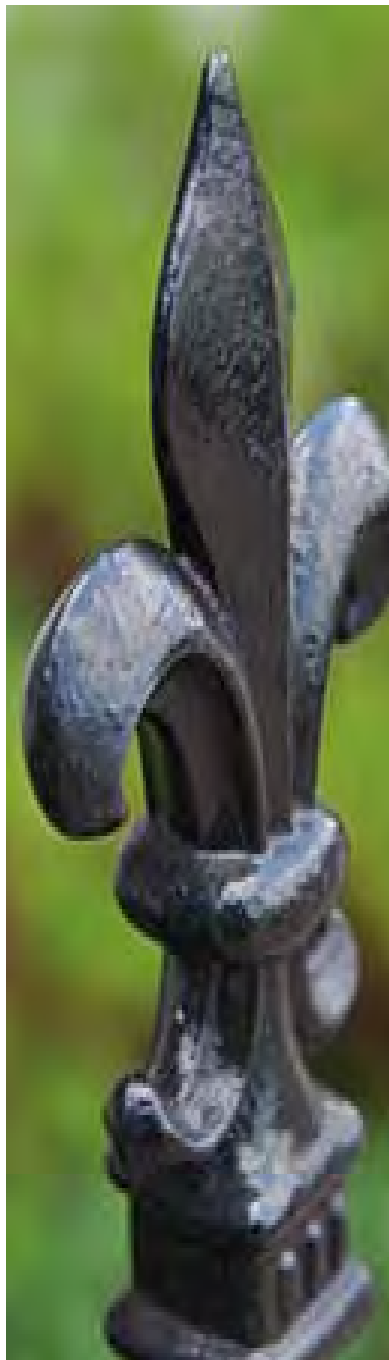


American Society for Horticultural Science  
Annual Conference Program

New Orleans  
2015





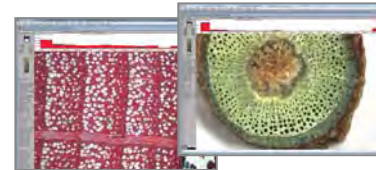
### WinSCANOPY™

- Canopy structure and Solar radiation
- Plant canopy health/stress (NDVI)
- Camera, calibrated fisheye lens, self-leveling mount, electronic compass,...



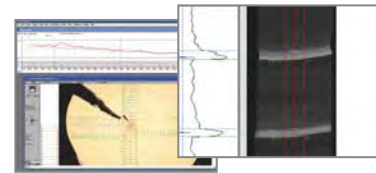
### WinCELL™

- Wood-cell structure parameters over annual rings
- Analysis of one or more rings per image
- Data computed on yearly basis in a format compatible with WinDENDRO™



### WinDENDRO™

- Tree rings from disks, cores, X-ray films and digital X-ray systems
- Cross-dating graphic, correlation functions, detrending,...
- Wood density and earlywood/latewood boundary



### WinFOLIA™

- Leaf morphology
- Leaf shape (Fractals), aspect ratio and form coefficient
- Healthy, diseased and pest damage areas



### WinSEEDLE™

- Seed and needle morphology
- Counts and classification of seeds and needles
- Healthy, diseased and pest damage areas



### WinRHIZO™

- Washed root morphology, topology, link, and architecture
- Automatic analysis of Arabidopsis seedlings
- Healthy, diseased and pest damage areas



### WinRHIZO™ Tron

- Morphology, architecture and topology of roots growing in soil
- Roots must be traced manually with a mouse or by touching the screen of a tablet computer



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Image acquisition hardware sold separately.

## American Society for Horticultural Science

1018 Duke Street, Alexandria, Virginia 22314, USA

Phone 703.836.4606 Fax 703.836.2024

August 2015

Dear ASHS 2015 Conference Participants,

Welcome to the 2015 Conference of the American Society for Horticultural Science! As we prepare to enjoy The Big Easy and all of its historic charms, it is important to celebrate the city's rebirth and cultural renewal. It is only fitting that the American Society for Horticultural Science return with its 112th annual conference to New Orleans on the ten-year anniversary of the tragic event of Hurricane Katrina. Proudly the American Society for Horticultural Science was one of the very first organizations to return to New Orleans with a major conference following Hurricane Katrina! While other organizations abandoned the city in the wake of the damage from Katrina, the American Society for Horticultural Science held to its commitment to bring the 2006 Annual Conference to New Orleans. Many of our members had family or friends, particularly those associated with Louisiana State University and Mississippi State University, who suffered terribly from the storm. By honoring our commitment to New Orleans for the 2006 Annual Conference we, in a small way, helped with the recovery. Now ten years later we return to celebrate a revitalized and vibrant city, rich in tradition and looking to a bright future.

So prepare to enjoy an outstanding technical program featuring leading horticultural scientists, educators, and extension professionals from around the country. Sample the finest foods and greatest jazz the world has to offer in the easy going style that is New Orleans. Enjoy the Cajun cuisine, historic French and Spanish Creole architecture and multicultural heritage that imbue the city. Be sure to visit the French Quarter, world class aquarium, classic zoo, historic botanic garden, and fabled Bourbon Street, in between talks or after hours of course.

On behalf of the Board of Directors of the American Society for Horticultural Science, welcome to "Nawlins" and the 2015 Conference of the American Society for Horticultural Science!



Michael Aloysius Arnold

President of the American Society for Horticultural Science

# ASHS Annual Conference

August 4–7 • New Orleans, Louisiana

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**Please Note:** All information in regard to scheduling for the ASHS–2015 Annual Conference is up-to-date as of the time this program goes to print. During the Conference, check the online program or at the registration desk for any updates.

## General Information

**Conference Facilities:** All conference activities will take place at the Sheraton Hotel New Orleans, New Orleans, LA, unless otherwise stated. Please check the detailed program and schedule for exact room locations.

**Registration:** The conference registration desk is located at Napoleon Registration. Operation hours are:

Monday, August 3	3:00–6:00 PM
Tuesday, August 4	7:30 AM–6:00 PM
Wednesday, August 5	7:30 AM–5:00 PM
Thursday, August 6	7:30 AM–5:00 PM
Friday, August 7	7:30 AM–3:00 PM

**Posters:** Posters are located in Napoleon Ballroom.

Set-up:

Monday, August 3	2:00–5:00 PM
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Viewing hours:

Tuesday, August 4	9:00 AM–5:00 PM
Wednesday, August 5	9:00 AM–5:00 PM
Thursday, August 6	9:00 AM–5:00 PM
Friday, August 7	9:00 AM–2:00 PM

**Note:** All posters must be removed between 1:45 PM and 2:30 PM on Friday, August 7.

**Exhibits:** Exhibitors are located in the Napoleon Ballroom

Exhibitor move-in:

Monday, August 3	2:00–5:00 PM
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Exhibitor move-out:

Friday, August 7	2:00–5:00 PM
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Open to attendees:

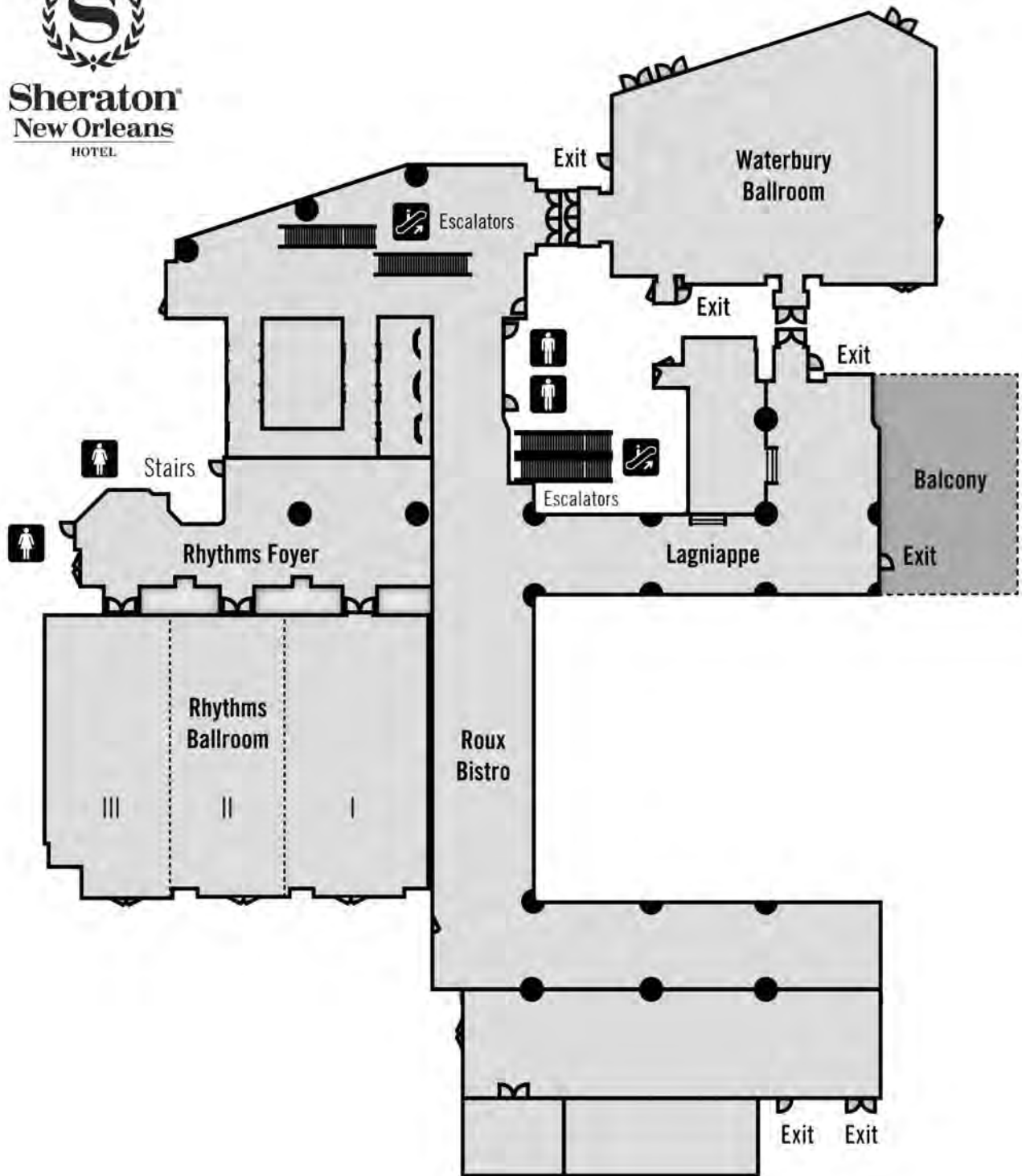
Tuesday, August 4	9:00 AM–2:00 PM
Wednesday, August 5	9:00 AM–2:00 PM
Thursday, August 6	9:00 AM–2:00 PM
Friday, August 7	9:00 AM–2:00 PM

**Speaker Ready Room Hours:** The Speaker Ready Room is located in the Gallier Room.

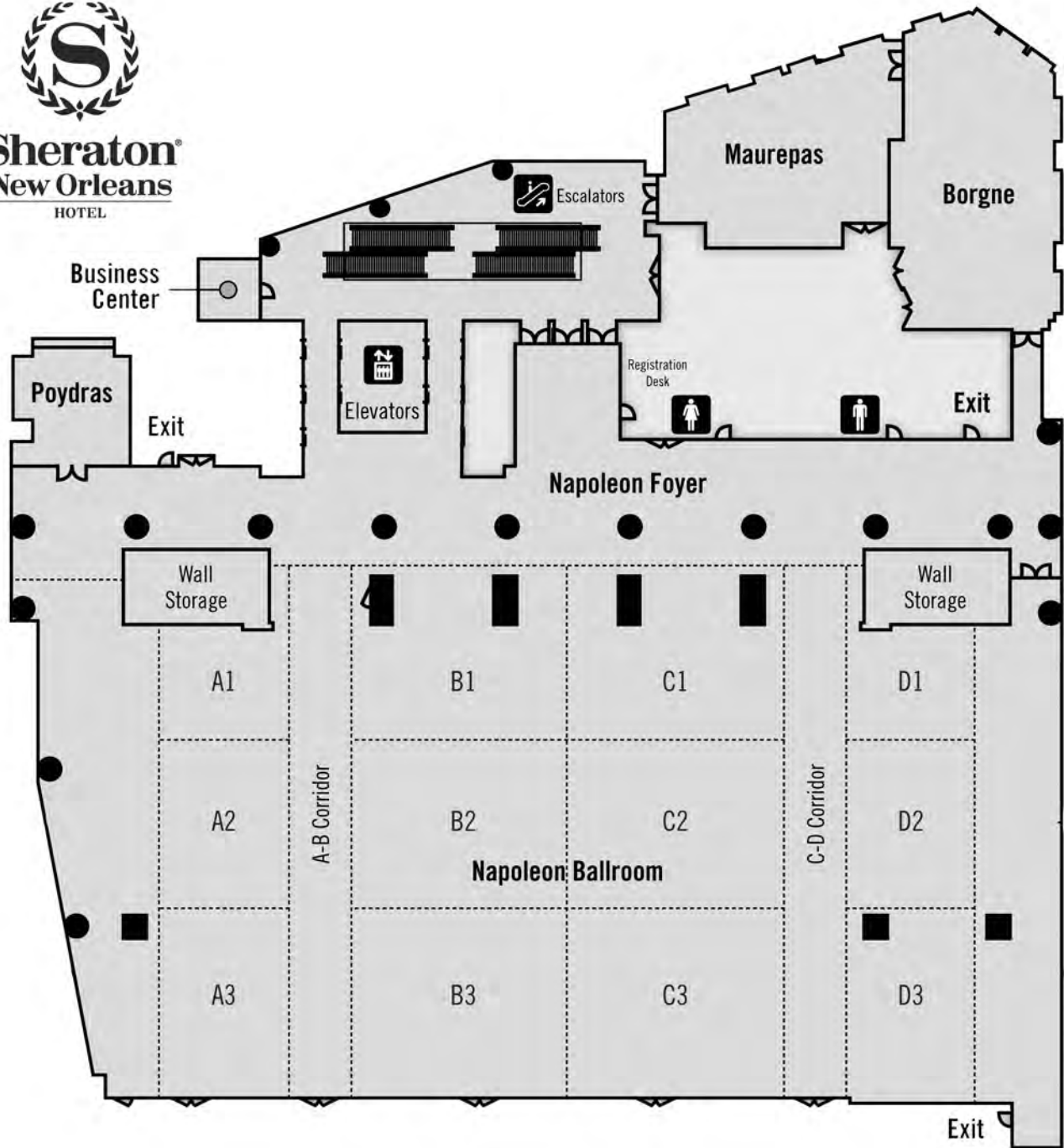
All speakers in Oral, Workshop, or Colloquium sessions are required to check in at the Speakers Ready Room at least 24 hours in advance of their presentation.

Monday, August 3	10:00 AM–6:00 PM
Tuesday, August 4	7:00 AM–6:00 PM
Wednesday, August 5	7:00 AM–6:00 PM
Thursday, August 6	7:00 AM–6:00 PM
Friday, August 7	7:00 AM–2:00 PM

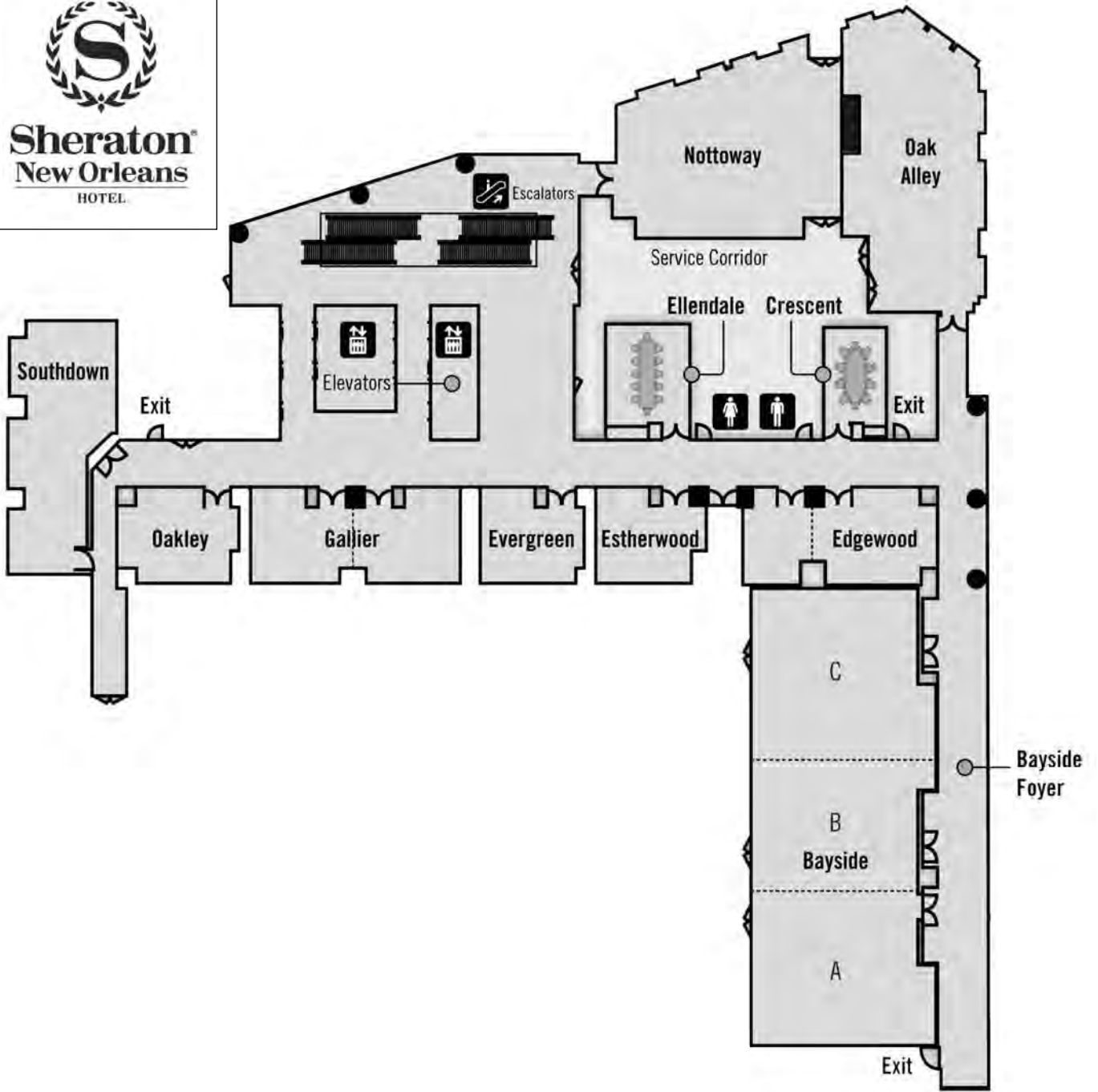
# Hotel Map/Floor Plan



## Second Floor

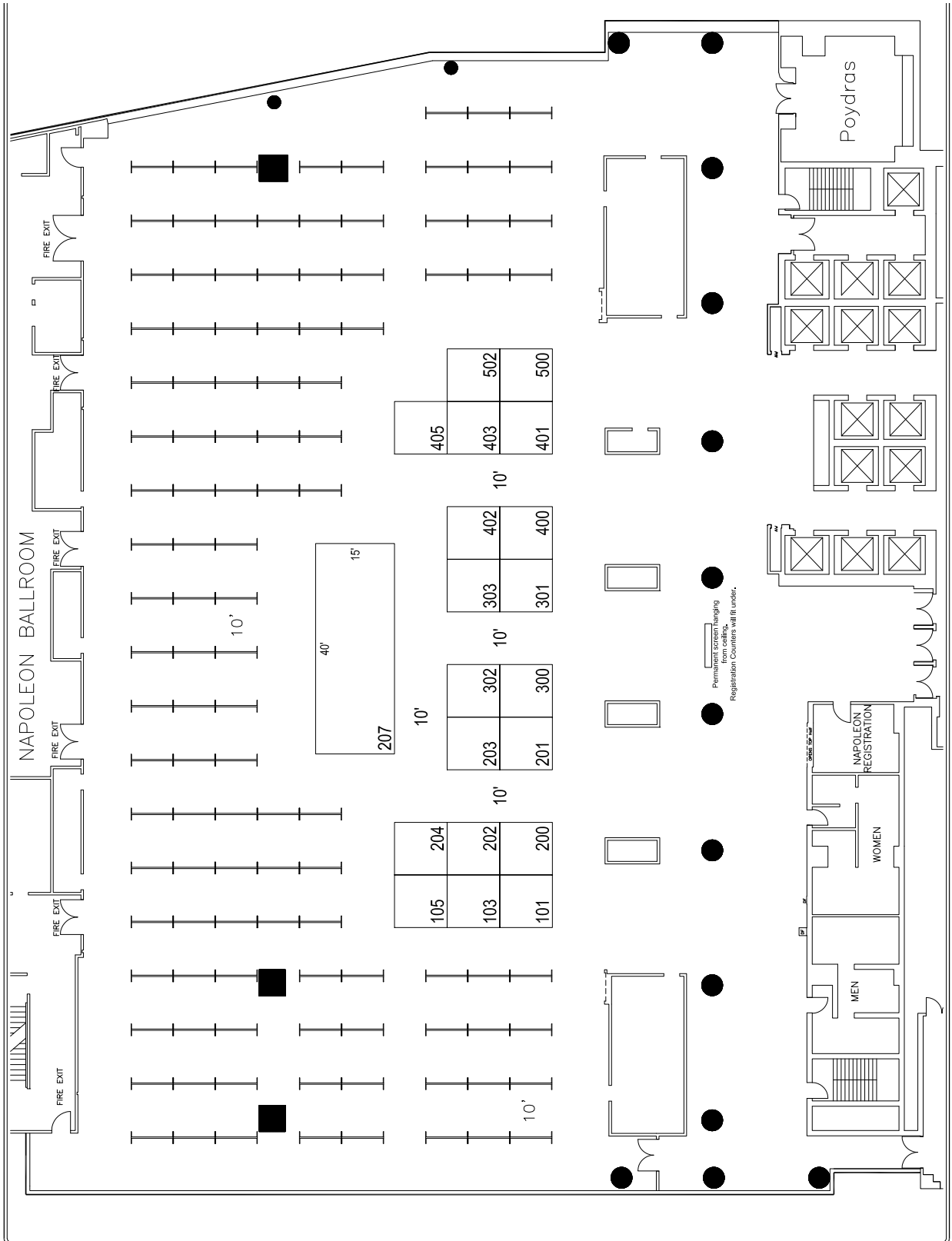


### Third Floor



## Fourth Floor

# Napoleon Ballroom (Exhibit and Poster Hall)







# Conference at a Glance

## Tuesday, August 4, 2015

	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	9:15 AM	9:30 AM	9:45 AM	10:00 AM	10:15 AM	10:30 AM	10:45 AM	11:00 AM	11:15 AM	11:30 AM	11:45 AM	Noon	12:15 PM	12:30 PM	12:45 PM	1:00 PM	1:15 PM	1:30 PM	1:45 PM	2:00 PM	2:15 PM	2:30 PM	2:45 PM	3:00 PM	3:15 PM	3:30 PM	3:45 PM	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	6:00 PM	6:15 PM	6:30 PM	6:45 PM	7:00 PM	7:15 PM	7:30 PM	7:45 PM	8:00 PM
Speaker Ready Room	Galleria A																																																				
Poster Presenter Receiving Room	Galleria B																																																				
Registration Open	Napoleon Registration																																																				
	Exhibits Open															Napoleon Expo Hall																																					
	Poster Hall Open															Napoleon Expo Hall																																					
	Career Center															Napoleon Expo Hall																																					
Graduates and Undergraduate Student Meeting	2nd Annual Silent Auction - Sponsored by the Herbs, Spices and Medicinal Plants Working Group																																																				
Starbucks-Lobby	4th Floor Foyer/Dunstable of Estherwood and Evergreen																																																				
	Moderator Training Session															ASHS Opening Plenary Session and William A. ("Tex") Finzier Lecture - Rhythms																																					
	Working Group Chairs and Chairs-Elect Business Meeting															Leafy Vegetable Crop Germplasm Committee Meeting																																					
	Trends in Plant Biotechnology (Workshop)															Walking Tour of the French Quarter																																					
	Horicultural Commodity Judging Contest and Plant Identification Contest Set-up															Waterbury																																					
	Early Career Competition															Bogue																																					
	International Division Advisory Council Meeting															Poydras																																					
	Root and Bulb Vegetable Crop Germplasm Committee (RBV-CCG) Meeting															Estherwood																																					
	Pomology 1 (Oral Session)															Notoway																																					
	Viticulture and Small Fruits 1 (Oral Session)															Boyside C																																					
	Ornamentals/Landscape and Small Fruits 1 (Oral Session)															Oak Alley																																					
	Plant Biotechnology (Oral Session)															Boyside A																																					
	Vegetable Breeding 1 (Oral Session)															Oak Alley																																					
	Alternative Specialty Crops: Opportunities and Challenges (Colloquium)															*CEU Approved																																					
	Garden District & Longue Vue Mansion & Garden Tour															Canal Street Entrance																																					
	Rhythms?																																																				
	Welcome Reception															Farming Building																																					







## ASHS Working Group Business Meetings and Activities

2nd Annual Silent Auction (Sponsored by the Herbs, Spices, and Medicinal Plants Working Group)	Tuesday, August 4 and Wednesday, August 5	10:00 AM–5:00 PM 10:00 AM–4:00 PM	4th Floor Foyer 4th Floor Foyer
Administrators (ADM) Working Group Meeting and Breakfast	Wednesday, August 5	8:00–9:30 AM	Poydras
Association of Horticulturists of Indian Origin (AHIO) Business Meeting	Wednesday, August 5	6:00–7:00 PM	Estherwood
Citrus Crops (CITR) Working Group Business Meeting	Tuesday, August 4	3:15–3:45 PM	Borgne
Commercial Horticulture (CHEX) Working Group Business Meeting	Thursday, August 6	12:00–1:00 PM	Bayside B
Computer Applications in Horticulture (COMP) Working Group Business Meeting	Tuesday, August 4	12:00–1:00 PM	Estherwood
Consumer Horticulture and Master Gardeners (CHMG) Working Group Business Meeting	Wednesday, August 5	1:00–2:00 PM	Bayside B
Crop Physiology (CRPP) Working Group Business Meeting	Tuesday, August 4	3:25–3:45 PM	Nottoway
Education Division Advisory Council Meeting	Thursday, August 6	8:00–10:00 AM	Estherwood
Emeriti (EMER) Working Group Business Meeting	Wednesday, August 5	9:00–10:00 AM	Estherwood
eXtension (EEXT) Working Group Business Meeting	Wednesday, August 5	11:45 AM–12:15 PM	Borgne
Extension and Industry Breakfast	Thursday, August 6	8:00–10:00 AM	Gallery Ballroom
Extension Division Advisory Council Meeting	Tuesday, August 4	4:00–6:00 PM	Estherwood
Federal Partners (FP) Working Group Business Meeting	Friday, August 7	9:30–10:00 AM	Bayside B
Floriculture (FLOR) Working Group Business Meeting	Wednesday, August 5	7:00–8:00 AM	Borgne
Fruit Breeding (FRBR) Working Group Business Meeting	Friday, August 7	11:45 AM–12:45 PM	Nottoway
Genetics and Germplasm (GG) Working Group Business Meeting	Thursday, August 6	1:00–2:00 PM	Bayside B
Graduate Student (GRAD) Working Group Business Meeting	Thursday, August 6	3:00–4:00 PM	Bayside B
Growth Chambers and Controlled Environments (CE) Working Group Business Meeting	Wednesday, August 5	6:00–7:00 PM	Oak Alley
Growth Regulators in Fruit and Nut Production (PGR) Working Group Business Meeting	Thursday, August 6	10:00–11:00 AM	Bayside B
Herbs, Spices, and Medicinal Plants (HSMP) Working Group Business Meeting	Thursday, August 6	3:25–3:55 PM	Bayside A
History of Horticultural Science (HIST) Working Group Business Meeting	Thursday, August 6	12:00–1:00 PM	Estherwood
Human Issues in Horticulture (HIH) Working Group Business Meeting	Thursday, August 6	8:00–9:00 AM	Poydras
Industry Division Advisory Council Meeting	Tuesday, August 4	2:00–4:00 PM	Estherwood
Intellectual Property Rights (IPR) Working Group Business Meeting	Wednesday, August 5	9:30–10:00 AM	Southdown
International Division Advisory Council Meeting	Tuesday, August 4	8:00–10:00 AM	Poydras
International Division Breakfast	Friday, August 7	8:00–10:00 AM	Gallery Ballroom
International Horticultural Consultants (ICON) Working Group Business Meeting	Friday, August 7	11:45 AM–12:15 PM	Bayside C
International Horticulture and Issues (IHI) Working Group Business Meeting	Thursday, August 6	11:00 AM–12:00 PM	Estherwood
Invasive Plants Research (INPR) Working Group Business Meeting	Wednesday, August 5	9:30–10:00 AM	Nottoway

Local Food Systems (LOCSY) Working Group Business Meeting	Friday, August 7	10:00–11:00 AM	Estherwood
Marketing and Economics (MKEC) Working Group Business Meeting	Tuesday, August 4	5:30–6:00 PM	Borgne
Organic Horticulture (ORGH) Working Group Business Meeting	Wednesday, August 5	1:00–2:00 PM	Bayside C
Ornamental Plant Breeding (OPB) Working Group Business Meeting	Tuesday, August 4	3:15–3:45 PM	Maurepas
Ornamentals/Landscape and Turf (O/LT) Working Group Business Meeting	Friday, August 7	12:15–1:15 PM	Borgne
Photography (FOTO) Working Group Business Meeting	Wednesday, August 5	8:00–9:00 AM	Estherwood
Plant Biotechnology (BTCH) Working Group Business Meeting	Tuesday, August 4	9:30–10:00 AM	Bayside A
Plant Nutrient Management (PNM) Working Group Business Meeting	Wednesday, August 5	6:00–7:00 PM	Southdown
Plasticulture (PLAST) Working Group Business Meeting	Thursday, August 6	1:00–2:00 PM	Estherwood
Pomology (POM) Working Group Business Meeting	Thursday, August 6	3:00–4:00 PM	Maurepas
Postharvest (PH) Working Group Business Meeting	Wednesday, August 5	11:45 AM–12:15 PM	Nottoway
Produce Quality, Safety, and Health Properties (QUAL) Working Group Business Meeting	Wednesday, August 5	8:00–9:00 AM	Bayside B
Production and Harvest Mechanization (MECH) Working Group Business Meeting	Thursday, August 6	7:00–8:00 AM	Bayside B
Propagation (PROP) Working Group Business Meeting	Friday, August 7	11:30 AM–12:30 PM	Bayside A
Public Horticulture (PUBHORT) Working Group Business Meeting	Tuesday, August 4	3:15–3:45 PM	Bayside A
Research Division Advisory Council Meeting	Wednesday, August 5	4:00–6:00 PM	Estherwood
Root Growth and Rhizosphere Dynamics (RHIZ) Working Group Business Meeting	Wednesday, August 5	1:00–2:00 PM	Estherwood
Seed and Stand Establishment (SSEST) Working Group Business Meeting	Tuesday, August 4	12:00–1:00 PM	Poydras
Teaching Methods (TCHG) Working Group Business Meeting	Tuesday, August 4	5:30–6:00 PM	Bayside C
Temperate Tree Nut Crops (NUTS) Working Group Business Meeting	Wednesday, August 5	7:00–8:00 AM	Bayside B
Tropical Horticulture Crops (TROP) Working Group Business Meeting	Wednesday, August 5	1:00–2:00 PM	Southdown
Undergraduate (UG) Working Group Business Meeting	Wednesday, August 5	12:00–1:00 PM	Bayside B
Vegetable Breeding (VGBR) Working Group Business Meeting	Thursday, August 6	8:00–9:00 AM	Bayside B
Vegetable Crops Management (VCM) Working Group Business Meeting	Friday, August 7	12:00–1:00 PM	Maurepas
Viticulture and Small Fruits (VSF) Working Group Business Meeting	Wednesday, August 5	12:00–1:00 PM	Estherwood
Water Utilization and Management (WUM) Working Group Business Meeting	Wednesday, August 5	5:30–6:30 PM	Bayside B
Weed Control and Pest Management (WCPM) Working Group Business Meeting	Thursday, August 6	3:15–3:45 PM	Oak Alley
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B
Working Group of Asian Horticulture (WGAH) Business Meeting	Tuesday, August 4	1:00–2:00 PM	Bayside B

## Education Division

Education Division Advisory Council Meeting	Thursday, August 6	8:00–10:00 AM	Estherwood
Scholars Ignite— Student Competition	Wednesday, August 5	6:00–9:00 PM	Bayside A
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B

## Extension Division

Extension and Industry Breakfast	Thursday, August 6	8:00–10:00 AM	Gallery Ballroom
Extension Division Advisory Council Meeting	Tuesday, August 4	4:00–6:00 PM	Estherwood
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B

## Industry Division

Extension and Industry Breakfast	Thursday, August 6	8:00–10:00 AM	Gallery Ballroom
Industry Division Advisory Council Meeting	Tuesday, August 4	2:00–4:00 PM	Estherwood
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B

## International Division

International Division Advisory Council Meeting	Tuesday, August 4	8:00–10:00 AM	Poydras
International Division Breakfast	Friday, August 7	8:00–10:00 AM	Gallery Ballroom
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B

## Research Division

Research Division Advisory Council Meeting	Wednesday, August 5	4:00–6:00 PM	Estherwood
Working Group Chairs and Chairs-elect Business Meeting	Tuesday, August 4	8:00–9:00 AM	Bayside B

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## Breakfast, Luncheons, Breaks, Dinners, Receptions

Administrators Working Group Breakfast	Wednesday, August 5	8:00–9:30 AM	Poydras
Breaks			
Wednesday	Wednesday, August 5	9:45–10:15 AM	Napoleon Expo Hall
Thursday	Thursday, August 6	9:45–10:15 AM	Napoleon Expo Hall
Friday	Friday, August 7	9:45–10:15 AM	Napoleon Expo Hall
Extension and Industry Breakfast	Thursday, August 6	8:00–10:00 AM	Gallery Ballroom
International Division Breakfast	Friday, August 7	8:00–10:00 AM	Gallery Ballroom
Pi Alpha Xi Luncheon— Annual Meeting	Wednesday, August 5	12:00–2:00 PM	Gallery Ballroom
Student Reception	Thursday, August 6	5:30–6:30 PM	Lagniappe
Welcome Reception	Tuesday, August 4	6:00–7:00 PM	Armstrong & Foyer

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## Committees

<i>HortScience</i> Editorial Board Meeting	Thursday, August 6	10:00–11:00 AM	Estherwood
<i>HortTechnology</i> Editorial Board Meeting	Wednesday, August 5	10:00–11:00 AM	Estherwood
<i>Journal of the ASHS</i> Editorial Board Meeting	Wednesday, August 5	11:00 AM–12:00 PM	Estherwood
Annual Conference Technical Program Committee Meeting	Thursday, August 6	5:30–6:30 PM	Poydras
ASHS Board of Directors Meeting	Friday, August 7	12:00–5:00 PM	Edgewood AB
Awards Committee Meeting	Wednesday, August 5	3:00–4:00 PM	Estherwood
Certified Horticulturist (CH) Board Meeting	Wednesday, August 5	2:00–3:00 PM	Poydras
Certified Professional Horticulturist (CPH) Board Meeting	Wednesday, August 5	3:00–4:00 PM	Poydras
Collegiate Activities Committee (CAC) Meeting	Thursday, August 6	11:00 AM–12:00 PM	Poydras
Consulting Editors Meeting	Thursday, August 6	11:00 AM–12:00 PM	Bayside B
Endowment Fund Committee Meeting	Wednesday, August 5	11:00 AM–12:00 PM	Poydras



Fellows Screening Committee Meeting	Tuesday, August 4	3:00–4:00 PM	Poydras
Graduate Student Activities Committee Meeting	Thursday, August 6	10:00–11:00 AM	Poydras
Horticultural Landmarks Selection Committee Meeting	Tuesday, August 4	1:00–2:00 PM	Estherwood
Horticulture Hall of Fame Selection Committee	Tuesday, August 4	5:00–6:00 PM	Poydras
Membership Committee Meeting	Tuesday, August 4	2:00–3:00 PM	Poydras
Nominations and Elections Committee Meeting	Tuesday, August 4	4:00–5:00 PM	Poydras
Scholarship Awards Committee Meeting	Friday, August 7	9:00–10:00 AM	Estherwood
William A. (“Tex”) Frazier Lecture Series Selection Committee	Thursday, August 6	9:00–10:00 AM	Poydras

## Graduate Events

Graduate and Undergraduate Student Morning Gathering			
Tuesday	Tuesday, August 4	7:00–8:00 AM	Starbucks - Lobby
Wednesday	Wednesday, August 5	7:00–8:00 AM	Starbucks - Lobby
Thursday	Thursday, August 6	7:00–8:00 AM	Starbucks - Lobby
Friday	Friday, August 7	7:00–8:00 AM	Starbucks - Lobby
Graduate Student (GRAD) Working Group Business Meeting	Thursday, August 6	3:00–4:00 PM	Bayside B
Graduate Student Poster Competition			
Session 1	Tuesday, August 4	12:15–1:00 PM	Napoleon Expo Hall
Session 2	Tuesday, August 4	1:00–1:45 PM	Napoleon Expo Hall
Session 3	Wednesday, August 5	12:15–1:00 PM	Napoleon Expo Hall
Session 4	Wednesday, August 5	1:00–1:45 PM	Napoleon Expo Hall
Session 5	Thursday, August 6	12:15–1:00 PM	Napoleon Expo Hall
Session 6	Thursday, August 6	1:00–1:45 PM	Napoleon Expo Hall
Scholars Ignite—Student Competition	Wednesday, August 5	6:00–9:00 PM	Bayside A
Student Reception	Thursday, August 6	5:30–6:30 PM	Lagniappe

## Meetings of Affiliated Organizations

B.Y. Morrison Lecture	Wednesday, August 5	4:00–5:00 PM	Maurepas
American Pomological Society (APS) Annual Business Meeting	Thursday, August 6	5:30–7:00 PM	Maurepas
American Pomological Society (APS) Executive and Advisory Board Meeting	Wednesday, August 5	6:00–9:00 PM	Poydras
Association of Collegiate Branches (ACB) Annual Business Meeting	Tuesday, August 4	2:00–3:00 PM	Bayside B
B.Y. Morrison Reception	Wednesday, August 5	5:00–6:00 PM	Maurepas
Crucifer Crop Germplasm Committee	Friday, August 7	8:30–10:30 AM	Poydras
Leafy Vegetable Crop Germplasm Committee Meeting	Tuesday, August 4	10:00 AM–12:00 PM	Estherwood
Muscadine Grape SCRI Project Meeting	Thursday, August 6	2:00–6:00 PM	Estherwood
NE1336 Multistate Regional Project Meeting	Sunday, August 2	2:00–6:00 PM	Poydras
NE1336 Multistate Regional Project Meeting - Day 2	Monday, August 3	9:00 AM–5:00 PM	Poydras
Project Leaders–National Strawberry Sustainability Initiative Program	Wednesday, August 5	4:00–6:00 PM	Poydras
Root and Bulb Vegetable Crop Germplasm Committee (RBV-CGC) Meeting	Tuesday, August 4	8:00–10:00 AM	Estherwood
SR-ASHS Executive Committee Meeting	Wednesday, August 5	12:00–2:00 PM	Poydras
USDA-ARS All-employee Meeting	Wednesday, August 5	6:00–7:00 PM	Maurepas

## Registration/Exhibits/Career Center/General Scheduling

ASHS Opening Plenary Session and William A. (“Tex”) Frazier Lecture	Tuesday, August 4	10:00 AM–12:00 PM	Rhythms
<b>Career Center</b>			
Tuesday	Tuesday, August 4	9:00 AM–5:00 PM	Napoleon Expo Hall
Wednesday	Wednesday, August 5	9:00 AM–5:00 PM	Napoleon Expo Hall
Thursday	Thursday, August 6	9:00 AM–5:00 PM	Napoleon Expo Hall
Friday	Friday, August 7	9:00 AM–2:00 PM	Napoleon Expo Hall
General Contractor Set Up—Monday	Monday, August 3	8:00 AM–5:00 PM	Napoleon Expo Hall
Exhibitor Set-Up—Monday	Monday, August 3	2:00–5:00 PM	Napoleon Expo Hall
Exhibitor Move Out—Friday	Friday, August 7	1:45–5:00 PM	Napoleon Expo Hall
<b>Exhibits Open</b>			
Tuesday	Tuesday, August 4	9:00 AM–2:00 PM	Napoleon Expo Hall
Wednesday	Wednesday, August 5	9:00 AM–2:00 PM	Napoleon Expo Hall
Thursday	Thursday, August 6	9:00 AM–2:00 PM	Napoleon Expo Hall
Friday	Friday, August 7	9:00 AM–2:00 PM	Napoleon Expo Hall
<b>Moderator Training Session</b>			
Monday	Monday, August 3	4:00–5:00 PM	Gallier B
Tuesday	Tuesday, August 4	8:00–9:00 AM	Maurepas
<b>Poster Hall Open to Attendees:</b>			
Tuesday	Tuesday, August 4	9:00 AM–5:00 PM	Napoleon Expo Hall
Wednesday	Wednesday, August 5	9:00 AM–5:00 PM	Napoleon Expo Hall
Thursday	Thursday, August 6	9:00 AM–5:00 PM	Napoleon Expo Hall
Friday	Friday, August 7	9:00 AM–2:00 PM	Napoleon Expo Hall
Presidential Address and ASHS Annual Business Meeting	Thursday, August 6	4:00–5:30 PM	Rhythms
<b>Registration Open</b>			
Monday	Monday, August 3	3:00–6:00 PM	Napoleon Registration
Tuesday	Tuesday, August 4	7:30 AM–6:00 PM	Napoleon Registration
Wednesday	Wednesday, August 5	7:30 AM–5:00 PM	Napoleon Registration
Thursday	Thursday, August 6	7:30 AM–5:00 PM	Napoleon Registration
Friday	Friday, August 7	7:30 AM–3:00 PM	Napoleon Registration
<b>Poster Presenter Recording Room</b>			
Monday	Monday, August 3	10:00 AM–6:00 PM	Gallier B
Tuesday	Tuesday, August 4	7:00 AM–6:00 PM	Gallier B
Wednesday	Wednesday, August 5	7:00 AM–6:00 PM	Gallier B
Thursday	Thursday, August 6	7:00 AM–6:00 PM	Gallier B
Friday	Friday, August 7	7:00 AM–2:00 PM	Gallier B
<b>Speaker Ready Room Open</b>			
Monday	Monday, August 3	10:00 AM–6:00 PM	Gallier A
Tuesday	Tuesday, August 4	7:00 AM–6:00 PM	Gallier A
Wednesday	Wednesday, August 5	7:00 AM–6:00 PM	Gallier A
Thursday	Thursday, August 6	7:00 AM–6:00 PM	Gallier A
Friday	Friday, August 7	7:00 AM–2:00 PM	Gallier A

## Special Events

2nd Annual Silent Auction (Sponsored by the Herbs, Spices, and Medicinal Plants Working Group)	Tuesday, August 4 and Wednesday, August 5	10:00 AM–5:00 PM 10:00 AM–4:00 PM	4th Floor Foyer 4th Floor Foyer
B.Y. Morrison Lecture	Wednesday, August 5	4:00–5:00 PM	Maurepas
ASHS Opening Plenary Session and William A. (“Tex”) Frazier Lecture	Tuesday, August 4	10:00 AM–12:00 PM	Rhythms
Certified Horticulturist Examination	Thursday, August 6	1:00–5:00 PM	Poydras
Early Career Competition	Tuesday, August 4	8:00–10:00 AM	Borgne
Presidential Address and ASHS Annual Business Meeting	Thursday, August 6	4:00–5:30 PM	Rhythms
Scholars Ignite—Student Competition	Wednesday, August 5	6:00–9:00 PM	Bayside A

## Tours

*NOTE: All tours meet and leave from the Canal Street Entrance of the Sheraton New Orleans Hotel.*

### Professional Tours

A Taste of Louisiana Tour	Monday, August 3	7:30 AM–5:30 PM
Invasives in Action: A Swamp Tour of Louisiana’s Invasive Aquatic Plants	Thursday, August 6	8:30 AM–1:00 PM

### Sightseeing Tours

Oak Alley and Laura Plantation Tour	Monday, August 3	12:30–6:30 PM
Walking Tour of the French Quarter	Tuesday, August 4	10:00 AM–12:30 PM
Garden District & Longue Vue Mansion & Garden Tour	Tuesday, August 4	2:00–6:00 PM
New Orleans Traditional City Tour with Citrus Orchard Visit	Wednesday, August 5	8:00 AM–12:00 PM
New Orleans School of Cooking	Thursday, August 6	9:30 AM–2:00 PM
Cajun Bayou Boat Tour	Friday, August 7	1:00–5:00 PM

## Undergraduate Events

Association of Collegiate Branches (ACB) Annual Business Meeting	Tuesday, August 4	2:00–3:00 PM	Bayside B
Graduate and Undergraduate Student Morning Gathering			
Tuesday	Tuesday, August 4	7:00–8:00 AM	Starbucks - Lobby
Wednesday	Wednesday, August 5	7:00–8:00 AM	Starbucks - Lobby
Thursday	Thursday, August 6	7:00–8:00 AM	Starbucks - Lobby
Friday	Friday, August 7	7:00–8:00 AM	Starbucks - Lobby
Student Reception	Thursday, August 6	5:30–6:30 PM	Lagniappe
The Horticultural Commodity Judging Contest and Plant Identification Contest	Tuesday, August 4	3:00–6:00 PM	Waterbury
The Horticultural Commodity Judging Plant Identification Written Examination	Tuesday, August 4	3:00–6:00 PM	Waterbury
Undergraduate (UG) Working Group Business Meeting	Wednesday, August 5	12:00–1:00 PM	Bayside B
Undergraduate Student Oral Competition	Tuesday, August 4	12:00–1:45 PM	Nottoway

# Graduate Student Poster Competition Schedule

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<b>SESSION 1: Tuesday, August 4 12:15 PM Napoleon Expo Hall</b>			
Poster No.	Paper Title	Name	Affiliation
99	Maturation Date and Postharvest Fruit and Juice Parameters of Pomegranate ( <i>Punica granatum</i> ) Accessions from the USDA-ARS National Clonal Germplasm Repository	John M. Chater	University of California-Riverside
102	Physiology of Postharvest Needle Abscission as Influenced by Mechanical Stress	Ernest A. Korankye	Dalhousie University Faculty of Agriculture
141	Identifying Master Gardener Training Priorities for Volunteering with Youth	Alison Leathers	Tennessee State University
142	Iowa Master Gardeners' Preferred Continuing Education Topics and Delivery Methods	Bryn Takle	Iowa State University
190	Greenhouse Production of Basil: Effects of Hydroponic Systems and Cultivar Selection	Kellie J. Walters	Iowa State University
191	Effect of Different Electrical Conductivities and pH on Growth and Biomass Accumulation of Dandelion ( <i>Taraxacum officinale</i> ) Grown in Nutrient Film and Deep Flow Hydroponic Systems	Reetinder Gill	University of Arkansas
193	Quantifying Growth Responses of High-value Ornamental Seedlings to Red and Far-red Light	Yujin Park	Michigan State University
220	Characterization of Root Systems in Tomato and Tomato Rootstocks Through the Use of Mini-Horhizotron Technology	David Suchoff	North Carolina State University
222	Using the Rhizometer and Root Analyzing Software to Measure Root Growth of Seedlings	Lesley A. Judd	North Carolina State University
299	Effects of Biostimulants and Fertilizers on Specialty Bell Pepper	Pedro E. Cruz-Carballo	University of Puerto Rico Mayagüez Campus
337	Impacts of Biofumigation and Anaerobic Soil Disinfestation on Strawberry Plant Nutrition and Fruit Quality	Jennifer Wheeler	University of Tennessee-Knoxville
<b>SESSION 2: Tuesday, August 4 1:00 PM Napoleon Expo Hall</b>			
Poster No.	Paper Title	Name	Affiliation
6	Fruit Quality and Nutrient Dynamics during Fruit Maturation of Jujube ( <i>Ziziphus jujuba</i> Mill.) in New Mexico	Junxin Huang	New Mexico State University
10	Genetic Diversity of Persian Walnut Revealed by a Set of Microsatellite Markers in Indiana	Aziz Ebrahimi	Purdue University
11	Microsatellite Development and Characterization in Hazelnut	Gehendra Bhattarai	Oregon State University
25	Genetic Analyses of Root-knot Nematode ( <i>Meloidogyne floridensis</i> ) Resistance in 'Flordaguard' Peach Rootstock	Mary Ann Maquilan	University of Florida
84	Combinations of Rootstocks and Scions to Increase the Fruit Quality in Watermelon	Felipe Garcia Lopez	Universidad de Guadalajara
85	Strawberry Cultivar and Tissue Chemotypes	Ashlyn Wedde	Washington State University
87	Effect of the Application of Edible Coatings on the Quality of Minimally Processed Mangoes ( <i>Mangifera indica</i> L.)	Jimena Esther Alba-Jiminez	Universidad Autónoma De Querétaro
89	Testing the Frying Performance of <i>Camellia oleifera</i> Oil	Charles Allen	University of Georgia
177	The Effect of 6-Benzylaminopurine (BAP) on Bud-forcing of Twelve <i>Quercus</i> L. Species	Andrea N. Brennan	University of Delaware
178	Propagation Methods and Distribution Potential of Eastern Hemlock, an Endangered Minnesota Conifer	Emily Ellingson	University of Minnesota
181	In Vitro Comparison of Benzyladenine and Meta-Topolin on Shoot Proliferation of River Cane ( <i>Arundinaria gigantea</i> ), a Candidate for Wetlands Restoration	Alex Rajewski	University of Georgia
271	Using a Pen Pal Program to Assess Student Learning in Science and Communications	Samantha Green	Iowa State University
307	Wyoming Fresh Herb Production	Casey Seals	University of Wyoming
355	Evaluating Light-emitting Diodes for Use in Supplemental Greenhouse Lighting for Seedling Plug Production	Brian Poel	Michigan State University
359	Utilizing the Mini-Horhizotron as a Tool for Assessing Plant Root Disease Severity in Floriculture Crops	Laura Kaderabek	NC State University

