July 2013

On behalf of the ASHS Board of Directors, the Technical Program committee, the great staff at ASHS Headquarters, and all the volunteers who have worked hard to make this conference outstanding, I want to welcome you to the 110th Annual Conference of the American Society for Horticultural Science (ASHS) being held at the JW Marriott Desert Springs Resort & Spa! A very special welcome to our International members, who have traveled far to be with us. In addition, a warm welcome and a big thank you to our friends and colleagues in the corporate world who have chosen our Conference to attend. Thank you and welcome to all the folks that brought an exhibition booth. It takes a lot of effort to bring all the display materials, and we do appreciate their hard work. Please take a moment and visit the booths, and thank them for sharing their business with us.

We have a great Conference planned for you. You can expect sizzling hot speakers, interesting colloquia, educational workshops, excellent symposia, fun tours, and other fiery activities. This year all of our ASHS awards will be presented to outstanding and deserving individuals who have gone above and beyond for horticulture. When you see the award winners, give them a hearty and warm congratulations, or better yet, attend the Awards Ceremony, and watch them be honored.

This year’s Conference is held in the heart of the Coachella Valley. The Coachella Valley is among the largest crop-growing regions in California. More than two-thirds of local farmland is irrigated in part with Colorado River water delivered via the All-American Canal. More than 60% of area farms use drip or other microirrigation techniques. The horticulture industry in 2011 was valued at $535 million, more than a dozen different kinds of fruit are grown valued at $225 million, and at least two dozen types of vegetables are grown worth $215 million. The nursery industry is valued at $30 million, and the turf and golf courses add another $65 million.

This is the primary date-growing region in the United States, responsible for nearly 95% of the nation’s crop, and celebrated each year with a National Date Festival. USDA horticulturist Bernard Johnson planted a number of date palm shoots that he brought back from Algeria in September 1903. The area’s entire date industry can be traced back to this original USDA horticulturist’s work. Horticulture is the life blood of this impressive valley.

Lastly, I express gratitude to you for attending the Conference. Without you and your continued support of ASHS, we would not be the best horticulture society in the world.

Sincerely,
Paul W. Bosland
ASHS President
Welcome letter from ASHS President
Paul Bosland .................................. inside front cover

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ASHS Annual Conference
July 22–25, 2013 • Palm Desert, California

General Information

Conference Facilities: All conference activities will take place at the JW Marriott Desert Springs, Palm Desert, CA, unless otherwise stated. Please check the detailed program and schedule for exact room locations.

Registration: The conference registration desk will be located at the Center and North Counter.

Operation hours are:

- Sunday, July 21: 1:00–5:00 PM
- Monday, July 22: 7:30 AM–6:00 PM
- Tuesday, July 23: 7:30 AM–5:00 PM
- Wednesday, July 24: 7:30 AM–5:00 PM
- Thursday, July 25: 7:30 AM–3:00 PM

Posters: Posters are located in the Desert Ballroom 7–8.
Set-up:
- Sunday, July 21: 2:00–5:00 PM

Viewing hours:
- Monday, July 22: 8:30 AM–5:00 PM
- Tuesday, July 23: 8:30 AM–5:00 PM
- Wednesday, July 24: 8:30 AM–1:45 PM

Note: All posters must be removed between 1:45 PM and 3:30 PM on Wednesday, July 24.

Exhibits: Exhibitors are located in the Desert Ballroom 7–8.
Exhibitor move-in:
- Sunday, July 21: 2:00–5:00 PM

Exhibitor move-out:
- Wednesday, July 24: 2:30–5:00 PM

Open to attendees:
- Monday, July 22: 8:30 AM–2:30 PM
- Tuesday, July 23: 8:30 AM–2:30 PM
- Wednesday, July 24: 8:30 AM–2:30 PM

Please Note:

All information in regard to scheduling for the ASHS–2013 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.

About Palm Desert:

Palm Desert is the geographic center of the Coachella Valley, a fast-growing region of southern California that comprises nine cities. Palm Desert has evolved into a vibrant small city that today is the educational, retail, and cultural hub of the Valley. Source: www.palm-desert.org/about-palm-desert

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Hotel Map/Floor Plan

See close-up next page
Close-Up of Desert Ballroom Salon 7 and 8
CONFERENCE AT–A–GLANCE (subject to change)

Sunday, July 21

**Pre-conference Events**

**Nursery and Botanical Garden Tour**
- Tours pick up at Tour Lobby
- Sunday, July 21
- Hours: Registration (Center & North Registration Counters) 1:00–5:00 PM

**University Garden Tour**
- Tours pick up at Tour Lobby
- Poster Set-up
- Desert Ballroom: Salons 7-8

**Citrus and Tropical Fruits Tour**
- Tours pick up at Tour Lobby
- Exhibitor Set-up
- Desert Ballroom: Salons 7-8
#### Conference at-A-Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 am</td>
<td>Registration (Center &amp; North Registration Counters)</td>
</tr>
<tr>
<td>8 am</td>
<td>Exhibits Open (Desert Ballroom: Salons 7-8)</td>
</tr>
<tr>
<td>9 am</td>
<td>Poster Hall Open (Desert Ballroom: Salons 7-8)</td>
</tr>
<tr>
<td>10 am</td>
<td>ornamentation (subject to change)</td>
</tr>
<tr>
<td>11 am</td>
<td>Annual Conference</td>
</tr>
<tr>
<td>12 noon</td>
<td>Controlled Environments Student Competition (until 1:00 PM)</td>
</tr>
<tr>
<td>1 pm</td>
<td>Oral Session: Propagation</td>
</tr>
<tr>
<td>2 pm</td>
<td>Oral Session: Crop Physiology</td>
</tr>
<tr>
<td>3 pm</td>
<td>Oral Session: Vegetable Breeding</td>
</tr>
<tr>
<td>4 pm</td>
<td>Oral Session: Environmental Stress Physiology</td>
</tr>
<tr>
<td>5 pm</td>
<td>Commercial Activities</td>
</tr>
<tr>
<td>6 pm</td>
<td>Collegiate Activities</td>
</tr>
<tr>
<td>7 pm</td>
<td>Desert Salon 1-2</td>
</tr>
<tr>
<td>8 pm</td>
<td>Desert Salon 13-14</td>
</tr>
<tr>
<td>9 pm</td>
<td>Desert Salon 11</td>
</tr>
</tbody>
</table>

**Tuesday, July 23**

- **Hours:**
  - **Registration:** (Center & North Registration Counters) 7:30 AM–5:00 PM
  - **Exhibits Open:** (Desert Ballroom: Salons 7-8) 8:30 AM–2:30 PM
  - **Poster Hall Open:** (Desert Ballroom: Salons 7-8) 8:30 AM–5:00 PM
**CONFERENCE AT–A–GLANCE**

(subject to change)

**Thursday, July 25**

Hours:
Registration: (Center & North Registration Counters) 7:30 am–3:00 pm

**Post-conference Events**

Friday, July 26, 2013 8:00 AM-5:00 PM
NE-1036 Technical Committee Meeting

Saturday, July 27, 2013 8:00 AM-12:00 PM
NE-1036 Technical Committee Meeting, Day 2
# ASHS Advisory Council/Board/Committee Meetings

## Advisory Council Meetings

<table>
<thead>
<tr>
<th>Division</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Division Advisory Council</td>
<td>Monday, July 22</td>
<td>5:00–6:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Extension Division Advisory Council</td>
<td>Wednesday, July 24</td>
<td>9:00–11:00 AM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Industry Division Advisory Council</td>
<td>Wednesday, July 24</td>
<td>11:00 AM–12:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>International Division Advisory Council</td>
<td>Tuesday, July 23</td>
<td>8:00–10:00 AM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Research Division Advisory Council</td>
<td>Monday, July 22</td>
<td>6:00–6:30 PM</td>
<td>Desert Salon 3</td>
</tr>
</tbody>
</table>

## Board Meetings:

<table>
<thead>
<tr>
<th>Board</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASHS Board of Directors</td>
<td>Thursday, July 25</td>
<td>10:00 AM–4:00 PM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>Certified Horticulturist (CH) Board</td>
<td>Thursday, July 25</td>
<td>10:00 AM–12:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Certified Professional Horticulturist (CPH) Board</td>
<td>Wednesday, July 24</td>
<td>10:00 AM–12:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td><em>HortScience</em> Editorial Board</td>
<td>Tuesday, July 23</td>
<td>11:00 AM–12:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td><em>HortTechnology</em> Editorial Board</td>
<td>Monday, July 22</td>
<td>3:00–4:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td><em>Journal of the ASHS</em> Editorial Board</td>
<td>Monday, July 22</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 3</td>
</tr>
</tbody>
</table>

## Committee Meetings:

<table>
<thead>
<tr>
<th>Committee</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Conference Technical Program Committee</td>
<td>Tuesday, July 23</td>
<td>4:00–5:30 PM</td>
<td>Desert Salon 12</td>
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<tr>
<td>Awards Committee</td>
<td>Tuesday, July 23</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Collegiate Activities Committee (CAC)</td>
<td>Tuesday, July 23</td>
<td>5:00–6:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Consulting Editors</td>
<td>Tuesday, July 23</td>
<td>10:00–11:00 AM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Endowment Fund Committee</td>
<td>Tuesday, July 23</td>
<td>1:00–3:00 PM</td>
<td>Desert Salon 3</td>
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<tr>
<td>Fellows Screening Committee</td>
<td>Monday, July 22</td>
<td>4:00–5:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Finance Committee</td>
<td>Wednesday, July 24</td>
<td>8:00–9:00 AM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Graduate Activities Committee</td>
<td>Tuesday, July 23</td>
<td>3:00–4:00 AM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Horticulture Hall of Fame Selection</td>
<td>Wednesday, July 24</td>
<td>1:30–2:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Horticultural Landmark Selection Committee</td>
<td>Tuesday, July 23</td>
<td>12:00–1:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Membership Committee</td>
<td>Wednesday, July 24</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Nominations and Elections Committee</td>
<td>Wednesday, July 24</td>
<td>9:00–10:00 AM</td>
<td>Desert Salon 12</td>
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<tr>
<td>Scholarship Awards Committee Meeting</td>
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<td>Desert Salon 12</td>
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<tr>
<td>SRASHS Executive Committee Meeting</td>
<td>Monday, July 22</td>
<td>4:00–6:00 PM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>William A. (“Tex”) Frazier Lecture Selection Committee</td>
<td>Tuesday, July 23</td>
<td>12:00–1:00 PM</td>
<td>Desert Salon 3</td>
</tr>
</tbody>
</table>
ASHS Working Group Business Meetings

All Working Group Chairs & Chairs-elect  Monday, July 22  8:00–9:00 AM  Desert Salon 9-10

EDUCATION DIVISION

Education Division Advisory Council Meeting  Monday, July 22  5:00–6:00 PM  Desert Salon 3
Administrators Working Group Breakfast  Wednesday, July 24  8:30–10:00 AM  Director Suite III
Computer Applications in Horticulture (COMP) Working Group  Thursday, July 25  1:00–2:00 PM  Desert Salon 3
Emeriti (EMER) Working Group  Monday, July 22  12:00–1:00 PM  Desert Salon 3
Graduate Student (GRAD) Working Group  Thursday, July 25  8:00–9:00 AM  Springs Salon C
History of Horticultural Science (HIST) Working Group  Monday, July 22  4:00–5:00 PM  Desert Salon 12
Teaching Methods (TCHG) Working Group  Thursday, July 25  2:00–3:00 PM  Springs Salon C
Undergraduate Student (UG) Working Group  Monday, July 22  8:00–9:00 AM  Desert Salon 12

EXTENSION DIVISION

Extension Division Advisory Council Meeting  Wednesday, July 24  9:00–11:00 AM  Desert Salon 3
Commercial Horticulture (CHEX) Working Group  Tuesday, July 23  4:00–5:00 PM  Desert Salon 3
Consumer Horticulture & Master Gardeners (CHMG) Working Group  Thursday, July 25  10:00–11:00 AM  Springs Salon C
eXtension (EEXT) Working Group  Monday, July 22  1:00–1:45 PM  Desert Salon 11
Extension & Industry Division Breakfast  Tuesday, July 23  8:00–10:00 AM

INDUSTRY DIVISION

Industry Division Advisory Council Meeting  Wednesday, July 24  11:00 AM–12:00 PM  Desert Salon 3
Extension & Industry Division Breakfast  Tuesday, July 23  8:00–10:00 AM
Intellectual Property Rights (IPR) Working Group  Wednesday, July 24  12:00–1:00 PM  Desert Salon 3
Marketing & Economics (MKEC) Working Group  Monday, July 22  9:00–10:00 AM  Desert Salon 3

INTERNATIONAL DIVISION

International Division Advisory Council Meeting  Tuesday, July 23  8:00–10:00 AM  Desert Salon 3
Association of Horticulturists of Indian Origin (AHIO)  Wednesday, July 24  12:00–1:00 PM  Desert Salon 11
International Horticultural Consultants (ICON) Working Group  Wednesday, July 24  3:00–4:00 PM  Desert Salon 3
International Horticulture & Issues (IHI) Working Group  Wednesday, July 24  9:00–10:00 AM  Springs Salon C
Tropical Horticultural Crops (TROP) Working Group  Wednesday, July 24  10:00–11:00 AM  Desert Salon 11
Working Group of Asian Horticulture (WGAH)  Wednesday, July 24  11:00 AM–12:00 PM  Desert Salon 11

Members At Large

Federal Partners (FP) Working Group  Tuesday, July 23  3:00–4:00 PM  Springs Salon C
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<tr>
<th><strong>RESEARCH DIVISION commodity</strong></th>
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<tbody>
<tr>
<td>Research Division Advisory Council Meeting</td>
<td>Monday, July 22</td>
<td>6:00–6:30 PM</td>
<td>Desert Salon 3</td>
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<tr>
<td>Citrus Crops (CITR) Working Group</td>
<td>Wednesday, July 24</td>
<td>3:00–4:00 PM</td>
<td>Desert Salon 12</td>
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<tr>
<td>Floriculture (FLOR) Working Group</td>
<td>Monday, July 22</td>
<td>2:00–3:00 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Fruit Breeding (FRBR) Working Group</td>
<td>Monday, July 22</td>
<td>4:00–5:00 PM</td>
<td>Springs Salon C</td>
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<tr>
<td>Growth Regulators in Fruit &amp; Nut Production (PGR) Working Group</td>
<td>Monday, July 22</td>
<td>9:00–10:00 AM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Herbs, Spices, &amp; Medicinal Plants (HSMP) Working Group</td>
<td>Tuesday, July 23</td>
<td>3:00–4:00 PM</td>
<td>Desert Salon 3</td>
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<tr>
<td>Nursery Crops (NUR) Working Group</td>
<td>Tuesday, July 23</td>
<td>9:00–10:00 AM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Ornamental Plant Breeding (OPB) Working Group</td>
<td>Thursday, July 25</td>
<td>11:00 AM–12:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Ornamentals/Landscape &amp; Turf (O/LT) Working Group</td>
<td>Monday, July 22</td>
<td>3:00–4:00 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Pomology (POM) Working Group</td>
<td>Tuesday, July 23</td>
<td>5:00 PM–6:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Temperate Tree Nut Crops (NUTS) Working Group</td>
<td>Wednesday, July 24</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Vegetable Breeding (VGBR) Working Group</td>
<td>Tuesday, July 23</td>
<td>9:00–10:00 AM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Vegetable Crops Management (VCM) Working Group</td>
<td>Thursday, July 25</td>
<td>10:00–11:00 AM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Viticulture &amp; Small Fruits (VSF) Working Group</td>
<td>Monday, July 22</td>
<td>5:00–6:00 PM</td>
<td>Springs Salon C</td>
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<tr>
<th><strong>RESEARCH DIVISION cross-commodity</strong></th>
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<tr>
<td>Research Division Advisory Council Meeting</td>
<td>Monday, July 22</td>
<td>6:00–6:30 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>Bioenergy (BioE) Working Group</td>
<td>Tuesday, July 23</td>
<td>9:00–10:00 AM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Crop Physiology (CRPP) Working Group</td>
<td>Tuesday, July 23</td>
<td>3:00–4:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Environmental Stress Physiology (STRS) Working Group</td>
<td>Thursday, July 25</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Genetics &amp; Germplasm (GG) Working Group</td>
<td>Tuesday, July 23</td>
<td>10:00–11:00 AM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Growth Chambers &amp; Controlled Environments (CE) Working Group</td>
<td>Monday, July 22</td>
<td>3:00–4:00 PM</td>
<td>Desert Salon 11</td>
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<tr>
<td>Human Issues in Horticulture (HIH) Working Group</td>
<td>Monday, July 22</td>
<td>9:00–10:00 AM</td>
<td>Desert Salon 11</td>
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<tr>
<td>Invasive Plants Research (INPR) Working Group</td>
<td>Tuesday, July 23</td>
<td>4:00–5:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Local Food Systems (LOCSY) Working Group</td>
<td>Wednesday, July 24</td>
<td>1:00–2:00 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Organic Horticulture (ORGH) Working Group</td>
<td>Monday, July 22</td>
<td>12:00–1:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Plant Biotechnology (BTCH) Working Group</td>
<td>Monday, July 22</td>
<td>4:00–5:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Plant Nutrient Management (PNM) Working Group</td>
<td>Wednesday, July 24</td>
<td>2:00–3:00 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Plasticulture (PLAST) Working Group</td>
<td>Tuesday, July 23</td>
<td>11:00–12:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Postharvest (PH) Working Group</td>
<td>Tuesday, July 23</td>
<td>2:00–3:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Produce Quality, Safety, and Health Properties (QUAL) Working Group</td>
<td>Thursday, July 25</td>
<td>9:00–10:00 AM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Production &amp; Harvest Mechanization (MECH) Working Group</td>
<td>Wednesday, July 24</td>
<td>1:00–2:00 PM</td>
<td>Desert Salon 11</td>
</tr>
<tr>
<td>Propagation (PROP) Working Group</td>
<td>Monday, July 22</td>
<td>1:00–2:00 PM</td>
<td>Springs Salon C</td>
</tr>
</tbody>
</table>

2013 ASHS Annual Conference
Public Horticulture (PUBHORT) Working Group  Monday, July 22  2:00–3:00 PM  Desert Salon 11
Root Growth & Rhizosphere Dynamics (RHIZ) Working Group  Tuesday, July 23  8:00–9:00 AM  Desert Salon 11
Seed & Stand Establishment (SSEST) Working Group  Tuesday, July 23  8:00–9:00 AM  Springs Salon C
Waste Utilization in Horticulture (WUH) Working Group  Thursday, July 25  8:00–9:00 AM  Desert Salon 11
Water Utilization & Management (WUM) Working Group  Wednesday, July 24  8:00–9:00 AM  Desert Salon 3
Weed Control & Pest Management (WCPM) Working Group  Thursday, July 25  12:00–1:00 PM  Desert Salon 11

SPECIAL EVENTS

APS Tropical Fruit Tasting  Wednesday, July 24  3:00–3:30 PM  Springs Salon C
ASHS Opening Plenary Session and William A. (“Tex”) Frazier Lecture  Monday, July 22  10:00 AM–12:00 PM  Springs Salon F
B.Y. Morrison Lecture  Tuesday, July 23  12:00–1:00 PM  Springs Salon A/B
B.Y. Morrison Reception  Tuesday, July 23  1:00–1:30 PM  Springs Salon C
Certified Horticulturist Examination 1  Wednesday, July 24  2:00–6:00 PM  Directors Suite VI
Certified Horticulturist Examination 2  Thursday, July 25  1:00–5:00 PM  Desert Salon 12
Listening Session with Sonny Ramaswamy NIFA Director  Monday, July 22  8:30–9:30 AM  Springs Salon F
Presidential Address and ASHS Annual Business Meeting  Wednesday, July 24  4:00–5:30 PM  Springs Salon F
Extension & Industry Division Breakfast  Tuesday, July 23  8:00–10:00 AM  Springs Ballroom Salons J-L
New Innovations in Commercial Horticultural Applications  Thursday, July 25  8:00–10:00 AM  Springs Salon D/E
Project Leaders – National Strawberry Sustainability Initiative Program  Tuesday, July 23  1:00–2:00 PM  Desert Salon 12
Moderators Training Session  Monday, July 22  9:00–10:00 AM  Springs Salon A/B
Scholars Ignite—Student Competition  Wednesday, July 24  9:30 AM–12:15 PM  Springs Salon A/B
SCRI Project Directors’ Workshop  Monday, July 22  1:00–4:00 PM  Desert Salon 9-10
SRASHS Executive Committee Meeting  Monday, July 22  4:00–6:00 PM  Directors Suite VI
Service Project: Undergraduate Student Activity  Visit registration for more information about the service project.
USDA–SCRI Eastern Broccoli Project Working Group Meeting  Thursday, July 25  10:00 AM-12:00 PM  Desert Salon 3
USDA–ARS All Employee Meeting  Tuesday, July 23  1:30 PM-2:30 PM  Springs Salon C
## BREAKFAST, LUNCHEONS, BREAKS, DINNERS, RECEPTIONS

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrators Working Group Breakfast</td>
<td>Wednesday, July 24</td>
<td>8:30–10:00 AM</td>
<td>Director Suite III</td>
</tr>
<tr>
<td>Break</td>
<td>Monday, July 22</td>
<td>9:30–10:00 AM</td>
<td>Desert Ballroom: Salons 7-8</td>
</tr>
<tr>
<td></td>
<td>Tuesday, July 23</td>
<td>9:45–10:15 AM</td>
<td>Desert Ballroom: Salons 7-8</td>
</tr>
<tr>
<td></td>
<td>Wednesday, July 24</td>
<td>9:45–10:15 AM</td>
<td>Desert Ballroom: Salons 7-8</td>
</tr>
<tr>
<td></td>
<td>Thursday, July 25</td>
<td>9:45–10:15 AM</td>
<td>Registration Foyer</td>
</tr>
<tr>
<td>Extension &amp; Industry Division Breakfast</td>
<td>Tuesday, July 23</td>
<td>8:00–10:00 AM</td>
<td>Springs Ballroom Salons J-L</td>
</tr>
<tr>
<td>International Division Breakfast</td>
<td>Thursday, July 25</td>
<td>8:00–10:00 AM</td>
<td>Director Suite III</td>
</tr>
<tr>
<td>Pi Alpha Xi Luncheon &amp; Annual Meeting</td>
<td>Wednesday, July 24</td>
<td>12:00–1:30 PM</td>
<td>Director Suite III</td>
</tr>
<tr>
<td>Student Reception</td>
<td>Wednesday, July 24</td>
<td>7:00–8:00 PM</td>
<td>Springs Retreat Pool</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(San Jacinto in case of bad weather)</td>
</tr>
<tr>
<td>Welcome Reception</td>
<td>Monday, July 22</td>
<td>6:30–7:30 PM</td>
<td>Springs Patio</td>
</tr>
</tbody>
</table>

## EXHIBITS, POSTERS, REGISTRATION

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhibits—Open to attendees</td>
<td>Monday, July 22</td>
<td>8:30 AM–2:30 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td></td>
<td>Tuesday, July 23</td>
<td>8:30 AM–2:30 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td></td>
<td>Wednesday, July 24</td>
<td>8:30 AM–2:30 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Exhibitor Set-up</td>
<td>Sunday, July 21</td>
<td>2:00–5:00 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Exhibitor Move-out</td>
<td>Wednesday, July 24</td>
<td>2:30–5:00 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Poster Hall—Open to attendees</td>
<td>Monday, July 22</td>
<td>8:30 AM–5:00 PM</td>
<td>Desert Ballroom 7-8</td>
</tr>
<tr>
<td></td>
<td>Tuesday, July 23</td>
<td>8:30 AM–5:00 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td></td>
<td>Wednesday, July 24</td>
<td>8:30 AM–1:45 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Poster Set-up</td>
<td>Sunday, July 21</td>
<td>2:00–5:00 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Poster Removal</td>
<td>Wednesday, July 24</td>
<td>1:45 AM–3:30 PM</td>
<td>Desert Ballroom 7–8</td>
</tr>
<tr>
<td>Registration Open:</td>
<td>Sunday, July 21</td>
<td>1:00–5:00 PM</td>
<td>Center &amp; North Registration</td>
</tr>
<tr>
<td></td>
<td>Monday, July 22</td>
<td>7:30 AM–6:00 PM</td>
<td>Center &amp; North Registration</td>
</tr>
<tr>
<td></td>
<td>Tuesday, July 23</td>
<td>7:30 AM–5:00 PM</td>
<td>Center &amp; North Registration</td>
</tr>
<tr>
<td></td>
<td>Wednesday, July 24</td>
<td>7:30 AM–5:00 PM</td>
<td>Center &amp; North Registration</td>
</tr>
<tr>
<td></td>
<td>Thursday, July 25</td>
<td>7:30 AM–3:00 PM</td>
<td>Center &amp; North Registration</td>
</tr>
</tbody>
</table>

## TOURS

**TOURS depart from the Tour Lobby entrance unless otherwise specified.**

### University Garden Tour
- **Date:** Sunday, July 21
- **Time:** 7:30 AM–5:00 PM
- **Location:** Departs (7:30 AM) from the DoubleTree by Hilton Lax-El Segund, arrives (5:00 PM) at the JW Marriott Desert Spring

### Sightseeing Tours

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua Tree National Park</td>
<td>Wednesday</td>
<td>7:30 AM–1:30 PM</td>
<td>Tour Lobby</td>
</tr>
<tr>
<td>Nursery and Botanical Garden</td>
<td>Sunday</td>
<td>7:00 AM–6:30 PM</td>
<td>Tour Lobby</td>
</tr>
</tbody>
</table>

2013 ASHS Annual Conference
Palm Spring Aerial Tram  Monday, July 22  2:00–6:00 PM  Tour Lobby
Palm Springs Art Museum  Tuesday, July 23  2:00–6:00 PM  Tour Lobby
The Living Desert  Thursday, July 25  7:30–11:30 AM  Tour Lobby
Whitewater Preserve & Wind Farms  Tuesday, July 23  8:00 AM–12:00 PM  Tour Lobby

**Professional Tours**

Coachella Valley Tour  Wednesday, July 24  9:00 AM–12:00 PM  Tour Lobby
Citrus and Tropical Fruits Tour  Sunday, July 21  8:00 AM–5:00 PM  Tour Lobby
Golf Course and Irrigation Tour  Tuesday, July 23  7:00–8:00 AM  Tour Lobby
Landscape and Ornamentals  Wednesday, July 24  7:00–8:00 AM  Tour Lobby
Huntington Gardens  Monday, July 22  7:00 AM–5:00 PM  Tour Lobby
Water Features Tour  Thursday, July 25  7:00–8:00 AM  Tour Lobby

**Student Tours**

Graduate Student Jeep Tour  Wednesday, July 24  4:00–7:00 PM  Tour Lobby

**STUDENT EVENTS**

Student Reception  Wednesday, July 24  7:00–8:00 PM  Tour Lobby
Graduate Student Jeep Tour  Wednesday, July 24  4:00–7:00 PM  Tour Lobby

**Graduate**

Controlled Environments Student Competition  Tuesday, July 23  6:00–9:00 PM  Springs Salon D/E
Graduate Student Working Group
Morning Gatherings  Monday, July 22  8:15–8:45 AM  Starbucks J.W Marriott Resort
Tuesday, July 23  8:15–8:45 AM  Starbucks J.W Marriott Resort
Wednesday, July 24  8:15–9:45 AM  Starbucks J.W Marriott Resort
Thursday, July 25  7:15–7:45 AM  Starbucks J.W Marriott Resort
Graduate Student (GRAD) Working Group
Business Meeting  Thursday, July 25  8:00–9:00 AM  Springs Salon C
Graduate Student Poster Competition
Judging Session 1  Monday, July 22  12:15–1:00 PM  Desert Ballroom: Salons 7-8
Judging Session 2  Monday, July 22  1:00–1:45 PM  Desert Ballroom: Salons 7-8
Judging Session 3  Tuesday, July 23  12:15–1:00 PM  Desert Ballroom: Salons 7-8
Judging Session 4  Tuesday, July 23  1:00–1:45 PM  Desert Ballroom: Salons 7-8
Judging Session 5  Wednesday, July 24  12:15–1:00 PM  Desert Ballroom: Salons 7-8
Judging Session 6  Wednesday, July 24  1:00–1:45 PM  Desert Ballroom: Salons 7-8
Scholars Ignite–Student Competition  Wednesday, July 24  9:30 AM–12:15 PM  Springs Salon A/B

**Undergraduate**

Association of Collegiate Branches (ACB) Annual
Business Meeting  Tuesday, July 23  12:30–1:30 PM  Desert Salon 1-2
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Environments Student Competition</td>
<td>Tuesday, July 23</td>
<td>6:00–9:00 PM</td>
<td>Springs Salon D/E</td>
</tr>
<tr>
<td>Horticultural Commodity Judging Contest &amp; Plant Identification Contest Set-up</td>
<td>Tuesday, July 23</td>
<td>7:00–9:00 AM</td>
<td>Springs Salon F</td>
</tr>
<tr>
<td>Horticultural Commodity Judging Contest &amp; Plant Identification Contest</td>
<td>Tuesday, July 23</td>
<td>9:00 AM–12:00 PM</td>
<td>Springs Salon F</td>
</tr>
<tr>
<td>Plant Identification Contest Written Exam</td>
<td>Tuesday, July 23</td>
<td>9:00 AM–12:00 PM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>Service Project: Undergraduate Student Activity</td>
<td>Monday, July 22</td>
<td>10:00 AM–5:00 PM</td>
<td>Center &amp; North Registration Counters</td>
</tr>
<tr>
<td>Student Reception</td>
<td>Wednesday, July 24</td>
<td>7:00–8:00 PM</td>
<td>Tour Lobby</td>
</tr>
<tr>
<td>Undergraduate Oral Competition</td>
<td>Monday, July 22</td>
<td>12:00–1:30 PM</td>
<td>Desert Salon 1-2</td>
</tr>
<tr>
<td>Undergraduate Poster Competition</td>
<td>Monday, July 22</td>
<td>4:00—6:00 PM</td>
<td>Desert Ballroom: Salons 7-8</td>
</tr>
<tr>
<td>Undergraduate Student (UG) Working Group Business Meeting</td>
<td>Monday, July 22</td>
<td>8:00–9:00 AM</td>
<td>Desert Salon 12</td>
</tr>
</tbody>
</table>

**MEETINGS OF AFFILIATED ORGANIZATIONS**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC1186: Water Management and Quality for Ornamental Crop Production and Health</td>
<td>Monday, July 22</td>
<td>8:00 AM–12:00 PM</td>
<td>Springs Salon D/E</td>
</tr>
<tr>
<td>NE-1036 Technical Committee Meeting</td>
<td>Day 1 Friday, July 26</td>
<td>8:00 AM–5:00 PM</td>
<td>Griffin Room</td>
</tr>
<tr>
<td></td>
<td>Day 2 Saturday, July 27</td>
<td>8:00 AM–12:00 PM</td>
<td>Griffin Room</td>
</tr>
<tr>
<td>American Pomological Society (APS) Annual Business Meeting</td>
<td>Wednesday, July 24</td>
<td>3:30–4:30 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>American Pomological Society (APS) Executive &amp; Advisory Board Meeting</td>
<td>Tuesday, July 23</td>
<td>6:00–10:00 PM</td>
<td>Desert Salon 3</td>
</tr>
<tr>
<td>APS Tropical Fruit Tasting</td>
<td>Wednesday, July 24</td>
<td>3:00–3:30 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>2013 B.Y. Morrison Lecture</td>
<td>Tuesday, July 23</td>
<td>12:00–1:00 PM</td>
<td>Springs Salon A/B</td>
</tr>
<tr>
<td>B.Y. Morrison Reception</td>
<td>Tuesday, July 23</td>
<td>1:00–1:30 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>Crucifer Crop Germplasm Committee</td>
<td>Wednesday, July 24</td>
<td>10:00 AM–12:00 PM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>Leafy Vegetable Crop Germplasm Committee Meeting</td>
<td>Monday, July 22</td>
<td>8:00–10:00 AM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>Pi Alpha Xi Luncheon - Annual Meeting</td>
<td>Wednesday, July 24</td>
<td>12:00–1:30 PM</td>
<td>Room tba</td>
</tr>
<tr>
<td>Project Leaders – National Strawberry Sustainability Initiative Program</td>
<td>Tuesday, July 23</td>
<td>1:00–2:00 PM</td>
<td>Desert Salon 12</td>
</tr>
<tr>
<td>Root and Bulb Vegetable Crop Germplasm Committee (RBV-CGC) Meeting</td>
<td>Wednesday, July 24</td>
<td>8:00–10:00 AM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>SCRI Project Directors’ Workshop</td>
<td>Monday, July 22</td>
<td>1:00–4:00 PM</td>
<td>Desert Salon 9-10</td>
</tr>
<tr>
<td>SRASHS Executive Committee Meeting</td>
<td>Monday, July 22</td>
<td>4:00 PM-6:00 PM</td>
<td>Directors Suite VI</td>
</tr>
<tr>
<td>USDA–ARS All Employee Meeting</td>
<td>Tuesday, July 23</td>
<td>1:30–2:30 PM</td>
<td>Springs Salon C</td>
</tr>
<tr>
<td>USDA–SCRI Eastern Broccoli Project Working Group Meeting</td>
<td>Thursday, July 25</td>
<td>10:00 AM–12:00 PM</td>
<td>Desert Salon 3</td>
</tr>
</tbody>
</table>
Graduate Student Poster Competition Schedule

Please note that the Graduate Student Poster Competition Presentation Time may be the same as your scheduled poster presentation time in the ASHS Technical Program. If it is not the same, you must be present at both times.

