest Management and the Pacific Northwest Potato Market**. Alan Schreiber, Agriculture Development Group, Inc., Eltopia, WA
- 12:00 **ADJOURN**

Wednesday, April 14, continued

**SYMPOSIUM:  
THRIPS BIOLOGY, CONTROL, AND RESISTANCE MANAGEMENT**

**8:30am-Noon**

*River Fork Room, 3rd Floor*

Organizers and Moderators: **Harvey Yoshida**, Dow AgroSciences, Richland, WA  
and **Tim Waters**, Washington State University Extension, Pasco, WA

- 8:30 **Welcome and Introduction**, Harvey Yoshida. Dow AgroSciences, Richland, WA
- 130 8:35 **Onion Thrips Control on Dry Bulb Onions in Washington State.** Tim Waters<sup>1</sup>,  
Doug Walsh<sup>2</sup>, <sup>1</sup>Washington State University, Pasco, WA <sup>2</sup>Washington State University,  
Prosser, WA
- 131 8:55 **Developing an IPM Program for Thrips Pests of Timothy (*Phleum  
pratense* L.) in the Western U.S.** Larry Godfrey<sup>1</sup>, Dominic Reisig<sup>1</sup>, Dan Marcum<sup>2</sup>,  
<sup>1</sup>University of California, Davis, CA, <sup>2</sup>University of California, McArthur, CA
- 132 9:15 **The Only Place in the World Where Thrips Are a Pest of Potatoes is in the  
Columbia Basin.** Alan Schreiber, Agricultural Development Group, Eltopia, WA
- 133 9:35 **Suppression of Onion Thrips Egg Load in Plants and Influence of Onion  
Crop Management Practices on Thrips and IYSV.** Diane Alston<sup>1</sup>, Jennifer Reeve<sup>1</sup>,  
Daniel Drost<sup>1</sup>, Kristie Buckland<sup>1</sup>, C. Kent Evans<sup>3</sup>, <sup>1</sup>Utah State University, Logan, UT,  
<sup>2</sup>USDA ARS, Pullman, WA
- 134 9:55 **Thrips-Transmitted Tospoviruses: Is There a Way to Break This Alliance?**  
Hanu Pappu, Washington State University, Pullman, WA
- 10:15 **BREAK**
- 135 10:30 **Insecticide Resistance Management in Thrips: A Manufacturer's  
Perspective.** Harvey A. Yoshida<sup>1</sup>, James E. Dripps<sup>2</sup>, Michael M. Lees<sup>3</sup>, James P.  
Mueller<sup>4</sup>, Anthony W. Weiss<sup>5</sup>, <sup>1</sup>Dow AgroSciences, Richland, WA, <sup>2</sup>Dow AgroSciences,  
Indianapolis, IN, <sup>3</sup>Dow AgroSciences, Granite Bay, CA, <sup>4</sup>Dow AgroSciences, Brentwood,  
CA, <sup>5</sup>Dow AgroSciences, Brandon, FL
- 136 10:50 **Managing Rotation of Biopesticides to Control Onion Thrips in Eastern  
Oregon.** Silvia Rondon, Oregon State University, Hermiston, OR
- 137 11:10 **Investigating Alternatives to Traditional Insecticides: The Effectiveness  
of Fungi and Bt against Citrus and Avocado Thrips.** Deane Zahn, Joseph  
Morse, University of California, Riverside, CA
- 138 11:30 **Behavior and Development of the Western Flower Thrips *Frankliniella  
occidentalis*.** Urs Wyss<sup>1</sup>, Michael Parrella<sup>2</sup>, Harvey Yoshida<sup>3</sup>, <sup>1</sup>Institute of  
Phytopathologie, Keil, Germany, <sup>2</sup>University of California, Davis, CA, <sup>3</sup>Dow  
AgroSciences, Richland, WA
- 12:00 **ADJOURN**



