135th Annual Meeting of the

FLORIDA STATE
HORTICULTURAL SOCIETY

June 5 - 7, 2022
Hyatt Regency Sarasota, FL
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### Program Overview

#### Registration Desk Hours – Convention Center Registration

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<tr>
<th>Day</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Sunday June 5</td>
<td>12:00PM—6:00 PM</td>
</tr>
<tr>
<td>Monday June 6</td>
<td>7:30 AM—5:00 PM</td>
</tr>
<tr>
<td>Tuesday June 7</td>
<td>7:00 AM—12:00 PM</td>
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#### Sunday —June 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>10:00—2:00</td>
<td>Marie Selby Botanical Garden, Coordinated by John Griffis Jr.</td>
<td>1534 Mound St, Sarasota, FL 34236</td>
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<tr>
<td></td>
<td>(Discounted tickets need to be purchased in advance)</td>
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</tr>
<tr>
<td>1:00—3:00</td>
<td>Poster Session Set up, Lisa Hickey</td>
<td>Sarasota PreFunction North &amp; South</td>
</tr>
<tr>
<td>5:00—5:15</td>
<td>Opening Ceremony, John Griffis Jr.</td>
<td>Sarasota E/F Ballroom</td>
</tr>
<tr>
<td>5:15—5:45</td>
<td><strong>Plenary Speaker:</strong> Ed Etxeberria. Professor Emeritus UF/IFAS. Former FSHS President. &quot;FSHS, the First Twenty Five Years (1888 – 1913)&quot;</td>
<td>Sarasota E/F Ballroom</td>
</tr>
<tr>
<td>5:45—6:00</td>
<td>Awards Ceremony, John Griffis Jr. (Including Student Travel Awards)</td>
<td>Sarasota E/F Ballroom</td>
</tr>
<tr>
<td>6:00—7:00</td>
<td><strong>Welcome Reception:</strong> Must wear your badge or purchase a guest ticket to attend</td>
<td>Boathouse</td>
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#### Monday Morning—June 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00—8:30</td>
<td><strong>Coffee &amp; Tea</strong></td>
<td>Sarasota PreFunction North &amp; South</td>
</tr>
<tr>
<td>8:30—9:45</td>
<td><strong>General Session</strong></td>
<td>Sarasota E/F Ballroom</td>
</tr>
<tr>
<td>8:30</td>
<td><strong>Welcome &amp; Presidential Address:</strong> John Griffis Jr., FSHS President</td>
<td>Sarasota E/F Ballroom</td>
</tr>
<tr>
<td>9:00</td>
<td><strong>Plenary Speaker:</strong> Jason Downing. Fairchild Botanical Garden “The Million Orchid Project”</td>
<td>Sarasota E/F Ballroom</td>
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<tr>
<td>9:45</td>
<td>End of General Session</td>
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### Concurrent Monday Morning Sessions:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>9:50</td>
<td>Agroecology &amp; Natural Resources</td>
<td>Ringling</td>
</tr>
<tr>
<td>9:50</td>
<td>Citrus</td>
<td>Sarasota G - Ballroom</td>
</tr>
<tr>
<td>9:50</td>
<td>Handing &amp; Processing</td>
<td>Tropics</td>
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<tr>
<td>10:00</td>
<td>Krome Memorial Institute</td>
<td>Sarasota C/D - Ballroom</td>
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<tr>
<td>9:50</td>
<td>Ornamental, Garden, &amp; Landscaping</td>
<td>The Keys</td>
</tr>
<tr>
<td>9:50</td>
<td>Vegetable</td>
<td>Sarasota E/F - Ballroom</td>
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<tr>
<td>12:00</td>
<td>Lunch (on your own)</td>
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### Monday Afternoon

**Concurrent Monday Afternoon Sessions:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:20</td>
<td>Agroecology &amp; Natural Resources</td>
<td>Tour</td>
</tr>
<tr>
<td>1:20</td>
<td>Citrus</td>
<td>Sarasota G - Ballroom</td>
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<tr>
<td>1:20</td>
<td>Handing &amp; Processing</td>
<td>Tropics</td>
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<tr>
<td>1:20</td>
<td>Krome Memorial Institute</td>
<td>Sarasota C/D - Ballroom</td>
</tr>
<tr>
<td>1:20</td>
<td>Vegetable</td>
<td>Sarasota E/F - Ballroom</td>
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### Monday Evening

5:00—6:00 **Reception and Poster Session**

(Included in paid conference registration)

6:00—7:00 **Fruit and Vegetable Extension Meeting**

### Tuesday Morning — June 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00</td>
<td>Horticultural Crops Breakfast</td>
<td>Boathouse</td>
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<tr>
<td></td>
<td>Invited Speaker, Marguerite Beckford, UF/IFAS Extension. “Treejuvenation—An Urban Street Tree Rejuvenation Program”</td>
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<tr>
<td>Time</td>
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<tr>
<td>8:30—9:00</td>
<td><strong>FSHS Annual Business Meeting</strong></td>
<td>Sarasota E/F - Ballroom</td>
</tr>
<tr>
<td>9:00—9:30</td>
<td><strong>Student Competition and Poster Competition Awards</strong>, Xin Zhao, Lisa Hickey</td>
<td>Sarasota E/F - Ballroom</td>
</tr>
<tr>
<td>9:30</td>
<td>Coffee Break</td>
<td>Sarasota PreFunction</td>
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<tr>
<td></td>
<td><strong>Concurrent Tuesday Morning Sessions:</strong></td>
<td></td>
</tr>
<tr>
<td>9:50—11:30</td>
<td><strong>Citrus</strong></td>
<td>Sarasota G - Ballroom</td>
</tr>
<tr>
<td>9:50—11:30</td>
<td><strong>Handing &amp; Processing</strong></td>
<td>Tropics</td>
</tr>
<tr>
<td>9:50—11:45</td>
<td><strong>Vegetable</strong></td>
<td>Sarasota E/F - Ballroom</td>
</tr>
<tr>
<td>12:00—1:00</td>
<td><strong>Extension Luncheon</strong></td>
<td>Boathouse</td>
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<tr>
<td></td>
<td>(Event ticket required)</td>
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<tr>
<td></td>
<td>Invited Speakers: Dr. Andra Johnson, UF/IFAS Extension Dean</td>
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<td></td>
<td>&quot;Key learnings and Future Priorities of UF/IFAS Extension&quot;</td>
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<tr>
<td>1:00—5:00</td>
<td><strong>In-Service Training</strong></td>
<td>Sarasota E/F - Ballroom</td>
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<tr>
<td></td>
<td>&quot;Working with Clients to Measure Water Savings and Nutrient Load Reduction Associated with their BMP Implementation&quot;</td>
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<tr>
<td>1:00—3:30</td>
<td><strong>Mango Summit</strong></td>
<td>Sarasota C/D - Ballroom</td>
</tr>
<tr>
<td>2:30-5:00</td>
<td>Gulf Coast Research and Education Center</td>
<td>4625 County Road 672, Wimauma, FL 33598</td>
</tr>
<tr>
<td></td>
<td>Coordinated by Marguerite Bedford</td>
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</tbody>
</table>
Florida State Horticultural Society
2021-2022 Board of Directors and

Chair of the Board: Noris Ledesma
President: John Griffis Jr.
President-Elect: Alan Chambers

Sectional Vice Presidents
Agroecology & Natural Resources: Taylor Clem
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Krome Memorial Institute: Mark Bailey
Ornamental, Garden and Landscape: Michelle Leonard-Mularz
Vegetable: Evelyn “Prissy” Fletcher

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Student Competitions Coordinator: Xin Zhao

CEU Coordinator: Frank Dowdle/Ron Rice

Poster Session Coordinator: Lisa Hickey

FSHS Newsletter Team: Alicia Lamborn

Platinum Level Sponsor ($2,000 and above)

Anonymous Donor
Citrus Research and Development Foundation, Inc.
National Mango Board
Florida Nursery, Growers and Landscape Association-Manasota Chapter (Ornamentals)

Gold Level Sponsor ($1,000—$1,999)

None

Silver Level Sponsor ($500—$999)

Love of Mangos
Mary Lamberts and George Fitzpatrick, in memory of Mary’s father, Dr. J.J. Lamberts, Professor Emeritus of English at Arizona State University

Bronze Level Sponsor (under $500)

Florida Gulf Coast University and Florida Southern College (Ornamentals)
Tomato Committee

Please see the full list of sponsors on the FSHS Website, poster section, and meeting rooms.
2022 FSHS Patron Members

Gene McAvoy
Ed Etxeberria
Karen Stauderman

Presentation, Publication and Submission Guidelines

- Full payment of page charges from past years is required before presentations and submissions can be accepted in current year.