**SESSION 1: Monday, July 22: 12:15 PM–1:00 PM**

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Paper Title</th>
<th>Name and Email</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(289)</td>
<td>Comprehensive Functional Analyses of Expressed Sequence Tags (ESTs) in <em>Jatropha curcas</em> L.</td>
<td>Wenlan Tian, <a href="mailto:tianwenl@ufl.edu">tianwenl@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
</tr>
<tr>
<td>(322)</td>
<td>Screening for Avocado Resistance to Laurel Wilt using Shoot Cuttings</td>
<td>Cristina Pisani, <a href="mailto:cpisani@ufl.edu">cpisani@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
</tr>
<tr>
<td>(329)</td>
<td>Micropropagation of the Relict Genus Cercidiphyllum (Cercidiphyllaceae)</td>
<td>Craig Carlson, <a href="mailto:craig.h.carlson@ndsu.edu">craig.h.carlson@ndsu.edu</a></td>
<td>North Dakota State Univ., Fargo</td>
</tr>
<tr>
<td>(113)</td>
<td>Fertigation with Micronized Sulfur Rapidly Reduces Soil pH in Highbush Blueberry</td>
<td>Khalid Almutairi, <a href="mailto:almutaik@onid.orst.edu">almutaik@onid.orst.edu</a></td>
<td></td>
</tr>
<tr>
<td>(122)</td>
<td><em>Vaccinium arboreum</em>: A Rootstock for Southern Highbush Blueberry?</td>
<td>Bruno Casamali, <a href="mailto:bcasamali@ufl.edu">bcasamali@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
</tr>
<tr>
<td>(111)</td>
<td>Friend or Foe? Bacterial Nitrate and Iron Reduction in the Roots and Rhizosphere of <em>Vaccinium corymbosum</em> and <em>Vaccinium arboreum</em></td>
<td>Gerardo H. Nunez, <a href="mailto:g.nunez@ufl.edu">g.nunez@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
</tr>
<tr>
<td>(293)</td>
<td>Survival and Persistence of Non-pathogenic <em>Escherichia coli</em> and <em>Escherichia coli</em> O157:H7</td>
<td>Celia D. Whyte, <a href="mailto:cwhyte@umes.edu">cwhyte@umes.edu</a></td>
<td>Univ. of Maryland Eastern Shore, Princess Anne</td>
</tr>
<tr>
<td>(234)</td>
<td>Observation with a Laser and Optical Microscope for Emarginated Fruits Surface of Paprika (<em>Capsicum annuum</em> L.)</td>
<td>Masaya Miyanaga, <a href="mailto:cf20221@meiji.ac.jp">cf20221@meiji.ac.jp</a></td>
<td>Meiji Univ., Kawasaki, Japan</td>
</tr>
<tr>
<td>(228)</td>
<td>Physiological and Biochemical Evaluation of Freezing Tolerance in Three Asparagus Cultivars in Early Spring</td>
<td>Mahmoud Panjandoust, <a href="mailto:mpanjtan@uoguelph.ca">mpanjtan@uoguelph.ca</a></td>
<td>Univ. of Guelph, ON, Canada</td>
</tr>
<tr>
<td>(226)</td>
<td>High Temperature Inhibits the Expressions of Some Genes Involved in Anthocyanin Biosynthesis in Strawberry Sachinoka' Fruit</td>
<td>Takumi Sakayori, <a href="mailto:cf20209@meiji.ac.jp">cf20209@meiji.ac.jp</a></td>
<td>Meiji Univ., Kawasaki, Japan</td>
</tr>
<tr>
<td>(15)</td>
<td>Induction of Variation in the Petunia Mlo Gene for Resistance to Powdery Mildew</td>
<td>Peng Jiang, <a href="mailto:pjiang@uga.edu">pjiang@uga.edu</a></td>
<td>Univ. of Georgia, Athens</td>
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</tbody>
</table>

**SESSION 2: Monday, July 22: 1:00–1:45 PM**

<table>
<thead>
<tr>
<th>Poster #</th>
<th>Paper Title</th>
<th>Name and Email</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(282)</td>
<td>Blue Light-emitting Diode Treatments Act to Decrease Kale Leaf Tissue Zeaxanthin Concentrations and Non-photochemical Quenching, Thereby Demonstrating a Less Stressful Light Environment</td>
<td>T. Casey Barickman, <a href="mailto:tbarickm@utk.edu">tbarickm@utk.edu</a></td>
<td>Univ. of Tennessee, Knoxville</td>
</tr>
<tr>
<td>(281)</td>
<td>Cucumber Seedlings Growth and Morphology under Supplemental Pulsed Lighting using Light-emitting Diodes</td>
<td>Ricardo Hernandez, <a href="mailto:ricahdez@email.arizona.edu">ricahdez@email.arizona.edu</a></td>
<td>Univ. of Arizona, Tucson</td>
</tr>
<tr>
<td>(284)</td>
<td>Cold Acclimation Attributes among Three Asparagus Cultivars under Controlled Conditions</td>
<td>JaeJoon Kim, <a href="mailto:jaejoon@uoguelph.ca">jaejoon@uoguelph.ca</a></td>
<td>Univ. of Guelph, ON, Canada</td>
</tr>
<tr>
<td>280</td>
<td>Growth of Lettuce Plants Exposed to Air Anion in a Plant Factory</td>
<td>Min-Jeong Song, <a href="mailto:hi_kate@nate.com">hi_kate@nate.com</a></td>
<td>Chungbuk National Univ., Cheongju, South Korea</td>
</tr>
<tr>
<td>(59)</td>
<td>Lead Uptake in Radish Cultivars Grown in Lead Contaminated Urban Soils</td>
<td>Tracey Emmerick Takeuchi, <a href="mailto:tntinsol@aol.com">tntinsol@aol.com</a></td>
<td>California Polytechnic Univ., Pomona</td>
</tr>
<tr>
<td>(66)</td>
<td>Evaluation of the Consumption of Fruits and Vegetables and Socio-economic Status on a Native American Reservation in Kansas</td>
<td>Pabodha G. Galgamuwe Arachchige, <a href="mailto:pabodha@ksu.edu">pabodha@ksu.edu</a></td>
<td>Kansas State Univ., Manhattan</td>
</tr>
<tr>
<td>(65)</td>
<td>Wyoming Brown and Gold Fresh Cut Sunflowers</td>
<td>Andrea R. Garfinkel, <a href="mailto:agarfink@uwyo.edu">agarfink@uwyo.edu</a></td>
<td>Univ. of Wyoming, Laramie</td>
</tr>
<tr>
<td>(39)</td>
<td>Evaporative and Transpirational Loss from Three Nursery Container Types</td>
<td>Alison Stoven O’Connor, <a href="mailto:astoven@larimer.org">astoven@larimer.org</a></td>
<td>Colorado State Univ., Fort Collins</td>
</tr>
<tr>
<td>(26)</td>
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<td>Whitney Gaches, <a href="mailto:wgaches1@umd.edu">wgaches1@umd.edu</a></td>
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<td>Patty Kraikittikun, <a href="mailto:pkrai@umkc.edu">pkrai@umkc.edu</a></td>
<td>Chapman Univ., Orange, CA</td>
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<td>Hilda Patricia Rodriguez-Armenta, <a href="mailto:hildap@ufl.edu">hildap@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
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<td>Characterization of Libyan Olive (Olea Europaea L.) Cultivars using Morphological Data</td>
<td>Salem Abdul, <a href="mailto:saleem.elleaga@yahoo.com">saleem.elleaga@yahoo.com</a></td>
<td>Chapman Univ., Orange, CA</td>
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<td>Dario J. Chavez, <a href="mailto:darioch@ufl.edu">darioch@ufl.edu</a></td>
<td>Univ. of Florida, Gainesville</td>
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<td>Kirk Laminack, <a href="mailto:kirkd9@tamu.edu">kirkd9@tamu.edu</a></td>
<td>Texas A&amp;M Univ., College Station</td>
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<td>Tyler J. Mock, <a href="mailto:mocktyler@hotmail.com">mocktyler@hotmail.com</a></td>
<td>Univ. of California, Riverside</td>
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<td>Kristen Hanson, <a href="mailto:hansonk@ag.arizona.edu">hansonk@ag.arizona.edu</a></td>
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<td>Srokith Sea, <a href="mailto:sokrith.sea@gmail.com">sokrith.sea@gmail.com</a></td>
<td>Chapman Univ., Orange, CA</td>
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<td>Moo Jung Kim, <a href="mailto:mkim10@ncsu.edu">mkim10@ncsu.edu</a></td>
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<td>Lesley A. Judd, <a href="mailto:lajudd@ncsu.edu">lajudd@ncsu.edu</a></td>
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<td>Anne Pfeiffer, <a href="mailto:acpfeiffer@wisc.edu">acpfeiffer@wisc.edu</a></td>
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<td>Rachel Rudolph, <a href="mailto:rrudolph@mnsu.edu">rrudolph@mnsu.edu</a></td>
<td>New Mexico State Univ., Las Cruces</td>
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<td>Tongyin Li, <a href="mailto:litongysq@yahoo.com">litongysq@yahoo.com</a></td>
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<td>The Presence of Genetic Modification in USDA Organic Certified Corn and Soy Food Products</td>
<td>Ryan Phelps, <a href="mailto:ryan.phelps851@topper.wku.edu">ryan.phelps851@topper.wku.edu</a></td>
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<td>Shawna Daley, <a href="mailto:sdaley@clemson.edu">sdaley@clemson.edu</a></td>
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<td>Micropropagation of Ostrya virginiana (Mill.) K. Koch</td>
<td>Juan R. Franco Coronado, <a href="mailto:juan.francocoronado@my.ndsu.edu">juan.francocoronado@my.ndsu.edu</a></td>
<td>North Dakota State Univ., Fargo</td>
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<td>Narinder Singh, <a href="mailto:narinder@mnsu.edu">narinder@mnsu.edu</a></td>
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<td>Soon Li Teh, <a href="mailto:tehhx010@umn.edu">tehhx010@umn.edu</a></td>
<td>Univ. of Minnesota, Saint Paul</td>
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<td>Victoria Towers, <a href="mailto:victoriatowers@gmail.com">victoriatowers@gmail.com</a></td>
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<td>Xiaofan Zhao, zhaoxiaoｆ<a href="mailto:an@mail.fresnostate.edu">an@mail.fresnostate.edu</a></td>
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<td>Luke O. Lee, <a href="mailto:lsolee@umes.edu">lsolee@umes.edu</a></td>
<td>Michigan State University, East Lansing</td>
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<td>Jennifer Evans, <a href="mailto:velvet.inveigle@gmail.com">velvet.inveigle@gmail.com</a></td>
<td>Michigan State Univ., East Lansing</td>
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<td>Yahia Othman, <a href="mailto:othman@mnsu.edu">othman@mnsu.edu</a></td>
<td>New Mexico State Univ., Las Cruces</td>
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<td>Sharon Motomura, <a href="mailto:smotomur@hawaii.edu">smotomur@hawaii.edu</a></td>
<td>Univ. of Hawaii, Hilo</td>
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<td>Wei-Kuang Lin, <a href="mailto:linweiku@msu.edu">linweiku@msu.edu</a></td>
<td>Michigan State Univ., East Lansing</td>
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<td>Do Plants Play a Part in Student Satisfaction?</td>
<td>Amanda Plante, <a href="mailto:aplante@utk.edu">aplante@utk.edu</a></td>
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<td>Joshua Sherman, <a href="mailto:xlr8@nmsu.edu">xlr8@nmsu.edu</a></td>
<td>New Mexico State Univ., Las Cruces</td>
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<td>Nadine M. Burton, <a href="mailto:nmburton@umes.edu">nmburton@umes.edu</a></td>
<td>Univ. of Maryland, Eastern Shore, Princess Anne</td>
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<td>Samuel Day, <a href="mailto:samuel.d.day@aggiemail.usu.edu">samuel.d.day@aggiemail.usu.edu</a></td>
<td>Utah State Univ., Logan</td>
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<td>Ruhiyyih Dyrdahl-Young, <a href="mailto:ruhiyyihamelia@gmail.com">ruhiyyihamelia@gmail.com</a></td>
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<td>Response of Mexican Lime to Partial Rootzone-drying: A Water-saving Strategy</td>
<td>Beatriz A. Contreras-Barragan, <a href="mailto:beacontrerasb@gmail.com">beacontrerasb@gmail.com</a></td>
<td>Texas A&amp;M Univ., Kingsville Citrus Center, Weslaco</td>
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<td>Use of Rainfall Simulation to Determine the Persistence and Transport of <em>Escherichia coli</em> and <em>Salmonella</em> in Runoff Water</td>
<td>Tamadour N. Khairi, <a href="mailto:tkmhairi@umes.edu">tkmhairi@umes.edu</a></td>
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<td>Sensor Integrated Automatic Irrigation System to Reduce Runoff and Nutrient Loss without Affecting Plant Growth</td>
<td>Xueni Wang, <a href="mailto:wangxuen@msu.edu">wangxuen@msu.edu</a></td>
<td>Michigan State Univ., East Lansing</td>
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<td>Zheng Wang, <a href="mailto:zheng.wang@uky.edu">zheng.wang@uky.edu</a></td>
<td>Univ. of Kentucky, Lexington</td>
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Guide to Exhibitors

Exhibitor booths are located in the Desert Ballroom: Salons 7-8

**Agrium Advanced Technologies**  
Booth # 6

106 King Street, Exeter, CA  
Phone: 559-429-9002  
E-mail: gbrummet@agriumat.com

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E-mail: info@biochambers.com  
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**CABI/CSIRO**  
Booth # 18

Stylus Publishing, 22883 Quicksilver Drive, Sterling, VA 20166

Open to attendees:  
Monday, July 22 = 8:30 am – 2:30 pm  
Tuesday, July 23 = 8:30 am – 2:30 pm  
Wednesday, July 24 = 8:30 am – 2:30 pm

Phone: 404-636-3996  
E-mail: patricia@styluspub.com  
Web: http://cabi.styluspub.com/books/features.aspx

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. Our mission and direction is influenced by our member countries who help guide the activities we undertake.

**CID BIO-Science, Inc.**  
Booth # 17

1554 NE 3rd Ave., Camas, WA 98607  
Phone: 360.833.8835; Fax: 360.833.1914  
Web: www.cid-inc.com

CID BiO-Sciences designs and manufactures scientific instruments for agricultural, environmental, and biotechnological research. CID’s mission is to satisfy the needs of researchers by designing instruments that are: reliable, portable, and easy-to-use. CID instruments provide relevant data for: photosynthesis, leaf area, plant canopy analysis, spectroscopy, root imaging and analysis, and ethylene analysis.

**Conviron**  
Booth # 16

590 Berry Street, Winnipeg, MB R3H 0R9, Canada  
Phone: 204.786.6451; Fax: 204.786.4433  
E-mail: info@conviron.com  
Web: www.conviron.com

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Decagon Devices, Inc. Booth # 8
2365 Hopkins Court, Pullman, WA 99163
Phone: 509.332.2756; Fax: 509.332.5158
E-mail: sandra@decagon.com
Web: www.decagon.com
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14 Park Mirage Lane, Rancho Mirage, CA 92270
Phone: 760.328.8260; Fax: 760.837.9242
E-mail: tmeisenbach@extension.org
Web: www.eXtension.org
The Consumer Horticulture Community of Practice and Extension Master Gardeners are part of the eXtension initiative. eXtension is an internet-based educational network providing 24/7/365 access to objective, science-based information from land-grant universities and partners nationwide. It is an integral part of and complements the community-based Cooperative Extension System.

Gylling Data Management Booth # 7
405 Martin Blvd, Brookings, SD 57006
Phone: 605.693.4180; Fax: 605.693.4150
Email: fran@gdmdata.com or staff@gddata.com
Web: www.gdmdata.com
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ARM ST: summarize and report for a trial series, across locations and/or years.

Psion Workabout Pro with Enhanced Rating Shell: enter trial assessments and descriptive information into Excel worksheet, then pull information into ARM trial on a PC.

ARM Trial Database: relational Access database for storing and retrieving trials based on standard ARM study definitions, then building customized reports for trials extracted from the database.

Inda-Gro Booth # 20
6176 Federal Blvd. San Diego, CA 92114-1401
Phone: 619.266.4004; Fax: 619.229.9287
E-mail: Darryl@elsmfg.com
Web: http://www.inda-gro.com
Inda-Gro Induction lamps are a type of High Output Fluorescent lamp that are known as Electrode-less Fluorescent Discharge Lamps (EFDL). Unlike conventional lamps that require screw in sockets or pins to power up the lamps, the EFDL induction lamp does not rely on a socket or pin connection to power the lamp. Instead EFDL efficiencies derive from being powered by a high frequency electromagnetic field. Without the use of pins, sockets or ballasts to operate the lamp, more energy is converted into usable plant light and not wasted due to the high temperatures and escaping gas inefficiencies that are inherent of lamps requiring electrodes. First introduced and patented in 1891 by Nikola Tesla, induction lamps, while expensive, were always prized for their high lumens per watt; low operating temperatures; crisp color; long lamp life; and low lumen depreciation over their lifetime. Inda-Gro’s EFDL Bi-Spectrum lamps have affordably combined the proven benefits of this technology with the unique spectral requirements that are essential for robust plant development. Inda-Gro’s custom horticultural phosphor blends are designed to be used as a primary grow light from vegetative on through flowering and budding stages. Moreover our fixtures replace the need for higher wattage fixtures and the lamp changes normally associated with different growth periods. When comparing other types of energy efficient grow lamps, such as LED, your investment in an Inda-Gro fixture will prove to be the longest lasting,
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Phone: Phone: 951.689.1701; Fax: 951.689.1701
E-mail: lindas@irrometer.com
Web: http://www.irrometer.com

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Web: http://naturalindustries.com
E-mail: sandeef@naturalindustries.com

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Colorado State University, Horticulture and Landscape Architecture
Fort Collins, CO 80523
Phone: (970)491-711; Fax: (970) 491-7748
E-mail: steven.newman@colostate.edu
Web: http://www.sare.org Since 1988, Sustainable Agriculture Research and Education (SARE; www.sare.org) has advanced sustainable innovations to the whole of American agriculture through grants and outreach programs. Successful SARE grantees are farmers and ranchers, researchers, educators and others who are engaged in projects that improve the profitability of agriculture; protect the nation’s land and water; and are a force for a rewarding way of life for farmers and ranchers, their communities, and society as a whole. SARE also conducts educational and extension programs in an effort to increase knowledge about—and help farmers and ranchers adopt—sustainable farming practices.
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ASHS Awards Ceremony

Ceremony to be held during the
Opening Plenary Session
July 22, 2013
10:00 AM–12:00 PM
Desert Springs J.W. Marriott Resort
Springs Salon F
Palm Desert, California

and includes recognition of the following awardees:

ASHS Fellows-elect: Class of 2013
2013 ASHS Career Award Recipients
2013 ASHS Publication Award Recipients
James Chester (J.C.) Raulston introduced more plants into culture than any other person in the world. His name, and the reputation he created for the NCSU Arboretum, stands alongside Luther Burbank, Ernest Wilson, and John Bartram. He has touched the lives of thousands of students, many of whom have leadership roles in horticulture throughout the world. The NCSU JC Raulston Arboretum exemplifies what a land grant university can do by adding value and service to local citizens and businesses.

Few have left a legacy as tangible as Raulston—his words of encouragement are the reasons our nurseries and gardens exist today. Tracy Traer, his colleague and closest friend, said of Raulston that “while we live in the third dimension, he cruised easily in the fifth.” C.D. Spangler, president of the 16-campus University of North Carolina system, said of Raulston that he was the kind of person we needed in this community to make things grow. He made friendships grow, he made the status of NCSU grow, and he made plants and trees around the world more appreciated and better understood.

His obituary in the New York Times* described him as “a generous-spirited giant among horticulturists.” At his memorial service, he was called “the linchpin of the American horticultural community.” Raulston also has been called “America’s Horticultural Ambassador”, a designation he would have rejected—in favor of being remembered simply for the signature with which he ended all his correspondence: “Plan—and plant for a better world.”

*(Published December 24, 1996)
Charles E. Hess has a distinguished career in horticulture research, academic administration, and state, national, and international agricultural leadership. His research, teaching, and service contributions are in the field of plant propagation. While a graduate student at Cornell, he pioneered the use of mist propagation in the nursery industry. He joined the Department of Horticulture at Purdue in 1958, where he continued his research in the study of naturally occurring substances that promote root initiation. Hess and his graduate students also studied juvenility in plants and tuberization. Since his retirement, Hess has continued research on the role of sphagnum moss in reducing the incidence of “damping off” when used as a germination medium. He isolated and identified tropolone, a fungistatic substance produced by bacteria living in association with sphagnum moss.

Hess became chair of the Department of Horticulture and Forestry at Rutgers University in 1966, Acting Dean of the College of Agriculture and Environmental Science in 1971, and was appointed the Founding Dean of Cook College in 1973. Cook College became one of the most popular colleges on the New Brunswick campus of Rutgers University. In 1975, Hess was recruited by the University of California—Davis to become Dean of the College of Agricultural and Environmental Sciences. While at Davis, Hess became very involved in state, national, and international agriculture and science. He is one of the first horticulturists to have three presidential appointments, two to the National Science Board, the governing board of the National Science Foundation, and one as Assistant Secretary of Science and Education in the U.S. Department of Agriculture. During his tenure as Assistant Secretary, Hess launched the National Research Initiative, USDA’s competitive grants program and promoted a greater investment in biotechnology research. He chaired a National Academy of Science committee to develop a National Strategy for Biotechnology in Agriculture. Upon his return in 1991 to the University of California, Davis, he became Director of International Programs and served on the Board of Trustees of two international agricultural research centers.

Hess was active in his professional societies—ASHS and the International Plant Propagators Society. He served as President of ASHS in 1972 and in that role was instrumental in the move of the headquarters to Alexandria, Virginia. He is an ASHS Fellow, and is a recipient of the Kenneth Post Award for research. He became member of the Plant Propagators Society (PPS) shortly after it was founded and helped it grow into an international organization. He served as editor of the Proceedings of the PPS from 1962 to 1970, became President of the Eastern Region in 1969–70, and International President in 1973. Since his retirement, Hess continued to serve the University in a variety of roles including special assistant to the Chancellor, Chairman of the Department of Nutrition, and Interim Vice Chancellor for Research. He is currently a member of the Science Advisory Panel of the Almond Board of California.

Hess is a member of Phi Beta Kappa, a Fellow of the American Association for the Advancement of Science, and received an honorary doctoral degree from Purdue University along with numerous other awards in recognition of his contributions.
Mark Farnham currently serves as supervisory research geneticist, research leader, and location coordinator at the USDA–ARS, U.S. Vegetable Laboratory, Charleston, SC.

Farnham received his BS degree in Agronomy from Ohio State University in 1977, his MS degree in Crop Science from North Carolina State University in 1984, and his PhD in Plant Breeding from the University of Minnesota in 1988. Farnham has had a postgraduate career of 24 years, which began with three years as a Postdoctoral Research Associate in the USDA–ARS Plant Science Research Unit, St. Paul, MN, and has continued as a Research Geneticist at the U.S. Vegetable Laboratory, Charleston, SC, since 1991.

He is widely recognized as an international leader in vegetable *Brassica* genetics and breeding for his groundbreaking work on broccoli with respect to the development of doubled haploid populations, the breeding for host plant resistance to downy mildew, the development of important information on levels of health-promoting minerals in field-grown vegetable heads, the characterization of the chemoprotective attributes often associated this vegetable crop, and the development of unique germplasms that are adapted to high temperature environments. Farnham is also recognized for spearheading successful domestic plant exploration efforts to collect landraces of collards and effectively establishing a significant national collards germplasm collection.

Farnham has been a very active member of ASHS. He has organized six workshops at six separate ASHS annual conferences, served two terms as chair of the ASHS Vegetable Breeding Working Group (2002 and 2013), served four terms as chair of the ASHS Intellectual Property Rights Working Group (2000, 2006, 2008, and 2009), and was an invited speaker at ASHS workshops in 1999 and 2005 and at an ASHS colloquium in 2010. Farnham has also been quite active in commodity organizations, and has served continuously as the chair of the National Crucifer Crop Germplasm Committee since 1999.

Election as a Fellow of the Society is the highest honor that ASHS can bestow on its members, in recognition of truly outstanding contributions to horticulture and the Society.
Irwin Goldman is Professor and Chair of Horticulture at the University of Wisconsin–Madison and a faculty member in the Plant Breeding and Plant Genetics program. In the early 1990s, Goldman joined with collaborators in hematology and oncology in the School of Medicine and Public Health to develop a better understanding of some of the unique medicinal properties of onions and garlic. These collaborations led to more than 15 years of research into medicinal traits in crop plants.

Goldman was one of the first U.S. horticulturists to adopt this research direction in the context of a plant breeding program and in partnership with medical scientists. This area has grown dramatically in horticulture worldwide in the past 20 years.

Goldman and co-workers have also been involved in research to improve the pigment concentration in vegetables for use as natural food colorants. These natural food colorants may supplant synthetic dyes for certain food applications and, in some cases, receive improved consumer acceptance. Populations of table beet with elevated levels of betalain pigments were developed by Goldman and co-workers and have been licensed to the food industry for use as a color source. Currently, this colorant is used in a variety of food products in the U.S. and in Europe. From the period 2004–2010, Goldman served in a variety of administrative roles in the College of Agricultural and Life Sciences, including Interim Dean, Vice Dean, and Associate Dean for Research. During this period, he had budgetary and personnel responsibility for a number of college programs. He was also involved in research administration and policy development for the University. Goldman and his students have worked to produce new inbred lines, open-pollinated cultivars, and germplasm for carrot, onion, and table beet. More than 75 licenses for this germplasm are in place with seed companies, national breeding programs, farmer–breeders, and non-profit organizations around the world.

Goldman has developed channels for the public communication of horticultural science in general and for the research work that focuses on crops and human health. One of these is a regular call-in show on Wisconsin Public Radio’s Garden Talk Show. Another close collaboration has been with the National Onion Association to help provide science-based information to consumers, farmers, and processors.

Goldman has taught three horticulture courses for the past 20 years, including World Vegetable Crops, Principles of Plant Breeding, and Techniques of Plant Breeding, along with an honors course in evolutionary biology.

Goldman has been actively involved with ASHS since 1992, serving on several Committees, including the Endowment Fund Committee and the Horticulture Hall of Fame Committee.

The first ASHS Fellows were elected in 1965.
Jude Grosser received a BA degree in biology from Thomas More College (KY), an MS degree in biology from Morehead State University (KY), and a PhD in plant breeding and genetics from the University of Kentucky, where he was fortunate to be co-advised by biotechnology expert Glenn B. Collins and the late red clover breeder Norman L. Taylor.

His career in citrus breeding and genetics began in 1984 when he was hired at the University of Florida’s Citrus Research and Education Center to adapt protoplast fusion and culture techniques to citrus. Since that time, his career has been dedicated to adapting and merging tissue culture-based biotechnologies with conventional citrus breeding as necessary to address all major citrus production problems worldwide, and also strives to develop new scion and rootstock cultivars that will provide growers with new marketing opportunities. Using a team-oriented approach, Grosser’s program is integrated with other members of the IFAS/CREC cultivar improvement team that includes Fred Gmitter and Bill Castle. These efforts are now coming to fruition, as the team is in the process of releasing a multitude of new varieties, including processing sweet oranges, seedless mandarins, red pummelos and grapefruit-like hybrids, seedless lemon/lime-like hybrids, ornamentals, and improved rootstocks. Grosser’s first two patented releases are the Valquarius™ early-maturing Valencia sweet orange for processing, and Valenfresh™ late-maturing seedless Valencia sweet orange for fresh market or processing—the first ever released citrus cultivars developed by exploiting somaclonal variation.

Grosser is responsible for developing efficient citrus protoplast isolation, culture and fusion techniques that have resulted in the regeneration of somatic hybrid and cybrid plants from hundreds of parental combinations, contributing to both scion and rootstock improvement. These techniques are now a routine part of citrus breeding programs all around the world, and they are also being adapted to other commodities including avocado and grape. Allotetraploid somatic hybrid breeding parents produced in Grosser’s program are contributing substantially to the production of new seedless triploids via interploid crosses, and have led to the development of a genetically powerful rootstock breeding program at the tetraploid level. Grosser’s program is also extensively involved with citrus transformation, including the development of new transformation methods that use protoplasts or embryogenic suspension culture cells as explant.

Grosser currently has more than 1200 transgenic citrus plants containing 15 different constructs under field evaluation, many showing promise against devastating HLB (huanglongbing or citrus greening disease) and canker.

In 2005, Grosser received the ASHS Outstanding Researcher Award.
Rebecca Grumet is an internationally recognized horticulturist known for her use of molecular techniques to examine and elucidate field associated problems. She has been a professor at Michigan State University (MSU) since 1987, after completing a BS at Cornell University, MS and PhD at MSU, and a Postdoctoral Associate position at Duke University. Grumet has significantly improved our understanding of floral and fruit development in *Cucumis* (cucumber and melon), focusing on the role of ethylene production, perception and signaling in the regulation of unisexual flower development, as well as the disease resistance of whole plants and developing fruits. Her international recognition is evidenced by her expansive publishing record, reports to numerous local cucurbit and international meetings, and her serving as organizer of many international meetings.

Grumet is also internationally recognized for an important related interest involving risk assessment research and international development work, supported by USAID and the Gates Foundation. This work with a group of MSU scientists has played a critical role in the education of international scientists and regulatory agencies dealing with the safety of genetically engineered crops, particularly Africa. Drawing upon this expertise, Grumet has created and co-teaches a course entitled “Biotechnology in Agriculture: Applications and Ethical Issues,” as well as co-editing a textbook, *Environmental Safety of Genetically Engineered Crops*.

Grumet’s research output includes an impressive publication record consisting of 62 refereed journal articles, 20 conference proceedings, eight book chapters, and the edited book mentioned above. Grumet has also contributed greatly to graduate and post-graduate mentoring, serving as both the Acting Director for MSU’s Plant Breeding and Genetics Graduate Program and as the Associate Director and Interim Director of MSU’s Graduate Program in Genetics. Within her program, Grumet has served as major professor for 15 PhD students and three MS students, and the career development of 15 Postdoctoral Associates and Visiting Scholars.

Grumet has been an active ASHS member, serving on numerous committees, as an associate editor for *HortScience*, as an elected chairperson of the ASHS Vegetable Breeding Working Group, and as a colloquium speaker. Collectively her group has presented 31 papers/posters at ASHS conferences and published numerous articles in ASHS journals. In 1993, she was a recipient of the ASHS Vegetable Publication Award.
**ASHS Fellow**

**James McCreight** has been an ASHS member since 1973. He received his BS degree from The Pennsylvania State University in Horticulture in 1971, MS from University of Connecticut in Plant Science in 1974, and PhD from North Carolina State University in Horticultural Science in 1977. He joined the U.S. Department of Agriculture, Agricultural Research Service at the Imperial Valley Conservation Research Center, Brawley, CA, and relocated to the U.S. Agricultural Research Station, Salinas, CA, in 1979. His research career has focused on breeding and genetics of lettuce and melon research. He was named Location Coordinator and Research Leader of the Salinas Research Station in 1994.

McCreight has served ASHS as associate editor of the *Journal of the American Society for Horticultural Science* (JASHS) and *HortScience* for Breeding and Genetics; as a member of the ASHS Press Editorial Board; twice as chair of the Vegetable Breeding Working Group; thrice as chair of the Genetics and Germplasm Working Group; Cultivar Release Subcommittee to the Publications Committee on Cultivar and Germplasm Release Notice Policy for *HortScience*; assistant editor of the melon and lettuce cultivar lists. He served ASHS and ISHS as co-organizer and co-editor of Symposium 17: Advances in Vegetable Breeding, Proceedings of the XXVI International Horticultural Congress, Toronto, Canada.

McCreight served as chair of the Cucurbit Crop Germplasm Committee that provides guidance to the U.S. National Germplasm System regarding cucurbit germplasm acquisition, maintenance, and distribution from 1984 to the present. He participated in or led four cucurbit germplasm collection and exchange trips to India, China, Republic of South Africa, and Turkmenistan. He served the Cucurbit Genetics Cooperative as chair of the By-Laws Committee, Gene List Committee, Coordinating Committee, and as chair and editor. McCreight served Cucurbitaceae: Breeding and Enhancement of Cucurbits thrice as member of the Scientific Committee, and organizer and editor.

McCreight served the National Lettuce Workshop and International Lettuce and Leafy Vegetable as member of the committee to establish lettuce gene symbols and nomenclature, drafted a germplasm proposal to the National Plant Germplasm System for *Lactuca* collection in their centers of diversity, and was a member of the Organizing Committee for two conferences.

McCreight is known for collection and evaluation of exotic germplasm of lettuce, and melon and other cucurbits with emphasis on host plant resistance to powdery mildew, insect-transmitted viruses, and insects. He released five breeding lines of melon and associated recombinant inbred lines, and three lettuce cultivars.
In 1981, Ellen Paparozzi was hired to help build a nationally recognized undergraduate horticulture program at the University of Nebraska. Since then, she has been an active participant and leader in the horticulture teaching and research program. She has taught/originated 12 different undergraduate and graduate courses, a major factor in building and maintaining a cutting edge curriculum. She created the first floral industry/university teaching partnership; created and helped build the business/entrepreneurship program and the non-thesis Master’s option, was a pioneer in developing Horticulture distance courses including co-authorship for a challenge grant and the first horticulture graduate certificates available through AG*IDEA.

She has written teaching abstracts, made presentations, and published peer-reviewed journal articles (ASHS Education Publication Award, 2008) in horticulture as well as other teaching journals. She has advised over 60 undergraduate horticulture production, science, and honors students and interacted with twice that many through her 30-year role as founder and chapter adviser of the Alpha-Gamma chapter of Pi Alpha Xi. Her lab has served as a research training ground in plant anatomy and nutrition for students from many disciplines. She has mentored over 30 graduate students and published 55 journal and proceedings articles; six book/symposia chapters; 12 book reviews (*HortScience*); and 83 abstracts. She holds one plant patent. She has received more than a half-million dollars in research and teaching grants. In 2011, she was honored for her efforts with the Holling Family Award for Teaching Excellence at UNL.

Paparozzi joined ASHS in 1976 when she was an undergraduate student at Rutgers. Since then she has served on and chaired many ASHS committees (Headquarters Relocation and Ornamentals, Education, and Cross-Commodity Publication Awards). She helped start two working groups, served as a book and article reviewer for all three ASHS journals, co-organized colloquia, and either presented a paper, poster, or chaired a session at 35 of 36 national meetings. Internationally, she presented research at numerous ISHS Congresses. As journal editor for horticulture/applied botany for *Annals of Applied Biology*, she raised awareness of horticulture research as well as the impact factor for this international journal. As President for National Pi Alpha Xi, the horticulture honor society, she changed the responsibilities of contact for initiation, dues, and scholarships from a university professor rotation to a permanent home with ASHS. This action ensured that the opportunity for horticulture students and faculty to be recognized as horticultural scholars will be available—not just now, but in the future.
Robert Stamps is a professor of environmental horticulture with a diverse extension and research career. He is a world-renowned cut foliage specialist and has shepherded Florida’s cut foliage industry for over three decades, helping the industry to dominate U.S. cut cultivated greens production (76% of U.S. total).

Stamps’ focus has been to support the ornamental horticulture industry while helping to protect and conserve natural resources. His research on irrigation and nutrient management enabled him to develop the first Nitrate Best Management Practices guidelines for Florida. His unique research on crop cold protection has saved growers tens of thousands of dollars and reduced groundwater withdrawals by trillions of gallons. Stamps has also evaluated and introduced new cut crops that require fewer inputs and new potting medium components.

Due to industry needs, Stamps has conducted weed management research that has helped to register new herbicides for use on ornamental crops that have reduced potential for contaminating groundwater. His extension publications on weed management for ornamental crops continue to be top hits on the Internet. Stamps was named Outstanding Weed Scientist by the Florida Weed Science Society. He also provides training on invasive species control. Stamps also helped improve contaminated groundwater phytoremediation using arsenic hyperaccumulating ferns. Research led to greatly increased arsenic uptake rates and the building of a pilot-scale hydroponic biofiltering system.

Stamps published the first refereed articles on the use of photoselective netting conducted in the United States and on the efficacy of cellulosic water for maintaining plants indoors. Stamps has co-authored one book, one book chapter, published two monographs, 64 refereed publications, 45 additional scientific articles, more than 325 trade and extension publications, given about 550 presentations, taught seven plant ID classes, and obtained $2 million in grants.

Stamps has been a member of ASHS since 1980 and has arranged and led workshop tours for working groups at annual meetings; served as chair of the ASHS Ornamentals Publication Award Committee, and co-organizer for ACB and post-conference tours; co-created the Pi Alpha Xi Horticultural Photography Contest and served as chair; chaired the Plant Invasiveness Colloquium Committee; served as ASHS Membership Representative; co-organized two ASHS colloquiums, chaired the Extension Social and Banquet Committee; served as an ASHS publications reviewer, session moderator, and served on the Annual Meeting Committee.

Stamps has been awarded Honorary Membership by the Florida State Horticultural Society and named Outstanding Specialist by the Florida Association of County Agricultural Agents.
Ann Marie VanDerZanden is Professor of Horticulture, and Director of the Center for Excellence in Learning and Teaching at Iowa State University (ISU). Her academic training is in horticultural science and she earned her BS and PhD from Washington State University, and her MS from Cornell University. Prior to joining the faculty at ISU, she was a faculty member at Oregon State University (OSU, 1997–2003) where she taught courses in landscape design, landscape construction, and herbaceous plant identification, and served as the state coordinator for the OSU Extension Service Master Gardener program. She was on the faculty at Illinois State University from 1995 to 1997, where she taught a range of horticulture courses.

At Iowa State University, VanDerZanden has teaching and extension responsibilities related to landscape design and construction in the horticulture department, and as an extension specialist for the nursery and landscape industry. Her research interests include undergraduate pedagogy, and using new technology to enhance the learning experiences of students and nursery/landscape professionals. She has an extensive publication record on this research and has shared her findings with others through presentations at ASHS and other related professional organizations.

VanDerZanden is a frequent contributor to regional and national horticulture magazines and television programming, and has a significant speaking schedule centered on landscape design, plant selection and sustainability. She has also co-authored three textbooks: Landscape Design: Theory and Application (2007); Mathematics for the Green Industry (2008); and Sustainable Landscape Management (2011).

In 2009 she assumed administrative responsibilities within the Center for Excellence in Learning and Teaching at Iowa State. In this capacity she provides leadership for university-wide teaching and learning initiatives. She also develops and delivers programming focused on becoming an engaged teacher, the scholarship of teaching and learning, and best practices for the peer-evaluation of teaching and interpreting student teaching evaluations.

VanDerZanden has been an active member of ASHS since 1994. She has been a long-term participant in the Teaching Methods Working Group, including chairing the group in 2011. She is a member of the Collegiate Activities Committee and participated in the Community Horticulture & Master Gardener Working Group, 1998–2004. She is currently serving in her 10th year as a consulting editor for HortTechnology. She has also been an active member of North American Colleges and Teachers in Agriculture (NACTA) since 1995, and just completed a six-year term as chair of the Educational Issues and Teaching Improvement Committee.
Vincent Fritz’s outreach work has had a major impact on grower practices, including the use of high tunnels, selection and culture of vegetable varieties, and management of sweet corn waste. He was part of a three-state faculty leadership team that worked with state food processor associations to form the Midwest Food Processors Association (MWFPA). This led to a combined educational conference (1989 to present) and established the MWFPA competitive research program. In response to a request from the MFPA, Fritz determined the nitrogen value from sweet corn processing waste. Because 66% of processing sweet corn is waste returned to the field, establishing best management practices (BMPs) is important. In collaboration with the University of Wisconsin, new BMPs were endorsed by state regulatory agencies and replaced the previous livestock manure model.

In 2003, Fritz was asked to participate in establishing an Extension program in Senegal to facilitate fresh green bean exports. The results were grower “field days” and meetings that facilitated growers learning from each other. He has also worked with colleagues from Morocco to develop new Extension programming.

Fritz has developed a collaborative research/demonstration project with Minnesota Master Gardeners to characterize phytonutrients in several Brassica varieties. This project has effectively engaged MGs in research and given them research-based information in teaching the public. A 2013 Extension publication, will, for the first time, give home gardeners an opportunity to select specific vegetables that will be the highest in potential health benefits.

Fritz developed the “Chemopreventive Café,” which teaches the health benefits of fruits and vegetables beyond basic nutrition. Through open houses at research and outreach centers, the University’s arboretum, and Mayo Clinic’s health fair, the café has reached thousands of consumers and health care professionals.

Fritz is an active member of ASHS Vegetable Crops Management (VCM) and Seed and Stand Establishment (SEST) Working Groups. He is a regular participant in ASHS annual conferences.

The ASHS Outstanding Extension Educator Award recognizes an educator who has made an outstanding and valuable contribution to horticultural science extension education.
Bhimanagouda (Bhimu) Patil is Professor and Director of the Vegetable and Fruit Improvement Center (VFIC) at Texas A&M University. Patil is recognized as a leader in the “foods for health” agenda, both nationally and internationally. He runs a large and very productive research program focused on the study of human-health related plant secondary metabolites. Patil has mentored more than 32 graduate students since coming to the department in 2005. His students have all followed his example by exhibiting an eager pursuit of plant bioactive research and publishing their research in appropriate journals.

Patil is passionately committed to teaching and learning. He has dedicated tremendous effort toward the development and implementation of two novel graduate courses at Texas A&M, and five other universities simultaneously. He has developed and maintained websites for both courses. He strives to provide students an understanding of his research information so that they can become a role models and teach others.

His keen interest in training students in interdisciplinary sciences is evident from his students’ publication records and their employment in leading research centres and in professional careers. Patil has served as a chair or co-chair for 36 graduate students and on six student committees. His students are now serving in several universities, medical institutions, federal agencies, and in industry. His guidance as an outstanding scientist has also inspired some undergraduate students to continue their education and achieve advanced degrees. He displays a very optimistic attitude in all aspects of his teaching and interaction with students. Patil’s vision is that students can always do better than they first expect with encouragement and guidance, and he is dedicated to teaching and mentoring students to achieve their full potential.

Patil was named a Fellow of ASHS in 2009.
Margaret McMahon is not afraid of trying new teaching concepts or techniques, some of her own creation, to help students learn. She brings her experience as a professional grower, researcher, and teacher into the classroom to share with the students in the hope they will learn from her experience. Her Student Evaluation of Instruction (SEI) scores are consistently at the 4.5 or higher (out of 5.0) in all categories, including: organized, created learning atmosphere, cared about learning and helping students, encouraged independent thinking, communicated subject matter clearly. Student narratives of her teaching frequently include comments such as: “she is one of the best teachers I have had in college;” “I like how she takes theory and shows how to apply it to the real world;” “her stories about her experiences as a grower help explain/make a point;” “the second chance exams really help me to learn/understand a difficult concept.”

McMahon has advised two student organizations, Pi Alpha Xi and the Landscape and Floriculture Forum, for most of her time at The Ohio State University (OSU). Her advising involves helping the students with agendas, trip planning, fundraising, and other activities. Whenever possible she accompanies the students on their trips, usually at her own expense. She has advised more than 100 undergraduate students who have completed their degrees and gone on to having successful lives.