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	76P	22	Tues., 8:30am	*Castro, Boris	75P	22	Tues., 8:18am
Black, Brent	118	29	Tues., 3:35pm		78P	22	Tues., 8:54am
*Black, Scott Hoffman	73	21	Tues., 11:20am	Chloridis, A.	74P	22	Tues., 8:06am
*	112	28	Tues., 4:10pm	*Clark, Catherine	20SP	14	Mon., 2:06pm
*Bolda, Mark	5	10	Mon., 3:45pm	*Clemens, Chris	121	30	Weds., 8:35am
	7	10	Mon., 4:45pm	Coates, W.W.	6	10	Mon., 4:15pm
*Boehme, Nicole	18SP	14	Mon., 1:42pm	Cooper, Monica	102P	25	Tues., 4:06pm
Bosque-Pérez, Nilsa	37SP	16	Mon., 2:06pm	*Cooper, W. Rodney	28P	15	Mon., 3:54pm
	66	21	Tues., 8:10am	Crowder, David	84P	23	Tues., 10:18am
*	105	28	Tues., 1:35pm	Daane, Kent	88P	23	Tues., 11:06am
*Boyd, Elizabeth	88P	23	Tues., 11:06am		89P	23	Tues., 11:18am
	102P	25	Tues., 4:06pm		98P	24	Tues., 3:00pm
Boykin, Roy	121	30	Weds., 8:35am	*	102P	25	Tues., 4:06pm
*Bragg, David	15	11	Mon., 4:15pm	Dalton, Daniel	2	10	Mon., 2:05pm
	16	11	Mon., 4:35pm	DeMark, Joe	59	20	Tues., 9:05am
Brandl, David	89P	23	Tues., 11:18am	*Denke, Patricia	8	11	Mon., 1:40pm
Braxton, Bo	75P	22	Tues., 8:18am	Ding, Hongjian	37SP	16	Mon., 2:06pm
*Brunner, Jay	115	29	Tues., 2:05pm	*	85P	23	Tues., 10:30am
Breece, Carolyn	70	21	Tues., 10:05am	Doerr, Mike	115	29	Tues., 2:05pm
Brent, Colin	31P	15	Mon., 4:18pm	*Dosdall, Lloyd	13	11	Mon., 3:35pm
*Bret, Brian	122	30	Weds., 8:55am	*Dreves, Amy	3	10	Mon., 2:35pm
Brooks, Deborah	101P	25	Tues., 3:51pm		100P	25	Tues., 3:34pm
*Brown, Gary	9	11	Mon., 2:00pm	Drost, Daniel	133	31	Weds., 9:35am
Brown, John	39SP	16	Mon., 2:30pm	Dripps, J	74P	22	Tues., 8:06am
	97P	24	Tues., 2:36pm		135	31	Weds., 10:30am