- The SENIOR AUTHOR must be a member of the Society, and the PRESENTING AUTHOR of the paper must be registered at the annual meeting (except for invited papers) for papers to be accepted for the Proceedings. Papers not presented at the meeting will not be published.

- Electronic submissions prior to the meeting are highly encouraged and preferred. Manuscripts should be delivered in FINAL electronic form at the time of the meeting to the FSHS editor, Mary Lamberts (editors@fshs.org) and copy their appropriate sectional VP.

- Authors may also publish their manuscript(s) in any refereed journal FSHS will publish the abstract with a link to the full publication.

- For all submissions, see complete Manuscript Preparation Guide (http://fshs.org/author-instructions/) for the Proceedings of the Florida

Attention FSHS Authors

- FSHS welcomes and encourages color pictures and color figures in Proceedings articles.
- Did you know that videos can also be linked to Proceedings articles?
- Color pictures, figures and videos are included FREE of CHARGE in the online Proceedings.
2022 FSHS

Poster Presentation Guidelines

- All posters are set up on Sunday, June 5th in the Sarasota Ballroom North and South preconference area.

- The posters will need to be moved on Monday between 4:30 and 5:00 pm to the Boathouse area for the reception. It is strongly suggested that the authors are available from 5:00 – 5:30 to answer questions about their poster and then join the reception in progress.
  - After the reception on Monday, posters need to be moved back to the Sarasota Ballroom North and South Preconference area.

- Please be by your poster during break times, and before or after sessions when feasible to talk about your research/projects.

- Poster will be judged on Monday between 11:00 am and 3:00 pm, and a rubric will be provided to all presenters.

- Posters must be taken down on Tuesday, June 7, 2022 at noon.

- Landscape 40” wide x 28” tall
Welcome 2022 FSHS
Sectional Vice-Presidents!

Agroecology & Natural Resources: **Taylor Clem**, UF/IFAS Extension Nassau County, taylor-clem87@ufl.edu

Citrus: **Manjul Dutt**, UF/IFAS Citrus Research and Education Center, manjul@ufl.edu

Handling & Processing: **Jeffrey Brecht**, UF/IFAS Hort Science Department, jkbrecht@ufl.edu

Krome Memorial Institute: **Mark Bailey**, UF/IFAS Extension Marion County, ironhill@ufl.edu

Ornamental, Garden, & Landscape: **Michelle Leonard-Mularz**, UF/IFAS Extension Monroe County, mleonard@ufl.edu

Vegetables: **Evelyn “Prissy” Fletcher**, UF/IFAS Extension St. Johns County, pfletch@ufl.edu
Monday Evening Session

Boathouse

(Authors present posters from 5:00pm – 5:30pm during Reception at Boathouse on Monday June 6. Posters will be moved from the Sarasota Ballroom North and South preconference area to Boathouse prior to the reception)

[P-1] **Success Rate of Propagation by Cuttings in American Beautyberry (Callicarpa americana).** Anna Goebel*,1, Brian D. Bovard2, and Sean Wortman-Goebel3. 1Department of Biological Sciences, Florida Gulf Coast University, Fort Myers, FL. 2Department of Ecology and Environmental Studies, Florida Gulf Coast University, Fort Myers, FL. 3Florida State University, Tallahassee, FL. (agoebel@fgcu.edu)

[P-2] **Toward Developing a Specialty Pepper (Capsicum annuum) Breeding Line with Bacterial Spot Resistance and Improved Fruit Quality Traits.** Lucas Manko*,1, Dominick Padilla1, Jeff Jones2, Bala Rathinasabapathi. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. 2Plant Pathology Department, University of Florida/IFAS, Gainesville, FL. (lucas.manko@ufl.edu)

[P-3] **Effects of Light Level and Controlled-release Fertilizer Level on Greenhouse Production and Consumer Perception of Philodendron ‘Birkin’.** Mollie Tew*,1, Malcolm Manners1, John Griffis Jr.2, Özlem Tuncay3. 1Florida Southern College, Lakeland, FL; 2Florida Gulf Coast University, Fort Myers, FL; 3Ege University, Izmir, Turkey. (mmanners@flsouthern.edu)

[P-4] **Student Interests and Perceptions on Vegetables, Fruits, and Herbs.** Bala Rathinasabapathi*,1, Caitlin Clarke1, and Michael Harrington2. 1Horticultural Sciences Department, University of Florida.
[P-5] **Effect of Fabric Mulch Ground Covers on Lemon Trees Rhizosphere Microbiome in Florida Indian River Flatwood Soils.** John M. Santiago*, John-Paul Fox', Sandra M. Guzman', Lorenzo Rossi'. 1Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL.  (lrossi@ufl.edu)

[P-6] **Revealing Root and Stem Morphological and Anatomical Traits of Florida Grapefruit Cultivars Grafted on US-942 and US-802.** Neus Alcon Bou*,1, Grace John2, Sandra Guzman1, Ute Albrecht3, Lorenzo Rossi1. 1Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. 2Biology Department, University of Florida, Gainesville, FL. 3Southwest Florida Research and Education Center, University of Florida/IFAS, Immokalee, FL.  (lrossi@ufl.edu)

[P-7] **Vanilla Orchids in the Garden and on the Farm in South Florida.** Jessica Ryals*,1, Twyla Leigh1, Thomas Becker2, Alan Chambers2. 1UF/IFAS Extension Collier County, Naples, FL. 2Tropical Research and Education Center, University of Florida/IFAS, Homestead, FL.  (Jessicaryals@ufl.edu)

[P-8] **Germplasm Genetic Diversity of Lactuca spp. in the UF/IFAS Lettuce Breeding Program.** Amanda Carroll*,1, Byron Manzanero1, Gustavo Kreutz1, Lis Rodrigues Porto1, Jesse Murray1, Hannah Mather1, Germán Sandoya1. 1Everglades Research and Education Center, University of Florida/IFAS, Belle Glades, FL.  (gsandoyamiranda@ufl.edu)

[P-9] **Using a Symbiont Strategy to Produce and Delivery Therapeutic Molecules to Fight Candidatus Liberibacter asiaticus.** Guilherme Locatelli*,1, Lorenzo Rossi1, Marco Pitino1, Patrick Zagorski2,3, Michelle L. Heck4,5,6, Robert G. Shatters, Jr.1. 1Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. 2Agrosource, Inc., Tequesta, FL. 3Agricultural Research Service, USDA, Fort Pierce, FL. 4School of Integrative Plant Science, Cornell University, Ithaca, NY. 5Boyce Thompson Institute, Ithaca, NY. 6Robert W. Holley Center for Agriculture and Health, USDA Agricultural Research Service, Ithaca, NY.  (robert.shatters@usda.gov)
[P-10] **Evaluation of Micro-sprinkler Irrigation for Reducing Water Use During Strawberry Establishment and Frost Protection in Florida.** Josue St Fort¹, Carlene A. Chase², Vivek Sharma³. ¹School of Natural Resources and Environment, University of Florida/IFAS, Gainesville, FL. ²Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. ³Agricultural and Biological Engineering, University of Florida/IFAS, Gainesville, FL. *(cachase@ufl.edu)*