An ASHS member since 1992, McMahon has been active in the Teaching Methods and Floriculture Working Groups. She has also served on the Graduate Student Activities and Scholarship Awards Committees, among others. She has been the chair of several ASHS committees or working groups dedicated to improving how horticulture is taught. She is also active in OFA—An Association of Horticulture Professionals, where she is involved in planning sessions for the annual Short Course for young OFA members as well as sessions for growers that highlight undergraduate education.

Since 1999 she has been the lead (sole) editor and main author of Hartmann’s Plant Science, which is used by many introductory horticulture and agronomy courses in the United States and around the world. The book was written with McMahon’s eye toward making difficult concepts understandable to the beginning student.

When OSU made the transition to semesters very recently, she was the person in the Horticulture and Crop Science Department who led the conversion. Her guidance resulted in a new curriculum that for the first time in over 20 years had horticulture (production) as an option in the major.
Warren Shafer spent 14 years at Abbott Laboratories, in both Research and Product Development scientific and management positions, working in several areas of the plant growth regulator and ag microbials businesses. During this period he served as the project leader for developing, registering, and commercializing the plant growth regulator active ingredient aminoethoxyvinylglycine (AVG) and its formulated product ReTain® on apples in the United States and several other countries.

The research, development, registration and commercialization of a successful product often is dependent upon the leadership of an individual who guides the active ingredient and formulated product through the various steps required for commercialization. Shafer was the champion behind the development and commercialization of AVG/ReTain. While the naturally occurring AVG molecule was known to be an effective ethylene biosynthesis inhibitor, its high cost prevented its development as an agrochemical product. At Abbott Laboratories, Shafer led the AVG/ReTain project team, developing AVG into a successful commercial product whose application has become a standard practice by apple growers for effective management of apple harvests, improved apple quality, and prevention of fruit drop.

Shafer earned a PhD in Horticulture, with a focus on plant physiology, from Texas A&M University. His major advisor was David Wm. Reed. A portion of his doctoral research program was conducted at the Botanical Research Institute in Munich, Germany, under the direction of Jörg Schönherr. Following completion of his PhD, Shafer spent two years conducting postdoctoral research work on pesticide spray application technology with John Bukovac at Michigan State University. Following his years at Abbott, Shafer held various R&D positions at Cargill and Rennessen. He joined Valent BioSciences in 2006 and currently is Vice President of Global R&D and Regulatory Affairs. In addition to his responsibilities at Valent BioSciences, he is a Board Member of the postharvest company Pace International, LLC.

Shafer is a past-President of the Plant Growth Regulation Society of America (PGRSA) and has also served in various administrative capacities with ASHS. He has also served as a corporate representative to the iBio Institute. Shafer is an author of 15 refereed scientific articles, 15 published meeting proceedings, and 21 published abstracts. He is also a co-inventor on six U.S. patents. In addition to being an active ASHS member, Shafer is currently a member of the American Chemical Society and the Plant Growth Regulation Society of America.

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The ASHS Outstanding Industry Scientist Award recognizes a horticultural crops scientist working in the private sector who has made outstanding and valuable contributions to horticultural science.
Craig Yencho joined the Horticulture Department at North Carolina State University in 2003, leading the Sweetpotato and Potato Breeding and Genetics Program. He has diversified an internationally recognized research group to encompass the development of tablestock, ornamental, industrial, and processing sweetpotato varieties both domestically and abroad.

Yencho’s research efforts have produced multiple programs that have directly impacted the international horticultural landscape. He works with the McKnight Foundation Collaborative Crop Research Program developing orange-fleshed varieties of sweetpotato resistant to Sweetpotato virus disease (SPV), which is a complex of Sweetpotato feathery mottle potyvirus and Sweetpotato chlorotic stunt crinivirus, for sub-Saharan Africa. When SPV is present, farmers experience 60% to 100% crop loss, potentially devastating for the local communities. Through the McKnight Foundation and the National Agricultural Research Organization National Crops Resources Unit, beta-carotene rich sweetpotato varieties with resistance to SPV and sweetpotato weevil have been released and distributed throughout Uganda, resulting in large advancements against vitamin A deficiencies and increasing food stability in the region.

Under Yencho, the NCSU Sweetpotato Program has also branched into the highly competitive world of ornamental floriculture, releasing 15 varieties of ornamental sweetpotato (OSP) since 2004, including the ‘Sweet Caroline’ and ‘Illusion’ series marketed through Proven Winners. Prior to Yencho’s research, the OSP market consisted of a few, non-patented varieties utilized by the landscaping industry. Since the release of the ‘Sweet Caroline’ series, numerous companies have begun developing their own varieties of OSP, bringing this horticultural crop to a multitude of consumers and broadening interest in sweetpotatoes as a whole. NCSU’s OSPs are now sold on four continents and include more than 10 countries.

Yencho has been an active ASHS member since 1997.

The ASHS Outstanding International Horticulturist Award recognizes an international horticulturist who has made an outstanding and valuable contribution to international horticultural science, education, research and/or outreach.
Jack Staub is internationally known for the development and application of genetic (quantitative and qualitative) traits, physiological (drought and chilling), and molecular (markers and maps) technologies leading to disease and abiotic stress resistant, high-yielding cucumber and melon germplasm; improving grower and processor profitability. His evaluation of cultural practices identified more effective and efficient production strategies, increasing yield potential via the release of 17 germplasms with disease resistance, unique growth, and novel flowering habits. He implemented and developed marker systems in Cucumis that led to the: 1) construction of genetic stocks and genomic characterization of cucumber and melon; 2) elucidation of evolutionary relationships in Cucumis and Cucurbita species; 3) first estimates of linkage marker/trait relationships [morphological traits, disease resistance loci, and yield components (QTL)] in cucumber and melon; 4) development of methodologies for germplasm diversity assessment; 5) use of molecular markers for plant variety protection in cucumber, and; 6) development and release of genetic stocks broadening the genetic base of cucumber and melon. The significance of this work is demonstrated by the successful application of marker-assisted multi-trait selection in cucumber and the only comprehensive efficacy comparisons between marker-assisted and phenotypic selection in Cucurbit species. He has also co-developed (China) the first interspecific fully fertile genetic bridge in Cucumis with the release (2011) of novel amphidiploid-(2n=38) derived inbred backcross lines (IBL; 2n=14) suitable for commercial cucumber industry hybrid development.

Staub has worked to enhance the stature of ASHS and horticulture by contributing his editorial expertise (HortScience, Plant Breeding, Journal New Seeds, and Cucurbit Genetics Cooperative Report), fulfilling numerous ASHS committee assignments (17), assisting with minority education [Society for the Advancement of Chicano and Native American in Science (SACNAS)], training 21 graduate students (16 PhD and five MS, four of which were minorities), co-chairing cross-society workshops (CSSA, one; and SACNAS, three), and administering national and international course instruction (genetics; Spain, India, China). He has also been inducted as a Fellow of a foreign academic society (China), and has published 150 refereed journals articles, four HortScience feature articles, two books, seven book chapters, 26 scientific meeting proceedings, and 42 technical bulletins.

Staub was named an ASHS Fellow in 2001 and is a two-time recipient of the ASHS Cross-Commodity Publication Award (1997 and 2012).
ASHS Publication Awards

Cross-Commodity Publication Award

Trait Diversity and Potential for Selection Indices Based on Variation Among Regionally Adapted Processing Tomato Germplasm

Education Publication Award

Gardening Increases Vegetable Consumption in School-aged Children: A Meta-analytical Synthesis
Langellotto, G.A. and A. Gupta
*HortTechnology* 22(4):430–445

Extension Publication Award

Costs of Establishing Organic Northern Highbush Blueberry: Impacts of Planting Method, Fertilization, and Mulch Type
*HortScience* 47(7):866–873

Fruit Publication Award

Comparative Studies on the Physiobiochemical, Enzymatic, and Ionic Modifications in Salt-tolerant and Salt-sensitive Citrus Rootstocks under NaCl Stress

Ornamental Publication

Simple Sequence Repeat Markers from *Cercis canadensis* Show Wide Cross-species Transfer and Use in Genetic Studies

Vegetable Publication Award

Characterization of Lateral Root Development at the Onset of Storage Root Initiation in ‘Beauregard’ Sweetpotato Adventitious Roots
Villordon, A., D. LaBonte, J. Solis, and N. Firon
*HortScience* 47(7):961–968
Janos Arnosky talks about his plans for the future.

“I was born and raised on a specialty cut flower farm in central Texas. Horticulture, especially the production of cut flowers, has always been a large part of my life. Upon coming to Texas A&M University in the fall of 2010 I decided to continue expanding my knowledge of the industry by majoring in horticulture with an emphasis in nursery and floral crop production and management. As a student, I have been actively involved with the Texas A&M Department of Horticultural Sciences. I joined the Horticulture Club my first semester at Texas A&M university, and through this club I was introduced to the American Society for Horticultural Science. I have participated in the Association of Collegiate Branches of ASHS and competed in the ACB horticulture commodity judging contest at both Southern Region and National conferences.”

“At the spring of 2012 Southern Region ASHS conference, I was elected Vice President of ACB and have served throughout the past year preparing for the 2013. I am also serving as the student representative for the Department of Horticultural Sciences at Texas A&M. This position involves attending departmental and university sponsored events in order to be one of the student faces of Texas A&M horticulture.

“I am very interested in international travel and horticulture abroad. I have spent time volunteering in Guatemala with the Borlaug Institute for International Development and I am planning to spend the fall semester studying at the Universidad San Francisco De Quito in Quito, Ecuador. While there I hope to travel the country and visit cut flower operations in order to gain a better understanding of international floriculture and how it relates to the cut flower industry in the United States. One of my ultimate goals is to use my education in order to expand the cut flower industry in Texas and the United States as a whole.”
Justin Brock says, “I have been involved with horticulture my entire life. Some of my earliest memories include gardening with my father. When I was nine, my family moved to a farm in north central Kansas, where my father taught my brothers and me the importance of a strong work ethic. When I graduated from high school, I chose to study horticulture because I liked the emphasis it places on individual plants. Today, I continue to enjoy horticulture because it provides practical applications of scientific principles.”

“Although I enjoy many areas of horticulture, my greatest interest lies in tree care. As a student in the concurrent bachelor/master horticulture program at (Kansas State University) K-State, I have begun researching vegetative propagation methods of Acer truncatum (Shantung maple) as part of my master degree. After I graduate, I believe I would enjoy a job as a climbing arborist. Ideally, my future career will include working outdoors, strong camaraderie with my co-workers, and a reputation for responsibility and integrity. I find these qualities readily available in the tree care industry.”

“As I discuss my future beyond the university, I should note that during the past year I have had a growing interest in mission work. I am a Christian, and I desire to tell those around me about my great God, regardless of whether I am at home or abroad. About a year ago, a friend of mine asked me to consider partnering with him as a missionary abroad. After much prayer and consideration, I have decided to join with him in this endeavor. The Lord has blessed me with good health and a sound mind, and I can think of no better way to use these blessings than to spread the knowledge of Him. Unless the Lord closes some doors, I am planning to go abroad after I finish my master degree.”

“The logical question, which now arises, is, How does my interest in missions affect my interest in horticulture? The Lord has given me an interest in horticulture and allowed me the opportunity to earn a master degree. He does all things for a purpose, so I believe that my work abroad will apply horticulture in some form. I look forward to seeing how He intends for me to use my skills in service to Him.”

“In conclusion, receiving a college education is a tremendous privilege, which I value highly. This scholarship will greatly aid me in paying for my education during the 2013–14 academic year. Although it is expensive to study at a university, I believe this investment will pay well in the long run because I have no doubt that horticulture will always be an important part of my life.”

This year, Brock also receives recognition as the ASHS Outstanding Undergraduate Horticulture Student at Kansas State University.
2013 ASHS Outstanding Undergraduate Horticulture Students

Normand Adams  
Virginia Polytechnic Institute & State University

Frank Balestri  
Illinois State University

Justin Bartels  
Montana State University

Benjamin Baum  
University of Florida

Justin Brock  
Kansas State University

John R. Bruce  
University of Vermont

Michael Cook  
Texas A&M University

Maria Cramer  
Delaware Valley College

Jacob Deaver  
University of Minnesota

Scott Dvorak  
University of Nebraska–Lincoln

Kevin Evenson  
Texas Tech University

Jeran Brent Guffey  
University of Tennessee
The ASHS Outstanding Horticulture Student Awards officially recognizes exceptional undergraduate horticulture students in baccalaureate programs. Students enrolled in horticulture (including pomology, olericulture, floriculture, and landscape or ornamental horticulture) or in a plant science/crop science department with an emphasis or major in horticulture are eligible.
Thank you to the following people for their efforts in making this a successful conference:

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Brian Irish
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Craig Campbell
Zhanao Deng
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Richard Heerema

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Julie Newman
Janine Hasey
Robert Polomski
Lucy Bradley
Juanita Popoene
Franz Niederholzer
Richard Heerema

Fruit Publication Award
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Thomas Walters
Rafael Socías i Company
Joshua Klein
Kathleen Anderson
Richard Bell
Rachel Elkins

Ornamentals Publication Award
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Sven Svenson
Donald Hodel
Thayne Montague
Yunsong Lai
Joseph Rothleutner
Touria Eaton
Catherine Neal

Ornamentals Publication Award
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Day-by-Day Program Schedule
Annual Conference of the American Society for Horticultural Science
July 22–25, 2013
JW Marriott Desert Springs Resort & Spa

Sunday, July 21, 2013

7:00 AM–6:30 PM  Tour Lobby
Nursery and Botanical Garden Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

7:30 AM–5:00 PM  Tour Lobby
University Garden Tour
Coordinators: Paul Siciliano, sicilian@purdue.edu
Richard A. Criley, criley@hawaii.edu

8:00 AM–5:00 PM  Tour Lobby
Citrus and Tropical Fruits Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

1:00–5:00 PM  Center & North Registration Counters
Registration Open

2:00–5:00 PM  Desert Ballroom: Salons 7-8
Exhibitor Set Up

2:00–5:00 PM  Desert Ballroom: Salons 7-8
Poster Set Up
All posters being presented at the conference must be set up on Sunday by 5:00 PM.

Monday, July 22, 2013

7:00 AM–5:00 PM  Tour Lobby
Huntington Gardens Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

7:30 AM–6:00 PM  Center & North Registration Counters
Registration Open

8:00–9:00 AM  Desert Salon 12
Undergraduate Student (UG) Working Group Business Meeting
Yessica Garcia, Chair
The UG Working Group fosters collegiality among undergraduate students in horticultural sciences.

8:00–9:00 AM  Desert Salon 9-10
Working Group Chairs and Chairs-elect Business Meeting
Presiding: Paul Bosland

8:00 AM–12:00 PM  Springs Salon D/E
NC1186: Water Management and Quality for Ornamental Crop Production and Health
Coordinator: Sarah A. White, swhite4@clemson.edu
Annual meeting of the NC1186 Multi-State Research Project. Meeting open to any scientists, whether public and private sector, extension professionals, and others who interested in contributing to a nationally based, multi-disciplinary approach to water management. Project focal areas include source water management and quality, irrigation management, runoff water management and quality, substrate and nutrition management, and pathogens and/or crop health management.

8:15–8:45 AM  Starbucks at J.W. Marriott Resort
Graduate Student Working Group Morning Gathering
Coordinator: Kristin Abney, kabney22@gmail.com
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).
William A. (“Tex”) Frazier Lecture

Back to the Future of Addressing Societal Challenges: Priorities for the Horticultural Sciences from the Local to the Global

Monday, July 22 • 10:00 AM • Springs Salon F

The American Society for Horticultural Science welcomes Sonny Ramaswamy, Director of the National Institute of Food and Agriculture at the United States Department of Agriculture (USDA–NIFA) as this year’s William A. (“Tex”) Frazier lecturer.

Ramaswamy was appointed to serve as director of the USDA’s National Institute of Food and Agriculture (NIFA) on May 7, 2012. As part of USDA’s Research, Education, and Extension mission, he oversees NIFA awards funds for a wide range of extramural research, education, and extension projects that address the needs of farmers, ranchers, and agricultural producers. Prior to joining NIFA, Ramaswamy served as dean of Oregon State University’s College of Agricultural Sciences and director of the Oregon Agricultural Experiment Station. He provided overall leadership for the college’s academic programs at the Corvallis campus and OSU programs at Eastern Oregon University in La Grande, for-credit extended education, informal education through the Agricultural Sciences and Natural Resources Extension Program, and research at OSU’s main campus and 11 branch experiment stations throughout the state.

Previously, Ramaswamy was associate dean of the Purdue University College of Agriculture and directed the university’s agricultural research programs from 2006 to 2009. Prior to joining the Purdue faculty, Ramaswamy was head of Kansas State University’s Department of Entomology from 1997 to 2006, where he held the title of Distinguished Professor and was named the Presidential Outstanding Department Head in 2002. He also served on the faculty of Mississippi State University and as a research associate at Michigan State University. As an insect physiologist, he worked on the integrative reproductive biology of insects.

Ramaswamy has received research grants from many federal agencies, including USDA, National Science Foundation, National Institutes of Health, Environmental Protection Agency, and the United States Agency for International Development, as well as from state agencies, commodity groups, and industry. He has published nearly 150 journal articles, book chapters, and a book. He has received a number of awards and honors as a scientist and department head, including being named a Fellow of the American Association for the Advancement of Science; Fellow of the Entomological Society of America; and Distinguished Graduate Alumnus of Cook College, Rutgers University.

He received a Bachelor of Science in agriculture and a Master of Science in entomology from the University of Agricultural Sciences, Bangalore, India, and his doctorate in entomology from Rutgers University. He is also a graduate of the University of Nebraska’s New Academic Chair’s Program and Harvard University’s Management Development Program.

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.”
Monday, July 22, 2013

8:30–9:30 AM                  Springs Salon F
Listening Session with the Director
Speaker: Sonny Ramaswamy, Director, National Institute of Food and Agriculture (NIFA)
This is an opportunity to ask questions of the new Director and to describe horticultural needs and opportunities as they relate to NIFA programs and potential programs. This will be an informal conversation with the Director.

8:30 AM–2:30 PM               Desert Ballroom: Salons 7-8
Exhibits Open

8:30 AM–5:00 PM               Desert Ballroom: Salons 7-8
Poster Hall Open

9:00–10:00 AM                 Springs Salon C
Growth Regulators in Fruit and Nut Production (PGR) Working Group Business Meeting
Anish Malladi, Chair; Derek D. Woolard, Chair-elect; Holly Little, Secretary
The PGR Working Group fosters excellence in plant growth regulator research; helps and encourage new research talent in plant growth regulators; and unifies research and industry workers in an attempt to solve horticultural problems related to plant growth regulator research between ASHS and other related organizations.

9:00–10:00 AM                 Desert Salon 11
Human Issues in Horticulture (HIH) Working Group Business Meeting
Cynthia Haynes, Chair
The HIH Working Group stimulates 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.

9:00–10:00 AM                 Desert Salon 3
Marketing and Economics (MKEC) Working Group Business Meeting
Jennifer Dennis, Chair; Bridget Behe, Chair-elect; Jennifer Dennis, Secretary
Objectives of the MKEC Working Group are 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.

9:00–10:00 AM                 Springs Salon A/B
Moderators Training Session
Presiding: Carl E. Sams
Overview of the processes and duties as a moderator of an oral session held during the ASHS Conference.

10:00 AM–12:00 PM             Springs Salon F
ASHS Opening Plenary Session and William A. ("Tex") Frazier Lecture
Keynote Speaker:
Sonny Ramaswamy
Director, National Institute of Food and Agriculture, U.S. Department of Agriculture, Washington, DC
Title:
Back to the Future of Addressing Societal Challenges: Priorities for the Horticultural Sciences from the Local to the Global
(See inset on previous page)
Also during the Opening Plenary Session:
ASHS 2013 Awards Ceremony
Presiding: Paul Bosland, ASHS President
Presentation of ASHS Professional Awards for 2013.

12:00–1:00 PM                 Desert Salon 3
Emeriti (EMER) Working Group Business Meeting
Blanche Dansereau, Chair; Arlie Powell, Chair-elect
The EMER Working Group provides a forum for retired horticulturists where some issues of concern to ASHS can be defined, analyzed, and acted on. The objective of this group is to establish and identify an accessible reservoir of research, extension, and teaching talent that may be called on for help and guidance. Attendees are invited to pick-up a lunch and join Emeriti members in an informal meeting.

12:00–1:00 PM                 Desert Salon 11
Organic Horticulture (ORGH) Working Group Business Meeting
Xin Zhao, Chair; Monica Ozores-Hampton Chair-elect; Bill Evans, Secretary
The ORGH Working Group aims 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.

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Monday, July 22, 2013

**Undergraduate Student Oral Competition**

**Moderator:** Yessica Garcia  
**Coordinator:** David Kopsell

**12:00–1:30 PM Desert Salon 1-2**

12:00–12:15 PM  
**A Semiyearly Study on the Effect of Light Quality on Flavor of Greenhouse Grown Tomatoes: LED Versus HPS**  
*M*Michael Dzakovich, Celina Gomez, Cary A. Mitchell

12:15–12:30 PM  
**Physiology of Solanaceous Scion and Rootstock Seedlings for Grafting in Low Temperature Storage Conditions under Low Light Intensity**  
*D*iana Vercillo, Hans Spalholz, Chieri Kubota

12:30–12:45 PM  
**Comparisons of Auxin Application Methods and Rates on Rooting of Perennial Cuttings**  
*V*ictoria Neff, Mara Grossman, John R. Freeborn, Holly L. Scoggins

12:45–1:00 PM  
**Drought Stress Tolerance Induced in Ornamental Plants through Foliar Application of Synthetic Abscisic Acid (s-ABA)**  
*A*dam Ingrao, Lauren C. Garner

1:00–1:15 PM  
**Elicitation of Physiological Stress and Kaempferol Accumulation in Soybean by Sugar Treatment**  
*A*mber Cook, Demitrius Onuaguluchi, Jeremiah Jackson, Bradly Patterson, Lindsey Gilbert, Shannon Combe, Shuba Ireland, Syed Muniruzzaman, Stephen Boue, Harish Ratnayaka

1:15–1:30 PM  
**Studying the Market Potential for Specialty Cultivars of Sunflower, Helianthus annuus, Cut Flowers**  
*K*athryn Short, Tina Waliczek Cade, Jayne M. Zajicek

**Poster Session—Floriculture**

(001) **Storage Time of Pine Wood Chip Aggregates Affects Phytotoxicity and Plant Growth**  
W. Garrett Owen, *B*rian Jackson, William C. Fonteno

(003) **Use of Plastic Trays to Reduce Irrigation Demand of Biocontainers**  
*A*ndrew Koeser, Guihong Bi, Michael R. Evans, Robert L. Geneve, Krista Jacobsen, Susmitha Nambuthiri, J. Ryan Stewart, Sarah T. Lovell

(004) **Vesicular–Arbuscular Mycorrhizae and Trichoderma Application Influenced Growth and Development of Poinsettia**  
*C*orrie P. Cotton, Fawzy M. Hashem, Lurlene E. Marsh

(005) **GA/ABA Ratio Affects Breaking Dormancy of Uncooled Herbaceous Peony**  
Yong Ha Rhie, *S*eung Youn Lee, Ju-hyun Park, Ki Sun Kim

(006) **Breeding by Interspecific Crosses and Its Bulb Production in Lilium spp.**  
SeungDeok Kim, JuHyung Kim, JongWon Lee, KiYeol Lee, Taejung Kim, Kee Yoeup Paek

(007) **Evaluation of Bioplastic-coated Fiber Containers for Greenhouse Grown Plants**  
*J*ames Schrader, Kenneth McCabe, Gowrishankar Srinivasan, David Grewell, Samy Madbouly, Michael Kessler, William Graves

(008) **Application of Thidiazuron, a Non-metabolized Compound with Cytokinin-like Activity, Improves the Quality of Potted Tulip Plants**  
Yanlong Zhang, Michael S. Reid, Cai-Zhong Jiang

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Monday, July 22, 2013

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Genetics and Germplasm**

(339) Flow Cytometry and DNA Microsatellite Analysis Detect and Identify Triploid Pyrus Cultivars
*Daeil Kim, J. Postman, April Nyberg, Nahla V. Bassil, Richard L. Bell

(340) Identification of Lettuce (*Lactuca sativa* L.) Cultivars using Newly Developed EST-SSR Markers
*Jee-Hwa Hong, Yong-Sham Kwon, Keun-Jin Choi, Doo-Hwan Kim

(341) The Verticillium Resistance 1 (*Vr1*) Gene from Cultivar La Brillante Determines Resistance in Different Lettuce Cultivars
*German Sandoya, Krishna V. Subbarao, Richard W. Michelmore, Ryan J. Hayes

(342) Development of Novel Microsatellite Markers and Construction of a Microsatellite Database Containing 288 Radish (*Raphanus sativus* L.) Commercial Cultivars in Korea
*Yong-Sham Kwon, Jee-Hwa Hong, Kyung-Mi Bae, Keun-Jin Choi

(343) Genetic Structure in a Core Subset of *Pinus massoniana* Lamb. Germplasm
Mohua Yang, Zhihui Li, Donglin Zhang, Xiaorong Tang, *Yujie Yang, Kun Shi, Qian Wang, Dangquan Zhang

(344) Genetic Relationships of *Michelia* L. Species Revealed from ISSR Markers
*Yujie Yang, Donglin Zhang, Xiaoling Jin, Mohua Yang, Jiwu Cao, Zhihui Li

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12:15–1:00 PM Desert Ballroom: Salons 7-8

**Graduate Student Poster Competition—Session 1**

Sign up at the time of abstract submission was required. Full competition schedule begins on p. 16.

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12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Human Issues in Horticulture**

(203) Determining the Effects of Mutual Interaction in Horticultural Activity on Acceptance of Children toward Children with Disabilities and Improvement of Language Capability for Children with Disabilities
*Sin-Ae Park, Kyung-Ui Lee, Ju-Hee Kim, KiCheol Son

(204) Hydroponics Program for Improving Work Adjustment Skills in Students with Mental Retardation
*Sin-Ae Park, Byung-Sik Jyu, KiCheol Son

(205) Determining Metabolic Costs of Gardening and Typical Physical Activities in Children
*Sin-Ae Park, A-Young Lee, Ho-Sang Lee, Kwan-Suk Lee, Ki-Cheol Son, Candice Shoemaker

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12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Plant Biotechnology**

(314) Purple Citrus? Utilization of Myb-related Transcription Factor Genes for Anthocyanin Production
*Manjul Dutt, T. Li Zhijian, Dennis J. Gray, Fred Gmitter, Jude W. Grosser

(315) Marker Free Plants using Bxb1-Mediated Site-specific Recombination Driven by a Seed-specific Promoter
Frank Y. Yau, Mona Easterling, *Kevin Y. Wang

(316) Clustering of Differentially Expressed Genes from Transcriptome of *Vitis flexuosa*
Soon Young Ahn, Seon Ae Kim, Seung Heui Kim, *Hae Keun Yun

(317) Gene Regulation Analysis of Alpha-linolenic Acid Metabolism in Fatty Acid Development of *Camellia oleifera* Seeds
Jiang Nan, Xiao-Feng Tan, *Donglin Zhang

(318) Characterization of Ferric Reductase Oxidase (FRO) Genes in *Populus tremula* L.
Danqiong Huang, *Wenhao Dai

(319) Expression of FER-Like Iron Deficiency-Induced Transcription Factor (FIT) in *Populus tremula* L.
Danqiong Huang, *Wenhao Dai

(320) Cloning and Characterization of a Stearoyl–Acyl Carrier Protein Desaturase Gene from Tung Tree (*Vernicia fordii*)
Lin Zhang, Min Liu, Xiao-Feng Tan, *Hongxu Long, Donglin Zhang, Qirui Wang, Zhibo Song, Baoguang Jia

(321) Assessment of Genetic Diversity of *Commiphora wightii* (Guggal) Germplasm in Rajasthan using RAPD and ISSR Markers
Priyanka Vyas, *Ramesh Joshi, M.L. Agarwal, Dilip Nandwani

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Monday, July 22, 2013

(322) Screening for Avocado Resistance to Laurel Wilt using Shoot Cuttings
  *Cristina Pisani, Mark A. Ritenour, Gloria A. Moore, Ed Stover

(323) Tomato Genotype-specific Biomarkers under Salinity Stress
  *Monther Sadder, Abdulla A. Alsadon, Mahmoud Wahb-Allah

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Postharvest


(384) Effect of Nitric Oxide, Microperforated Packages, and Ionizing Radiation on Postharvest Quality of Mango (Mangifera indica) cv. Manila
  Humberto Ramos, Sr., *Edmundo Mercado-Silva, Ma Estela Vázquez-Barrios, Eduardo Castaño-Tostado, Rosalía Reynoso-Camacho, Ramón Alvar Martinez-Peniche

  *Yan Wang, David Sugar

(386) Respiration and Quality Responses of ‘Bing’ Sweet Cherry to Different Atmospheres during Cold Storage and Shipping
  *Yan Wang, Lynn E. Long

(387) Effects of Modified Atmosphere Packaging and Irradiation on the Quality of Blueberries under Simulated Commercial Transportation and Retail Conditions
  *Jonathan Tong

(388) Effect of Preharvest Bagging and Postharvest 1-Methylecyclopene (1-MCP) Treatment on the Fruit Quality Attributes in Cold Stored ‘Gamhong’ Apple
  *Hun-Joong Kweon, Moo-Yong Park, Yang-Yik Song, Mok-Jong Kim, In-Kyu Kang, Jinwook Lee, Jinsu Lee

(389) An Objective Method to Measure the Peelability of Citrus Fruit
  *Mark A. Ritenour, Cassie Young, Macselynia Hossain, Cuifeng Hu

(390) Controlled Atmosphere Storage Reduces Deterioration Rate of Pomegranate (Punica granatum L.) Fruit
  Harwinder S. Sidhu, Dan MacLean, Smiljana Goreta Ban, Mira Radunic, Erick Smith, Anthony Bateman, *Juan Carlos Diaz-Perez

(391) A Link between Water Quality and Bacterial Growth in Christmas Tree Stands with Postharvest Needle Abscission in Balsam Fir
  Mason MacDonald, *Rajasekaran Lada

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Propagation

(324) Use of Unrooted Grafted Vegetable Cuttings: II. Shipping Trials Report
  *Mark A. Kroggel, Chieri Kubota

(325) Artificial Seeds in Asiatic Lily
  *Kedong Da, Hannah Farish-Williford, Samantha Smith, Barry Flinn

(326) Plant Regeneration and Somatic Embryogenesis in Amaryllis, Hippeastrum Hybrids, and H. papilio
  *Song Zhang, Barry Flinn

(327) Micropropagation of Four Species of Hellebore (Helleborus) and Their Commercialization
  *Song Zhang, Barry Flinn

(328) Micropropagation of Corymbia ptychocarpa
  *Yan Yang, Lijuan Jiang, Ruihui Wang, Mingliang Luo, Qiang Liu, Xiang Yin, Youping Sun

(329) Micropropagation of the Relict Genus Cercidiphyllum (Cercidiphyllaceae)
  *Craig Carlson, Todd P. West

(330) Somatic Embryogenesis of Symplocos paniculata
  *Yan Yang, Changzhu Li, Zhihui Li, Youping Sun, Lijuan Jiang, Peiwang Li, Jingzhen Chen

(331) Micropropagation of Lycium barbarum through Single Nodal Explants and Seeds from Mature Plants
  *Ronald R. Muse, Barbara D. Muse

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  Desert Ballroom: Salons 7-8

Poster Session—Vegetable Crops Management

(133) Light Source Effects on Hydroponically-grown Miniature ‘Little Gem’ Lettuce
  *Kent D. Kobayashi, Teresita D. Amore

(134) Weed Control in Okra [Abelmoschus esculentus (L). Moench] in the U.S. Virgin Islands
  *Dilip Nandwani

(135) Root-knot Nematode Damage to Low Desert Bell Pepper
  *Oli G. Bachie, Antoon Ploegg, Jose Luis Aguiar

(136) A Sampling Network for Insect Pests of Potato in the Columbia Basin of Washington and “Potato Pest Alerts”
  *Carrie H. Wohleb

(137) Field Chili and Sweet Pepper Cultivar Evaluation in Central Missouri
  Steven Kirk, *Catherine Bohnert, Sanjun Gu

(138) Watermelon Variety Evaluations in Central, Southeast, and Southwest Missouri
  *Catherine Bohnert, Nahshon Bishop, Steven Kirk, Sanjun Gu

(139) Multisite Evaluation of Pumpkin Cultivars in Missouri
  *Sanjun Gu, Catherine Bohnert, Steven Kirk, Tim Reinbott

(140) Growth and Yield Comparisons among Sweet Pepper Cultivars in South Korea
  *Jae-Keun Choi, Hyun-Taek Seo, Young-Jin Kim, Heesun Noh, Dae-Ki Hong, Sun-Bai Bang

(141) Muskmelon Production in Southern New England
  *Rebecca N. Brown, Mina Vescera

(142) Herbicide Activation with Drip Irrigation in Celery
  *Oleg Daugovish, Cameron Chandler

(143) Influence of Exogenous Uniconazole Application on Grafted Tomato Transplant Production
  Shuan Hao Teo, *Xin Zhao, Craig A. Campbell, Stephen M. Olson

12:15–1:00 PM  Desert Ballroom: Salons 7-8

Poster Session—Viticulture and Small Fruits

(108) Mow-down and Tip Pruning Management of Primocane Blackberries in Coastal California
  *Mark Gaskell, Mark Bolda, Oleg Daugovish, Anna D. Howell, Randy Long

(109) Nutrient Dynamic in Rabbiteye Blueberry (Vaccinium ashei Reade)
  *Ana Maria Castillo, Edilberto Avitia, Joel Pineda, Luis Alonso Valdez

(110) Developing a Genotyping by Sequencing Protocol for Linkage Map Construction in Black Raspberry
  *Jill M. Bushakra, Nahla Bassil, Michael Dossett, Todd Mockler, Douglas Bryant, Mary Peterson, Chad E. Finn

(111) Friend or Foe? Bacterial Nitrate and Iron Reduction in the Roots and Rhizosphere of Vaccinium corymbosum and Vaccinium arboreum
  *Gerardo H. Nunez, Carrie L. Harmon, Anne Vitoreli, Rebecca L. Darnell, James W. Olmstead

(112) Vaccinium arboreum: A Rootstock for Southern Highbush Blueberry?
  *Bruno Casamali, Rebecca L. Darnell, Jeffrey G. Williamson

(113) Fertigation with Micronized Sulfur Rapidly Reduces Soil pH in Highbush Blueberry
  *Khalid Almutairi, David R. Bryla, Rui M.A. Machado

12:15–1:00 PM  Desert Ballroom: Salons 7-8

Poster Session—Waste Utilization in Horticulture

(293) Survival and Persistence of Non-pathogenic Escherichia coli and Escherichia coli O157:H7
  *Celia D. Whyte, Corrie P. Cotton, Fawzy M. Hashem, Manan Sharma, Patricia Millner

(294) Reducing Cadmium Phytoextractability by Coal Bottom Ash

(295) Relationship of Soil Organic Matter and the Stability of Soil Carbon
  *Hyun-Moo Shin, Jeongmin Suh, Jae-Hwan Cho, Chang-Ho Hong, Jumsoon Kang, Shin-Mook Kang

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**Monday, July 22, 2013**

1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Computer Applications in Horticulture**

(181) Use of Simulation Modeling Software in Support of Container Nursery Process Improvement in the Gulf South

*Scott Langlois

(182) Ebooks: A New Platform for Extension Outreach


1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Environmental Stress Physiology**

(225) Analysis of the Purslane (*Portulaca oleracea* L.) Transcriptome under Drought Stress

*Sara Weeda, Shuxin Ren

(226) High Temperature Inhibits the Expressions of Some Genes Involved in Anthocyanin Biosynthesis in Strawberry ‘Sachinoka’ Fruit

*Takumi Sakayori, Kohei Matsusita, Takashi Ikeda

(227) Temperature Effects on Sweetpotato Growth and Development

*K.R. Reddy, Bandara Gajanayake, Mark Shankle, Ramon A. Arancibia

(228) Physiological and Biochemical Evaluation of Freezing Tolerance in Three Asparagus Cultivars in Early Spring

*Mahmoud Panjtandoust, David Wolyn

(229) Changes in Cold Hardiness, Carbohydrate Content, and β-Amylase Gene Expression of Prunus persica during Cold Acclimation and Deacclimation

*Hyunsuk Shin, Keum-Sun Kim, Youngjae Oh, Sung-II Oh, Seok Kyu Yun, Daeil Kim

(230) The Effect of Deacclimation and Reacclimation on Cold Tolerance, Carbohydrate Levels, and β-Amylase Gene Expression in *Prunus persica*

*Hyunsuk Shin, Youngjae Oh, Keum-Sun Kim, Sung-II Oh, Seok Kyu Yun, Daeil Kim

(231) Diurnal Root Zone Temperature Fluctuations Affect Strawberry Water Relations, Growth, and Fruit Quality

*Jose Antonio Gonzalez-Fuentes, Richard Y. Evans, Kenneth Shackel, Heiner Lieth

(232) Establishment on the Application Times of Foliage Spray with CaCl₂ for Water Core Reduction in Apple

*Sung-Hee Lee, Ikjej Kim, Yeu Seok Kwon, Ki Youl Lee

(233) Identification and Characterization of the Causal Agent of Gummy Stem Blight from Melon in East China

*Pingfang Li, Xingping Yang, Runsheng Ren, Jinghua Xu, Guang Liu, Xiefeng Yao

(234) Observation with a Laser and Optical Microscope for Emarginated Fruits Surface of Paprika (*Capsicum annuum* L.)