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Eger, Joe	59	20	Tues., 9:05am	Haygood, Robert	75P	22	Tues., 8:18am
Eigenbrode, Sanford	37SP	16	Mon., 2:06pm	Heckathorne, Darcy	99P	24	Tues., 3:17pm
	66	21	Tues., 8:10am	*Henke, Jennifer	62	20	Tues., 10:20am
	85P	23	Tues., 10:30am	*Hernandez, Natalie	86P	23	Tues., 10:42am
Ellsworth, Peter	78P	22	Tues., 8:54am	Higbee, Brad	77P	22	Tues., 8:42am
Elnaïem, Dia-Eldin	41SP	16	Mon., 2:54pm		89P	23	Tues., 11:18am
Emmert, Susan	83P	23	Tues., 9:54am	*	90P	23	Tues., 11:30am
*Espino, L.	82P	23	Tues., 9:42am	*Hilton, Richard	100P	25	Tues., 3:34pm
Evans, C. Kent	133	31	Weds., 9:35am	Hoffmann, Eric	25	30	Weds., 9:55am
*Ferguson, Holly	58	20	Tues., 8:45am	Horton, David	19SP	14	Mon., 1:54pm
	65	20	Tues., 11:20am		120	29	Tues., 4:25pm
*Fisher, Joanna	34SP	16	Mon., 1:30pm	Ikerd, Harold	68	21	Tues., 9:00am
*Fisher, Marc	76P	22	Tues., 8:30am	Ingwell, Laura	37SP	16	Mon., 2:06pm
	59	20	Tues., 9:05am	Ishida, Yuko	38SP	16	Mon., 2:18pm
*Fletcher, Michael	64	20	Tues., 11:00am	Iulek, Jorge	38SP	16	Mon., 2:18pm
Foley, Ian	8	11	Mon., 1:40pm	Jabbour, Randa	84P	23	Tues., 10:18am
Fortney, Martin	97P	24	Tues., 2:36pm	Jacquet, V.	74P	22	Tues., 8:06am
Fujushin, Martin	99P	24	Tues., 3:17pm	Jandreau, Colleen	12	11	Mon., 3:00pm
*Gadino, Angela	36SP	16	Mon., 1:54pm	*Janney, Phillip	52	18	Tues., 9:30am
Gaskin, John	109	28	Tues., 2:55pm	*Jenkins, Jeff	52	18	Tues., 9:30am
Gavloski, John	13	11	Mon., 3:35pm	Jones, Vincent	87P	23	Tues., 10:54am
Godfrey, Larry	75P	22	Tues., 8:18am	*	120	29	Tues., 4:25pm
	78P	22	Tues., 8:54am	Kaiser, Clive	100P	25	Tues., 3:34pm
*	131	31	Weds., 8:55am	Karasev, Alexander	37SP	16	Mon., 2:06pm
Gomez, Luis	74P	22	Tues., 8:06am	Kerns, David	78P	22	Tues., 8:54am