[P-11] **Garden to Table Series.** Ashley Stonecipher*¹ and Terri Keith¹. ¹University of FL/IFAS Extension Jackson County, Marianna, FL. *(ams2904@ufl.edu)*

[P-12] **Florida’s Green Industries Best Management Practices Training Promotes Sustainable Urban Landscapes.** Tom Wichman*¹. Esen Momol¹, Don Rainey², Bryan Unruh², Lynn Barber³, Marc Celestin¹, Cesar Peralta¹, C.J. Bain¹, John Bossart¹. ¹Center for Landscape Use Efficiency, University of Florida/IFAS Extension, Gainesville, FL. ²Southwest Extension District, University of Florida/IFAS, Plant City, FL. ³West Florida Research and Education Center, University of Florida/IFAS, Jay, FL. ³UF/IFAS Extension Hillsborough County, Seffner, FL. *(twichman@ufl.edu)*

[P-13] **Comparing Two Types of Preplant Granular Organic Fertilizers in Organic Celery Production.** Zachary T. Ray*¹. Lincoln Zotarelli¹, Xin Zhao¹. ¹Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. *(zxin@ufl.edu)*

[P-14] **Producing Florida Lettuce on Protected Agriculture Systems.** Jonael Bosques*¹. Germán Sandoya², E. Vanessa Vassilaros³. ¹University of Florida/IFAS Extension Hardee County, Wauchula, FL. ²Everglades Research and Education Center, University of Florida/IFAS, Belle Glades, FL. ³University of Florida/IFAS Extension Miami-Dade County, Homestead, FL. *(gsandoyamiranda@ufl.edu)*
Monday Morning Session

(9:50 AM – 12:00 PM) Ringling

9:50 Welcome and Introductions, Taylor Clem

A – Florida-Friendly Landscaping Program & Extension

10:00 Florida-Friendly Edible Landscaping Educational Campaign. Tiara Silvasy*1. 1Orange County Extension, University of Florida IFAS, Orlando, FL. (tsilvasy@ufl.edu). [ANR-1].

10:15 Protecting the Indian River Lagoon with Florida-Friendly landscaping: A Flip My Florida Yard Production in Brevard County. Bonnie Wells*1, Sally Scalera1, Tom Wichman2, and Claire Lewis2. 1Brevard County Extension, University of Florida IFAS, Cocoa, FL. 2Florida-Friendly Landscaping Program, University of Florida IFAS, Gainesville, FL. (bcwells@ufl.edu). [ANR-2]

B – Florida Agroecology

10:30 Walk in the Shoes of a Florida Farmer. Karen Stauderman*1 and Antony Merendino2. 1Volusia County Extension, University of Florida IFAS, DeLand, FL. 2Division of Foot and Ankle/Orthopedics and Rehabilitation, University of Florida Health Orthpaedics and Sprotts Medicine Institute, Gainesville, FL. (kstauderman@ufl.edu). [ANR-3]
10:45 **Extension report – Comparing Macadamia Hybrid Selections for Use in Florida.** Karen Stauderman*, Volusia County Extension, University of Florida IFAS, DeLand, FL. (kstauderman@ufl.edu). [ANR-4]

11:00 **Overview of Carbon Markets and the Potential for Florida Producers.** Sawssan Boufous* and Tara Wade. Southwest Florida Research and Education Center, University of Florida IFAS, Immokalee, FL. (boufous.sawssan@ufl.edu). [ANR-5]

**C – Student Presentations**

11:15 **Plant Species Richness and Composition Between Areas with Different Land-Use Histories in Southern Florida.** Daniel Caldwell, Cliff Martin, and Zack Brym. Tropical Research and Education Center, University of Florida IFAS, Homestead, FL. (brymz@ufl.edu). [ANR-6]

11:30 **Agroecology and Natural Resources Section Business Meeting,** Taylor Clem, VP, and Bonnie Wells, VP-Elect

11:45 **Lunch**

**Monday Afternoon Session**

(1:30 PM – 4:45 PM) – **ANR Field Trip**

1:30 **Field trip to Celery Fields** – led by Lynda Becherelli with Sarasota County Parks, Recreation, and Natural Resources Department – 6893 Palmer Blvd, Sarasota, FL 34240

Please meet in the hotel lobby at 1:30 pm and plan to drive your own vehicle or carpool to Celery Fields. The drive is approximately 20-25 minutes and we have a tour planned from 2pm – 4pm. We will meet the guide at the restroom building – not the gardens.
Our tour will end at the gardens, so no peeking!

The 400+ acre site is Sarasota County’s primary flood mitigation zone, but doubles as a county recreation facility and hotspot of birding. But why is it called “Celery Fields?” Why is Celery Fields so popular? And just what is that mountain made of? Learn the answers to these questions and more on a guided walk through the site. Participants should be prepared to walk approximately two miles along mostly unpaved and often uneven rocky or grassy surfaces, some of which will be uphill. Prepare for lots of sun, so plan accordingly with water and sunscreen.

4:00 Return to the Hotel

4:45 End of sessions. See you next year for the 136th FSHS annual meeting!
Monday Morning Session

(9:50 AM – 12:00 PM) Sarasota G - Ballroom

9:50   Welcome and Introductions, Manjul Dutt

A - Citrus Horticultural Production

10:00  Indian River Grapefruit Production in the Age of Huanglongbing: Current Status, Challenges and Opportunities. Lukas M. Hallman¹, Davie M. Kadyampakeni², Alan L. Wright¹, Mark A. Ritenour¹, and Lorenzo Rossi¹*. ¹ Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL. ² Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (l.rossi@ufl.edu) [C-1]

10:15  Updates on improved citrus production in Malawi: challenges and opportunities Andrew Thadzi¹ and Davie Kadyampakeni²*. ¹ Lilongwe University of Agriculture and Natural Resources-Natural Resources College, Lilongwe, Malawi. ² Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (dkadyampakeni@ufl.edu) [C-2]

10:30  Observation on Multiple 30+ Year Old Hamlin Sweet Orange Trees with Apparent HLB Tolerance. Gary K. England¹*, Manjul Dutt² and Brandon White³. ¹ Extension Agent IV Emeritus, University of Florida, IFAS, Hastings, FL. ² Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. ³ Lake County Extension, University of Florida, IFAS, Tavares, FL. (gke@ufl.edu) [C-3]

11:00 Initial observations on finger lime grown at three different locations in Central and South Florida. Manjul Dutt1*, Fernando Alferez2, Tim Gast1, Tripti Vashisth1, Alan Chambers3 and Jonathan Crane3. 1 Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. 2 Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. 3 Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (manjul@ufl.edu) [C-4]

11:15 Revisiting the Early Maturing Parson Brown Sweet Orange. Manjul Dutt1*, Lamiaa Mahmoud1, Tony Trama2 and Gary England3. 1 Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. 2 Florida Department of Citrus, Lake Alfred, FL. 3 Extension Agent IV Emeritus, University of Florida, IFAS, Hastings, FL. (manjul@ufl.edu) [C-5]