# Graduate Student Poster Competition Schedule

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<b>SESSION 3: Wednesday, August 5 12:15 PM Napoleon Expo Hall</b>			
Poster No.	Paper Title	Name	Affiliation
38	Estimates of Genetic Variance for Drought Tolerance Traits in Tomato	Limeng Xie	Texas A&M University
43	ANN Modeling of HS-SPME/GC-MS and Sensory Analysis of Potato Clones as a Potential Flavor Prediction Tool during Selective Breeding	Raven A. Bough	Colorado State University
44	Gas Chromatography-based Myrosinase Activity and QTL Mapping in Broccoli ( <i>Brassica oleracea</i> L. var. <i>italica</i> )	Alicia Gardner	University of Illinois
63	The Effect of Rowcovers and Municipal Water or Rainwater on the Growth of Vegetable Crops in Organic High Tunnels in Kentucky	Andrew Gott	Kentucky State University
64	Effects of No-till and Strip-till Systems in Organic Pepper and Broccoli Production	Dana Jokela	Iowa State University
92	Photoperiod and Irradiance Affect Red Russian Kale Leaf Nutrient Content	Justin Carlson	University of Minnesota
97	Fructans from Non-differentiated Garlic ( <i>Allium sativum</i> ): Extraction, Characterization, and Possible Applications	Francisco Ignacio Carrillo-Navarrete	Universidad Aut_noma de Quer_taro
208	The Responses of African Vegetable Amaranth ( <i>Amaranthus</i> spp.) Varieties to Drought Stress	Marcia Croft	Purdue University
211	Flowering Response of Bougainvillea to Drought Stress	Mun Wye Chng	University of Florida IFAS
212	The Interactive Effect of CO <sub>2</sub> , Temperature, and Water on Growth and Flowering of <i>Petunia xhybrida</i>	Sarah A. Mills	West Virginia University
227	The Influence of Fertilizers from Different Nitrogen Sources on Strawberry ( <i>Fragaria xananassa</i> ) Production	Yurui Xie	University of Florida
252	The Effects of AquaSmart-coated Sand Products on Growth and Water Use of Greenhouse-grown Ornamentals and Nutrient Leaching in Greenhouse Media	Magdalena Vinson	Oklahoma State University
317	Pine Sawyer Beetle ( <i>Monochamus carolinensis</i> ) Feeding Preference on Eleven Pinaceae Taxa	Matthew S. Wilson	Kansas State University
417	Growth Response of Date Palm ( <i>Phoenix dactylifera</i> ), Royal Palm ( <i>Roystonea regia</i> ), and Washington Palm ( <i>Washingtonia robusta</i> ) to Saline Irrigation Water	Samar Shawaqfeh	University of Florida
<b>SESSION 4: Wednesday, August 5 1:00 PM Napoleon Expo Hall</b>			
Poster No.	Paper Title	Name	Affiliation
16	Anthracnose Resistance in Andean Beans	Grady H. Zuiderveen	Michigan State University
45	Characterizing Crop Timing and Quality Traits of an Interspecific Hybrid <i>Petunia axillaris</i> x <i>P. exserta</i> F7 Recombinant Inbred Line Population	QiuXia Chen	Michigan State University
109	The Effect of Phytosanitary Irradiation on the Quality of Chandler Pummelo [ <i>Citrus maxima</i> (Burm.) Merr.]	A. Jain	Chapman University
132	The Effect of High Tunnel Production on Pre- and Postharvest Losses of Fresh Produce	Michael N. Ryan	Kansas State University
165	Optimizing Parameters for Precision Breeding of Grapevine	Raju Kandel	University of Wyoming
219	An Analysis of Historical Freeze Events and Determination of Blueberry and Peach Critical Bud Temperatures to Aid Growers in Freeze-related Risk Assessments	Elizabeth Conlan	University of Florida
230	Effects of Varying Potassium Levels on Yields and Petiole Potassium Levels for Organically Fertilized High Tunnel Tomato	Connor Eaton	University of New Hampshire
249	The Effects of Water Stress on Physiology and Growth of Potted Primocane-fruiting Blackberries in a Controlled Environment	Spencer Fiser	University of Arkansas
286	Autopathic Effect of Capsaicin (8-methyl-N-vanillyl-6-nonenamide) on Capsicum annum L. Seed Germination	Derek Barchenger	New Mexico State University
288	Antioxidant Capacity and Zinc Content of 'Wichita' Pecan Kernels Is Increased by Soil Zinc Fertilizer Application	Yuqing Wang	New Mexico State University
312	The Effects of Citrus Planting Design on Soil Properties and Phytophthora nicotianae Propagule Counts in Flood-irrigated Soil	Ana L. Olivares	Texas A&M University. Kingsville Citrus Center

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313	Inoculum Sources of <i>Phytophthora nicotianae</i>	Ben O. Perea	Texas A&M University, Kingsville
314	Impact of Young Citrus Shoot Flush Nutrients and Phloem Sap Composition on Asian Citrus Psyllid Populations	Srilakshmi Telagamsetty	Texas A&M University, Kingsville Citrus Center
380	Day/night Temperature Effects on Kale Photosynthesis and Leaf Morphology	Liz Perkus	UMN
432	A Survey of Fruit Quality Characteristics of Georgia Peach ( <i>Prunus persica</i> L.) Cultivars	Catherine Belisle	University of Georgia

## SESSION 5: Thursday, August 6 12:15 PM Napoleon Expo Hall

Poster No.	Paper Title	Name	Affiliation
31	Why Wait for the Fruit? DNA-informed Breeding in Rosaceae: Prediction of Apple, Peach, and Sweet Cherry Skin Color as a Case Study	Paul Sandefur	Washington State University
33	Validation of a Molecular Marker for Seedlessness in Muscadine Grapes	Paige Catotti	University of Georgia, Tifton Campus
37	Analysis of Blackberry Fruit Firmness in Crispy Fruit Segregating Populations	Alejandra Salgado	University of Arkansas
76	Use of Invasive Algae as a Potassium (K) Source Affects Growth and K Content in Pak Choi ( <i>Brassica rapa</i> cv. Bonsai, Chinensis Group) under Greenhouse Conditions	Chandrappa Gangaiah	University of Hawaii at Manoa
77	The Effect of Intensification on Nitrogen Losses from Diversified Vegetable Farms	Debendra Shrestha	University of Kentucky
78	Cowpea Biomass Productivity Under Organic Management in the Southeastern United States As Influenced by Cultivar and Soil Phosphorus	Samantha Hill	University of Tennessee
184	In Vitro Seed Germination of <i>Hydrangea paniculata</i> Sieb	Yibu Lu	University of Georgia
203	High Tunnel Microclimate in Early Spring and Late Fall	Gena Moore	North Carolina A&T State University
240	Timing Early Season Cucumber Beetle Control to Manage Bacterial Wilt in Muskmelon	Ahmad Shah Mohammadi	Purdue University
290	'Gasaway' Source of Resistance to Eastern Filbert Blight Provides a Predictable Level of Tolerance but Not Complete Resistance in New Jersey	Megan Muehlbauer	Rutgers University
328	Rhizosphere Acidification and Iron Deficiency Chlorosis in Deciduous Azalea ( <i>Rhododendron</i> Sect. <i>Pentanthera</i> ) Offer Insight on pH Adaptability	Alexander Susko	University of Minnesota
330	Growth of Naiad in Substrates with Varying Percentages of Sand and Controlled-release Fertilizer	Heather Hasandras	University of Florida FLREC
349	Environmental Stability in the Fall Acclimation Response of Cold-hardy Interspecific Hybrid Wine Grapes	John Stenger	North Dakota State University
395	Performance of Cucumber Cultivars in Northern Climate	Zhigang Wu	North Dakota State University
406	Influence of Eggshell Nanopowder on Calcium Uptake in Tomato	Boniface Tiimob	Tuskegee University

## SESSION 6: Thursday, August 6 1:00 PM Napoleon Expo Hall

Poster No.	Paper Title	Name	Affiliation
20	Genetic Diversity and Association Analysis for Bolting, Tallness, and Erectness in Spinach	Jessica Chitwood	Univ of Arkansas
21	Inheritance and Molecular Mapping of Serpentine Leafminer ( <i>Liriomyza trifolii</i> Burgess) Resistance in Romaine lettuce ( <i>Lactuca sativa</i> L.) Valmaine	Ramkrishna Kandel	University of Florida
94	Postharvest Evaluation of Essential Oil on Lettuce and Other Leafy Greens	Chen Jiang	NC State University
135	Assessment of Rootball Planting Treatments of Two Species of Container-grown Trees	Lauren Gragg	NC State University
136	Tensile Properties of Bark of <i>Dirca</i> (Leatherwood)	Zachary J. Hudson	Iowa State University
185	Rooting of <i>Kalmia latifolia</i> Stem Cuttings with Three Dosages of Hormones	Li He	University of Georgia

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196	Daily Light Integral and Light Quality from Sole-source Light-emitting Diodes Impact Phytochemical Content of Brassica Microgreens	Joshua K. Craver	Purdue University
197	LED Safety: Performance of Twelve Glasses Using 9 High-irradiance LEDs	Bo-Sen Wu	McGill University
281	Utilizing Horticultural Education to Empower a Community and Enhance Individual and Environmental Health	Michael B. Geiger	UW-Madison
407	Out of the Landfill and Into the Field: Suitability of Wastes as Agricultural Amendments	Rebecca Long	University of Rhode Island
438	Identification of Putative Fruit Growth Regulatory Genes in Apple	Shan Jing	University of Georgia
441	Managing Bourse Shoot Growth to Maximize Flowering in Apple	Fatemeh Sheibani	Purdue University
443	The Effect of Mechanical String Thinner Spindle Rotation Speed on Apple Spur Bud Removal	Thomas M. Kon	Pennsylvania State University

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# Guide to Exhibitors

Exhibitor booths are located in the Napoleon Expo Hall

## Open to attendees:

Tuesday, August 4 ..... 9:00 AM–2:00 PM

Wednesday, August 5 ..... 9:00 AM–2:00 PM

Thursday, August 6 ..... 9:00 AM–2:00 PM

Friday, August 7 ..... 9:00 AM–2:00 PM

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### Booth #203

#### Apogee Instruments

721 W 1800 N

Logan UT 84321

[www.apogeeinstruments.com](http://www.apogeeinstruments.com)

Apogee Instruments (Logan, Utah) was founded in 1996 by Dr. Bruce Bugbee, a professor of crop physiology at Utah State University. The company focuses on providing high-quality, cost-effective instrumentation for research and commercial applications in horticulture, meteorology, sustainable food production, and renewable energy. Apogee Instruments is a first-time exhibitor at ASHS, and will be featuring several new products including: a new quantum sensor with an improved spectral response; an affordable linear chlorophyll concentration meter; a rugged field spectroradiometer; and a full line of infrared radiometers for plant temperature measurement.



### Booth #201

#### BioChambers Incorporated

477 Jarvis Ave., Winnipeg, Canada R2W 3A8

[www.biochambers.com](http://www.biochambers.com)

BioChambers is a leading manufacturer of reach-in and walk-in plant growth chambers that range from small bench top units providing eight square feet of growth area to large multi-tier walk-in rooms that provide a growth area exceeding four hundred square feet. Each chamber is integrated with our easy to use control system that provides lighting level, photo-period, temperature and

fan speed control as standard features, and humidity and CO<sub>2</sub> control as optional features. We invite you to visit us at our booth and see how we can help create ideal environments for your research needs.



### Booth #200

#### CABI/CSIRO

22883 Quicksilver Drive

Herndon, VA 20172-0605

[www.styluspub.com](http://www.styluspub.com)

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment.

CSIRO PUBLISHING is an internationally recognized science and technology publisher, covering a wide range of disciplines, including agriculture, plant and animal sciences, and environmental management.



### Booth #500

#### CID Bio-Science, Inc.

1554 NE 3rd Ave.

Camas, WA 98607

CID Bio-Science is an industry leader in the design and manufacture scientific instruments for plant physiology research. Our mission is to identify and satisfy the needs of plant researchers by delivering high quality instruments that are portable, durable and easy to use. To



learn more, or set up an appointment with an application scientist, visit us at Booth #500, or phone Andrea Melnychenko at 971-506-6796.



### **Booth #401**

#### **Conviron**

590 Berry St., Winnipeg, MB, R3H 0R9 Canada  
[www.conviron.com](http://www.conviron.com)

Established in 1964 and with a global sales, distribution, and service network—Conviron is the world leader in the design, manufacture, and installation of controlled environment systems for plant science and agricultural biotechnology research. Conviron's reach-in plant growth chambers, walk-in rooms, and Argus Control Systems (a Conviron company) provide precise, uniform, and repeatable control of temperature, light, humidity, CO<sub>2</sub>, and other environmental conditions. All environmental parameters can be remotely programmed, monitored and analyzed with unparalleled accuracy and convenience. With a staff that includes engineers, technicians, and controls experts, Conviron is well equipped to supply both standard and custom applications for our clients around the world. Learn more at [www.conviron.com](http://www.conviron.com) or contact us at [info@conviron.com](mailto:info@conviron.com)



### **Booth #303**

#### **CRC Press**

6000 Broken Sound Parkway NW, Suite 300  
Boca Raton, FL 33487  
[www.crcpress.com](http://www.crcpress.com)

CRC Press is a premier publisher of scientific and technical content, reaching around the globe to collect essential reference material and the latest advances in food quality and safety to make them available to researchers, academics, professionals, and students. CRC Press products include world-class references, handbooks, and textbooks as well as the award-winning netBASE eBook collections. CRC Press is a member of Taylor & Francis Group, an Informa business. For more information, visit [www.crcpress.com](http://www.crcpress.com)



### **Booth #302**

#### **Decagon Devices, Inc.**

2365 Hopkins Court  
Pullman, WA 99301  
[www.decagon.com](http://www.decagon.com)

Decagon is the world leader in research grade instrumentation for irrigation scheduling, fertigation, and plant stress management. Whether you're looking to measure soil-water interactions or canopy characteristics we have the instrument for you. Stop by our booth #302 to see our new line of spectral reflectance sensors, soil moisture and salinity sensors, and water potential sensors.



### **Booth #402**

#### **Ellepot - USA**

10800 Blackmore Ave.  
Belleville, MI 48111-2500  
[www.blackmoreco.com](http://www.blackmoreco.com)

Ellepots™ allow the grower to choose the substrate, its compaction and the size of the “pot” from 15 mm to 120 mm. Ellepots™, bathed in oxygen, produce strong roots quickly. The result is a quick, consistent method for rooting cuttings in a wide variety of media. JUMBO Ellepots™ are ideal for landscape plantings or whenever pots are not required. Imagine, no pots or cell packs to collect or throwaway at the job site, the planting goes much more quickly. AND Ellepots™ are GREEN. Why buy pots if you don't need them? JUMBO Ellepots™ of 80 mm are the equivalent of 4” pots. Blackmore has been named the exclusive distributor for Pioneer Pot™ in North America. Pioneer Pots™, ideal for stepping up Ellepots™, stimulate the production of absorbing and structural roots, promote excellent root architecture, and are available in many sizes from propagation size to 5 gallon.



**Booth #105**

**Environmental Growth Chambers**

510 East Washington Street  
Chagrin Falls, OH 44022-4448  
www.egc.com

Environmental Growth Chambers (EGC) is celebrating sixty-three years of experience in the design and manufacture of controlled environment chambers. EGC has the largest selection of plant growth chambers for agriculture research of any company worldwide. We also produce shelf-lighted rooms, tissue culture chambers, walk-in controlled environment rooms, lighted and refrigerated incubators, S.P.A.R. day-lit chambers, root zone cabinets, PLC based controllers, and central computer systems for control monitoring. Please stop by to discuss your upcoming projects. We welcome your visit to our website at [www.egc.com](http://www.egc.com).



**Booth #103**

**Florida State Horticulture Society**

700 Experiment Station Road  
Lake Alfred, FL 33850-2299  
<http://fshs.org/>

Established in 1888, The Florida State Horticultural Society is the oldest and largest of its kind with emphasis on research, extension, industry, and student education. In its annual meetings, the society covers a broad range of disciplines aimed at advancing all aspects of Florida horticulture. The society publishes an annual "Proceedings" which contains valuable scientific and extension information presented at the annual meeting. Through our website ([www.fshs.org](http://www.fshs.org)) you can access all our publications including the Proceedings and Newsletters. Visit our display for more information and how to become a member.



**Booth #403**

**Gylling Data Management Inc.**

405 Martin Boulevard  
Brookings, SD 57006  
Phone: +1 605-692-4021  
[www.gdmdata.com](http://www.gdmdata.com)

Gylling Data Management, providing research management software since 1982 including:

- ARM Tablet Data Collector: enter and analyze assessments, take plot pictures, and record trial GPS locations.
- ARM: establish, manage, analyze, and report information for crop experiments including field and greenhouse protocols and trials.
- ARM ST: summarize and report a trial series across locations and/or years; links with ARM Trial Database to select trials based on information in any trial data entry field.



**heliospectra**

**Booth #101**

**Heliospectra (7549)**

Frans Perssons väg 6, Gothenburg SE-412 76  
Sweden  
[www.Heliospectra.com](http://www.Heliospectra.com)

Heliospectra AB specializes in intelligent lighting technology for commercial growers and plant researchers. Heliospectra products are based on in-depth knowledge about plants along with a unique way to utilize modern LED technology. Giving researchers a scientific advantage—from the algorithm used for the individual LED positions to the technique used to deliver power to the light.



**Booth #204**

**LI-COR Biosciences**

4647 Superior Street  
Lincoln, NE 68504  
www.licor.com

Please visit LI-COR's booth (#204) and ask our Applications Scientists to demonstrate the latest instrumentation for environmental research, including the LI-6400XT Portable Photosynthesis System, the new LI-1500 Light Sensor Logger, with optional GPS capabilities for mapping light distribution, and the LAI-2200C Plant Canopy Analyzer, with new capabilities for using under nearly any sky condition, and an optional integrated GPS receiver. LI-COR will also feature newly redesigned light sensors, including Pyranometers, Quantum Sensors, and Photometric Sensors. The new light sensors feature an improved water-shedding design, a detachable base that allows for interchangeable sensor heads, and multiple output signal options.



**Booth #400**

**NASA Space Life Sciences**

NASA Ames Research Center  
Mail Stop 247-9, Moffett Field, CA 94035

NASA space life sciences executes high quality, high value research and application activities developing technologies that will allow humans to travel safely and productively in the environment of space. Growing plants in a closed system for bioregenerative life support and long-term habitation are top priorities for NASA. Come learn about grants for spaceflight research in plant biology and postdoctoral research fellowship opportunities.



**Booth #301**

**PP Systems**

110 Haveshill Road, Suite 301  
Amesbury, MA 01913  
www.ppsystems.com

Check out our truly portable and popular CIRAS-3 Portable Photosynthesis System for measurement of photosynthesis and chlorophyll fluorescence. Also on display will be our range of CO<sub>2</sub> and H<sub>2</sub>O infrared gas analysis systems. We are the proud distributor of Hansatech Instruments and also on display will be their latest range of chlorophyll fluorescence and oxygen measurement systems (liquid and gas phase). Interested in light sensors? Check out the latest range of light sensors from Skye Instruments. You can always check us out at www.ppsystems.com.



**Booth #502**

**Pi Alpha Xi, National Horticulture Honor Society**

1018 Duke St.  
Alexandria, VA 22314  
E-mail: [pax@ashs.org](mailto:pax@ashs.org)  
<http://pax.ashs.org/>

Founded in 1923, Pi Alpha Xi (PAX) the national horticulture honor society whose purpose is to recognize high scholarship, foster good relationships among its members, promote the exchange of ideas among members of the profession, and establish relations among students, educators and industry members. Chapters are established at many universities in the United States that offer programs of study in horticulture at the undergraduate and graduate levels. Each year, PAX sponsors a photography contest to recognize the art and science of horticulture.



**Booth #405**

**RJ Lee Group**

2710 N. 20th Ave.  
Pasco, WA 99301  
[www.rjlg.com](http://www.rjlg.com)

RJ Lee Group, Inc. is an analytical laboratory and consulting firm with a diverse group of experts and fields of application. One branch of RJ Lee Group, Inc. specializes in making real-time volatile organic compounds (VOC) in the gas phase at very low concentrations. Gas phase VOC emissions can be used to identify disease or infestation in a crop, in stored fruits and vegetables, or during food packaging. These real-time monitoring systems are commonly used in research facilities but are increasingly found in continuous process monitoring to reduce spoilage. RJ Lee Group, Inc. provides long term solutions or short term consultation to address individual problems.



**Booth #300**

**Spectrum Technologies, Inc.**

3600 Thayer Ct.  
Aurora, IL 60504  
[www.specmeters.com](http://www.specmeters.com)

Spectrum Technologies has been manufacturing affordable, leading-edge agricultural measurement technology for researchers and growers around the world for over 27 years. Our weather, soil / water, plant nutrition, IPM instrumentation and web-based data-management systems gather valuable data to report and enable informed and profitable decisions. We offer a full line of instruments to measure soil moisture, nutrient levels, soil compaction, light, weather, and other factors directly affecting plant health and development. Comprehensive software and data management utilities allow users to view (live) data, generate reports and maps, graph data, and send alerts.



**Booth #202**

**Soil and Plant Laboratory, Inc.**

4741 East Hunter Ave., Suite A  
Anaheim, CA 92807  
[www.soilandplantlaboratory.com](http://www.soilandplantlaboratory.com)

Soil and Plant Laboratory, Inc. is a corporation committed to providing timely and innovative solutions to our customers. We aim to assist our clients in improving production of their crops and/or products. We are dedicated to continued expansion of our analytical, consulting and diagnostic services. We offer the following professional services:

- Soil, plant, water and amendment analysis
- Fertility evaluation and disease diagnosis
- Recommendations and troubleshooting
- Reliable lab work and practical solutions

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# 2015 ASHS Award Winners

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## ASHS Fellow



**Randolph M. Beaudry**  
Michigan State University

**Randolph M. Beaudry** has been an ASHS member since 1984. He has published 34 articles in ASHS journals, roughly 30% of his 112 refereed publications. Beaudry's research productivity also resulted in 4 patents, 10 book chapters, 2 reviews, 162 presentations, 56 invited national/international speaker engagements and over \$5 million in grant funds. These funds came from horticulture industries, chemical companies, packaging/polymer companies, and federal grants on modified atmosphere packaging/design, fresh cut product safety, fruit/vegetable aroma biology, apple, mango, sugarbeet, potato, and blueberry storage, plant growth regulator evaluation, 1-MCP utility, breeding of stevia, and mechanical harvesting.

Beaudry has served as an industry consultant regarding the storage of fruits and vegetables, legal opinions, and film and package design. His international invitations include Brazil, Malaysia, Chile, Dominican Republic, Argentina, Germany, Belgium, Spain, India, and New Zealand, and he was twice invited to speak at the Gordon Conference for Postharvest Physiology. He has served on 8 review panels for 5 different organizations, as Associate/Consulting Editor of *Hort-Science*, and on the Editorial Board of *Postharvest Biology and Technology*. His impact in the field attracted 21 visiting scholars to his lab. Beaudry has advised numerous PhD and MS graduate students and served on graduate student committees in many departments and countries, including New Zealand, Holland, Canada, and Australia. He served as interim Department Chair and currently serves as the Department Graduate Program Director. He also introduced students to science by engaging in the NSF-funded High School Honors Science Program, the Minority Summer Research Program, and undergraduate Special Projects. Beaudry taught Graduate Student Seminar, Graduate Scientific Writing, and Undergraduate Postharvest Biology and Technology courses.

Beaudry received numerous awards including the USDA Group Honor Award for Excellence, an ASHS Fruit Publication Award, a Gold Award for an International Horticulture Congress poster, the Distinguished Service award from the Michigan State Horticultural Society, and Fruit Man of the Year from Michigan Pomesters (pomology industry).

Beaudry serves the fruit industry as a resource for apple and blueberry harvest maturity, disorders, and storage recommendations. He is the faculty coordinator for MSU Apple Maturity Program, an active member of the Michigan Fruit Team, the Great Lakes Fruit Workers' Team and is coordinator of the bi-annual MSU Controlled Atmosphere and Storage Clinic, having developed 70 outreach articles, primarily for the Michigan apple industry.

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# 2015 ASHS Award Winners

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## ASHS Fellow



**Joan R. Davenport**  
Washington State University

**Joan R. Davenport** is an internationally recognized soil and plant scientist, with an impressive 30-year career as an outstanding researcher, educator, and prolific author of publications in the field of plant nutrient management for crop yield and quality. She is currently located at Washington State University's Irrigated Agriculture Research and Extension Center (IAREC) in Prosser, WA.

Davenport's research has focused on nutrient cycling through soil-plant systems in perennial fruit crops, with an emphasis on site-specific management of plant stress. Her research has been supported by more than 100 grants, a tribute to the value of her work, as recognized by numerous agricultural stakeholders.

She served as Senior Agricultural Scientist and Manager of Agricultural Research with Ocean Spray Cranberries, Inc., until 1996, when she accepted a faculty position at Washington State University. In this role, in addition to her innovative research programs in nutrient management, she mentored more than 20 graduate students, contributed to teaching more than 50 courses, and published more than 350 articles, proceedings, abstracts, and presentations.

Davenport has magnanimously and consistently volunteered her time as an officer and committee member within numerous organizations, including ASHS, American Society for Viticulture and Enology, American Society of Agronomy, Potato Association of America, and Soil Science Society of America.

Within ASHS, Davenport's service to the peer review of publications has been especially noteworthy. She has served as an Associate Editor (2001–2003) and Consulting Editor (2004–present) for over 200 manuscripts, with continuous service for 14 years with ASHS's outreach journal, *HortTechnology*. Despite this impressive workload, she has also accepted numerous requests to review submissions to other ASHS publications [*HortScience* (14 manuscripts), *Journal of the American Society for Horticultural Science* (11 manuscripts)] and many other peer-reviewed journals.

Davenport's record of unselfish commitment to the advancement of horticultural science through the scholarly publication process is especially important, as it is here that the work and careers of others are advanced, and the evolution of science is allowed to continue with enhanced clarity, accuracy, and merit.

Davenport received her BS degree in Plant Science from Rutgers University, and her MS and PhD in Soil Science from Iowa State University and the University of Guelph, respectively. She followed these with positions as Postdoctoral Fellow at University of Guelph and Postdoctoral Research Associate at Washington State University.

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# 2015 ASHS Award Winners

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## ASHS Fellow



**Brian A. Kahn**  
Oklahoma State University

**Brian A. Kahn** has been a faculty member in the Department of Horticulture and Landscape Architecture at Oklahoma State University (OSU) since 1982.

He has shown great dedication to teaching and student mentorship, well beyond what would be expected of a faculty member who does not carry a majority teaching appointment. Kahn has held three administrative titles relative to academic programs in his department since 1992. In each of the seven years that he served as faculty advisor to the OSU Horticulture Club, the club won first or second place in the ASHS Southern Region, and won the national ASHS Outstanding Small Club Award in 2001. He has mentored eight graduate students and over 250 undergraduates. Student leaders chose him as the Outstanding Advisor in the College of Agricultural Sciences and Natural Resources (CASNR) in 1996. Kahn has served on the CASNR Curriculum and Academic Standards Committee continuously since 1987, where he pioneered the concepts of formal academic minors and articulation planning guides that then developed into college-wide initiatives. He is the only faculty member in CASNR to train for, receive, and maintain national certification as a Global Career Development Facilitator (GCDF). He was recognized with the J.C. Miller, Jr. Distinguished Educator Award from the ASHS Southern Region in 2008.

Kahn's research has emphasized cultural and management practices to support the vegetable industry. He has consistently received grants from the industry, as well as competitive funding, and has compiled a strong and diversified publication record. Practical, applied research that supports and advances agriculture is at the heart of the land-grant mission, and Dr. Kahn has consistently fulfilled that responsibility. In 2001, he was elected to a term as Chair of the Biological Sciences Graduate Faculty at OSU, one of the few horticulturists to hold that position.

Kahn has a long record of service to ASHS. He is well known for his editorial skills. He was one of the youngest Associate Editors in ASHS history (1987–1990); was selected by the late Werner Lipton as Backup Science Editor (1990–1992); and received the Outstanding Reviewer Award (1995). In addition, he has been an active member of several regional and national ASHS committees, chaired two Working Groups, and served as President of the ASHS Southern Region in 2012. His presidential address, "The Last Child in the Garden", was published (by invitation) in the *ASHS Newsletter*.

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# 2015 ASHS Award Winners

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## ASHS Fellow



**H. Brent Pemberton**

**Texas A&M  
AgriLife Research & Extension Center**

**H. Brent Pemberton** began his career in 1982 at the Texas A&M AgriLife Research and Extension Center in Overton, Texas, as a member of the Texas A&M Department of Horticulture. He was recently awarded the Regent Fellow service award for work in support of the rose and bedding plant industries. During his 32 years with Texas A&M, he made valuable contributions to the field garden rose industry, flowering nursery container roses, postharvest care of miniature roses, and field screening hundreds of rose varieties for disease resistance and heat.

He is a national leader in field evaluations of new ornamental plant material for companies located across the United States and Europe. The success of his program is the partnership with Master Gardener Associations and corresponding County Extension Agents. He was the major developer of the North Texas Winner's Circle Award and is currently Chair of the Executive Board of the Texas Superstar® Program. Several of the plants designated as Texas Superstars® have each resulted in over a million dollars in increased sales for the Texas nursery and greenhouse industries. In addition to plant testing, Pemberton actively researches the use of plant growth regulators on extending the postharvest longevity of bedding plants to increase sales and reduce shrinkage in the marketing channel. Other work on plant growth regulators focuses on increasing branching quality of selected ornamental species during the production phase.

Pemberton has written 34 peer-reviewed journal articles and proceedings and authored 65 technical articles, 88 popular articles, 88 abstracts presented at regional, national, and international meetings, and 8 books and chapters including "Pot Rose Production" and 3 chapters in the *Encyclopedia of Rose Science* (Academic Press), for which he also served as an Associate Editor. He also served as editor for volume 751 of *Acta Horticulturae*, which is a collection of the manuscripts that serve as the *Proceedings of the Fourth International Symposium on Rose Research and Cultivation*. He has received nearly \$1 million in support of his program from grants, contracts, and gifts.

An active ASHS member, Pemberton currently serves as a Consulting Editor for the *Journal of the American Society for Horticultural Science*.



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# 2015 ASHS Award Winners

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## ASHS Fellow



**John E. Preece**  
National Clonal Germplasm  
Repository, USDA-ARS, Davis, CA

**John E. Preece** became the Supervisory Research Leader of the USDA–ARS National Clonal Germplasm Repository Davis, CA, and the National Arid Land Plant Genetic Resource Unit, Parlier, CA, in January 2010. Prior to assuming this new position, Preece was a horticulture professor at Southern Illinois University, Carbondale, for nearly 30 years. His teaching duties included General Horticulture, Plant Propagation, and Plant Growth and Development. In addition to an introductory horticulture textbook and published laboratory exercises, he was selected the Outstanding Teacher 4 times for his department, 3 times for his college, and received 3 national awards: 2 by NACTA (North American Colleges and Teachers of Agriculture), and was the 2006 ASHS “Outstanding Undergraduate Educator.” He completed over 40 graduate students.

Preece’s research has focused on clonal propagation of woody plants. He published the first reports of somatic embryogenesis and adventitious shoot organogenesis from *Fraxinus americana*, and *Juglans nigra*, somatic embryogenesis from *Fraxinus mandshurica*, adventitious shoot formation from rhododendron ‘P.J.M. Hybrids’ and *Hydrangea quercifolia*, axillary shoot micropropagation of *Acer saccharinum* germplasm, *Berberis thunbergia* ‘Crimson Pigmy,’ *Euphorbia lathyris*, and *Hibiscus moscheutos*, and development of the commercially used Long and Preece (LP) tissue culture medium. He has published protocols for rooting macrocuttings of *Euphorbia lathyris*, *Gypsophila paniculata*, *Berberis thunbergia* ‘Crimson Pigmy,’ *Acer palmatum*, *A. rubrum*, *A. saccharinum*, *Vitis aestivalis* ‘Norton,’ *Hydrangea quercifolia*, and *Betula nigra*. He developed shoot forcing technology utilizing large stems to dissect plants to study ontogeny, improve propagation performance, and extend season of propagation for numerous woody species. He developed technology for alginate encapsulation of *Hibiscus moscheutos* nodal explants that could be stored under refrigeration for up to 1.5 years. Technology was developed so that they could be planted under mist in a greenhouse with 100% rooting survival. Although research still has a propagation focus, there has been a shift to genotyping and phenotyping the collections and rootstock development.

John Preece has more than 160 publications, 83 of which are refereed journal articles, including a “Centennial Paper” on the history of clonal propagation during the first 100 years of the existence of ASHS. He served as an Associate Editor for the *Journal of the American Society for Horticultural Science* (2 years); *HortScience* (4 years); Backup Science Editor for *HortScience* (2 years); Consulting Editor *HortScience* (1 year); Associate Editor (14 years), Managing Editor (4 years), and Science Editor (2 years) for *Plant Cell, Tissue and Organ Culture*; and Assistant Editor (11 years) for *Propagation of Ornamental Plants*.

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# 2015 ASHS Award Winners

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## ASHS Fellow



**Thomas G. Ranney**  
North Carolina State University

**Thomas G. Ranney** has distinguished himself as a leader in ornamental nursery crops plant breeding research, and in broadly serving the nursery crops industry nationally and internationally. He is recognized as one of the most accomplished ornamental plant breeders in the United States. He is well known for his pioneering work in the use of dinitroaniline herbicides to develop polyploids for overcoming interspecific hybridization barriers in woody plant taxa. Ranney has also been a leader in breeding for sterile, non-invasive forms of popular woody ornamentals that show invasive potential. Recent introductions reflecting this area of focus are 'Chastity' trumpet vine and *Miscanthus My Fair Maiden*<sup>™</sup>. Some of his most highly regarded ornamental cultivar releases include *Calycanthus 'Venus'*, *Hydrangea arborescens Invincibelle Spirit*<sup>®</sup>, and the "Storm" series of *Chaenomeles*. Ranney has also addressed fundamental questions regarding cytogenetics and genome size evolution in many ornamental genera.

Ranney is a remarkable graduate educator. He has served as the major advisor for 23 graduate students, many of whom have received awards for presentations at professional and industry meetings. Ranney is committed to providing educational and professional development opportunities to undergraduate students. For many years, he has offered plant-breeding summer internship positions to undergraduate students. Such opportunities have shaped and directed the professional interests of these students, many of who have gone on to graduate school in plant breeding.

Ranney has made significant contributions to ASHS. He is well published in both the *Journal of the American Society for Horticultural Science* and *HortScience*. He has served as Associate Editor, Chair of various working groups, and as a member of many committees. Ranney is a passionate horticulturist, both in his personal and professional life. Students and colleagues alike respect the enthusiasm, positive attitude, and passion he conveys in his daily professional activities. Ranney is an ambitious researcher, but he is a gentle person with a calm demeanor. He is respected not only for his professional accomplishments and guidance, but also for his gentle spirit and the "human touch" that is so evident in his day-to-day interactions students and colleagues.

Over his career, he has authored or co-authored 75 refereed research manuscripts, and over 120 research reports and symposium articles.

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The first ASHS Fellows  
were elected in 1965.

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# 2015 ASHS Award Winners

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## ASHS Fellow



**Sandra B. Wilson**  
University of Florida

**Sandra B. Wilson** began her career at the University of Florida almost 15 years ago where she built a successful teaching and research program. Known for her passion for advancing education, she has developed innovative, award winning educational materials and given open access to them. She was the first faculty member in the University of Florida Environmental Horticulture Department to develop an industry-supported, extramurally funded research program on invasive ornamentals. She was recently appointed Interim Chair of the Environmental Horticulture Department at the University of Florida.

Her strong ties with the horticulture industry, coupled with her commitment to environmental organizations, has uniquely positioned her as a trusted leader in the field. Having completed several national leadership programs, she is now serving in an administrative capacity, where she is working to navigate national branding, recruiting and marketing initiatives to advance horticulture in research, teaching, and extension worldwide.

Wilson has been active on numerous ASHS Working Groups and Committees since joining the Society in 1991. She currently serves as Education Division Vice President.

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Election as a Fellow of the Society is the highest honor that ASHS can bestow upon its members. The honor is in recognition of truly outstanding contributions to horticulture and the Society.

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## 2015 ASHS Award Winners

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### ASHS Fellow



**Christopher B. Watkins**  
Cornell University

**Christopher B. Watkins** is a postharvest horticultural scientist known for addressing harvest maturity management, postharvest handling, and storage technologies from both basic and applied aspects. He is responsible for developing and conducting those components of the New York multidisciplinary statewide fruit extension program. Watkins has been at the forefront of research and extension related to developing the knowledge and practices required for commercialization of 1-methylcyclopropene (1-MCP), an ethylene-binding inhibitor that extends the storage life of apples and other specialty crops. He also conducts research on new cultivars of regional and national importance, investigating the effects of postharvest techniques on the nutritional quality of fruit, and to better understand the underlying mechanisms in fruit responses to storage conditions such as temperature, atmosphere, and 1-MCP, and the interaction of these factors with the development of storage disorders. He is currently focusing his efforts on key physiological disorders of apples such as internal browning, external carbon dioxide injury, and superficial scald.

While conducting very active academic and outreach programs, he has also taken on the administrative responsibility of serving as the Director for Cornell Cooperative Extension, and Associate Dean in the College of Agriculture and Life Sciences, and College of Human Ecology.

Watkins has published 143 peer-reviewed publications, including 33 in ASHS journals, written 14 book chapters and 44 conference proceeding papers, and 111 trade, newsletter, and technical bulletin articles. He has presented invited papers at 75 national and international conferences. He and his students have given over 53 presentations at ASHS meetings. He has directed or served on 10 MSc and 22 PhD Horticulture and Food Science student graduate committees at Cornell and has served as an external examiner for 12 PhD dissertations at international universities.

Watkins is an international leader among postharvest researchers. He was elected secretary (1997–1998) and chair (1998–1999) of the ASHS Postharvest Working Group and Vice Chair (2002) and Chair (2006) of the Gordon Research Conference on Postharvest Physiology. He is currently (as of 2014) Chair of the ISHS Commission Quality and Postharvest Horticulture. He has served his profession through editorial responsibilities including Associate Editor of *HortScience* (1999–2004), Editorial Board Member of *Postharvest Biology and Technology* (1993–2011), Associate Editor of *Horticulture Research* (2013–present), and Editorial Advisory Board member for *Encyclopedia of Applied Plant Sciences*.

Overall, Dr. Watkins is an outstanding and highly respected scientist and leader among postharvest horticulturists who brings great credit to ASHS.

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## 2015 ASHS Award Winners

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### Outstanding Extension Educator



**Edward W. Hellman**  
Texas A&M AgriLife Extension

**Edward W. Hellman**, Professor and Extension Specialist, Texas A&M Agrilife Extension Service, is recognized as a national leader in viticulture extension. He has twice served as chair of the Extension and Outreach Education Committee of the National Grape & Wine Initiative and has served 10 years on the Board of Directors. Hellman partnered with colleagues to develop an informal national meeting to facilitate collaboration among extension viticulturists. The first three NVEELC conferences were chaired by Hellman and the group continues to meet annually. One significant outcome of NVEELC was a successful SCRI grant to develop an eXtension Grape Community of Practice. Hellman was a Co-PI on the grant, subsequently serving on the leadership team of the Grape CoP for its first four years of developing Grape eXtension web resources.

In Texas, Hellman's work is recognized as instrumental in the dramatic growth of the Texas wine industry from 42 wineries in 2000 to more than 300 today. He organized a Viticulture Short Course, and then expanded it into a formal educational program in association with Texas Tech University. The hybrid delivery (online and face-to-face) Viticulture Certificate Program has graduated 60 students, many of whom have started their own vineyards and wineries. Prior to Texas, Hellman's merit was recognized by the Oregon Extension Service with two awards including the Search for Excellence Award for Outstanding Leadership in Education Programming.

While with Oregon State in 1995, when the Internet was in its infancy, Hellman foresaw its tremendous potential for extension outreach. He developed the first major, comprehensive website for winegrapes and berry crops. Twenty years later, the Northwest Berry & Grape Information Network is still delivering current research-based information to fruit producers. Upon coming to Texas, Hellman created another award-winning website as the cornerstone of the viticulture extension program. He also developed an interactive GIS system to characterize the winegrowing regions of Texas, and the Vineyard Doctor—an interactive grape problem diagnostic application. He is currently developing a companion mobile application that will provide disease and pest management recommendations, including current pesticide labels. Hellman continues exploring potential for technology applications in horticulture, as exemplified by his current project examining the economic feasibility of robotic technology for vineyard operations.

Hellman has been actively engaged in ASHS throughout his career, has been honored with the ASHS Extension Division Educational Materials Award (Website), has served on many ASHS committees, has led the Viticulture and Small Fruits Working Group, and serves as a dedicated reviewer of our Society's journals.

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## 2015 ASHS Award Winners

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### Outstanding Graduate Educator



**Bernadine C. Strik**  
**Oregon State University**

**Bernadine C. Strik** is key member of the graduate faculty at Oregon State University and makes significant contributions to in-class instruction of graduate students as well as mentoring students. She supports theory with issues faced in production systems by bringing internationally recognized experience in research and Extension. Strik is known for creating an atmosphere of excellence. She expects a high level of performance and students regularly meet the challenges she sets by following her example of achievement to raise their own standards.

Strik has served as instructor, co-instructor, or contributor to six graduate courses. Of the 20 students advised, 13 are women, seven are persons of color, and one is physically disabled, which indicates a commitment to diversity. Her students have been native to Canada, Ecuador, Saudi Arabia, Brazil, Chile, Thailand, Argentina, China, and the United States. She has served on 22 students committees, including one PhD student studying in Pakistan, and has served as a Graduate Council Representative for eight students. Strik advised or co-advised numerous students.

Of her 87 peer-refereed publications, 26 were with a graduate student as lead or co-author, including a manuscript recognized as the 2012 ASHS Outstanding Extension Publication Award. Her students have made over 50 oral and/or poster presentations and written numerous peer-reviewed and popular press articles. Strik's graduate students leave the Department with an excellent understanding of berry production systems and strong industry contacts. Students are involved in her research program and are supported to go to regional professional/industry meetings, present at University field days, present results at grower meetings, write newsletters or other proceedings articles, and are supported to attend an ASHS or ISHS meeting. Students are also encouraged to go on field visits/problem solving with her. Strick has also been invited to train graduate students and field advisors in other production regions (e.g., Chile, Italy, New Zealand, Canada) where she leads workshops on production systems and berry crop physiology.

An active ASHS member since 1983, Strik was named a Fellow of the Society in 2007.

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## 2015 ASHS Award Winners

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### Outstanding Undergraduate Educator



**David E. Kopsell**  
Illinois State University

**David E. Kopsell** exemplifies what a teacher should be. He cares about his students. He continually works to improve his own craft as a teacher. He finds ways to engage every student and help them become the best horticulturists they can be. Through his actions he inspires other faculty to become the best teachers they can be.

Kopsell has taught 14 different undergraduate horticulture courses including seven currently that comprise the core horticulture curriculum at Illinois State University. He has a long and successful history of incorporating meaningful service-learning projects that help students connect curriculum content to community service. Kopsell's courses require students to use higher-order thinking skills and his assignments ensure students achieve a multi-dimensional education and are prepared for a career in horticulture. Kopsell also collaborates with faculty at other universities to further develop educational materials for use in undergraduate horticulture programs. Dr. Kopsell has proven to be an excellent teacher. His average student evaluation scores at UW-Platteville and Illinois State have ranged from 4.6-4.83/5.0. Student comments on course evaluations illustrate his effectiveness and include: "Dr. Kopsell is awesome at communicating with students. Kopsell = Great!!" "I've had Dr. Kopsell for multiple classes—one of the Best instructors I've ever had." "Strives to connect with students on a personal level." To date he has mentored 34 undergraduate independent study projects and three Honors projects. Kopsell spends a significant amount of time coaching students in preparation for the annual PLANET Student Career Days (SCD) competition and to date has mentored 55 students at 6 national SCD competitions. His students have been very successful at the SCD event with four Top 10 individual event finishes, and three students placing in the Top 10 of the overall Superstar Competition.

Kopsell has been an active member of ASHS since 1993 and has served the organization in many capacities. He is involved in three working groups, including the Teaching Methods (TCHG) group, where he has served as secretary, chair-elect and chair (2012–2013). Kopsell proposed, developed, and coordinated the 2013 "community service project" for undergraduates at a local senior center during the ASHS conference in Palm Desert. In 2014 he organized and moderated a very well-attended workshop about online teaching. He also actively supports Cooperative Extension programs in Illinois by giving presentations to Master Gardener and other groups in the state.

Kopsell provides leadership on projects and committees including departmental, college, and university-level curriculum committees. He recently led his department's strategic planning process and its external program review. He was a 5-year member of his college's Faculty Council, serving two terms as council chair. He serves as an Associate Editor for *Natural Sciences Education* journal of the ASA, specifically reviewing innovative horticultural teaching pedagogy and methodology manuscripts. His excellent work was awarded the journal's 2012 Outstanding Associate Editor Award.

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## 2015 ASHS Award Winners

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### Outstanding Industry Scientist



**Robert C. Morrow**

**Orbital Technologies Corporation  
(ORBITEC), Madison, WI**

**Robert C. Morrow** of Orbital Technologies Corporation (ORBITEC) is an outstanding industry scientist in every sense. He has been an ASHS member since 1984 and he works in the area of controlled environment plant research. He has been an active member of the Growth Chambers and Controlled Environments Working Group (CEWG) since that time and was the chair of this group from 2010–2012. Morrow completed his MS thesis on acid rain effects on turfgrass, followed by a PhD on environmental factors regulating intumescence in tomato. He has been on the forefront of the area of LED lighting for crop growth since his postdoctoral work with the Wisconsin Center for Space Automation and Robotics, and he continues to break ground in this field with involvement on numerous USDA and NASA grants, both individually and in collaboration with top horticultural researchers in academia, industry, and government.

Morrow is an author or co-author on over 75 publications and 3 patents. His career has focused on controlled environment agriculture in general and space agriculture and LED lighting specifically, and he has been involved in 8 spaceflight campaigns over the last 22 years. Currently he is a member of the USDA Specialty Crops Research Initiative team focusing on LED lighting for greenhouse crops. He is collaborating on research with the University of Tennessee on the use of blue LED light to improve phytonutrient content in produce. Morrow is working closely with scientists and engineers at NASA's Kennedy Space Center on the Veggie hardware recently launched to the International Space Station, and the Advanced Plant Habitat hardware currently under development. His expertise and experience help guide the development of new research tools for large plant studies in space. His spaceflight work has led to a deeper understanding of plant physiology in the absence of gravity, and has been instrumental in the development of novel technologies to enable plant growth for long-duration space habitation.

In addition to his research contributions, Morrow has served as a role model for students. Under his leadership of the CEWG, he began an oral competition for ASHS students. This competition (with which he is still actively involved) has inspired many students who work using controlled environments, and has increased student participation in these sessions at the ASHS annual conference. Morrow judges posters for the American Society of Gravitational and Space Research (ASGSR), where he interacts with students in a wide array of space-related fields. He has developed a large number of education and outreach tools and speaks regularly at schools and with public groups.

Morrow is a contributor to the NCERA-101 Committee on Controlled Environment Agriculture technology and use, and he co-organized a meeting in 2010. He served on the governing board of the ASGSR, he organizes sessions for the International Conference on Environmental Sciences, and he is a member of the American Society of Agricultural and Biological Engineers.



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## 2015 ASHS Award Winners

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### Outstanding International Horticulturist



**Elizabeth Mitcham**  
University of California, Davis

**Elizabeth Mitcham** has been a faculty member and Cooperative Extension Postharvest Specialist in the Department of Plant Sciences at University of California, Davis (UC–Davis) since 1992. She has an outstanding research and extension program in postharvest handling of fruit crops and is a valued member of the UC–Davis community and a well-respected international horticulturist.

Mitcham is the Director of the Postharvest Technology Center and Director of the USAID-funded HortCRSP, both international programs based at Davis. The Postharvest Technology Center supports a highly visited website (<http://postharvest.ucdavis.edu>) that was redesigned in 2011–2012 under Beth’s leadership. It is the premier source of information worldwide for postharvest professionals. The Postharvest Technology Center and website aim to address postharvest needs in the developed world as well as the developing world. The Postharvest Technology Center issues a monthly e-newsletter with a Director’s message, which reaches about 4500 subscribers around the world.

Mitcham was the driving force behind the Produce Professional Certificate Program that began in 2013. This Certificate Program is an innovative first-of-its-kind offering, combining in-person and online educational components. Mitcham served as Associate Director for one year, and since 2011 serves as Director of the Horticulture Collaborative Research Support Program (<http://hortersp.ucdavis.edu/>). She contributed significantly to the writing of the proposal that was successful in getting the HortCRSP based at UC–Davis. This program, funded by USAID, is essentially a granting program. The management team develops a strategy to address poverty and hunger in the poorest countries of the world, and funds U.S. University researchers to work with developing country partners on horticulture development projects aimed at improving livelihoods through higher profits and diversified, nutrient-rich diets. Mitcham has visited most of the groups and countries conducting HortCRSP funded research (to date, 61 projects in 30 countries).