	76P	22	Tues., 8:30am	Kirby, Elizabeth	114	29	Tues., 1:40pm
	122	30	Weds., 8:55am	*Klassen, Parry	51	18	Tues., 9:00am
*Goodell, Pete	91P	23	Tues., 11:42am	Klaus, Mike	16	11	Mon., 4:35pm
	95P	24	Tues., 2:12pm	Knowles, Donald	60	20	Tues., 9:25am
Goodhue, Rachael	5	10	Mon., 3:45pm	*Koch, Jonathan	68	21	Tues., 9:00am
*Granatstein, David	114	29	Tues., 1:40pm	Krogh, Renata	38SP	16	Mon., 2:18pm
Greco, Alysia	21SP	14	Mon., 2:18pm	Landolt, P.	24SP	14	Mon., 2:54pm
*Green, Jessica	21SP	14	Mon., 2:18pm	Lanzaro, Greg	41SP	16	Mon., 2:54pm
*Greenberg, Les	61	20	Tues., 10:00am	Lassiter, Ralph	75P	22	Tues., 8:18am
Griswold, Terry	66	21	Tues., 8:10am	Latchinsky, A.	32P	15	Mon., 4:42pm
	68	21	Tues., 9:00am	Lawrence, Tim	71	21	Tues., 10:30am
*	92P	24	Tues., 1:36pm	Leal, Walter	38SP	16	Mon., 2:18pm
Groenendale, Dan	101P	25	Tues., 3:51pm	Leblanc, Luc	123	30	Weds., 9:15am
Guédot, C.	24SP	14	Mon., 2:54pm	*LeBuhn, Gretchen	72	21	Tues., 10:55am
Guerrero, Felix	60	20	Tues., 9:25am	Lee, Jana	36SP	16	Mon., 1:54pm
Hagerty, Aaron	83P	23	Tues., 9:54am		4	10	Mon., 3:05pm
Haile, Fikru	75P	22	Tues., 8:18am	*Lees, Mike	59	20	Tues., 9:05am
Hamm, Ronda	59	20	Tues., 9:05am		135	31	Weds., 10:30am
*Hapke, Sam	93P	24	Tues., 1:48pm	*Leite, Ney Ribeiro	47SP	17	Mon., 4:18pm
*	110	28	Tues., 3:30pm	Looney, Chris	66	21	Tues., 8:10am
Hartley, Scott	13	11	Mon., 3:35pm	Love, Byron	38SP	16	Mon., 2:18pm
Hashim-Buckey, J.	103P	25	Tues., 4:23pm	Lysandrou, M.	74P	22	Tues., 8:06am
*Hatten, Timothy	66	21	Tues., 8:10am	Mafra-Neto, Agenor	122	30	Weds., 8:55am
Haviland, David	77P	22	Tues., 8:42am	*Mahler, Bob	55	18	Tues., 11:30am
	86P	23	Tues., 10:42am	Marcum, Dan	131	31	Weds., 8:55am
*	103P	25	Tues., 4:23pm	Martin, A.	74P	22	Tues., 8:06am