B - Citrus Horticultural Manipulations I

11:30 ProGibb® PGR, a commercial formulation of gibberellic acid plant growth regulator, has multiple uses on Florida citrus groves, and a long history in the state Craig A. Campbell*. Valent U.S.A. LLC, Winter Garden, FL. (craig.campbell@valent.com) [C-7]

11:45 Boron, Iron, Manganese and Zinc allocation in above and below ground components on HLB-affected grapefruit trees. Lukas M. Hallman1, Davie M. Kadyampakeni2, Alan L. Wright1, and Lorenzo Rossi1*. 1 Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL. 2 Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (l.rossi@ufl.edu) [C-8]

12:00 Lunch

Monday Afternoon Session

(1:20 PM – 4:30 PM) Sarasota G – Ballroom

1:20 Welcome back and Introductions, Manjul Dutt
C – Student Presentations

1:30  **The UF/IFAS IRREC Millennium Grove: A comprehensive field evaluation of grapefruit cultivars in the Indian River District.** J. Martin Zapien-Macias\(^1\), William S. Castle\(^2\), Frederick G. Gmitter Jr\(^2\), Jude W. Grosser\(^2\), Rhuanito S. Ferrarezi\(^2\) and Lorenzo Rossi\(^1\)*. \(^1\) Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL. \(^2\) Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. \(^3\) Department of Horticulture, University of Georgia, Athens, GA. ([rossi@ufl.edu](mailto:rossi@ufl.edu)) [C-9]

1:45  **Large-scale field evaluation of compost applied to sweet orange trees grown on four rootstocks.** Gabriel Pugina, Sarah L. Strauss and Ute Albrecht*. Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. ([ualbrecht@ufl.edu](mailto:ualbrecht@ufl.edu)) [C-10]

2:00  **Citrus peel color and brix content are affected by leaf nutrient concentration under CUPS condition.** Shankar Shrestha*, Arnold Schumann, Laura Waldo, Perseveranca Mungofa, Timothy Ebert and Napoleon Mariner. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. ([shrestha.s@ufl.edu](mailto:shrestha.s@ufl.edu)) [C-11]

2:15  **External and Internal Fruit Quality Assessment Using Deep Learning Semantic Image Segmentation.** Perseveranca Mungofa, Arnold Schumann*, Laura Waldo, Shankar Shrestha, Timothy Ebert and Napoleon Mariner. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. ([schumaw@ufl.edu](mailto:schumaw@ufl.edu)) [C-12]

2:30  **Nutrient Differences in Fruiting and Non-Fruiting Leaves.** Jamie D. Burrow and Tripti Vashisth*. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. ([tvashisth@ufl.edu](mailto:tvashisth@ufl.edu)) [C-13]

2:45  **Uptake and accumulation dynamics of Boron (B) and Molybdenum (Mo) on young citrus trees.** Jorge Saiz Martinez\(^1,2\), Davie M. Kadyampakeni\(^2\)* and Alberto San Bautista Primo\(^1\). Escuela Técnica Superior de Ingeniería Agronómica y del Medio Natural, Universidad Politécnica de Valencia, Valencia, Spain. \(^2\) Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. ([dkadyampakeni@ufl.edu](mailto:dkadyampakeni@ufl.edu)) [C-14]
D - Citrus Horticultural Manipulations II

3:00  Shading provides sustainable yield benefits to HLB-affected citrus trees by mitigating disease severity. Anirban Guha*, Myrtho Pierre, Gillian Zeng Michalczyk and Christopher Vincent. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (anirbanguha@ufl.edu) [C-15]

3:15  Break

E - Abiotic and Biotic Stress management.

3:30  Response of the Finger Lime (Citrus australasica) following cold stress. Lamiaa Mahmoud and Manjul Dutt*. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (manjul@ufl.edu) [C-16]

3:45  Propagation and transmission efficiency of Candidatus Liberibacter asiaticus by graft inoculation in Citrus plants under greenhouse conditions. Rayane Barcelos Bisi1,2*, Kim D. Bowman2 and Ute Albrecht1. 1Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. 2US Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. (rbarcelosbisi@ufl.edu) [C-17]

4:00  Methods to inoculate citrus rootstocks with Beauveria bassiana as an entomopathogenic fungal endophyte. Marco Arnoldi, Laura Muschweck, Emily Duren, Pasco B. Avery and Lorenzo Rossi*. Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL. (l.rossi@ufl.edu) [C-18]

4:15  Citrus Section Business Meeting. Manjul Dutt, VP and Lorenzo Rossi, VP-elect.

4:30  Adjourn

Tuesday Morning Session

(9:50 AM – 11:45 AM) Sarasota G - Ballroom

9:50  Welcome and Introductions, Manjul Dutt

F - Citrus Automation and Under Cover.
10:00 Development of an automated citrus pest scouting module. Timothy Ebert*, Arnold Schumann, Perseveranca Mungofa and Laura Waldo. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL (tebert@ufl.edu) [C-19]

10:15 Improved yield and quality of citrus fruit under Individual Protective Covers (IPCs). Fernando Alferez*, Susmita Gaire and Ute Albrecht. Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. (alferez@ufl.edu) [C-20]

10:30 Update: Using colored mesh bags to induce early color development in fresh market citrus varieties. Laura Waldo*, Arnold Schumann, and Timothy Ebert. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL (ljwaldo@ufl.edu) [C-21]

10:45 Individual Protective Covers: Experiences growing high-density “Jackson™” grapefruit in Lake Alfred, Florida. Napoleon Mariner*, Laura Waldo, Timothy Ebert, Arnold Schumann, Lauren Diepenbrock, & Lena Craft. Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL (napoleon.mariner@ufl.edu) [C-22]

G - Citrus Economics

11:00 Automated Trunk Injection in Citrus A Cost-Benefit Analysis. Shourish Chakravarty and Tara Wade*. Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. (tara.wade@ufl.edu) [C-23]

11:15 Economic feasibility of Reintroducing Tahiti Lime Production in South Florida. Fredy H Ballen* and Trent Blare. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (fredy.ballen@ufl.edu) [C-24]

11:30 Assessment of Market Opportunity for Finger Limes. Fredy H Ballen* and Trent Blare. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (fredy.ballen@ufl.edu) [C-25]

11:45 End of sessions. See you next year for the 136th FSHS annual meeting!
Handling & Processing Section

Monday Morning Session

(9:50 AM – 12:00 PM) Tropics

9:50  Welcome and Introduction, Jeff Brecht.

A – Student Presentations

10:00 Evaluation of Thyme Oil Vapor for Control of Postharvest Anthracnose on Blueberry. Yuru Chang¹, Ali Sarkhosh¹, and Jeffrey K. Brecht¹*. ¹Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (jkbrecht@ufl.edu) [HP-1]

10:15 Investigating the Prevalence of Salmonella and E. coli in Florida’s Soil and Identifying Key Environmental Factors. Clara Diekman¹ and Michelle Danyluk¹*. ¹Food Science and Human Nutrition Department, Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. (mddanyluk@ufl.edu) [HP-2]

10:30 Studying the Impact of Ozonated Water Treatments on the Postharvest Quality of Fresh Peaches. Orestis Giannopoulos¹*, Camille Esmel McAvoy¹, Ramsey Corn¹, Dario Chavez², Angelos Deltidis². ¹Department of Horticulture, University of Georgia, Tifton Campus, Tifton, GA. ²Department of Horticulture, University of Georgia, Griffin Campus, Griffin, GA (orestis.g@uga.edu) [HP-3]