Although Mitcham has a 50% appointment as Director, the activity and commitment she has dedicated to ensure the program’s success clearly exceed that. The HortCRSP program was favorably reviewed by an external review team in 2013 and she is now working with the management team to develop the next 5-year plan. Mitcham also serves on several boards, including the Board for the Global Horticulture Initiative, the Advisory Board for the Archer Daniels Midland Institute for the Prevention of Postharvest Loss, and the Steering Committee for the Sacramento Chapter of the World Affairs Council.

Mitcham is active in both ASHS and the International Society for Horticultural Science.

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## 2015 ASHS Award Winners

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### Outstanding Researcher



**Penelope Perkins-Veazie**  
North Carolina State University

**Penelope Perkins-Veazie** has had an impressive career with over 25 years of research on postharvest storage and physiology of fruits and vegetables and the preservation of phytochemicals during storage. She has published/copublished 80 refereed papers, 300 abstracts, and 4 book chapters. She raised over 5.5 million dollars in grant funds and, since being at North Carolina State University, she has served as a committee member or chair for 8 graduate students. Perkins-Veazie's work on blackberries has been instrumental in growing this industry. Her collaborations with John Clark, University of Arkansas, led to the evaluation and establishment of blackberry varieties having a 3-week shelf life, compared to a 2-day shelf life, helping to move the industry to establish a year-round market place for fresh-market blackberries, valued at some \$147 million annually. There is no doubt that it is the release of firm fleshed blackberry varieties, mostly originating from the University of Arkansas, that has expanded this market niche. However, the work of Perkins-Veazie to establish the postharvest shelf life established serious interest in expanding production of fresh market blackberries.

Perkins-Veazie also became involved in phytochemical research for human health. In 1999, watermelon was considered primarily a dessert commodity in the United States. In collaboration with the National Watermelon Promotion Board, Perkins-Veazie determined that watermelon contains high amounts of lycopene, a red pigment also found in tomato that is useful in blocking free radical DNA changes, and initiated a series of studies to determine effects of cultivar, production system, and postharvest studies on maintenance of this phytochemical in fresh or fresh-cut fruit. Further studies indicated that citrulline found in watermelons was equally important in both antioxidant effects and ability to lower blood pressure in health-compromised groups. Perkins-Veazie established the relative amounts of these compounds in watermelon varieties under different environmental and production conditions, and fostered collaboration with nutritionists and sports medicine experts including collaboration with scientists at Johns Hopkins, Texas A&M University, Oklahoma State University, Clemson University, University of Florida, Florida State University, North Carolina State University, University of Maryland, Appalachian State University, Syngenta Corporation, Australia, and China. This work has contributed to a 20% increase in watermelon consumption and interest by groups ranging from prostate cancer survivors to competitive athletes.

Perkins-Veazie has served in various functions for ASHS. She has convened three colloquia as well as several workshops for the society, has served as president for the Southern Region, Member-At-Large for the ASHS board of directors, and is a Fellow of ASHS. She serves as a consulting editor for *HortScience* and on the editorial board. She has also served on the Fellows and William A. ("Tex") Frazier Lecture Series Selection Committees and as chair of the Postharvest and Food Quality working groups. Perkins-Veazie serves as a science advisor for the National Watermelon Promotion Board, is on the editorial board for *Postharvest Biology and Technology*, and as adjunct professor for the University of Maine at Orono.

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# 2015 ASHS Award Winners

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## Publication Awards

### Cross-Commodity Publication Award

#### **Semi-sterilized Tissue Culture for Rapid Propagation of Grapevines (*Vitis vinifera* L.) Using Immature Cuttings**

HortScience 49(7):949–954

Fucheng Shan and Kevin Seaton

### Education Publication Award

#### **Assessing Student Learning from an Experiential Module in a Greenhouse Management Course Using Hydroponics and Recirculating Solution Culture**

HortTechnology 24(5):610–617

Joshua K. Craver and Kimberly A. Williams

### Extension Publication Award

#### **Transformation of an Ancient Crop: Preparing California ‘Manzanillo’ Table Olives for Mechanical Harvesting**

HortTechnology 24(3):274–280

Louise Ferguson and Sergio Castro Garcia



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# 2015 ASHS Award Winners

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## Publication Awards

### Fruit Publication Award

#### ***Dw2*, a New Dwarfing Locus in Apple Rootstocks and Its Relationship to Induction of Early Bearing in Apple Scions**

J. Amer. Soc. Hort. Sci. 139(2):87–98

Gennaro Fazio, Yizhen Wan, Dariusz Kviklys, Leticia Romero, Richard Adams, David Strickland, and Terence Robinson

### Ornamental Publication

#### **Identification, Nomenclature, Genome Sizes, and Ploidy Levels of *Liriope* and *Ophiopogon* Taxa**

HortScience 49(2):145–151

Jason D. Lattier, Thomas G. Ranney, Paul R. Fantz, and Tony Avent

### Vegetable Publication Award

#### **Inheritance of Decay of Fresh-cut Lettuce in a Recombinant Inbred Line Population from ‘Salinas 88’ x ‘La Brillante’**

J. Amer. Soc. Hort. Sci. 139(4):388–398

Ryan J. Hayes, Carlos H. Galeano, Yaguang Luo, Rudie Antonise, and Ivan Simko



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## 2015 ASHS Award Winners

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### ASHS Scholar



**Jonathan Abarca**  
Washington State University

**Jonathan Abarca** says, “I was born in Mexico but have lived most of my life in a small agriculture town of Mattawa, Washington. At a young age I started working in fruit tree orchards and by age fifteen I had experience with various orchard practices. Although the work was difficult and tedious, I enjoyed working in fruit orchards. My interest in fruit trees continued and translated into my academic studies at Washington State University!

“I am a first generation college student pursuing a degree in fruit and vegetable management with a double minor in biology and horticulture. While working in fruit orchards I saw many aspects of crop production that could be improved to increase worker productivity, and most importantly, their safety. At Washington State University I attempt to stay involved in the community and in research to gain experience. I have been involved in various research projects throughout my time in college, one of which addresses possible methods to improve harvest efficiency of fruit trees. I have also been part of a project that analyzes the capacity of compost to function in soil remediation. From my involvement in research I have been able to gain valuable experience on current research methods that will benefit me in my future graduate studies!”

“My career interests are plant biotechnology and physical therapy, both of which are aimed at helping the agriculture community. I enjoy working in the tree fruit orchards but have also witnessed my coworkers get injured while working. I hope that with my dual degree I will contribute to the agriculture community in many ways. I want to help workers overcome their injuries and also develop new harvest technologies and cultivars that are more harvest efficient and safer for workers.”

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The ASHS Scholars Award was established by the ASHS Board of Directors for the purpose of recognizing and supporting scholastic achievement and to encourage career development in horticultural science at the undergraduate level.

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## 2015 ASHS Award Winners

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### ASHS Scholar



**Erin Kinley**  
University of Nebraska-Lincoln

ASHS Scholar **Erin Kinley** has this to say, “When I started college, I chose to major in horticulture because I loved plants. However, a few weeks into my freshman year, I realized two things. First, I still had a passion for all things photosynthetic. Second, I had no idea as to what I wanted to do for a career. Horticulture offered so many different directions that I felt overwhelmed with the possibilities at times. Lacking even a general direction to go in, I decided to do the next best thing and try all of the directions. In retrospect, it was the best, albeit most exhausting, decision that I have ever made!

“I started my journey by getting involved with campus organizations, primarily UNL Horticulture Club. Through the club, I was able to manage plant sales, connect with other young horticulturists, and tour amazing places, including Chicago Botanical Gardens and Disney’s Flower and Garden Festival at Epcot. In the meantime, I also pursued several opportunities in plant research, starting by doing seed processing and DNA analysis for the UNL Soybean Breeding Program and eventually ending up in my current position, where I assist with research involving iron uptake in cucurbits. In addition, I did forays into greenhouse tomato production, horticultural entrepreneurship, and pollinator education. To highlight my extracurricular involvement, I was very excited to join our college’s Pi Alpha Xi chapter last spring and was honored to be elected as chapter president!”

“However, even while I was getting involved outside of my classes, I did my best to excel academically as well, not only by keeping my grades up, but by also taking classes to explore current social issues. Through these classes, I learned about a variety of topics like income inequality, science education, and cultural diversity. Although these classes weren’t directly related to horticulture, they helped me realize the importance of plants in a healthy society and have inspired me to pursue a career in public horticulture. We need plants for so many things, from food and oxygen to recreation and ecosystem services, but unfortunately, there are many people who do not understand this. Our world faces many challenges in upcoming years, including climate change and an increasing population, and I believe that using plants to their full potential in our food production systems and landscapes can help us combat these challenges. To do this, though, we need people to have a better understanding of plants and the science surrounding them!”

“Throughout my college career, I have explored many different facets of horticulture. These experiences, combined with diversifying my academic background, helped me to discover my passion to become a public horticulturist. With the challenges that lie ahead for our world in mind, I look forward to a career in using horticulture to educate people about plants and their role in developing a healthier future.”

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## 2015 ASHS Outstanding Undergraduate Horticulture Students

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**Jonathan Abarca**  
Washington State University



**Evan Baker**  
North Carolina State University



**Deanna Bayo**  
University of Florida



**Jameson Coopman**  
University of Wisconsin-  
River Falls



**Erin Faivor**  
Michigan State University



**Ethan T. Hochstein**  
Southeast Missouri  
State University



**Whitney Kwok**  
University of Illinois at  
Urbana-Champaign



**Megan Lankford**  
University of Arkansas



**Matthew McKernan**  
Kansas State University

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## 2015 ASHS Outstanding Undergraduate Horticulture Students

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**Sarah Mittlestadt**  
University of Minnesota



**Lauren Muller**  
University of Georgia



**Yvonne Salisbury**  
Texas Tech University



**Jacob Suissa**  
University of Vermont



**Sarah Swofford**  
Texas A&M University



**Elizabeth Wilson**  
Virginia Polytechnic Institute  
and State University



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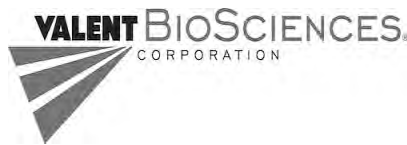
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# Day-by-Day Program Schedule

Annual Conference of the American Society for Horticultural Science

August 4–7, 2015

Sheraton New Orleans Hotel, New Orleans, Louisiana

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## Sunday, August 2, 2015

2:00–6:00 PM

Poydras

### NE1336 Multistate Regional Project Meeting (Day 1)

Coordinator: Randolph Beaudry, beaudry@msu.edu

---

## Monday, August 3, 2015

7:30 AM–5:30 PM

Canal Street Entrance

### A Taste of Louisiana Tour

Public Horticulture Working Group

Coordinator: Carolyn W. Robinson, cwrobinson@auburn.edu

Price per person: \$85. Price includes lunch, snack and water, admission to the New Orleans Botanical Garden and Oak Alley Plantation.

Leaves hotel promptly at: 7:30 AM Please arrive at the Canal Street Entrance 15 minutes prior to departure time.

This tour will begin at the New Orleans Botanical Garden (NOBG) located in New Orleans City Park. The NOBG was started in the 1930s and has literally weathered the storms throughout the years. Our next

stop for lunch and gardens will be at the Hammond Research Station that is part of the LSU Ag Center. This 150 acre facility is open to the public and focuses on landscape horticulture including evaluations of over 500 ornamental plants a year. Our final stop will be at Oak Alley Plantation, one of the most beautiful plantations along River Road.

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8:00 AM–5:00 PM

Borgne

### Symposium—From Wild Germplasm to Molecular Tools for Applied Breeding: Black Raspberry as a Case Study

Sponsor: Fruit Breeding Working Group

Moderator: Nahla Bassil, bassiln@hort.oregonstate.edu

Coordinator(s): Jill Bushakra, jill.bushakra@ars.usda.gov; Michael Dossett, Michael.Dossett@agr.gc.ca; Paul James Sandefur, paul.sandefur@email.wsu.edu

Objectives: To engage breeders and others interested in germplasm evaluation, molecular marker development and their use in an interactive symposium.

Abstract: Come learn about our experience with black raspberry—from collecting and evaluating wild germplasm, to developing molecular tools, to applied breeding. We will describe using phenotypic and genotypic methods to evaluate wild germplasm for genetic diversity, population structure, and to compare wild to cultivated germplasm to select the most interesting plants. Participate in an interactive session on using genotype information for genetic mapping using JoinMap software, and learn how the genetic linkage map can be used for quantitative trait analysis. Finally, we will provide examples on how to design, develop, and use DNA tests for genetic analysis, and what is needed to use these tools in applied breeding. The afternoon will be dedicated to answer questions and for practicing what was presented in the morning session.

### Speaker Ready Room

Gallier A

#### Hours:

**Monday** 10:00 AM–6:00 PM

**Tuesday–Thursday** 7:00 AM–6:00 PM

**Friday** 7:00 AM–2:00 PM

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room.

Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly.

Updates and modifications can be made to your presentation at this time.

### —CEU Approved—

Look for this designation for workshops and colloquia that have been approved by the American Society of Agronomy for Certified Crop Advisors to earn continuing education units.

#### A note about poster sessions:

The number in parentheses in front of a title refers to that poster's location on a board within the Poster Hall.

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

8:00–8:15 AM

**From Wild Germplasm to Molecular Tools for Applied Breeding: Black Raspberry as a Case Study**

\*Paul James Sandefur

8:15–8:30 AM

**From Wild Germplasm to Molecular Tools for Applied Breeding: Black Raspberry as a Case Study**

\*Michael Dossett

8:30–8:45 AM

**From Wild Germplasm to Molecular Tools for Applied Breeding: Black Raspberry as a Case Study**

\*Jill Bushakra

8:00 AM–5:00 PM

Napoleon Expo Hall

**General Contractor Set Up**

9:00 AM–5:00 PM

Poydras

**NE1336 Multistate Regional Project Meeting (Day 2)**

Coordinator: Randolph Beaudry, beaudry@msu.edu

10:00 AM–6:00 PM

Gallier A

**Speaker Ready Room**

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room. Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly. Updates and modifications can be made to your presentation at this time.

12:30–6:30 PM

Canal Street Entrance

**Oak Alley and Laura Plantation Tour**

Price: \$ 95 per person. Price includes entrance fees to both Plantations. No meals included.

Leaves hotel at 12:30 PM Please arrive at the Canal Street Entrance 15 minutes prior to departure time.

You will be picked up by an excellent driver-guide and begin your narrated scenic drive out of New Orleans. Driving along the shores of Lake Pontchartrain, you start your pilgrimage back in time to the Antebellum South. After a 90-minute ride, you arrive to visit two Louisiana plantations on the West Bank of the Old Mississippi River Road.

First is a guided tour of Oak Alley Plantation to admire this Louisiana jewel of Greek Revival architecture. [Guides in period costumes will bring to life the stories of generations who lived on this land. They will share with you every detail of this mansion’s history since 1830. Free time to walk around under a spectacular canopy of 28 giant live oaks around the mansion.] From the River Road you will see and hear all about Whitney, St. Joseph and Evergreen Plantations.

At Laura, the “Creole Plantation,” the guided tour transports you with dramatic detail into the charmed yet tragic lives of four generations of Creole owners and their slaves. After touring the Maison Principale, the visit moves onto the grounds, surrounded by sugarcane fields and 12 buildings on the National Register, winding into the plantation gardens: the formal Jardin Français, the kitchen garden and Laura’s new BananaLand. This part of the tour places visitors at the exact locations where sobering events of human slavery happened. The tour concludes inside one of the 1840s slave cabins where sugarcane workers lived until 1977 and where the ancient west-African folktales of Compère Lapin, better known as the legendary rascal Br’er Rabbit, were recorded.

2:00–5:00 PM

Napoleon Expo Hall

**Exhibitor Set-Up**

2:00–5:00 PM

Napoleon Expo Hall

**Poster Set Up**

All posters being presented at the conference must be set-up on Monday, August 3, 2015 by 5:00 PM.

3:00–6:00 PM

Napoleon Registration

**Registration Open**

**Poster Presenter Recording Room**

Gallier B

**Hours:**

**Monday 10:00 AM–6:00 PM**

**Tuesday–Thursday 7:00 AM–6:00 PM**

**Friday 7:00 AM–2:00 PM**

New this year, we will be inviting/encouraging poster presenters to record their presentations. This can be done two ways; both require an uploaded PDF of your poster in the Upload Poster section of your Speaker’s Corner. You may either upload the audio part of your presentation before arriving at the conference by uploading an MP3 recording of your presentation along with the PDF; or this can be done on-site in Gallier B Room at the conference (if you decide to record onsite, please keep in mind that your audio recording will not be available until after the meeting has ended). A QR code has been assigned to your poster so that you can include the QR code on your poster. Conference attendees can then scan the code and get access to your poster presentation in the online program. Poster presenters will still have to present during the conference at their assigned time but this process will allow your recorded presentation to remain part of the ASHS archives. All recordings will be housed on the ASHS website indefinitely. Your presentation will be accessible on our site with the rest of the ASHS technical program giving the poster presenters the same opportunity that oral presenters hold.

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Tuesday, August 4, 2015

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4:00–5:00 PM

Gallier B

### Moderator Training Session

An overview of the processes and duties as a moderator of sessions at the ASHS Annual Conference.

Moderators: Dennis T. Ray, dray@email.arizona.edu; Carl E. Sams, carlsams@utk.edu

---

## Tuesday, August 4, 2015

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7:00–8:00 AM

Starbucks - Lobby

### Graduate and Undergraduate Student Morning Gathering

Why wait until the student events to meet the other graduate and undergraduate students at ASHS this year? Come by and meet them while you grab your morning cup of coffee (or tea) . . . we'll meet in the lobby at Starbucks.

---

7:00 AM–6:00 PM

Gallier A

### Speaker Ready Room

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room. Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly. Updates and modifications can be made to your presentation at this time.

---

7:00 AM–6:00 PM

Gallier B

### Poster Presenter Recording Room

New this year, we will be inviting/encouraging poster presenters to record their presentations. This can be done two ways; both require an uploaded PDF of your poster in the Upload Poster section of your Speaker's Corner. You may either upload the audio part of your presentation before arriving at the conference by uploading an MP3 recording of your presentation along with the PDF; or this can be done on-site in Gallier B Room at the conference (if you decide to record onsite, please keep in mind that your audio recording will not be available until after the meeting has ended). A QR code has been assigned to your poster so that you can include the QR code on your poster. Conference attendees can then scan the code and get access to your poster presentation in the online program. Poster presenters will still have to present during the conference at their assigned time but this process will allow your recorded presentation to remain part of the ASHS archives. All recordings will be housed on the ASHS website indefinitely. Your presentation will be accessible on our site with the rest of the ASHS technical program giving the poster presenters the same opportunity that oral presenters hold.

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7:30–6:00 PM

Napoleon Registration

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### Registration Open

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8:00–9:00 AM

Maurepas

### Moderators Training Session

An overview of the processes and duties as a moderator of sessions at the ASHS Annual Conference.

Moderators: Dennis T. Ray, dray@email.arizona.edu; Carl E. Sams, carlsams@utk.edu

---

8:00–9:00 AM

Bayside B

### Working Group Chairs and Chairs-elect Business Meeting

Presiding: Michael A. Arnold

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8:00–9:30 AM

Bayside A

—CEU Approved—

### Workshop—Trends in Plant Biotechnology

Sponsor: Plant Biotechnology

Moderator: Manjul Dutt, manjul@ufl.edu

Coordinator(s): Dilip Panthee, dilip\_panthee@ncsu.edu; Manjul Dutt, manjul@ufl.edu

Abstract: Plant Biotechnology has evolved from an experimental science to an interdisciplinary effort aimed at increasing crop productivity. Biotech crops have been developed to improve nutritional value, increase biomass, protect against abiotic and biotic stresses and a source of therapeutic protein production among others. These crops have been cultivated commercially and adopted in a rapidly increasing number of countries over the past 20 years. Sequencing the genome of most common crops plants and development of robust genomics tools has enhanced identification of genes for key traits. This rapid identification of useful genetic information has resulted in a quick transfer of genes and genetic elements using biotechnology into susceptible plants. This workshop will discuss some of the current trends and progress made to integrate genomics and plant biotechnology tools for the rapid development of genetically modified horticultural cultivars. Future trends and prospects for biotechnological applications will also be discussed.

---

8:00–8:20 AM

#### TILLING and ecoTILLING for Variation in Genes for Ornamental Traits

\*Dayton Wilde

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8:20–8:40 AM

#### Grafting “Away” the Concerns on Genetically Engineered Plants?

\*Guo-qing Song

---

8:40–9:00 AM

#### Genetic Improvement of Horticultural Plants: Transgenic or Non-Transgenic?

\*Yi Li

---

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Tuesday, August 4, 2015

9:00–9:20 AM

**Opportunities for Modification of Tissue-specific Anthocyanin Accumulation in Solanaceous Crops**

\*John R. Stommel

8:00–10:00 AM

Borgne

**Early Career Competition**

Coordinator: John Dole, john\_dole@ncsu.edu

The Early Career Competition has been developed for new faculty and professionals to share their discoveries and creative work to a peer audience. This opportunity is available to postdocs, early career faculty (untentured, non-tenure track, or within the first five years of service at their current position), and industry and governmental professionals (within the first 5 years of service at their current position) to communicate the impact of their extension, research, teaching, and other scholarly activities. The top four papers submitted to the competition will be presented. The top presenter will receive recognition and publication fee waivers for the ASHS journal that best fits the audience for their work. The purpose of this competition is to provide a platform for new scholars to advance their work, and to help facilitate peer-reviewed extension, teaching, or research from a wide range of horticultural professionals.

8:00–10:00 AM

Poydras

**International Division Advisory Council Meeting**

Esmail (Essie) Fallahi, Chair;

All Working Group Chairs and Chairs-elect, International Division

8:00–10:00 AM

Estherwood

**Root and Bulb Vegetable Crop Germplasm Committee (RBV-CGC) Meeting**

Chris Cramer, Chair

8:00 AM–12:00 PM

Waterbury

**Horticultural Commodity Judging Contest and Plant Identification Contest Set-up**

8:15–10:00 AM

Bayside C

**Oral Session—Viticulture and Small Fruits 1**

Moderator: Andrew Ristvey, aristvey@umd.edu

8:15–8:30 AM

**An Initial Estimation of Chill Requirement in the Dormancy Release of the Deciduous Specialty Fruit Crop Aronia**

\*Andrew Ristvey

8:30–8:45 AM

**Evaluation of Strawberry Cultivars in Virginia**

\*Jayesh Samtani, Roy Flanagan III, Charles Johnson, Stephanie Romelczyk, Mikel Conway, Watson Lawrence, Jeremy Pattison

8:45–9:00 AM

**Survey of Turkish Strawberry Production Areas for Soil-borne Fungal Diseases**

Mehmet Naci Bildik, Cigdem Ulubas Serce, Sibel Dervis, Sahimerdan Turkolmez, Osman Ciftci, \*Sedat Serce

9:00–9:15 AM

**Understanding the Distribution Damage of Chitosan-coated Strawberry (cv. Monterey) Packed in Corrugated Container Caused by Location on Pallet**

Mehmet Seckin Aday, \*Shehbaz Singh, Koushik Saha, Jay Singh

9:15–9:30 AM

**Sustainable Soil Management Practices Interactions with Fumigation Strategy in Southeast Strawberry Production**

\*Amanda McWhirt, Michelle Schroeder-Moreno, Yasmin Cardoza, Gina Elizabeth Fernandez, Hannah Burrack

9:30–9:45 AM

**Improving Fumigation Efficiency by Increasing Drip-tape Number and Using Low-permeability Film in Raised-bed Production Systems**

\*Ruijun Qin, Oleg Daugovish, Suduan Gao, Brad Hanson

9:45–10:00 AM

**Anaerobic Soil Disinfestation (ASD): A Biological Strategy for Control of Soil-borne Diseases in Strawberry Production**

\*Carol Shennan, Joji Muramoto, Mark Mazzola

8:30–10:00 AM

Nottoway

**Oral Session—Pomology 1**

Moderator: Gregory Michael Peck, gmpeck@vt.edu

8:30–8:45 AM

**Evaluating the Pollen Tube Growth Characteristics of Different Crabapple Cultivars**

\*Candace DeLong, Keith Yoder, Leon Combs, Gregory Michael Peck

8:45–9:00 AM

**Apple Pollen Tube Growth and Spur Leaf Injury in Response to Thermal Shock Temperature and Duration**

\*Thomas M. Kon, James R. Schupp

9:00–9:15 AM

**Developing a Sustainable Strategy for Pollination in Tree Fruit**

\*Probir Das, Matthew Whiting

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

9:15–9:30 AM

**Evaluation of a Media for Artificial Pollination of Tree Fruit**

\*Probir Das, Nathan Brugnone, Matthew Whiting

9:30–9:45 AM

**Precision Chemical Thinning—A Useful and Practical Guide for Apple Growers**

Terence Lee Robinson, \*Poliana Francescato, Leo Dominguez, Jaime Lordan, Mario Miranda Sazo

9:45–10:00 AM

**Validating the Use of the MaluSim Carbohydrate Model for Apple Fruit Thinning**

\*Gregory Michael Peck

9:00–10:00 AM

Oak Alley

**Oral Session—Ornamentals/Landscape and Turf 1**

Moderator: Elizabeth Barton, lizbarton@gmail.com

9:00–9:15 AM

**Effects of Paclobutrazol on the Physiology, Growth, and Biomass Allocation of Three *Fraxinus* Species**

\*Sara R. Tanis, Deborah G. McCullough, Bert Cregg

9:15–9:30 AM

**A Comparison of Organic Matter Amendments for Use in Extensive Green Roof Substrates**

\*Elizabeth Barton

9:30–9:45 AM

**Irrigation Effects on Growth, Stress, Visual Quality, and Evapotranspiration of Ornamental Grasses**

\*Samuel Hagopian, James E. Klett

9:45–10:00 AM

**Graywater as an Alternative Irrigation Water Source for the Green Industries**

\*Raul I. Cabrera, Genhua Niu, James Altland, Youping Sun

9:00 AM–2:00 PM

Napoleon Expo Hall

**Exhibits Open**

9:00 AM–5:00 PM

Napoleon Expo Hall

**Poster Hall Open**

9:00 AM–5:00 PM

Napoleon Expo Hall

**Career Center**

Visit the ASHS Career Center for information on job, career and internship openings. Also, meet with industry, public garden, and university

professionals to get their insight on a variety of career paths. Tutorials on how to network utilizing the ASHS Membership Interface for advancing your career search and professional profile will also be given. Specific career sessions will be posted in the center each day.

9:30–10:00 AM

Bayside A

**Plant Biotechnology (BTCH) Working Group Business Meeting**

Objectives: To communicate research ideas, techniques, and progress on the emerging techniques in micropropagation, cell selection, protoplast culture, embryo culture, haploidy, gene transfer, and molecular biology as they relate to horticultural crop improvement; and to encourage collaboration among researchers in the fields of plant genetics, germplasm and breeding, stress physiology, tissue culture, growth regulator research, and plant growth and development on problems of concern in improvement and propagation of horticultural crops.

Jiang Lu, Chair; Manjul Dutt, Secretary

10:00 AM–12:00 PM

Rhythms

**ASHS Opening Plenary Session and William A. (“Tex”) Frazier Lecture**

Topic: Partnerships for Progress



Steven R. Shafer  
USDA-ARS

Dr. Shafer has devoted his entire professional career to public service in the United States Department of Agriculture (USDA). Effective May 2014, he serves as Associate Administrator for National Programs in the Agricultural Research Service (ARS). In this position, he is the senior leader and manager for planning, prioritizing, and budgeting ARS' comprehensive agricultural research programs. Prior to this appointment, he was Director of the Beltsville Agricultural Research Center (2012–14), USDA's largest research installation, which is located just outside Washington, D.C. He served as Deputy Administrator for Natural Resources and Sustainable Agricultural Systems in the ARS Office of National Programs (2008–12), with concurrent appointment as Senior Advisor for Climate Science in the Office of the Chief Scientist, USDA (2009–10). He was the ARS Midwest Area Director (2006–08), following his appointment as the Midwest Area's Associate Director (2005–06), with senior management responsibilities for all ARS research in eight states. He was the ARS National Program Leader for Global Change research (2000–05); Deputy Director for Environment and Plant Health in the USDA Office of Risk Assessment and Cost-Benefit Analysis (1998–2000); and a plant pest risk analyst in the Animal and

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Plant Health Inspection Service (1997–98). During 1983–97, he was a Research Plant Pathologist in ARS' Air Quality-Plant Growth and Development Research Unit at Raleigh, NC, with concurrent faculty appointment in the Plant Pathology and Soil Science departments at North Carolina State University. His research focused on interactions of air quality with plants, pathogenic and beneficial microorganisms, and soils. Dr. Shafer received the Senior Executive Service Meritorious Presidential Rank Award in 2011 and the USDA Secretary's Honor Award in 2012. He received B. Agr. and MS degrees from The Ohio State University and a PhD from North Carolina State University, all in plant pathology. He is a native of Marion, Ohio.

### About the Tex Frazier Lecture Series

The Tex Frazier Lecture series was named in honor of William A. ("Tex") Frazier, an eminent member of the faculty at Oregon State University. The intent of the lecture series is: "to foster and promote reciprocal liaisons between ASHS and other professional groups; to recognize distinguished scholars and to bring their point of view to ASHS members; and to encourage the development of a holistic philosophy within the horticultural science profession so that ASHS members and students can enjoy the benefits of a broader perspective provided by an understanding of the interrelationship of seemingly diverse disciplines."

10:00 AM–12:00 PM

Estherwood

### Leafy Vegetable Crop Germplasm Committee Meeting

Beiquan Mou, Chair

10:00 AM–12:30 PM

Canal Street Entrance

### Walking Tour of the French Quarter

Price: \$ 35 per person.

Leaves hotel promptly at: 10:00 AM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

New Orleans is known around the world for its signature food, its resilient spirit and, of course, its rich history, a history that has been impacted by many famous authors. Currently, the state of Louisiana boasts seven Literary Landmarks, all of which are located in New Orleans. Only two other cities in the country can boast as many Literary Landmarks: New York, New York, and Key West, Florida. To highlight this rich literary history, this tour offers an exclusive Literary History French Quarter Walking Tour, which includes all seven of these historic landmarks.

Led by local historians and writers, this two and a half hour tour begins and ends in the famous Carousel Bar at the Hotel Monteleone, one of only three Literary Landmarks in the country that is a hotel. The tour divulges the literary history of the hotel and its famous literary patrons including Eudora Welty, Tennessee Williams, William Faulkner, and Ernest Hemingway, among others. You will learn about the lives of Truman Capote, William Faulkner, Tennessee Williams, and Kate Chopin, all of whom resided in the French Quarter—but only one of whom was born in New Orleans!

Leaving the Hotel Monteleone, the walking portion of the tour begins on Royal St. and meanders through the French Quarter, connecting the rich literary culture of New Orleans with historic landmarks and

residences. Highlights on the walking tour include Exchange Alley, the Pontalba Apartments, Madame John's Legacy, the Old Ursuline Convent, the Beaugard-Keyes House, the Lalaurie Mansion, and the homes of William Faulkner and Tennessee Williams. This tour is a wonderful opportunity to gain a better understanding of the French Quarter's rich history as it relates to various authors who are icons of the modern literary world.

10:00 AM–5:00 PM

4th Floor Foyer

### Special Event: 2nd Annual Silent Auction—Sponsored by the Herbs, Spices and Medicinal Plants Working Group

Coordinator: Hideka Kobayashi

Objectives: To raise funds to support Herbs, Spices and Medicinal Plants (HSMP) Working Group's Workshop and related activities. The bidding will begin at 10:00 am on August 4, 2015 for all Silent Auction items. To bid on an item, you MUST fill in your FULL NAME as well as your bidding DOLLAR AMOUNT. Successful bidders must meet or exceed the minimum value stated at the top of the bid sheet. They must also increase by the minimum stated raise level. Silent auction closes at 4:00 pm on August 5. All items will be sold to the highest bidder who bids correctly. The closing bid will be determined by an auction official and it will then be declared the winning bid. The winning bidder must be present with a payment. If the winner is not present, the next highest bidder will be declared as the winner for the auction item. Payment in check must be payable to ASHS. The HSMP would like to acknowledge the generosity and thoughtfulness of the following donors: Millipore, AmericanHort, American Takii, Daylily World, Proven Winner, and Spectrum Technologies.

12:00–1:00 PM

Estherwood

### Computer Applications in Horticulture (COMP) Working Group Business Meeting

Objectives: This Working Group studies the application of computers in research, extension, and horticulture teaching.

Arthur Q. Villordon, Chair; Guihong Bi, Chair-elect;  
Arturo Duarte Sierra, Secretary

12:00–1:00 PM

Poydras

### Seed and Stand Establishment (SSEST) Working Group Business Meeting

Objectives: To bring together those interested in seed technology, seed storage, seed production, seed physiology, seed pathology, plant breeding, and all other phases of research, education, or extension related to horticultural seeds and seed quality, to discuss problems, new methods, technologies, and other aspects related to these areas, and to promote a strong union of public- and private-sector workers interested in seeds and seed crops. To promote activities related to the establishment of a uniform and vigorous crop from seed, transplant material, or vegetative propagules, with emphasis on seed treatments, soil amendments,

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transplanting techniques, and other practices that might lead to stand enhancement in the field or greenhouse.

Michael Olszewski, Chair; Ajay Nair, Chair-elect

12:00–1:45 PM

Nottoway

### Oral Session—Undergraduate Student Oral Competition

Moderator: Katherine Warpeha, kwarpeha@uic.edu

12:00–12:15 PM

**Effect of Nutrient Application Rate on Plant Growth Indices and Biomass of Fennel (*Foeniculum vulgare* cv. Grosfruchtiger) Produced Within a Protected Agricultural Greenhouse System**

Brian Pearson, \*Richard Smith, Jianjun Chen, Amanda Morgan

12:15–12:30 PM

**Analysis of Genetic and Nutritional Diversity Among Selected Accessions of Dry Beans and Nuña Beans (*Phaseolus vulgaris* L.) from the USDA–ARS National Plant Germplasm System**

Theodore J. Kisha, Giuliana Naratto, \*Karolina Kodin

12:30–12:45 PM

**Physical and Chemical Effects of Mulch on Weed Seed Germination**

\*Zachary P.W. Chauvin, Edward W. Bush

12:45–1:00 PM

**Capitalizing on the Benefits of Berries as a Treatment for Cancer**

\*Rhiannon Morrissey, Heather Axen, Songhua Zhang, Steven Moss, J.D. Swanson

1:00–1:15 PM

**Variability of Storage Root Yield, Size, and Shape of Sweetpotato Mericlones**

\*Rion Mooneyham

1:15–1:30 PM

**Within-week Turning Frequency May Not Strongly Impact In-vessel Food Waste Composting**

\*Paige Elizabeth Boyle

1:30–1:45 PM

**Evaluation of an Aquaponics System**

\*Cody Handlin, Tim Pannkuk, Robert Lane, Sharon Frey

12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Bioenergy

**(154) Advanced Breeding, Development, and Release of High Biomass-energy Cane Cultivars in Florida**

\*Vanessa S. Gordon

**(155) Development of SSR Markers in Oilseed Crop *Camelina sativa***

Seo-Hee Choi, Shipra Kumari, Nuri Park, Hye-Jeong Ha, \*Geung-Joo Lee

**(156) Planting Method Affects Stalk Size in Sweet Sorghum**

Valerie H. Teetor, Carl Schmalzel, \*Dennis T. Ray

**(157) Glucosinolate Production of Ethiopian Mustard and Interaction with Soil Environments**

\*Theodor Stansly

12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Consumer Horticulture and Master Gardeners

**(140) Funding Kansas Community Gardens: Lessons From a Mini-grant Project**

\*Cheryl R. Boyer, Evelyn Neier, Cary L. Rivard, Frannie Miller, Charles Marr

**(141) Identifying Master Gardener Training Priorities for Volunteering with Youth**

\*Alison Leathers, Thomas Broyles

**(142) Iowa Master Gardeners' Preferred Continuing Education Topics and Delivery Methods**

\*Bryn Takle, Cynthia L. Haynes, Denny Schrock

**(143) What Motivates Iowa Master Gardeners?**

\*Bryn Takle, Cynthia L. Haynes, Denny Schrock

**(144) County Master Gardener Coordinator Perceptions and Utilization of Training Resources**

\*Bryn Takle, Denny Schrock, Cynthia L. Haynes

**(145) MG SPROUTS: Project-in-a-Box Approach to Youth Gardening without a Garden**

\*Sheri Dorn, Krissy Slagle

12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Crop Physiology

**(170) Plant Growth Regulator and Temperature Affect *Echeveria* and *Andromischus* Leaf Cutting Rooting and Axillary Shoot Formation**

\*John Erwin, Esther Gesick, Ken Altman, Renee O'Connell

**(171) Development of Pistachios with Saline Irrigation Water and Regional Salt Tolerance in Pistachio Production Fields**

Blake Sanden, \*Louise Ferguson, Craig E. Kallsen

**(172) Embryo Abortion in *Pistacia vera* 'Pete I'**

Cara Allan, Gureet Brar, \*Louise Ferguson

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

**(173) Modelling Fruitlet Growth of *Pistacia vera* as a Function of Temperature**

Cara Allan, Gaetan Bourgeois, \*Louise Ferguson

**(174) Adaptability and Functionality of Peruvian Origin of Quinoa (*Chenopodium quinoa* Willd.) in South Korea**

\*Su-Young Hong, Kwang Soo Cho, Su-Jeong Kim, Jung-hwan Nam, Hwang-bae Shon, Jong-teak Suh, Yul-Ho Kim, Ki-beom Kwon, Jin-cheol Jeong

**(175) Clove Seed Sprouting and Bulb Growth in Garlic (*Allium sativum* L.) in Response to Varying Temperature**

SoonJa Oh, Kyung Hwan Moon, Eun Young Song, \*In-Chang Son, Seung Hwan Wi, Seok Chan Koh

12:15–1:00 PM

Napoleon Expo Hall

**Graduate Student Poster Competition (Session 1)**

Please see the full schedule of competition papers and times starting on p. 18.

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Growth Chambers and Controlled Environments 1**

**(189) Designing Light Regimens to Modify Plant Quality—A Case Study in Basil (*Ocimum basilicum*)**

\*Michael L. Schwieterman, Sofia Carvalho, Thomas A. Colquhoun, Kevin M. Folta

**(190) Greenhouse Production of Basil: Effects of Hydroponic Systems and Cultivar Selection**

\*Kellie J. Walters, Christopher J. Currey

**(191) Effect of Different Electrical Conductivities and pH on Growth and Biomass Accumulation of Dandelion (*Taraxacum officinale*) Grown in Nutrient Film and Deep Flow Hydroponic Systems**

\*Reetinder Gill, Michael Evans

**(192) Light Quality Impacts on Growth, Morphology, and Flowering of Grafted Tomato Seedlings**

Eric Cook, \*Meriam G. Karlsson

**(193) Quantifying Growth Responses of High-value Ornamental Seedlings to Red and Far-red Light**

\*Yujin Park, Erik S. Runkle

**(194) Analysis of Arabidopsis Light-sensitive Mutants Grown under Different Ratios of LED and Compared to Florescent Lighting**

Susan Bush, Julin Maloof, \*Melanie Yelton

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Postharvest 1**

**(098) Effectiveness of Banana Starch as an Edible Coating on the Quality and Shelf Life of ‘Ataulfo’ Mango**

Francisco Radillo-Juárez, \*Jaime Molina-Ochoa, Rosendo Balois-Morales, Evelia Camorlinga-Vargas, John E. Foster

**(099) Maturation Date and Postharvest Fruit and Juice Parameters of Pomegranate (*Punica granatum*) Accessions from the USDA–ARS National Clonal Germplasm Repository**

\*John M. Chater, John E. Preece

**(100) Aromatic Impact of Fresh Blackberries Identified by a Descriptive Sensory Panel**

Renee Threlfall, Olivia Hines, \*Daniela M. Segantini, John R. Clark

**(101) Planting Densities Affect Nitrate Concentration in Spinach (*Spinacia oleracea* L.) Cultivated in Root Floating Hydroponic System**

\*Antonio Lizana, D. Palma, M.L. Tapia, V.H. Escalona, L. Antonio Lizana

**(102) Physiology of Postharvest Needle Abscission as Influenced by Mechanical Stress**

\*Ernest A. Korankye, Rajasekaran Lada, Samuel K. Asiedu, Claude Caldwell

**(103) Effect of Xylem-fed Maple Sap on Balsam Fir Needle Abscission and Water Loss in Spring and Autumn**

Mason T. MacDonald, \*Rajasekaran Lada, Rachel R. West

**(104) Weather Conditions during Specific Apple Phenological Stages Influence Fruit Quality at Harvest and in Storage**

\*Gaetan Bourgeois, Jennifer R. DeEll, Maude Lachapelle, Dominique Plouffe, Marie-Pier Ricard

**(105) Optimizing Preharvest Calcium Application Frequency, Timing, Rate, and Sources to Increase Tissue Calcium Content and Shipping Quality of Sweet Cherry**

\*Yan Wang, Xingbin Xie, Todd Einhorn, Lynn Long

**(106) Preharvest AVG Applications Improve Storability of Summer Pears Depending on Application Rate, Timing, and Harvest Maturity**

\*Yan Wang, Xingbin Xie, Todd Einhorn

**(107) Differences in 1-Methylcyclopropene Sorption Processes in Fresh-cut Apple, Tomato, and Avocado Fruits**

Xiaoqing Dong, \*Donald J. Huber, Jingping Rao

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**(108) Visual Assessment of Gas-exchange Sites in Harvested Tomato Fruit**

\*Sonya Leonore Stahl, Donald J. Huber, Jerry A. Bartz, James H. Lee Jr.

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Root Growth & Rhizosphere Dynamics**

**(220) Characterization of Root Systems in Tomato and Tomato Rootstocks Through the Use of Mini-Horhizotron Technology**

\*David Suchoff, Christopher Gunter, Jonathan R. Schultheis, Brian E. Jackson, Frank Louws, Richard L. Hassell

**(221) Evolution and Potential of the Mini-Horhizotron as an Apparatus for Teaching and Research Investigations in the Plant Sciences**

\*Brian E. Jackson, William C. Fonteno

**(222) Using the Rhizometer and Root Analyzing Software to Measure Root Growth of Seedlings**

\*Lesley A. Judd, Brian E. Jackson, William C. Fonteno

**(223) Towards a Better Irrigation Management in Soilless Culture by Considering the Influence of Root Development on the Evolution of Hydraulic Properties of Substrates**

\*Jean-Charles Michel, Eric Kerloch, Brian E. Jackson, William C. Fonteno

**(224) Demonstration for Non-destructive Root Growth Measurement at Hydroponic Culture by Using a Root Imager**

\*Takashi Ikeda, Itsuki Sasaki, Akiyoshi Ota

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Tropical Horticultural Crops**

**(294) Yield and Quality of Leafy Vegetables Grown in Soilless Culture: A Comparison of Hydroponics and Aquaponics Culture Systems**

\*John Jifon

**(295) Performance of Organically Grown Mango Cultivars in a Rainy Tropical Region**

Francisca Vidal, \*J. Pablo Morales-Payan

**(296) Cultivar Trial of Olives (*Olea europaea*) in Hawaii**

\*Susan C. Miyasaka, Randall Hamasaki

**(297) Effects of Seed Piece Size and Cost on Yield and Economics of “Green” Ginger Production in Temperate-climate High Tunnels**

\*Charles L. Rohwer, Vincent A. Fritz

**(298) Yield and Fruit Quality Traits of Atemoya Cultivars Grown in Puerto Rico**

\*Ricardo Goenaga, David Jenkins

**(299) Effects of Biostimulants and Fertilizers on Specialty Bell Pepper**

\*Pedro E. Cruz-Carballo, J. Pablo Morales-Payan, Feiko Ferwerda, Dania Rivera-Ocasio

12:15–1:00 PM—Napoleon Expo Hall

**Poster Session—Viticulture and Small Fruits 1**

**(336) Cultivar Evaluations for Organic Strawberry Production in High Tunnels**

\*Sanjun Gu, John Evan Beck, Joseph Aaron Moore, Wenjing Guan

**(337) Impacts of Biofumigation and Anaerobic Soil Disinfestation on Strawberry Plant Nutrition and Fruit Quality**

\*Jennifer Wheeler, Dennis E. Deyton, David Butler, Frank Louws, Carl E. Sams

**(338) Evaluation of Chilling Injury to Strawberry Plants Following Application of an Organic Fungicide**

\*Diana Cochran, Richard L. Harkess, Patricia Knight, Eugene K. Blythe, Maria Tomaso-Peterson, Charles Gilliam

**(339) The National Strawberry Sustainability Initiative Phase II: A Public–Private Partnership Moving Technology from Demonstration to Practice**

\*Curt R. Rom, Heather Friedrich, Luke Freeman, Ron Rainey, Jennie Popp

**(340) Soilborne Pathogen and Nematode Management through Removal of Root Inoculum in Continuous Red Raspberry Systems**

\*Lisa Wasko DeVetter, Inga Zasada, Jerry Weiland, Rachel Rudolph, Sean Watkinson, Tom Walters

**(341) Blackberry Cultivar Evaluation Both in High Tunnel and Field in Northern New Mexico**

Shengrui Yao, \*Robert Heyduck, Steve Guldán

**(342) Yield Performance and Cold Hardiness of Advanced Thorny and Thornless Primocane-fruiting Blackberry Selections at Kentucky State University**

\*Jeremiah Lowe, Kirk William Pomper, Sheri B. Crabtree, John R. Clark, John G. Strang

1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Floriculture 1**

**(352) Engineering Pine Wood Chip Aggregates for Greenhouse Substrates**

\*Brian E. Jackson, William C. Fonteno

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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**(353) Postharvest Handling Methods for Fresh-cut Peonies**

\*Patricia S. Holloway, Ruth Osborne, Mackenzie Stamey, Melissa Pietila, Kathryn Mihalcz

**(354) Morphological Characteristics and Its Related Gene Expression in Cut Roses with Bent Peduncle Phenomenon**

\*Wan Soon Kim, Je Yeon Yeon, O Hyeon Kwon

**(355) Evaluating Light-emitting Diodes for Use in Supplemental Greenhouse Lighting for Seedling Plug Production**

\*Brian Poel, Erik S. Runkle

**(356) The Effect of Salinity on the Growth and Nutrient Status of Zinnia Grown under Regulated Deficit Irrigation**

Kranti Macherla, \*Richard McAvoy

**(357) Screening of Ornamental Sweetpotato (*Ipomoea batatas*) Cultivars for Intumescence Development**

\*Chad T. Miller, Joshua K. Craver, Myrna Gabriela Cruz, Kimberly A. Williams

**(358) Effects of Different Irrigation Strategies on the Evolution of Peat Hydraulic Properties during Cultivation**

\*Jean-Charles Michel, Eric Kerloch, Brian E. Jackson, William C. Fonteno

**(359) Utilizing the Mini-Horhizotron as a Tool for Assessing Plant Root Disease Severity in Floriculture Crops**

\*Laura Kaderabek, Brian E. Jackson, William C. Fonteno

**(360) Vase Life Evaluation of Field-grown *Lilium* Hybrids under Shade Cloth**

\*Michael Maurer, Miao Wang

**(361) Testing the Utility of Intergenic Spacer Regions to Identify Distinct *Plumeria* Taxa**

\*Kauahi Perez

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Fruit Breeding 1**

**(023) Development of the Simple Sequence Repeat Marker PruG4RS for the Differentiation of Cherry Rootstocks**

\*Kristen Andersen, Audrey Sebolt, Travis Stegmeir, Amy F. Iezzoni

**(024) Resistance of New Sweet Cherry Cultivars to Fruit Pitting**

\*Cheryl R. Hampson, Darrell-Lee McKenzie, Linda Herbert, Peter M.A. Toivonen

**(025) Genetic Analyses of Root-knot Nematode (*Meloidogyne floridensis*) Resistance in ‘Flordaguard’ Peach Rootstock**

\*Mary Ann Maquilan, Mercy A. Olmstead, José X. Chaparro

**(026) Smooth Delight and Smooth Zest Nectarines: Four New Low-chill Stone Fruit Cultivars**

David H. Byrne, Natalie Anderson, \*Zainab Mansur

**(027) Zest Peaches and Smooth Texan Nectarines: New Medium Chill Stone Fruit Cultivars**

David H. Byrne, Natalie Anderson, \*Zainab Mansur

**(028) Progress in the Development of Moderate-chill Peach Cultivars for the Southeastern United States**

\*Thomas G. Beckman, Jose Chaparro, Patrick J. Conner

**(029) Fruit Biochemical Content of Wild *Aronia* Germplasm**

\*Mark H. Brand, Bryan A. Connolly, Lanfang H. Levine

**(030) YouTube Videos Provide Expansion of Information of Fruit Cultivars**

\*John R. Clark, Fred Miller, Andrew Jecmen

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Genetics & Germplasm 1**

**(001) International Cultivar Registration for Ornamental Crabapple**

\*Ling Guo, Shiwei Zhao

**(002) Evaluation of Tomato (*Lycopersicon esculentum*) Genotypes for Agronomic Traits and Fruit Yield and Quality under Irrigation in the Northwestern Coast of Michoacán, Mexico**

\*Jaime Molina-Ochoa, Francisco Radillo-Juárez, Salvador Valle-Ponce, John E. Foster

**(003) Effectiveness of Molecular Markers for Detecting the Non-astringent Trait of Chinese Persimmon and a Trial to Identify the Gene Conferring Chinese PCNA Trait in ‘Luo Tian Tian Shi’**

\*Keizo Yonemori, Soichiro Nishiyama, Hisayo Yamane, Akihiko Sato

**(004) Horticultural Traits Associated with Cacao Accessions Recommended for Puerto Rico**

\*Brian Irish, Ricardo Goenaga

**(005) Collection and Evaluation of Breadfruit in Puerto Rico**

\*J. Pablo Morales-Payan

**(006) Fruit Quality and Nutrient Dynamics during Fruit Maturation of Jujube (*Ziziphus jujuba* Mill.) in New Mexico**

\*Junxin Huang, Robert Heyduck, Dawn VanLeeuwen,

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Richard D. Richins, Mary O'Connell, F. Omar Holguin,  
Shengrui Yao

**(007) Comparison of Three Genotyping by Sequencing Pipelines for Variant Identification and Linkage Mapping in the Cultivated Octoploid Strawberry**

Natalia Salinas, Jacob Tennessen, Kelly J. Vining, Aaron Liston, Eric van de Weg, Dan Sargent, Chad E. Finn, Eric Jackson, Jessica Schlueter, Shannon Schlueter, \*Nahla Bassil

**(008) Developing Black Raspberry Genetic and Genomic Resources**

\*Jill M. Bushakra, Douglas W. Bryant, Michael Dossett, Kelly J. Vining, Robert VanBuren, Barbara S. Gilmore, Sergei Filichkin, Jerry Weiland, Mary Peterson, Christine M. Bradish, Gina Elizabeth Fernandez, Kim S. Lewers, Julie Graham, Jungmin Lee, Todd Mockler, Nahla Bassil, Chad E. Finn

**(009) Morphological Characterization in Germplasm of *Genipa americana* L.**

\*Marina Ferreira Vitoria, Ana Veruska Cruz da Silva, Ana S. Ledo, Isis Bacelar Araujo, Ana Leticia Sirqueira Nascimento, Valter Ferreira Rocha Sr., Jessica Monalisa Santos Pereira Oliveira

**(010) Genetic Diversity of Persian Walnut Revealed by a Set of Microsatellite Markers in Indiana**

\*Aziz Ebrahimi, James McKenna, Keith Woeste, Charles Michler

**(011) Microsatellite Development and Characterization in Hazelnut**

\*Gehendra Bhattarai, Shawn A. Mehlenbacher

**(012) Detection of QTLs for Yield in Globe Artichoke**

\*Eugenia Martin, Daniel I. Leskovar, V.P. Cravero, A. Zayas, E.L. Cointry

1:00–1:45 PM

Napoleon Expo Hall

**Graduate Student Poster Competition (Session 2)**

Please see the full schedule of competition papers and times starting on p. 18.