*Takashi Ikeda, *Masaya Miyanaga, Yamanaka Kumi, Takuya Kawamura

(235) Phenotypic Correlation between Yield Components and Responsive Genes under Salinity Stress for Tomato Lines

*Mahmoud Wahb-Allah, Abdulla A. Alsadon, Monther Sadder

1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Floriculture**

(009) The Effects of Tree Harvest Season and Storage Method on Plant Growth in a Pine Tree Substrate

*Brian Jackson, Robert D. Wright

(010) Development of New Integrated Biological Control Technique against Western Flower Thrips Infesting Chrysanthemum in Korea

*Eunhye Ham, Jeung Sul Han, Jun Seok Lee, Yong Seok Choi, Jong Kyun Park

(011) Optimal Postharvest Handling Procedures of *Eremurus* ‘Line Dance’ and ‘Tap Dance’

*Iftikhar Ahmad, John M. Dole, Flavia Schiappacasse, Muhammad Saleem

(012) The Effect of Growth Regulator Addition on Bulb Cultivation in Interspecific Hybrid Lilies

*SeungDeok Kim, JuHyung Kim, JongWon Lee, KiYeol Lee, Taejung Kim, Kee Yoeup Paek

(013) Harvest Time and Cold Storage Duration of *Lilium* Oriental Hybrid Bulbs Affects Their Morphological Characteristics and Sugar Contents

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*Jiseon Kim, In Sook Park, Kyung Jin Cho, Wook Oh

(014) Evaluation of Two Different Irrigation and Fertilizer Applications on Dianthus ‘Telstar™ White’ and ‘Telstar™ Red’
*Bruce Dunn

(015) Induction of Variation in the Petunia Mlo Gene for Resistance to Powdery Mildew
*Peng Jiang, Yihua Chen, Dayton Wilde

(016) Field Performance of Transplants Grown using Light-emitting Diodes (LEDs)
*Meriam Karlsson, Cameron Willingham

1:00–1:45 PM Desert Ballroom: Salons 7-8
Graduate Student Poster Competition—Session 2
Sign up at the time of abstract submission was required. Full competition schedule begins on p. 16.

Poster Session—Growth Chambers and Controlled Environments

(002) Growth and Antioxidants of Cherry Tomato Seedlings Grown under Monochromatic Light-emitting Diodes
*Eun-Young Kim, Bong-Ju Park, Myung-Min Oh

(279) The Effects of Duty Ratio and Intensity of Pulsed LED Light on Growth and Photosynthetic Rate of Lettuce Grown in a Plant Factory System
*Kyung Jin Cho, Ji Yoon Cho, In Sook Park, Jiseon Kim, Tae Jo Lim, Wook Oh

(280) Growth of Lettuce Plants Exposed to Air Anion in a Plant Factory
*Min-Jeong Song, Chung-Su Han, Myung-Min Oh

(281) Cucumber Seedlings Growth and Morphology under Supplemental Pulsed Lighting using Light-emitting Diodes
*Ricardo Hernández, Alexander Dragotakes, Chieri Kubota

(282) Blue Light-emitting Diode Treatments Act to Decrease Kale Leaf Tissue Zeaxanthin Concentrations and Non-photochemical Quenching, Thereby Demonstrating a Less Stressful Light Environment
*T. Casey Barickman, Dean A. Kopsell, Carl E. Sams

(283) Investigating the Incorporation of Microbial Probiotics in Hydroponic Lettuce Production in Ohio
*Natalie Bumgarner, Robert C. Hansen, Robert W. McMahon, Michael S. Showell, Richard Carpenter

(284) Cold Acclimation Attributes among Three Asparagus Cultivars under Controlled Conditions
*JaeJoon Kim, David Wolyn

(285) Shading Rate in Greenhouse Affects Indoor Performance under Different Light Intensity in Mentha citrata
*In Sook Park, Tae Jo Lim, Kyung Jin Cho, Jiseon Kim, Ji Yoon Cho, Wook Oh

(286) The Effects of Several Light Sources on Growth and Development in Petunia and Torenia
*In Sook Park, Tae Jo Lim, Kyung Jin Cho, Jiseon Kim, Ji Yoon Cho, Wook Oh

(287) The Effect of Low Light Intensity by Dust of Greenhouses on Tomato Productivity
*Sun Yi Lee, Joon-Kook Kwon, Kyung-Sub Park, Hyo-Gil Choi

1:00–1:45 PM Desert Ballroom: Salons 7-8
Poster Session—Local Food Systems

(059) Lead Uptake in Radish Cultivars Grown in Lead Contaminated Urban Soils
A. James Downer, *Tracey Emmerick Takeuchi, Terrance Fugimoto, Bonny Burns Whitmore

(060) It’s a SNAP! Reaching New Farmers’ Market Patrons with Community Collaboration
*Heather Friedrich, Curt R. Rom, Kathleen Ochoa

(061) Permaculture Solutions for an Urban Community Garden
*Abbey E. Piner, Lucy K. Bradley, Will E. Hooker, Julieta T. Sherk

(062) Community Building: Growing a Model Farm to School Program with Community Partnerships
Heather Friedrich, *Curt R. Rom, Samantha E. Jones, Dana Smith, Adam Simmons, Elizabeth Ashbaugh, Christina Thomas

(063) Good Agricultural and Good Handling Practices: Compliance by Everyone?
*Kurt D. Nolte, Channah M. Rock

(064) Economics of Growing Microgreens for the Local Food Market
*Gary R. Bachman, Christine Coker

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(065) Wyoming Brown and Gold Fresh Cut Sunflowers
   *Andrea R. Garfinkel, Karen Panter

(066) Evaluation of the Consumption of Fruits and Vegetables and Socio-economic Status on a Native American Reservation in Kansas
   *Pabodha G. Galgamuwe Arachchige, Candice Shoemaker, Charles Barden, Spencer D. Wood

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Nursery Crops

(039) Evaporative and Transpirational Loss from Three Nursery Container Types
   *Alison Stoven O’Connor, Anthony J. Koski, James E. Klett

(040) Production of Ligustrum japonicum in Composted Algae
   *Joseph P. Albano, James Altland

(041) Influence of Time on Measuring Container Fertility by the Pour-through Extraction
   *Winston C. Dunwell, Dwight Wolfe, Carey Grable

(042) Cyclic Irrigation Does Not Overcome Low Water Holding Capacity of Juniperus virginiana-based Substrates for Greenhouse Production of Rudbeckia
   Travis R. Carmichael, *Cheryl R. Boyer, Stuart L. Warren, Catherine C. Lavis, Jason J. Griffin

(043) Nutrient Uptake and Removal by Christmas Tree Harvest
   *Gladis Zinati, Joseph R. Heckman, Mark Vodak

(044) Comparison of Irrigation Scheduling Based on Daily Water Use or Plant Water Demand of Container-grown Woody Plants
   Susmitha Nambuthiri, *Robert L. Geneve, Amy Fulcher

(045) Impact of Container Material on Substrate Heat Buildup in an Outdoor Nursery
   Susmitha Nambuthiri, *Robert L. Geneve, Genhua Niu, Youping Sun, Guihong Bi, Rodney Thomas Fernandez, Xueni Wang

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Ornamentals/Landscape and Turf

(022) Attractive Plants for Minimally Irrigated Landscapes in Colorado
   *Ronda Koski, James E. Klett, Pat Hayward

(023) Turf Fertilization Effects on Seasonal Nitrogen Levels of Autumn Blaze™ Maple and Kentucky Bluegrass in a Mixed Urban Landscape

(024) Green Roofs from Locally-available Materials
   *Marietta Loehrlein

(025) Effects of Pre-emergent Weed Control Products on Container-grown Herbaceous Ornamentals
   *Ronda Koski, James E. Klett, Cheryl Cooley

(026) Green Roof Substrate Durability: Particle Size Distribution of Five Mature Mid-Atlantic Green Roofs
   *Whitney Gaches, John D. Lea-Cox, Steven Cohan, Andrew Ristvey, Joe Sullivan, Allen Davis

(027) A Trial Study of 11 Kordes Rose Cultivars Grown under Low Maintenance Conditions
   *Pamela Collins, Ekaterina Jeliazkova, Dennis Rowe

(028) National Ornamental Grass Trials 2013
   *Jane Rozum, Mary Hockenberry Meyer, James E. Klett

(029) Comparison of Volatile Flavor Compounds in Korean Native Chrysanthemum Leaves
   *Su Jeong Kim, Tae Joung Ha, Jung-Hwan Nam, Dong Lim Yoo, Jong Taek Suh, Ki Sun Kim

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Produce Quality, Safety, and Health Properties

(067) The Track and Scat Fresh Produce Safety Handbook for Southwest, Arizona
   *Kurt D. Nolte, Kaylee Renick, Channah M. Rock

(068) Phytosanitary Irradiation Maintains Grape Quality under Simulated Transportation and Distribution Conditions
   *Patty Kraikittikun, Anuradha Prakash

(069) Antioxidant Potentials and Inhibitory Activity of Orange & Purple Color Sweetpotatoes (Ipomoea batatas L.) toward Rat Intestinal alpha-Glucosidase using p-Nitrophenyl-alpha-D-glucopyranoside (PNP-G) as a Substrate
   *Shahidul Islam, Md. Maksud M. Hossain

(070) Decontamination of Fruit Surfaces by Combining Treatment of Infrared Radiation Heating and Ultraviolet Irradiation
   *Daisuke Hamanaka, Naoko Norimura, Noriko Baba, Morihiro Tsukazaki, Fumihiko Tanaka, Toshitaka Uchino

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(071) Characterization of Anti-proliferative and Antibacterial Properties of Sulforaphene Obtained from Radish Seeds
*Sooyeon Lim, Byung-Ho Hwang, Sang-Wook Han, Jongkee Kim

(072) Watermelon Juice Supports Recovery from Strenuous Exercise
R. Andrew Shanley, *Penelope Perkins-Veazie, David C. Nieman, Amy M. Knab

(073) Comparison of IgE Binding Capacity and Expression Analysis of Strawberry Allergen Fra a 1
Daisuke Futsuki, Takeshi Nabe, Yoko Nitta, Hiroki Tsuruta, Kiyoshi Yamazaki, Miho Iduhara, *Yuichi Uno

(074) Varietal Differences in Transcript and Protein Levels of Strawberry Allergen Fra a 1
Manabu Narukami, Daisuke Futsuki, Takeshi Nabe, Yoko Nitta, Hiroki Tsuruta, Kiyoshi Yamazaki, Miho Iduhara, Yuji Noguchi, *Yuichi Uno

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Public Horticulture

(206) Public Horticulture—Public Gardens: Is There a Career for You?
*Richard A. Criley

(207) Southern Nevada’s Outdoor Education Center
*Angela M. O’Callaghan, M.L. Robinson

(208) Visitation Survey for The Crosby Arboretum in Picayune, Mississippi
*Richelle Stafne

(209) Distribution and Characteristics of Children’s Gardens in the United States
*Min Hyeong Kwon, Chun Ho Pak, Chiwon W. Lee

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Small Fruit Breeding

(351) Parthenocarpy in Rabbiteye Blueberry (Vaccinium ashei)
*Mark Ehlenfeldt, Stephen Stringer

(352) ‘Nocturne’ Blueberry: A Winter-hardy Hexaploid Hybrid with Ornamental Fruit and Superior Quality
*Mark Ehlenfeldt, Lisa J. Rowland

(353) Impact of Interspecific Hyridization on Anthocyanin Accumulation in Blueberry Species (Vaccinium spp.)

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Vegetable Crops Management

(144) Development of an In Planta Monitoring System of Phosphorus Content in Tomato
*Shu-I Lin, Jia-Ying Lin, Mei-Lin Kuo, Hsiao-Feng Lo

(145) Prediction of Radish Growth as Affected by Nitrogen Fertilization for Spring Production
*Sang Gyu Lee, Kyung-Hwan Yeo, Yoon Ah Jang, Jun Gu Lee, Chun Woo Nam, Hee-Ju Lee, Chang Sun Choi, Young Chul Um, Chiwon W. Lee

(146) The Effects of Air Temperature on Yield and Phytochemical Content of Red Ssamchoo and Red Leaf Lettuce Grown in a Plant Factory
*Sang Gyu Lee, Chang Sun Choi, Jun Gu Lee, Yoon Ah Jang, Chun Woo Nam, Hee-Ju Lee, Kyung-Hwan Yeo, Young Chul Um, Chiwon W. Lee

(147) The Effects of Nitrogen Fertilization on Glucosinolate Concentration and Yield in 28 Cabbage Varieties
*Hunter R. Barrier, Gad G. Yousef, Jose G. Garzon, Allan F. Brown, Christopher C. Gunter

(148) Tissue Elemental Content and Growth Response of Lettuce to Hydroponic Solution Concentration Varied with Cultivar
*Jonathan N. Egilla, Rose Ogutu, Isabelle Nyirakabibi

*Gad G. Yousef, Mary A. Lila, Ivette Guzman, James R. Ballington, Allan F. Brown

*Rachel A. Itle, Tatum Branaman, Silvia R. Marino, James W. Olmstead

*Hilda Patricia Rodriguez-Armenta, James W. Olmstead


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(149) Nitrogen Use Efficiency in Processing Sweet Corn
*Charles L. Rohwer, Vincent A. Fritz, Carl J. Rosen

(150) The Influence of Abnormally High Temperatures on the Growth and Yield of Hot Pepper (*Capsicum annuum L.*)
*Jeongmin Suh, Hyun-Moo Shin, Jae-Hwan Cho, Chang-Ho Hong, Jumsoon Kang, You Heo

(151) Effect of Grafting on Roma-type Tomato Production in Southwest Florida
Monica Ozores-Hampton, *Xin Zhao

1:00–1:45 PM Desert Salon 11

eXtension (EEXT) Working Group Business Meeting
Alex Stone, Chair; Milton E. McGiffen, Jr., Chair-elect; Danielle Treadwell, Secretary
Objectives of the EEXT Working Group are to identify those individuals who are involved in eXtension Communities of Practice (CoP) and provide opportunities for collaboration and sharing of ideas and methods among CoP participants through ASHS publications and meetings.

1:00–2:00 PM Springs Salon C

Propagation (PROP) Working Group Business Meeting
Todd P. West, Chair; J. Ryan Stewart, Chair-elect
The PROP Working Group exchanges ideas and information on propagation of horticultural crops and provides interaction between industry and public institutions interested in propagation of horticultural crops.

1:00–2:45 PM Desert Salon 4-6

Oral Session—Genetics and Germplasm
*Moderator: Tomas Ayala-Silva, tomas.ayala-silva@ars.usda.gov*

1:00–1:15 PM
Mapping *Alternaria cucumerina* Resistance in *Cucumis melo*
*James Daley, Richard L. Hassell, Patrick Wechter*

1:15–1:30 PM
Open Field and High Tunnel Screening for Powdery Mildew Resistance in Strawberry Species and Cultivars in Florida
*Colleen Kennedy, Tomas Hasing, Natalia A. Peres, Vance Whitaker*

1:30–1:45 PM
Two New Promising Cultivars of Mango for Florida Conditions
*Tomas Ayala-Silva, Hamide Gubbuk, Michael Winterstein*

1:45–2:00 PM
Agronomic Performance of Several Cavendish Cultivars (*Musa* spp. AAA) under Plastic Greenhouse
Dilek Güven, *Hamide Gubbuk, Tomas Ayala-Silva

2:00–2:15 PM
Reconstructing the Domestication Pathway of Macadamia from Australia via Hawaii and California
*Craig M. Hardner, Mark Nickum, Jacqueline Batley, Ainnantul Ahmad Termizi, Cathrine Nock, Ian McConachie, Cameron Peace*

2:15–2:30 PM
Geographical Distribution of Genetic and Phenotypic Diversity of *Dirca palustris*
*Bryan J. Peterson, William Graves*

2:30–2:45 PM
Genetic Diversity of Ruth’s Golden Aster (*Pityopsis ruthii*), An Endangered Species
*Phillip A. Wadl, Denita Hadziabdic, Adam J. Dattilo, Robert N. Trigiano*

1:00–4:00 PM Desert Salon 9-10

Workshop—SCRI Project Directors
*Sponsor: USDA–NIFA*
*Moderator: Thomas A. Bewick, tbewick@csrees.usda.gov*
*Coordinator: Caroline Sherony, csherony@nifa.usda.gov*
This workshop brings together Project Directors from the USDA SCRI (Specialty Crops Research Initiative) research program to discuss their research.

1:45–3:30 PM Desert Salon 13-14

Oral Session—Viticulture and Small Fruits
*Moderator: Mercy A. Olmstead, mercy1@ufl.edu*

1:45–2:00 PM
Applications of Acadian LSC™, a Commercial Extract of *Ascophyllum nodosum* Increase Yield and Improve Uniformity in ‘Pinot Noir’ Wine Grapes
*Holly Little, Annalisa Williams*

2:00–2:15 PM
Mechanical Canopy Management Reduces Labor Costs and Maintains Fruit Composition in ‘Cabernet
An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
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Sauvignon’ Grape Production
*S. Kaan Kurtural, Geoffrey Dervishian

2:15–2:30 PM
Training Systems for Hybrid Winegrapes in Subtropical Climates
*Mercy A. Olmstead

2:30–2:45 PM
The Effect of Root Restriction on Nitrogen Levels and Gene Expression Regulating Nitrate Reduction and Ammonium Assimilation in Grapevines (Vitis vinifera L. × Vitis labrusca L.)
Xiuming Yu, Bo Wang, Jiefa Li, Jianjun He, Lei Wang, Caixi Zhang, Wenping Xu, *Shiping Wang

2:45–3:00 PM
Vine-row Groundcover Management Affects Pruning and Cluster Weights, Petiole C and N Content, and N Leachate in a New York Vineyard
*Ian A. Merwin, Rebecca Sirianni, Justine Vanden Heuvel, Michael Brown

3:00–3:15 PM
Pruning Systems and Canopy Management Practice Interact on ‘Syrah’ Yield and Fruit Composition
*S. Kaan Kurtural

3:15–3:30 PM
Mechanical Canopy and Crop Load Management of Pinot Gris in a Warm Climate
*S. Kaan Kurtural, Joseph Geller

1:45–3:45 PM Desert Salon 1-2

Workshop—Ten Great Ideas for Your Master Gardener/Consumer Horticulture Program

Sponsor: Consumer Horticulture/Master Gardeners Working Group
Moderator: Pamela J. Bennett, bennett.27@cfaes.osu.edu
Coordinator: Ellen Bauske, ebauske@uga.edu

Participants will learn successful ideas from their colleagues that have been utilized in Master Gardener volunteer and consumer horticulture programs. The goal for this fast-paced workshop is for participants to take home at least 10 ideas that they can use in their programs. Presenters will share their innovative programs, social media and project management strategies, and other tips that have led to successful programs and impact in their community. Come prepared to take notes, discuss, and learn how to improve your program. There will also be an opportunity for participants to share and discuss projects and challenges.

Workshop—Contributions of Luther Burbank: Plant Breeding Artist and Legend

Sponsor: History of Horticultural Science Working Group
Coordinators: Jules Janick, janick@purdue.edu; David Karp, dkarp@sprintmail.com

The objectives of this workshop are to: 1) honor Luther Burbank, legendary plant breeder and horticulturist; 2) examine the contributions and present fate of Luther Burbank’s creations; and 3) emphasize the role of artistry and horticulture in plant breeding.

1:45–2:05 PM
Luther Burbank: Plant Breeding Artist, Horticulturist, and Legend
*Jules Janick

2:05–2:20 PM
Russet Burbank: No Ordinary Potato
*Charles R. Brown

2:20–2:35 PM
A Vast Array of Beauty: The Accomplishments of the Father of American Ornamental Plant Breeding, Luther Burbank
Neil O. Anderson, Richard T. Olsen

2:35–2:50 PM
Luther Burbank’s Plums
*David A. Karp

2:50–3:05 PM
21st Century Approach to Improving Burbank’s ‘Stoneless’ Plum
*Ann Callahan, Chris Dardick, Ralph Scorza

3:05–3:20 PM
Luther Burbank’s Contributions to Walnuts
*John Preece, Gale H. McGranahan

3:20–3:35 PM
Luther Burbank’s Berries
*Kim E. Hummer, Chad E. Finn, Michael Dossett

3:35–3:45 PM
Discussion

1:45–3:45 PM Springs Salon A/B

Workshop—How to Get in (and Succeed in) Graduate School
Undergraduate and Graduate Student Sponsored Activity
Coordinator: Kristin Abney, kabney22@gmail.com

The objectives of this workshop are to understand the interview and application process of applying to graduate school as well as how to pick a mentor and foster a good working relationship.
Monday, July 22, 2013

2:00–3:00 PM Desert Salon 3

*Journal of the ASHS* Editorial Board Meeting
Neal E. De Vos, *Editor in Chief*; Ed Etcheberria; Paul Bosland; John A. Juvik; Robert N. Trigiano

2:00–3:00 PM Springs Salon C

Floriculture (FLOR) Working Group Business Meeting
Paul Thomas, *Chair*; Kimberly Moore, *Chair-elect*

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

2:00–3:00 PM Desert Salon 11

Public Horticulture (PUBHORT) Working Group Business Meeting
Susan Hamilton, *Chair*; Carolyn Robinson, *Chair-elect*

The PUBHORT Working Group provides 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.

2:00–6:00 PM Springs Salon F

Colloquium—Advances and Critical Issues in Breeding Cultivars for Organic Cropping Systems and Developing Methods of Organic Seed Production
*Sponsor:* Organic Horticulture Working Group
*Coordinators:* Xin Zhao, zxin@ufl.edu; Erin Silva, emsilva@wisc.edu

The objective of this colloquium is to bring together researchers across the U.S. conducting cultivar development for organic systems, organic cultivar trialing, and organic seed research, allowing for the dissemination of information and the opportunity to forge new research directions and collaborations.

2:00–6:00 PM Tour Lobby

Palm Spring Aerial Tram Tour

3:00–4:00 PM Desert Salon 3

*HortTechnology* Editorial Board Meeting
Neal E. De Vos, *Editor in Chief*; Robert E. Lyons; Virginia I. Lohr; George J. Hochmuth, II; Michael A. Arnold

3:00–4:00 PM Desert Salon 11

Growth Chambers and Controlled Environments (CE) Working Group Business Meeting
Gioia D. Massa, *Chair*; Marc van Iersel, *Chair-elect*; Dean Kopsell, *Secretary*

The CE Working Group provides leadership for horticulturists in the use of growth chambers and controlled environments and provides a means for cooperative research and teaching among those using or interested in such facilities in their programs.

3:00–4:00 PM Springs Salon C

Ornamentals/Landscape and Turf (O/LT) Working Group Business Meeting
Joseph Rothleutner, *Chair*

Objectives of the O/LT Working Group are 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.

3:00–4:45 PM Desert Salon 4-6

Oral Session—Postharvest
*Moderator:* Bruce D. Whitaker, Bruce.Whitaker@ars.usda.gov

3:00–3:15 PM

Strawberry Flavor: Diverse Chemical Compositions, a Seasonal Influence, and Their Effect on Sensory Perception
*Michael L. Schwieterman, Thomas A. Colquhoun, Elizabeth A. Jaworski, Linda Bartoshuk, Charles A. Sims, Vance Whitaker, David G. Clark*

3:15–3:30 PM

Development of Tomato Aroma Profiles during Low Temperature Storage in Air or CA and Recovery during Shelf Life
*Angelos I. Deltsidis, Eleni D. Pliakoni, Elizabeth Baldwin, Jinhe Bai, Anne Plotto, Jeffrey K. Brecht*

3:30–3:45 PM

Metabolomics Combined with Standard Quality Measures of ‘Honeycrisp’ Apple Fruit Reveals Aspects of Metabolism Related to Flavor, Crispness, Maturity, and Storability
*Rachel Leisso, David Buchanan, Janie Countryman, Chris Sater, Christopher B. Watkins, James Mattheis, David R. Rudell*

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Monday, July 22, 2013

3:45–4:00 PM
Transcriptome Analysis of European Pears (Pyrus communis cv. Bartlett) Reveals Significant Gene Families and Co-expressed Genes Associated with Development of Ripening Capacity by Temperature Conditioning
*Ngoc Nham, Cai-Zhong Jiang, Trisha Kietikul, Andrew J. Macnish, Elizabeth J. Mitcham

4:00–4:15 PM
Lipoxygenase and Apple Aroma: Gene Expression of Lipoxygenase Family Members in Apple Peel
*Carolina Contreras, Randolph Beaudry

4:15–4:30 PM
Effect of Postharvest Treatments on Volatiles in ‘Rio Red’ Grapefruit Juice
*Priyanka R. Chaudhary, G.K. Jayaprakasha, Bhimanagouda S. Patil

4:30–4:45 PM
Phospholipase Dα Activity in Mesocarp Tissues from Fruit of Cucumis melo L. Reticulatus and Inodorus Cultivars
*Bruce D. Whitaker, Gene E. Lester, John L. Jifon, Miguel A. Gomez-Lim

4:00–5:00 PM Desert Salon 3
Fellows Screening Committee Meeting
Robert E. Lyons, Chair; Michael Wisniewski; Chad E. Finn; Emily Hoover; Caula Beyl; Penelope Perkins-Veazie; Tim Davis; Bruce Schaffer; Scott NeSmith; Paul Bosland

4:00–5:00 PM Springs Salon C
Fruit Breeding (FRBR) Working Group Business Meeting
Vance M. Whitaker, Chair; Danny Barney, Chair-elect; James W. Olmstead, Secretary
The FRBR Working Group promotes and coordinates research efforts in the genetics and breeding of fruit crops.

4:00–5:00 PM Desert Salon 12
History of Horticultural Science (HIST) Working Group Business Meeting
Jules Janick, Chair; David Karp, Secretary
The HIST Working Group exchanges information and promotes interest in the history of horticultural technology and science.

4:00–5:00 PM Desert Salon 11
Plant Biotechnology (BTCH) Working Group Business Meeting
Kevin Folta, Chair
The BTCH Working Group’s goals are 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, plant growth, and development on problems of concern in improvement and propagation of horticultural crops.

4:00–6:00 PM Directors Suite VI
SRASHS Executive Committee Meeting
Coordinator: David W. Reed

4:00–6:00 PM Desert Ballroom: Salons 7-8
Undergraduate Poster Competition
Please plan to be present for the entire poster competition session.

(193) The Inheritance of Plant and Flower Traits in Rose
*Sarah E. Jones, David H. Byrne

(194) Phylloquinone (Vitamin K) Variation, QTL Identification, and the Correlation with Carotenoids in Broccoli (Brassica oleracea var. italica)
*Kamilla Korsvold, Ivette Guzman, Robert Byrd, Gad G. Yousef, Allan F. Brown

(195) Microshoot Proliferation of Geranium magniflorum ‘La Veta Lace’
*Abigail R. Debner, John Murgel, Todd P. West

(196) Stem-Water Potential Reading Variability in Olive (Olea europaea)

(197) Persistence of Urea in a Coastal Plain Soil: An Incubation Study
*I. Bottone, L.C. Kibet, Arthur Allen, Lurline E. Marsh, Fawzy M. Hashem, Eric May, Ray Bryant

(198) Free Radical Scavenging Activities of Marrs Sweet Oranges
*Shreyas Kommein, Bhimanagouda S. Patil

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Monday, July 22, 2013

(199) Changes of Anthocyanin and Carotenoid Concentration in Purple Color Paprika Fruit during Ripening
*Kumi Yamanaka, Masayoshi Nakayama, Manami Akai, Takashi Ikeda

(200) Waste Wool, Cocoa Hulls, and Clover as Organic Mulch Alternatives in Tomato Production
*Whitney Garton, Sven Verlinden, Renee Conneway

(201) Secondary Shoot Proliferation in Hosta ‘Honeybells’ and the Isolation Plantlets Free of Hosta Virus X
*Joel Z. Sehloff, Ben E. Lockhart, Ryan Grajkowski, David C. Zlesak

(202) Commercial Food Grade Cinnamon Products Inhibit Mycelia Growth of Four Fungi In Vitro
*Shane Walsh, Charles E. Johnson

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4:00–6:00 PM Desert Salon 1-2

Workshop—How Public Policy Engagement Helps Horticultural Scientists

*Sponsor: National Issues Task Force
*Coordinator: Thomas Björkman, tnb1@cornell.edu

This workshop will have an update on ASHS’ participation in the action regarding the new Farm Bill, budget stalemates, and the next steps.

4:00–4:15 PM
How Public Policy Will Help Horticultural Scientists

4:15–4:30 PM
ASHS’ Impact on Washington Decision Makers
*Jonathan Moore, Thomas Björkman

4:30–4:45 PM
Engaging Congressional Staff
*Rebekah Rodriguez-Lynn, Thomas Björkman

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4:00–6:00 PM Desert Salon 13-14

Workshop—Sustainable Production of Essential Oils

*Sponsor: Herbs Spices and Medicinal Plants Working Group
*Moderator: Valtcho D. Jeliazkov, valtcho.pubs@gmail.com
*Coordinator: Lyle E. Craker, craker@pssci.umass.edu

The United States is a major producer of peppermint and spearmint essential oils. U.S. peppermint oil is considered to be a quality standard for peppermint oils in the international market. Recent research has shown feasibility for other species to be developed as essential oil crops for the United States. The objective of this workshop is to bring together researchers and industry representatives to share knowledge and outline future directions for research and development.

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4:00–6:00 PM Springs Salon D/E

Workshop—What Happens When Your Growth Chamber Lighting or Controls Become Obsolete? Retrofitting Growth Chambers to Improve Performance

*Sponsor: Growth Chambers and Controlled Environments Working Group
*Moderator: Marc van Iersel, mvanier@uga.edu
*Coordinator: Gioia D. Massa, gioia.massa@nasa.gov

This workshop provides an overview of the procedures to upgrade older growth chambers and inform the horticulture community on options that are available.

4:00–4:15 PM
Lighting Options for Growth Chambers
*Jacob A. Nelson

4:15–4:30 PM
General Growth Chamber Lighting Obsolescence
*Reg Quiring

4:30–4:45 PM
Upgrading a Plant Growth Chamber Controller
*Marc Theroux

4:45–5:00 PM
Retrofitting Growth Chambers for Improved Intensity, Efficiency, Uniformity, and Spectral Characteristics
*Richard Tuck

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4:00–6:00 PM Springs Salon A/B

Workshop—eXtension/Ecampus/On Campus: Synergies in Curriculum Development

*Sponsor: eXtension Working Group
*Coordinator: Alexandra Stone, stonea@hort.oregonstate.edu

This workshop will explore how eXtension Communities of Practice are developing curricula and educational resources to train current and future agricultural professionals through eXtension’s Moodle campus, on campus, Ecampus, and other educational venues.

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Monday, July 22, 2013

4:00–4:15 PM
Eviticulture as a Tool for Educating Future Grape Industry Professionals through Traditional and Nontraditional Teaching
*Patricia A. Skinkis, Eric Stafne, Chris Lake

4:15–4:30 PM
Developing Topic Groups into Curriculum for Crop Improvement: Evolution of the Plant Breeding and Genomics Community of Practice
*David Francis, Shawn Yarnes, John McQueen, Barbara E. Liedl, Michael Coe

4:30–4:45 PM
Development of Technical Training and Support for Agricultural Service Providers and Farmers in Certified Organic Dairy Production Systems through eOrganic
*Cindy Daley, Heather Darby, Sarah Flack, Audrey Denney, Debra Heleba

4:45–5:00 PM
Problem- and Planning-based Learning in Organic and Ecological Agroecosystems: An Eorganic and OSU Ecampus Partnership
*Alexandra Stone, Anita Azarenko, Helen Atthowe

5:00–5:15 PM
Assessment of Degradable Alternatives for Plastic Mulch for Organic Tomato (Solanum lycopersicum) Production in the Southeast
Jeffrey T. Martin, *Annette L. Wszelaki

5:15–5:30 PM
Organic Habanero Pepper (Capsicum chinense): Effect of Intercropping Marigold (Tagetes erecta) and Mulching with Sawdust on Controlling the White Fly (Bemisia tabaci) and Root-knot Nematodes (Meloidogyne spp.)
*Roland Ebel

5:30–5:45 PM
Fall Broccoli Production following Summer Cover Crops in Louisiana
*Carl E. Motsenbocker, Robert Williams, William B. Evans, Rao S. Mentreddy, Girish Kumar Panicker

5:45–6:00 PM
The Effect of Beauveria bassiana on Parasite Fauna of Organic Habanero Pepper in Quintana Roo, Mexico
*María de Jesús Méndez-Aguilar, *Roland Ebel

5:00–6:00 PM Desert Salon 3
Education Division Advisory Council Meeting
Anita Azarenko (Education Division Vice President), Chair; David W. Reed (Past Education Division Vice President); all Working Group Chairs and Chairs-elect, Education Division

5:00–6:00 PM Desert Salon 12
Scholarship Awards Committee Meeting
Lurline E. Marsh Chair; Richelle Stafne; Cathie Lavis; Ajay Nair; Allan Brown; Michelle Leinfelder-Miles; David Hensley

5:00–6:00 PM Springs Salon C
Viticulture and Small Fruits (VSF) Working Group Business Meeting
James W. Olmstead, Chair; Nahla Bassil, Chair-elect; Rebecca Harbut, Secretary

This Working Group studies 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 exchanges current information on recent research findings and educational and industry problems.

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5:00–6:30 PM Desert Salon 4-6

Oral Session—Vegetable Breeding

Moderator: Charles L. Rohwer

5:00–5:15 PM
Initiating a Hop Breeding Program at the University of Minnesota
*Charles L. Rohwer, John R. Thull, Vincent A. Fritz

5:15–5:30 PM
Regional Hybrid Broccoli Trials Provide a Means to Further Breeding Efforts of This Increasingly Important Vegetable Crop
*Mark W. Farnham, Phillip Griffiths, Jeanine M. Davis, Mark Hutton, Wythe Morris, Carl E. Sams, Dean A. Kopsell, Thomas Björkman

5:30–5:45 PM
Estimating Heritability of Skinning Resistance in Sweetpotato
*Reeve Legendre, Don LaBonte, Ramon A. Arancibia

5:45–6:00 PM
Host Plant Resistance to Cucurbit Yellow Stunting Disorder Virus and Bemisia Tabaci in Melon: Status and Prospects
*James D. McCreight, William M. Wintermantel, Eric T. Natwick

6:00–6:15 PM
Cucurbit Powdery Mildew Race Variation on Melon in California’s Sacramento Valley
*James D. McCreight

6:15–6:30 PM
Screening for Bacterial Fruit Blotch Resistance in the USDA Watermelon Germplasm Collection
*Shen Ma, Todd C. Wehner

6:00–6:30 PM Desert Salon 3

Research Division Advisory Council Meeting

John D. Lea-Cox (Research Division Vice President), Chair; Rebecca L. Darnell (Past Research Division Vice President); all Working Group Chairs and Chairs-elect, Research Division

6:30–7:30 PM Springs Patio

Welcome Reception

Tuesday, July 23, 2013

7:00–8:00 AM Tour Lobby

Golf Course and Irrigation Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

7:00–9:00 AM Springs Salon F

Horticultural Commodity Judging Contest and Plant Identification Contest Set-up

7:30 AM–5:00 PM Center & North Registration Counters

Registration Open

8:00–9:00 AM Desert Salon 11

Root Growth and Rhizosphere Dynamics (RHIZ) Working Group Business Meeting

R. Paul Schreiner, Chair; Xin Zhao, Chair-elect
The RHIZ Working Group provides 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.

8:00–9:00 AM Springs Salon C

Seed and Stand Establishment (SSEST) Working Group Business Meeting

Dharmalingam Pitchay, Chair; Juan Carlos Diaz Perez, Chair-elect
The SSEST Working Group brings 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. The group promotes a strong union of public- and private-sector workers interested in seeds and seed crops and promotes 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, transplanting techniques, and other practices that might lead to stand enhancement in the field or greenhouse.

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8:00–9:15 AM Springs Salon A/B

**Oral Session—Growth Chambers and Controlled Environments**

*Moderator: Jiwan P. Palta, jppalta@wisc.edu*

8:00–8:15 AM
Shoot Tissue Pigment Concentrations in Broccoli Microgreens Are Higher under Narrow-Band Wavelengths from LEDs than under Fluorescent/Incandescent Light
*Dean A. Kopsell, Carl E. Sams, Robert C. Morrow*

8:15–8:30 AM
Glucosinolate Concentrations of Broccoli Microgreens Are Greater under Specific Narrow Wavelength LED Light Regimes than under Conventional Fluorescent/Incandescent Light in Controlled Environments
*Carl E. Sams, Dean A Kopsell, Robert C. Morrow*

8:30–8:45 AM
Comparison of LED Supplemental Lighting and High Pressure Sodium Energy Consumption and Plant Responses of Cucumber and Tomato Transplants
*Ricardo Hernández, Chieri Kubota*

8:45–9:00 AM
Comparison of Light-emitting Diode Towers Versus High-pressure Sodium Lamps for Year-round Production of High-wire Greenhouse-grown Tomatoes
*Celina Gomez, Cary A. Mitchell*

9:00–9:15 AM
Oedema/Intumescence Injury on the Leaves of Potato Plants Is Mitigated by Calcium Nutrition
*Jiwan P. Palta, Justin E. Schabow*

8:00–9:45 AM Springs Salon D/E

**Oral Session—Ornamental Plant Breeding**

*Moderator: Michele Scheiber, mscheiber@novaflora.com*

8:00–8:15 AM
Historical Significance of Rhododendron Development in Louisiana
*Allen D. Owings, Edward W. Bush*

8:15–8:30 AM
The Ornamental Plant Trialing Program at Star Roses and Plants
*Michele Scheiber, Michael Dobres*

8:30–8:45 AM
Breeding Lance-leaved Caladiums
*Zhanao Deng*

8:45–9:00 AM
Improved Floral Characteristics of Tetraploid Stephanotis
*Kenneth Leonhardt, Susana D. Vanzie-Canton*

9:00–9:15 AM
Autotetraploid Induced Sterility in the Pink and White Shower Tree
*Ken W. Leonhardt*

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9:15–9:30 AM
The Female Fertility of Triploids in Lilium Euploid and 5-Same-Genomes of Endosperm are of Ensence
*Shujun Zhou

9:30–9:45 AM
Genetic and Phenotypic Characterization of Oriental Lilies Transformed with Genes of Herbicide Tolerance and Flavonoid Biosynthesis
Soo Jung Hyun, Sun Kim, Young Sook Ryu,
*Byung Joon Ahn

8:00–9:45 AM Desert Salon 9-10
Oral Session—Postharvest
Moderator: Yan Wang, yan.wang@oregonstate.edu

8:00–8:15 AM
Development of Novel, Antimicrobial Plant Essential Oil Treatments to Reduce the Postharvest Incidence of Botrytis cinerea on Strawberries
*Ryan Brantley, J. Wyatt Brown

8:15–8:30 AM
The Importance of Leaf Maturity to Shelf-life and Quality of Fresh-cut Kale Stored at Two Temperatures
*Karin Albornoz, Marita I. Cantwell

8:30–8:45 AM
Real World Evaluation of Packaging Strategies and SO₂ Fumigation for Shipment of Blueberry Fruit from Chile to North America
*Randolph Beaudry, Claudia Moggia, Gustavo Lobos, Jorge Retamales, Carolina Bravo

8:45–9:00 AM
The Effects of Low Oxygen on Chlorophyll and Glycoalkaloid Concentrations in Potato Tubers
*Hsueh-yuan Chang, Marita I. Cantwell

9:00–9:15 AM
Firmness and Quality Changes in Broccoli Due to Dehydration and Hydration
*Anderson Martins Melo, Marita I. Cantwell

9:15–9:30 AM
Evaluation of the Impact of Hot Water Treatment on the Antioxidant System of Fresh Tomatoes in Chilling and Non-chilling Storage
*Francisco Loayza, Amarat Simonne, Elizabeth Baldwin, Jeffrey K. Brecht

9:30–9:45 AM
Extending Storage Life and Ensuring Arrival Quality of ‘Bartlett’ Pears after Long-distance Export by Maintaining Cold Chain and MA Chain
*Francisco Loayza, Amare Simonne, Efiez Baldwin, Jeffrey K. Brecht

*Yan Wang, David Sugar

8:00–10:00 AM Springs Ballroom Salons J-L
Extension & Industry Division Breakfast
Presiding: Jeffrey Norrie, jnorrie@acadian.ca; Gary Bachman, gbachman@ext.msstate.edu
(Preregistration and prepayment required.)