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Martin, Tunyalee	95P	24	Tues., 2:12pm	*Peck, George	65	20	Tues., 11:20am
Martini, Silvana	118	29	Tues., 3:35pm	Peerbolt, Tom	2	10	Mon., 2:05pm
Mau, Ronald	123	30	Weds., 9:15am	*Phillips, Kim	25SP	14	Mon., 3:06pm
Mavrotas, C.	74P	22	Tues., 8:06am	Pickel, Carolyn	95P	24	Tues., 2:12pm
*McCulloch, John	22SP	14	Mon., 2:30pm	Pike, Keith	11	11	Mon., 2:40pm
	63	20	Tues., 10:40am	*	14	11	Mon., 3:55pm
McElfresh, Steve	98P	24	Tues., 3:00pm	Pinero, Jaime	123	30	Weds., 9:15am
McKern, Jackie	59	20	Tues., 9:05am	Pitts, James	18SP	14	Mon., 1:42pm
Meers, Scott	13	11	Mon., 3:35pm		20SP	14	Mon., 2:06pm
Melichar, Mike	59	20	Tues., 9:05am		45SP	17	Mon., 3:54pm
Melton, Tawnee	87P	23	Tues., 10:54am		46SP	17	Mon., 4:06pm
Menalled, Fabian	80P	22	Tues., 9:18am	Pitts-Singer, T.	94P	24	Tues., 2:00pm
Meneses, Claudio	41SP	16	Mon., 2:54pm	Prabhaker, Nilima	126	30	Weds., 10:30am
Merickel, Frank	81P	23	Tues., 9:30am	Ransom, Corey	118	29	Tues., 3:35pm
Mesner, Nancy	53	18	Tues., 10:30am	Rao, Sujaya	17SP	14	Mon., 1:30pm
*Millar, Jocelyn	108	28	Tues., 2:35pm		9	11	Mon., 2:00pm
*	98P	24	Tues., 3:00pm	*	10	11	Mon., 2:20pm
	100P	25	Tues., 3:34pm		40SP	16	Mon., 2:42pm
	102P	25	Tues., 4:06pm		25SP	14	Mon., 3:06pm
*Miller, Betsey	23SP	14	Mon., 2:42pm		42SP	16	Mon., 3:06pm
Miller, Terry	11	11	Mon., 2:40pm		67	21	Tues., 8:35am
	14	11	Mon., 3:55pm	*	111	28	Tues., 3:50pm
	16	11	Mon., 4:35pm	Rayapati, Naidu	101P	25	Tues., 3:51pm
Mills, N.J.	116	29	Tues., 2:30pm	*Reddy, Gadi	96P	24	Tues., 2:24pm
	120	29	Tues., 4:25pm	*Reed, Marcia	56	20	Tues., 8:05am
Morse, Joseph	137	31	Weds., 11:10am	Reeve, Jennifer	118	29	Tues., 3:35pm
Moulton, Laurel	21SP	14	Mon., 2:18pm		133	31	Weds., 9:35am
Mueller, Jim	76P	22	Tues., 8:30am	Reierson, Donald	57	20	Tues., 8:25am
	135	31	Weds., 10:30am	Reisig, Dominic	131	31	Weds., 8:55am
Muhareb, Jeanette	79P	22	Tues., 9:06am	Renquist, Steve	100P	25	Tues., 3:34pm
Munyanesa, Joseph	19SP	14	Mon., 1:54pm	Reyes, Carlos	104P	25	Tues., 4:40pm
Nadkarni, Nalini	93P	24	Tues., 1:48pm	Richardson, Jesse	75P	22	Tues., 8:18am
	110	28	Tues., 3:30pm		76P	22	Tues., 8:30am
Nay, Justin	88P	23	Tues., 11:06am	*	78P	22	Tues., 8:54am
*Neven, Lisa	29P	15	Mon., 4:06pm	Richburg, John	75P	22	Tues., 8:18am
*Nowierski, Bob	49	18	Tues., 8:00am	Riedl, Helmut	52	18	Tues., 9:30am
Ohlendorf, Barbara	95P	24	Tues., 2:12pm	*Rill, Stephanie	77P	22	Tues., 8:42am
*Ohler, B.	24SP	14	Mon., 2:54pm		103P	25	Tues., 4:23pm
Olfert, Owen	13	11	Mon., 3:35pm	Roberts, Diana	14	11	Mon., 3:55pm
Oliva, Glaucius	38SP	16	Mon., 2:18pm	Rodstrom, J. R.	97P	24	Tues., 2:36pm
O'Neal, Sally	58	20	Tues., 8:45am	*Rodstrom, R. A.	39SP	16	Mon., 2:30pm
Owen, Jeb	27SP	15	Mon., 3:42pm	*	97P	24	Tues., 2:36pm
*	63	20	Tues., 10:40am	Rondon, Silvia	83P	23	Tues., 9:54am
*Paige, Ginger	53	18	Tues., 10:30am	*	136	31	Weds., 10:50am
*Palumbo, John	124	30	Weds., 9:35am	Rowley, Marc	118	29	Tues., 3:35pm
*Pantoja, Alberto	83P	23	Tues., 9:54am	*Rust, Michael	57	20	Tues., 8:25am
*Pappu, Hanu	134	31	Weds., 9:55am		61	20	Tues., 10:00am
*Parrella, Michael	106	28	Tues., 1:55pm	*Sagili, Ramesh	70	21	Tues., 10:05am
*	138	31	Weds., 11:30am	*Scherr, Melissa	40SP	16	Mon., 2:42pm
Patten, Kim	23SP	14	Mon., 2:42pm	*Schmid, Melody	41SP	16	Mon., 2:54pm
Peachy, Ed	21SP	14	Mon., 2:18pm				