1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Herbs, Spices, & Medicinal Plants**

**(300) Black Cohosh and Goldenseal Field Establishment in a Marginal Woodland**

\*Guochen Yang, Sanjun Gu, Zhongge (Cindy) Lu, John Evan Beck

**(301) Influence of Biochar Amendments on Green Roof Media Physical Characteristics and on the Growth of Basil and Peppermint**

\*Michael Olszewski, Sasha Eisenman

**(302) Mulching, Closer Spacing, and Double Harvesting Increased Stevia Biomass Yield in Western North Carolina**

\*Jeanine Marie Davis, Luping Qu, Kelly Gaskill

**(303) Hawaii Farmers Find a Niche Market in Exporting Ginger Seed**

\*Sharon Motomura, Susan C. Miyasaka, Linda Cox

**(304) Identification of Biological Effective Constituents from the *Potentilla supina***

\*Jung-Hwan Nam Sr., Jong-Taek Seo, Yul-Ho Kim, Ki-Deog Kim, Jong-Nam Lee, Su-Young Hong, Su-Jeong Kim, Hwang-Bae Sohn, Hee-Jhun Park, Kyung-Tea Lee

**(305) Winter Greenhouse Production of Basil (*Ocimum* spp.) for Essential Oils**

\*Ellen Pappozzi, Allison Butterfield, Wan Wei, M. Elizabeth Conley

**(306) Performance of Three Fennel (*Foeniculum vulgare*) Cultivars Produced in a Protected Agricultural Greenhouse System**

Brian Pearson, \*Amanda Morgan, Jianjun Chen, Richard Smith

**(307) Wyoming Fresh Herb Production**

\*Casey Seals, Karen Panter

1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Produce Quality, Safety, and Health Properties 1**

**(083) Comparison of Free Citrulline and Arginine in Watermelon Seeds and Flesh**

\*Penelope Perkins-Veazie, Guoying Ma, Lisa Dean, Richard L. Hassell

**(084) Combinations of Rootstocks and Scions to Increase the Fruit Quality in Watermelon**

\*Felipe Alejandro García López, Diego Raymundo González Eguarte Sr., Ramón Rodríguez Macías Sr., Mario Alberto Ruiz López Sr., Patricia Zarazúa Villaseñor

**(085) Strawberry Cultivar and Tissue Chemotypes**

\*Ashlyn Wedde

**(086) Evaluation of Consumer Acceptance of West Coast versus East Coast-produced Broccoli through Sensory Analysis of Quality Rating Factors and Nutritionally Important Metabolites**

\*Carl E. Sams, Marjorie Penfield, Dean Kopsell, Miguel Gómex, Thomas Björkman, Mark W. Farnham

**(087) Effect of the Application of Edible Coatings on the Quality of Minimally Processed Mangoes (*Mangifera Indica* L.)**

Patricia Eugenia Romero-Cano, \*Jimena Esther Alba-Jiménez,

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Ma. Estela Vázquez-Barrios, Dulce María Rivera-Pastrana,  
Sofía María Arvizu-Medrano, Edmundo Mercado-Silva

**(088) Effectiveness of Acidic Electrolyzed Water in Reducing Microbial Load on Lettuce Produced in a High Tunnel**

\*Changzheng Wang, Lingyu Huang, Cecil Butler,  
Michael Bomford

**(089) Testing the Frying Performance of *Camellia oleifera* Oil**

\*Charles Allen, John M. Ruter, Ron Pegg

**(090) Analysis of Effect on Harmful Microorganism Death Rate According to Ultraviolet Irradiation and Sterilization Condition of Substrate for Cultivation of Oyster Mushroom**

\*Il Sun Baek, Yun Kyeoung Jeoung, Jeong Han Kim,  
Han Bum Lee, Jeong Hyun Chi

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Propagation 1**

**(176) Propagation of Several New England Shrubs by Softwood or Semi-hardwood Stem Cuttings**

\*Bryan J. Peterson, Gregory J.R. Melcher

**(177) The Effect of 6-Benzylaminopurine (BAP) on Bud-forcing of Twelve *Quercus* L. Species**

\*Andrea N. Brennan, Valerie Pence, Matthew D. Taylor,  
Brian W. Trader, Murphy Westwood

**(178) Propagation Methods and Distribution Potential of Eastern Hemlock, an Endangered Minnesota Conifer**

\*Emily Ellingson, Steven McNamara, Jim Bradeen,  
Stan C. Hokanson

**(179) Propagation of *Amelanchier spicata* by Softwood Stem Cuttings**

\*Gregory J.R. Melcher, Bryan J. Peterson

**(180) In Vitro Seed Germination and Rootstock Establishing for Micrografting of *Theobroma cacao* L.**

\*Maria Jenderek, Gregory Holman, Brian Irish,  
Fernanda V.D. Souza

**(181) In Vitro Comparison of Benzyladenine and Meta-Topolin on Shoot Proliferation of River Cane (*Arundinaria gigantea*), a Candidate for Wetlands Restoration**

\*Alex Rajewski, Cecilia McGregor, Donglin Zhang,  
Hazel Y. Wetzstein

**(182) Effect of Time of Fertilization and Electrical Conductivity of the Nutrient Solution on Transplantable Stage of Dandelion (*Taraxacum officinale*)**

\*Reetinder Gill, Michael Evans

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Teaching Methods 1**

**(265) Evaluation of a Collaborative Writing Project: Student Development of a Literature Review in Inter-institutional Teams**

\*Bruce Dunn, Kimberly A. Williams

**(266) Virtual Nursery Field Trip (VNFT) Use by Horticulture Instructors in Nursery Production and Related Courses**

\*Amy N. Wright, Mengmeng Gu, James A. Robbins

**(267) Characterizing Student Use of Virtual Plant Maps as a Study Tool in Plant Identification Courses**

\*Matthew S. Wilson, Chad T. Miller

**(268) The Global Resource Systems Major at Iowa State University**

\*Kevin Duerfeldt, Gail Romberger Nonnecke, John MacDonald,  
Dorothy Masinde, Elizabeth Sukup, David Acker

**(269) Advancing Your Scholarly Teaching into the Scholarship of Teaching and Learning (SoTL)**

\*Ann Marie VanDerZanden, Cynthia L. Haynes, Sara Marcketti

**(270) Hawaiian Lei—A Floriculture Design Lab**

\*Richard A. Criley, Orville C. Baldos

**(271) Using a Pen Pal Program to Assess Student Learning in Science and Communications**

\*Samantha Green, Cynthia L. Haynes, Michael Retallick

**(272) Perceptions of the Audubon Cooperative Sanctuary Program: A Survey of Superintendents of United States University-affiliated Golf Courses**

Jacob Kuban, \*David Eliot Kopsell, Ann Marie VanDerZanden,  
Aslihan Spaulding

**(273) TPSS 300—Evolving to Become a Flipped Class/ BYOD Course**

\*Kent D. Kobayashi

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1:00–2:00 PM

Estherwood

**Horticultural Landmarks Selection Committee Meeting**

Martin Stone, Chair; Esmail (Essie) Fallahi, Richelle Stafne,  
Rose Ogutu, Mary Lu Arpaia

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1:00–2:00 PM

Bayside B

**Working Group of Asian Horticulture (WGAH) Business Meeting**

Objectives: To promote dialogue and information and germplasm exchanges between horticulturists residing in America and Asia and

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to assist them in developing horticultural education, research, and extension programs to better preserve and utilize their rich horticultural resources.

Hye-Ji Kim, Chair; Shengrui Yao, Chair-elect; Kedong Da, Secretary

1:45–3:00 PM

Oak Alley

### Oral Session—Nursery Crops

Moderator: Yan Chen, [yachen@agcenter.lsu.edu](mailto:yachen@agcenter.lsu.edu)

1:45–2:00 PM

#### Carbon Footprint and Costs of Pot-in-Pot Production System Components Using Life Cycle Assessment

\*Dewayne L. Ingram, Charles R. Hall

2:00–2:15 PM

#### Rice Hull Ash as Substrate Amendment

\*Yan Chen, Allen D. Owings, Anthony Witcher

2:15–2:30 PM

#### Plant Growth and Nutrient Uptake of Encore Azalea in Response to Nitrogen Availability and Container Type

\*Tongyin Li, Guihong Bi, Richard L. Harkess

2:30–2:45 PM

#### National Survey of Ornamental Grower Practices

\*John Majsztrik, Charles R. Hall, Sarah A. White, Erik Lichtenberg

2:45–3:00 PM

#### Root Disease Incidence and Severity in Nursery Crops with Soil Moisture Sensor-based Automated Irrigation

\*William Wheeler, Matthew Chappell, Paul A. Thomas, Marc W. van Iersel, Jean Williams-Woodward

1:45–3:15 PM

Maurepas

—CEU Approved—

### Workshop Session—New Technologies for Managing Breeding Data

Sponsor: Ornamental Plant Breeding Working Group

Coordinator: Michele Scheiber, [mscheiber@novaflora.com](mailto:mscheiber@novaflora.com)

Objectives: To explore new technology available for acquisition and management of breeding related data.

Abstract: Managing plant breeding data is a cumbersome, labor intensive yet essential task for any breeding program. However, a variety of technologies and software are available to reduce labor inputs, increase efficiency and uniformity, and improve the ability to track trends. Workshop topics will include data management of pollination records, pedigrees, trial data, and multiple projects as well as the integration of technology. Several novel software programs will be discussed and demonstrated. In addition, tablets used in conjunction with Excel will be presented for capturing field data. Finally, innovative approaches for maximizing the potential of traditional spreadsheets will be presented.

1:45–2:00 PM

#### Field Notes: The Next Generation

\*Steve Todd

2:00–2:15 PM

#### ‘Excel’ing at Breeding Data Management

\*Michele Scheiber

2:15–2:30 PM

#### How Do I Transform More and More Data into Useful Breeding Information? Integrating Data Sources to a “Single Source of Truth” is Key for the New Generation of Breeding

\*Evert Keuken

2:30–2:45 PM

#### Trial Tracker Software

\*Scott Holmes

1:45–3:15 PM

Bayside A

### Workshop Session—Public Gardens and People: Overcoming Disasters

Sponsor: Public Horticulture Working Group

Coordinator: Carolyn W. Robinson, [cwrobinson@auburn.edu](mailto:cwrobinson@auburn.edu)

Objectives: To discuss catastrophes that public gardens sometimes face, how the event affects the garden and community, and what can we learn from these experiences.

Abstract: This workshop will focus on three gardens and how they have overcome different tragedies. Paul Soniat, Director of New Orleans Botanical Garden, will tell us about their destruction and triumphant rise after Hurricane Katrina. Sabina Carr, Vice President of Marketing at Atlanta Botanical Garden, will discuss a devastating construction accident and the process of moving forward. Finally, Andrew Pulte of the University of Tennessee (UT) will describe how The UT Gardens had to evolve after losing 19 large trees during the spring of 2011. There are many impacts to both the people and the gardens with disasters such as these, but they are also opportunities to learn and improve for the future.

1:45–2:15 PM

#### Destruction and Triumphant Rise of Public Gardens after Hurricane Katrina

\*Paul Soniat

2:15–2:45 PM

#### Moving Forward

\*Sabina Carr

2:45–3:15 PM

#### How Did the University of Tennessee Gardens Evolve?

\*Andrew Pulte

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1:45–3:15 PM

Borgne

—CEU Approved—

## Workshop Session—Therapeutic Methods for Emerging Diseases in Citrus and Other Horticultural Crops

Sponsor: Citrus Crops Working Group

Moderator/Coordinator: Tripti Vashisth, tripti.vashisth@gmail.com

Abstract: The purpose of this workshop is to review the therapeutic methods that are being employed for different emerging diseases in citrus and other horticultural crops. This workshop will encourage and facilitate the mutual exchange of ideas and information concerning the use of therapeutic methods for diseases in horticultural crops and how these approaches can be adopted in citrus. Currently, the citrus industry is threatened by a disease called “Huanglongbing, (HLB)”. HLB, also called citrus greening is one of the most destructive disease of citrus and one of the greatest limitations on production in every citrus producing region where it is present. HLB-infected trees often display multiple disease and mineral deficiency symptoms, poor fruit set, high fruit drop, low fruit quality, and low overall yields. At present there is no cure for this disease and therefore it poses a big threat to the entire citrus industry of America. It is anticipated that this workshop on use of different therapeutic approaches such as nanoparticles, RNAi, etc. will generate a discussion on how similar approaches can be employed in citrus to combat HLB and other diseases. The specific objectives of this workshop are: a) increase our knowledge about the therapeutic methods that are being or have been used for suppressing/curing diseases in horticultural crops; b) to have a better understanding about what type of therapeutic approaches are being used for diseases like citrus greening or canker; and c) how the approaches from other horticultural crops can be adopted for citrus.

1:45–2:00 PM

### An Overview of Citrus Production

\*Ed Stover

2:00–2:25 PM

### Exploration into Antibacterial Nano Compounds: Model Approaches Being Tested Against Bacterial Spot of Tomato Caused by *Xanthomonas* Species

\*Mathews Paret

2:25–2:50 PM

### Therapeutic Strategies for Combating Citrus Greening Disease

\*Robert Shatters Jr.

2:50–3:15 PM

### In-field Thermotherapy of HLB-infected Citrus Trees

Reza Ehsani, \*Tripti Vashisth

1:45–3:25 PM

Nottoway

—CEU Approved—

## Workshop Session—Basic and Applied Physiology Research on Selected Biostimulants for Horticultural Crops

Sponsor: Crop Physiology Working Group

Coordinator: J. Pablo Morales-Payan, morales.payan@upr.edu

Objectives: The workshop will focus on presenting published and new data on the effects of selected biostimulant groups (amino acids and peptides, alga extracts, humates and related substances) on the physiology and responses to abiotic and biotic stress, growth, yield, and quality of horticultural crops.

1:45–1:55 PM

### Introductory Remarks

1:55–2:15 PM

### Biostimulants from the Sea: Marine Plant Extracts and Their Impact on Plant Stress Resistance

\*Jeffrey Norrie

2:15–2:35 PM

### Soil Microbial Inoculants Impacts on Strawberry Plug Plant Growth and Development

\*Amanda McWhirt

2:35–2:55 PM

### Biostimulants Based on Amino Acids and Related Compounds

\*J. Pablo Morales-Payan

2:55–3:25 PM

### Demonstration of Equipment for Research on Biostimulant Responses

\*Eric Price

1:45–3:45 PM

Bayside C

—CEU Approved—

## Workshop Session—Online Learning and Big Data in Horticulture: New Insights and Directions

Sponsor: Computer Applications in Horticulture Working Group

Moderator: Zachary Brym, zack.brym@usu.edu

Coordinator: Arthur Q. Villordon, avillordon@agcenter.lsu.edu

Objectives: 1. To provide an overview of new computing tools and approaches for improving data management in horticulture. 2. To share practical experiences and insights in the development of an asynchronous online extension program.

Abstract: The rise of big data in research mirrors the increase in take up of online learning. Using computers to store, analyze, and present data has become the norm not only in horticultural research but

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also in teaching and extension. There are several online learning tools that are available, but very little attention has been paid to how well these courses actually support learners. The first part of this workshop aims to introduce valuable concepts and techniques in order to improve familiarity with advanced computing tools and increase efficiency of data management. The second part of the workshop describes the development, deployment, and evaluation of an synchronous online extension program for Tennessee nursery producers.

1:45–2:15 PM

**Developing an Asynchronous Online Extension Program for Tennessee Nursery Producers**

\*Amy Fulcher

2:15–2:45 PM

**Comparing an Asynchronous Online Extension Program and a Traditional Face-to-Face Program for Delivering Master Producer Content**

\*Amy Fulcher

2:45–3:15 PM

**An Introduction to Advanced Computing in Science**

\*Zachary Brym, Alexander Susko

2:00–3:00 PM

**Association of Collegiate Branches (ACB) Annual Business Meeting**

Presiding: Perla Aguilar, ACB President

Bayside B

2:00–3:00 PM

**Membership Committee Meeting**

Mark Uchanski, Chair; Carol Lovatt, Meredith Melendez, Thomas Molnar, Casey Seals, Raju Manchakkal Thupran, Yiqun Weng, Tim Rhodus, Claudia Melea Martin

Poydras

2:00–4:00 PM

**Industry Division Advisory Council Meeting**

Angela Davis Chair; Jeffrey Norrie, Vanessa Gordon, Jozsef Racsko, Nancy Roe, Sahap Kurtural, Holly Little, Neal E. De Vos, Peter Petracek, Craig Campbell, All Working Group Chairs and Chairs-elect, Industry Division

You are all invited to join this dynamic group discussion on how industry and ASHS can combine resources and expertise. Bring your ideas on how industry can help strengthen ASHS, and how ASHS can strengthen the voice of industry. Add the topic of building mutually-beneficial cooperation with academia, and you have a must-not-miss event. This meeting incorporates the Industry Division Working Group.

Estherwood

2:00–6:00 PM

—CEU Approved—

**Colloquia Session—Alternative Specialty Crops: Opportunities and Challenges**

Sponsors: Asian Horticulture, Tropical Horticulture, and Pomology Working Groups

Coordinators: Hye-Ji Kim, [hjikim@purdue.edu](mailto:hjikim@purdue.edu); Shengrui Yao, [yaos@nmsu.edu](mailto:yaos@nmsu.edu)

This colloquium will bring together researchers and specialists to address the importance of alternative specialty crops, introduce various types of alternative specialty crops and their consumption as fresh and/or processed fruits, share their cultural practices and marketing strategies, and discuss how to mitigate potential problems associated with the introduction of alternative specialty crops. The proposed colloquium will have two general objectives: 1) introduction to alternative specialty crops and 2) potentials and challenges.

2:00–2:05 PM

**Introduction to the Colloquium**

\*Hye-Ji Kim

2:05–2:30 PM

**An Overview of a Long-term Research with Alternative Fruits in the Intermountain West Region of the United States**

\*Esmail (Essie) Fallahi, Bahar Fallahi, Michael Kiester

2:30–2:55 PM

**Asian Pear: A Potential Alternative Fruit Crop for Growers in the Mid-Atlantic Region**

\*Christopher Walsh, Julia M. Harshman, Anna E. Wallis, Amy Barton Williams, Michael J. Newell, G.R. Welsh

2:55–3:20 PM

**Jujube, an Alternative Crop for the Southern and Southwestern United States**

\*Shengrui Yao

3:20–3:45 PM

**The Commercial Date Industry in the United States**

\*Glenn C. Wright

3:45–4:10 PM

**Potential of Greater Castanea Production in the United States**

\*Michael A. Schnelle, Jeanmarie Verchot

4:10–4:35 PM

**Woody Ornamental Plants with Edible Attributes**

\*Donglin Zhang, Jianmin Fu, De-yi Yuan

4:35–5:00 PM

**Asian Vegetable Crops: Production, Nutrition and Consumer Preference**

\*William J. Sciarappa

Rhythms

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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5:00–5:25 PM

**Growing and Analyzing International and Alternative Vegetables for Production, Marketing, and Medicinal Properties in Tennessee**

\*Arvazena Clardy, Sherry Crudup

5:25–5:55 PM

**Panel Discussion**

2:00–6:00 PM

Canal Street Entrance

**Garden District & Longue Vue Mansion & Garden Tour**

Price: \$80 per person.

Leaves hotel promptly at: 2:00 PM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

You will be picked up at the Sheraton Hotel at 2:00 PM. This tour includes a 90-minute narrated walking tour of the Garden District, then continues with driving Uptown, passing the Universities, riding along the 179-year-old Streetcar line & the St. Charles Avenue's grand colonial mansions. Next is the guided tour of Longue Vue Mansion and Gardens, an exquisite 8-acre grand city estate. You will return to the Sheraton Hotel by 6:00 PM.

3:00–4:00 PM

Poydras

**Fellows Screening Committee Meeting**

Bruce Schaffer, Chair; Tim Davis, Scott NeSmith, Mary M. Peet, James Flore, Duane Greene, Robert N. Trigiano, Mark Farnham, Michele Warmund

3:00–6:00 PM

Waterbury

**The Horticultural Commodity Judging Contest and Plant Identification Contest**

The Horticultural Commodity Judging Contest and Plant Identification Contest are held at each ASHS Annual Conference. Undergraduate students and ACB member clubs compete by rating the quality of horticultural commodities, identifying a large number of plants, many from out of their region, and by taking a general examination of horticultural knowledge.

3:00–6:00 PM

Waterbury

**The Horticultural Commodity Judging Plant Identification Written Examination**

3:15–3:45 PM

Borgne

**Citrus Crops (CITR) Working Group Business Meeting**

Objectives: To provide a forum for exchange of ideas between the various specialists in citrus research and citrus extension personnel.

Barrett Gruber, Chair; Tripti Vashisth, Chair-elect

3:15–3:45 PM

Maurepas

**Ornamental Plant Breeding (OPB) Working Group Business Meeting**

Objectives: To promote ornamental plant breeding, to serve as a forum for exchange of information among breeders, and to coordinate the communication of results to industry and academe.

Michele Scheiber, Chair; Wagner Vendrame, Chair-elect

3:15–3:45 PM

Bayside A

**Public Horticulture (PUBHORT) Working Group Business Meeting**

Objectives: To provide a forum for professional networking and discussion about matters related to botanic gardens, arboreta, and other institutions of public horticulture. Of particular interest are issues germane to public horticulture research, education, and outreach activities conducted within a higher education environment.

Carolyn W. Robinson, Chair

3:15–4:30 PM

Oak Alley

**Oral Session—Vegetable Breeding 1**

Moderator: Changbin Chen, chenx481@umn.edu

3:15–3:30 PM

**Exploring Phenotypic and Genotypic Diversity and Freedom to Operate in Commercially Available Carrot Cultivars**

Irwin L. Goldman, \*Claire Luby

3:30–3:45 PM

**Mapping of the Tomato Begomovirus Resistance Gene *Ty-6* and the Resistance Provided to Two Viruses by *Ty-6* Alone and in Combination with *Ty-3* or *ty-5***

\*Samuel Hutton, John W. Scott

3:45–4:00 PM

**Genetics and Breeding of Tomatoes for Short-season Locations and Unique Cultural Interest**

\*Changbin Chen, Ryan Murphy, Kenneth Jombwe

4:00–4:15 PM

**The Use of Seed Germination Rate as an Indicator of Heat Tolerance in Spinach (*Spinacia oleracea* L.)**

\*Jessica Chitwood, Ainong Shi, Michael Evans, John R. Clark, Dennis Motes, Pengyin Chen, David Hensley, Curt R. Rom

4:15–4:30 PM

**Preliminary Studies on Obtaining Haploid Plants in Spinach**

Ceren Eksi, \*Davut Keles, Hasan Pinar, Atilla ATA, Nihal Denli, Namik Kemal Yucel, Hatira Taskin, Saadet Buyukalaca

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3:25–3:45 PM

Nottoway

### **Crop Physiology (CRPP) Working Group Business Meeting**

Objectives: To provide a cross commodity forum for discussions of the integrative physiology of horticultural crop growth, development, and cropping. Areas of interest include (but are not limited to): patterns of vegetative and reproductive development; crop radiation interception and microclimate; dry matter production and partitioning; cultural and environmental influences on crop physiology and productivity; integration of carbon, water and nutrient physiology; modeling of physiological processes.

J. Pablo Morales Payan, Chair; T. Casey Barickman, Chair-elect; Samar Shawaqfeh, Secretary

4:00–5:00 PM

Poydras

### **Nominations and Elections Committee Meeting**

Presiding: Brian Trader, btrader@longwoodgardens.org

4:00–5:30 PM

Bayside C

### **Workshop Session—Five-minute Impact Strategies for Engaging Students: Where to Start with Service-learning and Fundraising?**

Sponsor: Teaching Methods Working Group

Moderator/Coordinator: Brian W. Trader, btrader@longwoodgardens.org

Objectives: To share and communicate ideas on student engagement inside and outside of the classroom. Highlight methods of integrating students into various communities and organizations through service learning. Explore new opportunities of student experiential learning through innovative fundraising.

Abstract: How do we engage with our students on a deeper level and connect through meaningful learning experiences? Members of the Teaching Methods Working Group will present five-minute strategies, ideas and tips on working with students inside and outside of the classroom. There will be an emphasis on student-centric learning and how service-learning projects, fundraising, club travel impacts and enforces learning outcomes. At the end of the session, others are encouraged to ask questions, discuss teaching strategies and offer their own tips for the group's benefit.

4:00–4:10 PM

#### **Service-Learning with Local Schools—Incorporating Multiple Courses on the Same Project**

\*David Eliot Kopsell

4:10–4:20 PM

#### **Rebuilding Historic Irish Gardens One Peat Brick at a Time**

\*Ann Marie VanDerZanden

4:20–4:30 PM

#### **From Propagation to Professional Development**

\*Brian Pearson

4:30–4:40 PM

#### **Using IFAT Quizzes to Engage Students**

\*Susan S. Barton

4:40–4:50 PM

#### **Using Flipped Classroom, BYOD, and Public Speaking to Engage Students**

\*Kent D. Kobayashi

4:50–5:00 PM

#### **I Do . . . I Understand**

\*Kauahi Perez

5:00–5:15 PM

#### **Fruit and Vegetable Culture Class Turned Veggie Venture**

\*Brian W. Trader

4:00–5:30 PM

Borgne

—CEU Approved—

### **Workshop Session—The Eyes Have It: Understanding the Roles of Branding and Marketing of Consumer Horticultural Products Using New Technologies**

Sponsor: Marketing and Economics Working Group

Moderator/Coordinator: Cheryl R. Boyer, crboyer@ksu.edu

Objectives: This workshop will focus on new methods of consumer research featuring advances in technology on a variety of fronts.

Abstract: Eye tracking devices have enabled a greater understanding of consumer choices and decision making related to horticultural products for several commodities such as ornamental plants and nano-packaged food products. Experimental auctions provide another dimension in consumer behavior research by implementing real economic consequences. Techniques to merge experimental auctions and eye-tracking analysis will be discussed. Evaluation of a statewide promotional program, Fresh from Florida, using eye-tracking technology to study consumer preference for plants and program awareness in order to determine participants' purchase likelihood will be featured. While research into social media marketing for garden centers and nurseries is new and ongoing, the opportunities and challenges will be discussed. The Marketing and Economics Working Group Business Meeting will be held at the end of the workshop.

4:00–4:15 PM

#### **The Role of Plant Brands and Perceived Quality**

\*Bridget K. Behe, Patricia Huddleston, Lynnell Sage

4:15–4:30 PM

#### **Eye Tracking Technology Data Collection Methods**

\*Lynnell Sage, Bridget K. Behe, Patricia Huddleston

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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4:30–4:45 PM

**Eye-tracking and Experimental Auctions: An Innovative Approach**

Alicia Rihn, Chengyan Yue, \*Jingjing Wang

4:45–5:00 PM

**Consumer Willingness to Pay for Nano-Packaged Horticultural Products**

\*Chengyan Yue, Bhagyashree Katare, Terrance Hurley

5:00–5:15 PM

**State Promotional Campaign Awareness and Visual Attention**

Hayk Khachatryan, Alicia Rihn, Ben Campbell, Bridget K. Behe, Charles R. Hall, \*Cheryl R. Boyer

5:15–5:30 PM

**Like It, Pin It, Follow It: Opportunities and Challenges for Social Media Marketing in Garden Centers and Nurseries**

\*Cheryl R. Boyer, Lauri Baker, Hikaru Peterson, Scott Stebner

4:00–6:00 PM

Maurepas

—CEU Approved—

**Workshop Session—Automation and Mechanization in Commercial Vegetable Production**

Sponsor: Vegetable Crops Management Working Group

Moderator/Coordinator: Ajay Nair, nairajay@iastate.edu

Objectives: To provide new information on automation and mechanization technologies utilized in commercial vegetable production.

Abstract: One of the major challenges confronting the vegetable industry is the lack of consistent and skilled labor supply. Finding skilled labor is critical for timely completion of field activities and overall productivity of the farming enterprise. In the last two to three decades, the vegetable industry has made huge strides in adopting tools, equipment, and techniques that have reduced labor requirements for growing and harvesting produce. Although mechanization and automation advances have been more for the harvest of processing vegetables, more fresh-market vegetables are either being harvested mechanically or there is some form of mechanization/automation utilized during their production process. This workshop will provide information on technologies that focus on automated site specific irrigation and fertilizer application; Geographic Positioning System (GPS)-based planting, cultivating, chemical application, and harvest equipment; and GPS-based field mapping technology for yield prediction in vegetable crops. The workshop will also cover the topic of automated thinning technology currently being tested in lettuce producing areas in California and Arizona. The final portion of the workshop will highlight the increasing role of Unmanned-Aerial-Vehicles (UAVs) in horticultural crop production. There will be live demonstration of UAVs followed by information on post-image processing and interpretation of images for agricultural 3-D mapping. This workshop would include three presentations as well as a short discussion/demonstration period.

4:00–4:30 PM

**Mechanization and Technologies in Processing Vegetables—Past, Present, and Future**

\*Gordon C. Johnson

4:30–5:00 PM

**Automated Thinners in California Lettuce Production**

\*Richard F. Smith

5:00–6:00 PM

**Integrating UAVs into Photogrammetry Applications for Agricultural 3D Mapping**

\*Kurt D. Nolte

4:00–6:00 PM

Estherwood

**Extension Division Advisory Council Meeting**

Susan S. Barton, Chair; Gary R. Bachman; All Working Group Chairs and Chairs-elect, Extension Division

4:30–5:45 PM

Bayside A

**Oral Session—Viticulture and Small Fruits 2**

Moderator: Jessica Lilia Gilbert, jessgilb@ufl.edu

4:30–4:45 PM

**Blueberry Flavor Biochemistry**

\*Jessica Lilia Gilbert, Salvador A. Gezan, Melissa Pisaroglo de Carvalho, Thomas A. Colquhoun, Charles A. Sims, David G. Clark, James W. Olmstead, Michael L. Schwieterman

4:45–5:00 PM

**Strategies for Maintaining Fruit Quality in Northern Highbush Blueberry under Water-limited Conditions: Deficit Irrigation and Reduced Crop Loads**

\*Khalid F. Almutairi, David R. Bryla, Bernadine C. Strik

5:00–5:15 PM

**Major and Minor Anthocyanins and Anthocyanidins Recovered during Juice Processing Steps in Rabbiteye Blueberries by LC MS-MS and UPLC-UV**

\*John C. Beaulieu, Casey C. Grimm, Steve W. Lloyd, Rebecca E. Stein-Chisholm

5:15–5:30 PM

**Xylella fastidiosa in Rabbiteye Blueberry: Detection of the Bacterium and Association with Yield Loss**

\*Mary Helen Ferguson, Christopher A. Clark, Barbara J. Smith

5:30–5:45 PM

**Microbial Iron Reduction: A Secondary Source of Fe<sup>2+</sup> in the Southern Highbush Blueberry Rhizosphere**

\*Gerardo H. Nunez, Rebecca L. Darnell, James W. Olmstead

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Tuesday, August 4, 2015

4:45–6:00 PM

Nottoway

## Oral Session—Growth Chambers and Controlled Environments 1

Moderator: Xiuming Hao, xiuming.hao@agr.gc.ca

4:45–5:00 PM

### Water Use Efficiency of Four Types of Lettuce (*Lactuca sativa*) in Response to Different Drought Severities

\*David Gianino, Anish Malladi, Marc W. van Iersel

5:00–5:15 PM

### Hybrid Lighting Configurations with Top HPS Lighting and LED Inter-lighting and N:K ratios in Nutrient Feedings Affected Plant Growth, Fruit Yield, and Light and Energy Use Efficiency in Greenhouse Tomato Production

\*Xiuming Hao, Jingming Zheng, Celeste Little, Shalin Khosla

5:15–5:30 PM

### Effect of Different Ratios of Red and Blue LED Light on Lettuce Production and Phytochemical Accumulation

\*Most Tahera Naznin, Mark G. Lefsrud, Valerie Gravel, Bo-Sen Wu, Srinivas Reddy

5:30–5:45 PM

### The Photosynthesis Action Radiation (PAR) Curve of Lettuce plants using Blue Narrow Spectrum LEDs

\*Bo-Sen Wu, Mark G. Lefsrud

5:45–6:00 PM

### Effects of Diffused Cover Materials on Greenhouse Microclimate, Plant Growth, Fruit Yield and Quality, and Energy Use in Greenhouse Cucumber and Sweet Pepper Production

\*Xiuming Hao, Jingming Zheng, Xiaobin Guo, Celeste Little, Shalin Khosla

4:45–6:00 PM

Oak Alley

## Oral Session—International Horticulture and Issues

Moderator: Robin G. Brumfield, brumfield@aesop.rutgers.edu

4:45–5:00 PM

### Urban and Peri-urban Agriculture Agriculture/Horticulture in the Developing World

\*Prem Nath

5:00–5:15 PM

### Small Plot Farming to Ensure Food Security

\*Ajay Kumar Jha

5:15–5:30 PM

### Vegetable Landraces in the Souss Region of Morocco

\*S. Alan Walters, Mimouni Abdelaziz, Rachid Bouharroud, Ahmed Wifaya, Mohamed Boujghagh

5:30–5:45 PM

### Lasting Impacts of a Business Management Training Program for Turkish Women Farmers

\*Robin G. Brumfield, Burhan Özkan, Jenny Carleo

5:45–6:00 PM

### Long-term Revegetation Success on Acid Infertile Subsoils in the Amazon

\*Clinton C. Shock, Myrtle Shock, Byron M. Shock, Joao Ferraz, Jorge Ramos, Hitoshi Saito

5:00–6:00 PM

Poydras

## Horticulture Hall of Fame Selection Committee

William J. Lamont Jr., Chair; Fred T. Davies, L. George Wilson, Dewayne L. Ingram, Maria Jenderek, Mary H. Meyer, Paul W. Bosland

5:30–6:00 PM

Borgne

## Marketing and Economics (MKEC) Working Group Business Meeting

Objectives: To bring together workers having horticultural and economic interests in the marketing of horticultural crops and to expand markets and improve marketing techniques for horticultural crops.

Cheryl R. Boyer, Chair; Alicia Rihn, Secretary

5:30–6:00 PM

Bayside C

## Teaching Methods (TCHG) Working Group Business Meeting

Objectives: To provide information and an area of interaction among educators at all levels and extension personnel interested in teaching, with emphasis on teaching procedures, effective use of photographic equipment and materials, and lists of source materials.

Brian Trader, Chair; Kent Kobayashi, Chair-elect

6:00–7:00 PM

Armstrong Ballroom

## Welcome Reception

Open to all conference attendees—your badge is your ticket. Spouses, guests and children require a ticket for entrance. Tickets may be purchased at registration up until Tuesday, August 4 at 6:00 PM.

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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## Wednesday, August 5, 2015

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7:00–8:00 AM

Borgne

### Floriculture (FLOR) Working Group Business Meeting

Objectives: To identify problem areas (and propose approaches to resolving them), to develop higher standards of quality, and to share information about activities occurring in floriculture research, education, and extension.

Stephanie Burnett, Chair; Nicole L. Waterland, Chair-elect

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7:00–8:00 AM

Starbucks - Lobby

### Graduate and Undergraduate Student Morning Gathering

Why wait until the student events to meet the other graduate and undergraduate students at ASHS this year? Come by and meet them while you grab your morning cup of coffee (or tea) . . . we'll meet in the lobby at Starbucks.

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7:00–8:00 AM

Bayside B

### Temperate Tree Nut Crops (NUTS) Working Group Business Meeting

Objectives: To bridge the wide communications gap among nut tree researchers, to exchange ideas, results, and experiences in similar orchard crops, and to provide a forum to discuss various aspects of research unique to tree nut crops.

John Preece, Chair; Richard Heerema, Chair-elect

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7:00 AM–6:00 PM

Gallier A

### Speaker Ready Room

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room. Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly. Updates and modifications can be made to your presentation at this time.

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7:00 AM–6:00 PM

Gallier B

### Poster Presenter Recording Room

New this year, we will be inviting/encouraging poster presenters to record their presentations. This can be done two ways; both require an uploaded PDF of your poster in the Upload Poster section of your Speaker's Corner. You may either upload the audio part of your presentation before arriving at the conference by uploading an MP3 recording of your presentation along with the PDF; or this can be done on-site in Gallier B Room at the conference (if you decide to record onsite, please keep in mind that your audio recording will not

be available until after the meeting has ended). A QR code has been assigned to your poster so that you can include the QR code on your poster. Conference attendees can then scan the code and get access to your poster presentation in the online program. Poster presenters will still have to present during the conference at their assigned time but this process will allow your recorded presentation to remain part of the ASHS archives. All recordings will be housed on the ASHS website indefinitely. Your presentation will be accessible on our site with the rest of the ASHS technical program giving the poster presenters the same opportunity that oral presenters hold.

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7:30 AM–5:00 PM

Napoleon Registration

### Registration Open

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8:00–9:00 AM

Estherwood

### Photography (FOTO) Working Group Business Meeting

Objectives: To provide a forum for interaction among horticulturists who desire to use digital imaging (still and video) for innovative applications of photography in research, education, and extension. Workshops to focus on teaching procedures and techniques for digital image processing, with special emphasis on effective use of equipment, accessories, and software to obtain best quality imaging.

James McConnell, Chair

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8:00–9:00 AM

Bayside B

### Produce Quality, Safety, and Health Properties (QUAL) Working Group Business Meeting

Objectives: To promote more creative research, teaching, and industry liaison among horticulturists and food scientists.

Penelope Perkins-Veazie, Chair

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8:00–9:30 AM

Poydras

### Administrators Working Group Breakfast

Objectives: To provide a forum for department and government administrators to meet to consider and discuss common problems and responsibilities and to share ideas that may enhance administrative abilities. This is a ticketed event. Advance registration is required.

Wayne Mackay, Chair, Irwin Goldman, Chair-elect

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8:00–9:30 AM

Southdown

—CEU Approved—

### Workshop Session—Germplasm Exchange And The Nagoya Protocol: What Changes Can Plant Breeders Expect?

Sponsor: Intellectual Property Rights Working Group

Moderator: Todd P. West, todd.p.west@ndsu.edu

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Coordinator: Timothy F. Bourne, tbourne@sunviewvineyards.com

Objectives: The objective of this workshop is to familiarize plant breeders and other interested parties on the ramifications of the Convention on Biological Diversity and the Nagoya Protocol on germplasm exchange.

Abstract: The art and science of plant breeding, responding to consumer preference, and environmental challenges, requires access to diverse germplasm from around the world. However, the policy landscape governing access to and benefit sharing from the use of genetic resources is increasingly complex. The International Treaty on Plant Genetic Resources for Food and Agriculture, the Nagoya Protocol to the Convention on Biological Diversity, and intellectual property agreements on plant variety protection and patents intersect and are giving rise to new norms of access and terms for benefit sharing from the use of genetic resources. The impact of these agreements on the collection, dissemination and use of germplasm will be discussed. Royalties and non-monetary benefit sharing approaches will be considered as well as challenges for future germplasm collection and use.

8:00–8:20 AM

### **An Introduction to the Nagoya Protocol**

\*Barbara Campbell

8:20–8:40 AM

### **The Nagoya Protocol and the Plant Treaty: A Practical Perspective to Compliance and the Development of ABS Agreements**

\*Bruce S. Manheim Jr.

8:40–9:00 AM

### **Understanding the International Plant Treaty & the Nagoya Protocol: an introduction for plant breeders**

\*Jennifer Long

9:00–9:30 AM

### **Discussion**

8:00–9:30 AM

—CEU Approved—

## **Workshop Session—Invasive Plant Management and Restoration: Current Research and Future Challenges**

Sponsor: Invasive Plants Research Working Group

Moderator: Lyn Gettys, lgettys@ufl.edu

Coordinator: S. Christopher Marble, marblesc@ufl.edu

Objectives: The objectives of this workshop are to: 1) provide approaches for invasive plant management and native plant restoration as developed by researchers and government agencies; 2) present research on how global climate change may impact current management strategies; and 3) discuss current challenges and future research needs.

Abstract: Non-native, or alien plant species, are commonly introduced into new geographical regions for food, fiber, fuel, medicinal, or ornamental use, or often times introduced inadvertently. Regardless of the means of introduction, certain plant species have the ability to outcompete native vegetation and can begin to cause significant

ecological damage by displacing native vegetation and wildlife, invading crop land, and impeding waterways. It is estimated that more than \$25 billion is spent each year to control over 5,000 invasive plant species in the United States alone. Due to increasing urbanization, water restrictions, and global climate change, there is a growing concern regarding the negative impacts of invasive species on our environment and if current management practices will remain effective in the future.

8:00–8:20 AM

### **Invasion Pathways for Invasive Aquatic Species: Case Studies from Florida**

\*Lyn Gettys

8:20–8:40 AM

### **Effect of Substrate Composition and Fertility on Ramet Production in Crested Floatingheart (*Nymphoides cristata*)**

\*Carl J. Della Torre III, Lyn Gettys, Kyle Thayer

8:40–9:00 AM

### **Growth and Control of Invasive Weeds under Elevated CO<sub>2</sub>**

\*G. Brett Runion, S. Christopher Marble, Stephen A. Prior, H. Allen Torbert

9:00–9:20 AM

### **An Invasive Species Assessment System for the North Carolina Horticultural Industry**

\*Clara Trueblood, Joseph C. Neal, Thomas Ranney

8:00–9:30 AM

Oak Alley

## **Oral Session—Marketing and Economics**

Moderator: Bridget K. Behe, behe@msu.edu

8:00–8:15 AM

### **Sanitary and Phyto-sanitary Measures, Compliance to International Standards for the Export of Value-added Products from Pakistan to High-end Retail Markets**

\*Waqar Ahmed, Muhammad Azher Nawaz, Raheel Anwar

8:15–8:30 AM

### **Consumer Preference for Quality in Three Leafy Vegetables in Kenya**

\*Marcia Croft, Maria Marshall, Steve Hallett, Stephen C. Weller

8:30–8:45 AM

### **The Role of Plant Brands in Consumer Quality Perceptions of Herb and Vegetable Transplants**

\*Bridget K. Behe, Lynnell Sage, Patricia Huddleston

8:45–9:00 AM

### **Age Influence on Product Involvement and Expertise for Vegetable and Herb Transplants**

\*Lynnell Sage, Patricia Huddleston, Bridget K. Behe

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

9:00–9:15 AM

**Economic Analysis of Using Alternative Containers in a Greenhouse Production System**

\*Robin G. Brumfield, Alyssa DeVincentis, Andrew Koeser, Sarah T. Lovell, J. Ryan Stewart

9:15–9:30 AM

**Using Real Money to Promote Extension Horticulture Programming**

\*Richard G. Snyder

8:00–9:45 AM

Waterbury

**Oral Session—Postharvest 1**

Moderator: Shehbaz Singh, [ssingh@apioinc.com](mailto:ssingh@apioinc.com)

8:00–8:15 AM

**Respiration Rate and Ethylene Production of Ackee (*Blighia sapida* Koenig) Fruit Harvested at Different Stages of Maturity**

\*Machel A. Emanuel, Jeffrey K. Brecht, Donald J. Huber

8:15–8:30 AM

**Effectiveness of Chitosan Coatings on the Quality of Strawberry (cv. Monterey) during Simulated Air-ride Truck Distribution**

Mehmet Seckin Aday, \*Shehbaz Singh, Koushik Saha, Jay Singh

8:30–8:45 AM

**Environmental Factors on the Incidence and Development of End Rot on Sweetpotato**

\*Ratchanee Pattaravayo, D. LaBonte, Tara Smith, Arthur Q. Villordon, Christopher A. Clark

8:45–9:00 AM

**Improving Shelf Life, Quality, and Safety of Locally Grown Vegetables in Kansas**

\*Helena Pontes Chiebao, Jennifer A. Page, Jacob R. Jenott, Daniel A. Unruh, Sara E. Gragg, Cary L. Rivard, Eleni D. Pliakoni

9:00–9:15 AM

**The Effects of Carvacrol and Thymol on Growth of *Guignardia citricarpa*, the Causal Agent of Citrus Black Spot on ‘Valencia’ Orange Fruit**

\*Jiaqi Yan, Mark A. Ritenour, Pamela Roberts, Megan Dewdney

9:15–9:30 AM

**Effect of Chemicals on Keeping Quality and Vase Life of Carnation (*Dianthus caryophyllus* L.) ‘Eskimo’**

\*Qurrat ul Ain Farooq, Misha Arshad, Maik Abid Mehmood

9:30–9:45 AM

**Enhancing Vase Life of Rose Flower ‘Cardinal’ by the Use of Different Chemicals**

\*Malik Ferdosi

8:00–10:00 AM

Bayside A

—CEU Approved—

**Workshop Session—The Roots of a Horticultural Revolution**

Sponsor: Root Growth & Rhizosphere Dynamics Working Group

Moderator(s)/Coordinator(s): Astrid Volder, [avolder@ucdavis.edu](mailto:avolder@ucdavis.edu); Arthur Q. Villordon, [avillordon@agcenter.lsu.edu](mailto:avillordon@agcenter.lsu.edu)

Objectives: 1) Provide an overview of advances in the understanding of the intrinsic and environmental cues of root architecture development. 2) Highlight advances in the study of root architecture & physiology in some horticultural species. 3) Examine current challenges in the study of root development and physiology in horticultural species. 4) Stimulate research collaborations through interactions and networking among the participants.

Abstract: It is becoming increasingly evident that optimization of root architecture for resource capture is vital for enabling the next green revolution. In globally important cereals, such as maize and rice, the enhanced knowledge of root architecture has already led to measurable gains in the ability to exploit soil resources with corresponding enhancements in yield attributes. Although cereals provide much needed calories, horticultural crops are essential to human health and food security on a global scale. Yet, knowledge about root architecture in horticultural species is limited, and measurement of root growth and root system architecture are often overlooked in horticultural research. The overarching goal of this workshop is to highlight the hidden half of horticultural crops, the root system. One of the goals of this workshop is to provide an overview of advances in model systems, focusing on the adaptive strategies that plant root systems have developed to cope with a variety of environmental stresses. In addition, the workshop will highlight advances in the study of root architecture and physiology in some horticultural species. Understanding how plant roots respond to environmental challenges is critical in the development and testing of tools and practices for modifying plant growth, especially in regions characterized by low input agriculture. Knowledge of the intrinsic signals that mediate root development and affect resource capture will facilitate the development of crop varieties that are tolerant to a range of growing environments.

8:00–8:20 AM

**Development of an Aeroponics System to Facilitate Investigations into the Development of Entire Sweetpotato Root Systems**

\*Arthur Q. Villordon

8:20–8:40 AM

**Root Production, Distribution, and Turnover in Conventional and Organic Blueberry Systems**

Luis R. Valenzuela-Estrada, Oscar Vargas, \*David R. Bryla

8:40–9:00 AM

**Root Distribution and Its Representation for Quantifying Plant Water Uptake: An Applied Perspective**

\*Xuejun Dong

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



9:00–9:20 AM

**Identification of Landscape Plant Species for Use in Rain Gardens**

\*Amy N. Wright

9:20–9:40 AM

**Patterns of Root Production in Tree Crops in Response to Environmental Variation**

\*Astrid Volder

8:00–10:00 AM

Maurepas

—*CEU Approved*—

**Workshop Session—Soil Health and Implication in Organic Nutrient Management on Vegetable Production**

Sponsor: Organic Horticulture Working Group

Coordinator: Monica P. Ozores-Hampton, ozores@ufl.edu

Objectives: The workshop will present information on the interactions of soil health, nutrient management and BMPs in organic vegetable production

Abstract: The organic vegetable industry is familiar with production practices aimed to improve the health and function of the soil. Soil health is defined as continued capacity of the soil to function as a vital living ecosystem that sustain plants, animals, and humans. The definition implies the management of the soil to provide food, shelter and water for future generations. The most common indicators of soil health include soil physical, chemical, and biological properties. However, the adoption of best management practices (BMPs) to improve soil health while optimizing nutrient management in order to minimize the nutrient movement out of the root zone and reduce the environmental impact can be challenging in organic production. BMPs including cover crops, compost, and others soil amendments are non-regulatory, incentive-based cultural practices intended to reduce or prevent nutrient loss into the watersheds while maintaining agricultural productivity and profitability. Therefore, objective of the workshop is to present information on the interactions of soil health, nutrient management, and BMPs in organic vegetable production.