8:00–10:00 AM Desert Salon 3
International Division Advisory Council Meeting
Esmaeil “Essie” Fallahi (International Division Vice President), Chair: Diane Doud Miller, (Past International Division Vice President); all Working Group Chairs and Chairs-elect, International Division

8:00–10:00 AM Desert Salon 13-14
Oral Session—SCRI-MINDS Water Utilization and Management
Moderator: Olyssa Starry, olyssa@gmail.com

8:00–8:15 AM
Hydraulic Properties of Peat-based Substrates: The Importance of Hydraulic Conductance
*Marc van Iersel, Sue Dove, James S. Owen, Jr.

8:15–8:30 AM
Control of Poinsettia Stem Elongation: Height Limits using Deficit Irrigation
*Peter Alem, Paul Thomas, Marc van Iersel

8:30–8:45 AM
Subirrigation Controlled by Capacitance Sensors for Citrus Rootstock Production
*Rhuanito Soranz Ferrarezi, Maycon Diego Ribeiro, Marc van Iersel, Roberto Testezlaf

8:45–9:00 AM
Estimation of Green Roof Stormwater Efficiency using Sensor-informed Models
*Olyssa Starry, Andrew Ristvey, Steven Cohan, John D. Lea-Cox

9:00–9:15 AM
Effects of Water Availability and Temperature on CAM Expression and Water Use Efficiency by Sedum album and Sedum kamtschaticum
*Olyssa Starry, Jongyoun Kim, Sue Dove, Marc van Iersel, John D. Lea-Cox

9:15–9:30 AM
Carbon and Water Flux Responses to Physiology by

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
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Environment Interactions: A Sensitivity Analysis of Climate Impacts on Biophysical Model Parameters
William L. Bauerle, Alex B. Daniels, Dave M. Barnard
9:30–9:45 AM
Implementing Substrate Moisture Set-point Irrigation Control in Cut-flower Greenhouse Production
Jongyun Kim, Bruk E. Belayneh, John D. Lea-Cox
9:45–10:00 AM
The Costs and Benefits of Sensor Networks for a Cut-flower Greenhouse Operation
John Majsztrik, Erik Lichtenberg, Monica Saavedra

Colloquium—Integrated Pest Management for Vegetable Crops in the Tropics

Sponsor: Tropical Horticulture Crops Working Group
Moderator: Rangaswamy Muniappan, rmuni@vt.edu
Coordinators: Ricky Bates, mb30@psu.edu; Rangaswamy Muniappan, rmuni@vt.edu
This meeting will provide an opportunity to learn how an international, multidisciplinary group of specialists helps farmers grow healthier vegetable crops via IPM components and packages in different tropical regions of the world. We’ve developed a program featuring a group of speakers who will present their work on IPM package development and implementation.

Whitewater Preserve & Wind Farms Tour

8:15–8:45 AM
Starbucks at J.W Marriott Resort

Graduate Student Working Group Morning Gathering
Coordinator: Kristin Abney, kabby22@gmail.com
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).

Exhibits Open

8:30 AM–2:30 PM
Desert Ballroom: Salons 7-8

Poster Hall Open

9:00–10:00 AM
Bioenergy (BioE) Working Group Business Meeting

Wagner Vendrame Chair; Thomas Ranney, Chair-elect
The BioE Working Group provides a platform for promoting and expanding the opportunities to apply expertise and technologies of horticulture to bioenergy crops and for sharing and disseminating information related to bioenergy research and expanded funding potential.

Nursery Crops (NUR) Working Group Business Meeting

Cheryl R. Boyer, Chair; John Majsztrik, Chair-elect; Brian Jackson, Secretary
Objectives of the NUR Working Group are to: identify those conducting nursery crop research and to ascertain the scope and direction of their studies; develop and share information for teaching nursery management and production courses; and provide staff development opportunities for nursery crop specialists, teachers, and researchers by developing information programs and interacting with the nursery industry and profession.

Vegetable Breeding (VGBR) Working Group Business Meeting

Mark Farnham, Chair; Michael Mazourek, Chair-elect; Kevin M. Crosby, Secretary
The VGBR Working Group promotes the exchange of information on breeding procedures, screening techniques, and other areas of specific interest to vegetable breeders; encourages the exchange of germplasm among vegetable breeders; and maintains current lists of vegetable variety names and descriptions.

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 from 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.

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9:00 AM–12:00 PM Directors Suite VI

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

9:45–10:15 AM Desert Ballroom: Salons 7-8

**Break**

9:45–11:45 AM Springs Salon A/B

**Oral Session—Floriculture**

*Moderator: James E. Barrett, jbarrett@ufl.edu*

9:45–10:00 AM

Effects of Nitrogen Rates on Plant Performance and Nutrient Content in Reblooming Iris  
* Xiaojie Zhao, Guihong Bi, Richard L. Harkess

10:00–10:15 AM

Changes in Nitrogen Partitioning to Inflorescence and Pseudobulbs during Various Growth Stages of *Oncidium* ‘Gower Ramsey’  
* Yao-Chien Alex Chang, Yi-Ai Kuo

10:15–10:30 AM

Factors Affecting the Efficacy of Dikegulac Sodium on Poinsettias  
* James E. Barrett, Carolyn A. Bartuska, Robert F. Weidman

10:30–10:45 AM

Paclobutrazol and Ancymidol Lower Water Use of Potted Ornamental Plants and Plugs  
* Ifitkhar Ahmad, Brian E. Whipker, John M. Dole, Ingram McCall

10:45–11:00 AM

Reducing Evapotranspiration of Pansies: Efficacy and Duration of ABA and ABA-analog Spray Applications  
* Geoffrey Weaver, Marc van Iersel

11:00–11:15 AM

Optimal Postharvest Handling Protocols for *Antirrhinum majus* ‘Chantilly Yellow’ and Celosia Cristata ‘Fire Chief’  
* Ifitkhar Ahmad, John M. Dole, Frank A. Blazich

11:15–11:30 AM

Determining the Effectiveness of Red and Blue Light-Emitting Diodes as Supplemental Lighting during Seedling (plug) Propagation

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10:00–11:00 AM Springs Salon C

**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*.

10:00–11:15 AM Springs Salon D/E

**Oral Session—Bioenergy**

*Moderator: John L. Jifon, jljifon@ag.tamu.edu*

10:00–10:15 AM

High-throughput Quality Characterization of Warm Season Lignocellulosic Feedstocks  
* John L. Jifon, Jorge da Silva, Gerleene Acuna, Nael El-Hout

10:15–10:30 AM

Phenotypic Diversity of *Jatropha curcas* L. Accessions under Warm Subtropical Conditions  
* Silvia Nietsche, Wagner Vendrame, Jonathan H. Crane, Marlon C.T. Pereira, Sidnei Reis

10:30–10:45 AM

Differential Gene Expression in *Jatropha curcas* in Vitro Cultures Exposed to Microgravity  
* Wagner Vendrame, Ania Pinares

10:45–11:00 AM

Elevated Salinity in Irrigation Water Reduced Growth of *Ricinus communis* L. Cultivars  
* Youping Sun, Genhua Niu, Pedro Osuna

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11:00–11:15 AM
Effects of Implementing Psi-light on Hydrogen Production via Biophotolysis in *Chlamydomonas reinhardtii* Mutant Strains
*Daniel Johnson, Joel L. Cuello, Takanori Hoshino

10:15 AM–12:15 PM Desert Salon 13-14

**Workshop—Consumer Research on Sustainability**

*Sponsor: Marketing and Economics Working Group
*Coordinator: Bridget K. Behe, behe@msu.edu

The workshop will convey timely research information on consumer studies involving sustainability related to horticultural products, services, and experiences

10:15–10:30 AM
Consumer Perceptions of Sustainability
*Bridge K. Behe, Ben Campbell, Charles R. Hall, Hayk Khachatryan, Jennifer Dennis

10:30–10:45 AM
Plant Container Preferences for North American Consumers
Ben Campbell, Bridget K. Behe, *Jennifer Dennis, Charles R. Hall, Hayk Khachatryan

10:45–11:00 AM
Consumer Perspectives on Local, Organic, and Sustainable Terms
*Ben Campbell, Bridget K. Behe, Charles R. Hall, Hayk Khachatryan, Jennifer Dennis

11:00–11:15 AM
Environmental Incentives and Willingness to Pay Price Premiums for Environmentally-friendly Plant Attributes
*Hayk Khachatryan, Ben Campbell, Bridget K. Behe, Charles R. Hall, Jennifer Dennis

11:15–11:30 AM
The Use of Smartphone Technologies to Access Gardening Information
*Charles R. Hall, Bridget K. Behe, Ben Campbell, Jennifer Dennis, Hayk Khachatryan

10:15 AM–12:15 PM Desert Salon 9-10

**Workshop—Perspectives on Building Strong University–Industry Research Relationships**

*Sponsor: Industry Division
*Moderator: Jeffrey Norrie, jnorrie@acadian.ca
*Coordinator: Jeffrey Norrie, jnorrie@acadian.ca

This workshop will provide an understanding of how several prominent researchers and industry representatives interact to establish, conduct, and report on collaborative research. The speakers may touch on issues ranging from identification of qualified research partners to funding, execution, and technology transfer.
B.Y. Morrison Memorial Lecture Series

Opportunities in Plant Breeding: From the Integration of Genomics to the Participation of Farmers

Tuesday, July 24 • 12:00–1:00 PM • Springs Salon A/B

The Agricultural Research Service (ARS), USDA’s principal in-house scientific agency, and ASHS are pleased to welcome Paul Gepts, Professor of Plant Sciences, University of California, Davis, as the 2013 B.Y. Morrison Memorial Lecturer. The title of his lecture is “Opportunities in Plant Breeding: From the Integration of Genomics to the Participation of Farmers.”

“It has been said that we live in a great time to be biologists,” says Gepts. “The same can be said of plant breeding. In addition to the renewed interest in plant breeding as a profession, a number of scientific developments, such as genomics and participatory breeding, promise to increase the impact of plant breeding, especially in light of rapidly gathering challenges such as climate instability and population increase.”

About Paul Gepts

Paul Gepts is a renowned agronomist who specializes in how domestication has influenced the biodiversity of crops. As head of the Gepts Laboratory at the University of California, Davis (UC Davis), his expertise on the elucidation of geographic and ecological patterns of genetic diversity and domestication of plants has given us a better understanding of how cultivation has changed our crops. Since January 2012, Gepts has led the UC Davis bean breeding program, with the responsibility for producing new varieties of lima bean, garbanzos, and common bean as well as developing new genetic and genomic tools for Phaseolus, such as a broad range of genetic markers, coordinated molecular linkage maps, BAC libraries, QTL analyses, and, recently, the PhaseolusGenes database. As a consequence of his research, the common bean (P. vulgaris) is now one of the crops with the best understood patterns of domestication and genetic diversity at the eco-geographic level.

The scope of his bean work is international. Gepts has conducted explorations in Latin America for wild relatives of Phaseolus. He also provides scientific coordination for the African Bean Consortium, a project funded by the Kirkhouse Trust that seeks to develop new bean varieties in East Africa using a combination of phenotypic and marker-assisted selection.

Data from his research group has been used extensively in public and private breeding programs in the U.S. and abroad, including the documentation of a marked genetic bottleneck resulting in an increased focus on landraces and wild beans, the utilization of inter-racial, inter-gene pool, and inter-specific crosses to broaden diversity of the elite gene pool. In particular, the information from his research has led to the application of the bean host-pathogen coevolution to identify new disease resistances. Gepts is also lead editor of Biodiversity in Agriculture: Domestication, Evolution, and Sustainability, a notable book on the origins of farming and farm animals in 2012.

Among his many honors and awards are election as Fellow of the American Association for the Advancement of Science, the American Society of Agronomy, and the Crop Science Society of America. He has also received both the Distinguished Achievement and the Meritorious Service Award from the Bean Improvement Cooperative. He was a co-author of the Best Paper (2010) for the Crop Science Society of America and served as associate editor of the American Journal of Botany from 2005 to 2012.

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 preserving and enhancing natural beauty. The Morrison Lecture is on a scientific or policy topic of the lecturer’s choice.
Tuesday, July 23, 2013

11:00 AM–12:00 PM Desert Salon 3

**HortScience Editorial Board Meeting**

M. LeRon Robbins, *Editor in Chief*; David Bryla; Jianjun Chen; Penelope Perkins-Veazie; Clinton C. Shock

11:00 AM–12:00 PM Desert Salon 11

**Plasticulture (PLAST) Working Group Business Meeting**

Peter Nitzsche, *Chair*; Juan Carlos Díaz-Pérez, *Chair-elect*

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.

11:30 AM–1:00 PM Springs Salon D/E

**Oral Session—Fruit Breeding**

*Moderator:* Ralph Scorza, Ralph.Scorza@ars.usda.gov

11:30–11:45 AM
Fruit Tree Domestication: The Evolution of Productivity
*Eliezer E. Goldschmidt

11:45–12:00 PM
Prediction of Genetic Potential of Candidate Apple Cultivars for Fruit Quality from Unreplicated Multilocation Field Trials
*Craig M. Hardner, Cameron Peace, James Luby, Katherine Evans

12:00–12:15 PM
Enabling Marker-assisted Breeding in Heterozygous Polyploid Species: The Strategy Used in Sour Cherry (*Prunus cerasus*)
*Travis Stegmeir, Umesh Rosyara, Audrey Sebolt, Amy F. Iezzoni

12:15–12:30 PM
“FasTrack” Breeding to Produce New Plum Pox Virus Resistant Plum Germplasm and Cultivars
*Ralph Scorza, Chris Dardick, Ann Callahan, Chinnathambi Srinivasan, Doug Raines, Ted M. DeJong, Sarah Castro

12:30–12:45 PM
Genome-wide QTL Detection of Individual Sugars, Sensory Sweetness, and Soluble Solids Content in Apples
*Yingzhu Guan, Susjeet Verma, Cameron Peace, David R. Rudell, Katherine Evans

12:45–1:00 PM Desert Salon 12

**Genome-wide QTL Analyses Uncovers SNP Marker-based Functional Alleles for Apple “Fresh Sensation” Traits**

*Susjeet Verma, Cari Schmitz, Matthew Clark, Yingzhu Guan, Benjamin Orcheski, Julia Harshman, Katherine Evans, Susan K. Brown, James R. McFerson, Nahla Bassil, Umesh Rosyara, Marco Bink, James Luby, Eric van de Weg, Amy F. Iezzoni, Cameron Peace

12:00–1:00 PM Springs Salon A/B

**2013 B.Y. Morrison Lecture**

*Lecturer:* Paul Gepts

Professor of Plant Sciences, University of California, Davis

*Topic:* Opportunities in Plant Breeding: From the Integration of Genomics to the Participation of Farmers

(see inset on facing page)

12:00–1:00 PM Desert Salon 12

**Horticultural Landmarks Selection Committee Meeting**

John Masiunas, *Chair*; Patricia Holloway; Martin Stone; Jeff Olsen; Richelle Stafne; Mary Lewnes Albrecht

12:00–1:00 PM Desert Salon 3

**William A. (“Tex”) Frazier Lecture Selection Committee**

Penelope Perkins-Veazie, *Chair*; Ellen T. Paparozzi; Stephanie Harvey; Craig Campbell; John M. Dole

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Consumer/Commercial Horticulture and Master Gardeners**

(210) Citizen Scientist Master Gardeners Conduct Landscape Plant Variety Trials
*Kelly Young, Karl Wyant

(211) Regional IPM Webinars Reach Large Extension Master Gardener Audiences
*Mary Hockenberry Meyer, Karen Jeannette, Jeff Gillman, Michelle Grabowski, Rhoda L. Burrows, Pamela J. Bennett

(212) What are the Economic Costs and Benefits of Home Vegetable Gardens?
*Gail Langellotto

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Tuesday, July 23, 2013

(213) Importance and Scope of Horticultural Crops in India—A Commercial Approach
   Ramesh Joshi, *M.L. Agarwal, Dilip Nandwani

12:15–1:00 PM   Desert Ballroom: Salons 7-8

**Poster Session—Crop Physiology**

(296) The Effects of Plant Hormones on Root Growth and GmEXPB2 Expression in Soybean
   *Xinxin Li, Hye-Ji Kim, Hong Liao

(297) Laurel Wilt Differentially Affects Xylem Sap Flow of Three Avocado Cultivars
   *Bruce Schaffer, Randy C. Ploetz, Ana I. Vargas, Joshua L. Konkol, JuanaPablo Salvatierra

(298) Increasing Root Zone Ca\textsuperscript{2+} Concentration Will Decrease Uptake and Transport of Na\textsuperscript{+} and Enhance Plant Growth of *Pistacia* Species Grown in Saline Soils
   *Morad Mortaz

(299) Analysis of Cold Hardiness, Dehydrins, and Their Gene Expressions during Cold Acclimation and Deacclimation in Four Peach Cultivars (*Prunus persica*)
   *Keum-Sun Kim, Hyunsook Shin, Youngjae Oh, Seolah Kim, In-Chang Son, Daeil Kim

(300) Evaluating Physiological Efficiencies of Branching Structure in Low-intensity Tart Cherry and High-density Apple
   *Zachary Brym, Brent Black

(301) Measuring Soil Water Potentials in Horticultural Substrates at Very Low Water Potentials
   Jeb S. Fields, William C. Fonteno, *Brian Jackson

(302) The Effect of Artificial Pollination and Growth Regulator Applications on Olive Trees under Mexican Desert Conditions
   *Raul L. Grijalva-Contreras, Saul A. Grijalva-Durón, Arturo López-Carvajal, Fabian Robles-Contreras, Manuel de Jesús Valenzuela-Ruiz, Ruben Macias-Duarte

(303) Enlarged Olive Fruit on ‘Manzanita’ under Arid Conditions
   Arturo López-Carvajal, *Raul L. Grijalva-Contreras, Adan Fimbres-Fontes, Fabian Robles-Contreras, Ruben Macías-Duarte

(304) Heat Determination of Growth in *Pistachia vera* Cultivars
   *Cara J. Allan

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Tuesday, July 23, 2013

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Ornamentals/Landscape and Turf**

(030) Green Roofs: Water Recycling Effect on Water Quality and Soil Chemistry
* Eric Stafne, Matthew W. Fidelibus

(031) The Growth Habits of the Ornamental Gunnera in a Costa Rican Natural Habitat
Clarice Esch, *Martin Stone

(032) Conversion of Tall Fescue to Seeded or Vegetatively Propagated Bermudagrass and Seashore Paspalum
* Marco Schiavon, Brent Barnes, David A. Shaw, J. Michael Henry, James H. Baird

(033) Does Propagation Method Impact Survival and Growth of Below Grade Planted Trees?
* Michael A. Arnold, Andrew R. King, Donita L. Cartmill

(034) Granular Fertilizer Formulations Affect Nutrient Uptake in Perennial Ryegrass Turf
James H. Baird, *Tyler J. Mock, Nick Hoisington

(035) Full Sun Landscape Trial of Caladiums in Southeastern Louisiana
Yan Chen, Regina P. Bracy, *Allen D. Owings

(036) Urban Tree Selection in a Changing Climate
* Bert Cregg, Dana Ellison

(037) Early Germination Response of Lodgepole Pine Seeds to Imbibition with a Commercial Extract of Ascophyllum nodosum
Joanne E. MacDonald, B.I. Daigle, *Will Neily, Jeffrey Norrie

(038) Daily Fluctuations of Chlorophyll Efficiency of Dark-adapted Rhododendron and Kidney Beans
* Heather Hammack, Craig Ramsey, Steven Earl Newman

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Plasticulture**

(052) Adoption of Plastic Mulch and Drip Irrigation by Small Limited Resource Farmers in North Carolina
Grace Summers, Kurt Taylor, Patricia Perez, *Sanjun Gu, Rickie Holness

(053) Effect of Biodegradable Mulches on Environmental Data Collected from High Tunnel and Open Field Settings

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Tuesday, July 23, 2013

[431x24]2013 ASHS Annual Conference

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Postharvest**

(392) Developmental-dependent Responses of Beit-Alpha Cucumber Fruit to Ethylene are Associated with Re-Dox Homeostasis  
Jinsu Lee, *Donald J. Huber, Eduardo C. Vallejos

(393) Leucine Catabolism Affects Acetate Ester Production in Bananas (cv. Senorita)  
*Sumithra K. Wendakoon, Hajime Furukawa

(394) Assessing Superficial Scald Risk in Granny Smith Apples during Controlled Atmosphere Storage using Biomarker-based Technology  
*David R. Rudell, Jinwook Lee, James Mattheis, Rachel Leisso, David Buchanan, Christopher B. Watkins, Maarten Hertog, Nigel Gapper, Bart Nicolai, James Giovannoni

(395) Evidences from Individual Studies of Ethylene and 1-MCP Treatment Prove that Volatile Biosynthesis Is Regulated by Ethylene in Apple (cv. ‘Golden Delicious’)  
XiaoTang Yang, *Jun Song, Leslie Campbell-Palmer, Sherry Fillmore, ZhaoQi Zhang

(396) Postharvest Treatments to Maintain Quality and Control Diseases of Cut Flowers  
Lihua Fan, *Jun Song, Li Li, Tim Hughes, Leslie Campbell-Palmer, XiHong Li

(397) Fishing for Biomarkers; A Multivariate Approach to Scrutinize the Combined Metabolome-Transcriptome Profiles on Our Quest toward Biomarkers for Postharvest Apple Disorders  
David R. Rudell, Maarten Hertog, Nigel Gapper, *Christopher B. Watkins, James Giovannoni, James Mattheis, Jinwook Lee, Rachel Leisso

(398) Reversal of the Petal Senescence Process and Ethylene Responses in Carnations  
*Byung-Chun In, Brad M. Binder, Tanya G. Falbel, Sara E. Patterson

(399) Storability and Phenolic Compounds Profile of Organically Grown Blackberries  
*Moo Jung Kim, Penelope Perkins-Veazie, Guoying Ma, Gina Elizabeth Fernandez

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*Carol A. Miles, Xiaoci Ji, Jeffrey T. Martin, Russell W. Wallace, Annette L. Wszelaki, J. Moore-Kucera, Debra Inglis, Jaehoon Lee

(054) Grafting Influences on Fruit Yield of Tomatoes Grown in a High Tunnel  
*Peter J. Nitzsche, Jack Rabin, Daniel Ward, Wesley L. Kline

(055) Leafy Vegetable and Herb Production and Costs in High Tunnels in the Arid Southwest  
Ursula K. Schuch, *Kristen Hanson, Tilak Mahato

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12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Pomology**

(089) Apple Rootstock Response to Prohexadion Calcium and SPAD Readings in a Non-cropping Year  
*Robert M. Crassweller, Donald E. Smith

(090) Changes of Cold Hardiness, Dehydrins, and Their Gene Expressions in Response to Deacclimation and Reacclimation in Peach (Prunus persica)  
*Daeil Kim, Keum-Sun Kim, Youngjia Oh, Seolah Kim, In-Chang Son, Hyunsuk Shin

(091) Quality of Bartlett Pears Subjected to Phytosanitary Irradiation Treatment Followed by Commercial Distribution and Simulated Retail Display  
*Sokrith Sea, Anuradha Prakash

(092) Differential Effects of Deficit Irrigation and Reflective Mulch Application on Two Clingstone Peach Cultivars  
*Eleni D. Pliakoni, George D. Nanos

(093) Morphological Characterization of Early Floral Development in Apple, Pear, and Cherry in the Midwestern United States  
P. Francescatto, Jozsef Racsko, *Diane Doud Miller

(094) Boron Phloem Mobility and Boron Levels in Leaves and Fruit Are Altered in Transgenic Apple Trees with Decreased Sorbitol Synthesis  
Ting Wu, Michael Rutzke, Abhaya M. Dandekar, *Lailiang Cheng

(095) Turning the Shaded Side of Apple Fruit to Sunlight Exposure Increases Favonoids and Total Phenolics in Both the Original Shaded Peel and the Original Sun-exposed Peel of ‘Fortune’ and ‘Mutsu’  
Fengjuan Feng, Mingjun Li, *Lailiang Cheng
**Tuesday, July 23, 2013**

12:15–1:00 PM Desert Ballroom: Salons 7-8

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

(249) Determining Root Hydraulic Conductance of Container-grown Plants as an Assessment of Root Mass  
*Lesley A. Judd, Brian Jackson, William C. Fonteno, Jean-Christopher Domec

(250) Mini-Horhizotron: A Nondestructive Technique for Observing and Measuring Growth of Developing Root Systems during Production  
*Lesley A. Judd, Brian Jackson, William C. Fonteno

(251) Rhizometer: A Technique for Observing and Measuring Root Growth and Their Influence on Substrate Physical Properties In Situ  
*Lesley A. Judd, Brian Jackson, William C. Fonteno

(252) Root Traits of Twelve Pecan Accessions of Varying Origin  
*Astrid Volder, Larry J. Grawe

(253) Assessing Root Characteristics of Cucurbit Rootstocks using a Simple Germination Test  
Nhi Nguyen, *Xin Zhao, Wenjing Guan, Richard L. Hassell

(254) Axenic Culture Growth Optimization of Adventitious Root Promoting Endophyte, *Piriformospora indica*  
*Allison Hope Justice

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Vegetable Crops Management**

(152) Black Oat Cover Crop Management in Watermelon Production Systems  
*Donald J. Makus, Larry M. Zibilske

(153) Effect of Deficit Irrigation on Pigment Content, Photosynthesis, Growth, and Yield of Cabbage  
*Chenping Xu, Daniel Leskovar

(154) Biofumigant Performance of Four *Brassica* Crops in an Irrigated Chile Pepper Rotation System  
*Rachel Rudolph, Stephanie Walker, Mark Uchanski

(155) Modeling Environmental Parameters Affecting Processing Pea Yield in Minnesota  
*Charles L. Rohwer, Vincent A. Fritz

(156) Cover Crops and Tillage Systems: Three Years of Impacts on Soil Characteristics and Sweetpotato Yield in North Mississippi  
Jeffrey L. Main, *Ramon A. Arancibia, William B. Evans

(157) Cover Crops in Conventional Tillage System: Three Years of Impacts on Soil Characteristics and Sweetpotato Yield in North Mississippi  
Jeffrey L. Main, *Ramon A. Arancibia, William B. Evans

(158) Living Mulch Cover Crops on Small Parcels for Urban and Small-scale Applications  
*Anne Pfeiffer, Jed Colquhoun, Erin Silva

(159) Comparing Minirhizotron and Soil Core Methods for Measuring Root Growth of Melons under Deficit Irrigation  
*Sat Pal Sharma, Daniel Leskovar, Kevin M. Crosby, Astrid Volder, Amir Ibrahim

12:30–1:30 PM Desert Salon 1-2

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

Presiding: Yessica Garcia, ACB President

1:00–1:30 PM Springs Salon C

**B.Y. Morrison Reception**

Sponsored by the Agricultural Research Service

1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Citrus Crops**

(103) The Effects of Huanglongbing and Foliar Nutritional Treatments on Orange Flavor  
*Elizabeth Baldwin, Anne Plotto, Jinhe Bai, John A. Manthey, Sharon Dea, Smita Raithore, Michael Irey, Cecilia Nunes, Randall Cameron, Gary Luzio, Jan Narciso

(104) Evaluating the Effects of Controlled Release Fertilizer Application Rate and Watering Regime on Photosynthesis and Growth of Potted Grapefruit Foliage  
*Barrett Gruber, Prem Kumar

(105) Seasonal Production of Phloem Tissue in HLB-affected Citrus Trees  
*Ed Etxeberria, Craig Brodersen, Cody Narciso

(106) Microsprinkler Location in Citrus  
*N.V. O’Connell, L.J. Schwankl

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Tuesday, July 23, 2013

(107) Results of Providing Weekly Data on Citrus Tree Cold Acclimation to Florida Growers
*Chris Oswalt, Timothy M. Spann, Arnold W. Schumann

1:00–1:45 PM  Desert Ballroom: Salons 7-8

Graduate Student Poster Competition—Session 4

Sign up at the time of abstract submission was required.
Full competition schedule begins on p. 16.

1:00–1:45 PM  Desert Ballroom: Salons 7-8

Poster Session—Nursery Crops

(046) Plant Growth Regulators Increase Branching of Hydrangea paniculata ‘Limelight’ and ‘Jane’ (Little Lime™)
*Diana Cochran, Amy Fulcher

(047) The Effect of Selected Herbicides on Growth of Aucuba and Flowering of Scaevola
*H. Brent Pemberton, William R. Roberson

(048) Use of Biocontainers in Pot-in-Pot Nursery Production System
*Tongyin Li, Guihong Bi, Genhua Niu, Susmitha Nambuthiri, Robert L. Geneve, Xueni Wang, Rodney Thomas Fernandez, Amy Fulcher, Youping Sun

(049) The Use of Topflor G in Knockout Rose Container Production
Yan Chen, Regina P. Bracy, *Allen D. Owings

(050) Transplant Establishment of Container-grown Plants Produced in Eastern Redcedar Substrate
Travis R. Carmichael, *Cheryl R. Boyer, Jason J. Griffin, Stuart L. Warren

(051) Increased Chlorophyll Efficiency of Dark-adapted Camellia Foliage when Treated with Chlorine Dioxide or Hydrogen Peroxide and Blended with an Ionic Surfactant
*Debra Newman, Heather Hammack, Craig Ramsey, Steven Earl Newman

1:00–1:45 PM  Desert Ballroom: Salons 7-8

Poster Session—Propagation

(332) The Effect of Nitrogen Application on Bud Take, Scion Growth, and the Level of Endogenous Cytokinins in Shoots of Trifoliate Orange Rootstocks
*Gurreet Brar, Timothy M. Spann

(333) The Effect of Auxin on Vegetative Propagation of Idesia polycarpa Maxim
Barrett Wilson, *Matthew D. Taylor

(334) Clonal Propagation of Stem Cuttings of Spigelia Marilandica, S. Gentianoides Var. Alabamensis, and S. Marilandica × S. Gentianoides Var. Alabamensis F₂ and F₃ Hybrids
Amanda J. Hershberger, *Carol D. Robacker

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(335) Micropropagation of *Ostrya virginiana* (Mill.) K. Koch  
*Juan R. Franco Coronado, Todd P. West*

(336) In Vitro Germination of *Ostrya virginiana* (Mill.) K. Koch using Gibberellic Acid as a Substitute for Overcoming Seed Dormancy  
*Juan R. Franco Coronado, Todd P. West*

(337) Development of Cutting Propagation Techniques of *Deutzia amurenisa*  
Wei He, Xinjian Wang, Yunde Tan, *Hongxu Long, Donglin Zhang, Lin Zhang*

(338) Rootstock Age Affects Grafting Ability and Rootstock Re-rooting of Grafted Watermelon Transplants  
*Shawna Daley, Richard L. Hassell*

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1:00–1:45 PM  Desert Ballroom: Salons 7-8  
**Poster Session—Seed and Stand Establishment**

(245) Evaluation of Seed Treatments for Sweet Corn at Sixteen Locations in the United States  
*Carrie H. Wohleb*

(246) The Use of a Photosensitive Film during Lettuce Seed Production for Improving Germinability  
*Samuel Contreras, Paloma Segura*

(247) Delayed Seeding of Muskemelon (*Cucumis melo*) following Spring *Brassica* Cover Crop Incorporation Improves Seedling Emergence  
*Aaron Yoder, Mathieu Ngouajio*

(248) Bioassay of *Pythium* and *Rhizoctonia* in a Peat-based Substrate Amended with Pine Wood Chip Aggregates  
W. Garrett Owen, *Brian Jackson, William C. Fonteno, D. Michael Benson*

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1:00–1:45 PM  Desert Ballroom: Salons 7-8  
**Poster Session—Vegetable Breeding**

(364) Evaluation of Lettuce Germplasm for Response to Bacterial Leaf Spot  
*Huangjun Lu, Richard Raid*

(365) Genetic Study of the Banded Cucumber Beetle Resistance in Romaine Lettuce Cultivar Valmaine  
*Huangjun Lu, Ramkrishna Kandel, Gregg Nuessly, Heather McAuslane*

(366) Measuring Selection Progress in Onion Germplasm after One Selection Cycle for Reduced Iris Yellow Spot Symptom Expression  
*Christopher S. Cramer, Neel Kamal*

(367) Screening of Cucumber Plant Introduction Accessions for Resistance to *Phytophthora capsici*  
Marivi Colle, Elizabeth Straley, Sue A. Hammar, *Rebecca Grumet*

(368) Selection Progress for Reduced Iris Yellow Spot Symptom Expression in Onion  
*Narinder Singh, Christopher S. Cramer*

(369) Participatory Evaluation of Broccoli Varieties Grown under Organic Conditions in Western North Carolina  
Emily R. Bernstein, *Jeanine M. Davis*

(370) QTL Mapping for Quinone Reductase Activity in Broccoli with Hepa1c1c7 Cell Lines  

(371) Differential Response of Taro (*Colocasia esculenta*) Cultivars to Taro Leaf Blight  
*Susan C. Miyasaka, Michael Shintaku, Heather Kimball, Kurt Lamour*

(372) Managing Downy Mildew of Spinach: A Genomics-based Approach  
*James C. Correll, Burton H. Bluhm, Kurt Lamour, Steven T. Koike, Lindsey J. Du Toit, D. Neil McRoberts, Chunda Feng, Saara Mansouri*

(373) A Promising Breeding Strategy for Improving Tuber Quality in Chipping Potatoes  
Cinthya Zorrilla, Felix Navarro, Sandra E. Vega, *Jiwan P. Palta*

(374) Productivity and Quality of New Onion Varieties Bolting Resistant in Northeast Sonora, Mexico  
Ruben Macias-Duarte, *Raul L. Grijalva-Contreras, Fabian Robles-Contreras, Manuel de Jesús Valenzuela-Ruiz, Arturo López-Carvajal*

(375) Evaluation of Segregating Tomato Lines for Salinity Tolerance  
*Abdulla A. Alsadon, Monther Sadder, Mahmoud Wahb-Allah*

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1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Viticulture and Small Fruits**

(114) Patterns of Variation for Sugar and Organic Acid Composition during Berry Ripening in Cold Climate Wine Grape Cultivars
*Soon Li Teh

(115) Understanding the Causes of Flower Necrosis in Grapevines
*R. Paul Schreiner, Jungmin Lee, Patricia A. Skinkis

(116) Chlorine Dioxide Sachets for the Control of Postharvest Decay of ‘Crimson Seedless’ Table Grapes
*Xiaofan Zhao, Jan Narciso, Sonet Van Zyl, Joseph Smilanick

(117) The Influence of Post-veraison Foliar Potassium Applications on Table Grape Berry Quality
*Sijie Zhu, David Obenland, Sonet Van Zyl, Franka Gabler, Joseph Smilanick

(118) The Evaluation of Different Cultural Practices on Scarlet Royal Table Grapes to Determine Postharvest Quality
*Victoria Towers, Sonet Van Zyl

(119) Impact of Yield Management Practices on Vine Growth and Fruit Composition of Oregon Pinot Noir
*Patricia A. Skinkis, Amanda J. Vance, Alison L. Reeve

(120) Using Electrical Resistance Sensors for Monitoring Soil Moisture to Determine Table Grape Water Consumption in the Caborca Sonora Region
Manuel de Jesús Valenzuela-Ruiz, Fabian Robles-Contreras, *Raul L. Grijalva-Contreras, Ruben Macias-Duarte

1:00–1:45 PM Desert Ballroom: Salons 7-8

**Poster Session—Weed Control and Pest Management**

(214) Biology & Biocontrol of Lewis Spider Mite (*Eotetranychus lewisi*) in Strawberries
*Anna D. Howell, Oleg Daugovish, Cameron Chandler

(215) The Newly Sporadic and Major Insect Pests of Orchard Crops in Gyeonggi Province in South Korea
*Young-su Lee, Hyun-Ju Lee, Soon-sung Hong, Haejeen Bang

(216) Hydrilla IPM RAMP—Starting a Statewide Extension Project
*Kenneth T. Gioeli, James P. Cuda, Jennifer Gillett-Kaufman, Joan P. Bradshaw, William A. Overholt, Verena Lietze, Judy Shearer, Raymond L. Hix

(217) Improving Pest Control Options through Split Application of Insecticides using Spike Wheel Liquid Injection Technology
Mark C. Siemens, *Kurt D. Nolte

(218) Development of Native Natural Predator, *Chrysoperla nipponensis* (Okamoto) for the Control of Mealy Bugs, *Pseudaulacaspis cockerelli* (Cooley) at Five Flavor Berry, *Schisandra chinensis* Baill Orchard in Korea
*Eunhye Ham, Jeung Sul Han, Young-su Lee, Jun Seok Lee, Jong Kyun Park

(219) Studies on Biological Control of Yellow Tea Thrips; *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae) on Five Flavor Berry Orchards; *Schisandra chinensis* Baill, using *Amblyseius swirskii* Athias-Henriot
*Eunhye Ham, Jeung Sul Han, Young Cheol Choi, Jun Seok Lee, Jong Kyun Park

(220) Bark Beetle Flight in Relation to Lodgepole Pine Host Chemistry: Another Case for Coevolution?
*Teri Gadd, William L. Bauerle, Ingrid Aguayo, Lou Bjostad

(221) Biological Control of White Mold of Snap Bean with Low Rate Contans Applications
*Alexandra Stone, Mikio Miyazoe, Aaron Heinrich

(222) The Effect of Clopyralid Rate on Annual Strawberry Production and Black Medic (*Medicago lupulina*) Control
*Peter Dittmar

(223) Influence of Trichoderma Application on Seed Germination and Seedling Biomass of Jamaican Scotch Bonnet Peppers
*Luke O. Lee, Corrie P. Cotton, Fawzy M. Hashem

(224) Heat-Induced Inactivation of Seed Germination in Canola (*Brassica napus*), Grain Amaranth (*Amaranthus caudatus*), and Proso Millet (*Panicum miliaceum*)
*Chiwon W. Lee, Larry J. Cihacek

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Tuesday, July 23, 2013

1:00–3:00 PM Desert Salon 3

Endowment Fund Committee Meeting
Chris Gunter, Chair; Bernadine Strik; Beiquan Mou; Rich Marini; Chris Gunter; Marietta Loehrlein; Astrid Volder; Paul E. Read; Carl E. Sams; Paul Thomas; Brian Trader; Paul Bosland; David Hensley; Michael W. Neff

1:30–2:30 PM Springs Salon C

USDA–ARS All Employee Meeting
Presiding: Sally Schneider

1:45–3:00 PM Springs Salon A/B

Oral Session—Herbs, Spices, and Medicinal Plants
Moderator: Valtcho D. Jeliazkov, vjeliazk@uwyo.edu
1:45–2:00 PM
Essential Oil Yield, Composition, and Bioactivity as a Function of Distillation Time
* Valtcho D. Jeliazkov, Charles Cantrell, Tess Astatkie, Thomas E. Horgan, Vicki L. Schlegel, Ekaterina Jeliazkova

2:00–2:15 PM
Drying and Shade Effects on Native Spearmint Oil Yields and Composition
*Valtcho D. Jeliazkov, Ekaterina Jeliazkova, Tess Astatkie

2:15–2:30 PM
Study on Spearmint and Japanese Cornmint in Mississippi
*Thomas E. Horgan, Crofton Sloan, John McKee, Charles Cantrell, Dennis Rowe, Valtcho D. Jeliazkov

2:30–2:45 PM
Peppermint and Spearmint in Wyoming Can Survive the First Fall Frosts
*Valtcho D. Jeliazkov, Charles Cantrell, Tess Astatkie, Ekaterina Jeliazkova

2:45–3:00 PM
Effectiveness of Some Plant Extracts to Bacterial Speck Disease on Tomato
*Kubilay Kurtulus Bastas

1:45–2:00 PM Community Engaged Collaborative Design of a New Children’s Garden at a Public Garden
Dana R. Reynolds, *Lucy K. Bradley, Julieta T. Sherk, Julia L. Kornegay

2:00–2:15 PM
USAID Supporting the Fruit and Vegetable Pulping Sector in Pakistan
*Waqar Ahmed, Muhammad Azher Nawaz, Khalid Saeed Wattoo, Babar Malik, Raheel Anwar

2:15–2:30 PM Consumer Preferences for Longevity Information and Guarantees on Cut Flower Arrangements
*Alicia L. Rihn, Chengyan Yue, Charles R. Hall, Bridget K. Behe

2:30–2:45 PM Dynamic Plant Water Use Measurement using Data from a Low-cost Weighing Lysimeter
*Peter Ling, Robert Boucherle, Jonathan M. Frantz

2:45–3:00 PM Building Database Resources for Translational Research in Rosaceae

3:00–3:15 PM Development, Testing, and Application of a Process-based Crop Simulation Model for Garlic
*Soo-Hyung Kim, Jighan Jeong, Lloyd Nackley, Kyung Hwan Moon, Soo-Ock Kim, Jin I. Yun

3:15–3:30 PM Building Capacity in Public Horticulture through Strategic Partnerships and Cooperative Education
*Brian Trader, Douglas C. Needham

1:45–2:00 PM Workshop—Plasticulture Technologies for Expanding the Season and Improving the Sustainability of Eastern U.S. Strawberry Production
Sponsor: Plasticulture Working Group
Moderator: Peter Nitzsche; nitzsche@aesop.rutgers.edu
Coordinator: Barclay Poling; strawberrydoc@gmail.com

In this workshop leading university and industry experts in commercial strawberry plasticulture production in the Eastern

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

2013 ASHS Annual Conference
United States will provide the most up-to-date, expert information on plasticulture technologies for expanding the season and improving strawberry production sustainability. Belinski Santos, IFAS, University of Florida will be discussing increasing the biological feasibility of high tunnel production of strawberries in Florida. Non-irrigation alternatives for freeze protection of strawberries utilizing floating row covers will be covered in two of the presentations, and the benefits of row covers in the fall season to enhance floral initiation and differentiation will be discussed by strawberry researchers from the mid-west (Ohio) and mid-south (North Carolina).