10:45 Determination of Mango Flavor Formation Through Pathway-based Metabolomics. Robert Madden¹, Joonhyuk Suh¹, Jonathan Crane², Alan Chamber², Yu Wang²*. ¹Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. ²Tropical Research and Education Center, University of Florida/IFAS, Home-
11:00  **Effect of Sequential Treatments of an Ethylene Scrubber Followed by 1-MCP on the Shelf life of 'Hass' Avocado.** Marilia C. S. Bittencourt\(^1\), Steven A. Sargent\(^2\), and Jeffrey K. Brecht\(^3\). \(^1\)Plant Sciences Department, Federal University of Viçosa UFV, Viçosa, Brazil. \(^2\)Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (mc.desouzabitten@ufl.edu) [HP-5]

11:15  **Evaluating the Effects of Controlled Atmosphere Storage on Shelled Pecans.** Ramsey Corn\(^1\), Orestis Giannopoulos\(^1\), Camille E.E. McAvoy\(^1\), Angelos Deltsidis\(^1\). \(^1\)Department of Horticulture, University of Georgia, Tifton Campus, Tifton, GA. (adeltsidis@uga.edu) [HP-6]

**B – Cultivar Evaluations**

11:30  **Cell Wall Polysaccharide Composition in the Peel and Pulp of Blueberry Cultivars Differing in Fruit Texture Quality.** Marlee Trandel-Hayse\(^1\), Heeduk Oh\(^1\), Suzanne Johanningsmeier\(^2\), Massimo Iorizzo\(^1\), Penelope Perkins-Veazie\(^1\). \(^1\)Postharvest Horticulture Laboratory, North Carolina State University, PHHI, Kannapolis, NC. \(^2\)USDA-ARS, U.S. Horticultural Research Laboratory, Fort Pierce, FL. (marlee.trandel@usda.gov) [HP-7]

11:45  **Quality Evaluation of Six Sugar Apple (Annona squamosa L.) Selections Grown in East Central Florida.** Anne Plotto\(^1\), Jinhe Bai\(^1\), Greg McCollum\(^1\), and Kim D. Bowman\(^1\). \(^1\)U.S. Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. (anne.plotto@usda.gov) [HP-8]

12:00  **Lunch**

**Monday Afternoon Session**

(1:20 PM – 4:45 PM) Tropics

1:20  **Welcome back and introductions** – Angelos Deltsidis

**B – Cultivar Evaluations (cont’d)**

1:30  **Handling & Processing Section Business Meeting.** Jeff Brecht, VP and Angelos Deltsidis VP-elect
Handling & Processing Section

1:45 Postharvest Performance of Mandarin UF '411'. Mark A. Ritenour1*, Cuifeng Hu1, Jude Grosser2, and Fred G. Gmitter2. 1Indian River Research and Education Center, University of Florida, IFAS, Fort Pierce, FL. 2Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. (ritenour@ufl.edu) [HP -9]

2:00 Postharvest Quality of Orange and Purple-Fleshed Sweetpotato Cultivars Grown in North Florida. Steven A. Sargent1*, Wendy A. Mussoline2, Adrian D. Berry1, Merce A. Santana1, Robert C. Hochmuth3, and David A. Dinkins4. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. 2Putnam County Extension Center, University of Florida/IFAS, East Palatka, FL. 3North Florida REC-Suwannee Valley, University of Florida/IFAS, Live Oak FL. 4Florida Cooperative Extension Service, University of Florida/IFAS, Gainesville, FL. (sasa@ufl.edu) [HP-10]

C – Postharvest Pathology, Disorders, and Stress

2:15 Identification of Early Biomarkers of Stem End Rot Using Metabolomics Techniques. Jin-Pyo An1*, Katia Rodrigues-Stuart2, Megan M. Dewdney2, Mark A. Ritenour1, and Yu Wang1. 1Department of Food Science and Human Nutrition, Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. 2Department of Plant Pathology, Citrus Research and Education Center, University of Florida/IFAS, Lake Alfred, FL. 3Horticultural Science Department, Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. (yu.wang@ufl.edu) [HP-11]

2:30 Fruit Quality and Mineral Content of Tomato Fruit Exhibiting Blotchy Ripening Disorder. Tian Gong1, Xin Zhao1*, and Jeffrey K. Brecht1. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (xin@ufl.edu) [HP-12]

2:45 Lipidomic Profiles of Avocado Fruit Under Chilling Injury. Yogesh Ahlawat1, Utsab Ghimire1, and Tie Liu1*. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (tieliu@ufl.edu) [HP-13]

3:00 Postharvest Fungal Diseases and their Prevalence on Florida
Produced Strawberries. Jiuxu Zhang1, Jinhe Bai2, Anne Plotto2, Cuifeng Hu1, Liliana M. Cano1, and Mark A. Ritenour1*. 1Indian River Research and Education Center, University of Florida/IFAS, Fort Pierce, FL. 2US Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. (ritenour@ufl.edu) [HP-14]

3:15 Break

3:30 Observation of Ripening of Tropical Fruit Under Extreme High Temperature Conditions. Sonya Leonore Stahl1* and Steven A. Sargent1. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (cocom plum@ufl.edu) [HP-15]

D – Postharvest Quality and Quality Retention

3:45 Determining the Optimum Temperature and Atmosphere Combination for Maximum Quality Retention of Pink Stage Tomatoes in MAP. Angelos Deltsidis1, Eleni Pliakoni2, Jeffrey K. Brecht1. 1Department of Horticulture, University of Georgia, Tifton Campus, Tifton, GA. 2Department of Horticulture and Natural Resources, K-State Olathe, Olathe, KS. 3Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (adeltsidis@uga.edu) [HP-16]

4:00 Establishing Optimum Atmospheres for Extended Transport of Tree-ripe Mangos. Faisal Shahzad1, Moshe Doron1, and Jeffrey K. Brecht*. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. (jkbrecht@ufl.edu) [HP-17]

4:15 Influence of Temperature During Ethylene Treatment on Ripening and Quality of Mangos. Jeffrey K. Brecht*, Moshe Doron1, Paul LaFreniere1, and Dennis Khilstadius2. 1Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. 2Produce Technical Services and National Mango Board, Bemidji, MN. (jkbrecht@ufl.edu) [HP-18]

4:30 Characterization of Senescence-associated Genes in Lactuca sativa With Respect to Shelf Life. Kathryn Chase1,2*, Catherine Belisle1, Chiwah Tseung2, Steven Sargent1, Germán Sandoya3, Alfred Huo1, Carol Shao-shan Huang4, Kevin Begcy1, and Tie Liu2. 1Environmental Horticulture Department, University of Florida, Gainesville, FL. 2Horticultural Sciences Department, University of Florida, Gainesville, FL. (jkbrecht@ufl.edu) [HP-19]
Handling & Processing Section

Florida, Gainesville, FL. 2Everglades Research & Education Center, University of Florida IFAS, Belle Glade, FL. 3Department of Biology, New York University, New York, NY. (tieliu@ufl.edu) [HP-19]

4:45 Adjourn

Tuesday Morning Session
(9:50 – 11:00) Tropics

9:50 Welcome and introductions – Jeff Brecht

E – New Crops and Products for Florida

10:00 What’s the Future of Hemp? Analysis of the Opportunities and Challenges to Strengthen US Hemp Markets. Trent Blare1, Martha Rivera1, Fredy Ballen1, Zachary T. Brym1. 1Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (tblare@ufl.edu) [HP-20]

10:15 Postharvest Quality of Elderberry (Sambucus nigra ssp. canadensis) grown in Florida. Adrian D. Berry1, Steven A. Sargent1, Merce Santana1, and David Jarnagin2. Horticultural Sciences Department, University of Florida/IFAS, Gainesville, FL. 2Hyldemœr + Co., LLC, Chiefland, FL. (adberry@ufl.edu) [HP-21]