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*Schreiber, Alan	132	31	Weds., 9:15am	Travatte, Daniel	93P	24	Tues., 1:48pm
*	129	30	Weds., 11:30am	Trumble, John	35SP	16	Mon., 1:42pm
Schwartzländer, M.	44SP	17	Mon., 3:42pm	Ueti, Massaro	60	20	Tues., 9:25am
	109	28	Tues., 2:55pm	Unger, Lana	37SP	16	Mon., 2:06pm
Scoles, Glen	27SP	15	Mon., 3:42pm	*Unruh, Tom	119	29	Tues., 4:00pm
*	60	20	Tues., 9:25am	*Van Steenwyk, R.	6	10	Mon., 4:15pm
Shearer, Peter	6	10	Mon., 4:15pm	VanBuskirk, Philip	100P	25	Tues., 3:34pm
*	117	29	Tues., 3:10pm	*Vander Vliet, Ann	27SP	15	Mon., 3:42pm
	120	29	Tues., 4:25pm	Vargas, Roger	122	30	Weds., 8:55am
*Sheppard, Walter	71	21	Tues., 10:30am	*	123	30	Weds., 9:15am
Siebert, Melissa	75P	22	Tues., 8:18am	*Vetter, Richard	57	20	Tues., 8:25am
Siegel, Joel	89P	23	Tues., 11:18am	von Dohlen, Carol	45SP	17	Mon., 3:54pm
Sikes, Derek	83P	23	Tues., 9:54am	Walenta, D.	10	11	Mon., 2:20pm
*Simko, Ben	99P	24	Tues., 3:17pm	Wallis, Kelly	52	18	Tues., 9:30am
*Sisterson, Mark	30P	15	Mon., 4:18pm	Waterworth, Rebecca	98P	24	Tues., 3:00pm
*Skyrm, Kimberly	42SP	16	Mon., 3:06pm	Walsh, Douglas	1	10	Mon., 1:35pm
*	67	21	Tues., 8:35am		58	20	Tues., 8:45am
Smart, Matthew	71	21	Tues., 10:30am		65	20	Tues., 11:20am
Smith, Emma	39SP	16	Mon., 2:30pm		101P	25	Tues., 3:51pm
Smith, Larry	81P	23	Tues., 9:30am		130	31	Weds., 8:35am
Snyder, William	84P	23	Tues., 10:18am	Walton, Larry	75P	22	Tues., 8:18am
Spurgeon, Dale	28P	15	Mon., 3:54pm	Walton, Vaughn	36SP	16	Mon., 1:54pm
*	31P	15	Mon., 4:18pm	*	2	10	Mon., 2:05pm
Stark, John	39SP	16	Mon., 2:30pm		23SP	14	Mon., 2:42pm
*	50	18	Tues., 8:30am		100P	25	Tues., 3:34pm
*Steffan, Shawn	87P	23	Tues., 10:54am		102P	25	Tues., 4:06pm
	120	29	Tues., 4:25pm	Ward, Ruby	118	29	Tues., 3:35pm
Stephen, W.P.	17SP	14	Mon., 1:30pm	*Waters, Tim	130	31	Weds., 8:35am
	25SP	14	Mon., 3:06pm	Weiss, Anthony	135	31	Weds., 10:30am
	42SP	16	Mon., 3:06pm	White, Linda	23SP	14	Mon., 2:42pm
	67	21	Tues., 8:35am		25SP	14	Mon., 3:06pm
*Stevens, Bryan	32P	15	Mon., 4:42pm	*Williams, Kevin	45SP	17	Mon., 3:54pm
*Stokes, Brad	26SP	15	Mon., 3:30pm	*Wilson, Joseph	46SP	17	Mon., 4:06pm
Strand, Joyce	95P	24	Tues., 2:12pm	Wooster, David	40SP	16	Mon., 2:42pm
Strange, James	66	21	Tues., 8:10am	Wu, Judy	71	21	Tues., 10:30am
	68	21	Tues., 9:00am	*Wyss, Urs	138	31	Weds., 11:30am
Suarez, Carlos	60	20	Tues., 9:25am	*Xu, Wei	38SP	16	Mon., 2:18pm
*Symmes, Emily	43SP	17	Mon., 3:30pm	Yang, Wei	2	10	Mon., 2:05pm
*Szücs, Marianna	44SP	17	Mon., 3:42pm	*Yokoyama, Victoria	79P	22	Tues., 9:06am
*	109	28	Tues., 2:55pm	Yokota, Glenn	102P	25	Tues., 4:06pm
Tanner, David	18SP	14	Mon., 1:42pm	*Yoshida, Harvey	135	31	Weds., 10:30am
*	33P	15	Mon., 4:54pm		138	31	Weds., 11:30am
*Tanigoshi, Lynell	1	10	Mon., 1:35pm	Zack, Richard	24SP	14	Mon., 2:54pm
*Taylor, Alan	128	30	Weds., 11:10am	*Zahn, Deane	48SP	17	Mon., 4:30pm
Tebeau, Andrew	118	29	Tues., 3:35pm	*	137	31	Weds., 11:10am
Tescari, E.	74P	22	Tues., 8:06am	Zalom, Frank	43SP	17	Mon., 3:30pm
Thomas, James	78P	22	Tues., 8:54am		5	10	Mon., 3:45pm
Thomas, Jamey	75P	22	Tues., 8:18am	*	7	10	Mon., 4:45pm
Thoms, Ellen	59	20	Tues., 9:05am	*	54	53	Tues., 11:00am
Tolley, Mike	59	20	Tues., 9:05am	Zemetra, Robert	37SP	16	Mon., 2:06pm
Torne, M.	74P	22	Tues., 8:06am	Zou, Yunfan	98P	24	Tues., 3:00pm