1:45–2:00 PM
Non-irrigation Alternatives for Freeze Protection of Strawberries in Florida
*Bielinski M. Santos, Ixchel M. Hernandez-Ochoa, Craig Stanley

2:00–2:15 PM
Biological Feasibility of High Tunnel Production of Strawberries in Florida
*Bielinski M. Santos, Teresa Salame-Donoso

2:15–2:30 PM
Ohio Strawberry Plasticulture Row Cover Management
*Brad R. Bergefurd

2:30–2:45 PM
Practical Opportunities to Reduce Sprinkler Irrigation Usage with Row Cover Technology for Pre-bloom and Bloom Cold Protection and Preliminary Observations on using Drip Irrigation under Row Covers for Frost Control
*Barclay Poling

2:45–3:00 PM
Modeling Yield of ‘Chandler’ and ‘Camarosa’ as a Function of Accumulated Fall Growing Degree Days and Practical Row Cover Intervention Strategies
*Jeremy Pattison, Elizabeth Clevinger, E. Barclay Poling

1:45–3:45 PM Springs Salon D/E
Workshop—Potential Impact of Precision Agriculture Methods on Roots and Root Function
Sponsor: Root Growth & Rhizosphere Dynamics Working Group
Moderator: R. Paul Schreiner, paul.schreiner@ars.usda.gov
Coordinator: R. Paul Schreiner, paul.schreiner@ars.usda.gov

The purpose of this workshop is to explore how precision agriculture may influence root and soil properties and provide a conceptual framework to better understand how farming practices can improve the efficiency of resource use in horticulture.

1:45–2:15 PM
Introduction to Precision Agriculture in Florida Citrus, with Emphasis on Fertilization and Irrigation
*Arnold W. Schumann, Qamar Zaman

2:15–2:45 PM
Spatial Variability in C&N Dynamics: Vineyard to AVA
*Kerri Steenwerth

2:45–3:15 PM
Site-specific Management of Soil pH and Nutrients in Blueberry
*David R. Bryla

3:15–3:45 PM
New Methods to Quantify Root Responses to Variable Water or Nutrient Supply
*Taryn Bauerle

2:00–3:00 PM Desert Salon 12
Awards Committee Meeting
John R. Clark, Chair; William J. Lamont, Jr.; Fred T. Davies; Dewayne L. Ingram; Paul Bosland

2:00–3:00 PM Desert Salon 11
Postharvest (PH) Working Group Business Meeting
David Obenland, Chair; John Beaulieu, Chair-elect; Wyatt Brown, Secretary

The PH Working Group exchanges ideas and information relating to postharvest biology and technology of horticultural crops. Objectives include increasing the awareness among other researchers, research administrators, legislators, and the public of the importance of the postharvest aspects of horticulture.

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Tuesday, July 23, 2013

2:00–6:00 PM  
**Tour Lobby**

**Palm Springs Art Museum Tour**

3:00–4:00 PM  
**Desert Salon 11**

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

Raj Lada, *Chair*; Mark Matthews, *Chair-elect*

The CRPP Working Group provides 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.

3:00–4:00 PM  
**Springs Salon C**

**Federal Partners (FP) Working Group Business Meeting**

Penelope Perkins-Veazie, *Chair*

The FP Working Group provides a network for horticultural professionals who work for national and federal governments. Objectives include: providing linkages to university and industry colleagues and to promote the exchange of ideas, common research goals, and multilevel approaches to large and/or complex issues affecting horticulture and food security.

3:00–4:00 PM  
**Desert Salon 12**

**Graduate Student Activities Committee Meeting**

Kent Kobayashi, *Chair*; Cecilia McGregor; Bala Rathinasabapathi; Stuart Warren

3:00–4:00 PM  
**Desert Salon 3**

**Herbs, Spices, and Medicinal Plants (HSMP) Working Group Business Meeting**

Valtcho D. Jeliazkov, *Chair*; Dayan Ranwala, *Chair-elect*; Gary Stutte; *Secretary*

The HSMP Working Group promotes and encourages scientific research and education on herbs, spices, and medicinal plants, emphasizing botanical, cultural, environmental, genetic, harvesting, physiochemical, processing, and pharmacological aspects of these plants.

4:00–5:00 PM  
**Desert Salon 3**

**Commercial Horticulture (CHEX) Working Group Business Meeting**

Carol A. Miles, *Chair*; Gordon Johnson, *Chair-elect*

Objectives: To increase ASHS membership and meeting participation of horticultural extension specialists working with industry and/or community groups; foster communications between such specialists; and share ideas and methods for working with growers and commodity groups.

4:00–5:00 PM  
**Desert Salon 11**

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

Zhanao Deng, *Chair*; Gary Knox, *Chair-elect*

The INPR Working Group communicates 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.

4:00–5:15 PM  
**Springs Salon D/E**

**Oral Session—Propagation**

*Moderator: Chiwon W. Lee, chiwon.lee@ndsu.edu*

4:00–4:15 PM

Adventitious Shoot Regeneration from Asiatic Lily  
*Kedong Da, Hannah Farish-Williford, Samantha Smith, Barry Flinn*

4:15–4:30 PM

Development of a Rooting Protocol for *Oenothera* Spp. Vegetative Cuttings  
*Stephen Stanphill, Bruce Dunn*

4:30–4:45 PM

Use of Unrooted Grafted Vegetable Cuttings: I. Effects of Healing Duration and Transportation Temperature  
*Chieri Kubota, Mark A. Kroggel, Leo Sabatino, Brent Salazar*

4:45–5:00 PM

The Effect of Rootstock Age on Grafting Ability, Re-rooting, and Field Performance of Grafted Watermelon Transplants  
*Shawna Daley, Richard L. Hassell*

5:00–5:15 PM

Germination Enhancement of Common Honeylocust (*Gleditsia triacanthos*) Seeds by Scarification  
*Chiwon W. Lee, Saem Choi, Karson Beckstrom, Todd P. West*

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**Tuesday, July 23, 2013**

4:00–5:30 PM   Desert Salon 12

**Annual Conference Technical Program Committee Meeting**

Carl E. Sams, *Co-Chair;* Dennis Ray, *Co-Chair;
Maren Mochizuki; Kent Kobayashi; Marita I. Cantwell;
Anita Azarenko; Brian Trader; Dean Kopsell; Jozsef Racsko;
Maria Jenderek; Paul Bosland; Michael W. Neff

4:00—5:30 PM   Desert Salon 1-2

**Oral Session—Crop Physiology**

*Moderator:* Charles A. Sanchez, sanchez@ag.arizona.edu

- **4:00–4:15 PM**  
  Use of Pollen Vitality to Monitor the Nutritional Status of Flowers  
  *Thomas Ferrari*

- **4:15–4:30 PM**  
  Response of AVP1-OX Romaine Lettuce to Phosphorus  
  *Charles A. Sanchez, Roberto Gaxiola*

- **4:30–4:45 PM**  
  The Influence of Nitrogen Nutritional Status on the Physiological Response of *Cyphomandra betaceum* Seedlings to Flood Conditions  
  *Hermann Restrepo-Diaz, Augusto Ramirez-Godoy, Juan Carlos Melgar, Jorge-Edwin Betancourt, Diego-Leonardo Sanchez-Cano*

- **4:45–5:00 PM**  
  Variations in Calcium Requirements for In Vitro Shoot Culture among Potato Cultivars  
  *Zienab F.R. Ahmed, Jiwan P. Palta*

**4:00—6:00 PM**   Springs Salon A/B

**Oral Session—Environmental Stress Physiology**

*Moderator:* Leo Gene Albrigo, albrigo@ufl.edu

- **4:00–4:15 PM**  
  Physiological and Growth Responses of Two Sweetpotato Cultivars at Early Season Soil Moisture Deficit  
  *Bandara Gajanayake, K.R. Reddy, Mark Shankle, Ramon A. Arancibia*

- **4:15–4:30 PM**  
  Morphological, Anatomical, and Physiological Adaptations of Potatoes to a Simulated Heat Stress  
  *Jiwan P. Palta, Justin E. Schabow*

- **4:30–4:45 PM**  
  Managing Drought Stress of Oranges to Optimize Flowering and Productivity under Sao Paulo–Mina Gerais, Brazil, and Florida Conditions  
  *Leo Gene Albrigo, Eduardo J. Chica, Ricardo R. Carrera*

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Tuesday, July 23, 2013

4:45–5:00 PM
Mild Water Stress Affects Water Relations, Gas Exchanges and Vascular Flows of ‘Hayward’ Kiwifruit Branches during the Second Stage of Berry Development
Brunella Morandi, *Luca Corelli Grappadelli

5:00–5:15 PM
Chemical and Physiological Response of Turkish Red Pine (*Pinus brutia* Ten.) and American Red Pine (*Pinus resinosa* Ait.) Seedlings Exposed to Artificial Cold Temperature Treatments
Dilek Yildiz, Pascal Nzokou, Ayse Deligoz, *Ismail Koc, Musa Genc

5:15–5:30 PM
Comparative Investigation of Salinity-induced Drastic Effects on Leaf Water Status, Physiological, Enzymatic, and Ionic Attributes of Salt-tolerant and Salt-sensitive Okra Cultivars
*Muhammad Aslam Pervez, Tahira Abbas, Muhammad A. Shahid, C.M. Ayub, Muhammad Rashid Shaheen

5:30–5:45 PM
Mitigation of Salinity Induced Morpho-physiological and Biochemical Effects by Seed Treatment with 28-Homobrassinolide in Pea (*Pisum sativum* L.)
*Muhammad Adnan Shahid, Rashad M. Balal, Muhammad Aslam Pervez, Zafar Iqbal, Neil Mattson, Francisco Garcia-Sanchez

5:45–6:00 PM
Genetic Variability of Citrus Rootstock Cultivars under Saline Regime
*Rashad M. Balal, Muhammad Mumtaz Khan, Muhammad Adnan Shahid, Neil Mattson, Francisco Garcia-Sanchez, Muhammad Usman Ghazanfar

4:00–6:00 PM Desert Salon 9-10

**Workshop—Challenges in Seedling Production and Establishment in Organic and Sustainable Production Systems**

* Sponsor: Seed & Stand Establishment Working Group
* Coordinator: Dharmlingam Pitchay, dpitchay@tnstate.edu

The working group will present new information and challenges related to organic seedling and stand establishments in comparison with conventional techniques. The focus would be to minimize losses in organic seedling supply chain and to promote transplanting in organic farming.

4:00–6:00 PM Springs Salon E

**Workshop—Create An Impact!**

*Coordinator: John D. Lea-Cox, jlc@umd.edu*

The objective of this workshop is to demystify the impact-statement writing process. Participants will leave this workshop with a draft statement, specific to their research or extension project.

**Speakers:**

**Thomas A. Bewick**—Thomas Bewick is a national program leader at the U.S. Department of Agriculture. He serves as liaison to university scientists (as well as to the horticultural industry) on issues that affect horticulture, provides programmatic leadership and oversight for horticultural programs across the country, and directs the Specialty Crop Research Initiative.

**Linda Brewer**—Linda Brewer is a project manager and technical writer with the Department of Horticulture and the Extension Agriculture Program at Oregon State University. She successfully facilitated the adoption of an online reporting process for the Extension Ag faculty. Along with her grant reporting responsibilities, this activity shaped her thinking about the components of effective impact statements. She has led impact writing workshops for the faculty at Oregon State, and works one-on-one with faculty to develop useful, meaningful impact statements. http://agsci.oregonstate.edu/research/writingimpacts

**Thomas Björkman**—Thomas Björkman is the chair of the ASHS National Issues Task Force. He enjoys using compelling impact statements to persuade legislators, horticulture industry leaders, and other decisionmakers that horticultural scientists are doing important and exciting work that deserves much greater support. He finds writing his own impact statements just as difficult as everyone else does. He does research in crop physiology, with projects on improving vegetable production systems through the use cover crops and developing broccoli genotypes that will produce quality inflorescences in the eastern United States.

**Marc van Iersel**—Marc van Iersel of professor of plant nutrition and physiology in the Department of Horticulture at the University of Georgia. He serves as consulting editor for the *Journal of the American Society for Horticultural Science*, is a member of the national issues task force, and a past vice-president of ASHS.

**John D. Lea-Cox**—John Lea-Cox is a professor in the Department of Plant Science and Landscape Architecture at the University of Maryland, specializing in water
and nutrient management issues. He currently serves as research vice-president for ASHS and with the support of Linda Brewer, Tim Rhodus, and Mike Neff, established CHRIS (http://www.ashsmedia.org) as an online repository to communicate the direct impacts of research and extension on horticultural industries, in the United States and beyond.

### Workshop—The Role and Importance of Polyploidy in Ornamental Plant Breeding

**Sponsor:** Ornamental Plant Breeding Working Group  
**Moderator:** Wenhao Dai, wenhao.dai@ndsu.edu  
**Coordinator:** Ryan Contreras, ryan.contreras@hort.oregonstate.edu

This workshop will provide attendees with the current research on applications of polyploidy in ornamental plant breeding, particularly, in the areas of identification and induction of polyploids and utilization of polyploidy to breed new ornamental plant materials.

4:00–4:15 PM  
**Taking Advantage of Natural Variation in Ploidy Levels**  
*Ryan Contreras*

4:15–4:30 PM  
**Ploidy Modifications Enhance Flower Breeding for Winter Hardiness and Rhizome Production in Gaura**  
*Neil O. Anderson*

4:30–4:45 PM  
**Induction and Utilization of Polyploids to Sterilize Nandina and Lantana**  
*Zhanao Deng*

4:45–5:00 PM  
**Applications of Ploidy Manipulation and Analysis in an Applied Nursery Crop Breeding Program**  
*Thomas G. Ranney*

### Collegiate Activities Committee (CAC) Meeting

Nathan Phillips, *Chair*; David Kopsell; Margaret J. McMahon; Stephanie Burnett; Donita Bryan; Kent Kobayashi; Rammohan Uckoo; Katherine Warpeha; Murali Panen; Cody Seals (ACB Vice President); Wade Hummer (Past ACB President)

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Bandara Gajanayake—Physiological and Growth Responses of Two Sweetpotato Cultivars At Early Season Soil Moisture Deficit

Michael Dzakovich—A Semiyearly Study On the Effect of Light Quality on Flavor of Greenhouse Grown Tomatoes: LED Versus HPS

Diana Vercillo—Physiology of Solanaceous Scion and Rootstock Seedlings for Grafting in Low Temperature Storage Conditions under Low Light Intensity

Wednesday, July 24, 2013

6:00–10:00 PM Desert Salon 3

American Pomological Society (APS)
Executive and Advisory Board Meeting
Presiding: Kirk William Pomper

6:15–8:00 AM Tour Lobby
Landscape and Ornaments Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

6:30–1:30 PM Tour Lobby
Joshua Tree National Park Tour

8:00–9:00 AM Desert Salon 3
Water Utilization and Management (WUM) Working Group Business Meeting
Donald J. Merhaut, Chair; James S. Owen, Chair-elect; Raul I. Cabrera, Secretary
The WUM Working Group gathers and disseminate information on water conservation, crop water requirements, irrigation methods, and efficient and effective water management.

8:00–9:15 AM Springs Salon A/B
Oral Session—Vegetable Crops Management
Moderator: Ajay Nair, nairjay@iastate.edu

8:00–8:15 AM
The Effect of Biochar on Sweet Corn Production
*Ajay Nair, Laura Weieneth, Vince Lawson

8:15–8:30 AM
Biochar Added to a Potting Mix Decreased Bell Pepper Transplant Size, While Increasing Nutrient Retention
*Brandon Carpenter, Ajay Nair

8:30–8:45 AM
Trellising and Plastic Mulch Effects on Cucumber Production in High Tunnels
*Ajay Nair, Moriah Bilenky, Nick Howell

8:45–9:00 AM
The Composition, More so than Yield, of Organic Field-grown Tomato Fruit Is Affected by Grafting and Rootstock
Natalie Bumgarner, David Francis, Bizhen Hu, Jennifer Moyseenko, *Matthew D. Kleinhenz

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Wednesday, July 24, 2013

9:00–9:15 AM
Commercial Extract from the Brown Seaweed *Ascophyllum nodosum* (Stimplex®) Improves Earliness and Yield of Hydroponically Grown Sweet Bell Peppers
*Will Neily, Jef Achenbach, Laurel Shishkov, Jeffrey Norrie

9:15–9:30 AM
Cauliflower Yield, Biomass Accumulation as Affected by Nitrogen Rates and Irrigation Scheduling
*Lincoln Zotarelli, Charles Barrett, Guilherme B. Buck, Simone da Costa Mello

8:00–10:00 AM
Oral Session—Postharvest
Moderator: Jinwook Lee, Jinwook.Lee@ars.usda.gov

8:00–8:15 AM
Genetic and Environmental Variation in Southern Highbush Blueberry Flavor Components
*Jessica L. Gilbert, Michael L. Schwiererman, Thomas A. Colquhoun, David G. Clark, James W. Olmstead

8:15–8:30 AM
Efficacy of 1-Methylcyclopropene (1-MCP) in Purple Passion (*Passiflora edulis* Sims) Fruits as Affected by Dosage and Maturity Stage
*Jane Ambuko, Penina Mueni Yumbya, Margaret Jesang Hutchinson, Solomon Igosangwa Shibairo, Hiroshi Gemma, Willis Omondi Owino

8:30–8:45 AM
Starch Metabolism in Apple Fruit and Its Relationship with Maturation and Ripening
*Franziska C. Doerflinger, Christopher B. Watkins, William B. Miller

8:45–9:00 AM
Fumigation of 1-Hexylcyclopropene Inhibit Ethylene Production in Climacteric Fruits at Ambient Conditions
*Shamim A.K.U. Khan, Zora Singh, Alan Payne

9:00–9:15 AM
1-MCP Differentially Affects Postharvest Physiological Attributes and Incidence of Internal Browning in Cold Stored ‘Gala’ Apples
*Jinwook Lee, James Mattheis, David R. Rudell

9:15–9:30 AM
The Effects of Re’Tain, Harvista, and NAA on the Quality of ‘Mcintosh’ Apples
*Christopher B. Watkins, Jacqueline F. Nock

9:30–9:45 AM
Diphenylamine and Conditioning Affect Disorders in Controlled Atmosphere (CA) Stored ‘Honeycrisp’ Apples
Christopher B. Watkins, *Jacqueline F. Nock

9:45–10:00 AM
Storage Temperature Affects Fruit Quality and Consumer Acceptability of ‘Fajri’ Mango
*Ahmad Sattar Khan, Aman Ullah Malik, Iftikhar Ahmad, Syed Ali Raza

8:00–10:00 AM
Root and Bulb Vegetable Crop Germplasm Committee (RBV-CGC) Meeting
Christopher S. Cramer, Chair

8:00–10:00 AM
Oral Session—SCRI-MINDS Nursery Crops
Moderator: Paul Thomas, pathomas@uga.edu

8:00–8:15 AM
Development of an Advanced Sensor Network Node for Automated Monitoring and Control of Irrigation in Nursery and Greenhouse Production
George Kantor, David Kohanbash, Todd Martin, *John D. Lea-Cox

8:15–8:30 AM
Wireless Sensor Networks for Automated Irrigation Control in Container Nurseries: Implementation and Economic Impact
*Paul Thomas, Matthew Chappell, John M. Ruter, Erik Lichtenberg, Marc van Iersel

8:30–8:45 AM
Sensor-Controlled Irrigation Scheduling for Pot-in-Pot Nursery Tree Production
*Bruk E. Belayneh, John D. Lea-Cox

8:45–9:00 AM
The Implications of Minimum Stomatal Conductance on Estimating Water Flux in Containerized Tree Nurseries
*Dave M. Barnard, William L. Bauerle

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Wednesday, July 24, 2013

9:00–9:15 AM
A Comparison of the Potential for Scaling Up Irrigation Scheduling Techniques: Substrate Moisture Sensing Versus Predictive Water Use Modeling
*Dave M. Barnard, William L. Bauerle

9:15–9:30 AM
Water, Irrigation Costs and the Benefits of Sensor Networks: Results from a National Survey of Ornamental Growers
*John Majsztrik, Erik Lichtenberg, Monica Saavedra, John D. Lea-Cox

9:30–9:45 AM
Behind the Curtain: The Support Component of Wireless Soil Moisture Networks
*Lauren Crawford, John D. Lea-Cox, John Majsztrik, William L. Bauerle, Marc van Iersel, Todd Martin, David Kohanbash

9:45–10:00 AM
Fertilizer Rate and Irrigation Duration Affect Leachate Volume, Electrical Conductivity, and Growth of Gardenia jasminoides
*Amanda Bayer, John M. Ruter, Marc van Iersel

8:00–10:00 AM Desert Salon 13-14
Workshop—I’ve Earned My Degree . . . What’s Next?
Sponsor: Graduate Student Working Group
Coordinators: Kristin Abney, kabaney22@gmail.com; Amanda Bayer, bayer10@uga.edu
The objectives of this workshop are to: learn about careers in land-grant and non-land-grant universities as postdocs, professors and research technicians; learn about careers with the USDA as postdocs and professors.

8:00–10:00 AM Springs Salon D/E
Workshop—Sustainable Weed Management
Sponsors: Weed Control and Pest Management and Organic Horticulture Working Groups
Moderator: Teri Gadd, teri.gadd@colostate.edu
Coordinator: Teri Gadd, teri.gadd@colostate.edu
This workshop will offer interactive weed control research presentations that lessen or eliminate the need of herbicides and compare certified organic weed control to uncertified. Topics include: 1) certified organic and uncertified weed management comparison; 2) weed seedbanks, mulches, cover crops, and soil fertility; and 3) physical and cultural weed control. Each topic will be followed by a short discussion period.

8:00–8:02 AM
Overview of Workshop Topics, Timing, and Speaker Introductions

8:02–8:15 AM
Do Certified and Uncertified Fresh-market Organic Tomato Farmers in the Midwest Manage Weeds Differently?
*Kevin D. Gibson, Jose M. Gomez Vargas, Ariana P. Torres Bravo

8:15–8:20 AM
Discussion of Topic 1: Certified Organic and Uncertified Weed

8:20–8:32 AM
Can Living Mulches Reduce Weed Seed Banks in Fresh Market Tomatoes?
*Kevin D. Gibson

8:32–8:51 AM
Cover Crops Influence Weed Management in Dry Edible Beans
Erin C. Taylor, *Karen A. Renner, Christy L. Sprague

8:51–9:00 AM
Discussion of Topic 2: Weed Seedbanks, Mulches, Cover Crops, and Soil

9:00–9:11 AM
Timing of Early Weed Control Practices by Growing Degree Days
Erin C. Taylor, *Karen A. Renner, Christy L. Sprague

9:11–9:31 AM
Physical Pest Control: Soil Disinfestation with Steam in Strawberry and Machine-vision Intra-row Cultivation in Vegetables
*Steven A. Fennimore

9:31–9:51 AM
Impact of Vineyard Floor Management Practices on Weed Communities and Soil Quality
*Richard F. Smith, Larry J. Bettiga, Michael Cahn

9:51–10:00 AM
Discussion of Topic 3: Physical and Cultural Weed Control

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Wednesday, July 24, 2013

8:00 AM–12:00 PM Springs Salon F

Colloquium—Strategy for Developing Mechanical Harvesting of Horticultural Crops: Simultaneous Short-, Medium-, and Long-Term Strategies

Sponsor: Production and Harvest Mechanization Working Group

Moderators: Rachel B. Elkins, rbelkins@ucdavis.edu; Stephanie Walker, swalker@nmsu.edu; Louise Ferguson, lferguson@ucdavis.edu

The objective of this colloquium is to delineate through successful examples the simultaneous steps of a successful mechanical harvesting development program from the harvesting technology through the extension program for adoption, including composition of the research team. The steps of developing a mechanical harvesting program will be presented as the short, medium and long-term goals and highlight the critical limiting factors of each.

8:00–8:30 AM
How Agricultural Engineers Develop Mechanical Harvesters: The University Perspective
*Sergio Castro-Garcia

8:30–8:45 AM
How Companies Select and Develop Harvesters: The Commercial Perspective
*Rachel B. Elkins

8:45–9:10 AM
Preparing Fresh Apple, Peach, and Pear Orchards for Mechanical Harvesting
*Terence Lee Robinson

9:10–9:35 AM
Transformation of an Ancient Crop: Preparing Oil and Table Olives for Mechanical Harvesting
*Louise Ferguson

9:35–10:00 AM
Chili Peppers: Challenges and Advances in Transitioning Harvesting of New Mexico’s Signature Crop
*Stephanie Walker

10:00–10:25 AM
Grapevine Varieties, Trellis Systems, and Mechanization of the California Raisin Industry
*Matthew W. Fidelibus

10:25–10:50 AM
Progress in Breeding Highbush Blueberry Cultivars Adapted to Machine Harvest for the Fresh Market
*James W. Olmstead

10:50–11:15 AM
Breeding Oil and Table Olives for Mechanical Harvesting
*Luis Rallo

11:15–11:40 AM
Mechanization of Tasks in Horticultural Crops: The Labor Perspective
*Guadalupe Sandoval

8:15–9:45 AM Starbucks at J.W Marriott Resort

Graduate Student Working Group Morning Gathering

Coordinator: Kristin Abney, kabney22@gmail.com

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).

8:30–10:00 AM Director Suite III

Administrators Working Group Breakfast

Anita Azarenko, Chair; Emily Hoover, Chair-elect; John Peterson, Secretary

8:30 AM–1:45 PM Desert Ballroom: Salons 7-8

Poster Hall Open

8:30 AM–2:30 PM Desert Ballroom: Salons 7-8

Exhibits Open

9:00–10:00 AM Springs Salon C

International Horticulture and Issues (IHI) Working Group Business Meeting

Sarada Krishnan, Chair; Rich Pratt, Chair-elect

The objectives of the IHI Working Group are 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 and to provide a potential mechanism through concerted action for input into decision and policymaking processes at the national and international levels.

9:00–11:00 AM Desert Salon 3

Extension Division Advisory Council Meeting

Gary A. Bachman (Extension Division Vice President),
Wednesday, July 24, 2013

Chair; Jeanine M. Davis, (Past Extension Division Vice President); all Working Group Chairs and Chairs-elect, Extension Division

9:00 AM–12:00 PM  Tour Lobby
Coachella Valley Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

9:30 AM–12:15 PM  Springs Salon A/B
Scholars Ignite: Student Competition
Presiding: Anita Azarenko

ASHS is hosting the first annual competition called “Scholars Ignite” for graduate students to share their discoveries and creations to a non-specialist audience. Education VP Anita Azarenko is looking forward to making this new 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 would stir the society’s membership up around graduate student learning, research, discovery, and creativity. ASHS would obtain “stories” to share via YouTube and for the web, and to brag about our graduate student membership and their accomplishments. Graduate students would meet other students, learn of research and other creative and scholarly activities across ASHS, and hopefully have fun! Winners will receive a cash award of $500, $250, and $100 for the top three places, respectively. Students signed up for the competition at the time of registering for the ASHS conference.

9:45–10:15 AM  Desert Ballroom: Salons 7-8
Break

10:00 AM–12:00 PM  Desert Salon 12
Certified Professional Horticulturist (CPH) Board Meeting
Terry Ferriss, Chair; Kerrie Badertscher; Mike Orzolek; John Abbott; Deborah Ellis; Gary Bachman

10:00 AM–12:00 PM  Directors Suite VI
Crucifer Crop Germplasm Committee
Presiding: Mark Farnham

10:00 AM–12:00 PM  Springs Salon C
Workshop—Waste Utilization in Horticulture Walking Tour of Related Posters
Sponsor: Waste Utilization in Horticulture Working Group
Moderator: William B. Evans, wbe1@ra.msstate.edu
Coordinators: William B. Evans, wbe1@ra.msstate.edu; Joseph P. Albano, joseph.albano@ars.usda.gov

Please Meet in Springs C to gather with workshop participants. Group will then travel to the poster hall together.

The workshop will begin with a brief introduction, followed by an informal walk around the poster area to view work being done related to waste processing; waste recovery; composts and composting; substrates, containers, and fertilizers made from waste products; and other aspects of the role horticulture plays in finding uses for by-products and wastes.

10:15–11:45 AM  Desert Salon 4-6
Oral Session—Ornamentals/Landscape and Turf
Moderator: Donald R. Hodel, drhodel@ucanr.edu

10:15–10:30 AM  Research in Real Time: Integrating Social Media and Landscape Research
*Bert Cregg

10:30–10:45 AM  Genetic Characterization of Kyrgyzstan Fine-leaved Festuca valesiaca Germplasm for Use in Semi-arid, Low-maintenance Turf Applications
*Jack E. Staub, Yingmei Ma, Matthew D. Robbins, Paul G. Johnson, Steven R. Larson

10:45–11:00 AM  Easy Tea Hybrid Tea Rose Study: 2009–2012 Results
*Allen D. Owings

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Wednesday, July 24, 2013

10:15 AM–12:15 PM
Oral Session—Genetics and Germplasm

Moderator: Nahla Bassil, Nahla.Bassil@ars.usda.gov

10:15–10:30 AM
Genetic Control of Resistance to Anthracnose Crown Rot of Strawberry in Florida and North Carolina
*Vance Whitaker, Luis F. Osorio, Jeremy Pattison

10:30–10:45 AM
A Single Gene Confers Resistance to Bacterial Leaf Spot in the Lettuce Cultivar La Brillante
*Ryan J. Hayes, Mark Trent, Carolee Bull

10:45–11:00 AM
Horticultural Trait-SNP Marker Association Study in a Collection of Lettuce (Lactuca sativa L.) Lines
*Jinguo Hu, Soon-Jae Kwon, Ivan Simko, Barbara Hellier, Beiquan Mou

11:00–11:15 AM
What Have We Learned during Marker-locus Trait Validation for Rpf1 Red Stele Resistance in Strawberry?
Megan M. Mathey, Eric van de Weg, *Nahla Bassil, Andrew R. Jamieson, Chad E. Finn, Umesh Rosyara, James F. Hancock

11:15–11:30 AM
Characterization of Eight Novel Microsatellite Markers from Viburnum rufidulum
*Deborah Dean, Phillip A. Wadl, Denita Hadziabdic, Robert N. Trigiano

11:30–11:45 AM
Adaptive Differences Associated with Neutral and Non-neutral Markers in the Core Collection for North American Plums (Prunus spp.)
*Dario J. Chavez, Thomas G. Beckman, W.R. Okie, José Chaparro

11:45–12:00 PM
Molecular Markers for Population Studies of Cornus sanguinea
*Robert N. Trigiano, Phillip A. Wadl, Annie Hatmaker

12:00–12:15 PM
Population Structure Analysis of Eastern Filbert Blight Resistant Hazelnut (Corylus spp.) Germplasm
*Megan Muehlbauer, Thomas J. Molnar, Josh Honig, Jennifer Vaiciunas, John M. Capik

Oral Session—Pomology

Moderator: Carol A. Miles, milesc@wsu.edu

10:15–10:30 AM
Mechanical Harvest of Hard Cider Apples
*Carol A. Miles, Jonathan Roozen, Jacqueline King, Karen Hasenoehrl, David Bauermeister

10:30–10:45 AM
The Effect of Summer Hedging of Tall Spindle Apple Trees on Growth, Fruit Quality, and Flowering
*Terence Lee Robinson, Mario Miranda-Sazo, Stephen A. Hoying, Leonel Dominguez, Jose Fachinello

10:45–11:00 AM
Chemical Thinning of ‘Gala’ Apples with Treatments that Combine Sprays of NAA or BA during Flowering with Metamitron in Postbloom
*Gabino M. Reginato, Cristián Riquelme

11:00–11:15 AM
The Effect of Timing and Rate of Metamitron Sprays on Chemical Thinning of ‘Brookfield Gala’ Apple Trees
*Gabino M. Reginato, Cristián Riquelme

11:15–11:30 AM
Genotypic Variation in Apple Rootstock Cold Temperature Tolerance
*Renae Moran, Fang Geng, Gennaro Fazio, John A. Cline

11:30–11:45 AM
How Long Should Apple Rootstock Trials be Conducted?
*R.P. Marini

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
10:15 AM–12:15 PM Desert Salon 13-14
**Workshop—Challenges and Opportunities of Operating a University Garden**
*Sponsor:* Public Horticulture Working Group  
*Coordinator:* Susan Wilson Hamilton, sueham@utk.edu

This workshop will share information and experiences regarding the challenges and opportunities of those responsible for the management and operations of university gardens.

10:15 AM–12:15 PM Springs Salon D/E
**Workshop—Organic Agriculture in Southern California: Producing Organic Products in the Low Desert**
*Sponsor:* Organic Horticulture Working Group  
*Coordinators:* Milton E. McGiffen, Jr., milt@ucr.edu;  
Erin Silva, emsilva@wisc.edu

The Sonoran or Low Desert holds records for both high temperatures and high yields. It presents many unique challenges—extreme climate, low organic matter soils, and rapid breakdown of organic amendments. But it also presents many unique opportunities, including low water costs and a chance to supply uniquely profitable market niches. This workshop focuses on meeting both universal organic agricultural challenges in a challenging environment, and taking advantage of the unique situation the desert presents. Local growers, researchers, and extension personnel talk about working in the unique environment surrounding the site of this year’s conference.

10:15–10:30 AM  
Certified Organic Compost and Compost Tea Production and Use  
*Abira Selvaraj

10:30–10:45 AM  
Cost of Production Study for Organic Avocado  
*Eta Takele

10:45–11:00 AM  
Organic Date Production  
*Vince Samons

11:00–11:15 AM  
Organic Farming in the Imperial Valley  
*Scott Howington

11:15–11:30 AM  
Organic Vegetable Production in the Coachella Valley  
*Jose Luis Aguiar

11:30–11:45 AM  
Short- and Long-term Effects of Adding Organic Carbon to Low Organic Carbon Desert Soils  
*Milton E. McGiffen, Jr.