8:00–8:30 AM

**Can Organic or Conventional Vegetables be Produced Sustainably without Cover Crops?**

\*Eric Brennan

8:30–9:00 AM

**Compost Quality Guidelines for Organic Vegetable Production**

\*Monica P. Ozores-Hampton

9:00–9:30 AM

**Organic Fertilizers for Greenhouse Crop Production**

\*Mary Anne Rogers

9:30–10:00 AM

**Effect of Long Term Compost Application in a Certified**

**Organic System on Soil Quality and Vegetable Yields**

\*Sven Verlinden

8:00–10:00 AM

Borgne

—*CEU Approved*—

**Workshop Session—Document the Impact of Your Research, Teaching, or Extension Activity**

Sponsor: Floriculture Working Group

Moderator: Kimberly Moore, klock@ufl.edu

Coordinator: Stephanie Burnett, sburnett@maine.edu

Objectives: The goal of this workshop is to assist participants in writing meaningful statements describing the impact their work.

Abstract: Increasingly, impact statements are an expectation for publically-funded work. While they allow us to describe our work using powerful, succinct language, many of us struggle to write impact statements. In this workshop, our presenters will provide key concepts and approaches to documenting impacts. Participants should bring draft impact statements to the workshop. They will work with the presenters and other participants to strengthen their impact statements based on workshop content. All of the participants will leave the workshop with more focused and clear statements describing the impact of their work.

8:00–8:15 AM

**Getting the Most out of Your Impact Statements**

\*John Dole

8:15–8:30 AM

**Document the Value of the Public Investment in Your Research**

\*Linda Brewer

8:30–8:45 AM

**Kiss: Keep Impact Statements Simple**

\*Marc W. van Iersel

8:45–9:00 AM

**Understanding Your Audience—What to Include in Impact Statements for NIFA**

\*Megan O'Reilly

9:00–10:00 AM

**Impact Statement Writing Workshop**

8:00–10:00 AM

Bayside C

—*CEU Approved*—

**Workshop Session—Unique and Alternative Fruit Crops**

Sponsor: Viticulture and Small Fruits Working Group

Moderator/Coordinator: Lisa Wasko DeVetter, lisa.devetter@wsu.edu

Objective: The objective of this workshop is to provide information

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

about unique/alternative fruit crops that researchers and extension personnel are being increasingly asked about.

Abstract: This workshop will introduce several unique and alternative fruit crops that are increasingly being encountered among researchers and extension personnel. The purpose of this workshop is to provide information about the production and relevant physiology of these specific fruit crops so that researchers and extension personnel are better able to address questions concerning these crops. Specific crops to be addressed include: hardy kiwi (*Actinidia arguta*), haskap (*Lonicera caerulea*), unique caneberry species (*Rubus glaucus*, *R. coreanus*, and/or *R. phoenicolasius*), and continental-climate grapes (*Vitis* spp.).

8:00–8:30 AM

### Cold-Climate Wine and Table Grapes

\*James J. Luby

8:30–9:00 AM

### Unique Caneberries

\*Michael Dossett

9:00–9:30 AM

### Haskap

\*Eric Gerbrandt

9:30–10:00 AM

### Hardy Kiwi

\*Iago Hale

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8:00 AM–12:00 PM

Canal Street Entrance

## New Orleans Traditional City Tour with Citrus Orchard Visit

Price: \$80 per person. Advance Registration Required.

Leaves hotel promptly at: 8:00 AM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

This tour starts with a fully narrated 3-hour complete historical city tour of New Orleans, and ends with the 1 hour orchard tour. Beginning in the French Quarter, you will get all the history and architecture of the old Creole city, Jackson Square, St. Louis Cathedral, the Pontalba row houses, and an overall view of the Mississippi River and the Port of New Orleans. You will be driven by the French Market, the old U.S. Mint and the stately mansions along Esplanade Ave. Next, you will stop for a guided walking tour of historic St. Louis Cemetery #3 on Esplanade Avenue.

Riding along peaceful Bayou St. John, you view houses from the late 1700s. You will drive through City Park to see the picturesque antique carousel and centuries old Louisiana live oaks. Next is the stop for restrooms and refreshments at “Morning Call”—try the cafe au lait and scrumptious beignets (refreshments cost not included).

Along Lake Pontchartrain’s shores, the levee system that protects both the city of New Orleans and surrounding areas of Southeast Louisiana is explained and the longest of all bridges, the Causeway, is seen. The tour continues with Uptown, the Universities, the 179-year-old Streetcar line and St. Charles Avenue’s grand colonial mansions and into the Garden District to show famous (maybe haunted?) historic homes; and then on to Downtown, around the Superdome and through the heart of the Arts

and Museum district. Finally, you will drive over to the west bank of the Mississippi River, arrive in Lower Coast Algiers for a guided tour of Isabelle’s Orange Orchard, a 4-acre organic citrus farm.

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9:00–10:00 AM

Estherwood

## Emeriti (EMER) Working Group Business Meeting

Objectives: To provide a forum for retired horticulturists where some issues of concern to ASHS can be defined, analyzed, and acted on; to establish a registry of retired horticulturists; and to identify an accessible reservoir of research, extension, and teaching talent that may be called on for help and guidance.

Dharma Pitchay, Chair; Donald Merhaut, Chair-elect

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9:00 AM–12:00 PM

Napoleon Expo Hall

## Undergraduate Student Poster Competition

Moderator: Kimberly Moore, klock@ufl.edu

### (254) Evaluating Shade Effects on Primocane Blackberry Flowering and Fruiting

\*Olivia Caillouet, Curt R. Rom, J. McAfee

### (255) In Vitro Microtuberization in 30 Potato Varieties

\*Kenya Emanuel, Thomas W. Zimmerman

### (256) Predicting Harvest Date from Sorrel Bud and Calyx Measurements

\*Shamali Dennery, Thomas W. Zimmerman

### (257) Morphological Stages of Seedling Development in Mustard (*Brassica rapa*) Microgreens

\*Jordon Masters, Eugenia Pena-Yewtukhiw, Nicole Waterland, Sven Verlinden

### (258) Seaweed Extract on the Growth and Development of Marigold and Sunflower

\*Cadien Beckford, Corrie Cotton, Fawzy Hashem

### (259) Comparison of Biomass, Essential Oil Yield, Phenolic Content, and Antioxidant Capacities between Overwintered and Transplanted Lemongrass (*Cymbopogon citratus*)

\*Megan Russo, Byungrok Min, Lurline Marsh

### (260) Enhancing Bioactive Molecules (*Lactuca sativa*) Utilizing Polycarbonate Color Filters

\*Amanda Hamilton, Youyou Moon, Nicole L. Waterland

### (261) Lettuce Development and Nutrient Runoff under Regimes with Kelp, Fish Emulsion, and Synthetic Fertilizers

\*Isaiah Adams, Lurline Marsh, Fawzy Hashem, Eton Codling

### (262) The Effect of Gallic Acid Treatment on *Rubus Callus*

\*Megan Sylvia, Meaghan Trzasko, J.D. Swanson

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

**(263) Photosynthetic Physiology and Kaempferol Yield Affected by Leaf Treatments in Soy Plants**

Noble Opusunju, \*Alanna Humphrey, Kareeba Gabriel, Chiderah Ugbaja, Shannon Combe, Steve Boue, Harish Ratnayaka

10:00–11:00 AM

Estherwood

**HortTechnology Editorial Board Meeting**

Neal E. De Vos, Editor in Chief; Joan Davenport; Virginia I. Lohr; George J. Hochmuth II, Michael A. Arnold

**(264) Reclaimed Wastewater as an Irrigation Alternative for Growing Coleus (*Plectranthus scutellarioides*)**

\*Cristina Martinez, Kimberly Moore, Luci Fisher

10:00 AM–5:00 PM

4th Floor Foyer

**Special Event:**

**2nd Annual Silent Auction—Sponsored by the Herbs, Spices and Medicinal Plants Working Group**

Coordinator: Hideka Kobayashi

Objectives: To raise funds to support Herbs, Spices and Medicinal Plants (HSMP) Working Group's Workshop and related activities. The bidding will begin at 10:00 am on August 4, 2015, for all silent auction items. To bid on an item, you must fill in your full name as well as your bidding dollar amount. successful bidders must meet or exceed the minimum value stated at the top of the bid sheet. They must also increase by the minimum stated raise level. Silent auction closes at 4:00 pm on August 5. All items will be sold to the highest bidder who bids correctly. The closing bid will be determined by an auction official and it will then be declared the winning bid. The winning bidder must be present with a payment. If the winner is not present, the next highest bidder will be declared as the winner for the auction item. Payment in check must be payable to ASHS. The HSMP would like to acknowledge the generosity and thoughtfulness of the following donors: Millipore, AmericanHort, American Takii, Daylily World, Proven Winner, and Spectrum Technologies.

9:00 AM–2:00 PM

Napoleon Expo Hall

**Exhibits Open**

9:00 AM–5:00 PM

Napoleon Expo Hall

**Poster Hall Open**

9:00 AM–5:00 PM

Napoleon Expo Hall

**Career Center**

Visit the ASHS Career Center for information on job, career and internship openings. Also, meet with industry, public garden and university professionals to get their insight on a variety of career paths. Tutorials on how to network utilizing the ASHS Membership Interface for advancing your career search and professional profile will also be given. Specific career sessions will be posted in the center each day.

9:30–10:00 AM

Southdown

**Intellectual Property Rights (IPR) Working Group Business Meeting**

Objectives: To provide a forum that will promote the exchange of information and discussion of issues concerning the protection of intellectual properties.

Tim Bourne, Chair; Ralph Scorza, Chair-elect; Johnny Loff, Secretary

10:15–11:30 AM

Maurepas

**Oral Session—Herbs, Spices, & Medicinal Plants/History of Horticulture**

Moderator: Changbin Chen, chenx481@umn.edu

10:15–10:30 AM

**Vitamin C and Phenolic Compound Concentrations in the Leafy Vegetables *Solanum scabrum* and *Gynandropsis gynandra***

\*Dulce Maria Jiménez-Aguilar, Michael A. Grusak

9:30–10:00 AM

Nottoway

**Invasive Plants Research (INPR) Working Group Business Meeting**

Objectives: To communicate research ideas, techniques, and methods on the identification, study, and control of invasive plants in cross-commodity horticulture production and in urban and rural lands; and the assessment of exotic plants for potential invasiveness.

Lynn Gettys, Chair; Chris Marble, Chair-elect

10:30–10:45 AM

**Medicinal Plants as Specialty Crops for Midwest Growers**

\*Changbin Chen, Ryan Murphy, Kenneth Jombwe, Majid Azizi

9:45–10:15 AM

Napoleon Expo Hall

**Break**

Sponsored by Gylling Data Management.

10:45–11:00 AM

**Seed Yield of Fenugreek in Response to Planting Date, Irrigation, and Harvest Time**

\*Alexander D. Pavlista, Dipak K. Santra

11:00–11:15 AM

**Carolinas Therapeutic Horticulture Network**

\*Lucy Bradley, John Murphy, Heather Kelejian

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

11:15–11:30 AM

**The Voynich Manuscript as a MesoAmerican Herbal**

\*Jules Janick, Arthur O. Tucker

10:15–11:45 AM

Borgne

—CEU Approved—

**Workshop Session—An Overview of the NEW eXtension, and How to Evaluate Your Online Extension Program**

Sponsor: eXtension Working Group

Moderator/Coordinator: Danielle Dion Treadwell, ddtreadw@ufl.edu

Objectives: The objectives of this workshop are to learn about the new opportunities eXtension will be offering to land grant faculty, and to build a toolbox of evaluation strategies for online extension programs.

Abstract: eXtension has recently re-evaluated its role and is positioning itself to better respond to the changing needs and priorities of land-grant faculty, staff and the clientele they serve. The NEW eXtension is advancing exceptional, technology-enhanced learning environments while building on the Cooperative Extension System's content, educator, and leadership resources. Today, eXtension is an innovative place for Extension educators and strategic partners to marry content with technology that appeals to and attracts new audiences to Cooperative Extension. Online extension programming is an important strategy for many extension specialists, and is utilized to improve clientele access to important information and to provide visual and audio enhancements to the learning environment. Evaluation is important and necessary in extension programming, but program evaluation for online programs presents several challenges: spatial and temporal distance from the target audience; difficulty in confirming the program's impact on participants; and the lack of established methodologies for measuring the value of the program to the public. This workshop will be particularly important for members and leaders of eXtension Communities of Practice and Learning Networks and for all faculty with Extension programs online.

10:15–11:00 AM

**An Overview of the NEW eXtension, and How to Evaluate Your Online Extension Program**

\*Terry Meisenbach, Sarah Baughman, Danielle Dion Treadwell

11:00–11:45 AM

**Evaluating Online Educational Programming for the Military Families Learning Network**

\*Sarah Baughman

10:15–11:45 AM

Southdown

**Oral Session—Fruit Breeding 1**

Moderator: Jill M. Bushakra, jill.bushakra@ars.usda.gov

10:15–10:30 AM

**Fertile Hybrids between Tetraploid Highbush Blueberry Cultivars (*Vaccinium* section *Cyanococcus*) and**

**Colchicine-induced Tetraploid *Vaccinium stamineum* (section *Polycodium*)**

\*Paul Lyrene

10:30–10:45 AM

**Linkage and QTL Analysis of a Tetraploid Interspecific Pseudo-backcross Between *Vaccinium corymbosum* and *V. arboreum***

\*Hilda Patricia Rodriguez-Armenta, James W. Olmstead

10:45–11:00 AM

**Genomic Selection: A New Approach in Blueberry Breeding**

\*Catherine Cellon, James Olmstead

11:00–11:15 AM

**Molecular Evaluation of Aphid-resistant Black Raspberry Germplasm for Improved Durability in Black and Red Raspberry**

\*Jill M. Bushakra, Michael Dossett, Jana C. Lee, Jungmin Lee, Nahla Bassil, Chad E. Finn

11:15–11:30 AM

**RosBREED2: More Traits, Additional Crops, Expanded Germplasm, New Science**

\*Amy F. Iezzoni, Cameron Paul Peace, Nahla Bassil, Michael Coe, Chad E. Finn, Ksenija Gasic, Stan C. Hokanson, James J. Luby, Dorrie Main, James R. McPerson, John Norelli, Mercy A. Olmstead, Vance M. Whitaker, Chengyan Yue

11:30–11:45 AM

**Consideration of Cost and Accuracy for Trial Design of Advanced Apple Selections**

\*Julia M. Harshman, Kate M. Evans, Craig M. Hardner

10:15–11:45 AM

Nottoway

—CEU Approved—

**Workshop Session—Reducing Postharvest Losses: Historical Perspective and Emerging Technologies**

Sponsor: Postharvest Working Group

Moderator/Coordinator: J. Wyatt Brown, wbrown@calpoly.edu

Objectives: To discuss postharvest losses in the context of historical and current practices, to present emerging technologies to reduce such losses in both developing and developed nations, and to discuss methods to facilitate the adoption of these technologies.

Abstract: Postharvest losses in developing and developed nations can be significant, commonly representing a loss of 10% to 40% of the harvested product. Losses occur through mishandling, insufficient cooling, poor storage and temperature management, and lack of infrastructure to get products to market in a timely fashion. Decreasing postharvest losses is often a first step to increased economic returns, especially in areas with limited resources. This workshop will discuss 1) historical postharvest methods to reduce produce losses—their benefits and shortcomings,

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

2) emerging technologies for both developed and developing nations, including cooling and transportation, and 3) methods to increase the adoption of new technologies and practices, including education and the linking of farmers to both local and international markets.

10:15–10:40 AM

**Postharvest Losses: An Overview**

\*J. Wyatt Brown

10:40–11:05 AM

**Postharvest Losses: Emerging Technologies to Mitigate**

\*Christopher B. Watkins

11:05–11:30 AM

**Postharvest Losses: Appropriate Mitigation Strategies in the Developing World**

\*Elizabeth Mitcham

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10:15 AM–12:15 PM

Bayside C

—*CEU Approved*—

**Workshop Session—Developing, Producing, and Commercializing Bioenergy Crops and Technologies**

Sponsor: Bioenergy Working Group

Moderator/Coordinator: Thomas Ranney, tom\_ranney@ncsu.edu

Objectives: The objective of the workshop are to explore progress and opportunities in developing, producing, and commercializing new crops and technologies for emerging bioenergy sectors.

Abstract: Success of emerging bioenergy industries hinge on the simultaneous development and management of an entire supply chain ranging from crops to bioprocessing, on a substantial scale. Crop improvement, production, bioprocessing, and development of novel value-added technologies all play important roles in the efficiency, feasibility and profitability of the entire endeavor. Moreover, there is considerable interdependence among all of the various components, disciplines, and constituents in the supply chain. This workshop will take a broad view to explore progress, challenges, and opportunities facing the future of bioenergy.

10:15–10:30 AM

**Breeding Cold-hardy Energy Grasses**

\*Darren Touchell, Thomas Ranney

10:30–11:00 AM

**High-fiber Sugarcane Breeding and Production for use as Bioenergy Feedstock**

\*Anna Hale, Paul White

11:00–11:15 AM

**Survey of Fungal Diseases of Switchgrass Seed and Plants**

\*Robert N. Trigiano, Bonnie H. Ownley, Sara Collins, Mary Dee, Oluseyi Fajolu, Andrew Vu

11:15–11:45 AM

**Sugar Crops for Biofuel/bioproduct Production**

\*Donal Day

11:45 AM–12:15 PM

**Engineering High Biomass C4 Grasses for Production of Polyhydroxyalkanoate Biodegradable Plastics**

\*Stevens Brumbley

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10:15 AM–12:15 PM

Oak Alley

**Workshop Session—National Issues Workshop: Our Responsibility As AFRI and SCRI Stakeholders**

Sponsor: ASHS National Issues Committee

Coordinator: Thomas Björkman, tnb1@cornell.edu

Objectives: Help sustain the critical role of AFRI and SCRI in keeping horticulture funded by providing constructive stakeholder comment on the requests for proposals through the most effective channels.

Abstract: Many ASHS members depend on funding from the NIFA programs AFRI and SCRI. Keeping these programs effective is critical to our discipline. One responsibility we have, but need to better execute, is to provide constructive stakeholder comment on the requests for proposals. Those comments are due shortly after the New Orleans conference, so priority issues identified in this workshop can have an immediate impact. This workshop is a structured discussion where audience input is essential in order to identify common concerns. These programs are supporting excellent horticultural research, so identifying priorities and policies that need to stay is primary. The agency has recently made policy changes in response to stakeholder input, so feedback on whether those are having the desired effect is timely. Finally, are the horticultural needs and opportunities of importance in the coming three years that should be more explicitly addressed in future requests for proposals?

10:15–10:30 AM

**The Role of Stakeholder Feedback in NIFA Programs**

\*Mary M. Peet

10:30–10:45 AM

**How SCRI Has Used Stakeholder Feedback**

\*Tom Bewick

10:45–11:00 AM

**Effect of Funding Policies on Academic Horticultural Research Capacity**

\*Richard P. Marini

11:00 AM–12:15 PM

**Our Role Helping AFRI and SCRI Keep Horticultural Research Vibrant**

\*Thomas Björkman

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Wednesday, August 5, 2015

10:30 AM–12:00 PM

Waterbury

## Oral Session—Vegetable Crops Management 1

Moderator: Nicholas Andrews, nick.andrews@oregonstate.edu

10:30–10:45 AM

### Crop Time: Degree-day Models and an Online Decision Tool for the Vegetable Industry

\*Nicholas Andrews, Leonard B. Coop, Heidi E. Noordijk, James R. Myers

10:45–11:00 AM

### Environment and Production System Influence Fresh Cilantro Yield and Quality in a Five-state Trial

\*T. Casey Barickman, William Bruce Evans, Carol A. Miles, Rebecca N. Brown, Ramon A. Arancibia

11:00–11:15 AM

### A Bitter Crop with Sweet Potential for Producers and Human Health

\*Jose L. Perez, Bhimanagouda S. Patil, G.K. Jayaprakasha

11:15–11:30 AM

### Stip: A Physiological Disorder of Pepper Fruits

\*James Fulton, Peter Cooke, Barry Dungan, F. Omar Holguin, Robert Steiner, Mark Uchanski

11:30–11:45 AM

### Sweet Onion (*Allium sativa*) Yield as Affected by Potassium Rates

\*Juan Carlos Diaz-Perez, Jesús Bautista, Guna Gunawati, Anthony Bateman

11:45 AM–12:00 PM

### Response of Grafted Tomato to Nitrogen

\*David Suchoff, Christopher Gunter, Jonathan R. Schultheis, Brian E. Jackson, Richard L. Hassell, Frank Louws

11:00 AM–12:00 PM

Estherwood

## Journal of the ASHS Editorial Board Meeting

Neal E. De Vos, Editor in Chief; Ed Etxeberria, Paul W. Bosland, John A. Juvik, Robert N. Trigiano

11:00 AM–12:00 PM

Poydras

## Endowment Fund Committee Meeting

Paul Thomas, Chair; Marietta Loehrlein, Astrid Volder, Paul Read, Carl E. Sams, Brian Trader, John L. Griffis Jr., Curt R. Rom, Kedong Da, Ellen Paparozzi

11:45 AM–12:15 PM

Nottoway

## Postharvest (PH) Working Group Business Meeting

Objectives: To exchange ideas and information relating to postharvest biology and technology of horticultural crops, to increase the awareness among other researchers, research administrators, legislators, and the public of the importance of the postharvest aspects of horticulture to the physical, economic, and psychological well-being of the population, and to integrate activities with those of associated Working Groups.

Wyatt Brown, Chair; Mark A. Ritenour, Chair-elect; Randolph Beaudry, Secretary

11:45 AM–12:15 PM

Borgne

## eXtension (EEXT) Working Group Business Meeting

Objectives: To identify those individuals who are involved in eX-tension Communities of Practice (CoP) and provide opportunities for collaboration and sharing of ideas and methods among CoP participants through ASHS publications and meetings.

Danielle Treadwell, Chair

12:00–1:00 PM

Bayside B

## Undergraduate (UG) Working Group Business Meeting

Objectives: To foster collegiality among undergraduate students in horticultural sciences.

Perla Aguilar, Chair

12:00–1:00 PM

Estherwood

## Viticulture and Small Fruits (VSF) Working Group Business Meeting

Objectives: To study the improvement, production, propagation, and culture of small fruit and grape crops, to perform services for the Society and the general public in the area of small fruits and grapes, and to exchange current information on recent research findings and educational and industry problems.

Lisa DeVetter, Chair

12:00–2:00 PM

Gallery Ballroom

## Pi Alpha Xi Luncheon and Annual Meeting

Presiding: Karen Panter

12:00 PM–2:00 PM

Poydras

## SR–ASHS Executive Committee Meeting

Presiding: David Reed

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Environmental Stress Physiology 1**

**(206) Salt Tolerance of Ten Perennial Plants in Asteraceae**

Shasha Wu, \*Youping Sun, Genhua Niu, James Altland, Raul I. Cabrera

**(207) The Effects of Partial Root-zone Drying on Water Uptake Between the Drying and Wetting Zones**

\*Douglas Alt, Marc W. van Iersel

**(208) The Responses of African Vegetable Amaranth (*Amaranthus* spp.) Varieties to Drought Stress**

\*Marcia Croft, Michael Mickelbart, Stephen C. Weller

**(209) Calcium Chloride Pretreatment Enhances Waterlogging Tolerance of Chrysanthemum under High Temperatures**

\*Yen-Ting Wang, Der-Ming Yeh

**(210) Oxygen Release Compound Alleviates Injuries of Chrysanthemum under Waterlogging and High Temperature Conditions**

\*Yen-Ting Wang, Der-Ming Yeh

**(211) Flowering Response of Bougainvillea to Drought Stress**

\*Mun Wye Chng, Kimberly Moore

**(212) The Interactive Effect of CO<sub>2</sub>, Temperature, and Water on Growth and Flowering of *Petunia ×hybrida***

\*Sarah A. Mills, Youyou Moon, Nicole L. Waterland

**(213) Assessing and Comparing Relationships Between Heat and Drought Tolerance: Analytical Approaches**

\*Jesse Traub, Muhammad Naeem, Greg Austic, James D. Kelly, David M. Kramer, Wayne H. Loescher

**(214) Environmental Stresses in Cranberry Production: Critical Thresholds and Physiological Effects**

\*Vincent Pelletier, Steeve Pepin, Simon Bonin, Jean Caron, Jacques Gallichand

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Floriculture 2**

**(362) Lantana Cultivars Respond Differently to Plant Growth Regulator Substrate Drenches**

Christopher J. Currey, \*Kellie J. Walters, Kenneth G. McCabe

**(363) Wetting Agent Addition for Limiting Risks of Hydrophobicity of Peat Substrate**

\*Jean-Charles Michel, Brian E. Jackson, William C. Fonteno

**(364) Effect of Water Content on the Hydration Efficiency of Several Organic Substrates**

\*Jean-Charles Michel, Brian E. Jackson, William C. Fonteno

**(365) Growing Media in France and Europe: Inventory and Current Perspectives**

\*Jean-Charles Michel, Gerald Schmilewski, Laurent Largent, Brian E. Jackson, William C. Fonteno

**(366) Comparative Efficacy of Various Substrates on Growth, Flowering, and Vase Life of ‘Vermeer’ *Lilium***

Iftikhar Ahmad, Faria Azher, \*John Dole

**(367) The Effect of Moisture Adjustment Procedures on Substrate Hydration and Wettability**

Ted C. Yap, \*Brian E. Jackson, William C. Fonteno

**(368) The Effects of Parboiled Rice Hull-amended Substrates on the Growth and Water Use of *Petunia* and *Zinnia***

Lizhen Xu, Nian Liu, \*Hye-Ji Kim

**(369) Physical and Chemical Properties of a Peat-based Substrate Amended with Parboiled Rice Hulls**

Lizhen Xu, Nian Liu, \*Hye-Ji Kim

**(370) Evaluation of Conventional and OMRI-certified Organic Fertilizers, and Their Effect on Soil pH**

\*Michael Hazlet, Steven Earl Newman

**(371) Evaluation of Injection-moldable PLA- and PHA-based Biocomposites for Horticultural Application: Processing, Properties, and Performance**

Jake J. Behrens, James A. Schrader, Kenneth G. McCabe, Mitchel M. Michel, David Grewell, Chris Currey, \*William Richard Graves

**(372) Fertilizer Rate, Vesicular-Arbuscular Mycorrhizae, and Trichoderma Application Influenced Poinsettia Growth and Development**

\*Corrie Cotton, Fawzy Hashem, Lurline Marsh

12:15–1:00 PM

Napoleon Expo Hall

**Graduate Student Poster Competition (Session 3)**

Please see the full schedule of competition papers and times starting on p. 18.

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Marketing and Economics**

**(146) Combating Rose Rosette Disease: Economics and Marketing**

Marco Palma, Luis Ribera, Charles R. Hall, David H. Byrne, \*Ellen Roundey

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Wednesday, August 5, 2015

**(147) How Do Intensive Cropping Systems Impact Profitability for Pumpkin Producers?**

\*Sarah E. Hulick, Stephen Reiners, Bradley Rickard

**(148) Green Growth: An Exploratory Study of Metro and Non-metro Garden Centers' Use of New Media Marketing**

Scott Stebner, \*Cheryl R. Boyer, Lauri Baker, Hikaru Peterson

**(149) Dates International Trade Could Be a Challenging Opportunity for Fruit Export Diversification for Chile**

Werther Kern, Marco Schwartz, \*Antonio Lizana

**(150) Estimating the Economic Feasibility of Producing Blackberries for Four Different Production Systems**

Hector German Rodriguez, Jennie Popp, \*Curt R. Rom, Heather Friedrich, Luke Freeman

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12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Nursery Crops 1**

**(414) Comparison of Pine Bark Substrates from Multiple Suppliers: White Wood Percentage and Volume**

Brian E. Jackson, William C. Fonteno, \*Abigail Wunch

**(415) Comparison of Pine Bark from Multiple Suppliers: Variation in Substrate Physical Properties**

Brian E. Jackson, William C. Fonteno, \*Abigail Wunch

**(416) A New Automated Irrigation System Reduces Irrigation Consumption during Gardenia Production Using Overhead Irrigation**

Katie Guitreaux, \*Edward W. Bush, Jeff Beasley, Maureen Thiessen, Jeff Kuehny

**(417) Growth Response of Date Palm (*Phoenix dactylifera*), Royal Palm (*Roystonea regia*), and Washington Palm (*Washingtonia robusta*) to Saline Irrigation Water**

\*Samar Shawaqfeh, Timothy K. Broschat

**(418) Physiological Response to Drought Stress and Water Use in Two Redbud (*Cercis*) Ecotypes**

Susmitha Nambuthiri, \*Robert L. Geneve, Sharon Kester

**(419) Wettability of Fresh and Aged Pine Bark Substrates from Different Sources**

\*Brian E. Jackson, William C. Fonteno, Abigail Wunch

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12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Organic Horticulture 1**

**(062) The Effects of Alternative Media and Deficit Irrigation on Organic Vegetable Transplant Production**

Heather Reshel Griffith, Cody Caswell, Audrey C. Geise, \*Sven Verlinden

**(063) The Effect of Rowcovers and Municipal Water or Rainwater on the Growth of Vegetable Crops in Organic High Tunnels in Kentucky**

\*Andrew Gott, Krystal Conway, Michael Tierney, Anthony Silvernail, Jonathan Cambron, Sheri B. Crabtree, John Sedlacek, Kirk William Pomper

**(064) Effects of No-till and Strip-till Systems in Organic Pepper and Broccoli Production**

\*Dana Jokela, Ajay Nair

**(065) The Effects of Cover Crops on Squash Bug (*Anasa tristis*) Populations**

\*Lindsay Davies, David Berle, Paul Guillebeau, Elizabeth Little

**(066) Exploring Systems Management of Insect Pests and Diseases on an Organic Vegetable Farm in Oregon**

\*Alexandra Stone, Jeff Falen, Helen Atthowe

**(067) CAL-Collaborative Organic Research and Extension Network: On-farm Research to Improve Strawberry/Vegetable Rotation Systems in Coastal California**

\*Carol Shennan, Joji Muramoto, Alexander Gershenson, Diego Nieto, Marc Los Huertos, Stefanie Kortman, Steven Koike

**(068) The Center for Sustainability of Farms and Families: Impacts of the Small-scale Farm Grant**

\*Joni Nelson, Allison Noel, Kirk William Pomper, Teferi Tsegaye

**(069) The Use of Shade Cloth and Passive Venting to Delay Spring Bolting in Organic Kentucky High Tunnels**

\*Anthony Silvernail, Marlon Bascombe, Kirk William Pomper

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12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Ornamentals/Landscape and Turf 1**

**(316) The Business License: An Effective Extension Tool and a Challenging Research Tool**

\*Ellen Bauske, Bodie V. Pennisi, Harrison Laird

**(317) Pine Sawyer Beetle (*Monochamus carolinensis*) Feeding Preference on Eleven Pinaceae Taxa**

\*Matthew S. Wilson, Jason J. Griffin, Raymond A. Cloyd, Timothy C. Todd

**(318) Economic Injury Threshold of Chilli Thrips (*Scirtothrips dorsalis* Hood) on Knock Out Rose**

\*Yan Chen, Steven Arthurs, Hayk Khachatryan, Dennis Ring, Allen D. Owings

**(319) Public Perception of a Sustainable Landscape Demonstration**

\*Susan S. Barton, Jules Bruck, Shreeram Inamdar, Douglas Tallamy, Joshua Duke

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Wednesday, August 5, 2015

**(320) Residents and Specialists Rate Residential Streamside Landscapes Differently**

Virginia I. Lohr, \*Rita L. Hummel

**(321) Golfer Perception of Trees on Golf Courses**

Tony Koski, \*Alison S. O'Connor

**(322) Landscape Evaluation of Daylily Cultivars for Daylily Rust: Association of Ploidy with Disease Severity**

\*Eugene K. Blythe, Cecil Pounders, Michael Anderson

**(323) Green Roofs on Guam—How Vegetation Survives Typhoons?**

\*Greg Wiecko

**(324) Evaluation of Ornamental Eudicot Species for Phytotoxic Response to Various Pesticides in the Southeastern U.S. for Interregional Research Project #4 (IR-4)**

\*B.A. Fraelich, T.M. Webster, C.L. Palmer

**(325) Temperature Affects Cacti and Succulent Development Rate**

\*John Erwin, Esther Gesick, Ken Altman, Fran Esqueda

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12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Vegetable Breeding**

**(038) Estimates of Genetic Variance for Drought Tolerance Traits in Tomato**

\*Limeng Xie, Kevin Crosby, John Jifon

**(039) Vernalization, Dormancy, and the Annualization of Onion (*Allium cepa*) for Breeding**

Chris D'Angelo, \*Irwin L. Goldman

**(040) Comparison of Tomato Genotypes Grown under Conventional and Organic Production System for Nutrient Composition**

\*Dilip Panthee

**(041) Breeder to Seeder to Eater Synergies**

\*Lane Selman, James R. Myers

**(042) Stability Estimates and Breeding for Eggplant Fruit Phenolic Acid Content**

\*John R. Stommel, Kathleen G. Haynes, Bruce Whitaker, Jaime Prohens

**(043) ANN Modeling of HS-SPME/GC-MS and Sensory Analysis of Potato Clones as a Potential Flavor Prediction Tool during Selective Breeding**

\*Raven A. Bough, Sastry S. Jayanty, David G. Holm

**(044) Gas Chromatography-based Myrosinase Activity and QTL Mapping in Broccoli (*Brassica oleracea* L. var. *Italica*)**

\*Alicia Gardner, Kang-Mo Ku, Allan Brown, John A. Juvik

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Citrus Crops**

**(308) Satsuma Mandarin Trial on the Central Coast of California**

\*Robert J. McNeil

**(309) The Effects of Rootstock on 'Ray Ruby' Grapefruit Fruit Quality**

\*Greg McCollum, Kim Bowman

**(310) Evidence for Alternative Pathways of CLAs Movement in Citrus Trees**

\*Ed Etxeberria

**(311) Yield, Tree Size, and Fruit Quality of Mature 'Owari' and 'Brown Select' Satsumas on *Poncirus trifoliata* 'Rubidoux' and Flying Dragon' Rootstocks in North Florida**

\*Peter C. Andersen, Brent Brodbeck

**(312) The Effects of Citrus Planting Design on Soil Properties and *Phytophthora nicotianae* Propagule Counts in Flood-irrigated Soil**

\*Ana L Olivares, Catherine Simpson, Ayako Kusakabe, Mamoudou Setamou, Shad D. Nelson, Veronica Ancona

**(313) Inoculum Sources of *Phytophthora nicotianae***

\*Ben O Perea, Shad D. Nelson, Olufemi J. Alabi, Veronica Ancona

**(314) Impact of Young Citrus Shoot Flush Nutrients and Phloem Sap Composition on Asian Citrus Psyllid Populations**

\*Srilakshmi Telagamsetty, Shad D. Nelson, Catherine Simpson, Mamoudou Setamou

**(315) Mature Citrus Transformation to Combat Citrus Diseases in Florida**

\*Hao Wu, Janice Zale, Yosvanis Acanda

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1:00–1:45 PM

Napoleon Expo Hall

**Graduate Student Poster Competition (Session 4)**

Please see the full schedule of competition papers and times starting on p. 18.

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—International Horticulture and Issues**

**(151) Current Status of Agriculture Extension in China**

Fu Cheng, \*Mengmeng Gu

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Wednesday, August 5, 2015

**(152) Improving Home Gardening Techniques for Small-scale Farmers in Bangladesh under the Farmer-to-Farmer Program**

\*Dilip Nandwani, Sochinwechi Nwosisi

**(153) Improving Organic Farming Practices for Training of Trainers in Nepal under the Farmer-to-Farmer Program**

\*Dilip Nandwani, Sochinwechi Nwosisi

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Ornamental Plant Breeding 1**

**(045) Characterizing Crop Timing and Quality Traits of an Interspecific Hybrid *Petunia axillaris* × *P. exserta* F7 Recombinant Inbred Line Population**

\*QiuXia Chen, Ryan Warner

**(046) Combating Rose Rosette—The Information Pipeline**

\*Brent Pemberton, David H. Byrne, Alan Windham, Jennifer Olson, Gary W. Knox, Kevin Ong

**(047) Combating Rose Rosette Disease: Development of Rapid, Efficient, User-friendly Virus Diagnostic Tools and Studying Virus–Vector Interactions**

Ramon Jordan, John Hammond, Mathews Paret, Binoy Babu, Francisco Corona, Jennifer Olson, Ronald Ochoa, \*Ellen Roundey, David H. Byrne

**(048) Combating Rose Rosette Disease: Breeding for Resistance**

David H. Byrne, Patricia Klein, \*Ellen Roundey, Muqing Yan, Brent Pemberton, Xinwang Wang, Mark Windham, Tom Evans, David C. Zlesak, Michael Dobres, Michele Scheiber, Christian Bedard, Marco Bink, Eric van de Weg, Jim Sproul, Don Holeman, Ping Lim

**(049) Induced Autotetraploidy Results in Reduced Fertility in ‘Crimson Pygmy’ Japanese Barberry**

\*Mark H. Brand, Shelley N. Durocher

**(050) ‘Little Madame’, a New *Vitex* Release**

\*Carol D. Robacker, David Knauff

**(051) SSRs Are Useful in Characterizing Genetic Diversity in Endangered *Magnolia ashei***

Christopher Von Kohn, Kevin Conrad, Richard T. Olsen, \*Margaret Pooler

**(052) Immature Embryo Culture of *Hydrangea quercifolia* Bartr**

\*Yibu Lu, Donglin Zhang, Yin Yi, Jinying Dong

**(053) ‘UMNAZ 493’ and ‘UMNAZ 502’; Two New Cold-hardy Deciduous Azalea Selections from the University of Minnesota**

\*Stan C. Hokanson, Steven McNamara, Nancy Rose, Kathryn Zuzek, Harold Pellett

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Pomology 1**

**(429) Salt Tolerance of 22 Pomegranate Cultivars**

\*Youping Sun, Genhua Niu, Jaime Iglesias, James Altland, Raul I. Cabrera

**(430) Pomegranate Variety Trial in Arizona**

\*Glenn C. Wright, Ursula K. Schuch

**(431) Effect of Bloom and Fruit Thinning on Quality Characteristics of ‘Harvester’ and ‘Redglobe’ Peach Fruit Varieties in Georgia**

\*Dario J. Chavez, Jeff Cook

**(432) A Survey of Fruit Quality Characteristics of Georgia Peach (*Prunus persica* L.) Cultivars**

\*Catherine Belisle, Daniel Jackson, Dario J. Chavez, Koushik Adhikari

**(433) The Effect of Gibberellic Acid (GA<sub>3</sub>) and Aminoethoxyvinylglycine (AVG) on Late-season Peach [*Prunus persica* (L.) Batsch] Varieties in Middle Georgia**

\*Dario J. Chavez, Jeff Cook

**(434) Antioxidant and Whitening Activities of Fruit Development Stages in Several Pear Cultivars**

Sun-Hee Yim, Kwang-sik Cho, Jin-Ho Choi, Ju-Hyun Lee, ByulHaNa Lee, Yoon-Kyeong Kim, \*Young Sik Cho, Myung-Su Kim

**(435) Hi1-4: A Unique Pawpaw Selection in the Kentucky State University Repository Collection**

\*Kirk William Pomper, Sheri B. Crabtree, Jeremiah Lowe

**(436) Performance of Five North American Pawpaw Advanced Selections in Grower Trials at Three Locations**

\*Sheri B. Crabtree, Kirk William Pomper, Jeremiah Lowe

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Postharvest 2**

**(109) The Effect of Phytosanitary Irradiation on the Quality of Chandler Pummelo [*Citrus maxima* (Burm.) Merr.]**

\*A. Jain, Anuradha Prakash

**(110) Hand versus Mechanical Harvest of Fresh-market Grape Tomatoes**

Samuel F. Hutton, \*Steven A. Sargent, Adrian D. Berry, Colleen Kennedy

**(111) Postharvest Control of Brown Rot (*Phytophthora palmivora*) of Florida Citrus Fruit Using Phosphite Salts**

\*Mark A. Ritenour, Cuifeng Hu, Jiuxu Zhang

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

- (112) **Influence of Shellac Coating, Proline Dip, and Harvest Date on Chilling Injury in ‘Marsh’ Grapefruit**  
Thanaa Ezz, \*Mark A. Ritenour, Jeffrey K. Brecht
- (113) **Evaluation of Alternative Colorants to Citrus Red II and Their Application on Citrus Fruit**  
\*Xiuxiu Sun, Elizabeth A. Baldwin, Mark A. Ritenour, Anne Plotto, Jinhe Bai
- (114) **Impact of Maturity and Peel Characteristics on the Response of Mandarin Varieties to Wax Application and Storage**  
\*David Obenland, Nittaya Ummarat, Mary Lu Arpaia
- (115) **Effect of Low-dose Gamma Irradiation on the Postharvest Quality of Seedless Kishu Mandarins (*Citrus kinokuni mukakukishu*)**  
\*J.J. Ornelas-Paz, K. Rodriguez, A. Jain, S. Thornton, A. Prakash
- (116) **Use of Edible Coatings to Improve Weight Loss, Microbial Stability, Appearance, Texture, and Sensory Qualities for Fresh and Cooked Zucchini**  
\*Elizabeth A. Baldwin, Maria Teresa Blanco-Diaz, Anne Plotto, Jinhe Bai, Rafael Font
- (117) **Transcriptomic Study on the Crispness Maintenance of ‘Honeycrisp’ Apple Fruit**  
\*Hsueh-Yuan Chang, Diana Trujillo, Cindy B.S. Tong
- (118) **Ripening-related Physicochemical Changes of Polysaccharides of ‘Golden Delicious’ Apples and Their Relationship with Postharvest Fruit Softening**  
\*J.J. Ornelas-Paz, P. Escalante-Minakata, E. Ochoa-Reyes, C. Rios-Velasco, J.D. Pérez-Martínez, P.B. Zamudio-Flores, V. Ibarra-Junquera, A. Prakash
- (119) **Impact of a Different Ripening Stage, as Defined by the Index of Absorbance (IAD), on Polyphenol Metabolism and Superficial Scald Development in Apple Fruit**  
\*Guglielmo Costa, Brian Farneti, Nicola Busatto, Alice Tadiello, Fabrizio Costa, Francesco Spinelli
- (120) **Use of 1-MCP to Extend Postharvest Life of Hardy Kiwi Fruit and Anticancer Effect of the Fruit Extract**  
Sooyeon Lim, Seung Hyun Han, Jeongyun Kim, Han Jun Lee, Jeong Gu Lee, \*Eun Jin Lee
- (121) **Activation of Ester Production in Japanese Apricot Fruit Stored under High-oxygen Atmosphere**  
\*Yumi Sasanuma, Hitoshi Matsubara, Koichi Nakahara, Yoshihiro Imahori
- (122) **Controlled Atmosphere and Dynamic CA-Chlorophyll Fluorescence Storage of ‘McIntosh’ and ‘Delicious’**  
\*Jacqueline Nock, Harrison Wright, John DeLong, Yosef Al-Shoffe, Christopher B. Watkins
- (123) **The Effect of Controlled Atmosphere Packaging on Overall Quality of ‘Wonderful’ Pomegranate**  
\*Antonio Lizana, A. Bustamante, J.L. Henriquez, V.H. Escalona, L. Antonio Lizana
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- 1:00–1:45 PM Napoleon Expo Hall
- Poster Session—Vegetable Crops Management 1**
- (380) **Day/night Temperature Effects on Kale Photosynthesis and Leaf Morphology**  
\*Liz Perkus, Justin Carlson, Joanne Slavin, John Erwin, Carl J. Rosen, Greg Schweser
- (381) **Light Source Effects on Hydroponically Grown Compact ‘Winter Density’ Bibb Lettuce**  
\*Kent D. Kobayashi, Teresita D. Amore
- (382) **Effectiveness of Botanical Extracts and Metamidophos to Control White Flies (*Bemisia tabaci*) in Husk Tomato (*Physalis ixocarpa*)**  
Francisco Radillo-Juárez, \*Jaime Molina-Ochoa, Oscar Rebolledo-Domínguez, Roberto Lezama-Gutiérrez, Francisco Javier Díaz-Hernández, John E. Foster
- (383) **Lettuce Screening for Growth, Quality, and Water Use Efficiency in a Hydroponic Culture System**  
Daniel I. Leskovar, \*Vasile Cerven
- (384) **Importance of Calibrating Cultural Greenhouse Growth Practices Using LED Technology in Tomato Production**  
\*Melanie Yelton, James Byrtus
- (385) **Conditioning Transplants Affects Early Growth but Not Final Productivity**  
\*Rick Heflebower, Daniel T. Drost
- (386) **Overhead Irrigation Saves Water Significantly in Commercial Potato Production in Florida**  
Yuqi Cui, Xiaolin Liao, \*Guodong Liu, Lincoln Zotarelli, Crystal Snodgrass, Alan Jones
- (387) **Commercial Performance of Broccoli Varieties Selected for a New Climate**  
\*Thomas Björkman, Monica P. Ozores-Hampton, Lincoln Zotarelli, Mark G. Hutton, Jeanine Marie Davis, Ronald Morse, Christy Hoepfing, Powell Smith, Wythe Morris
- (388) **Cucumber Plant Growth and Fruit Yield as Affected by 6-Benzyladenine and Magnesium Sulfate**  
\*Juan Carlos Diaz-Perez, Jesús Bautista
- (389) **Bell Pepper Plant Growth and Fruit Yield as Affected by S-ABA Concentration and Water Application Rate**  
\*Juan Carlos Diaz-Perez

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Wednesday, August 5, 2015

**(390) Developing No-till and Minimum Tillage Pumpkin Production in the Great Plains**

\*Cary L. Rivard, Jason J. Griffin, Megan Kennelly, DeAnn Presley, Peter Tomlinson, Kimberly Oxley

**(391) Growth and Physiological Responses of Chinese Cabbage ‘Chungwang’ to Different Temperatures during Early to Middle Growth Stages**

\*In-Chang Son, Eun Young Song, Seung Hwan Wi, SoonJa Oh, Kyung Hwan Moon, Sang Gyu Lee, Ki-Deog Kim

**(392) The Effect of Temperature on Germination of Southern-type Garlic during Early Growth Stage**

Kyung Hwan Moon, Eun Young Song, \*In-Chang Son, Seung Hwan Wi, SoonJa Oh, Chun Hwan Kim

1:00–2:00 PM

Bayside B

**Consumer Horticulture and Master Gardeners (CHMG) Working Group Business Meeting**

Objectives: To become familiar with cooperative extension home horticulture programs within the United States, to identify and develop the ability to respond to home horticulture information needs, and to improve methods of information delivery to home horticulture audiences.

Ellen Bauske, Chair; Lucy Bradley, Chair-elect

1:00–2:00 PM

Bayside C

**Organic Horticulture (ORGH) Working Group Business Meeting**

Objectives: To stimulate discussion on horticultural research techniques that enable growers to produce horticultural crops according to organic standards, and on the processes that make organic production systems function.

Monica Ozores-Hampton, Chair; Sven Verlinden, Chair-elect; Mary Rogers, Secretary

1:00–2:00 PM

Estherwood

**Root Growth and Rhizosphere Dynamics (RHIZ) Working Group Business Meeting**

Objectives: To provide a forum to promote and exchange information on basic and applied research about the plant rhizosphere, soil microorganisms, root growth and development, and root modeling, which apply to horticultural (fruit, vegetable, ornamentals), forest, and agronomic crops grown in synthetic or field soils.

Astrid Volder, Chair; J. Pablo Morales-Payan, Secretary

1:00–2:00 PM

Southdown

**Tropical Horticulture Crops (TROP) Working Group Business Meeting**

Objectives: To discuss the culture, postharvest physiology, and processing of tropical fruits, vegetables, herbs, spices, condiments, pharmaceuticals, flavors, fragrances, latex, nuts, oils, beverages, and underutilized horticultural plants.