10:30 Winter Melon Juice: Recent Developments, Challenges, and Prospects. Jinhe Bai1, Xiuxiu Sun1,2, Elizabeth Baldwin1, Anne Plotto1, Erin Rosskopf1, John Manthey1, Wei Zhao1, Christina Dorado1, Randall Cameron1. 1U.S. Horticultural Research Laboratory, USDA, ARS, Fort Pierce, FL. 2U.S. Pacific Basin Agricultural Research Center, USDA, ARS, Hilo, HI. (jinhe.bai@usda.gov) [HP-22]

10:45 Establishing Gene Editing Technology to Generate Seedless Passion Fruit. Ellen Garcia1, Alan Chambers2, and Tie Liu1. 1Horticultural Sciences Department, University of Florida, IFAS, Gainesville, Florida. 2Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL (tieliu@ufl.edu) [HP-23]

11:00 End of sessions. See you next year for the 136th FSHS annual meeting!
Monday Morning Session

(10:00 AM – 12:00 PM) Sarasota C/D - Ballroom

10:00  Welcome and Introductions, Mark Bailey

A – Tropical and Subtropical Fruit

10:15  Freeze Damage & Protection of Passion Fruit. Mark Bailey, UF-IFAS Extension Marion County, Ocala, FL. (ironhill@ufl.edu) [K-1]

10:30  A Transcriptome of Miracle Fruit Pulp: Important Genomic Resource for Discovery Research and Breeding in Miracle Fruit. Vincent Njung’e Michael¹, Lynhe Demesyeux¹, Aureliano Bombarely², Alan Chambers¹, ¹Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL; ²Instituto de Biologia Molecular y Celular de Plantas (IBMCP), (CSIC-UPV), Valencia, Spain. (ac@ufl.edu) [K-2]

10:45  Progress Towards Establishing a Domestic Vanilla Industry. Alan Chambers, Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL (ac@ufl.edu) [K-3]

11:00  Achieving Sustainable Anthracnose Management in Organically Grown Avocado and Mango Orchards in South Florida. Lederson Gañán Betancur¹, Jonathan H. Crane¹, Bruce Schaffer¹, Ali Sarkhosh², Ana I. Vargas¹, Ray Melcon¹, and Romina Gazis¹. ¹Tropical Research and Education Center, University of Florida IFAS, Homestead, FL. ²Horticultural Sciences Department, Univer-
11:15 **Tilt® Used as a Soil Drench Prevents Laurel Wilt Symptoms in Potted Avocado Plants but has Limited Efficacy in Field Trees.**

Monica Navia-Urrutia*, Jonathan H. Crane¹, Romina Gazis¹. ¹Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (r.gazisseregina@ufl.edu) [K-4]

### B – Student Presentations

11:30 **New Passion Fruit for Florida: Quality Metrics.** Josh Anderson*,¹, Alan Chambers¹, Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL. (ac@ufl.edu) [K-6]

11:45 **Effects of *Vaccinium arboreum* Rootstock on Yield and Fruit Quality of “Patrecia™ Southern Highbush Blueberry on a Minimum Amended Soil.** Cecilia Rubert Heller, Gerardo H. Nunez, and Jeffrey Williamson, Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (g.nunez@ufl.edu) [K-7]

12:00 **Lunch**

### Monday Afternoon Session

(1:20 PM – 3:15 PM) Sarasota C/D – Ballroom

1:20 **Welcome back and Introduction.** Mark Bailey

### B – Student Presentations (Continued)

1:30 **Vanilla *Planifolia callus* Production for Biotechnological Transformation.** Manuel Gastelbondo*,¹, Alan Chambers¹, Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL. (ac@ufl.edu) [K-8]

1:45 **Reclaimed Water as an Alternative Source for Blueberry Irri-
gation in Florida. Yasmeen Saleem¹, Shinsuke Agehara², Davie Kadyampakeni²* ¹UF/IFAS Citrus Research and Education Center, Lake Alfred, FL; ²UF/IFAS Gulf Coast Research and Education Center, Wimauma, FL. (dkadyampakeni@ufl.edu) [K-9]

C – Berry Crops

2:00 Market Trends for U.S Berry Crops: Implications for Florida Berry Producers. Kimberly L Morgan, Southwest Florida Research and Education Center, University of Florida, IFAS, Immokalee, FL. (kimorgan@ufl.edu) [K-10]

2:15 Interaction of Chill Accumulation and Hydrogen Cyanamide Applications in “Optimus™ Southern Highbush Blueberry. Dylan C. Kovach, Marina L. Curtis, Gerardo H. Nunez, Horticultural Sciences Department, University of Florida. (g.nunez@ufl.edu) [K-11]

2:30 Blueberry Root and Fruit Responses to Humic Acid Application. Gerardo H. Nunez, Giancarlo Buzzi, and Cecilia R. Heller, Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (g.nunez@ufl.edu) [K-12]

D – Edible Landscaping

2:45 Florida-Friendly Edible Landscapes: Publishing A UF/IFAS EDIS Series. Tina L. McIntyre, Rachel Gutner, Tia Silvasy, Hamutahl Cohen UF/IFAS Extension Seminole County, Sanford, FL. (k.mcintyre@ufl.edu) [K-13]

3:00 Krome Memorial Section Business Meeting, Mark Bailey, VP and Kimberly Morgan, VP-Elect

3:15 End of sessions. See you next year for the 136th FSHS annual meeting!

Join us Tuesday afternoon for the Mango Summit (See page 40 for more details)
Ornamental Garden and Landscape

Michelle Leonard-Mularz
Presiding
mleonard@ufl.edu

Monday Morning Session
(9:50 AM–11:45 AM) The Keys

9:50  Welcome and Introductions, Michelle Leonard-Mularz

A- Irrigation Management

10:00  Small Rain Gauge Method for Monitoring Container Drainage. Jeff Million and Tom Yeager*. Environmental Horticulture Department, University of Florida, IFAS, Gainesville, FL (yeagert@ufl.edu). [OGL-1]

B- Crop Production

10:15  Commercial Production Recommendations for Philodendron ‘Birkin’ Grown in a Central Florida Greenhouse. John L Griffis Jr.*, Malcolm M. Manners², Mollie M. Tew², Kazana Bennett¹, Özlem Tuncay³. ¹Ecology and Environmental Studies Dept., Florida Gulf Coast University, Ft. Myers, FL; ²Horticultural Science Dept., Florida Southern College, Lakeland, FL; ³Dept. of Horticulture, Ege University, Izmir, Turkey (jgriffis@fgcu.edu). [OGL-2]

10:30  Unusual Variegation Pattern in Philodendron ‘Birkin’ Related to Leaf Chlorophyll Content and Leaf Color. John L Griffis, Jr.*, Malcolm M. Manners², Mollie M. Tew², Kazana Bennett¹, Özlem Tuncay³. ¹Ecology and Environmental Studies Dept., Florida Gulf Coast University, Ft. Myers, FL; ²Horticultural Science Dept., Florida Southern College, Lakeland, FL; ³Dept. of Horticulture, Ege University, Izmir, Turkey (jgriffis@fgcu.edu). [OGL-2]
Ornamental, Gardening & Landscape Section


C- Environmental Concerns

11:00 Relating Individual Environmental Concerns to Preferences for Low-Input Residential Lawns in Florida. Xumin Zhang and Hayk Khachatryan*. Mid-Florida Research and Education Center, University of Florida, IFAS, Apopka, FL (hayk@ufl.edu). [OGL-5]

D- Student Presentations

11:15 Embryo development on seed germination of silver saw palmetto (Serenoa repens f. glauca). Vânia Maria Pereira, Wagner Vendrame, Héctor E. Pérez. Environmental Horticulture Department, IFAS, University of Florida, IFAS, Gainesville, FL (vania.pereira@ufl.edu). [OGL-6]

11:30 Ornamental, Gardening and Landscape Section Business Meeting. Michelle Leonard-Mularz VP and Ashley Kush, VP-elect

11:45 End of sessions. See you next year for the 136th FSHS annual meeting!
Monday Morning Session

(9:50 AM – 12:00 PM) Sarasota E/F – Ballroom

9:50 Welcome and Introduction, Prissy Fletcher.