## Student Posters

Students participating in the poster competition should post their work in the Aspen Room on the 2nd floor during the Monday lunch break, between 11:30am and 1:30pm. Student posters will be on display in the Aspen Room from 1:30pm on Monday through 4:00pm on Tuesday. Senior authors are indicated with an asterisk (\*).

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Barbour, James	8SPO	12	Pitts, James	3SPO	12
	15SPO	13		5SPO	12
	22SPO	13		16SPO	13
Birch, A. Nicholas	17SPO	13		20SPO	13
Bosque-Pérez, Nilsa	11SPO	13	Rao, Sujaya	4SPO	12
Brown, John	6SPO	12		21SPO	13
Campbell, Kim	11SPO	13	*Rodriguez, Juanita	20SPO	13
Cane, Jim	19SPO	13	Rodstein, Josh	8SPO	12
Chambers, Ute	2SPO	12	Rodstrom, R. Andrew	6SPO	12
*Clark, Sarah	5SPO	12	Rosetta, Robin	9SPO	12
Curry, Eric	23SPO	13	*Scherr, Melissa	21SPO	13
*Del Pozo, Alejandro	6SPO	12	Schreiber, Alan	7SPO	12
Dreves, Amy	18SPO	13	Snyder, William	17SPO	13
*Dugaw, Dax	7SPO	12	*Tebeau, Andrew	12SPO	13
Eigenbrode, Sanford	17SPO	13	Temple, Todd	4SPO	12
Ferguson, Holly	13SPO	13	*Traore, Tiecoura	22SPO	13
*Gadino, Angela	18SPO	13	Turnbull, Matt	12SPO	13
Gent, David H.	14SPO	13	Unger, Lana	11SPO	13
*Gunnell, Clay	3SPO	12	*Vinchesi, Amber	13SPO	13
Hanks, Lawrence	8SPO	12	von Dohlen, Carol	16SPO	13
*Hedstrom, Christopher	2SPO	12		20SPO	13
James, David	14SPO	13	*Waichert, Cecilia	16SPO	13
Jensen, Andrew	7SPO	12	Walton, Vaughn	2SPO	12
Jones, Vincent	23SPO	13		9SPO	12
Lee, Jana	14SPO	13		18SPO	13
Landolt, Peter	7SPO	12	Walsh, Douglas	13SPO	13
Lavine, Laura Corley	15SPO	13		15SPO	13
*Lindzey, Summer	17SPO	13	Waters, Timothy	13SPO	13
Liston, Aaron	4SPO	12	Wilson, Joseph	3SPO	12
*Love, Byron	19SPO	13		5SPO	12
*Maki, Elin	8SPO	12	*Wiman, Nik	23SPO	13
*Maxfield-Taylor, Sarah	4SPO	12	*Woods, Joanna	14SPO	13
Millar, Jocelyn	8SPO	12	Wooster, David	21SPO	13
*Miller, Betsey	9SPO	12	Zack, Richard	7SPO	12
*Moulton, Laurel	10SPO	12	Zalom, Frank	15SPO	13
*Odubiyi, Steven	11SPO	13	*Zhou, Changqing	15SPO	13
O'Neal, Sally	13SPO	13	Zungoli, Patricia	12SPO	13