Ram Uckoo, Chair; Manjul Dutt, Secretary

1:45–3:30 PM

Nottoway

**Oral Session—Floriculture 1**

Moderator: Jared Barnes, [barnesj@sfasu.edu](mailto:barnesj@sfasu.edu)

1:45–2:00 PM

**Modeling the Effects of Macronutrients on Fallow Soilless Root Substrate pH**

\*Jared Barnes, Paul V. Nelson, Brian E. Whipker, David A. Dickey, Dean Hesterberg, Wei Shi

2:00–2:15 PM

**Influence of Nutrient Accumulation in *Chrysanthemum xmorifolium* on Root Substrate pH Over Time**

\*Jared Barnes, Paul V. Nelson, Brian E. Whipker, David A. Dickey, Dean Hesterberg, Wei Shi

2:15–2:30 PM

**Efficacy of Various Nutrition Regimes on Growth, Flowering, and Seed Yield of *Calendula officinalis***

Iftikhar Ahmad, Nazish Jabeen, Khurram Ziaf, \*John Dole

2:30–2:45 PM

**Silicon Improves Flowering Characteristics of Sunflower and Petunia at Low Phosphorus Rates**

\*Jennifer Boldt, James Altland, Wendy Zellner, James Locke

2:45–3:00 PM

**Quantifying the Effects of Chelated Calcium and Salicylic Acid on the Leaf Mechanical Strength of Poinsettia**

\*Uttara Samarakoon, James Faust, John Dole

**3:00–3:15 PM**

**Growth and Development of Poinsettia (*Euphorbia pulcherrima*) under Reduced Temperature Finishing and Bench-top Root-zone Heating**

\*Madeline W. Olberg, Roberto G. Lopez

3:15–3:30 PM

**Inhibition of Premature Flowering of *Phalaenopsis* Orchids by High Temperature Interruption**

Hyo Beom Lee, \*Ki Sun Kim

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

1:45–3:30 PM

Oak Alley

## Oral Session—Genetics & Germplasm 1

Moderator: Mark Ehlenfeldt, mark.ehlenfeldt@ars.usda.gov

1:45–2:00 PM

### Fungicide Treatment of Avocado (*Persea americana* Mill.) Trees for Management of Laurel Wilt Disease

\*Tomas Ayala-Silva, Michael Winterstein

2:00–2:15 PM

### Unlocking Genetic Potential of the Peach Collection at the National Clonal Germplasm Repository in Davis, California

\*Ksenija Gasic, Carole L. Bassett, David Michael Glenn, John E. Preece

2:15–2:30 PM

### Advanced Genetic and Genomic Resources for the American Cranberry (*Vaccinium macrocarpon* Ait.)

\*Brandon Schlautman, Lorraine Rodriguez-Bonilla, Giovanni Covarrubias Pazarán, Luis Diaz Garcia, Shawn Steffan, Juan Zalapa

2:30–2:45 PM

### Progress in Precision Breeding for Genetic Improvement of Muscadine Grapevine

\*Dennis J. Gray, Zhijian Li, Stephen Stringer, Thomas W. Zimmerman, Trudi Grant, Deborah Dean

2:45–3:00 PM

### Mutagenesis Analysis of Acetolactate Synthase (ALS) Genes from *Vitis vinifera* for Use as a Selectable Marker to Facilitate Precision Breeding of Grapevine

\*Zhijian Li, Chi Nguyen, Deborah Dean, Trudi Grant, Matthew Creech, Bishu Das, Dennis J. Gray

3:00–3:15 PM

### Breeding and Hybridization of *Vaccinium corymbodendron* Dunal: Unexpected Triploidy

\*Mark Ehlenfeldt, James R. Ballington

3:15–3:30 PM

### Wild *Vaccinium* Species in Turkey

\*Huseyin Celik, Sedat Serce

1:45–3:30 PM

Maurepas

## Oral Session—Produce Quality, Safety, and Health Properties

Moderator: Michael Paul Dzakovich, mdzakovi@purdue.edu

1:45–2:00 PM

### Using Light to Manipulate the Nutritional and Sensory Properties of Greenhouse Tomatoes with Red, Blue, and Far-red Supplemental LEDs

\*Michael Paul Dzakovich, Celina Gomez-Vargas, Cary A. Mitchell

2:00–2:15 PM

### Effect of Day and Night Temperature on Red Russian Kale Mineral Nutrient, Vitamin C, and Fiber Content

\*Justin Carlson, Liz Perkus, Joanne Slavin, Carl J. Rosen, John Erwin

2:15–2:30 PM

### Preharvest Effects on Postharvest Quality of Strawberries Grown in High Tunnels

\*Kelly Gude, Cary L. Rivard, Kimberly Oxley, Helena Pontes Chiebao, Eleni D. Pliakoni

2:30–2:45 PM

### Enumeration of Sanitizer-injured Coliform Bacteria in the Production and Harvest Environment of Vegetables

\*Hidemi Izumi, Yuji Nakata, Ayano Inoue, Takuma Shiraki

2:45–3:00 PM

### Epicuticular Physicochemical Properties on Porcine Rotavirus Attachment to 24 Leafy Green Vegetables and Tomatoes

\*Kang-Mo Ku, Lu Lu, Sindy Palma-Salgado, Hao Feng, John A. Juvik, Thanh Nguyen

3:00–3:15 PM

### A National Effort That Helps Improve Food Safety of Potato Products

\*Yi Wang, Jeffrey Endelman, Paul Bethke

3:15–3:30 PM

### Frying Performance Testing of *Camellia oleifera* Oil

\*Charles Allen, John M. Ruter, Ron Pegg

1:45–3:45 PM

Borgne

## Oral Session—Vegetable Crops Management 2

Moderator: Ajay Nair, nairajay@iastate.edu

1:45–2:00 PM

### Cropping System and Vegetable Production in Miami-Dade County, Florida

\*Qingren Wang

2:00–2:15 PM

### Growing Vegetables for Local Consumption in the Northern Great Plains

\*Chiwon W. Lee, Thomas Kalb, Terrance Nennich

2:15–2:30 PM

### Photosynthetic Responses of “Specialty Greens” to Irradiance and Carbon Dioxide

\*John Erwin, Esther Gesick

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

## Wednesday, August 5, 2015

2:30–2:45 PM

### **Evaluation of Activated Charcoal as a Remedy for Soil Residual Herbicide Injury**

\*Joseph G. Masabni, Muthu Bagavathiannan, Thomas Isakeit, Paul Baumann

2:45–3:00 PM

### **Application of Biochar in Potato Production and Its Effects on Soil Properties, Crop Yield, and Quality**

\*Ajay Nair, Vince Lawson

3:00–3:15 PM

### **Biochar Soil Amendment to Save Water and Enhance Vegetable Productivity**

\*Britney Hunter, Shawn Olsen, Marion Murray, Diane Alston, Grant Cardon, Darren McAvoy

3:15–3:30 PM

### **Winter Produce Potential in Conventional and “Deep Winter” Greenhouses in the Upper Midwest**

\*Liz Perkus, John Erwin, Carl J. Rosen, Joanne Slavin, Justin Carlson, Greg Schweser

3:30–3:45 PM

### **Growing Food with Garbage: Waste Amendments for Vegetable Production**

\*Rebecca J. Long, Robert Bercaw, Angela R. Possinger, José A. Amador, Rebecca N. Brown

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2:00–3:00 PM

Poydras

### **Certified Horticulturist (CH) Board Meeting**

Fred T. Davies Jr., Chair; Kerrie Badertscher, Steve Carver, Janet C. Cole, Terry Ferriss, George Fitzpatrick, Robert Geneve, Mary Lamberts, Douglas Needham, Karen Panter, Kay Phelps, Tim Rhodus, Susan Steinberg, Juanita Popenoe, Gary Bachman

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2:00–4:00 PM

Southdown

—CEU Approved—

### **Workshop Session—Horticultural Demonstration Initiatives: Lessons Learned from Successful Partnerships**

Sponsor: Tropical Horticultural Crops Working Group

Moderator/Coordinator: Rammohan Uckoo, rammohanuckoo@yahoo.com

Moderator: Shad D. Nelson, shad.nelson@tamuk.edu

Objectives/Abstract: Promoting innovations and educating horticulture at the grass roots through an integrated industry and land grant university system have existed for several decades. However, developing viable partnerships is the need of the hour. The collaborations help address specific problems, exchange innovative ideas and provide rapid means of dissemination of discovered sciences. These strategic partnerships also provide an excellent opportunity to the academicians, scientists, producers, industry personnel and students to nurture both

their scientific as well as leadership skills. This workshop will discuss and showcase some of the case studies of successful partnerships of university and industry to effectively integrate and work toward expanding the mission of land grant system. The challenges and opportunities of establishing such partnerships will also be discussed.

2:00–2:30 PM

### **Improving Orchards Irrigation Management Practices at the On-Farm Level: A 10 Year Case Study of Collaboration between Scientists and Citrus Producers**

\*Shad D. Nelson, Mac Young, Catherine Simpson, Juan Carlos Melgar, Mamoudou Setamou

2:30–3:00 PM

### **Gulf Coast Landscape Horticulture Research Gardens—A New LSU AgCenter Industry/University Partnership**

\*Allen D. Owings

3:00–3:30 PM

### **Application of Appropriate Postharvest Technologies to Benefit the Sweetpotato Industry**

\*David Picha

3:30–4:00 PM

### **On-Farm Demonstrations of Novel Planting Strategies: Working with Growers to Optimize Soil Environments, Reduce Water Loss, and Manage Pests and Diseases**

\*Catherine Simpson, Shad D. Nelson, Ayako Kusakabe, Beatriz B. Contreras, Shima Chaudhary, Juan C. Melgar, Mamoudou Setamou

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2:00–6:00 PM

Waterbury

—CEU Approved—

### **Colloquia Session—Climate Change: Realities, Controversies, and Responses**

Sponsor: Fruits and Vegetables Working Group

Coordinators: Dennis T. Ray, dtray@email.arizona.edu; Carl E. Sams, carlsams@utk.edu; William Vance Baird, bairdw@msu.edu

Objectives: Present and evaluate the scientific evidence for global climate change, assess its quality and interpret implications to plants and plant production in horticulture, and investigate existing/potential adaptations (natural and engineered).

Abstract: By understanding recent trends in climate, we can gain insight into the challenges that climate change is likely to bring to horticultural production over the next several decades. Horticultural crop value is derived from both the quantity and the quality of the harvested plant material, and both quantity and quality are affected by climate. Because of this there are increasing concerns about how climate change will impact the sustainability of our horticultural production systems. This colloquium will look at trends in climate that are most likely to continue or intensify, and the use of models to predict how near-term changes in climate might impact the physiology of temperate to tropical crops. Perennial crops (apple, grape, citrus, coffee, banana/plantain, and cacao) and one annual crop (lettuce) will be discussed. In all cases,

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unanticipated stresses may occur, and new breeding techniques and genetic resources may need to be adopted or developed to accelerate the breeding of new cultivars. All of this will lead toward a discussion of climate smart agriculture, which is the alignment of food security, sustainable production, climate resiliency, and greenhouse gas mitigation.

2:00–2:15 PM

**Introductory Remarks**

2:15–3:00 PM

**Past as Prologue: What Do Recent Climate Trends Tell Us about Tomorrow?**

\*Robert Henson

3:00–3:30 PM

**Near-term Climate Predictions and Their Impacts on the Physiology of Temperate Crops**

\*Anthony King, Syeda Mariya Absar,  
Sujithkumar Surendran Nair, Benjamin L. Preston

3:30–4:00 PM

**Past and Future Climate Patterns Affecting Temperate, Sub-tropical and Tropical Horticultural Crop Production**

\*David Michael Glenn

4:00–4:30 PM

**Sustainable Lettuce: Adaptability to Uncertain Production Conditions**

\*Ryan Hayes

4:30–5:00 PM

**The Other CSA: Climate Smart Agriculture**

\*Joanne Logan

5:00–5:30 PM

**Panel Discussion**

2:15–3:30 PM

Bayside C

**Oral Session—Plant Nutrient Management 1**

Moderator: Charles A. Sanchez, [sanchez@ag.arizona.edu](mailto:sanchez@ag.arizona.edu)

2:15–2:30 PM

**Variable Rate Fertilizer Application for Desert Vegetable Production**

\*Charles A. Sanchez, Pedro Andrade-Sanchez

2:30–2:45 PM

**Effects of Mulching and Micronutrient Management on Growth and Yield of Onion**

\*Md. Abul Kalam Azad, Edward Binod Soren,  
Juan Carlos Diaz-Perez, El-Jaoual Eaton Touria

2:45–3:00 PM

**Microbial Bio-fertilizers for Pepper Production**

\*Patrick Hogan, Chiun-Kang Hsu, Brian P. Klubek,  
S. Alan Walters

3:00–3:15 PM

**Storage Root Shape Determination in Sweetpotato: Fifty Shades of Phosphorus**

\*Arthur Q. Villordon

3:15–3:30 PM

**Physiological and Molecular Basis for the Low Nitrate (NO<sub>3</sub><sup>-</sup>) Assimilation in Blueberry**

\*Douglas Alt, Anish Malladi

3:00–4:00 PM

Estherwood

**Awards Committee Meeting**

Fred T. Davies, Chair; Dewayne L. Ingram, Paul W. Bosland,  
Mary H. Meyer, Michael A. Arnold

3:00–4:00 PM

Poydras

**Certified Professional Horticulturist (CPH) Board Meeting**

Gary Bachman, Chair; Deborah Ellis, Terry Ferriss,  
Robert Mazalewski, Mike Orzolek, Chad Miller

4:00–5:00 PM

Maurepas

**2015 B.Y. Morrison Lecture**

Topic: A Different Approach to Plant Breeding:  
Integrating Consumers with Genetics



**Harry Klee**

University of Florida, Gainesville

Flavor is the most important of consumer traits. Yet it is also the least understood and most difficult challenge for breeding. We have taken a systematic approach, linking genetics to consumer preferences using the tomato as a model. We seek to understand the underlying chemistry of flavor preferences, turning that knowledge into a molecular toolkit for breeders. Ultimately the goal is to understand precisely what the consumer wants and to deliver that product in a way that drives consumers to adopt healthier diets.

**About the B.Y. Morrison Lecture:**

The B.Y. Morrison Lecture was established in 1968 by the Agricultural Research Service (ARS) of the U.S. Dept. of Agriculture (USDA), to honor the memory of Benjamin Y. Morrison (1891–1966) and to recognize scientists who have made outstanding contributions to ornamental horticulture and other environmental sciences, to encourage the wide application of these sciences, and to stress the urgency of

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Wednesday, August 5, 2015

preserving and enhancing natural beauty. The Morrison Lecture is on a scientific or policy topic of the lecturer's choice.

Coordinator: Kim Kaplan, Kim.Kaplan@ars.usda.gov

4:00–5:15 PM

Bayside A

## Oral Session—Water Utilization & Management

Moderator: Bruk Belayneh, belayneh@umd.edu

4:00–4:15 PM

### Using Wireless Sensor Networks for Irrigation and Nutrient Management in Strawberry Production

\*Bruk Belayneh, John D. Lea-Cox

4:15–4:30 PM

### Demonstration of Improved Citrus Irrigation Using Soil Balance Model and Soil Moisture Sensors

\*Kelly Morgan

4:30–4:45 PM

### Surface Irrigation Degradation of Water Quality in Streams

\*Byron M. Shock, Ellen Hammond, Gary Faw, Ken Diebel, Clinton C. Shock

4:45–5:00 PM

### Dormant Stem Water Potential Responds to Cycles of Hydration as Well as Changing Environmental Conditions in Deciduous Tree Crops

\*Luke Milliron, Andres Olivos, Sebastian Saa, Blake Sanden, Kenneth Shackel

5:00–5:15 PM

### Irrigation Requirements for Seed Production of Five Native *Lomatium* Species

\*Clinton C. Shock, Erik Feibert, Alicia Rivera, Monty Saunders, Nancy Shaw, Francis Kilkenny

4:00–6:00 PM

Estherwood

## Research Division Advisory Council Meeting

Patricia Knight, Chair; John D. Lea-Cox; All Working Group Chairs and Chairs-elect, Research Division

4:00–6:00 PM

Nottoway

## Workshop Session—Speed-dating on Career Options, 3rd Edition

Sponsor: ASHS Industry Division

Moderator/Coordinator: Angela Davis, angela.davis@hmclosure.com

Objectives: To provide students short and quick “live” autobiographies from several well-known Industry researchers, to hear their stories on

education, research pathways and career choices, and solicit ideas on the students' own career options and opportunities.

Abstract: When it comes to determining career pathways, students can be faced with vastly different opportunities. These career choices can include positions in industry, university, government or even private consulting. Given that industry often leads to exciting and rewarding careers, this workshop introduces students to industry scientists and technical people in a fun and quick-paced way. Scientists from several horticultural companies will give a brief description of their education, past experience, current roles and responsibilities, and provide humble advice for students looking at career options, with emphasis on how their education has supported their career path. In addition to a quick Q&A, students can take time afterward to mingle and discuss career ideas with the speakers.

4:00–4:15 PM

\*Fred Hulme

4:15–4:30 PM

\*Angela Davis

4:30–4:45 PM

\*Rakesh Kumar

4:45–5:00 PM

\*Tamiko Gaines

5:00–5:15 PM

\*Jeffrey Norrie

5:15–5:30 PM

\*Steven Michael Millett

4:30–6:00 PM

Oak Alley

## Oral Session—Growth Chambers and Controlled Environments 2

Moderator: Geoffrey Weaver, gmweaver@uga.edu

4:30–4:45 PM

### High-intensity Blue Light as a Night Interruption Can Regulate Flowering of Photoperiodic Ornamentals

\*Qingwu Meng, Erik S. Runkle

4:45–5:00 PM

### The Effects of Daily Light Integral and Nutrient Solution Concentration on Growth of Several Basil Species (*Ocimum* spp.)

\*Kellie J. Walters, Christopher J. Currey

5:00–5:15 PM

### Using Normalized Difference Vegetation Index (NDVI) as a Proxy for Plant Size in Water Use Models to Facilitate Precision Irrigation

\*Shuyang Zhen, Marc W. van Iersel

5:15–5:30 PM

### LED Light Screening Method for Better Quality and Quantity of Lettuce

\*Srinivasa Reddy, Mark G. Lefsrud, Bo-Sen Wu

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



Wednesday, August 5, 2015

5:30–5:45 PM

**Blue Light Dose-response of Growth and Morphology of Tomato Seedlings under Different Blue and Red Photon Flux Ratios Using LEDs**

\*Ricardo Hernandez, Chieri Kubota

5:45–6:00 PM

**Chlorophyll Fluorescence Measurements Can Indicate Carbon Fixation Rates of Lettuce**

\*Geoffrey Weaver, Marc W. van Iersel, Erico Mattos, Rhuano S. Ferrarezi

4:45–6:00 PM

Bayside C

**Oral Session—Organic Horticulture 1**

Moderator: Brian Ward, bw@clemson.edu

4:45–5:00 PM

**Rice as a Vegetable: An Organic Perspective of System of Rice Intensification**

\*Brian Ward

5:00–5:15 PM

**Establishment of a Sustainable Production System for Chaya (*Cnidoscolus aconitifolius*) in Quintana Roo, Mexico**

\*Roland Ebel, María de Jesús Méndez-Aguilar

5:15–5:30 PM

**Comparison of Fruit Qualities of Melons (*Cucumis melo* L.) from Around the Globe Grown on a Heavy Soil Using Organic Agricultural Practices**

\*Girish Kumar Panicker, Germana Salazar-Mejia, Victor Njiti, Padma Nimmakayala, Yan Tomason, Umesh Reddy

5:30–5:45 PM

**Comparing Yield of Baby-Leaf Lettuce with Salanova™ ‘Baby-Leaf’ Head Lettuce Production in Northwest Washington**

Charlene Grahn, Carol A. Miles, \*Chris Benedict

5:45–6:00 PM

**Yield Performance of Sweetpotato as an Alternative Agriculture Enterprise in Delaware**

\*Lekha Paudel, Marikis N. Alvarez, Rose Ogutu

5:00–6:00 PM

Maurepas

**B.Y. Morrison Reception**

Sponsored by the Agricultural Research Service

5:00–6:00 PM

Southdown

**Oral Session—Plant Nutrient Management 2**

Moderator: Menahem Edelstein, medelst@volcani.agri.gov.il

5:00–5:15 PM

**Nitrogen, Phosphorous, and Potassium Uptake and Partitioning on Open-field Tomato Production with Seepage Irrigation in Florida**

\*Monica P. Ozores-Hampton, Francesco Di Gioia, Sato Shinjiro, Eric Simonne, Kelly Morgan

5:15–5:30 PM

**Nitrogen- and Carbon-stable Isotopes in Organic and Conventional Fertilized Greenhouse Tomatoes**

\*Marlee Anne Trandel, April Vigardt, S. Alan Walters, Mihai Lefticariu, Mary Kinsel

5:30–5:45 PM

**Comparative Yield Response of Lettuce to a Commercial Seaweed Extract in Two Hydroponic Systems: A Preliminary Evaluation**

\*Jonathan Egilla, Isabelle Nyirakabibi

5:45–6:00 PM

**Use of Enriched Fertilization to Overcome Nutritional Deficiency in Grafted Melons**

\*Menahem Edelstein

5:30–6:30 PM

Bayside B

**Water Utilization and Management (WUM) Working Group Business Meeting**

Objectives: To gather and disseminate information on water conservation, crop water requirements, irrigation methods, and efficient and effective water management.

Raul I. Cabrera, Chair; Susmitha Nambuthiri, Chair-elect

6:00–7:00 PM

Estherwood

**Association of Horticulturists of Indian Origin (AHIO) Business Meeting**

Objectives: To promote fellowship among the horticultural scientists of Indian origin and increase professional opportunities through increased interaction among them and with other American scientists; promote awareness of ASHS membership benefits and encourage membership pool from India; facilitate and support ASHS ad-hoc membership to attract Indian Horticulturists; act as scientific ambassadors to facilitate an exchange of scientific information and cultural ideas between India and countries in North America; and help share and transfer results of scientific research to India to improve agricultural productivity and quality.

Tripti Vashisth, Chair; Susmitha Nambuthiri, Secretary

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Wednesday, August 5, 2015

6:00–7:00 PM

Oak Alley

### **Growth Chambers and Controlled Environments (CE) Working Group Business Meeting**

Objectives: To provide leadership for horticulturists in the use of growth chambers and controlled environments and to provide a means for cooperative research and teaching among those using or interested in such facilities in their programs.

Marc W. van Iersel, Chair; Dean Kopsell, Chair-elect; Christopher Currey, Secretary

6:00–7:00 PM

Southdown

### **Plant Nutrient Management (PNM) Working Group Business Meeting**

Objectives: To exchange ideas and information on mineral nutrition and to provide interaction between industry and public institutions interested in mineral nutrition of horticultural crops.

Dharma Pitchay, Chair; Donald Merhaut, Chair-elect

6:00–7:00 PM

Maurepas

### **USDA–ARS All-employee Meeting**

6:00–8:00 PM

Borgne

—*CEU Approved*—

### **Workshop Session—Fresh Produce in the City: A Workshop and Tour**

Sponsor: Local Food Systems Working Group

Moderator: Carl Motsenbocker, cmots@lsu.edu

Coordinator: William Bruce Evans, bill.evans@msstate.edu

Objectives: Both the workshop and the tour are designed with the underlying objective of bringing together interested ASHS members and leveraging their interest and expertise in bringing fresh produce to urban and other underserved locations now and in the future.

Abstract: One of the nation's most important movements related to horticulture is the urban farming movement and access to fresh produce in underserved and other urban environments. These movements are huge opportunities for horticulture and related sciences to simultaneously serve the sciences and the local and global society. Efforts to study, develop, and support these movements include partners from both private and public institutions, individuals, communities, industries, schools, and faith-based institutions throughout the country. Starting with an introduction to one NGO's efforts to bring fresh produce to several U.S.

cities, including inner-city New Orleans, this workshop will include brief introductory presentations before becoming an open discussion of current and future efforts to bring fresh produce to underserved areas. The discussions may include audience descriptions of efforts they are involved in; perceived current and future needs; introductions and networking opportunities; current and future research; teaching and extension/service needs; integration of horticultural expertise into community projects; and current and future financial, physical, and human support for these efforts. In addition to the workshop, a short, informal tour to a New Orleans center providing fresh produce for underserved clientele is planned. The tour will complement the workshop, providing context for discussions at the workshop and in the future. Both the workshop and the tour are designed with the underlying objective of bringing together interested ASHS members and leveraging their interest and expertise in this space now and in the future.

### **It's All about the Food**

\*Cindy Ayers-Elliot

### **ReFresh Project: A Community Health Hub**

\*Jeffrey Schwartz

6:00–9:00 PM

Poydras

### **American Pomological Society (APS) Executive and Advisory Board Meeting**

Presiding: Peter Hirst

6:00–9:00 PM

Bayside A

### **Scholars Ignite: Student Competition**

Coordinators: Andrew Koeser, akoeser@ufl.edu; Brian Pearson, bpearson@ufl.edu

Brian Pearson and Andrew Koeser are hosting the annual competition called "Scholars Ignite" for graduate students to share their discoveries and creations to a non-specialist audience.

ASHS looks forward to making this opportunity available to graduate students to communicate the impact of their research, projects and scholarly activities. Graduate students will make compelling presentations in three minutes using no more than one single PowerPoint slide or visual aid. The purpose of the presentation is to generate awareness, stimulate thought, and inspire attendees to appreciate the breadth and depth of horticulture research and scholarly activities. This is similar to the three- to five-minute thesis and research presentation events (e.g. Three Minute Thesis, Ignite, or Scholars' Studio) occurring around the globe, and done especially well in Australia, British Columbia, and the University of Washington. Our hope is that this activity will stir up the society's membership around graduate student learning, research, discovery, and creativity.

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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## Thursday, August 6, 2015

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7:00–8:00 AM Starbucks - Lobby  
**Graduate and Undergraduate Student Morning Gathering**

Why wait until the student events to meet the other graduate and undergraduate students at ASHS this year? Come by and meet them while you grab your morning cup of coffee (or tea) . . . we'll meet in the lobby at Starbucks.

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7:00–8:00 AM Bayside B  
**Production and Harvest Mechanization (MECH) Working Group Business Meeting**

Objectives: To provide an informal organization to bring together those interested in production and harvest mechanization needs, opportunities, and problems in horticultural crops.

Rachel Elkins, Chair

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7:00 AM–6:00 PM Gallier A  
**Speaker Ready Room**

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room. Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly. Updates and modifications can be made to your presentation at this time.

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7:00 AM–6:00 PM Gallier B  
**Poster Presenter Recording Room**

New this year, we will be inviting/encouraging poster presenters to record their presentations. This can be done two ways; both require an uploaded PDF of your poster in the Upload Poster section of your Speaker's Corner. You may either upload the audio part of your presentation before arriving at the conference by uploading an MP3 recording of your presentation along with the PDF; or this can be done on-site in Gallier B Room at the conference (if you decide to record onsite, please keep in mind that your audio recording will not be available until after the meeting has ended). A QR code has been assigned to your poster so that you can include the QR code on your poster. Conference attendees can then scan the code and get access to your poster presentation in the online program. Poster presenters will still have to present during the conference at their assigned time but this process will allow your recorded presentation to remain part of the ASHS archives. All recordings will be housed on the ASHS website indefinitely. Your presentation will be accessible on our site with the rest of the ASHS technical program giving the poster presenters the same opportunity that oral presenters hold.

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7:30 AM–5:00 PM Napoleon Registration  
**Registration Open**

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8:00–9:00 AM Poydras  
**Human Issues in Horticulture (HIH) Working Group Business Meeting**

Objectives: To stimulate discussion among those engaged in research and education programs in areas of horticulture that interact with the social sciences, such as economics, psychology, education, various forms of therapy, urban and rural sociology, and urban and rural development.

Cynthia Haynes, Chair

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8:00–9:00 AM Bayside C  
**Oral Session—Ornamental Plant Breeding**

Moderator: to be announced

8:00–8:15 AM  
**Search for Genetically Conditioned Resistance to Rose Rosette Disease Among Garden Roses**

\*Ellen Roundey, Christian Bedard, Michael Dobres, Claude Graves, Jennifer Olson, Alan Windham, Mark Windham, Laura Miller, David H. Byrne

8:15–8:30 AM  
**Optimizing Polyploidization of In Vitro-grown *Prunus x cistena***

\*Nathan A. Maren, Joseph Rothleutner, Todd P. West

8:30–8:45 AM  
**Heritability of *Rosa* spp. Plant Architecture in Diploid Rose**

\*Xuan Wu, Shuyin Liang, David H. Byrne

8:45–9:00 AM  
**Microsatellite Development from *Fothergilla xintermedia* and Cross-transferability to Other Genera in the Hamamelidaceae**

Phillip A. Wadl, \*Elizabeth Hatmaker, Bonnie H. Ownley, Robert N. Trigiano

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8:00–9:00 AM Bayside B  
**Vegetable Breeding (VGBR) Working Group Business Meeting**

Objectives: To promote the exchange of information on breeding procedures, screening techniques, and other areas of specific interest to vegetable breeders, to encourage the exchange of germplasm among vegetable breeders, and to maintain current lists of vegetable variety names and descriptions.

Kevin Crosby, Chair; Sam Hutton, Chair-elect; Bill Kazokas, Secretary

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Thursday, August 6, 2015

8:00–9:15 AM

## Oral Session—Propagation 1

Moderator: Andrew King, aking@tamu.edu

8:00–8:15 AM

### Timing, Root Zone Temperatures, and Auxin Concentrations Affect Quantity and Quality of Adventitious Roots Regenerated on Shoot Cuttings of Native Texas Groundcovers

\*Andrew King, Michael A. Arnold, Charles R. Hall, Brent Pemberton, Marco Palma, Sean Carver

8:15–8:30 AM

### Utilizing Anti-auxin to Increase Axillary Shoot Proliferation Rate of Japanese Elm

\*Todd P. West, Nathan A. Maren

8:30–8:45 AM

### Rooting of Single-node *Pennisetum setaceum* ‘Rubrum’ Culm Cuttings is Influenced by Photosynthetic Daily Lght Integral, Medium Temperature, and Hormone Application

\*Garrett Owen, Roberto G. Lopez

8:45–9:00 AM

### Scion Root Affects Flowering, Yield, and Nutrient Status in ‘Shiranuhi’ Mandarin Hybrid

\*Seokbeom Kang Sr., Youngeel Moon, Seunggab Han, Haejin Lee, Younghun Choi, In-Chang Son

9:00–9:15 AM

### Rooting Single-node Floricane Blackberry Cuttings

\*Abigail Debner, Harlene Hatterman-Valenti, Fumiomi Takeda

8:00–9:30 AM

## Oral Session—Tropical Horticultural Crops

Moderator: Edgar L. Vinson III, vinsoed@auburn.edu

8:00–8:15 AM

### Pitahaya or Dragon Fruit: A New Crop with a Future for Southern California Small-scale Farmers

\*Ramiro Lobo, Jose Fernandez de Soto, Jose L. Aguiar, Gary Tanizaki

8:15–8:30 AM

### Assessment of Phenological and Morphological Characteristics of Banana (*Musa* sp.) to Determine Potential for Fruit Production in Coastal Alabama

\*Edgar L. Vinson III, Elina D. Coneva, Joseph M. Kemble, Floyd M. Woods, Esendugue G. Fonsah, Penelope Perkins-Veazie, Jeff L. Sibley

Bayside A

8:30–8:45 AM

### Potential Ethnic Vegetable Crops for Production in the Southeastern United States

\*Rao S. Mentreddy, Lavanya Abburi, Robert Spencer, Julio Correa, Radhika Kakani, Eddie Wheeler

8:45–9:00 AM

### Sunn Hemp (*Crotalaria juncea* L.) Intercrop and Mulch Reduces Wind Stress and Increases Growth and Development of Papaya (*Carica papaya* L.)

\*Christopher Vincent, Bruce Schaffer, Diane Rowland

9:00–9:15 AM

### Tropical Cover Crop Mulch Systems for Low-external-input Reduced-tillage Vegetable Production

\*Stuart A. Weiss, Danielle Dion Treadwell, K. Paul Beamer, Rhuano S. Ferrarezi

9:15–9:30 AM

### Effect of Manuring with Commercial Products and with Local Resources on the Output of Organic Dragonfruit (*Hylocereus undatus*)

Roberta Martínez-Castillo, \*Roland Ebel

8:00–10:00 AM

## Workshop Session—Fresh Perspectives on Citrus History

Sponsor: History of Horticultural Science

Coordinator: David Karp, dkarp@ucr.edu

Objectives/Abstract: The purpose of this workshop is to explore topics in citrus history that are of great interest and importance but have not been adequately covered in the existing historical and horticultural literature. It offers new historical studies of satsuma cultivation on the U.S. Gulf Coast, grapefruit cultivation in the Indian River district of Florida, and blood orange cultivation in the Mediterranean basin and around the world. It also provides a review of recent developments in citrus archeobotany in the Mediterranean region, and a synthesis of the long and fascinating history of the citron.

8:00–8:25 AM

### History of Gulf Coast Citrus

\*James D. Spiers, Claudine Jenda, Bridget Farrell

8:25–8:50 AM

### History of Indian River Grapefruit

\*Barrett R. Gruber

8:50–9:15 AM

### Archeobotany of Citrus in the Ancient Mediterranean

\*Dafna Langgut

9:15–9:40 AM

### History of Citron (*Citrus medica* L.): Biological and Cultural Features

\*Eliezer E. Goldschmidt

Oak Alley

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Thursday, August 6, 2015

9:40–10:00 AM

### History of Blood Oranges

\*Antonio Catara, Giovanni Continella,  
Giuseppe Reforgiato Recupero

8:00–10:00 AM

Estherwood

### Education Division Advisory Council Meeting

Sandra B. Wilson, Chair; Anita Azarenko, Tim Pannkuk, Srinivasa Rao Mentreddy, Kimberly Moore, Tim Rhodus, James Klett, Nicole L. Waterland, All Working Group Chairs and Chairs-Elect, Education Division

8:00–10:00 AM

Gallery Ballroom

### Extension and Industry Breakfast

Coordinators: Susan S. Barton, sbarton@udel.edu; Angela Davis, angela.davis@hmclosure.com

### Topic: Meeting the Future Challenges of the Green Industry

Speaker: **Charles R. Hall**

Texas A&M University, College Station

The years leading up to the Great Recession were good ones. The green industry showed signs of strength and stability, much of it fueled by a booming housing market. Overall economic contributions in 2007 were estimated to be \$175.26 billion. Then came the crash. Nursery and greenhouse growers who experienced remarkable growth in sales and profits for most of the decade prior to the recession now face stagnant demand, with prospective landscape and garden center buyers willing to purchase product only if and when it's needed. Maintaining enough liquidity to handle daily operations is a key industry challenge. The decline in industry sales, accompanied by increased expenses to maintain nursery and greenhouse products, have combined to reduce firm-level cash reserves and forced many growers, landscape service providers, and retailers to attempt to source additional credit from lenders or suppliers.

I still have reason to believe that the most successful grower, landscape, and retail firms in 2015 will be those that are well-positioned with their customers in the marketplace; not overleveraged; and clearly articulating their value proposition. Conversely, those that aren't probably won't be around much longer. We will likely see continued structural changes across the industry supply chain as we morph into the more compact and efficient industry of the next decade. This will not only mean fewer key players in the industry but deeper, more strategic relationships among those left from the transition. The green industry in the next decade will not look the same; not even close. Yes, the industry will still be around—if it maintains value, relevance and authenticity to end consumers—but the factors that will guarantee success in the future are going to change. Better brand management, more detailed SKU movement and replenishment analysis, greater efficiency in distribution and logistics, closer integration of genetic innovations and supply levels with consumer demand, and the assimilation of innovative marketing technologies (social media and otherwise) are the new key success factors of the future. Given that, extension educators will need to be cognizant of these issues and develop educational programming to properly ad-

dress them utilizing intensive pedagogical formats that go deeper with selective firms and worrying less about being all things to all clientele.



### 2015 President's Distinguished Industry Achievement Award Recipient

**Anthony "Tony" Simmons**

Chief Executive Officer, McIlhenny Company,  
Avery Island, LA

Each year the Industry Division of ASHS chooses an outstanding person to recognize for his or her support of the agricultural industry and environmental stewardship. This year, the Industry Division of ASHS is proud to present the President's Distinguished Industry Achievement Award to Anthony "Tony" Simmons.

Mr. Simmons is the elected Chief Executive Officer of McIlhenny Company, maker of TABASCO® brand products. A great-great-grandson of Edmund McIlhenny, the creator of TABASCO® Sauce, Mr. Simmons is a member of the fifth generation of the McIlhenny family involved in the production of TABASCO® Sauce and is the seventh family member to assume leadership of the family-owned and -operated company. Mr. Simmons is a native of New Orleans and an avid outdoor sportsman.

Today, TABASCO® brand products are sold in more than 180 countries and territories around the world and labeled in 22 languages and dialects. In addition to its world-famous TABASCO® Original Red Sauce, McIlhenny Company also produces a Green Jalapeño Sauce, Chipotle Sauce, SWEET & Spicy Sauce, Habanero Sauce, Garlic Pepper Sauce, and a Buffalo Style Hot Sauce, in addition to many other specialty items.

The award will be presented on August 6th, 2015, to Mr. Simmons for his leadership in continuing the McIlhenny Company legacy of manufacturing its premier product in a sustainable manner, upholding the company's zero-waste approach, and maintaining the land that is Avery Island, which serves as a sanctuary to many exotic plants and animals.

8:00–10:00 AM

Borgne

—CEU Approved—

### Workshop Session—Molecular Physiology and Genetics of Fruit Growth and Development

Sponsor: Pomology Working Group

Moderator/Coordinator: Anish Malladi, malladi@uga.edu

Objectives/Abstract: Advances have been made recently in our understanding of the molecular physiology and genetics of various aspects of fruit growth and development in tree fruits. One goal of this workshop is to summarize such advances in apple, peach and other tree fruits. Another goal is to further explore avenues for integrating molecular and genetic approaches to improve our understanding of fruit growth and to apply such knowledge for improving fruit production.

8:00–8:20 AM

### Reevaluating Growth of Sweet Cherry by Functional Modelling with Reference to Anatomy, Cell Growth, and Endoreduplication

\*Todd Einhorn, David Gibeaut, Matthew Whiting

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

## Thursday, August 6, 2015

8:20–8:40 AM

### **Cell Division and Enlargement in Peach Mesocarp Cells Affected by Time of Thinning**

\*Gregory L. Reighard, Rafael Pio,  
Filipe Bittencourt Machado de Souza

8:40–9:00 AM

### **Fruit Growth in Apple: Current Knowledge of the Molecular Players**

\*Anish Malladi

9:00–9:20 AM

### **Apple Fruit Acidity, What Do We Know about It Now?**

\*Kenong Xu

9:20–9:40 AM

### **Understanding the Genetic Basis of Abscission in Sweet Cherry to Enable Mechanical Harvesting**

Benjamin Kilian, Nnadozie Oraguzie, Matthew Whiting,  
\*Amit Dhingra

8:00–10:00 AM

Nottoway

—*CEU Approved*—

## **Workshop Session—Recycling Used Agricultural Plastics**

Sponsor: Plasticulture Working Group

Coordinator: Keith S. Williamson, keith.williamson@guardianag.com

Objectives: Present an overview of the recycling of agricultural plastics, tips on how to participate in recycling programs, and an evaluation of non-recycling options. An extended period of discussion will be included following the presentations.

Abstract: The use of plastics in agriculture has greatly enhanced productivity and the economic livelihood of farmers and ranchers throughout the world. This is especially true of horticulturists, as we attempt to provide food for the expanding world population. These agricultural plastics include plastic mulch films, greenhouse plastics, bale and silage wraps, nursery containers, etc. However, the success story of plasticulture has been blemished by the failure to find and utilize means to dispose of these materials in a manner that does not harm the environment. In this workshop we will look at this problem. We will talk about the unsustainable aspects of disposal, such as field burning and landfilling. We will talk about avenues that exist and are being developed to give more sustainable solutions to the disposal of plastics from agriculture and tips on how to support and participate in recycling efforts. An extended period of time for discussion has been allotted at the end of the session.

8:00–8:15 AM

### **An Overview of Recycling Agricultural Plastics**

\*Keith S. Williamson

8:15–8:30 AM

### **Recycling Plastic Agricultural Mulch Film**

\*Gene Jones

8:30–8:45 AM

### **Open Burning of Agricultural Plastics—Is this Really a Good Management Practice?**

\*Anne Macmillan

8:45–9:15 AM

### **Tips for Growers on Recycling Used Plastic Film and Containers**

\*Lois Levitan

8:00 AM–12:00 PM

Rhythms

—*CEU Approved*—

## **Colloquia Session—Vertical Farming: Challenges and Opportunities**

Sponsor: Controlled Environment Working Group

Coordinator: Marc W. van Iersel, mvanier@uga.edu

Objectives/Abstract: Indoor, controlled environmental agriculture, including vertical farms and plant factories, provides year-round opportunities to bring more horticulture into urban environments. Among the touted benefits are food production in cities, little need for transportation, high resource use efficiency, no pollution, and no need for arable land. On the other hand, there are questions about whether vertical farms are economically viable. The initial costs are high and most “farms” depend on electrical lighting, requiring large amounts of energy. This colloquium will explore the challenges and opportunities related to horticultural production in controlled environmental agriculture facilities. The colloquium will cover production practices, sustainability, and socio-economic aspects of controlled environmental agriculture.

8:00 AM

### **Optimizing Production Methods for Vertical Farms**

\*Nate Storey

8:45 AM

### **Growing Food for Space and Earth: NASA's Contributions to Vertical Farming**

\*Raymond M. Wheeler

9:30 AM

### **From Photons to Food**

\*Bruce Bugbee

10:15 AM

### **Emerging Technologies and Associated Challenges for Controlled Environment Agriculture**

\*George Kantor

11:00 AM

### **Panel Discussion**

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

8:30 AM–1:00 PM Canal Street Entrance

### **Invasives in Action: A Swamp Tour of Louisiana's Invasive Aquatic Plants**

Sponsor: AERF and the Invasive Plant Research Working Group

Coordinator: Lyn Gettys, lgettys@ufl.edu

Price: \$ 35 per person. Includes snacks and water. No meals included.

Leaves hotel at: 8:30 AM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

This professional tour will be operated by the Louisiana Tour Company. Tour attendees will be picked up at the Sheraton New Orleans and transported by van to the Jean Lafitte National Historical Park and Preserve in Marrero, LA. We will board a Swamp Tour boat and make our way through the Barataria Swamps, the Crown Jewel of the Louisiana Purchase.

We will see lots of wildlife, along with native and invasive aquatic plants, including giant salvinia (*Salvinia molesta*), hydrilla (*Hydrilla verticillata*) and waterhyacinth (*Eichhornia crassipes*). The slow drift of the tour boat through moss-draped trees and small waterways will provide ample opportunity for viewing and photography. The swamp tour is fully narrated and boat captains are natives of the Barataria Swamps with a background of gator hunting, fishing and trapping. Tour boats are specially designed for and have a roof, restroom facilities, cushioned seats, and windows that can be raised or lowered during rainy weather, along with plenty of standing and walking room.

9:00–10:00 AM Poydras

### **William A. ("Tex") Frazier Lecture Series Selection Committee**

Stephanie Harvey, Chair; Craig Campbell, John Dole, Kim Hummer

9:00 AM–2:00 PM Napoleon Expo Hall

### **Exhibits Open**

9:00 AM–5:00 PM Napoleon Expo Hall

### **Poster Hall Open**

9:00 AM–5:00 PM Napoleon Expo Hall

### **Career Center**

Visit the ASHS Career Center for information on job, career and internship openings. Also, meet with industry, public garden and university professionals to get their insight on a variety of career paths. Tutorials on how to network utilizing the ASHS Membership Interface for advancing your career search and professional profile will also be given. Specific career sessions will be posted in the center each day.

9:15–10:15 AM Bayside C

### **Oral Session—Vegetable Breeding 2**

Moderator: Mark W. Farnham, mark.farnham@ars.usda.gov

9:15–9:30 AM

#### **Using Weighted Trait Indices to Select the Best-performing Broccoli Hybrids in Multi-site and Multi-year Trials**

Zachary Stansell, \*Mark W. Farnham, Sandra Pelc, David Couillard, Thomas Björkman

9:30–9:45 AM

#### **Genotypic and Maturity-related Variation in Anthocyanin Quantity and Quality in Crucifer Vegetables**

\*Alexandra Amanda Bennett, Didier Socquet-Juglard, David Christopher Manns, Anna Katharine Mansfield, Phillip Griffiths

9:45–10:00 AM

#### **Determination of High-temperature Tolerance of Some Pepper Genotypes**

\*Davut Keles, Hasan Pinar, Atilla ATA, Zeki Karipein, Aykut Ates, Hatira Taskin, Saadet Buyukalaca

9:30–2:00 PM Canal Street Entrance

### **New Orleans School of Cooking**

Price: \$35 per person. Advance registration required.

Leaves hotel at 9:30 AM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

Located between Decatur and Chartres Streets, the New Orleans School of Cooking is walking distance from the Sheraton Hotel. You will be walked to the Cooking School by a tour guide. Classes last approximately 2 hours and include a full 3-course meal. Please note that you are on your own for the walk back to the Sheraton Hotel.

9:45–10:15 AM Napoleon Expo Hall

### **Break**

10:00–11:00 AM Estherwood

### **HortScience Editorial Board Meeting**

M. LeRon Robbins, Editor in Chief; David R. Bryla, Jianjun Chen, Penelope Perkins-Veazie, Clinton C. Shock

10:00–11:00 AM Poydras

### **Graduate Student Activities Committee Meeting**

Andrew Koester, Chair; Dayton Wilde, Chair-elect; Guihong Bi, Juan Carlos Melgar, Amanda Plante, Brian E. Jackson, Chieri Kubota, Brian Pearson, Ainong Shi

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Thursday, August 6, 2015

10:00–11:00 AM

Bayside B

### **Growth Regulators in Fruit and Nut Production (PGR) Working Group Business Meeting**

Objectives: To foster excellence in plant growth regulator research, to help and encourage new research talent in plant growth regulators, to unify research and industry workers in an attempt to solve horticultural problems related to plant growth regulator research between ASHS and other related organizations.

Holly Little, Chair; Craig Campbell, Chair-elect;  
T. Casey Barickman, Secretary

10:15–11:45 AM

Oak Alley

### **Oral Session—Genetics & Germplasm 2**

Moderator: Phillip A. Wadl, pwadl@utk.edu

10:15–10:30 AM

#### **Mapping of the Bacterial Leaf Spot Resistance Gene in Lettuce PI358001-1**

\*Yunwen Wang, Huangjun Lu

10:30–10:45 AM

#### **Analysis of Resistance to Fusarium Wilt Race 3 in Accessions of the Wild Tomato Species *Solanum pennellii***

\*Jian Li, Samuel F. Hutton, Gary E. Vallad, Jeffrey B. Jones

10:45–11:00 AM

#### **Exploring the Transcriptome of the Glucosinolate/Myrosinase System in Broccoli (*Brassica oleracea* var. *italica*)**

\*Talon Michael Becker, Kang Mo Ku, John A. Juvik

11:00–11:15 AM

#### **Genetic Relationships Between Basil (*Ocimum* spp.) Germplasm Provide Insights for Downy Mildew Resistance Breeding**

\*Robert Pyne, Josh Honig, Jennifer Vaiciunas, James Simon

11:15–11:30 AM

#### **Exploring Genetic Drift within the Endangered Species *Pityopsis ruthii* (Asteraceae)**

\*Elizabeth Hatmaker, Phillip A. Wadl, Robert N. Trigiano

11:30–11:45 AM

#### **Development of Microsatellite Markers from *Erysiphe pulchra* (Dogwood Powdery Mildew) for Analyzing Genetic Diversity**

\*Phillip A. Wadl, Margaret Staton, Timothy A. Rinehart,  
Thomas J. Molnar, Richard E. Baird, Robert N. Trigiano

10:15–11:45 AM

Borgne

### **Oral Session—Plant Biotechnology 1**

Moderator: Megan Muehlbauer, meganmu@scarletmail.rutgers.edu

10:15–10:30 AM

#### **Targeted Gene Mutagenesis in Citrus to Produce Citrus Canker Resistance**

\*Ahmad Omar, Hongge Jia, Nian Wang, Jude W. Grosser

10:30–10:45 AM

#### **Transgenic Strategies for Huanglongbing-resistant Citrus at the USDA–ARS**

\*Ed Stover, Guixia Hao, Maria Luiza Oliveira, Yongping Duan,  
Goutam Gupta, James Thomson, William Belknap,  
Robert Shatters Jr., John Hartung

10:45–11:00 AM

#### **Categorization of Expressed Sequence Tag Microsatellites for Marker Optimization and Genotype Evaluation in Peach**

\*Chunxian Chen

11:00–11:15 AM

#### **Optimization of a High-throughput Assay Enabling Early Detection of *Anisogramma anomala* in Hazelnuts**

\*Megan Muehlbauer, Julianne Davis, Thomas J. Molnar

11:15–11:30 AM

#### **Understanding the Role of Floral Genes in Gall Formation on Grape Leaves Caused by the Grape Phylloxera**

\*Trudi Grant, Zhijian Li, Deborah Dean, Jack Schultz,  
Dennis J. Gray

11:30–11:45 AM

#### **Detection and Semi-quantification of a Bacterial Wilt Disease in Kidney Beans (*Phaseolus vulgaris*) Leaf Tissue using DNA Analysis**

\*Craig Ramsey, Vanessa Marie Sandoval, Paul Freebury,  
Debra Newman, Steven Earl Newman

10:15 AM–12:00 PM

Bayside A

### **Oral Session—Pomology 2**

Moderator: Todd Einhorn, todd.einhorn@oregonstate.edu

10:15–10:30 AM

#### **Local Effect of Fruiting on Different Anatomical and Physiological Traits in Apple**

\*Mokhles ELsyy, Peter Hirst

10:30–10:45 AM

#### **Trunk Injection of Fruit Thinners to Regulate Fruit Set and Return Bloom in Apples**

\*Duane W. Greene, Steven J. McArtney, Samuel Drahn

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



Thursday, August 6, 2015

10:45–11:00 AM

**Integration of Renewable Canopy Architectures and Precocious Rootstocks Optimize Sweet Cherry Yields, Fruit Quality, and Labor Efficiency**

\*Gregory A. Lang

11:00–11:15 AM

**Use of Maxcel and Promalin to Produce Feathered Trees**

Terence Lee Robinson, \*Jaume Lordan, Mario Miranda Sazo, Winfred P. Cowgill, Brent L. Black, Poliana Francescato

11:15–11:30 AM

**The Effects of Rootstock and Fertilizer Selection on Apple Orchard Productivity and Soil Microbial Community Ecology**

\*Ashley A. Thompson, Gregory Michael Peck

11:30–11:45 AM

**A Generalized Scaling Approach to Improve Variety Selection in Orchard Fruit**

\*Zachary T. Brym

11:45 AM–12:00 PM

**Abscisic Acid Reduces Photosynthesis But Does Not Consistently Thin ‘Bartlett’ Pears in Oregon**

\*Todd Einhorn, Matthew Arrington

10:15–1:15 PM

Nottoway

**Workshop Session—Moving the National Strategic Plan for Consumer Horticulture Research, Education, and Extension Forward: Creative Destruction and Rebuilding**

Sponsor: Consumer Horticulture and Master Gardeners Working Group

Moderator/Coordinator: Ellen Bauske, ebauske@uga.edu

Coordinator: Lucy Bradley, lucy\_bradley@ncsu.edu

Objectives: Continue development of a national strategic plan for consumer horticulture research, education, and extension.