11:00 AM–12:00 PM Desert Salon 3
**Industry Division Advisory Council Meeting**
Jeffrey Norrie (Industry Division Vice President), *Chair*;  
Robert Mikkelsen (Industry Division Past President); all Working Group Chairs and Chairs-elect, Industry Division

11:00 AM–12:00 PM Desert Salon 11
**Working Group of Asian Horticulture (WGAH) Business Meeting**  
Jayesh Samtani, *Chair*;  
Mengmeng Gu, *Chair-elect*

The WGAH Working Group promotes dialogue and information and germplasm exchanges between horticulturists residing in America and Asia and assists them in developing horticultural education, research, and extension programs to better preserve and utilize their rich horticultural resources.

12:00–1:00 PM Desert Salon 11
**Association of Horticulturists of Indian Origin (AHIO) Business Meeting**  
Rammohan Uckoo, *Chair*

The Working Group’s goals are to: 1) promote fellowship among the horticultural scientists of Indian origin and increase professional opportunities through increased interaction among them and with other American scientists; 2) promote awareness of ASHS membership benefits and encourage membership pool from India; 3) facilitate and support ASHS ad-hoc membership to attract Indian Horticulturists; 4) act as scientific ambassadors to facilitate an exchange of scientific information and cultural ideas between India and countries in North America; and 5) help share and transfer results of scientific research to India to improve agricultural productivity and quality.

12:00–1:00 PM Desert Salon 3
**Intellectual Property Rights (IPR) Working Group Business Meeting**  
Amelie Aust, *Chair*;  
Todd P. West, *Chair-elect*;  
Tim Bourne, *Secretary*

The IPR Working Group provides a forum that will promote the exchange of information and discussion of issues concerning the protection of intellectual properties.
Wednesday, July 24, 2013

12:00–1:00 PM Desert Salon 4-6

**Oral Session—Local Food Systems**

*Moderator:* Mary E. Henry, mbhenry@ufl.edu

12:00–12:15 PM
Characterizing Polk Small Farms, as Compared to a Previous Florida Small Farms Survey
*Mary E. Henry, Glenn Israel

12:15–12:30 PM
The People’s Garden Initiative: Case Studies on the Mississippi Gulf Coast
*Christine E. Coker, Gary R. Bachman, Corey Wheeler, Jeannine May, Beth D’Aquilla

12:30–12:45 PM
Global Sustainable Food Systems for Urban Environments
*Ajay Jha, Paul Rupp

12:45–1:00 PM
Designing in Systems: Using Engaged Design to Incorporate Permaculture Solutions
*Abbey E. Piner, Lucy K. Bradley, Will E. Hooker, Julieta T. Sherk

12:00–1:30 PM Director Suite III

**Pi Alpha Xi Luncheon and Annual Meeting**

(Preregistration and prepayment required.)

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Crop Physiology**

(305) Ethylene, Hypobaria, and Hypoxia: Influence on Plant Gas Exchange, Germination, Plant Growth, and Nutrition of Lettuce (*Lactuca sativa*) from Seed to Harvest
*Fred T. Davies, Chuanjiu He

(306) Physiological Response of Non-acclimated Spinach to Repeated Freeze–Thaw Cycles
*Dan Drost, Taunya Ernst

(307) Changes in Aliphatic Glucosinolates Synthesis during Early Seedling Growth and Insect Herbivory in Radish (*Raphanus sativus* L.)
Eun-Hye Gu, Sooyeon Lim, Byung-Ho Hwang, *Jongkee Kim

(308) Quantitative Analysis of the Major Aliphatic Glucosinolates in Doubled Haploid Lines of Radish Plants (*Raphanus sativus* L.) Obtained By Microspore Culture
NaRae Han, Si Un Kim, Sooyeon Lim, *Byung-Ho Hwang

(309) Comparison of Glucoraphasatin and Glucoraphenin Content from Radish Plant during Vegetative and Reproductive Growth
Si Un Kim, NaRae Han, Sooyeon Lim, *Byung-Ho Hwang

(310) Polyamines Alter Fruit Size and Shape By Regulating Cell Division and Expansion in Tomato
*Raheel Anwar, Shazia Fatima, Avtar K. Handa

(311) Glucosinolates Distribution during Growth and Development in Radish Plants
*Sooyeon Lim, Byung-Ho Hwang, Sang-Wook Han, Jongkee Kim

(312) Daily Light Integral Influences Production of Steviol Glycosides
*Jennifer Evans, Veronica Vallejo, Ryan M. Warner

(313) The Influence of Temperature, Amino Acid, and Polyamine on Pollen Germination of Pepper (*Capsicum annuum* L.)
*Jeongmin Suh, Jumsoon Kang, Younghoon Park, Jae-Hwan Cho, Chang-Ho Hong, Hyun-Moo Shin

12:15–1:00 PM Desert Ballroom: Salons 7-8

**Poster Session—Environmental Stress Physiology**

(236) Carbon Gain, Biomass Allocation, and Water Use by Garlic in Response to Elevated CO₂ and Nitrogen Availability
*Lloyd Nackley, Jighan Jeong, *Soo-Hyung Kim

(237) The Effects of Fog Moisture Treatment on Reduction of Water Core Occurrence in Apple
*Sung-Hee Lee, Ikjei Kim, Yeu Seok Kwon, Ki Youl Lee

(238) The Effect of Water Stress on Leaf Aquaporin Expression in Sweet Orange Trees
*Maria Benloch-Gonzalez, *Ayako Kusakabe, Hilda S. del Rio, Eliezer Louzada, Juan Carlos Melgar

(239) Sound Practices to Effectively Perform Electrolyte Leakage Assays
*Ayako Kusakabe, Juan Carlos Melgar

(240) Interactive Effects of Hypoxia and Salinity on Perennial Ryegrass and Alkaligrass
*Hanan Isweiri, Yaling Qian

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Wednesday, July 24, 2013

(241) Varietal Differences in Physiology of Drought Stressed Phaseolus
Jesse Traub, James D. Kelly, *Wayne H. Loescher

(242) Initial Evaluation of Lettuce Collections for Drought Tolerance
*Caleb Knepper, Beiquan Mou

(243) Remotely Surface Reflectance Data for Irrigation Scheduling of Southern New Mexico Pecan Orchards
*Yahia Othman, Caiti Steele, Rolston St. Hilaire

(244) Using Sap Flow, Stem Diameter Micro-variations to Assess Water Use in Grapefruit Trees under Water-saving Irrigation Strategies
Sheren Elsayed Farag, *Juan Carlos Melgar

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Floriculture

(017) Temperature Affects the Development of Brown Spots on the Leaves of Oncidium Sharry Baby
Hye-Ji Kim, *Min Hee Kim, Xinxin Li, Kenneth Leonhardt

(018) Evaluation of Oncidium Intergenerics as Potential Cut Flowers
*Min Hee Kim, Kenneth Leonhardt, Hye-Ji Kim

(019) Biocontainer Use in Petunia ×hybrida Greenhouse Production—A Cradle-to-Gate Carbon Footprint Assessment of Secondary Impacts
Robin Brumfield, *Andrew Koeser, Sarah T. Lovell, J. Ryan Stewart

(020) Bluing of Hydrangea ‘Endless Summer’ Sepals Is Influenced by Timing of Aluminum Sulfate Drenches or Aluminum Chelate Foliar Sprays in Three Different Locations and Production Systems
*James S. Owen, Jr., Kimberly A. Williams, Heather M. Stoven, Joshua Craver, Julie Brindley

(021) Water Use and Cold Hardiness of English Lavender
Shuyang Zhen, *Stephanie Burnett

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Fruit Breeding

(357) Application of Simple Sequence Repeat Markers for Fruit Soluble Solids Content and Titratable Acidity in the Arkansas Peach and Nectarine Breeding Program
*Alejandra A. Salgado, John R. Clark, Paul Sandefur, Ksenija Gasic, Cameron Peace, Nahla V. Bassil

(358) Application of a Standardized Protocol for Fruit Quality Phenotyping in the Arkansas Peach and Nectarine Breeding Program
*Alejandra A. Salgado, John R. Clark, Paul Sandefur, Ksenija Gasic, Cameron Peace, Nahla V. Bassil

(359) RosBREED: Functional Allele Distribution for Blush Development in U.S. Peach Breeding Germplasm

(360) Application of Whole Genome Sequencing and High Resolution Mapping to Characterize Brown Rot (Monilinia spp.) Resistance in Peach [Prunus persica (L.) Batsch]

(361) Comprehensive Assessment on Quality of Fresh-eating Jujube Cultivars
Deyi Yuan, Wen-tao Chen, Riqing Zhang, *Donglin Zhang, Zhi-qiang Han, Hong-xu Long

(362) Phenotypic Diversity of Individual Sugars, Soluble Solids Content, and Acidity in Rosbreed Apple Germplasm
*Yingzhu Guan, Cari Schmitz, Matthew Clark, Benjamin Orcheski, James Luby, Susan K. Brown, Cameron Peace, David R. Rudell, Katherine Evans

(363) S, Progeny of Japanese Pear (Pyrus pyrifolia Nakai) ‘Osa Nijisseiki’ Having Self-compatibility and Their Homozygosity Estimated By SSR Analysis
*Eiichi Inoue

(416) Novel Carotenoid Pathway-related Gene Expression Patterns in Citrus Leaves and Maturing Fruits
*Xu Wei, Qibin Yu, Chunxian Chen, Antoine Gady, Yuan Yu, Fred Gmitter, Guolu Liang

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

2013 ASHS Annual Conference
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12:15–1:00 PM Desert Ballroom: Salons 7-8
Graduate Student Poster Competition—Session 5
Sign up at the time of abstract submission was required.
Full competition schedule begins on p. 16.

12:15–1:00 PM Desert Ballroom: Salons 7-8
Poster Session—Growth Regulators in Fruit and Nut Production
(276) The Use of ABA and AVG to Manage Fruit Set and Cropload of European Pear
*Todd Einhorn, Mateus Da Silveira Pasa
(277) Transplant Height Control and “Transplant Shock” Reduction with S-Abscisic Acid (S-ABA) in Vegetable Production
Frederick Marmor, Craig A. Campbell, Paul Silverman, Derek D. Woolard, Liu Xiaozhong, Peter D. Petracek, *Rob Fritts, Daniel Leep, Gregory Venburg, Johan Pienaar, Jozsef Racsko
(278) Physiological Investigations of Chemical Thinner Efficacy in Apples
P. Francescatto, *Diane Doud Miller, Jozsef Racsko

12:15–1:00 PM Desert Ballroom: Salons 7-8
Poster Session—Plant Nutrient Management
(266) Buffering Capacity of Substrates with Varying Amounts of Compost and Limestone
*Rachel A. Kreis, Matthew D. Taylor
(267) The Hydration Efficiency of Two Pine Tree Substrate Components under Dry Conditions
Jeb S. Fields, William C. Fonteno, *Brian Jackson
(268) Processing Tomato Response to Nitrogen Fertilizer
*Elizabeth T. Maynard
(269) The Ability of Plecrranthus parviflorus and P. ambiguus to Regreen after Micronutrient Deficiency
*Christopher Borman, Ellen T. Paparozzi, M. Elizabeth Conley
(270) Urea Hydrolysis in Pine Tree Substrate Is Affected by Urea and Lime Rate
*A. Alexander X. Niemiera, Linda L. Taylor, Jacob H. Shreckhise
(271) Content of Nitrogen, Phosphorus, and Potassium in Oregano (Origanum vulgare L.) Cultivated in Substrate
*C.R. Juarez-Rosete, J.A. Aguilar-Castillo, R. Bugarin-Montoya, M.E. Juarez-Rosete
(272) The Effect of Osmotic Potential of Nutrient Solution on the Yield of Hungarian Wax Pepper (Capsicum annuum L.)
(273) The Effect of Osmotic Potential of Nutrient Solution on the Yield of Yellow Pepper (Capsicum annuum L.)
*Porfirio Juarez-Lopez, Fredi I. Salazar-Jara, Gelacio Alejo-Santiago, Ruben Bugarin-Montoya, J. Diego Garcia-Paredes
(274) Mature Prune Trees in a Commercial Orchard Did Not Absorb a Measurable Amount of Potassium Analog Applied to the Soil Beneath an Adjacent Tree
*Franz Niederholzer
(275) The Effect of Foliar-applied Acidified Iron Sulfate on Chlorophyll and Iron Contents in Leaves of ‘Chandler’ Walnut Trees
Sergio Sanhueza, Pilar M. Gil, *Bruce Schaffer, Manuel Araya

12:15–1:00 PM Desert Ballroom: Salons 7-8
Poster Session—Pomology
(096) Unique Fruit Development of Ornamental ‘Teapot’ Jujube
*Shengrui Yao
(097) Searching for the Next Pawpaw Cultivar: Unique Germplasm Selections At Kentucky State University
*Kirk William Pomper, Sheri B. Crabtree, Jeremiah Lowe
(098) Field Establishment and Vigor of Kentucky State University Pawpaw Advanced Selections
*Sheri B. Crabtree, Kirk William Pomper, Jeremiah Lowe, Brandon May
(099) Inflorescence Traits and Pollen Germination Characteristics of Castanea henryi
Xiao-ming Fan, Deyi Yuan, Jing Tang, Feixiang Yang, Wei Gao, Ya Yang, Donglin Zhang, *Hongxu Long

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
(100) The National Strawberry Sustainability Initiative
(101) Pomegranate Variety Trial in Southern Arizona
Ursula K. Schuch, *Tilak Mahato, Glenn Wright
(102) Regulation of Floral Induction in Apple
*Mokhles A. ELsysy, Peter M. Hirst

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Postharvest

(400) Cultivar Differences in Gaseous 1-Methylcyclopropene Accumulation in Whole and Fresh-cut Apple Fruit
Xiaoqing Dong, Donald J. Huber, *Maricruz Ramirez-Sanchez, Jing-Ping Rao, Jinsu Lee, Christopher B. Watkins
(401) Quality of Fresh-cut Pineapple Cubes Treated by Either High Pressure or Thermally Blanching
*Hidemi Izumi, Megumi Ishimaru, Hiroshi Matsu
(402) Evaluation of Quality and Sensory Attributes of Purple Passion Fruit (Passiflora edulis Sims) Harvested at Different Stages of Maturity
*Jane Ambuko, Penina Mueni Yumbya, Willis Omondi Owino
(403) Study of the Application of Technological Alternatives to Increase the Shelf Life of Mango (Mangifera indica L.) Cv. Manila
Dalia Vázquez-Celestino, Rosalía Reynoso-Camacho, Eduardo Castaño-Tostado, Ma Estela Vázquez-Barrios, *Edmundo Mercado-Silva
(404) Harvest Timing, Crop Load, and Preharvest GA₃ Application Affect Postharvest Quality of ‘Lapins’ and ‘Sweetheart’ Sweet Cherries
*Yan Wang, Todd Einhorn
(405) Grafting Rootstock, Scion, and Field Holding Effects on Seedless Watermelon Fruit Quality
*Penelope Perkins-Veazie, Richard L. Hassell
(406) Effects of Postharvest Heat Treatments on Chilling Injury, Diseases, and Quality of Tuscan Melons
*Christian Krarup, Cristian Jacob, Samuel Contreras
(407) Effect of Harvest Delay of Southern Highbush Blueberry on Resistance to Impact and Storage Quality
*Steven Sargent, Jeffrey G. Williamson, Adrian D. Berry, James W. Olmstead
(408) Extending Cassava Root Market Life in Liberia with Improved Postharvest Practices
*David H. Picha
(409) Market Life Extension and Fruit Quality Enhancement of Navel Oranges
*David H. Picha, Mary S. Bowen
(410) Suitability of Two Instruments to Determine Skinning Resistance in Sweetpotato
*Xiang Wang, Ramon A. Arancibia, Jeffrey L. Main, Lori Grelen, Don LaBonte
(411) Postharvest Storage Affects Sweetpotato Water-soluble Vitamin Composition
*Wilmer Barrera, David H. Picha
(412) Differences in Storage Quality of Onion Bulb as Affected By Harvesting Methods
*Injong Ha, Sunkyong Kwang, Jongtae Lee, Sunyoung Lee, Jinseong Moon, Byeonggyu Min, Heedae Kim
(413) Application of Two Different MAP Systems in Order to Prolong the Shelf Life of Romaine Lettuce during Marine Shipment
*Eleni D. Pliakoni, Donald J. Huber, Steven Sargent, Jeffrey K. Brecht
(414) Essential Oils in the Conservation of ‘Palmer’ Mango Fruits
*Gisele Polete Mizobutsi, Gisele Mizobutsi, Raquel Rodrigues Soares Sobral, Rayane Carneiro dos Santos, Martielle Batista Fernandes, Lais Maia e Silva, Daffine Oliveira Santos, Wagner Vendrame, Edson Hiydu Mizobutsi
*Edson Hiydu Mizobutsi, Raquel Rodrigues Soares Sobral, Rayane Carneiro dos Santos, Martielle Batista Fernandes, Lais Maia e Silva, Daffine Oliveira Santos, Gisele Polete Mizobutsi, Gisele Mizobutsi, Wagner Vendrame

12:15–1:00 PM Desert Ballroom: Salons 7-8

Poster Session—Viticulture and Small Fruits

(121) Muscadine Grapes: Evaluation of Genotypes and Field Fungicide Applications on Postharvest Storage Attributes
*Derek W. Barchenger, John R. Clark, Renee T. Threlfall
Wednesday, July 24, 2013

(122) Failure Tests of Intact Grape Berry Skins and What They Tell Us About Berry Cracking
   *Yan Zhuang, Mark Matthews, Kenneth Shackel

(123) Determining Survival of Lobesia botrana Larvae in Grapes Processed for Wine Making to Evaluate the Risk of Dispersal
   *Rhonda J. Smith, Monica L. Cooper, Lucia G. Varela, Gregory S. Simmons

(124) Utilizing Pruning and Leaf Removal to Ripen Grapes and Encourage Cold Tolerance in North Dakota
   Andrew D. Aipperspach, Harlene Hatterman-Valenti, *Brittany K. Olson

(125) Applying Precision Agriculture Technologies as a Problem Solving Tool to Improve Small-scale Vineyard Management in Western Nile Delta of Egypt
   *Diaa O. EL-Ansary

(126) Flavonoid Accumulation in Wine Grapes
   *Ashlyn E. Wedde

(127) Evaluation of Two Sources of Organic Matter Applied to Soil and Their Effects on Grape Production
   Fabian Robles-Contreras, Manuel de Jesús Valenzuela-Ruiz, Ruben Macias-Duarte, *Raúl Grijalva-Contreras, Arturo López-Carvajal

12:30–1:30 PM Desert Salon 1-2

Workshop—International Consultation, Outreach, and Capacity Building


Coordinators: Mary E. Henry, mbhenry@ufl.edu; David Obenland, david.obenland@ars.usda.gov

This workshop will inform participants on strategies to craft a career with potential to translate into international work in the future. Updates on current USAID projects, as well as those funded by other sources, including volunteer assignments will be offered. Participants will benefit from honest discussion of in-country experience and learn how they can get involved in international employment and consultation opportunities.

12:30–12:45 PM
Farmer-to-Farmer Volunteer Opportunities: University Lectures and Labs in Tajikistan with CNFA
   *John L. Griffis, Jr.

12:45–1:00 PM
Career Opportunities at USAID
   *John E. Bowman

1:00–1:45 PM Desert Ballroom: Salons 7-8

Study Abroad/International Field Trips to Increase Students’ and Agriculture Professionals’ Competitiveness in the International Arena
   Mengmeng Gu, James A. Robbins, Xin Zhao

1:15–1:30 PM
Hort CRSP Update
   Beth Mitcham

1:00–1:15 PM Desert Ballroom: Salons 7-8

Graduate Student Poster Competition—Session 6

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Herbs, Spices, and Medicinal Plants

(176) An Efficient Protocol for Direct Somatic Embryogenesis in Medicinal Tree Murraya Koenigii (L.)
   Nisha Khatik, *Ramesh Joshi, M.L. Agarwal, Dilip Nandwani

(177) Photosynthesis and Harvest of Deltoid Synurus (Synurus delitodes) under Three Different Light Environments
   *Heesun Noh, Kyeongcheol Lee, Jonghwan Kim, Hangsup Han

(178) Anti-inflammatory Activity of Potentilla kleiniana Extracts
   *Jung-Hwan Nam, O.S. Hur, Su-Young Hong, Su Jeong Kim, Hee-Jhun Park, Kyung-Tea Lee, Oh-Keun Kwon, Kwang-Soo Cho, Hwang-Bae Sohn, Ki Sun Kim

(179) Phenolic Content and Antioxidant Capacity of American Persimmon Teas
   *Hideka Kobayashi, George Anotnious, Changzheng Wang, Kirk William Pomper

(180) The Effect of Composts on Field Soils Affected by Bacterial Wilt of Edible Ginger in Hawaii
   *Sharon Motomura, Scot Nelson, Susan C. Miyasaka, Michael Shintaku

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Organic Horticulture

(082) Groundcover Management System and Nutrient Source Impact Physical Soil Quality

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Indicators in an Organically Managed Apple Orchard
Neal Mays, *Curt R. Rom, M. Elena Garcia, Mary Savin, Kristofer Brye, Jason McAfee, Heather Friedrich

(083) Cover Crop Mixtures Build Soil Quality in Organic Hop Orchards
*Lori Hoagland, Kevin Murphy, Sam Turner, Robert Sirrine

(084) An Evaluation of Organic Fertilizers for Use in Container Media
*A. James Downer, Anna D. Howell

(085) Effect of Late Summer Cover Crops on Weed Management in Organic Vegetables in the Great Lakes Region
*Thomas Björkman, Joseph W. Shail, Jr., Daniel C. Brainard, Carolyn Lowry, John B. Masiunas, Dan Anderson

(086) Nutrient Content of Field-grown Organic Heirloom Tomatoes as Influenced by Poultry Compost and Mycorrhizae Application
Lurline E. Marsh, *Fawzy M. Hashem, Brett D. Smith, Corrie P. Cotton

(087) Organic Production of Sunflowers in High Tunnels
*Guihong Bi, William B. Evans, Vasile Cerven

(088) Vegetable Yield and Soil Quality as Affected by Organic Cropping Systems
*Xin Zhao, Kathleen Delate, Cynthia Cambardella

(380) In Vitro Callus Induction of Dendranthema indicum var. Aromaticum, a Scented Chrysanthemum
*He Miao, Feng Bo, Dong Chunyan, Qixiang Zhang, Neil O. Anderson

(381) Variation in Nuclear DNA Content and Chromosome Number among and within Caladium Species
Zhe Cao, *Zhanao Deng, Mike McLaughlin

(382) Haploid Production through Anther Culture in Saintpaulia Species
*Yuichi Uno, Haruyuki Kobayashi, Hitomi Koda

1:00–1:45 PM Desert Ballroom: Salons 7-8
Poster Session—Ornamental Plant Breeding

(376) In Vitro Chromosome Doubling of Prunus laurocerasus ‘Otto Luyken’
*Ryan Contreras, Luigi Meneghelli

(377) Breeding Heat Tolerant Abutilon
Fanghua Niu, *Donglin Zhang, John M. Ruter, Zhihui Li

(378) Characterizing Crop Timing and Quality Traits of a Petunia integrifolia × P. axillaris Recombinant Inbred Line Population under Different Temperatures
*Wei-Kuang Lin, Ryan M. Warner

(379) Ploidy Analysis of Cultivated Corylosis (Hamamelidaceae)
Richard T. Olsen, *Margaret Pooler

1:00–1:45 PM Desert Ballroom: Salons 7-8
Poster Session—Teaching Methods

(184) Development of Teaching Aid for Leaf Function and Evaluation of Its Impacts on Student Academic Achievement
*Ji-Hye Moon, Sun Jin Jeong, Sang Mi Lee

(185) Do Plants Play a Part in Student Satisfaction?
*Amanda Plante, J. Mark Fly, Susan Wilson Hamilton

(186) A Webinar Series to Provide Advanced Training for Iowa Nursery and Landscape Professionals
*Ann Marie VanDerZanden

(187) An Undergraduate Independent Study Project Developing a Golf Course Tree Inventory for Audubon Sanctuary Certification
*David Kopsell, Jacob Kuban, Mike Rayman

(188) Introducing the Flipped Classroom in Several Horticulture Courses
*Kent D. Kobayashi, Kauahi Perez

(189) Fruit Quality Measurements in a Segregating Blueberry Population: Plant Breeding Training for Undergraduates
*Rachel A. Itle, Catherine Cellon, Kyle M. Guerrero, Micah J. Weiss, William Cobb, Giovanny E. Covarrubias, Werner R. Collante, James W. Olmstead

(190) Understanding Student Perceptions and Industry Expectations for Viticulture and Enology Careers
*Patricia A. Skinkis, Sierra Laverty, James Osborne

(191) The Use of Creative Nonfiction in a Floriculture Production Course to Introduce Concepts of Plant Conservation, Industry Internationalism, and Consumer Motivations for Plant Purchases
*Kimberly A. Williams

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(192) How To: Making an Informative Video from Start to Finish
*Rosa Bevington, Sadhana Ravishankar, Kurt D. Nolte

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Temperate Tree Nut Crops

(128) A Reduced Early Season Irrigation Schedule for Southeastern Pecan Production
*Lenny Wells

(129) Efficiency of California Trunk Shaking Pistachio Harvesters
*Louise Ferguson, John A. Miles, Sergio Castro-Garcia, Kitren Glozer

(130) Feeding Preference of Conotrachelus retentus on Black Walnut Tissues
*Michele R. Warmund, Audrey L. Davis, Terrell Stamps

(131) Characterization of the Relationship of Manganese Nutrition to Photosynthesis of Pecan in the Mesilla Valley, New Mexico
*Joshua Sherman, Richard Heerema, Rolston St. Hilaire, Dawn VanLeeuwen

(132) Investigating Physiology of Salt Processing in Pistachio
*Jessie M Godfrey, Maciej Zwieniecki, Georgia Drakakaki, Louise Ferguson

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Vegetable Crops Management

(160) Symbiotic Performance of Diverse Cowpea Genotypes on the Delmarva Peninsula
*Nadine M. Burton, Fawzy M. Hashem, Robert B. Dadson, Corrie P. Cotton

(161) Grafting and Number of Polyplastic Film Layers Affect Yield of High Tunnel Tomatoes
*Sanjun Gu, Catherine Bohnert, Steven Kirk

(162) Effects of Grafting and Landscape Fabric on Productivity of Three Organically Grown Heirloom Tomato Varieties in High Tunnels
*Kurt Taylor, Grace Summers, Patricia Perez, *Sanjun Gu, Rickie Holness

(163) Low Tunnels and Shading Influence Total and Marketable Yield of Bell Pepper Fruit
*Samuel Day, Dan Drost

(164) Evaluating Extended Season Head Lettuce Production in West Virginia
*Lewis Jett

(165) Fruit Yield and Composition as Functions of Grafting and Irrigation Regimen in an Organic High Tunnel System
*Matthew D. Kleinhenz, David Francis

(166) Production and Quality of Grafted Watermelon Cultivars
*Samuel Contreras, Cristian Jacob, Christian Krarup

(167) Influence of Grafting and Planting Density on Fruit Yield and Root-knot Nematode Control in Tomato Production
*Ruhiyyih Dyrdahl-Young, Xin Zhao, Stephen M. Olson, Robert McSorley

1:00–1:45 PM Desert Ballroom: Salons 7-8

Poster Session—Water Utilization and Management

(255) Influence of Nitrogen Rate and Drip Application Method on Pomegranate Fruit Yield and Quality
*Donald J. Makus, R.C. Phene, C.J. Phene, R. Schoneman, James E. Ayars

(256) Container-grown Lavender Affected by Oxygenated Irrigation Water
*S. Evan Wilson, *Diana Cochran, Amy Fulcher

(257) Response of Mexican Lime to Partial Rootzone-drying: A Water-saving Strategy
*Beatriz A. Contreras-Barragan, Ayako Kusakabe, Juan Carlos Melgar

(258) Strategies for Reduction of Irrigation Applications for Bare-root Strawberry Transplant Establishment in Central Florida
*Craig Stanley, Bielinski M. Santos

(259) Sensor Integrated Automatic Irrigation System to Reduce Runoff and Nutrient Loss without Affecting Plant Growth
*Xueni Wang, Rodney Thomas Fernandez, Bert Cregg, Mathieu Ngouajio, Rafael Auras, Joseph P. Albano

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(260) Seasonal Water Use of Southern Highbush Blueberry in Florida
  *Jeffrey G. Williamson, Luis E. Mejia, Bradley Ferguson

(261) Identification of Plant-endophytic Bacteria from Bell Pepper (Capsicum annuum L.) Grown under Different Production Systems and Water Regimes
  *Zheng Wang, Timothy W. Coolong

  Leonardo D Rivera, *Lauren Crawford, Marc van Iersel, Sue Dove

(263) Seasonal Landscape Crop Coefficients
  *Tim Pannkuk

(264) Containment, Remediation, and Recycling of Irrigation Water for Sustainable Ornamental Crop Production: Results of a SCRI Planning Grant

(265) Use of Rainfall Simulation to Determine the Persistence and Transport of Escherichia coli and Salmonella in Runoff Water
  *Tamadour N. Khairi, Fawzy M. Hashem, Corrie P. Cotton, Robert Korir, Leonard C. Kibet, Arthur Allen, Ray Bryant, Patricia Millner

1:00–2:00 PM  Desert Salon 11

Production and Harvest Mechanization (MECH) Working Group Business Meeting
Stephanie Walker, Chair
The MECH Working Group provides an informal organization to bring together those interested in production and harvest mechanization needs, opportunities, and problems in horticultural crops.

1:00–3:00 PM  Springs Salon A/B

Workshop—Fantastic Fruits Grown in California
Sponsor: American Pomological Society
Moderator: Michele R. Warmund, warmundm@missouri.edu
Coordinator: Michele R. Warmund, warmundm@missouri.edu
To present current knowledge of three exotic California-grown fruit crops. This workshop features three of California’s fascinating fruit crops, including figs, persimmon, and pitahaya. Figs were purportedly introduced into California in 1759 by Franciscan missionaries. Production of this crop increased steadily over the years and peaked in 1943. While fig acreage has declined, California currently ranks third in world production. Japanese and Chinese persimmons were introduced into the United States in the mid-1800s and are primarily grown in the San Joaquin valley and in southern California today. In the 1990s, adventurous producers started growing pitahaya or dragon fruit, which can be found in local markets. Each of these exotic fruits has production opportunities and challenges in a changing environment.

1:00–1:55 PM  Springs Salon C

Local Food Systems (LOCSY) Working Group Business Meeting
Christine Coker, Chair; Kathryn Fortenot Chair-elect; Rebecca N. Brown, Secretary
The LOCSY Working Group promotes 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 marketing, local food system and farmland policy, and relationships of local horticulture to rural and urban communities and economies.

1:30–2:00 PM  Desert Salon 3

Horticulture Hall of Fame Selection Committee
Paul E. Read, Chair; Mary M. Peet; John R. Clark; Cary A. Mitchell; William J. Lamont, Jr.; Fred T. Davies; Kelly Young; Paul Bosland; Mary Lewnes Albrecht

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**Wednesday, July 24, 2013**

1:45–3:30 PM  
Desert Ballroom: Salons 7-8  

**Poster Removal**

All posters are to remain up until the last poster session has ended.

The removal can begin at 1:45 PM on Wednesday. Any posters that are still in the hall after 3:30 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.

1:45–3:45 PM  
Springs Salon D/E  

**Workshop—A Speed Dating Approach to Career Options**

*Sponsor: Industry Division  
*Moderators: Kristin Abney, kabney22@gmail.com; Jeffrey Norrie, jnorrie@acadian.ca

Students are increasingly looking at options other than university or government positions when exploring career paths. Industry is one of the most important potential avenues for these alternative choices. This workshop is designed to expose students to the requirements and responsibilities of several Industry scientists in a fun and fast-paced way. Scientists from several horticultural companies will deliver a brief description of their education, past experience, current responsibilities and advice for students looking at career options, with emphasis on how their education has supported their career path. Students will have time afterward to mingle and discuss career ideas with the speakers, and carry on the discussion poolside in the evening.

1:45–3:45 PM  
Desert Salon 9-10  

**Workshop—Current Techniques for Nondestructive Quality Evaluation of Postharvest Horticultural Commodities**

*Sponsor: Postharvest Working Group  
*Coordinator: David Obenland, david.obenland@ars.usda.gov

To discuss the current state of evaluating horticultural quality parameters by nondestructive sensing techniques for use in laboratory and commercial settings following harvest.

1:45–2:00 PM  
Rapid Agricultural Product Quality Measurements using Magnetic Resonance Based Sensors  
*Michael McCarthy

2:00–2:15 PM  
The Use of X-ray Imaging Technology for Nondestructive Inspection of Horticultural Crops for Defects and Contaminants  
*Ronald Haff

2:15–2:30 PM  
Use of Electronic Nose for Evaluation of Fruit Harvest Maturity, Variety, and Quality  
*Elizabeth Baldwin

2:30–2:45 PM  
Real Time Inspection of Agricultural Products with NIR  
*Thomas Pearson

2:45–3:00 PM  
Using Chlorophyll Fluorescence for the Rapid, Nondestructive Assessment of Fruit Quality  
*Jun Song

3:00–3:15 PM  
An Industry Perspective on Nondestructive Testing of Horticultural Commodities  
*Ken Moynihan

1:45–3:45 PM  
Desert Salon 13-14  

**Workshop—Horticultural Substrates: Current Research, Development, and Characterization for Improved Crop Production**

*Sponsor: Nursery Crops Working Group  
*Moderator: Cheryl R. Boyer, crboyer@k-state.edu  
*Coordinators: John Majsztrik, jmajsz@umd.edu; Brian Jackson, brian_jackson@ncsu.edu; Sarah A. White, swhite4@clemson.edu

This workshop will provide an update on the status of alternative nursery crop substrate research in the United States and to share new techniques for substrate analysis.

1:45–2:05 PM  
Introduction and Overview of Current Issues and Advances in Traditional and Alternative Substrate Manufacturing and Utilization  
*Brian Jackson

2:05–2:30 PM  
Proper Statistical Methods for Analyzing Substrate Mixtures  
*James Altland

2:30–2:45 PM  
Irrigating Substrates to Improve Nutrient Retention and Plant Growth  
*Rodney Thomas Fernandez

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Wednesday, July 24, 2013

2:55–3:20 PM
Root Growth of Container Crops: Techniques for Enhancing and Measurement
*Brian Jackson

3:20–3:45 PM
Methods for Analysis of Soilless Substrate Physical and Hydraulic Properties
*James S. Owen, Jr.

1:45–3:45 PM Desert Salon 4-6
Workshop—Intellectual Property Fundamentals and Current Issues
Sponsor: Intellectual Property Rights Working Group
Moderators: Amelie Aust, ameliae@fallcreeknursery.com; John R. Clark, jclark@uark.edu
Coordinators: Timothy F. Bourne, timbourne@sunviewvineyards.com; Larry D. Knerr, lknerr@shamrockseed.com; Todd P. West, todd.p.west@ndsu.edu

The IPR workshop will act as a resource for ASHS members on the domestic intellectual property landscape, including both prepared speeches and a panel for questions. The presentations will present an overview of the various types of Intellectual Property rights and their application in horticulture and agriculture, and how they can be used. In addition, we will address current events relevant to horticulture, specifically addressing new laws and legal precedents that you should be aware of. A panel of speakers will include a variety of perspectives, including Researchers, Intellectual Property Attorneys, and Industry Experts. In the first hour, panel speakers will provide an overview of the types of intellectual property protection beyond Plant Patents and Plant Breeder’s Rights Certificates. These rights include Trademarks, Trade Secrets, Utility Patents, and Copyrights, all of which can be utilized to maximize your intellectual property benefits. This information will serve as the foundation material for the panel speakers to build upon during the second hour.

Topics:

IP Basics—Domestic Focus
Chelle Bos, Plant Patent Attorney

Current Events—Changes in the Patent Law, Legal Precedent, and What It Means to the Horticulture Community

Breeding—The Future Role of Public versus Private IP in Horticulture
(speaker to be announced)

The moderated panel presentation for the second hour will address relevant current events in intellectual property law, and the resulting implications to the agricultural and horticultural industries. The goal of the workshop is for participants to gain an understanding of the interface between intellectual property rights, and how to maximize the benefits from protecting those rights. There will be time allotted during the second hour for questions and discussion.

1:45–3:45 PM Desert Salon 1-2
Workshop—The Challenges of Using Alternative and Recycled Water Sources for Horticultural Use
Sponsor: Water Utilization and Management Working Group
Coordinator: John D. Lea-Cox, jlc@umd.edu

This workshop will illustrate some the issues surrounding the use of alternative and recycled water sources in the production and management of horticultural commodities.

1:45–2:15 PM
The Challenges of Graywater as an Alternative Water Source for Landscape Irrigation
*Raul I. Cabrera

2:15–2:45 PM
Pharmaceuticals and Persistent Organic Micropollutants in Reclaimed Irrigation Water
*Sarah A. White

2:45–3:15 PM
Pesticides in Recycled Water: What Are the Issues?
*Rodney Thomas Fernandez

3:15–3:45 PM
Daily and Seasonal Changes in the Water Quality of Irrigation Containment Ponds
*John D. Lea-Cox

2:00–3:00 PM Desert Salon 12
Membership Committee Meeting
Marita I. Cantwell, Chair; Angela Davis, Matthew Taylor, Tim Rhodus, Mark Uchanski, Carol Lovatt, Paul Bosland, Michael W. Neff

2:00–3:00 PM Springs Salon C
Plant Nutrient Management (PNM) Working Group Business Meeting
Joseph Albano, Chair; Dharmalingam Pitchay, Chair-elect; Monica Ozores-Hampton, Secretary

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The PNM Working Group exchanges ideas and information on mineral nutrition and provides interaction between industry and public institutions interested in mineral nutrition of horticultural crops.

2:00–3:00 PM Desert Salon 3

Temperate Tree Nut Crops (NUTS) Working Group Business Meeting
Richard Rosecrance, Chair; John Preece, Chair-elect
The NUTS Working Group works to: bridge the wide communications gap among nut tree researchers; exchange ideas, results, and experiences in similar orchard crops; and provide a forum to discuss various aspects of research unique to tree nut crops.

2:00–6:00 PM Directors Suite VI

Certified Horticulturist Examination
Proctor: George Fitzpatrick

2:30–5:00 PM Desert Ballroom: Salons 7-8

Exhibits Move Out

3:00–3:30 PM Springs Salon C

APS Tropical Fruit Tasting

3:00–4:00 PM Desert Salon 12

Citrus Crops (CITR) Working Group Business Meeting
Glenn Wright, Chair
The CITR Working Group provides a forum for exchange of ideas between the various specialists in citrus research and citrus extension personnel.