A - Irrigation and Nutrient Management

10:00 Saving farm water and money, one sensor at a time. Lisa Hickey\(^1\), Shawn Steed\(^2\), and Vivek Sharma\(^3\). \(^1\) UF/IFAS Extension Manatee County, Palmetto, FL; \(^2\) UF/IFAS Extension Hillsborough County, Sefner, FL; and \(^3\) Agricultural and Biological Engineering Department, University of Florida, Gainesville, FL. (lisa.hickey@ufl.edu) [V-1]

10:15 The influence of soil moisture and different irrigation strategies on sweet potato production in Florida. Wendy Mussoline\(^1\)*, Robert Hochmuth\(^2\), Christian Christensen\(^3\), Sandra Guzman\(^4\), and Zane Grabau\(^5\). \(^1\) UF/IFAS Putnam County Extension, East Palatka, FL; \(^2\) UF/IFAS North Florida Research and Education Center, Live Oak, FL; \(^3\) UF/IFAS Hastings Agriculture Extension Center, Hastings, FL; \(^4\) Agricultural and Biological Engineering Department, University of Florida, Indian River Research and Education Center, Fort Pierce, FL; and \(^5\) Entomology and Nematology Department, University of Florida, Gainesville, FL. (wmussoli@ufl.edu) [V-2]

10:30 Nitrogen fertilizer application strategies targeting potato yield goals. Fernando Rodrigo Bortolozo\(^1\), Judyson de Matos Oliveira\(^1\), André Luiz Biscaia Ribeiro da Silva\(^2\), and Lincoln Zotarelli\(^3\). \(^1\) Horticultural Sciences Department, University of Florida, Gainesville, FL; \(^2\) Department of Vegetable Cropping Systems, Department of Horticulture, Auburn University, Auburn, AL; \(^3\) Department of Agronomy, State University of Maringa, Maringa, PR, 87020-900, Brazil. (lzota@ufl.edu) [V-3]
**Vegetable Section**

**B – Alternative Crops, Genetics and Production Practices**

10:45 *Establishment of the winter artichoke production system in Florida.* Shinsuke Agehara*1* and Weining Wang*1. 1Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL (sagehara@ufl.edu) [V-4]

11:00 *Field evaluation of CRISPR-Cas9-driven brachytic and jointless pedicel tomatoes.* Tong Geon Lee*1*. 1Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (tonggeonlee@ufl.edu) [V-5]

11:15 *Potato genotypic difference in tolerance to aluminum toxicity.* Qiansheng Li*1* and Guodong Liu*1*. 1Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (Guodong@ufl.edu) [V-6]

11:30 *Localized root-zone compost application improves establishment and yield of tomato in a subtropical sandy soil.* Álvaro J. Bautista*1*, Shinsuke Agehara*1*, and Joao Cardoso de Souza Junior*1*. 1Gulf Coast Research and Education Center, University of Florida IFAS, Wimauma, FL. (abautistaflores@ufl.edu) [V-7]

11:45 *Genomics-enabled breeding in squash: progress towards high-throughput application.* Geoffrey Meru*1*+, Swati Shrestha, Vincent Michael and Yuqing Fu. 1Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (gmeru@ufl.edu) [V-8]

12:00 Lunch

**Monday Afternoon Session**

(1:20 PM– 4:30 PM) Sarasota E/F – Ballroom

1:20 Welcome back – Prissy Fletcher

1:30 Vegetable Session Business Meeting, Prissy Fletcher, VP and Lisa Hickey VP-elect

**C - Student Presentations**
**High-density planting of common bean (**Phaseolus vulgaris**)) for improving vegetable productivity.** Paislyn M. Ellington¹*, Ryan A. Fraser¹, Zachary E. Black¹, and Bala Rathinasabapathi¹. ¹Horticultural Sciences Department, University of Florida, IFAS, Gainesville, FL. (pellington@ufl.edu) [V-9]

**Exploration of rapid phenotyping methods for detecting lettuce genotypes with high content of vitamins E and K1.** Jesse Murray¹ and Germán Sandoya¹*. ¹Everglades Research and Education Center, University of Florida, IFAS, Belle Glade, FL. (gsandoyamiranda@ufl.edu) [V-10]

**Marker assisted back-crossing for rapid introgression of ZYMV and PRSV resistance in squash.** Swati Shrestha¹*, Yuqing Fu¹, Vincent Michael¹, and Geoffrey Meru¹. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (s.shrestha@ufl.edu) [V-11]

**Conserving water in strawberry production using intermittent sprinkler irrigation during establishment.** Junaid M. Lone¹*, Shinsuke Agehara, and Amr Abd-Elrahman. ¹Gulf Coast Research and Education Center, University of Florida IFAS, Balm, FL. (j.lone@ufl.edu) [V-12]

**Exploring heat tolerance in the UF/IFAS lettuce germplasm for early season production.** Hannah Mather², Germán Sandoya¹*, Gustavo Kreutz¹, and Christian Christensen². ¹Everglades Research and Education Center. University of Florida IFAS, Belle Glade, FL; and ²Hastings Agricultural and Extension Center. University of Florida IFAS, Hastings, FL. (gsandoyamiranda@ufl.edu) [V-13]

**Integrated approach using insecticides in combination with reflective plastic mulch for the management of pepper weevil, Anthonomus eugenii Cano (Coleoptera: Curculionidae) in South Florida.** Victoria O. Adeleye¹*, Dakshina Seal³, Oscar Liburd³, Xavier Martini³, and Geoffrey Meru¹. ¹Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL; ²Entomology and Nematology, University of Florida, IFAS, Gainesville, FL. ³North Florida Research and Education Center, University of Florida IFAS, Quincy, FL. (vadeleye@ufl.edu) [V-14]
3:30 **Sampling Corn Silk Fly (Diptera: Ulidiidae) Adults Using Traps Baited with Synthetic Food-based Lures.** Larissa P. Lima¹, Julien Beuzelin¹, Dakshina Seal¹, Sandra Allan¹, and Lindsay Campbell⁴. ¹Everglades Research and Education Center, University of Florida IFAS, Belle Glade, FL; ²Tropical Research and Education Center, University of Florida IFAS, Homestead, FL; ³Center for Medical, Agricultural and Veterinary Entomology, USDA-ARS, Gainesville, FL; and ⁴Florida Medical Entomological Laboratory, University of Florida IFAS, Vero Beach, FL. ([lpereiralima@ufl.edu](mailto:lpereiralima@ufl.edu)) [V-15]

3:45 **Assessing anaerobic soil disinfestation for production of baby spinach in organic open-field and high-tunnel systems.** Isaac Vincent¹⁺, Erin Rosskopf² and Xin Zhao¹. ¹Horticultural Sciences Department, University of Florida IFAS, Gainesville, FL; ²USDA-ARS, US Horticultural Research Laboratory, Fort Pierce, FL. ([zxin@ufl.edu](mailto:zxin@ufl.edu)) [V-16]

4:00 **Using particle-size distribution for estimating soil water retention curve of irrigated sandy soils.** Judyson de Matos Oliveira¹, Fernando R. Bortolozo¹, Lincoln Zotarelli¹⁺, Cássio Antônio Tormena², Allan Bacon¹, and Julio C. Pachon¹. ¹University of Florida, Gainesville, Florida, United States; ²State University of Maringá, Maringá, Paraná, Brazil. ([lzota@ufl.edu](mailto:lzota@ufl.edu)) [V-17]