10:15–10:25 AM

**Welcoming Remarks**

\*Ellen Bauske

10:25–10:45 AM

**Strategic Planning, Public Gardens, Arboreta, and the Gardening Public**

\*John R. Clark

10:40–11:10 AM

**Presentation and Reconstruction of the National Strategic Plan for Consumer Horticulture Research, Education, and Extension**

\*Tom Bewick

10:30 AM–12:00 PM

Maurepas

**Oral Session—Postharvest 2**

Moderator: Peter M.A. Toivonen, peter.toivonen@agr.gc.ca

10:30 —10:45 AM

**Preharvest Plant Growth Regulators and Conditioning Treatment Effects on Flesh Browning on ‘Gala’ Apples**

Franziska Doerflinger, Gilang Sutanto, Jacqueline Nock, \*Christopher B. Watkins

10:45–11:00 AM

**Storage Temperature and 1-MCP Treatment Affect Storage Disorders and Physiological Attributes of ‘Royal Gala’ Apples**

Jinwook Lee, \*James P. Mattheis, David Rudell

11:00–11:15 AM

**Carbon Dioxide Injury in ‘Honeycrisp’ Apple: Dose Response and Induction of Fermentative Volatiles**

\*Diep Tran, Randolph Beaudry

11:15 –11:30 AM

**Peel Maturity Only Correlates with Soft Scald in a Highly Susceptible Orchard of Ambrosia™ Apple**

\*Peter M.A. Toivonen, John DeLong, Jun Song, Charles F. Forney

11:30–11:45 AM

**Impact of Atmosphere Modification on Red Raspberry Fruit Quality**

\*Charles F. Forney, Andrew R. Jamieson, Kathleen D. Munro Pennell, Michael A. Jordan, Sherry A.E. Fillmore

11:45–12:00 PM

**Possible Commercial Protocols for Recovering Ripening Capacity of 1-MCP-treated European Pears**

\*Yan Wang, Xingbin Xie, David Sugar

10:30 AM–12:15 PM

Bayside C

**Oral Session—Viticulture and Small Fruits 3**

Moderator: Elina D. Coneva, edc0001@auburn.edu

10:30–10:45 AM

**Elderberry Rust: A Conspicuous Disease of *Sambucus***

\*Michele Warmund

10:45–11:00 AM

**Managing Anthocyanin Concentration, Proportion, Acylation and Hydroxylation of ‘Autumn Royal’ Table Grape with Plant Growth Regulator and Applied Water Amount Interaction**

\*Sonet Van Zyl, S. Kaan Kurtural, James A. Kennedy

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Thursday, August 6, 2015

11:00–11:15 AM

**The Effect of Irrigation Amounts during Fruit Ripening on Skin Anthocyanins in Forced Cabernet Sauvignon Grapevines**

\*Tian Tian, Sanliang Gu

11:15–11:30 AM

**Growing Pierce's Disease-resistant Grapes in the Southeast**

\*Elina D. Coneva

11:30–11:45 AM

**Deacclimation Rate in Cultivated and Wild Grapes is Dependent on Dormancy Stage and Temperature**

\*Alisson Pacheco Kovaleski, Jason Londo

11:45 AM–12:00 PM

**The Vineyard Advisor Mobile Application for Pest Management Recommendations**

\*Edward W. Hellman, Justin Scheiner, Daniel Holman, David Stone, Sean Ross

12:00–12:15 PM

**Performance of Two Southern Highbush Blueberry Cultivars Grafted onto *Vaccinium arboreum***

\*Bruno Casamali, Rebecca L. Darnell, Jeffrey G. Williamson

11:00 AM–12:00 PM

Poydras

**Collegiate Activities Committee (CAC) Meeting**

Nathan Phillips, Chair; Stephanie Burnett, Chair-Elect; Kent Kobayashi, Rammohan Uckoo, Katherine Warpeha, Diana Cochran, Kimberly Moore, Adam Newby, Spencer Waschebach, Perla Aguilar

11:00–12:00 PM

Bayside B

**Consulting Editors Meeting**

Presiding: M. LeRon Robbins and Neal E. De Vos

Meeting of the Consulting Editors for *HortScience*, *HortTechnology*, and the *Journal of ASHS*.

11:00 AM–12:00 PM

Estherwood

**International Horticulture and Issues (IHI) Working Group Business Meeting**

Objectives: To provide a forum for the exploration, discussion, and exchange of information on global issues of vital concern to horticulturists in all divisions and disciplines; to provide a potential mechanism through concerted action for input into decision and policy making processes at the national and international levels.

Dilip Nandwani, Chair; Marikis Alvarez, Chair-elect; J. Pablo Morales-Payan, Secretary

12:00–1:00 PM

Bayside B

**Commercial Horticulture (CHEX) Working Group Business Meeting**

Objectives: To increase ASHS membership and meeting participation of horticultural extension specialists working with industry and/or community groups, to foster communications between such specialists, and to share ideas and methods for working with growers and commodity groups.

Gordon Johnson, Chair; Lewis Jett, Chair-elect

12:00–1:00 PM

Estherwood

**History of Horticultural Science (HIST) Working Group Business Meeting**

Objectives: To exchange information and promote interest in the history of horticultural technology and science.

David Karp, Chair and Secretary

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Fruit Breeding 2**

**(031) Why Wait for the Fruit? DNA-informed Breeding in Rosaceae: Prediction of Apple, Peach, and Sweet Cherry Skin Color as a Case Study**

\*Paul James Sandefur, Terrence James Frett, John R. Clark, Ksenija Gasic, Kate M. Evans, Nnadozie Oraguzie, Cameron Paul Peace

**(032) Heritability and Phenotypic Correlations among Bloom, Flower Density, and Fruit Set**

\*Zainab Mansur, Timothy Patrick Hartmann, Silvia Carpendo, David H. Byrne

**(033) Validation of a Molecular Marker for Seedlessness in Muscadine Grapes**

\*Paige Speed Catotti, Joann Conner, Patrick J. Conner

**(034) A Functional, Consensus Linkage Map of Blueberry and Cranberry**

\*Ying-Chen Lin, Robert Reid, Lisa J. Rowland, Nahla Bassil, James W. Olmstead, Brooklyn Phillips, Aswathy Thomas, Danielle Nonnemacher, Mary Ann Lila, Allan Brown

**(035) A Breeder-friendly DNA Fingerprinting Protocol for Blackberry Fruit**

\*Jennifer Lewter, John R. Clark, Nahla Bassil, April Nyberg, Fy'Nisha Oliver

**(036) Heritability of Fruit Splitting Tendency in Blueberry**

\*Michael Dossett, Chaim Kempler

**(037) Analysis of Blackberry Fruit Firmness in Crispy Fruit Segregating Populations**

\*Alejandra Salgado, John R. Clark

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

12:15–1:00 PM

Napoleon Expo Hall

## Graduate Student Poster Competition (Session 5)

Please see the full schedule of competition papers and times starting on p. 18.

12:15–1:00 PM

Napoleon Expo Hall

## Poster Session—Organic Horticulture 2

### (070) Incorporating Sensory Evaluations into Organic Vegetable Variety Trials

\*Lane Selman, Alexandra Stone, James R. Myers

### (071) The Effect of Biofertilizers and Organic Substrates on Squash (*Cucurbita pepo*) Growth and Yield

Francisco Radillo-Juárez, \*Jaime Molina-Ochoa, Juan Manuel González-González, Elvis Corazón Mendoza-Vargas, John E. Foster

### (072) Yield and Economics of Organic and Conventional Tomatoes Grown in Soils Amended with Poultry Litter and Other Nutrients

\*Lurline Marsh, Mohammad Ali, Fawzy Hashem, Smith Brett

### (073) Ammonia Production Rates of Three Commonly Cultured Fish Species in Aquaponics Systems

\*Joseph G. Masabni, L. Frank Rotter

### (074) Organic Fertilizers for Greenhouse Production of Day-neutral Strawberries

\*Mary Rogers, Elizabeth Perkus, Justin Carlson, Carl J. Rosen, Julie Grossman, Joanne Slavin, John Erwin

### (075) Soil Nutrients, Nitrogen Mineralization, and Microbial Biomass in Organically Fertilized Potting Media under Greenhouse Conditions

\*Elizabeth Perkus, Julie Grossman, Carl J. Rosen, Mary Rogers, Joanne Slavin, Justin Carlson, John Erwin

### (076) Use of Invasive Algae as a Potassium (K) Source Affects Growth and K Content in Pak Choi (*Brassica rapa* cv. Bonsai, Chinensis Group) under Greenhouse Conditions

\*Chandrapa Gangaiah, Amjad A. Ahmad, Hue Nguyen, Theodore Radovich

### (077) The Effect of Intensification on Nitrogen Losses from Diversified Vegetable Farms

\*Debendra Shrestha, Krista Jacobsen, Ole Wendroth, John Schramski

### (078) Cowpea Biomass Productivity under Organic Management in the Southeastern United States As Influenced by Cultivar and Soil Phosphorus

\*Samantha Hill, David Verbree, Gary Bates, David Butler

### (079) ESO-Cuc Eastern Sustainable Organic Cucurbit Project

Michael Mazourek, \*Jeanine Marie Davis, Michael Hoffmann, Micaela Colley, John Murphy, Peter Ojiambo, Abby Seaman, Christine Smart, Tony Kleese, Robert Hadad, Crystal Stewart, Judson Reid

12:15–1:00 PM

Napoleon Expo Hall

## Poster Session—Ornamentals/Landscape and Turf 2

### (326) Combating Rose Rosette—Monitoring the Extent and Diversity of the Disease

Kevin Ong, Brent Pemberton, Jennifer Olson, Alan Windham, Gary W. Knox, Ashley Brake, \*Ellen Roundey, David H. Byrne

### (327) Combating Rose Rosette: Pictorial Guide to Rose Rosette Disease Symptoms

Jennifer Olson, Michael A. Schnelle, Kevin Ong, \*Ellen Roundey, David H. Byrne

### (328) Rhizosphere Acidification and Iron Deficiency Chlorosis in Deciduous Azalea (*Rhododendron Sect. Pentanthera*) Offer Insight on pH Adaptability

\*Alexander Susko, Timothy A. Rinehart, Steven McNamara, Jim Bradeen, Stan C. Hokanson

### (329) Evaluation of Organic Fertilizer on Performance of St. Augustinegrass Cultivars

\*Tim Pannkuk, Robert Lane

### (330) Growth of Naiad in Substrates with Varying Percentages of Sand and Controlled-release Fertilizer

\*Heather Hasandras, Kimberly Moore, Lyn Gettys, Wagner Vendrame

### (331) The Relationship of Four Substrates to N and P Removal and Biomass Establishment in Greenhouse Natural Swimming Pool Mesocosms

\*Margaret Hoffman, Rob Berghage

### (332) Kentucky Bluegrass Sensitivity and Physiological Responses to Chloride and Sulfate Salts

\*Qi Zhang, Liqi Yang

### (333) Micropropagation of Ornamental Grass *Miscanthus senensis* ‘Strictus’

\*Kedong Da, Samantha Smith, Jami Carey

### (334) Micropropagation of Two Ornamental Grasses, *Schizachyrium scoparium* and *Sporobolus heterolepis*

Song Zhang, Jami Carey, \*Kedong Da

### (335) Plant Select-Plant Smarter

\*James E. Klett, Pat Hayward

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

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12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Plasticulture

#### (225) Planting Date Affects Yield and Harvest Duration of Organically Managed Salad Mixes in High Tunnels

\*Sanjun Gu, John Evan Beck, Joseph Aaron Moore, Wenjing Guan, Gena Simpson Moore

#### (226) Getting off the Grid: Solar Greenhouse Design and Rainwater Catchment Use

\*Krista Jacobsen, Brent Rowell, Timothy W. Coolong

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12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Vegetable Crops Management 2

#### (393) Performance of Nine Butternut Squash Varieties in Summer in the U.S. Virgin Islands

Thomas C. Geiger, K. Paul Beamer, Stuart A. Weiss, \*Rhuanito S. Ferrarezi

#### (394) Yield of Tomatoes in High Tunnels: Stake and Weave versus Prune and String Support Systems

\*Elizabeth Maynard

#### (395) Performance of Cucumber Cultivars in Northern Climate

\*Zhigang Wu, Xinhua Jia, Chiwon W. Lee

#### (396) Evaluation of Pepper Cultivars for Production in Northern Great Plains

\*Zhigang Wu, Anjan Neupane, Chiwon W. Lee

#### (397) Spring and Fall Supersweet Corn Trials in Georgia

\*Timothy W. Coolong

#### (398) Rough Sweetpotato Weevil (*Blosyus asellus*) Damage to Sweetpotato (*Ipomoea batatas*) Cultivars in Hawaii

\*Susan C. Miyasaka, Grant McQuate, Charmaine Sylva, Alton Arakaki

#### (399) Determination of Optimum Plant Spacing for New Mexican Green Chile (*Capsicum annuum*)

Laura Johnson, \*Stephanie J. Walker

#### (400) Effects of Topping on Marketable Yields in Several Cultivars of Brussels Sprout (*Brassica oleracea* var. *Gemmifera*)

\*Rebecca Grube Sideman, Olivia Saunders

#### (401) Pot Vegetables for Cities

Sundari Velayudhan, \*Prem Nath

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12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Viticulture and Small Fruits 2

#### (343) Fruit Quality and Polyphenolic Compounds of ‘Tupy’ Blackberry Influenced by Pruning Time and Irrigation Management in a Subtropical Climate

\*Daniela M. Segantini, Sarita Leonel, John R. Clark, Renee Threlfall

#### (344) Valuation of the Northern Grapes Project Webinar Series

\*Chrislyn Particka, Eric Stafne, Timothy Martinson

#### (345) Screening Grapevine Cultivars for Adaptability to Soil and Climatic Conditions in Wyoming

Sadanand Dhekney, \*Raju Kandel, Jeremiah Vardiman, Daniel Bergey, Dennis J. Gray

#### (346) A Spotted Wing Drosophila Trapping Study in the Small Fruit and Grapes Plots and a Woodlot at Piketon, Ohio

\*Y.G. Gao, M.R. Slaughter, M.C. Daniels, B.R. Bergefurd

#### (347) Performance of Eight Muscadine Cultivars and Selections in Southern Georgia

\*Patrick J. Conner

#### (348) Assessment of Vine Quality and Pruning Techniques in Oklahoma Vineyards

\*Eric Stafne, Becky Carroll

#### (349) Environmental Stability in the Fall Acclimation Response of Cold-hardy Interspecific Hybrid Wine Grapes

\*John Stenger, Harlene Hatterman-Valenti

#### (350) Examining Various Phytochemical Attributes of Southern Highbush and Rabbiteye Blueberry Genotypes

\*Rachel A. Itle, D. Scott Nesmith, Daniel Jackson, Jordan T. Burbage, Parshall B. Bush

#### (351) Evaluating the Impact of Superabsorbent Polymers on Grapevine Water Management

\*Amir A. Khoddamzadeh, Bruce Dunn, Saleh Taghvaeian

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12:15–1:00 PM

Napoleon Expo Hall

### Poster Session—Weed Control & Pest Management

#### (235) Evaluation of Oxidant Biocide Formulations for Soil Sanitation

\*Debra Newman, Paul Freebury, Craig Ramsey, Steven Earl Newman

Thursday, August 6, 2015

**(236) Evaluation of an Oxidant Disinfectant's Ability to Prime Plant Defenses for Systemic Acquired Resistance in Light Red Kidney Bean Plants Inoculated with Common Bean Bacterial Wilt**

\*Vanessa Marie Sandoval, Debra Newman, Paul Freebury, Craig Ramsey, Steven Earl Newman

**(237) Off-season Weed and Sting Nematode Management for Organic Strawberry**

\*Carlene A. Chase, Guilherme Braz, Tamika Garrick

**(238) Effect of Prodiamine and Isoxaben Tank Mixture for Early Postemergence Control of Bittercress**

\*S. Christopher Marble, Annette Chandler

**(239) Multifunctional Intercropping as a Cultural Strategy to Reduce Weed Pressure for Organic Vegetable Production**

Jose G. Franco Jr., \*Joseph G. Masabni, Stephen King, Astrid Volder

**(240) Timing Early Season Cucumber Beetle Control to Manage Bacterial Wilt in Muskmelon**

\*Ahmad Shah Mohammadi Sr., Ricky Foster, Elizabeth Maynard

**(241) Neem and Gliricidia Hedge Effects on Sweetpotato Production in the Caribbean**

Francis B. Lopez, \*Andrea K. Veira

**(242) *Pseudococcus comstocki* (Kuwana) Using Sex Pheromone in Pear Orchards in Korea**

\*Young Sik Cho, Jang-Hoon Song, Kyung-Hee Choi, Jin-Ho Choi, Myung-Su Kim

**(243) The Effect of Aqueous Leaf Extract of *Azadirachta indica* on the Growth and Survival of *Spodoptera frugiperda***

\*Jaime Molina-Ochoa, José Manuel Gutiérrez-Bautista, Roberto Lezama-Gutiérrez, Martín González-Ramírez, Francisco Radillo-Juárez, Luis Jorge García-Márquez, Rafael Macedo-Barragán, Steven R. Skoda, John E. Foster

**(244) Susceptibility of Criollo Genotypes of Mexican Corn (*Zea mays*) to Attack of *Spodoptera frugiperda* under Field Conditions**

\*Jaime Molina-Ochoa, Sergio Noé Mora-Farías, Roberto Lezama-Gutiérrez, Francisco Radillo-Juárez, Luis Jorge García-Márquez, Steven R. Skoda, John E. Foster, Alfonso Pescador-Rubio

**(245) Weed Management in Arizona Nurseries**

\*Kelly Murray Young, Worku Burayu

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1:00–1:45 PM Napoleon Expo Hall  
**Poster Session—Commercial Horticulture**

**(135) Assessment of Rootball Planting Treatments of Two Species of Container-grown Trees**

Barbara Fair, \*Lauren Gragg

**(136) Tensile Properties of Bark of *Dirca* (Leatherwood)**

\*Zachary J. Hudson, William Richard Graves

**(137) Evaluating Production and Marketing of Asian Vegetables in West Virginia**

\*Lewis Jett

**(138) Evaluation of Hop Cultivars for Commercial Production in Ontario: Yield, Quality, and Pest Susceptibility**

Catherine Bakker, \*Evan Elford, Mary Ruth McDonald

**(139) Climate Change Impacts on Maple Syrup Yield in Nova Scotia, Canada**

Karen Nelson, \*Rajasekaran Lada, Arumugam Thiagarajan

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1:00–1:45 PM Napoleon Expo Hall  
**Poster Session—Computer Applications in Horticulture**

**(282) Using the GoPro InfraBlue 22 Lens for NDVI Field Measurements?**

Kurt D. Nolte, \*Rosa Bevington

**(283) Website Resources for Free iOS and Android Apps for Extension Personnel**

\*Kent D. Kobayashi

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1:00–1:45 PM Napoleon Expo Hall  
**Graduate Student Poster Competition (Session 6)**

Please see the full schedule of competition papers and times starting on p. 18.

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1:00–1:45 PM Napoleon Expo Hall  
**Poster Session—Growth Chambers and Controlled Environments 2**

**(195) Sole-source LED Lighting Impacts Mineral Nutrient Density of Chinese Kale**

\*Dean Kopsell, Carl E. Sams, Robert C. Morrow

**(196) Daily Light Integral and Light Quality from Sole-source Light-emitting Diodes Impact Phytochemical Content of *Brassica* Microgreens**

\*Joshua K. Craver, Joshua Gerovac, Roberto G. Lopez, Dean A. Kopsell

**(197) LED Safety: Performance of Twelve Glasses Using Nine High-irradiance LEDs**

\*Bo-Sen Wu, Most Tahera Naznin, Mark G. Lefsrud

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Thursday, August 6, 2015

**(198) Effect of Spacing and Daily Light Integral on Growth of Sweet Basil (*Ocimum basilicum*)**

\*Kellie J. Walters, Christopher J. Currey

**(199) Effects of Different Light-emitting Diode (LED) Lights on the Growth Response of Leafy Vegetables in a Closed-type Plant Factory System**

\*Ju-hyun Park, Sang-Woo Lee, Su Yeon Lee, Soon Jae Kim, Kyu-hyun Hwang, Suk-Woo Jang, Gee Young Lee

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Local Food Systems**

**(080) Maintaining a Way of Life: Trials and Tribulations of Farmers Market Families**

Megan Lankford, Catherine Shoulders, \*Curt R. Rom, Jennie Popp

**(081) Production of Cilantro (*Coriandrum sativum*) as a Fall Crop in Southern New England**

\*Rebecca N. Brown

**(082) SAFE: Sustainable Agriculture and Food Environment**

\*Tim Pannkuk, Kyle Ferrell, Mark Anderson, Stanley Kelley

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Ornamental Plant Breeding 2**

**(054) Inheritance of Leaf Shape in Coleus**

\*Ya-Ting Shiu, Der-Ming Yeh

**(055) Inheritance of Leaf Blotch, Spot, and Stripe in Coleus**

\*Ya-Ting Shiu, Der-Ming Yeh

**(056) Interspecific Compatibility of *Melastoma candidum* and *M. sanguineum***

Mingtao Jiang, Shasha Wu, Junwen Zhai, Siren Lan, \*Mengmeng Gu, Donghui Peng

**(057) Pollen Germination and Storage of *Melastoma* Linn**

Donghui Peng, Mingtao Jiang, Shasha Wu, Junwen Zhai, Siren Lan, \*Mengmeng Gu

**(058) RAPD Analysis of an Easter Lily Chlorophyll Mutant**

\*Kedong Da, Samantha Smith, Nicole Miller

**(059) Cross Compatibility of Three *Illicium* Species**

Yingbing Hu, \*Donglin Zhang, Jinying Dong, Shouyun Shen, Xiaoling Jin

**(060) Photosynthetic Characteristics and Leaf Coloration Mechanism of the Hybrids between *Forsythia* ‘Courtaneur’ and *F. koreana* ‘Suwon Gold’**

Jiayi Wang, Jianshuang Shen, \*Mengmeng Gu, Huitang Pan, Qixiang Zhang

**(061) Genome Sequencing and Preliminary Assembly of Tung Tree (*Vernicia fordii*)**

\*Xiaofeng Tan, Hongxu Long, Lin Zhang, Jun Yuan, Hao Chen, Ze Li, Heping Cao

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Pomology 2**

**(437) Use of Innovative Plastic Films to Cover Cherry Orchard for Fruit Cracking Control and Fruit Quality Enhancement**

\*Guglielmo Costa, Alessandro Ceccarelli, Maddalena Taioli, Lorenzo Rocchi, Serena Vidoni, Stefano Lugli

**(438) Identification of Putative Fruit Growth Regulatory Genes in Apple**

\*Shan Jing, Anish Malladi

**(439) The Effects of Auxin, Gibberellins, and Defoliation on the Expression of Apple Flowering Genes (*Malus x domestica* Borkh.)**

\*Mokhles ELsysis, Peter Hirst

**(440) Correlation of IAD Values to Common Harvest Maturity Indicators in ‘Honeycrisp’ Apples**

Ines Hanrahan, \*Jacqueline Gordon, James R. McFerson

**(441) Managing Bourse Shoot Growth to Maximize Flowering in Apple**

\*Fatemeh Sheibani, Mokhles ELsysis, Bofan Xie, Peter M. Hirst

**(442) What Causes Weak Wood in Apple?**

Michael R. Basedow, \*Robert M. Crassweller

**(443) The Effect of Mechanical String Thinner Spindle Rotation Speed on Apple Spur Bud Removal**

\*Thomas M. Kon, James R. Schupp, H. Edwin Winzeler, Melanie A. Schupp

**(444) Shade Netting Reduces Sunburn Damage and Soil Moisture Depletion in ‘Granny Smith’ Apples**

Laura Asteggiano, \*Desmond R. Layne, Tory Schmidt, Lee Kalcsits

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Teaching Methods 2**

**(274) Scan, Link, Learn: Campus Arboretum as Living Lab**

\*Paul Siciliano Jr.

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**(275) Where Health and Horticulture Intersect: A Navajo Wellness Collaboration**

\*Kevin Lombard, Desiree Deschenie, Beresford A.A. Shirley, India Ornelas, Jesse Jim, Mark Bauer, Felix Nez

**(276) A Model for Establishing and Maintaining the Campus Landscape as a Significant and Dynamic Outdoor Classroom, Laboratory, and Therapy Center**

\*Andrew Pulte

**(277) Cross-cultural Connections: How Key Hole Gardens Link Two Schools**

\*Kevin Duerfeldt, Gail Romberger Nonnecke, David Minner, Laura Byaruhanga, Cynthia L. Haynes

**(278) The Impact of a Living Green Wall on Student Attitudes and Moods**

\*Terry Gilbertson Ferriss, Travis Tubre, David Trechter, Brittany Rootes, Alison Moitke

**(279) Student Reflections on Service Learning Experiences in a Hydroponic Food Production Course**

\*Christopher J. Currey, Ann Marie VanDerZanden

**(280) Tiny Houses for Northwest New Mexico: A Collaboration between San Juan College and the New Mexico State University Agricultural Science Center at Farmington to Demonstrate Sustainable Living**

\*Kevin Lombard, Blake Barnett, Richard Arnold

**(281) Utilizing Horticultural Education to Empower a Community and Enhance Individual and Environmental Health**

\*Michael B. Geiger, Sara E. Patterson

1:00–2:00 PM

Bayside B

**Genetics and Germplasm (GG) Working Group Business Meeting**

Objectives: To provide a forum for plant breeders, geneticists, botanists, general horticulturists, and others interested in collecting, preserving, evaluating, distributing, and/or using germplasm in or for research or teaching programs.

Stan C. Hokanson, Chair; Jill Bushakra, Chair-elect; Michael Dossett, Secretary

1:00–2:00 PM

Estherwood

**Plasticulture (PLAST) Working Group Business Meeting**

Objectives: Heightened environmental awareness and recent advances in plasticulture technology are catalyzing all kinds of new approaches in horticultural production around the world. The purpose of the Working Group is to encourage and facilitate the mutual exchange of ideas

and information concerning the use of plastics in various aspects of horticultural research, extension, education, and industry. This is accomplished by promoting plastics science and technology, by providing a forum for the exchange of plasticulture ideas and information, and by encouraging innovation.

Wesley Kline, Chair; Carol Miles, Chair-elect; Josh Freeman, Secretary

1:00–5:00 PM

Poydras

**Certified Horticulturist Examination**

1:45–3:15 PM

Oak Alley

—CEU Approved—

**Workshop Session—Implications of Climate Change for Pest Management for Horticultural Crops**

Sponsor: Weed Control & Pest Management Working Group

Moderator/Coordinator: Carlene A. Chase, cachase@ufl.edu

Objectives: The objectives of the workshop are: 1) provide a source of information for ASHS members about the ways in which climate change is impacting pest management; 2) provide a forum for discussion of the implications of these impacts on pest management; and 3) assist ASHS members in prioritizing research intended to mitigate adverse effects of pest populations that are being influenced by climate change.

Abstract: In addition to climate change affecting horticultural crop growth and yields, horticulturists should recognize that climate change will also affect pathogens, rates of disease progression, pests and their natural enemies, and weeds. Increases in atmospheric and soil temperatures may result in less effective disruption of pathogen, pest, and weed life cycles that typically occur during winter in temperate regions. This workshop will provide an opportunity for ASHS members to receive critical information on the ways in which pathogens, pest and beneficial arthropods, and weeds are currently being affected by climate change and the prospects for the future. The workshop format will include time for audience questions and comments.

1:45–2:15 PM

**Effects of Climate Change on Pathogens and Diseases**

\*Karen Garrett

2:15–2:45 PM

**Impacts of Climate Change on Weeds and Weed Management**

\*Lewis Ziska

2:45–3:15 PM

**Climate Change Effects on Pest Arthropods and Their Natural Enemies**

\*James D. Harwood

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Thursday, August 6, 2015

1:45–3:25 PM

—CEU Approved—

## Workshop Session—Prospects and Opportunities in Herbs, Spices, and Medicinal Plants Research

Sponsor: Herbs, Spices, & Medicinal Plants Working Group

Moderator: Hideka Kobayashi, hideka.kobayashi@kysu.edu

Coordinator: Jeanine Marie Davis, jeanine\_davis@ncsu.edu

Objectives: The objective of the workshop is to bring together leading academic scientists, and exchange and share their experiences and research results about emerging issues in herb, spice and medicinal plant research. Several focus areas had been identified and those include: drug discovery, new medicinal crops, germplasm preservation, and phytochemical analysis. The workshop also provides the premier interdisciplinary and multidisciplinary forum for researchers and educators to present and discuss the recent innovations, trends, and opportunities in the field of herbs, spices and medicinal plants.

Abstract: The year 2013 marked another period of increase in sales of herbal dietary supplements, a total of \$994 million. Among the most popular were cranberry, garlic, saw palmetto, soy, and ginkgo, some of which have been used in traditional and indigenous medicines for centuries. The resurgence in popularity of botanical and herbal medicine is fueled in part by recent regulatory changes and interests among aging baby boomers who have become increasingly conscious of their health. Medicinal plants serve as a source of dietary supplements, crude drug materials, and pharmaceutical constituents that have gone through rigorous scrutiny. While many medicinal species have been domesticated and are now grown in the field or under controlled environments for harvesting, many remain wildcrafted both domestically and internationally. Excessive, non-sustainable collection of plants from the wild has resulted in loss or destruction of habitats, decrease in genetic diversity or even in some cases, extirpation, thereby possibly causing a loss of traditional usage and knowledge in medicinal plants. Many rare and endangered medicinal plants and their phytochemical constituents have not been thoroughly analyzed, screened, or evaluated for their potential in health amelioration or other possible uses, creating substantial constraints and the need for germplasm preservation of medicinal plant species. The purpose of this workshop is to bring together leading academic scientists, researchers, and specialists in various disciplines (including dietary supplements, natural product chemistry, pharmaceutical science, pharmacognosy, horticulture, plant germplasm preservation, and indigenous medicine) to address current issues and trends in herbs, spices and medicinal plant research. Specifically, we will discuss how to tackle issues in needed research or newly emerging areas, such as medicinal plant uses in indigenous medicine, germplasm preservation, drug discovery, and quality control.

1:45–2:00 PM

### Hunting and Collecting Native *Allium* in the Western United States

\*Barbara Hellier

2:00–2:15 PM

### Traditional Plant Medicine of the Houma People

\*Lanor Curole

Bayside A

2:15–2:30 PM

### Screening North American Plant Species for Health Ameliorating Properties: Comparative Floristic and Cross-Cultural Approaches

\*Hideka Kobayashi

2:30–2:45 PM

### Challenges with Multiple Growers Providing Consistent Raw Materials Using *Echinacea* as an Example

\*Jeanine Marie Davis, Lijing Zhou, Jennifer Crumley, John Balles

2:45–3:00 PM

### Screening Native Botanicals for Bioactivity: An Interdisciplinary Approach

\*Elizabeth Floyd, Anik Boudreau, Diana M. Cheng, Carmen Ruiz, David Ribnicky, C. Ray Brassieur, Larry Allain, William T. Cefalu

1:45–3:45 PM

Bayside C

—CEU Approved—

## Workshop Session—New Innovations in Commercial Horticultural Applications — CEU Approved—

Sponsor: Industry Division

Objectives: To introduce conference participants to new and innovative technologies available for research, teaching, and extension.

Abstract: This workshop is designed to introduce new and innovative technologies available for research, teaching, and extension. Presentations are made by companies who exhibit at the annual meeting and will concentrate on new and/or innovative aspect of their company or products.

1:45–2:05 PM

### Measuring Leaf Area Index under Any Sky Condition

\*Eric Price

2:05–2:25 PM

### Plant and Soil Sensors for Better Control of Plant Quality

\*Lauren Crawford

2:25–2:45 PM

### New Products from Apogee Instruments

\*Mark Blonquist

2:45–3:05 PM

### Web-Based Data Management and Portable Blue Tooth Devices

\*Wendy Sayre

3:05–3:25 PM

### Assessment Review Tools and Methods

\*Steven Gylling

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



3:25–3:45 PM

**Heliospectra—Intelligent Light for Efficient Growth**

\*Jimmy Gustafsson

1:45–3:45 PM

Borgne

—CEU Approved—

**Workshop Session—Seed Biology and Seed Treatments**

Sponsor: Seed & Stand Establishment Working Group

Moderator/Coordinator: Michael Olszewski, olszewsk@temple.edu

Objectives: The objective is to present diverse research topics regarding seed treatment technology and to discuss their effects on stand establishment.

Abstract: Seed treatments include coatings, encapsulations, or other “enhancements” that typically result in increased vigor and/or in breaking dormancy. These treatments have a variety of applications as commercial seed technology and as a means of facilitating stand establishment for some plant species. Industry, government, and university researchers will discuss practical applications of several seed treatments and their potential impact on stand establishment. Following the presentations, there will be a group discussion on the significance of seed technology and its practical applications. This workshop will highlight the importance of seed treatments in horticulture and it will show several applications of seed technology and biological responses that result in enhanced stand establishment.

1:45–2:05 PM

**Influence on Non-ionic Surfactant Seed Coatings for Promoting Germination and Plant Growth under Deficit Irrigation and Non-optimal Temperatures**

\*Matthew Madsen

2:05–2:25 PM

**Embryo Rescue and Artificial Seed Encapsulation Treatments in Flowers**

\*Amir A. Khoddamzadeh, Bruce Dunn

2:25–2:45 PM

**Seed Treatments and Germination Responses of Seabeach Amaranth, a Threatened Plant in the United States**

\*Sasha Eisenman

2:45–3:05 PM

**Modifying Soil Water Status and Improving Stand Establishment in a Water Repellent Soil Using Surfactant Coated Seed. I.**

\*Stanley Kostka

3:05–3:25 PM

**Modifying Soil Water Status and Improving Stand Establishment in a Water Repellent Soil Using Surfactant Coated Seed. II**

\*Mica McMillan

2:00–3:00 PM

Maurepas

—CEU Approved—

**Workshop Session—Cornell Apple Breeding, Genetics, and Genomics: Exciting Times!**

Sponsor: Pomology Working Group

Moderator/Coordinator: Michele Warmund, warmundm@missouri.edu

Objectives/Abstract: The American Pomological Society, founded in 1848, is the oldest fruit organization in North America. The mission of the Society is to “foster the science and practice of fruit production and variety development.” In keeping with this mission, this year’s keynote presentation will provide an overview of one of the most significant apple breeding programs in North America. Since 1895, the Cornell apple breeding program has released 65 apple varieties, with ‘Cortland’, ‘Macoun’, ‘Empire’, ‘Jonagold’ and the scab resistant ‘Liberty’ among the best known. ‘SnapDragon’ and ‘RubyFrost’ are the two most recently-developed cultivars. The top priority of the Cornell University program is breeding for fruit quality, but investigators are also conducting genetic research on plant architecture, resistance to flesh browning, enhancement of vitamin C and specific antioxidants in fruit. To enhance the understanding of traits important in genetic improvement, epigenetic, genetic and genomic studies with students are conducted in collaboration with many valued colleagues at USDA and Cornell in the area of germplasm use, storage research, developing and testing of cider varieties, new ornamentals and disease resistant varieties.

2:00–3:00 PM

**Cornell Apple Breeding, Genetics and Genomics: Exciting Times!**

\*Susan K Brown

2:00–6:00 PM

Estherwood

**Muscadine Grape SCRI Project Meeting**

Coordinator: Mercy A. Olmstead, mercy1@ufl.edu

SCRI Project Meeting

3:00–4:00 PM

Bayside B

**Graduate Student (GRAD) Working Group Business Meeting**

Objectives: To provide a formal organization for Graduate Students in ASHS to support programs and issues facing Graduate Students in Horticulture.

Zachary Brym, Chair; Alex Susko, Workshop Co-Chair; Alex Rajeski, Service Committee Co-Chair; Jessica Chitwood, Communications Co-Chair

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

3:00–4:00 PM

Maurepas

**Pomology (POM) Working Group Business Meeting**

Objectives: To assist the planning and development of research, extension, and teaching programs in pomology and to serve the current and future needs of the fruit industry.

Desmond Layne, Chair; Gregory Michael Peck, Chair-elect; Elina Covenia, Secretary

3:15–3:45 PM

Oak Alley

**Weed Control and Pest Management (WCPM) Working Group Business Meeting**

Objectives: To share new ideas and other research information concerning pest control in the varied areas of horticultural crop production.

Carlene Chase, Chair; Harlene Hatterman-Valenti, Chair-elect

3:25–3:55 PM

Bayside A

**Herbs, Spices, and Medicinal Plants (HSMP) Working Group Business Meeting**

Objectives: To promote and encourage scientific research and education on herbs, spices, and medicinal plants, emphasizing botanical, cultural, environmental, genetic, harvesting, physiochemical, processing, and pharmacological aspects of these plants.

Gary Stutte, Chair; Hideka Kobayashi, Chair-elect

4:00–5:30 PM

Rhythms

**Presidential Address and ASHS Annual Business Meeting**

Topic: Relevancy in the Corporate University – Horticulture’s 21st Century Challenge



**Michael A. Arnold**  
ASHS President

What are the latest and most critical challenges facing horticulture in today’s corporate university and global paradigm? How do we stay relevant as a discipline in tomorrow’s rapidly changing academic, cultural, and economic environments? What steps can ASHS take today? How do we position for the future and what is our “take-home message”?

Followed by the ASHS Annual Business Meeting.

5:30–6:30 PM

Poydras

**Annual Conference Technical Program Committee Meeting**

Dennis T. Ray, Co-Chair; Carl E. Sams, Co-Chair; Brian Trader; Dean Kopsell, Jozsef Racsko, Maria Jenderek, Eugene K. Blythe, Pablo J. Morales-Payan, William Vance Baird, Bill Miller

5:30–6:30 PM

Lagniappe

**Student Reception**

Sponsored by Tanimura & Antle

Come meet and network with graduate and undergraduate students from around the world. Advance registration required. Price: \$15.00.

5:30–7:00 PM

Maurepas

**American Pomological Society (APS) Annual Business Meeting**

Presiding: Peter Hirst

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**Friday, August 7, 2015**

7:00–8:00 AM

Starbucks - Lobby

**Graduate and Undergraduate Student Morning Gathering**

Why wait until the student events to meet the other graduate and undergraduate students at ASHS this year? Come by and meet them while you grab your morning cup of coffee (or tea) . . . we’ll meet in the lobby at Starbucks!

7:00 AM–2:00 PM

Gallier A

**Speaker Ready Room**

Oral, Workshop and Colloquium Speakers are requested to check-in at the Speaker Ready Room. Please note that even though you have uploaded in advance, you are still asked to check in at the Speaker Ready Room at least 24 hours in advance of your presentation to confirm that your videos and PowerPoint presentations were successfully uploaded and running properly. Updates and modifications can be made to your presentation at this time.

7:00 AM–2:00 PM

Gallier B

**Poster Presenter Recording Room**

New this year, we will be inviting/encouraging poster presenters to record their presentations. This can be done two ways; both re-

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

quire an uploaded PDF of your poster in the Upload Poster section of your Speaker's Corner. You may either upload the audio part of your presentation before arriving at the conference by uploading an MP3 recording of your presentation along with the PDF; or this can be done on-site in Gallier B Room at the conference (if you decide to record onsite, please keep in mind that your audio recording will not be available until after the meeting has ended). A QR code has been assigned to your poster so that you can include the QR code on your poster. Conference attendees can then scan the code and get access to your poster presentation in the online program. Poster presenters will still have to present during the conference at their assigned time but this process will allow your recorded presentation to remain part of the ASHS archives. All recordings will be housed on the ASHS website indefinitely. Your presentation will be accessible on our site with the rest of the ASHS technical program giving the poster presenters the same opportunity that oral presenters hold.

7:30—3:00 PM

Napoleon Registration

## Registration Open

8:00—9:00 AM

Borgne

## Oral Session—Genetics & Germplasm 3

Moderator: Chandra Sekhar Thammina, chandra.thammina@ars.usda.gov

8:00—8:15 AM

### Analysis of Genetic Diversity and Relatedness of Boxwood Accessions Using Genic-simple Sequence Repeat Markers

\*Chandra Sekhar Thammina, Richard T. Olsen, Matthew H. Kramer, Margaret Pooler

8:15—8:30 AM

### Genetic Relationship between *Lactuca georgica* and Five Other *Lactuca subseccion Lactuca* Species as Revealed by TRAP Markers

Theodore J. Kisha, \*Barbara Hellier, Alex Beharav, Soon Jae Kwon

8:30—8:45 AM

### Characterization of 11 Hybrid Rose Populations for Petal Number under Cool- and Warm-season Conditions

\*Shuyin Liang, Xuan Wu, David H. Byrne

8:45—9:00 AM

### Perspectives from Soybean Breeding: A Combination of Classic and New Technologies to Map and Fine Map Aphid Resistance in Soybean and Its Application in Horticulture

\*Wenyan Du, Dechun Wang

8:00—9:30 AM

Bayside B

—CEU Approved—

## Workshop Session—New Orleans USDA–ARS Projects on Crops of the South

Sponsor: Federal Partners Working Group

Coordinator: Penelope Perkins-Veazie, Penelope\_Perkins@ncsu.edu

Objectives: This working group is designed to highlight the activities and accomplishments of partners in non-university institutions, especially those in federal or government science positions.

Abstracts: The Federal Partners working group was organized to better capture the research role of federal employees in the U.S., Canada, and other countries. The goal of this workshop is to highlight work being done at the New Orleans USDA–ARS location. Research areas include allergens, aflatoxins, rice, sugar cane, and functional foods, food processing, and sensory quality.

8:00—8:15 AM

### Functional Beverages and Value-added Foods: Opportunities Beyond the Juice

\*John C. Beaulieu, Steve Boue

8:15—8:30 AM

### Structure, Function and IgE Epitopes of the Peanut Panallergen Ara h 8

\*Barry Hurlburt

8:30—8:45 AM

### USDA–ARS Research on Preharvest Control of Aflatoxin Contamination in Food and Feed Crops

\*Jeffrey Cary

8:45—9:00 AM

### On The Road to a New Large-scale Sweet Sorghum Industry in Rural America

\*Gillian Eggleston

8:00—9:30 AM

Bayside A

## Oral Session—Citrus Crops

Moderator: Tracy Kahn, tracy.kahn@ucr.edu

8:00—8:15 AM

### Update on Evaluations of Lemon Selections for the California Desert

\*Tracy Kahn, Glenn C. Wright

8:15—8:30 AM

### A Reductionist Approach to the Study of Citrus Huanglongbing Disease

\*Greg McCollum, David Hall

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

8:30–8:45 AM

**The Interaction Between *Phytophthora* spp. and *Candidatus Liberibacter* spp. Damage to Citrus Fibrous Roots**

\*Jian Wu, Evan Johnson, Diane Bright, Kayla Gerberich, James Graham

8:45–9:00 AM

**Identifying Disease Resistant Pummelos for Citrus Improvement**

\*Ethan Nielsen, Jude W. Grosser

9:00–9:15 AM

**Soil-Applied Controlled Release Fertilizer (CRF) Treatments Impact the Health and Growth of HLB-Infected Trees—Results from Greenhouse and Field Experiments**

\*Jude W. Grosser, Gary Barthe, James Baldwin, Ahmad Omar, Tripti Vashisth

9:15–9:30 AM

**The Effect of Fruit on Floral Gene Expression in Alternate-bearing *Citrus reticulata* (Blanco)**

\*Lisa Tang, Carol J. Lovatt

8:00–9:30 AM

**Oral Session—Postharvest 3**

Moderator: Randolph Beaudry, beaudry@msu.edu

8:00–8:15 AM

**Up-regulation of Genes in Diphenylamine- and 1-Methylcyclopropene-treated Apples during Cold Storage**

Nigel E. Gapper, \*David Rudell, David A. Buchanan, James J. Giovannoni, James P. Mattheis, Christopher B. Watkins

8:15–8:30 AM

**Characterization of Calmodulin Gene Family during Tomato Fruit Development and Ripening**

\*Tianbao Yang, Hui Peng, Wayne Juirick

8:30–8:45 AM

**A Targeted Quantitative Proteomic Investigation Reveals the Changes in Proteins Responsible for Flavonoid and Anthocyanin Biosynthesis in Strawberry Fruit at Different Ripening Stages**

\*Jun Song, Lina Du, Li Li, Wilhelmina Kalt, Leslie Campbell Palmer, Sherry A.E. Fillmore, ZhaoQi Zhang, Xihong Li

8:45–9:00 AM

**A Single Lipoxygenase in Apple and Its Free Linoleic Acid Substrate are Proposed to Constitute a Major Pathway in the Formation of Hexyl Esters during Fruit Ripening**

Carolina Contreras, Doreen Schiller, Jörg Vogt, Frank Dunemann, Bruno Defilippi, Henrik Tjellström, Wilfried Schwab, \*Randolph Beaudry

9:00–9:15 AM

**Distribution of Apple Fruit Epidermal Non-polar Metabolites**

\*David Rudell, David Buchanan, James P. Mattheis

9:15–9:30 AM

**Postharvest Characterization and Storability of Major Hot Pepper Hybrids**

Muhammad S. Mazhar, Javed Iqbal, \*Tanveer Ahmad, Haider Ali

8:00–9:45 AM

**Oral Session—Floriculture 2**

Moderator: Kedong Da, kda@ialr.org

Oak Alley

8:00–8:15 AM

**Light Intensity, Photoperiod, and Temperature Effects on Growth and Flowering of Red Firespike**

\*Amir Rezazadeh, Richard L. Harkess

8:15–8:30 AM

**The Effects of Photoperiod and Temperature on Growth and Flowering of *Clematis xhybrida***

\*James Faust, Uttara Samarakoon, Alexandra Carver, Misty Shealy

8:30–8:45 AM

**Manipulation of Light Frequency by LEDs and *Phalaenopsis* Orchid Spike Growth**

\*Jake Holley, Melanie Yelton

8:45–9:00 AM

**Ethephon Drenches and Sprays for Height Control in Spring Bulbs**

\*William B. Miller

9:00–9:15 AM

**Cryopreservation of *Dendrobium* Orchid Varieties and the Potential for the Elimination of Cymbidium Mosaic Virus**

\*Amanda Ackerman, Michael Melzer, Kenneth W. Leonhardt

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

9:15–9:30 AM

**Daylily Callus Induction and Plant Regeneration**

\*Kedong Da, Samantha Smith

9:30–9:45 AM

**Leaf Culture Regeneration and Micropropagation of Rex Begonia**

\*Kedong Da, Samantha Smith

8:00–9:45 AM

Nottoway

**Oral Session—Vegetable Crops Management 3**

Moderator: Gordon C. Johnson, gcjohn@udel.edu

8:00–8:15 AM

**Quantifying the Impact of Low-temperature Exposure on Cauliflower Head Initiation**

\*Gaetan Bourgeois, Virginie Logier-Paquette, Andreeanne Ferland

8:15–8:30 AM

**Summer Cover Crop and Plant Back Timing Effects on Fall Cabbage Production**

\*Ray Kruse, Ajay Nair

8:30–8:45 AM

**Rowcover Modifies Microclimatic Conditions and Increased Cilantro Yield in Virginia**

\*Ramon A. Arancibia, William Bruce Evans

8:45–9:00 AM

**Growth and Yield of Sequentially Transplanted Lettuce in an Organically Managed High Tunnel**

\*Gena Simpson Moore, John Evan Beck, Joseph Aaron Moore, Paula E. Faulkner, Sanjun Gu

9:00–9:15 AM

**Optimizing Processing Sweet Corn Production on the Delmarva Region of the Mid-Atlantic**

Emmalea Ernest, \*Gordon C. Johnson

9:15–9:30 AM

**Response of Onion Yield, Grade, and Financial Return to Plant Population and Irrigation System**

\*Clinton C. Shock, Erik Feibert, Monty Saunders

9:30–9:45 AM

**The Effect of Different Light Levels on the Growth and Production of Chili Pepper and Tomato Plants**

\*Youping Sun, Joseph G. Masabni, Priscilla Del Valle, Genhua Niu

8:00–10:00 AM

Gallery Ballroom

**International Division Breakfast**

Coordinator: Esmaciel (Essie) Fallahi, efallahi@uidaho.edu

Topic: Challenges and Opportunities in Global Horticultural Programs



L. George Wilson

North Carolina State University

In this talk, Professor Wilson will talk about USAID Hort Innovation Lab efforts, but will leave the door open for dialogue on other international horticultural programs.