## General Session Posters

*Non-student posters should be posted in the Aspen Room on the 2nd floor between 5:00 and 7:00pm on Monday. They will be on display from 8:00am to 4:00pm on Tuesday. Asterisk (\*) indicates senior author.*

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Arévalo-Galarza, Lourdes	32PO	26	Koivunen, M.E.	27PO	25
Asolkar, R.	27PO	25	Kuhl, Joseph	31PO	26
Barbour, James	35PO	26	Lam, R.	27PO	25
	39PO	27	Lambrinos, John	45PO	27
Borel, Amanda	24PO	25	Landolt, Peter	46PO	27
Bosque-Pérez, Nilsa	25PO	25	Lavine, Laura Corley	44PO	27
Brooks, Deborah (Tora)	35PO	26	*Lehman, Brian	38PO	27
	46PO	27	Marrone, P.G.	27PO	25
Cabral, Susan	36PO	26	Melnicoe, Rick	28PO	26
Cambron, Susan	25PO	25	Murray, A.	27PO	25
*Carter, Arron	25PO	25	Nelson, Mark	35PO	26
*Chambers, Ute	26PO	25	Niino-DuPonte, Ruth	36PO	26
*Chanbusarakum, L.I.	27PO	25	O'Neal, Sally	35PO	26
*Clarke, Diane	28PO	26	Ohm, Herbert	25PO	25
*Cooper, W. Rodney	29PO	26	Parks, Johnny	38PO	27
*Costello, Michael	30PO	26	Peng, Wilson	35PO	26
del Conte, Sandra Castle	46PO	27	Petit, Brad	26PO	25
Ding, Hongjian	31PO	26	Pham, Hong-Hien	47PO	27
Droege, Sam	33PO	26	Pitts-Singer, Theresa	39PO	27
*Eigenbrode, Sanford	31PO	26		43PO	27
Ellis, Katie	38PO	27	Reyna, Victor	46PO	
*Follett, Peter	32PO	26	27Rightmyer, Molly	34PO	26
Garczynski, Stephen	44PO	27	Shearer, Peter	24PO	25
Gingras, Stacy	46PO	27	*Song, Yoohan	47PO	27
*Gonzalez, Victor	33PO	26	Spurgeon, Dale	29PO	26
	34PO	26	Smith, Rhonda	41PO	27
Griswold, Terry	33PO	26	*Strange, James	40PO	27
	34PO	26	Tan, E.	27PO	25
*Groenendale, Dan	35PO	26	Unger, Lana	25PO	25
*Hara, Arnold	36PO	26	*Varela, Lucia	41PO	27
Herbst, Linda	28PO	26	*	42PO	27
Hodgson, Erin	39PO	27	*Vorel, Cory	43PO	27
*Hoheisel, Gwen-Alyn	37PO	26	Wallner, D.	27PO	25
Huang, H.	27PO	25	Walsh, Doug	35PO	26
Hull, Larry	38PO	27	*Weaver, Steven	44PO	27
Huntzinger, Kimberly	33PO	26	Wilson, Tom	37PO	26
James, David	46PO	27	*Winfield, Tammy	45PO	27
Johnson, T.	27PO	25	Wong, Jeffrey	30PO	26
Jones, Vincent	26PO	25	*Wright, Larry	46PO	27
	38PO	27			

**See you next year  
at PBESA 2011**



**March 27-30 in  
Waikoloa, Hawaii**

## 2nd Floor Meeting Space



## 3rd Floor Meeting Space

# GROVE HOTEL Meeting Room Layout