3:00–4:00 PM Desert Salon 3

International Horticultural Consultants (ICON) Working Group Business Meeting
Mary Beth Henry, Chair; Carl Motsenbocker, Chair-elect
The objectives of this group are: 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.

3:30–4:30 PM Springs Salon C

American Pomological Society (APS) Annual Business Meeting
Chair: Kirk William Pomper

4:00–5:30 PM Springs Salon F

Presidential Address and ASHS Annual Business Meeting
President: Paul Bosland, ASHS President
Business Meeting:
Presiding: Dewayne L. Ingram, Chair, ASHS Board of Directors
Agenda:
• Board of Directors Report
• Observation of a moment of silence for deceased members
• Open discussion on matters of importance to Members
• Association of Collegiate Branches (ACB) report
• Presentations in recognition of services to ASHS
• Introduction of the 2013–2014 ASHS President and Board of Directors

4:00–7:00 PM Tour Lobby

Graduate Student Jeep Tour
Coordinator: Jeffrey Norrie, jnorrie@acadian.ca
Thank you to the following organizations for supporting this event: Acadian Seaplants, Brandt, Crop King, Duarte Nursery, Fall Creek Nursery, Farming Systems Research, Fides Ecke, Harris Moran Seed Company, Heinz, Shamrock Seed Company, and Syngenta.

7:00–8:00 PM Springs Retreat Pool

Student Reception

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Thursday, July 25, 2013

7:00–8:00 AM
Water Features Tour
Coordinator: Milton E. McGiffen, Jr., milt@ucr.edu

7:15–7:45 AM
Starbucks at J.W Marriott Resort
Graduate Student Working Group Morning Gathering
Coordinator: Kristin Abney, kabney22@gmail.com

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).

7:30–11:30 AM
The Living Desert Tour

7:30 AM–3:00 PM
Center & North Registration Counters
Registration Open

8:00–9:00 AM
Graduate Student (GRAD) Working Group Business Meeting
Kristin Abney, Chair; Amanda Bayer, Chair-elect

The GRAD Working Group provides a formal organization for Graduate Students in ASHS to support programs and issues facing Graduate Students in Horticulture.

8:00–9:00 AM
Waste Utilization in Horticulture (WUH) Working Group Business Meeting
Monica Ozores-Hampton, Chair

The WUH Working Group enables researchers, teachers, and service professionals to meet and share common interests and experiences, to minimize duplication of efforts, to plan future areas of research, and to promote cooperative research. The group serves as a source of current information and guidance to those involved in waste recycling that benefit horticultural industries.

8:00–9:30 AM
Oral Session—Vegetable Crops Management
Moderator: Gordon Johnson, gcjohn@udel.edu

8:00–8:15 AM
Response of Pigeonpea [Cajanus cajan (L.) Millsp.] to Planting Date and Spacing in Alabama
*Rao S. Mentreddy, Rapheal Baggett, Ernst Cebert, Udai R Bishnoi

8:15–8:30 AM
Subsurface Drip Irrigation Affects Water Usage and Yield in Acorn Squash
*Timothy W. Coolong

8:30–8:45 AM
Onion Variety Response to Plant Population and Irrigation System
*Clinton C. Shock, Erik B.G. Feibert, Lamont Saunders

8:45–9:00 AM
Cultivar Adaptability for Midwest Sweetpotato Production
*Ajay Nair, Moriah Bilenky, Ben Bergum

9:00–9:15 AM
Improving Lima Bean (Phaseolus lunatus) Productivity in the Mid-Atlantic Region
*Gordon C. Johnson, Emmalea Garver Ernest

9:15–9:30 AM
SWOT Analysis of the Vegetable and Fruit Programs in Texas
*Daniel Leskovar, Marco Palma, Bhimanagouda S. Patil

8:00–9:30 AM
Oral Session—Viticulture and Small Fruits
Moderator: Wei Qiang Yang, wei.yang@orst.edu

8:00–8:15 AM
The Effect of Terbacil, Root Injury, and Rhizoctonia fragariae on Strawberry and the Development of Black Root Rot
*E.K. Lavely, B.K. Gugino, K. Demchak, R.P. Marini

8:15–8:30 AM
Genetic Parameter Estimates for Resistance to Colletotrichum gloeosporioides and Comparisons with Production Traits in Strawberry
*Jozer Mangandi, Luis F. Osorio, Vance M. Whitaker

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8:30–8:45 AM  
Extending the Strawberry Season: High Tunnels, Low Tunnels, and Targeted Supplemental Heating  
*Tiffany Maughan, Brent Black, Dan Drost

8:45–9:00 AM  
Specific Changes in the Expression of Cell Wall Carbohydrate Metabolism Related Genes during Fruit Abscission in Rabbiteye Blueberry  
*Tripti Vashisth, Anish Malladi

9:00–9:15 AM  
Effect of Rootstock and Soil Amendment on Three Highbush Blueberry Cultivars  
*Wei Qiang Yang, Adrienne Basey, Peter Sturman

9:15–9:30 AM  
The Effect of Timing and Intensity of Summer Pruning on Vegetative and Reproductive Traits of Southern Highbush Blueberry  
*Alisson Pacheco Kovaleski, Jeffrey G. Williamson, Rebecca L. Darnell

8:00–9:45 AM Desert Salon 9-10  
**Oral Session—Consumer Horticulture and Master Gardeners**

8:00–8:15 AM  
Increasing Confidence in Diagnosing Plant Problems with Diagnostic Updates  
*Pamela J. Bennett, James C. Chatfield

8:15–8:30 AM  
Making Meaning Out of Science: Using Nature’s Notebook to Engage Citizens in Exciting and Relevant Research  
*Peter Warren, LoriAnne Barnett

8:30–8:45 AM  
Permaculture in Community Gardens: A Systems-based Approach to Engaged Design  

8:45–9:00 AM  
Organic Gardening Educational Materials for Extension Master Gardener Volunteers  
Aimee A. Rankin, *Lucy K. Bradley, David Orr, Frank J. Louws

9:00–9:15 AM  
The 40 Gallon Challenge: A Simple Effective Educational Tool  
*Ellen Bauske, Paul Pugliese, Melanie Biersmith, Emily Pitts

9:15–9:30 AM  
Virtual Volunteers: Expanding Extension’s Reach with a National EMG Social Media Certification  
*Karen Jeannette, Emily Eubanks

9:30–9:45 AM  
Seeing in Systems: Helping Community Gardeners Build Resilience and Reduce the Need for Maintenance by Making Permaculture Connections  
*Abbey E. Piner, Lucy K. Bradley, Will E. Hooker, Julieta T. Sherk

8:00–10:00 AM Director Suite III  
**International Division Breakfast**

Coordinator: Esmaeil “Essie” Fallahi, efallahi@uidaho.edu

Speaker: Clinton C. Shock, clinton.shock@oregonstate.edu  
Director of Oregon State University Malheur Experiment Station, Ontario, OR

(Preregistration and prepayment required.)

**Topic:**

Ending the Cycle of Poverty Among Some of the Rural Poor in Mato Grosso do Sul, Brazil

Professor Shock will focus on his horticultural mission to Brazil. Although his mission goals were achieved, he found that the social needs were more important than those initial horticultural needs and, thus, he redirected his work. Professor Shock and his wife developed farm plans for 52 individual poor farm families out of many thousands and used NGO funds and free market pass-through loans to deliver resources to the families at modern lending institution rates. The selected farm families became more prosperous and escaped abject poverty. Effects spread to neighboring counties. Professor Shock is a nationally and internationally renowned horticulturist who has traveled to many countries and assisted in several horticultural projects, particularly in irrigation projects of onions and potatoes and other crops.

8:00–10:00 AM Desert Salon 13-14  
**Oral Session—Teaching Methods**

Moderator: James A. Robbins, jrobbins@uaex.edu

8:00–8:15 AM  
Effectiveness of Online Laboratory Experiences  
*Cynthia B. McKenney, D. Thayne Montague, Ashley Elle

8:15–8:30 AM  
Creating Virtual Nursery Trips to Improve On-campus and Distance Education in Nursery Production  
*James A. Robbins, Amy N. Wright, Mengmeng Gu

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
**Thursday, July 25, 2013**

8:30–8:45 AM  
Using an Extraordinary Combination of In-person Education and Distance Learning to Help Women Producers Create Business  
*R*Robin G. Brumfield, Jenny Carleo, Jeff Heckman, April Lippet-Faczak, Jennifer Matthews, Meredith Melendez, Barbara O’Neill, Nicholas Polanin

8:45–9:00 AM  
Climate Change Literacy in the U.S. Undergraduate Horticulture Curriculum  
*Virginia I. Lohr*

9:00–9:15 AM  
Using Different Teaching Methods to Enhance Student Learning of Climate Change  
*Amanda Bayer, Marc van Iersel*

9:15–9:30 AM  
A Syllabus Rejig: Aligning Course Goals, Learning Objectives, Assignments, and Assessment  
*Ann Marie VanDerZanden*

9:30–9:45 AM  
Continuing Agricultural Education: Relationship between Adult Learning Styles and Educational Delivery Method Preferences  
*Kaylee Renick, Ryan M. Foor, Kurt D. Nolte*

9:45–10:00 AM  
North American Horticulture Graduate Program Survey: Demographics, Policies, Finances, and Metrics  
*Michael A. Arnold, R. Daniel Lineberger, Tim Davis, David W. Reed*

**Workshop—Citrus Breeding**

*Sponsor:* Fruit Breeding Working Group  
*Moderator:* Vance Whitaker, vwhitaker@ufl.edu  
*Coordinators:* Vance Whitaker, vwhitaker@ufl.edu; Glenn Wright, gwright@ag.arizona.edu

Workshop objectives are: 1) Provide an updated perspective on new cultivars and future directions for U.S. citrus breeding programs; 2) Illustrate the tools used in citrus breeding including transgenics, triploidy, somaclonal variation and somatic hybridization; and 3) examine current challenges and opportunities in topic areas such as cold hardiness, resistance to HLB and other diseases, germplasm utilization, rapid-cycle breeding, rootstock development and seedlessness.

8:00–8:20 AM  
Underutilized Citrus Germplasm and How to Obtain Priority Germplasm in the United States  
*R*Richard Lee

8:20–8:40 AM  
Breeding Citrus for North Florida  
*José Chaparro*

8:40–9:00 AM  
Citrus Breeding at UCR—Progress and Challenges  
*Mikeal L. Roose*

9:00–9:20 AM  
Biotechnology Facilitated Breeding of Improved Citrus  
*Jude W. Grosser, Fred Gmitter*

9:20–9:40 AM  
Transgenic Approaches to Improved Disease Resistance in Citrus  
*Manjul Dutt, Jude W. Grosser*

9:40–10:00 AM  
Critical Needs of U.S. Citrus Growers in Scion and Rootstock Breeding  
*Ted Batkin*

**Workshop—New Innovations in Commercial Horticultural Applications**

This workshop will introduce conference participants to new and innovative technologies available for research, teaching, and extension.

8:00–8:20 AM  
Amperometric Ethylene Sensor with Interfering Gas Trap  
*M*ichael Larman

8:20–8:40 AM  
Drip Irrigation/Plastic Mulch Kits for Home Gardeners  
*K*eith Williamson

8:40–9:00 AM  
ARM Tablet Data Collector  
*St*even R. Gylling

9:00–9:20 AM  
Optimizing Drip Irrigation System Uniformity with Proper Design and Management  
*Inge Bisconer*
9:00–10:00 AM Desert Salon 11
Produce Quality, Safety, and Health Properties (QUAL) Working Group Business Meeting
John Beaulieu, Chair; Penelope Perkins-Veazie, Chair-elect
The QUAL Working Group promotes more creative research, teaching, and industry liaison among horticulturists and food scientists.

9:45–11:00 AM Desert Salon 1-2
Oral Session—Ornamentals/Landscape and Turf
Moderator: Erin E Agro, agroe@uoguelph.ca

9:45–10:00 AM
Pine Wood Chips as an Alternative to Perlite in Horticultural Substrates: Physical, Chemical, and Cultural Parameters
*Brian Jackson, W. Garrett Owen, William C. Fonteno

10:00–10:15 AM
Effect of Vermicompost-amended Media on Container-grown Miniature Roses
*Pamela Collins, Ekaterina Jeliazkova, Dennis Rowe

10:15–10:30 AM
Determination of Optimal Controlled Release Fertilizer Rates for Container Nursery Crop Production in Cold Climates
*Erin E Agro, Youbin Zheng

10:30–10:45 AM
Impact of Biopots on Landscape Plant Performance and Pot Degradation
*Genhua Niu, Youping Sun, Guihong Bi, Andrew Koeser, Krista Jacobsen, Sven Verlinden, Renee Conneway, Amy Fulcher

10:45–11:00 AM
The Effects of Lawn Plant Diversity on Arthropod Diversity
*Sam Marshall, David Orr, Lucy K. Bradley, Steven Frank, Christopher Moorman

The objectives of the CHMG Working group are to: become familiar with cooperative extension home horticulture programs within the United States; identify and develop the ability to respond to home horticulture information needs; and improve methods of information delivery to home horticulture audiences.

10:00–11:00 AM Desert Salon 11
Vegetable Crops Management (VCM) Working Group Business Meeting
Chris Gunter, Chair; Ajay Nair, Secretary
The VCM Working Group promotes research and extension of a systems approach to production and utilization of vegetables.

10:00–12:00 PM Desert Salon 12
Certified Horticulturist (CH) Board Meeting
Fred T. Davies, Jr., Chair; Kerrie Badertscher; Steve Carver; Janet C. Cole; Terry Ferriss; George Fitzpatrick; Mary Lamberts; Doug Needham; Karen Panter; Kay Phelps; Susan Steinberg

10:00–4:00 PM Directors Suite VI
ASHS Board of Directors Meeting

10:15–11:15 AM Springs Salon A/B
Workshop—Commercial Use of PGRs to Increase Color Development of Fruit
Sponsor: Growth Regulators in Fruit and Nut Production, Working Group
Moderator: Derek D. Woolard, derek.woolard@valent.com
In this workshop, industry representatives will present information about two exciting new PGR products available to commercial fruit growers for increasing the coloration of fruit.

10:15–10:30 AM
The Use of S-Abscisic Acid for the Enhancement of Grape Coloration
*Rob Fritts, Derek D. Woolard, Rick Hopkins, Julio Retemales, Johnny Lopez, Daniel Leep, Johan Pienaar

10:30–10:45 AM
BLUSH™, a New Fruit Color Enhancer for Apples
*Kevin Forney
10:15–11:30 AM Desert Salon 9-10

**Oral Session—Plant Biotechnology**

*Moderator:* Ioannis Tzanetakis; itzaneta@uark.edu

10:15–10:30 AM

Plant Responses to Bacterial Quorum Sensing
*Kubilay Kurtulus Bastas*

10:30–10:45 AM

Development and Preliminary Evaluation of the IStraw90 Axiom® Array in Cultivated Strawberry (*Fragaria xananassa*)
*Nahla V. Bassil, Iraida Amaya, Francois Bellon, Thomas M. Davis, Beatrice Denoyes, T. van Dijk, Stephen Ficklin, Amy F. Iezzoni, Sook Jung, Lise Mahoney, Dorrie Main, Mike Mittman, Amparo Monfort, Cameron Peace, Ali Pirani, Daniel Sargent, Theresa Webster, Dave Wood, Y. Yang, H. Zhang, Eric van de Weg*

10:45–11:00 AM

Transcriptome Analysis of *Vernicia fordii* Seed in Three Development Stages
*Xiao-Feng Tan, *Hongxu Long, Guixiong Jiang, Lin Zhang, Donglin Zhang, Fangfang Yan*

11:00–11:15 AM

An Automatic Bioinformatics Tool to Detect and Discover Plant Viruses
*Thien Ho, *Ioannis Tzanetakis*

11:15–11:30 AM

Rapid High-level Transient Expression of Vampire Bat Plasminogen Activator (DSPα1) in Plant for Stroke Treatment with a DNA Replicon System
*Kevin Y. Wang, Frank Y. Yau, Mona Easterling*

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10:15–12:00 PM Desert Salon 4-6

**Oral Session—Water Utilization and Management**

*Moderator:* Oleg Daugovish, odaugovish@ucdavis.edu

10:15–10:30 AM

Differential Susceptibility of Strawberry to Salts
*Oleg Daugovish, Ben Faber, Anna D. Howell, Cameron Chandler*

10:30–10:45 AM

Physiological Responses of Citrus to Partial Rootzone Drying Irrigation Strategies
*Antonia Romero-Conde, Ayako Kusakabe, *Juan Carlos Melgar*

10:45–11:00 AM

Irrigation and Nitrogen Management Web-based Software for Lettuce Production
*Michael D. Cahn, Richard F. Smith, Timothy K. Hartz, Bryon J. Noel*

11:00–11:15 AM

The Effects of Crop Load and Water Stress on Yield and Fruit Quality of Sweet Cherry Cultivars
*Denise Neilsen, Gerry Neilsen, Tom Forge, John A. Cline*

11:15–11:30 AM

Performance of Landscape Trees in the Semi-Arid Southwest under Three Irrigation Regimes
*Ursula K. Schuch, Edward C. Martin, Tilak Mahato, Jay Subramani*

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**Thursday, July 25, 2013**

11:30–11:45 AM  
Evaluation of a Vegetative Landform Cap to Reduce Water Percolation  
*Edward W. Bush, Jeffrey S. Beasley, Magee Shaw*

11:45–12:00 PM  
Sustainable Water Management Strategies for California Table Grapes  
*Isabel Abrisqueta, James E. Ayars, Andrew J. McElrone*

10:15 AM–12:15 PM Desert Salon 13-14  
**Workshop—Teaching with Tablets and Apps**

*Sponsor:* Computer Applications in Horticulture Working Group  
*Moderator:* Tim Rhodus, rhodus.1@osu.edu  
*Coordinators:* Tim Rhodus, rhodus.1@osu.edu; Kent D. Kobayashi, kentko@hawaii.edu

The goal of this workshop is to learn how other educators have incorporated tablets and apps into their teaching and how that decision affects the type of assignments and activities that are presented to students.

10:15–10:30 AM  
Workshop Overview  
*Tim Rhodus*

10:30–10:45 AM  
Teaching with Tablets and Apps over Wireless  
*Tim Rhodus*

10:45–11:00 AM  
Students Keep Your Cell Phones On, Please  
*Margaret J. McMahon*

11:00–11:15 AM  
Enhancing Tropical Plant and Soil Sciences (TPSS) Instruction with Mobile Devices  
*Kent D. Kobayashi, Theodore J.K. Radovich*

11:15–11:30 AM  
Live Lecture Capture with Whiteboard Annotation and iTunesU Delivery for Asynchronous Learning  
*Steven Earl Newman*

11:30–11:45 AM  
Accessing Real-time Data from Sensor Networks  
*John D. Lea-Cox, David Kohanbash, George Kantor*

11:00–12:00 PM  
Ornamental Plant Breeding (OPB) Working Group Business Meeting  
Wenhao Dai, *Chair*; Bruce Dunn, *Chair-elect*

The OPB Working Group promotes ornamental plant breeding, serves as a forum for exchange of information among breeders, and coordinates the communication of results to industry and academia.

11:15 AM–12:15 PM  
**Oral Session—Nursery Crops**

*Moderator:* Alison Stoven O’Connor, astoven@larimer.org

11:15–11:30 AM  
Landscape Transplant Success of Chanticleer® Pear Grown in Three Container Types  
*Alison Stoven O’Connor, Anthony J. Koski, James E. Klett, Daniel K. Struve*

11:30–11:45 AM  
Plant Growth and Water Use in Plastic, Fiber, Keratin, and Root Pouch Containers  
*Xueni Wang, Rodney Thomas Fernandez, Guihong Bi, Amy Fulcher, Robert L. Geneve, Genhua Niu, Sven Verlinden, Bert Cregg, Mathieu Ngouajio, T. Kijchavengku, Rafael Auras, Susmitha Nambuthiri, Renee Conneway, Youping Sun*

11:45–12:00 PM  
Photosynthetic and Morphological Response of *Abies fraseri* (Pursh) Poir to the Combined Effect of Irrigation and Fertilization in Controlled Environment  
*Ismail Koc, Pascal Nzokou*

12:00–12:15 PM  
Determining the Carbon Footprint of Tree Production System Components in Field Nurseries using Life Cycle Assessment (LCA)  
*Dewayne L. Ingram*

11:30–1:30 PM Springs Salon A/B  
**Workshop—RosBREED Fruit Quality QTLs: From Publications to Applications**

*Sponsor:* Genetics and Germplasm Working Group  
*Moderator:* Cholani Kumari Weebadde, weebadde@msu.edu  
*Coordinator:* Amy F. Iezzoni, iezzoni@msu.edu

Share experiences from the RosBREED project with the horticultural breeding community: (1) illustrate that QTL results

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are only the first step toward marker-assisted breeding; (2) explain how the desirable functional alleles need to be identified and then used to influence selection decisions; (3) demonstrate how QTL information can be translated into a genetic test for use in marker-assisted breeding; and (4) illustrate the use of genetic tests developed by RosBREED in fruit breeding programs to validate germplasm used for developing better cultivars.

11:30–11:45 AM
Discovering a QTL: A Major Milestone or a Stepping-stone into Practical Marker-assisted Breeding?
*Cholani Kumari Weebadde

11:45–12:00 PM
You’ve Just Identified a QTL for a Major Trait of Interest—What Now? QTL and QTL Allele Validation in Cherry
*Amy F. Iezzoni

12:00–12:15 PM
QTL and QTL Allele Validation in Apple
*Sujeet Verma

12:15–12:30 PM
QTL and QTL Allele Validation in Peach
*Ksenija Gasic

12:30–12:45 PM
Marker-assisted Breeding for Apple at the University of Minnesota and Washington State University
*James Luby

12:00–1:00 PM Desert Salon 11
Weed Control and Pest Management (WCPM) Working Group Business Meeting
Teri Gadd, Chair; Peter Dittmar, Chair-elect; Carlene Chase, Secretary
The WCPM Working Group shares new ideas and other research information concerning pest control in the varied areas of horticultural crop production.

12:30–2:00 PM Desert Salon 9-10
Oral Session—Environmental Stress Physiology
*Craig Ramsey, craig.l.ramsey@aphis.usda.gov

12:30–12:45 PM
Do Canker Pathogens Limit the Supply of CO₂ for Photosynthesis? Estimation of Stomatal and Internal Limitations in Maple Leaves in Response to Phytophthora cactorum Inoculations
*Hyungmin Rho, Drew Zwart, Soo-Hyung Kim

12:45–1:00 PM
Biochar Amendment Alters the Effects of Phytophthora Cankers on Leaf Physiology of Acer rubrum
*Drew Zwart, Soo-Hyung Kim

1:00–1:15 PM
The Effects of Chlorine Dioxide on SAR Plant Immunity Responses to a Bacterial Wilt Infection
*Craig Ramsey, Heather Hammack, Steven Earl Newman

1:15–1:30 PM
A Soybean β-Expansin Gene GmEXPB2 Involved in Root System Architecture Responses to Abiotic Stresses in Transgenic Arabidopsis
*Xinxin Li, Hye-Ji Kim, Hong Liao

1:30–1:45 PM
Abscisic Acid Inhibits Leaf Expansion by Limiting Cell Expansion But Not Cell Division in Arabidopsis
Shinsuke Agehara, Scott Finlayson, *Daniel Leskovar

1:45–2:00 PM
Growth and Physiological Responses of Bermudagrass to Salinity Stress
*Ran Xu, Sr., Hideyasu Fujiyama, Sr.

12:30–2:00 PM Desert Salon 4-6
Oral Session—Organic Horticulture
*Brian Ward, bw@clemson.edu

12:30–12:45 PM
The Effect of Biochar and Fertilizers Made from Plant Extracts on Crop Growth and Nitrogen Leaching with Containerized Greenhouse Plants
*Touria E. Eaton, Douglas A. Cox

12:45–1:00 PM
Influence of Organic Versus Synthetic Nitrogen Fertigation on Sweet Corn Yield, Quality, and Nutritional Quality
*Brian Ward

1:00–1:15 PM
Organic Agriculture in the Kingdom of Saudi Arabia
*Khalid Al-Redhaiman

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Assessing the Suitability of Biofumigation and Anaerobic Soil Disinfestation to Improve Vegetable Crop Performance in Michigan
*Aaron Yoder, Mathieu Ngouajio

Investigating Vermicompost as the Primary Fertilizer Source in Organic Vegetable and Flower Transplant Production
*Stephanie Beeks, Neil Mattson

Exploring Best Organic Soil/Pest Management Practice through Farm Systems Analyses (FSAs) of Organic Vegetable Farms
*Alexandra Stone, Helen Atthowe, William Snyder, Michelle Wander

New Jersey’s Agricultural Plastics Recycling Program
*Wesley L. Kline, Karen Kritz

Impacts from Three Years of an Integrated High Tunnel Project in Mississippi
*William B. Evans, Guihong Bi, Mengmeng Gu, Vasile Cerven

Deterioration of Three Biodegradable Plastic Mulches before and after Soil Incorporation in a Broccoli Production System
*Jeremy Cowan, Carol A. Miles, Debra Inglis

Plasticulture Grown Cabbage: Effects of Plant Population and Planting Dates on Crop Yield
*Charles Barrett, Lincoln Zotarelli, Lucas Paranhos, Guilherme B. Buck, Mihai Giurcanu

Evaluating Visual Assessments of Mulch Deterioration to Predict Changes in Mulch Mechanical Properties
*Jeremy Cowan, Carol A. Miles, Karen Leonas, H. Liu, Arnold Saxton, Debra Inglis

The Evolution of Ohio Strawberry Plasticulture Production (2001–2013)
*Brad R. Bergefurd, Barclay Poling, Shawn Wright

The Effect of Nitrogen and Potassium Fertilization on Growth and Nutrient Content of Container-grown Dahlia ‘Magic Moment’
*Matthew D. Taylor, Timothy E. Elkner

Growth Regulators Applied to Poinsettias in Production Affect Cyathia Drop and Bract Edge Burn in Postproduction
*James E. Barrett, Carolyn A. Bartuska, Robert F. Weidman

Evaluation of Heliconia Cut-flower Production under Shading

Developing Production and Postharvest Protocols for Cut Penstemon grandiflorus ‘Esprit’
*Alicain S. Carlson, John M. Dole

Development and Evaluation of Injection-molded Bioplastic Container Prototypes
*James Schrader, Kenneth McCabe, Gowrishankar Srinivasan, Kyle Haubrich, David Grewell, Samy Madbouly, Michael Kessler, William Graves

Identification of the Rose Rosette Disease Agent
Patrick Di Bello, Thien Ho, *Ioannis Tzanetakis

Global Gene Expression Changes in Response to Bent Neck and Petal Blueing in Cut Roses ‘Freedom’ and ‘Forever Young’
*Alicain S. Carlson, Hao Zhu, George Allen, John M. Dole, Bryon Sosinski, John D. Williamson

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Thursday, July 25, 2013

2:15–2:30 PM
The North Carolina Cut Flower Industry: Results of a Production and Marketing Survey
*Halley Granitz, Julia L. Kornegay, John M. Dole, Charles Safley

1:00–2:00 PM
Computer Applications in Horticulture (COMP) Working Group Business Meeting
Kent Kobayashi, Chair; Arthur Villordon, Secretary
The COMP Working Group studies the application of computers in research, extension, and teaching of horticulture.

1:00–5:00 PM
Certified Horticulturist Examination 2

12:30–3:00 PM
Oral Session—Marketing and Economics
Moderator: John L. Griffis, Jr., jgriffis@fgcu.edu

12:30–12:45 PM
Partial and Enterprise Budgets for Growing Hard Cider Apples in Virginia
*Gregory Michael Peck, Gordon Groover, Jarrad Farris

12:45–1:00 PM
Relevance of Apple Quality Traits for Consumers
*Lilian Carrillo, R. Karina Gallardo, Chengyan Yue, Vicki McCracken, James Luby, James R. McFerson, Ines Hanrahan

1:00–1:15 PM
Consumer Characteristics Affect on Local and Organic Purchasing
*Lingqiao Qi, Ben Campbell, Yizao Liu

1:15–2:00 PM
Mineral Nutrient Density of Cabbage in Response to Cultivar Selection and Nutritional Regimes
*Touria E. Eaton, Allen V. Barker, Md J. Meagy, Emad Jahanzad

1:45–2:00 PM
Enzyme, Temperature, and Processing Effects on the Percentage of Juice Recovery and Anthocyanin Changes in Blueberries
*John C. Beaulieu, Rebecca E. Stein

2:00–2:15 PM
Field Based Evaluations of Trace Element Transfer from Contaminated Urban Garden Soils to Vegetables
*Ganga M. Hettiarachchi, Chammi Attanayake, Phillip Defoe, Sabine Martin, Gary M. Pierzynski

2:30–2:45 PM
Developing an On-farm Decision Tree for Fresh Produce Growers to Assess Risks and Prioritize Implementation of Food Safety Practices
Elizabeth Bihn, Michele A. Schermann, *Annette L. Wszelaki, Gretchen L. Wall, Susannah K. Amundson

2:45–3:00 PM
In Vitro Antioxidant Activities of Annona squamosa Leaf and Identification of Bioactives by LC-ESI-MS-Qtof
*G.K. Jayaprakasha, Bhimanagouda S. Patil

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Thursday, July 25, 2013

3:00–3:15 PM
Studying Quality Attributes of Grafted Specialty Melons using Both Consumer Sensory Analysis and Instrumental Measurements
*Wenjing Guan, Xin Zhao, Charles A. Sims

3:15–3:30 PM
High Throughput Screening of Pyruvic Acid in Onions using Microplate Reader
*Akshata Kulkarni, Ram M. Uckoo, G.K. Jayaprakasha, Bhimanagouda S. Patil

3:30–3:45 PM
Electron Beam Irradiation of Fresh Cut Cantaloupe under Modified Atmosphere Extends the Shelf Life and Maintains the Quality
*Ram M. Uckoo, Bianca Smith, G.K. Jayaprakasha, Suresh D Pillai, Kevin M. Crosby, Bhimanagouda S. Patil

3:45–4:00 PM
Microgreens: Assessment of Nutrient Concentrations
*Gene E. Lester, Zhenlei Xiao, Yaguang Luo, Qin Wang

2:00–3:00 PM Desert Salon 11
Environmental Stress Physiology (STRS) Working Group Business Meeting
Hannah Mathers, Chair; Lloyd Jones, Chair-elect; Genhua Niu, Secretary
The STRS Working Group promotes basic and applied research on the physiology of horticultural crops with primary emphasis on crop physiological responses to environmental stresses, specifically including temperature, water, and air pollution stresses.

2:00–3:00 PM Springs Salon C
Teaching Methods (TCHG) Working Group Business Meeting
David Kopsell, Chair; Cynthia Haynes, Chair-elect; Brian Trader, Secretary
The working Group provides 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.

2:15–3:45 PM Desert Salon 4-6
Oral Session—Vegetable Crops Management
Moderator: Derek D. Woolard, derek.woolard@valent.com

2:15–2:30 PM
Growth Control of Leafy Vegetables with S-Abcsisic Acid (S-ABA) for Improved Quality and Harvest Management
*Derek D. Woolard, Frederick Marmor, Paul Silverman, Liu Xiaozhong, Peter D. Petracek, Daniel Leep, Rob Fritts, Gregory Venburg, Johan Pienaar, Jozsef Racsko

2:30–2:45 PM
Downy Mildew of Basil in Illinois: Occurrence and Management
*Mohammad Babadoost, Alan DeYoung

2:45–3:00 PM
Growth, Yield, Fruit Quality, and Verticillium Wilt Tolerance of Grafted Watermelon and Tomato in Field Production in the Pacific Northwest
*Carol A. Miles, Sacha Johnson, Debra Inglis

3:00–3:15 PM
Determination of Bacterial Contamination in Orange and Black Carrot Seeds
*Kubilay Kurtulus Bastas

3:15–3:30 PM
Efficient Intercropping for Biological Control of Aphids in Organic Lettuce
*Eric Brennan

3:30–3:45 PM
Intercropping to Mitigate Salinity Stress on Watermelon: Halophyte Performance in a Greenhouse Pot Study
Catherine Simpson, *Jose G. Franco, Stephen R. King, Astrid Volder

2:15–4:00 PM Desert Salon 13-14
Oral Session—Human Issues in Horticulture
Moderator: Candice Shoemaker, cshoemak@ksu.edu

2:15–2:30 PM
People’s Psychophysiological Responses to Tropical Urban Tree Pruning in Hawaii
*Andrew Kaufman, Aarthi Padmanabhan, Aliah Irvine, Dioreme Navasca, Sang Mi Lee

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Thursday, July 25, 2013

2:30–2:45 PM
Exercise Intensities of Gardening Tasks as a Physical Activity in Children and Adults by using Mets
*Sin-Ae Park, A-Young Lee, Ho-Sang Lee, Kwan-Suk Lee, Ki-Cheol Son, Candice Shoemaker

2:45–3:00 PM
School Gardening Program for Improving Social Relations of Elementary School Students
*Sin-Ae Park, Seong-Sil Kim, Ki-Cheol Son

3:00–3:15 PM
An Evaluation of the Fayetteville School Landscape Project
*Ann Fleener, Carolyn W. Robinson, Donald J. Eakes, David Williams, Robert E. Lyons

3:15–3:30 PM
Can Locally-grown Crops Replace Nonfat Dry Milk in Ready-to-Use-Therapeutic Foods? Innovative Malnutrition Solutions for Haiti
Natalie Bumgarner, Stephanie Short, Corey Ballard, Daniel J. Schmitz, Yael Vodovotz, *Matthew D. Kleinhenz

3:30–3:45 PM
Career Exploration of Horticultural Therapy Professionals
Anna Shinjo, *Candice Shoemaker

3:45–4:00 PM
Integrating Schools, Community, and Family to Effect Sedentary Behavior, Fruit and Vegetable Consumption, and Physical Activity through Gardening
*Candice Shoemaker, Cynthia Domenghini, George Milliken, Gregory Welk, David A. Dzewaltowski

2:15–4:00 PM Desert Salon 9-10
Oral Session—Pomology
Moderator: Clive Kaiser, clive.kaiser@oregonstate.edu

2:15–2:30 PM
Impacts and Outcomes of Integrated Pest Management Extension Programs in Umatilla County, Oregon
*Clive Kaiser, Leonard Coop, Kevin Masterson

2:30–2:45 PM
Ratio of Carbon to Nitrogen in Peach and Susceptibility to Peach Tree Short Life
*Gregory L. Reighard, Newton Alex Mayer, David Michael Glenn, W.C. Bridges, Jr.

2:45–3:00 PM
Impact of Nitrogen on Vegetative Growth of Mature Peach Trees in a Subtropical Climate
*Mercy A. Olmstead, Lincoln Zotarelli, Matthew Ross

3:00–3:15 PM
Fruit Development Alters the Vegetative and Reproductive Shoot Growth in ‘Hass’ Avocado (Persea americana, Mill.)
*Rodrigo Iturrieta, Mary Lu Arpaia, Harley Smith

3:15–3:30 PM
Cutting Type and Time-of-Year Affect Rooting Ability of Hardy Minnesota Prunus
*Emily Hoover, Neil O. Anderson, Emily Tepe, John Tillman

3:30–3:45 PM
Developmental Sensitivity of European Pear and Sweet Cherry Floral Buds to Sub-zero Temperatures from Late Dormancy through Petal Fall
*Todd Einhorn, David Gibeaut

2:45–4:00 PM Springs Salon D/E
Oral Session—Propagation
Moderator: Donglin Zhang, donglin@uga.edu

2:45–3:00 PM
Impact of Location, Seasonality, and Iba Concentration on Rooting of Prunus angustifolia
*Elizabeth McMahon, Bruce Dunn, Eric Stafne

3:00–3:15 PM
K-Iba Concentration Regulated Rooting Quality and Plant Vigor of Prunus laurocerasus L.
Yujie Yang, *Donglin Zhang, Jinying Dong, Zhihui Li

3:15–3:30 PM
Light Quality Affects Microshoot Growth of Apple Rootstocks: B.9 & G.30
*Fang Geng, Renae Moran, Donglin Zhang

3:30–3:45 PM
Fine-Root Dynamics of Apple (Malus domestica Borkh.) Rootstocks under Replant Condition
*Amaya Atucha, Bryan Emmett, Taryn Bauerle

3:45–4:00 PM
Protocol for the Micropropagation of Commercial Cultivars of Date Palm (Phoenix dactylifera L.)
*Nasser S. Al-Khalifah

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Friday, July 26 and Saturday, July 27, 2013

2:45–4:30 PM Desert Salon 1-2

Oral Session—Plant Nutrient and Horticultural Waste Management

Moderator: Aziz Baameur, azbaameur@ucdavis.edu

2:45–3:00 PM
Pepper N Uptake: Preliminary Field Study
*Aziz Baameur, Richard F. Smith

3:00–3:15 PM
Soil Surfactant Increases Nutrient Use Efficiency and Yield of Tomato Grown in Sandy Soil
*Guodong Li

3:15–3:30 PM
Biochar Increases the Ion Exchange Capacity of Potting Mix
*Elizabeth Crutchfield, Milton E. McGriffen, Jr., Donald J. Merhaut

3:30–3:45 PM
The Effect of Nutrient Ratios on Plant Height
*Laura A. Wiser, Theo J.M Blom

3:45–4:00 PM
Quantifying the Impact of Macronutrients on Substrate pH
*Jared Barnes, Paul V. Nelson, Brian E. Whipker, Dean Hesterberg, Wei Shi, Dave Dickey

4:00–4:15 PM
University Campus Composting Programs: Initiatives for the Future
*Jennifer Sembera, John Montoya, Jr., Tina Waliczek Cade

4:15–4:30 PM
Incorporating Wool-waste into Compost to Develop Alternative Compost Products
*Tina Waliczek Cade, Erica Jane Meier, Gwendolyn Hustvedt

Friday, July 26, 2013

8:00 AM–5:00 PM Griffin Room

NE-1036 Technical Committee Meeting

Saturday, July 27, 2013

8:00 AM–12:00 PM Griffin Room

NE-1036 Technical Committee Meeting: Day 2

An asterisk (*) in front of a name indicates the presenting author. The schedule is subject to change.
Index of Authors, Coordinators, Presenters, and Moderators
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