8:00–10:00 AM

Bayside C

**Oral Session—Local Food Systems**

Moderator: Cindy Fake, cefake@ucanr.edu

8:00–8:15 AM

**Enhancing Local Food Security: A Holistic Approach**

\*Lee Altier, Julie Estep

8:15–8:30 AM

**Asian Crops: Production, Nutrition, and Consumer Preference**

\*William J. Sciarappa

8:30–8:45 AM

**County Food System Assessment and Postharvest Food Infrastructure Asset Mapping in New Mexico**

\*Drey Clark, Chris Brown, John Garlisch, Michael Patrick, Stephanie J. Walker, Mark Uchanski

8:45–9:00 AM

**Training the Next Generation of Farmers in the Sierra Nevada Foothills: Lessons Learned**

\*Cindy Fake, Roger Ingram, Daniel Macon, James Muck

9:00–9:15 AM

**Initiating a Group GAP, Fresh Produce Safety Certification Program in Arizona**

\*Kurt D. Nolte, Channah Rock, Paula Kahn-Rivadeneira, Stewart Jacobson

9:15–9:30 AM

**Approach and Accomplishments of Farm to Plate Programming in Florida's SNAP-Ed Program**

\*Danielle Dion Treadwell, Karla Shelnett, Glenn Israel, David Diehl, David Campbell, Lauren Headrick, David Bearl

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

9:30–9:45 AM

**Specialty Crop Programming for Florida's Small Farms and Alternative Enterprises**

\*Danielle Dion Treadwell, Mary Beth Henry, Robert C. Hochmuth, Jose Perez

9:45–10:00 AM

**Heirloom Dry Beans (*Phaseolus vulgaris*) in Northwest Washington**

\*Carol A. Miles, Kelly Atterberry, Brook Brouwer

8:30–10:30 AM

Poydras

**Crucifer Crop Germplasm Committee**

Presiding: Mark Farnham

9:00–10:00 AM

Estherwood

**Scholarship Awards Committee Meeting**

Michelle Leinfelder-Miles, Chair; Stan C. Hokanson, Kimberly Moore, Jeremy Cowan, Kauahi Perez

9:00 AM–2:00 PM

Napoleon Expo Hall

**Exhibits Open**

9:00 AM–2:00 PM

Napoleon Expo Hall

**Poster Hall Open**

9:00 AM–2:00 PM

Napoleon Expo Hall

**Career Center**

Visit the ASHS Career Center for information on job, career and internship openings. Also, meet with industry, public garden and university professionals to get their insight on a variety of career paths. Tutorials on how to network utilizing the ASHS Membership Interface for advancing your career search and professional profile will also be given. Specific career sessions will be posted in the center each day.

9:15–10:45 AM

Borgne

**Oral Session—Computer Applications in Horticulture/Teaching Methods**

Moderator: Shaun Broderick, srb559@msstate.edu

9:15–9:30 AM

**Introducing NRSP10: Database Infrastructure for Specialty Crops**

\*Dorrie Main, Sook Jung

9:30–9:45 AM

**Ten Tips on Capturing Great Aerial Field Imagery Using GoPro Mounted UAVs**

Kurt D. Nolte, \*Rosa Bevington

9:45–10:00 AM

**GenSAS: An Easy-to-Use, Web-Based Solution for Specialty Crop Genome Annotation**

\*Jodi L. Humann, Stephen P. Ficklin, Taein Lee, Chun-Huai Cheng, Sook Jung, Jill Wegrzyn, David Neale, Dorrie Main

10:00–10:15 AM

**Making Plant Trial Data Accessible through a Trialing Website**

\*Shaun Broderick, Dale Moore, Clay Cheroni

10:15–10:30 AM

**Designing a Departmental Badging System to Enhance Program Assessment for the Benefit of Students**

\*Tim Rhodus

10:30–10:45 AM

**Teaching Undergraduate Turf Science as an Online Course: Student and Instructor Perspectives**

\*Pamela B. Trewatha

9:30–10:00 AM

Bayside B

**Federal Partners (FP) Working Group Business Meeting**

Objectives: To provide a network for horticultural professionals who work for national, federal, state, and local governments. To provide linkages to university and industry colleagues to promote exchange of ideas, common research goals, and multilevel approaches to large and/or complex issues affecting horticulture and food security.

Penelope Perkins-Veazie, Chair; Nahla Bassil, Secretary

9:45–10:15 AM

Napoleon Expo Hall

**Break**

10:00–11:00 AM

Estherwood

**Local Food Systems (LOCSY) Working Group Business Meeting**

Objectives: To promote academic and research information exchange on scientific development, scholarship, and educational activities related to and regarding local and regional production systems, including definition and measurement of food systems, foodsheds, small and mid-scale production systems, beginning/new farmers, local farmers and farmers markets, farmers expanding from direct sale to local/regional wholesale, scale neutral technologies, agriculture at the urban/rural interface, urban horticulture production (community gardens, school gardens, home gardens), farm-to-consumer marketing, farmer-to-institution /school

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

marketing, local food system and farmland policy, and relationships of local horticulture to rural and urban communities and economies.

Rebecca N. Brown, Chair; Kelly Young, Chair-elect

10:15–11:15 AM

Maurepas

## Oral Session—Environmental Stress Physiology

Moderator: Alexander Litvin, alitvin@uga.edu

10:15–10:30 AM

### **Abscisic Acid Induces Leaf Age-dependent Chlorosis by Limiting Nitrogen Distribution to Mature Leaves in Arabidopsis**

\*Shinsuke Agehara, Scott Finlayson, Daniel I. Leskovar

10:30–10:45 AM

### **Transcriptome Analysis of *Petunia xhybrida* under Water Stress Using RNA Sequencing**

\*Suejin Park, Youyou Moon, Nicole L. Waterland

10:45–11:00 AM

### **Drought Stress Reduces Stem Elongation and Down-regulates Gibberellin Biosynthesis in Tomatoes during Vegetative Growth**

\*Alexander Litvin, Marc W. van Iersel, Anish Malladi

11:00–11:15 AM

### **Response of Water-stressed Young Peach Trees to Foliar Applications of Ascorbic Acid**

Consuelo Penella, Angeles Calatayud, \*Juan Carlos Melgar

10:15–11:30 AM

Bayside B

## Oral Session—Federal and International Programs

Moderator: Mathieu Ngouajio, mngouajio@nifa.usda.gov

10:15–10:30 AM

### **Promoting Horticulture: A National Initiative**

\*Mary H. Meyer, Douglas Needham, Brian W. Trader, John Dole, Michael Neff, Marnie Conley

10:30–10:45 AM

### **NIFA Investments in Plant Breeding: Strategies, Achievements and Impacts in Research, Education, and Extension**

\*Mary M. Peet, Mathieu Ngouajio, Caroline Sherony, Ed Kaleikau, Ann Marie Thro, Tom Bewick, Pushpa Kathir, Megan O'Reilly

10:45–11:00 AM

### **The USDA Plant Breeding Roadmap**

Ann Marie Thro, Roy Scott, Ed Kaleikau, \*Mathieu Ngouajio, David Gwaze, Randy Johnson, Kelly Day-Rubenstein, Paul Heisey, John Englert

11:00–11:15 AM

### **Estate Planning: Transitioning for the Future of Horticultural Businesses in New Jersey**

\*Robin G. Brumfield, Jenny Carleo, Meredith Melendez, Barbara O'Neill, Nicholas Polanin

11:15–11:30 AM

### **Impacts Achieved via the Horticulture Innovation Lab**

\*Elizabeth Mitcham

10:15–11:30 AM

Bayside A

## Oral Session—Propagation 2

Moderator: Daniel I. Leskovar, d-leskovar@tamu.edu

10:15–10:30 AM

### **The Effects of Leaf Removal on Adventitious Root Formation and Plant Growth of Grafted Tomatoes**

\*Cary L. Rivard, Lani Meyer, Eleni D. Pliakoni, Megan Kennelly

10:30–10:45 AM

### **Light Intensity and Relative Humidity Effects on the Regrowth of Newly Grafted Tomato Plants**

\*Bizhen Hu, Peter Ling, Matthew D. Kleinhenz

10:45–11:00 AM

### **Grafting Watermelon to Manage Verticillium Wilt in Washington State**

Jesse A. Wimer, \*Carol A. Miles, Debra A. Inglis

11:00–11:15 AM

### **Abscisic Acid: Practical Application for Vegetable Transplants**

\*Shinsuke Agehara, Daniel I. Leskovar

11:15–11:30 AM

### **Low-level Nitrogen Fertilization Improved Root Growth Components and Quality of Containerized Artichoke Transplants**

\*Daniel I. Leskovar, Yahia Othman

10:15–11:45 AM

Oak Alley

## Oral Session—Consumer Horticulture and Master Gardeners

Moderator: Ellen Bauske, ebauske@uga.edu

10:15–10:30 AM

### **Transforming the North Carolina State EMGV Manual from a Static Three-ring Binder with Limited Distribution into a Dynamic Digital Tool Available to the Public**

\*Lucy Bradley, Kathleen Moore

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

10:30–10:45 AM

**Evaluating Long Distance Delivery of the North Dakota Master Gardener Core Course**

\*Esther McGinnis

10:45–11:00 AM

**Volunteer and Coordinator Perspectives on the Extension Master Gardener Program in Tennessee**

\*Natalie Bumgarner, Joseph Donaldson

11:00–11:15 AM

**Navigating the Extension Master Gardener Rescreening Process**

\*Pamela J. Bennett, Johnson Denise

11:15–11:30 AM

**Webinars Teach IPM to National Audience**

\*Mary H. Meyer, Rhoda L. Burrows, Celeste Welty, Vera Krischik, Michelle Grabowski

11:30–11:45 AM

**The Urban Double Crop: Fall Vegetables and Summer Lawn**

\*Ellen Bauske, Sheri Dorn, Clint Waltz

10:15–11:45 AM

**Oral Session—Fruit Breeding 2**

Moderator: Nahla Bassil, nahla.bassil@ars.usda.gov

10:15–10:30 AM

**Comparative Analysis and Genetic Study of Aroma Volatiles from Different Citrus Selections and Hybrids**

\*Yuan Yu, Jinhe Bai, Chunxian Chen, Anne Plotto, Elizabeth A. Baldwin, Fred Gmitter Jr.

10:30–10:45 AM

**Pedigree-based QTL Detection for Disease Resistance and Fruit Quality Traits: An Overview of the University of Florida Strawberry Breeding Program**

\*Sujeet Verma, Jozer Mangandi, Jack A. Roach, Natalia Peres, Nahla Bassil, Eric van de Weg, Vance M. Whitaker

10:45–11:00 AM

**Usefulness of *FaPFRU*-Associated Perpetual Flowering Markers in the Cultivated Octoploid Strawberry**

Natalia Salinas, Kim Daeil, Justine Perrotte, Amelia Gaston, Aline Potier, James F. Hancock, Kazim Gunduz, Megan Mathey, Sonali Mookerjee, Thijs van Dijk, Eric van de Weg, Cameron Paul Peace, Beatrice Denoyes, Chad E Finn, \*Nahla Bassil

11:00–11:15 AM

***FaRXf1*: A Locus Conferring Resistance to *Xanthomonas fragariae* in Octoploid Strawberry**

\*Jack A. Roach, Sujeet Verma, Natalia Peres, Andrew R. Jamieson, Eric van de Weg, Nahla Bassil, Vance M. Whitaker

11:15–11:30 AM

**QTL Detection and Allele Mining for *Phytophthora cactorum* Resistance in University of Florida Strawberry Breeding Germplasm**

\*Sujeet Verma, Jozer Mangandi, Natalia Peres, Vance M. Whitaker

11:30–11:45 AM

**Evaluating Bacterial Spot [*Xanthomonas arboricola* pv. *Pruni* (*Xap*)] Resistance for Molecular Characterization and Incorporation of Marker-assisted Breeding (MAB) into the University of Arkansas Peach and Nectarine Breeding Program**

\*Terrence James Frett, John R. Clark, Brant Smith, Burton H. Bluhm, Alejandra Salgado, Paul James Sandefur, Cameron Paul Peace, Ksenija Gasic

10:15–11:45 AM

Bayside C

—CEU Approved—

**Workshop Session—International Horticultural Consultants**

Sponsor: International Horticultural Consultants Working Group

Moderator/Coordinator: Clinton C. Shock, clinton.shock@oregonstate.edu

Objectives: Encourage international consulting through sharing knowledge of the benefits and challenges.

Abstract: Horticulturists can make substantial contributions through international consulting. Specific problems need to be overcome due to cross-cultural communication, misunderstood local needs, lack of value placed on international efforts by the consultant's home institution, and confusion in professional research roles versus consulting. This workshop and the following discussion seek to share consulting experiences to foster future success.

10:15–10:35 AM

**Bridging the Cultural Gap**

\*Roland Ebel

10:35–10:55 AM

**Experiences with the Farmer-to-Farmer Volunteer Specialist Program: Projects in Guatemala and the Dominican Republic**

\*John L. Griffis Jr.

10:55–11:15 AM

**Benefits and Challenges of Faculty Engagement in International Agricultural Development Work**

\*Tim D. Davis

11:15–11:30 AM

**Unexpected Needs for Flexibility in International Consulting**

\*Clinton C. Shock

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



Friday, August 7, 2015

11:00–12:15 PM

Borgne

## Oral Session—Ornamentals/Landscape and Turf 2

Moderator: Michelle Atkinson, michelleatkinson@ufl.edu

11:00–11:15 AM

### Consumer Preference for Turfgrass Attributes in the United States

Chengyan Yue, \*Jingjing Wang, Eric Watkins

11:15–11:30 AM

### Lawn Renovation Using Alternatives to Glyphosate

\*Tony Koski, Alison S. O'Connor

11:3–11:45 AM

### Potential for Injury to Container Tomatoes when Mulched with Grass Clippings from Herbicide-treated Turf

\*Alison S. O'Connor, Tony Koski

11:45 AM–12:00 PM

### Using Smart Irrigation Apps to Show the Value of Extension to Local Government

Michael Dukes, \*Michelle Atkinson, Kati Migliaccio

12:00–12:15 PM

### Performance of *Zoysia* and *Axonopus compressus* Turf on Turf-paver Complex under Simulated Traffic

\*Siew-Wai Chin, Lai-Fern Ow

11:30 AM–12:30 PM

Bayside A

## Propagation (PROP) Working Group Business Meeting

Objectives: To exchange ideas and information on propagation of horticultural crops and to provide interaction between industry and public institutions interested in propagation of horticultural crops.

Donglin Zhang, Chair; Javier Castillon, Chair-elect

11:45 AM–12:15 PM

Bayside C

## International Horticultural Consultants (ICON) Working Group Business Meeting

Objectives: To discuss the credentials and accreditation of international consultants and sources of information, backstopping, teamwork, training, experience, and communications necessary for effective employment as an international consultant in either the private or public sector, and to develop a directory of international horticultural consultants in ASHS and their sources of information.

Clinton C. Shock, Chair

11:45 AM–12:45 PM

Nottoway

## Fruit Breeding (FRBR) Working Group Business Meeting

Objectives: To promote and coordinate research efforts in the genetics and breeding of fruit crops.

James Olmstead, Chair; Mary Lu Arpaia, Chair-elect; Chunxian Chen, Secretary

12:00–1:00 PM

Maurepas

## Vegetable Crops Management (VCM) Working Group Business Meeting

Objectives: To promote research and extension of a systems approach to production and utilization of vegetables.

Ajay Nair, Chair; David Liu, Chair-elect; T. Casey Barickman, Secretary

12:00–5:00 PM

Edgewood AB

## ASHS Board of Directors Meeting

Presiding: Mary H. Meyer, Chair

12:15–1:00 PM

Napoleon Expo Hall

## Poster Session—Environmental Stress Physiology 2

### (215) Effects of Salinity on Vegetative Response, Yield, and Fruit Quality Attributes of Commercial Piquin Peppers (*Capsicum annuum* L. var. *glabriusculum*)

Iván Vaingerl, \*Juan I. I Valiente-Banuet

### (216) Evaluation of Lettuce Genotypes for Salinity Tolerance

\*Chenping Xu, Beiquan Mou

### (217) Evaluation of Salt Tolerance and Proline Accumulation in Korean Potato Cultivars (*Solanum tuberosum* L.) Using In Vitro Culture

\*Ju Sung Im, Ji Hong Cho, Kwang Soo Cho, Dong Chil Chang, Yong Ik Jin, Hong Seob Yu, Su-Young Hong

### (218) Low-temperature Conditioning of Garlic “Seed” Cloves Induces Differential Response in Sprouts Proteome

Miguel David Dufoo-Hurtado, \*Francisco Ignacio Carrillo-Navarrete, José Ángel Huerta-Ocampo, Ana Paulina Barba de la Rosa, Edmundo Mercado-Silva

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

**(219) An Analysis of Historical Freeze Events and Determination of Blueberry and Peach Critical Bud Temperatures to Aid Growers in Freeze-related Risk Assessments**

\*Elizabeth Conlan, Mercy A. Olmstead, James W. Olmstead, Jeffrey G. Williamson, Dario J. Chavez, Erick David Smith, Orville Lindstrom

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Nursery Crops 2**

**(420) Effects of Paclobutrazol on the Growth of *Leucospermum* Hybrids**

Liyu Chen, Kenneth W. Leonhardt, \*Hye-Ji Kim

**(421) Influence of White Wood on Physical Properties of Pine Bark Substrates**

Brian E. Jackson, William C. Fonteno, \*Abigail Wunch

**(422) Pine Bark Substrate Source and Age Affect Seedling Toxicities**

Brian E. Jackson, \*Abigail Wunch, William C. Fonteno

**(423) Influence of Sand on Physical Properties of Pine Bark Substrates of Different Ages and from Different Sources**

Brian E. Jackson, \*Abigail Wunch, William C. Fonteno

**(424) Optimizing Container Production and Propagation Protocols for Five Underutilized Northeastern United States Native Shrubs**

Pragati Shrestha, \*Jessica Dawn Lubell

**(425) Comparison of Pine Bark from Multiple Suppliers: Variation in Available and Unavailable Water**

\*Brian E. Jackson, William C. Fonteno, Abigail Wunch

**(426) Rooting of Choke Cherry Cuttings in Response to a Commercial Liquid Extract of the Marine Macroalga *Ascophyllum nodosum***

Joanne E. MacDonald, Elizabeth Mills, J. Dale Simpson, \*Jeffrey Norrie

**(427) Development of a New Tool for Growers and Researchers to Better Understand Ornamental Operations**

\*John Majsztrik, John D. Lea-Cox, Daniel Hitchcock, David Sample, Dewayne L. Ingram, Charles R. Hall, Saurav Kumar, Sarah A. White

**(428) The Effect of Hammer Mill Processing on Pine Bark Substrate Wettability**

Ted C. Yap, William C. Fonteno, \*Brian E. Jackson

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Plant Biotechnology**

**(162) Investigating Peach Varieties using Plant Biotechnology and Best Management Practices**

\*Moniece McKinney, Charnele McCrary, Derrick Smith, Bipul K. Biswas

**(163) Establishment of Anther Culture of *Swida wilsoniana***

Peiwang Li, Changzhu Li, Lijuan Jiang, \*Youping Sun

**(164) Evaluation of Citrus-derived Constitutive Promoters in Citrus, *Nicotiana benthamiana*, and Grapevine**

\*Manjul Dutt, Jude W. Grosser, Gary Barthe

**(165) Optimizing Parameters for Precision Breeding of Grapevine**

\*Raju Kandel, Dennis J. Gray, Zhijian Li, Viji Sittther, Manjul Dutt, Daniel Bergey, Isaac Quarterman, Sadanand Dhekney

**(166) In Vitro Conservation Methods in Rain Lilies**

\*Amir A. Khoddamzadeh, Bruce Dunn

**(167) Monitoring of Genes Responding to Ionizing Radiation in *Tradescantia***

Nuri Park, Seo-Hee Choi, Hye-Jeong Ha, \*Geung-Joo Lee

**(168) Transcriptome Sequencing Reveals Fatty Acid Synthesis Pathway in *Eucommia ulmoides* Oliv.**

\*Yanzhi Feng, Lin Zhang, Heping Cao, Xiaofeng Tan, Lu Wang, Fangdong Li

**(169) Development of Gene-targeted Markers for Verticillium Resistance in Chile Peppers (*Capsicum*)**

\*Li Jiang, Stephen Hanson, Paul W. Bosland

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Plant Nutrient Management**

**(227) The Influence of Fertilizers from Different Nitrogen Sources on Strawberry (*Fragaria xananassa*) Production**

\*Yurui Xie, Xin Zhao, Zack Black

**(228) Determining Meaningful Electrical Conductivity Values from In Situ Substrate Measurements**

\*Lauren Crawford, Doug Cobos

**(229) Optimizing Method and Rate of Application of Substrate-incorporated Fertilizers for Poinsettia Production**

\*Kimberly A. Williams, Neil Mattson

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

**(230) Effects of Varying Potassium Levels on Yields and Petiole Potassium Levels for Organically Fertilized High Tunnel Tomato**

\*Connor Eaton, Rebecca Grube Sideman, Mark G. Hutton, Bruce Hoskins, Eric Sideman

**(231) Yield of Purslane (*Portulaca oleracea* L.) as a Function of the Concentration of Nutrient Solution**

\*Porfirio Juarez-Lopez, Iran Alia-Tejagal, Victor Lopez-Martinez, Dagoberto Guillen-Sanchez, Oscar G. Villegas-Torres, Manuel Sandoval-Villa, Luis A. Valdez-Aguilar, Rosendo Balois-Morales

**(232) Growing Snapdragon and Cyclamen with Pelletized Soy-bioplactic Fertilizers**

\*Kenneth G. McCabe, Christopher J. Currey, James A. Schrader, Jake J. Behrens, David Grewell, William Richard Graves

**(233) Maize (*Zea mays* L.) Monosaccharides Content as Affected by Zinc Sulfate Following Systematic Application of Mineral Fertilizers to Carbonate Chernozem Soil Type**

\*Vasile Cerven

**(234) Low Irradiance Combined with High Relative Humidity Induce Leaf Tipburn in *Eustoma grandiflorum***

\*Hsin-Wen Wang, Der-Ming Yeh

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Postharvest 3**

**(124) Proteome Changes in Banana Fruit in Response to High Temperature and Ethylene Treatments**

Lina Du, \*Jun Song, Leslie Campbell Palmer, Sherry A.E. Fillmore, ZhaoQi Zhang

**(125) Handling of Refrigeration (Temperature and Time) During Shipping of ‘Ataulfo’ Mango Exported from Mexico to the United States**

\*Jorge A. Osuna-Garcia, Yolanda Nolasco-Gonzalez, Orlando M. Rodriguez-Venegas

**(126) Effect of Different Postharvest Treatments to Delay Mango Fruit Softening**

Dalia Vázquez-Celestino, José Ángel Huerta-Ocampo, Ana Paulina Barba de la Rosa, Luis Eugenio González de la Vara, Ma. Estela Vázquez-Barrios, Edmundo Mercado-Silva, \*Francisco Ignacio Carrillo-Navarrete

**(127) Study of Different Agents that Improve Firmness of Guava Fruits during Ripening**

\*Jimena Esther Alba-Jiménez, Ma. Estela Vázquez-Barrios, Dulce María Rivera-Pastrana, Francisco Ignacio Carrillo-Navarrete, Edmundo Mercado-Silva

**(128) Packing and Refrigeration for Mangaba Preservation**

\*Ana Veruska Cruz da Silva, Marina Ferreira Vitoria, Evandro Neves Muniz, Ana S. Ledo

**(129) Preliminary Report on Jujube Fruit Cold Storage and Nutrient Changes**

\*Shengrui Yao, Junxin Huang, Robert Heyduck

**(130) Effect of Ripening Stage at Harvest on Phytochemical Composition of Huamiché (*Ferocactus histrix*) Fruit**

\*Javier Álvarez-Sanchez, Edmundo Mercado-Silva, Ma. Estela Vázquez-Barrios, Rolando Tenoch Bárcenas, Dulce María Rivera-Pastrana

**(131) Pepino Dulce (*Solanum muricatum* Ait.) in Chile: Postharvest Storage Potential**

\*Carolina Contreras, Mauricio González-Agüero, Bruno Defilippi

**(132) The Effect of High Tunnel Production on Pre- and Postharvest Losses of Fresh Produce**

\*Michael N. Ryan, Helena Pontes Chiebao, Lani Meyer, Cary L. Rivard, Eleni D. Pliakoni

**(133) Changes in Quality during Storage of Yellow Squash**

\*Timothy W. Coolong

**(134) Rapid Curing as a Means of Minimizing Postharvest Losses In Early Potatoes**

\*Mildred N. Makani, Steven A. Sargent, Lincoln Zotarelli, Donald J. Huber, Charles A. Sims

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Seed & Stand Establishment**

**(284) Lettuce Transplanting—A Potential Late Summer Planting Strategy for Yuma Iceberg Lettuce Production**

Chieri Kubota, \*Kurt D. Nolte, Mark A. Kroggel, Janine Lane

**(285) Surfactant Coated Seeds Improve Biomass of Turf in Hydrophobic Sand**

\*Samara Gray

**(286) Autopathic Effect of Capsaicin (8-methyl-N-vanillyl-6-nonenamide) on *Capsicum annuum* L. Seed Germination**

\*Derek W. Barchenger, Paul W. Bosland

**(287) Scarification and Environmental Effects on Seed Germination in Minnesota Hardy *Prunus***

\*Sarah Kostick, Neil O. Anderson, Emily Hoover, John Tillman, Emily Tepe

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

12:15–1:00 PM

Napoleon Expo Hall

**Poster Session—Water Utilization & Management**

**(246) Clean Water3: Reduce, Remediate, Recycle: The Genesis of a SCRI-CAP Project**

\*Sarah A. White, John Majsztrik, James S. Owen, Rodney Thomas Fernandez, Paul R. Fisher, Charles R. Hall, Daniel Hitchcock, Dewayne L. Ingram, Alexa Lamm, John D. Lea-Cox, Jennifer L. Parke

**(247) Water Relations, Gas Exchange, and Yield of Pepper Cultivars under Water Deficit Stress**

Daniel I. Leskovar, \*Yahia Othman, Kevin Crosby, Xuejun Dong, Qingwu Xue, Thomas Marek

**(248) Evaluating a Physiological-based, On-demand Irrigation System for Container-grown Woody Plants with Different Water Requirements**

Susmitha Nambuthiri, Ethan D. Hagen, \*Amy Fulcher, Robert L. Geneve

**(249) The Effects of Water Stress on Physiology and Growth of Potted Primocane-fruiting Blackberries in a Controlled Environment**

\*Spencer K. Fiser, Curt R. Rom, Jason McAfee, Luke Freeman, Edward Gbur

**(250) Low-cost Open-source Microcontrollers to Build Automated Irrigation and Fertigation Systems Using Soil Moisture and Electrical Conductivity Sensors**

\*Rhuanito S. Ferrarezi, Sue K. Dove, Marc W. van Iersel, Rafael M.L. Silva

**(251) Examining the Role of Substrate Moisture Sensor Placement in Container Volumetric Water Content Measurement Accuracy**

Ethan D. Hagen, Wesley Wright, Sun Xiaocun, \*Amy Fulcher

**(252) The Effects of AquaSmart-coated Sand Products on Growth and Water Use of Greenhouse-grown Ornamentals and Nutrient Leaching in Greenhouse Media**

\*Magdalena Vinson, Janet C. Cole, Justin Quetone Moss

**(253) Irrigation Scheduling: A Water Balance Approach to Improve Water Efficiency for South Texas Horticultural Crops**

\*Corina Fuentes, Juan Enciso, Shad D. Nelson, Juan Anciso, Mamoudou Setamou

12:15–1:15 PM

Borgne

**Ornamentals/Landscape and Turf (O/LT) Working Group Business Meeting**

Objectives: To study woody (ornamental and native) herbaceous and turf materials with emphasis on plant adaptability, selection, and maintenance requirements and to provide a vehicle for arboreta, botanic gardens, and the landscape industry (architects and contractors) to become more closely allied to ASHS.

Andrew Koeser, Chair

1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Floriculture 3**

**(373) Photoperiod and irradiance affect *Monadenium coccineum* Flowering**

\*John Erwin, Esther Gesick, Ken Altman

**(374) Nitrogen and Phosphorus Rates Influence Growth, Flowering, and Nutrient Uptake in *Iris germanica* L. 'Immortality'**

\*Xiaojie Zhao, Guihong Bi, Richard L. Harkess

**(375) The Effects of Environmental Factors, Stem Caliper, and Pruning Height on Axillary Bud Development in *Dracaena* 'Waikiki' and *Dracaena* 'Ruth Luka' Grown from Stem Cuttings**

\*John L. Griffis Jr., Malcolm M. Manners, Andrew Kawabata, Kheng Cheah, Joel Stuckey

**(376) Varying Durations of High Temperature Affects Flowering Time and Flowering Shoot Morphology in *Pointsettia***

\*Brent Pemberton, Ruth Kobayashi, William Roberson

**(377) Effects of Substrate Drenches Containing Ethephon on Containerized Annual Bedding Plants are Affected by Concentration and Application Timing**

Christopher J. Currey, \*Kenneth G. McCabe, Kellie J. Walters

**(378) Determining the Optimum Supplemental LED Intensity for Winter Production of Cut Snapdragons at Northern Latitudes**

David Llewellyn, Yun Kong, \*Melanie Yelton, Youbin Zheng

**(379) A New Landscaping Garden Chrysanthemum Cultivar 'Madang Ball' with Red–Purple Petals, Spreading and Semidouble Type**

\*DongChan Kim, NakBeom Jeon, HaSeung Park, HyunGu Choi, JongJin Choi, YunKyung Jong, HaeJoon Chung

Friday, August 7, 2015

1:00–1:45 PM

Napoleon Expo Hall

## Poster Session—Genetics & Germplasm 2

### (013) Functional Annotation and the Effect of Curing on the Expression of Skinning Injury Response Genes in Sweetpotato Cultivars

J. Effendy, \*D. LaBonte, N. Baisakh, D. Effendi, N. Khumaida, G. Wattimena

### (014) Genetic Variations of *Magnolia sieboldii* K. Koch ‘Colossus’ and *Magnolia grandiflora* L. ‘Kay Parris’ F<sub>1</sub> Seedlings Using ISSR Markers

Mingmei Wang, Kevin Parris, Yujie Yang, \*Donglin Zhang

### (015) Breeding Compatibility with *Camellia azalea*

\*Matthew D. Taylor

### (016) Anthracnose Resistance in Andean Beans

\*Grady H. Zuiderveen, Kelvin Kamfwa, James D. Kelly

### (017) Genetic Diversity of North American Wild Kidney Bean (*Phaseolus polystachios*) in the Eastern United States

\*Theodore J. Kisha, Karolina Kodin

### (018) Cryopreservation Techniques of Plumules of Brazilian Green Dwarf Coconut Accession (BGD)

\*Ana S. Ledo, Caroline M. Araujo, Fernanda V.D. Souza, Izulme R.I. Santos

### (019) Genetic Diversity and Population Structure of Collard Landraces Collected in the Southeast

Sandra Pelc, \*Mark W. Farnham, David Couillard, Zachary Stansell

### (020) Genetic Diversity and Association Analysis for Bolting, Tallness, and Erectness in Spinach

\*Jessica Chitwood, Ainong Shi, BeiQuan Mou, John R. Clark, Dennis Motes

### (021) Inheritance and Molecular Mapping of Serpentine Leafminer (*Liriomyza trifolii* Burgess) Resistance in Romaine lettuce (*Lactuca sativa* L.) Valmaine

\*Ramkrishna Kandel, Huangjun Lu, Gregg Nuessly, Heather McAuslane

### (022) A Dominant Gene for the Banded Cucumber Beetle Resistance in Lettuce

\*Huangjun Lu, Ramkrishna Kandel, Gregg Nuessly, Heather McAuslane, Jinguo Hu

1:00–1:45 PM

Napoleon Expo Hall

## Poster Session—Growth Chambers and Controlled Environments 3

### (200) Plant Responses and Water Uptake of Lettuce Grown under Different Spectra of Supplemental Lighting

\*Asmaa Morsi, Cary A. Mitchell, Celina Gomez Vargas

### (201) Air Temperature Affects the Growth and Development of Basil (*Ocimum*) Species

\*Kellie J. Walters, Christopher J. Currey

### (202) Mapping Monthly Distribution of Daily Light Integrals Across China

\*Youping Sun, Yibing Sun, Zhengchun Sun, PeiWang Li, Changzhu Li

### (203) High Tunnel Microclimate in Early Spring and Late Fall

\*Gena Simpson Moore, John Evan Beck, Joseph Aaron Moore, Sanjun Gu

### (204) Influence on Uniform Primordia Formation of *Pleurotus ostreatus* by Post-incubation Period and Temperature

\*Yun Kyeoung Jeoung, Il Sun Baek, Jeong Han Kim, Young Ju Kang, Jeong Hyun Chi

### (205) Growing High-value Ornamental Seedlings under White Light-emitting Diodes

\*Yujin Park, Erik S. Runkle

1:00–1:45 PM

Napoleon Expo Hall

## Poster Session—Produce Quality, Safety, and Health Properties 2

### (091) Screening Glucosinolates, Their Hydrolysis Products, and Quinone Reductase Anticancer Activity of the USDA Arugula Germplasm Collection

\*Kang-Mo Ku, John A. Juvik

### (092) Photoperiod and Irradiance Affect Red Russian Kale Leaf Nutrient Content

\*Justin Carlson, Liz Perkus, Joanne Slavin, Carl J. Rosen, John Erwin

### (093) Elevated Levels of Potassium in Greenhouse Red Romaine Lettuce Impacts Mineral Nutrient Content and Nutritional Quality

\*T. Casey Barickman, Thomas E. Horgan, Carl E. Sams

### (094) Postharvest Evaluation of Essential Oil on Lettuce and Other Leafy Greens

\*Chen Jiang, Penelope Perkins-Veazie

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

**(095) Fertility Treatment Affects Vitamin C, Fiber, and Total Nutrient Content in Mizuna and Red Giant Mustard**

\*Justin Carlson, Liz Perkus, Joanne Slavin, Carl J. Rosen, Julie Grossman, Mary Anne Rogers, John Erwin

**(096) Variations in Glucosinolate Contents and Quinone Reductase-inducing Activities among Florets, Leaves, and Roots of Broccoli Plants**

\*Young-Sang Lee, Kang-Mo Ku, John A. Juvik

**(097) Fructans from Non-differentiated Garlic (*Allium sativum*): Extraction, Characterization, and Possible Applications**

\*Francisco Ignacio Carrillo-Navarrete, Edmundo Mercado-Silva, Dulce María Rivera-Pastrana, Patricia Eugenia Romero-Cano, Miguel David Dufoo-Hurtado, Ma. Estela Vázquez-Barrios

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Propagation 2**

**(183) The Effects of Media, Hormones, and Stem Diameter on Adventitious Rooting of *Acacia confusa* Stem Cuttings**

\*Nathan C. Phillips, Andrew Thomas, Song Cui

**(184) In Vitro Seed Germination of *Hydrangea paniculata* Sieb**

\*Yibu Lu, Donglin Zhang, Yin Yi, Yujie Yang, Jinying Dong

**(185) Rooting of *Kalmia latifolia* Stem Cuttings with Three Dosages of Hormones**

\*Li He, Donglin Zhang, Yujie Yang, Jinying Dong

**(186) Tissue Culture Program on Guam Focuses Its Attention on Orchid Propagation and Establishment of Local Workforce**

\*Alicia Wiecko

**(187) Response of Rudimentary Zygotic Embryos of *Ilex crenata* Thunb. to Plant Growth Regulators**

\*Yujie Yang, Donglin Zhang, Zhihui Li, Xiaoling Jin

**(188) Effect of Cutting Time and Scion Type on Rooting of *Acanthus ilicifolius*, *Codariocalyx motorius*, and *Citrus medica* var. *sarcodactylis***

\*Hoongeun Oh, Joungwon Lee

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Temperate Tree Nut Crops**

**(288) Antioxidant Capacity and Zinc Content of ‘Wichita’ Pecan Kernels Is Increased by Soil Zinc Fertilizer Application**

\*Yuqing Wang, James Walworth, Barry Dungan, Richard Heerema, F. Omar Holguin

**(289) Mechanical Pruning Direction and Frequency Impacts on Light Interception in Southwestern Pecan Orchards**

Pedro Andrade-Sanchez, Brad Lewis, Joshua Sherman, Marisa Potter, \*Richard Heerema

**(290) ‘Gasaway’ Source of Resistance to Eastern Filbert Blight Provides a Predictable Level of Tolerance but Not Complete Resistance in New Jersey**

Thomas J. Molnar, John Michael Capik, \*Megan Muehlbauer

**(291) Novel Sources of Resistance to Eastern Filbert Blight in Hazelnut**

\*Gehendra Bhattarai, Shawn A. Mehlenbacher, David C. Smith

**(292) Sexual Reproduction in the Chinese Chestnut (*Castanea mollissima* Blume)**

\*Feng Zou, Su-juan Guo, Xiong Huan, De-yi Yuan

**(293) Study on Pollen Xenia Effect of Four Cultivars in *Castanea henryi***

Xu-hui Zhang, \*De-yi Yuan, Zhou-jun Zhu, Feng Zou, Huan Xiong

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1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Vegetable Crops Management 3**

**(402) Biodegradable Plastics as Alternative to Polyethylene Mulch for Watermelon Production Systems**

\*Daniel I. Leskovar, Yahia Othman

**(403) Effects of Organic Biofungicides versus Conventional Fungicides on Powdery Mildew in Pumpkins**

\*Thomas E. Horgan, T. Casey Barickman

**(404) Meeting the Demand for Organic Sweetpotato Production in the Great Plains and Midwest**

\*Jason J. Griffin, Edward E. Carey

**(405) Hydrolyzed Organic Fish Fertilizer and Poultry Litter Influence Soil Enzyme Activity, Chemical Properties, and Microbial Community in the Rhizosphere of Sweetpotato [*Ipomoea batatas* (L.) Lam]**

\*Desmond George Mortley, Lauren Lindsey, Ramble Ankumah, Raymon Shange, Conrad Bonsi

**(406) Influence of Eggshell Nanopowder on Calcium Uptake in Tomato**

\*Boniface Tiimob, Vijaya Rangari, Shaik Jeelani, Lashachiah Parks, Desmond George Mortley

**(407) Out of the Landfill and Into the Field: Suitability of Wastes as Agricultural Amendments**

\*Rebecca J. Long, Angela R. Possinger, José A. Amador, Rebecca N. Brown

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

**(408) Growing Potato Profitably for Organic Dry Matter Production in Western Nebraska**

\*Alexander D. Pavlista

**(409) Performance of Poly-coated Urea for the Production of *Vidalia* Onions**

\*Timothy W. Coolong

**(410) Contribution of Urea Nitrogen to Soil Fertility: Production of Indigenous Underutilized Vegetables and Food Security in Southwest Nigeria**

\*Mary Idowu, Durodoluwa Oyedele

**(411) Commercial Extract from the Brown Seaweed *Ascophyllum nodosum* (Acadian®) Improves Yield and Quality of Hydroponically Grown Grape Tomato**

\*William Neily, Chris Fowler, Katy Griegoschewski

**(412) Soluble Fertilizer at Transplant and Early Season Plastic Mulch Increase Tomato Yield in Soil with Adequate Fertility**

\*Charles L. Rohwer, Vincent A. Fritz

**(413) Effect of Nitrogen, Phosphorus, and Plant Density on the Yield of *Vigna unguiculata***

Mateo Rosas-Pastor, Francisco Radillo-Juárez,

\*Jaime Molina-Ochoa, Luis Jorge García-Márquez, John E. Foster

1:00–1:45 PM

Napoleon Expo Hall

**Poster Session—Waste Utilization in Horticulture**

**(158) Seed Germination and Plant Growth Using Composted and Vermicomposted Pulp Mill Waste**

\*Gary R. Bachman, Christine E. Coker

**(159) Converting Seepage Irrigation into Center Pivot Irrigation to Save Water for Commercial Snap Bean Production in Southwest Florida**

Xiaolin Liao, Yuqi Cui, Guodong Liu, Lincoln Zotarelli,

\*Crystal Snodgrass, Alan Jones

**(160) Tips for Growers on Recycling Used Plastic Film and Containers**

\*Keith S. Williamson, Lois Levitan

**(161) Heavy Metals Uptake in Plant Parts of Hot Pepper Grown in Recycled Waste**

\*George F. Antonious

1:00–5:00 PM

Canal Street Entrance

**Cajun Bayou Boat Tour**

Price: \$85 per person.

Leaves hotel promptly at: 1:00 PM. Please arrive at the Canal Street Entrance 15 minutes in advance of departure time.

Driving out to Cajun Country, you will go through wild cypress swamps, over the Mississippi River on an impressive suspended bridge, and along vast sugarcane fields, as your guide tells a unique story of the odyssey of the Cajun people and how they came to settle in Southeast Louisiana. Your Cajun guide, also an alligator hunter and fur trapper, shares his knowledge of the swamp including reptile habits, healing plants and exotic birds. After this peaceful ride, explore his picturesque swamp zoo on Bayou Boeuf.

1:45–2:45 PM

Bayside B

**Oral Session—Weed Control/Pest Management and Waste Utilization in Horticulture**

Moderator: John Montoya, montoyaj1@hotmail.com

1:45–2:00 PM

**Grapevine Recovery from Herbicide Damage**

\*Paul E. Read, Stephen J. Gamet

2:00–2:15 PM

**Efficacy of a 1,3-Dichloropropene and Chloropicrin Mixture Used with Totally Impermeable Film for Nutsedge Control**

Josh Freeman, \*Mary Stevens

2:15–2:30 PM

**The Relationship of Compost Knowledge, Compost Attitudes, and Environmental Attitudes of College Students**

Tina W. Waliczek, \*Megan Holmes, Amy McFarland

2:30–2:45 PM

**The Willingness to Pay for a Specialty Blend Compost Product Developed from *Sargassum* sp., Brown Seaweed, Harvested from Coastal Regions in Texas**

Tina W. Waliczek, \*John Montoya

1:45–3:00 PM

Bayside C

**Oral Session—Crop Physiology**

Moderator: Diane Beckles, dmbeckles@ucdavis.edu

1:45–2:00 PM

**Investigating the Genetic Basis of Leaf Economic Traits in Cultivated Sunflower (*Helianthus annuus* L.)**

\*Caitlin D.A. Ishibashi, J. Seth Bradley, Lisa A. Donovan, John M. Burke

2:00–2:15 PM

**The Effects of Salinity and Nutrient Deficiency on Spinach Growth, Physiology, and Nutrition Value**

\*Chenping Xu, Beiquan Mou

An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.

Friday, August 7, 2015

2:15–2:30 PM

**Physiological Impacts of Iron Deficiency in Raspberry Species**

\*Wenhao Dai, Danqiong Huang

2:30–2:45 PM

**Using Leaf Starch to Identify Transgenic Tomatoes with Improved Greenhouse Performance**

\*Diane Beckles, Kietsuda Luengwilai

2:45–3:00 PM

**Antagonistic Effects of Auxins and Abscisic Acid on Floret Closure of Rice (*Oryza sativa*)**

Youming Huang, Xiaochun Zeng, \*Heping Cao

---

1:45–3:00 PM

Oak Alley

**Oral Session—Growth Chambers and Controlled Environments 3**

Moderator: Joshua K. Craver, jcraver@purdue.edu

1:45–2:00 PM

**A Biofeedback System for Plant-driven Photosynthetic Lighting**

\*Marc W. van Iersel, Rhuanito S. Ferrarezi, Geoffrey Weaver, Erico Mattos

2:00–2:15 PM

**End-of-day Far-red Lighting to Mitigate Intumescences on Tomato Seedlings Grown under LEDs**

\*Tomomi Eguchi, Ricardo Hernandez, Chieri Kubota

2:15–2:30 PM

**The Effect of Different Ratios of Red and Blue LED Light on Greenhouse Tomato Production**

\*Most Tahera Naznin, Mark G. Lefsrud, Valerie Gravel, Bo-Sen Wu, Srinivas Reddy

2:30–2:45 PM

**Daily Light Integral and Light Quality from Sole-source Light-emitting Diodes Affect Seedling Quality and Subsequent Flowering of Long-day Bedding Plant Species**

\*Joshua K. Craver, Roberto G. Lopez

2:45–3:00 PM

**The Search of an Optimized Supplemental Lighting Spectrum for Greenhouse Tomato Production**

Celina Gomez-Vargas, \*Cary A. Mitchell

1:45–3:00 PM

Bayside A

**Oral Session—Organic Horticulture 2**

Moderator: Amjad A. Ahmad, alobady@hawaii.edu

1:45–2:00 PM

**Biodegradable Mulch Film for Organic Production Systems**

\*Carol A. Miles

2:00–2:15 PM

**Cover Crops and Conservation Tillage in Organic Jalapeno Pepper (*Capsicum annuum* L. 'Tormenta')**

\*Danielle Dion Treadwell, Stuart A. Weiss, Jose Perez

2:15–2:30 PM

**Use of Biochar and Compost Improves the Productivity of Nutrient-poor Tropical Soils**

Arnoldus K. Berek, \*Hue Nguyen, Amjad A. Ahmad

2:30–2:45 PM

**Enhancing Nitrogen Availability in Liquid Fertilizers Derived from Solid Organic Sources for Fertigation**

\*Amjad A. Ahmad, Hue Nguyen, Theodore Radovich

2:45–3:00 PM

**Assessing Plant Growth, Water Quality, and Economic Effects from Application of a Plant-based Aquafeed in a Recirculating Aquaponic System**

\*Miles Medina, Krish Jayachandran, Mahadev Bhat

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1:45–2:30 PM

Napoleon Expo Hall

**Poster Removal**

All posters are to remain up until the last poster session has ended. The removal can begin at 1:45 PM on Thursday. Any posters that are still in the hall after 2:30 PM will be removed by the general contractor. ASHS cannot accept responsibility for loss or damage to any posters that are not removed at the scheduled removal period.

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1:45–3:15 PM

Maurepas

**Oral Session—Plant Biotechnology 2**

Moderator: Thomas A. Colquhoun, ucnteme1@ufl.edu

1:45–2:00 PM

**Exploration of Plant–Animal Interactions via Multiple Modalities**

\*Thomas A. Colquhoun

2:00–2:15 PM

**Reduction of *MLO* Expression in *Petunia* Increases Resistance to Powdery Mildew**

Peng Jiang, Yihua Chen, \*Dayton Wilde

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An asterisk (\*) in front of a name indicates the presenting author. The schedule is subject to change.



Friday, August 7, 2015

2:15–2:30 PM

**A Basic Helix-Loop-Helix Transcriptional Factor Regulates Flower Senescence by Mediating Ethylene Biosynthesis in *Petunia***

Jing Yin, Xiaoxiao Chang, Takao Kasuga, Michael Reid,  
\*Cai-Zhong Jiang

2:30–2:45 PM

***Petunia* Plants Transformed with an ABA Biosynthesis Gene under Control of a Stress-inducible Promoter Improve Water Use Efficiency under Limited Irrigation**

Alejandro Estrada, Michael Reid, \*Cai-Zhong Jiang

2:45–3:00 PM

**Phenylalanine and Abiotic Regulation of Early Defense**

\*Katherine Warpeha, Yang Chen, Huini Wu,  
DurreShahwar Muhammad

3:00–3:15 PM

**Applying Genotyping by Sequencing Technology on *Rosa* Species**

\*Muqing Yan, Qianni Dong, David H. Byrne, Patricia Klein

---

1:45–3:15 PM

Borgne

**Oral Session—Pomology 3**

Moderator: Emily K. Lavelly, ekn5016@psu.edu

1:45–2:00 PM

**Measuring Fine Roots in Fruit Crops: Finding Order in Functional Variation**

\*Emily K. Lavelly, Annie Klodd, Jianghong Zhang,  
Kaitlyn Peterson, Richard P. Marini, David Eissenstat

2:00–2:15 PM

**Mechanically Pruning Apple and Sweet Cherry Increases Efficiency**

Matthew Whiting, \*Jacqueline Gordon, Karen Lewis,  
Stefano Musacchi

2:15–2:30 PM

**Accumulation of Total Phenolics and Antioxidant Activity in Different Tissues of Peach Fruit**

\*Asma Abdelghafar, Ksenija Gasic, Gregory L. Reighard

2:30–2:45 PM

**Effects of Deficit Irrigation Strategies on Peach Trees Grown in the Desert of Western Nile Delta of Egypt**

\*Diaa El-Ansary, Samir Ismail, Tarek Zein El-Abedin,  
Ahmed Abd El-Al

2:45–3:00 PM

**Sequencing Analysis of Wood-decay Fungi Associated with Peach Scaffold Breakage**

\*Chunxian Chen, Clive H. Bock, Ted E. Cottrell

3:00–3:15 PM

**Investigating the Role of Near-harvest Deficit Irrigation on Sweet Cherry Fruit Quality**

Matthew Whiting, \*Nadia Valverdi

---

1:45–3:15 PM

Nottoway

**Oral Session—Teaching Methods**

Moderator: Brian W. Trader, btrader@longwoodgardens.org

1:45–2:00 PM

**A Study and Development of an Initiative to Increase Undergraduate Student Enrollment in the Plant Science Major and Specializations**

\*John C. Peterson, Sandra B. Wilson, Kathleen Sharkey,  
Thomas A. Colquhoun

2:00–2:15 PM

**Building Community and Engagement among Public Gardens through Regional Intern Field Days and Service Learning Projects**

\*Brian W. Trader

2:15–2:30 PM

**Developing a New Multidisciplinary Course that Incorporates Videoconferencing as a Tool to Connect Classrooms at Two Locations**

\*Eleni D. Pliakoni, Sara E. Gragg, Cary L. Rivard,  
Royce Ann Collins

2:30–2:45 PM

**Field-On-The-Move: Producing Live, Field-based Educational Workshops via a Mobile, Outdoor Video Production Studio**

\*Kurt D. Nolte, Rosa Bevington

2:45–3:00 PM

**Impact of School Garden-based Education on Dry Bean Knowledge and Preference**

\*Carol A. Miles, Kelly Atterberry, Lee Anne Riddle, Susan Kerr

3:00–3:15 PM

**Student Directed Organic Farms as a Teaching Tool for Sustainable Farming**

\*April Vigardt, S. Alan Walters

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2:00–5:00 PM

Napoleon Expo Hall

**Exhibits Move Out**

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