4:15 **Lettuce accessions respond to different levels of phosphorus availability.** Gustavo F. Kreutz¹, Jehangir H. Bhadha, and Germán V. Sandoya⁺. ¹Everglades Research and Education Center, University of Florida IFAS, Belle Glade, Florida. ([gsandoyamiranda@ufl.edu](mailto:gsandoyamiranda@ufl.edu)) [V-18]

4:30 Adjourn

**Tuesday Morning Session**

(9:50 AM – 11:30 AM) Sarasota E/F Ballroom

9:50 **Welcome and introductions** – Prissy Fletcher

D - Pest Management

10:00 **Listronotus sp., an emerging weevil pest of celery and parsley in southern Florida.** Anna Meszaros¹ and Julien Beuzelin². ¹Palm
Common resistance identified for multiple diseases affecting the lettuce (*Lactuca sativa* L.) crop in Florida. Lis N. R. Porto¹, Amanda Carroll, Richard N. Raid¹, and Germán V. Sandoya-Miranda²*. ¹Everglades Research and Education Center, University of Florida IFAS, Belle Glade, FL. (ameszaros@ufl.edu) [V-19]

Evaluation of biological products for the control of *Rhi-zoctonia* root rot in snap bean. Qingchun Liu¹† and Shouan Zhang¹. ¹Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (q.liu1@ufl.edu) [V-20]

Insecticide performance against corn silk flies under laboratory and field conditions. Julien M Beuzelin¹*, Eric Schwan Resende¹, Donna Larsen¹, Silvana Paula-Moraes², Dakshina Seal³, and Gregg Nuessly¹. ¹Everglades Research and Education Center, University of Florida, IFAS, Belle Glade, FL; ²West Florida Research and Education Center, University of Florida IFAS, Jay, FL, ³Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (jbeuzelin@ufl.edu) [V-22]

Applying spray drone for pest management, potential and restrictions. Qingren Wang¹*. University of Florida IFAS Extension Miami-Dade County, Homestead, FL. (qrwang@ufl.edu) [V-23]

Pest and disease incidence in different tomato varieties. Rhafia Khan¹*. ¹Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL. (rkhan@ufl.edu) [V-24]

End of sessions. See you next year for the 136th FSHS annual meeting!
In-Service Training—Agriculture

Tuesday Afternoon Session

Hyatt Regency Hotel, Sarasota, FL

1:00 P.M.—5:00 Sarasota E/F - Ballroom

“Working with Clients to Measure Water Savings and Nutrient Load Reduction Associated with their BMP Implementation”

Organizer: Davie Kadyampakeni, Coordinator: Jamie Burrow UF/FAS, Citrus Research and Education Center

(dkadyampakeni@ufl.edu and jdyates@ufl.edu)

Agenda

1:00  Welcome and Introduction, pre-testing, background. Dr. Davie Kadyampakeni and Jamie D. Burrow. UF/IFAS, Citrus Research and Education Center, Lake Alfred, FL

1:05  Best Management Practices (BMPs) Research and Extension Perspectives and Impacts. Dr. Michael Dukes, UF/IFAS Center for Land Use Efficiency, Gainesville, FL

1:25  Using Smart Irrigation in Citrus and Vegetable Cropping Systems for Saving Water and Nutrients. Dr. Kelly Morgan UF/IFAS, Soil and Water Sciences Department, Gainesville, FL

2:05  Implementing Irrigation and Nitrogen BMPS in Potato Cropping Systems in Florida. Dr. Lincoln Zotrelli UF/IFAS, Horticultural Sciences Department, Gainesville, FL

2:45  Break
2:55  Importance of the active root zone and fertilizer placement in BMPs. Dr. Shinsuke Agehara UF/IFAS, Gulf Coast Research and Education Center, Wimauma, FL

3:35  Rising prices worrying specialty crop producers: Valuation of BMPS in Florida. Dr. Kimberly Morgan UF/IFAS, Food and Resource Economics Department, SWFREC, Immokalee, FL

4:15  Implementing Nitrogen BMPS in Selected Row Cropping Systems in Florida. Dr. Lakesh Sharma. UF/IFAS, Soil and Water Sciences Department, Gainesville, FL

4:55  Conclusion: questions, discussions, post-testing. Dr. Davie Kadyampakeni and Jamie D. Burrow. UF/IFAS, Citrus Research and Education Center, Lake Alfred, FL.

5:00  Adjourn
Mango Summit

Tuesday Afternoon Session

Hyatt Regency Hotel, Sarasota, FL

1:00 — 3:30 PM Sarasota C/D - Ballroom and zoom

Organizer: Noris Ledesma, UF/IFAS, Moderator: Alan Chambers UF/IFAS Tropical Research and Education Center
(norrisledesma.mango@gmail.com and ac@ufl.edu)

Agenda

1:00  Welcome and Introductions. Alan Chambers UF/IFAS Tropical Research and Education Center.

1:15  Export Potential of Mango Cultivars: Tolerance to the USDA APHIS Hot Water Insect Quarantine Treatment. Jeffrey K. Brecht¹, Steven A. Sargent¹, and Pavlos Tsouvaltzis¹, Charles A. Sims², and Jonathan H. Crane³. ¹Horticultural Sciences Department, UF/IFAS, Gainesville, FL, ²Food Science & Human Nutrition Department, UF/IFAS, Gainesville, FL, ³Tropical Research and Education Center, UF/IFAS, Homestead, FL. (jkbrecht@ufl.edu) [K-14]

1:30  What is Pollinating Our Mango Trees: A Brief Review. Jonathan H. Crane, Matthew Quenaudon, and Daniel Carrillo, Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL; USDA APHIS. (jhcr@ufl.edu) [K-15]

1:45  Cherry*: A Potential Commercial Mango Cultivar. Noris Ledesma, University of Florida, IFAS (norisledesma.mango@gmail.com) [K-16]

2:00  Improving mango fruit quality through plant breeding. Alan Chambers, Tropical Research and Education Center, Horticultural Sciences Department, University of Florida, IFAS, Homestead, FL (ac@ufl.edu) [K-17]
2:15 Recent Phenology of Mature Glenn Mango Trees. Jonathan Crane, Alan Chambers, Yu Wang and Ray Melcon. Tropical Research and Education Center, University of Florida, IFAS, Homestead, FL; Citrus Research and Education Center, University of Florida, IFAS, Lake Alfred, FL. (jhcr@ufl.edu) [K-18]

2:30 Break

2:45 A brief summary of the current mango industry in Florida. Jeff Wasielewski, Jonathan H. Crane, Richard J. Campbell, UF/IFAS Miami-Dade County Extension. (sflhort@ufl.edu) [K-19]

3:00 Mango Blooming and Challenges. Victor Galan Sauco, Instituto Canario de Investigaciones Agrarias, (vgalan46@gmail.com) [K-20]

3:15 National Mango Board. Tricia Bramley, National Mango Board. (tbramley@www.mango.org) [K-21]

3:30 Adjourn
Hyatt Regency Hotel Sarasota
Meet your 2023 FSHS Sectional Vice-Presidents!

Agroecology & Natural Resources: **Bonnie Wells**, UF/IFAS Extension Brevard County, bcwells@ufl.edu

Citrus: **Lorenzo Rossi**, UF/IFAS Indian River Research and Education Center, l.rossi@ufl.edu

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Ornamental, Garden, & Landscape: **Ashley Kush**, UF/IFAS Jackson County, ashleykush@ufl.edu

Vegetables: **Lisa Hickey**, UF/IFAS Extension Manatee County, lisa.hickey@ufl.edu
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