

2019 Meeting of Southern Section of the American Society of Plant Biologists

March 16-18, 2019
Watt Family Innovation Center
Clemson University, Clemson, South Carolina

Program Book



Chair: Shahid Mukhtar
Vice-Chair: Aruna Kilaru
Organizers: Magaly Rincón-Zachary and Julia Frugoli

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PROGRAM AT A GLANCE

SATURDAY, MARCH 16

1:00 p.m. - 6:00 p.m.	Registration- Watt Family Innovation Center Atrium
4:00-6:00 p.m.	Executive Committee Meeting Best Western Plus
1:00 p.m.	Planetarium Show 1- Kinard 112
3:00 p.m.	Botanical Garden Tour (Off Perimeter Rd-meet at Geological Museum inside Botanical Garden and park there)
3:00 p.m.	Planetarium Show 2- Kinard 112
2:00 p.m. - 6:00 p.m.	Poster Set-up - Watt Center Atrium
6:30 p.m. - 8:30 p.m.	Opening Night Mixer and Welcome Remarks by the Chair, Best Western Plus Hotel

SUNDAY, MARCH 17

7:15 a.m. - 8:00 a.m.	Breakfast- Watt Center Atrium
7:00 a.m. - 8:00 a.m.	Poster set up, Watt Center Atrium
7:00 a.m.- 7:30 p.m.	Poster Session Remains Open - Watt Center Atrium
8:00 a.m. - 10:40 a.m.	Welcome Remarks & General Session Watt Center 108
10:40 a.m. - 11:15 a.m.	Refreshment Break - Watt Center Atrium
11:15 a.m. - 12:15 p.m.	Non-Competitive Concurrent Sessions (A & B)- Watt Center 108,208
12:15 p.m. - 1:30 p.m.	Lunch, Watt Family Innovation Center Atrium
1:30 p.m. - 3:00 p.m.	Competitive Concurrent Sessions (C & D)- Watt Center 108,208
3:00 p.m. - 3:30 p.m.	Refreshment Break, Watt Family Innovation Center Atrium
3:30 p.m. - 4:45 p.m.	Competitive Concurrent Sessions (E & F) Watt Center 108,208
5:00 p.m. - 6:00 p.m.	Poster session (ODD numbered posters) Watt Center Atrium
6:00 p.m. - 7:00 p.m.	Poster session (EVEN numbered poster) Watt Center Atrium
7:30 p.m. - 9:30 p.m.	Banquet & Student Awards, Best Western Plus Hotel

MONDAY, MARCH 18

7:00 a.m. - 8:00 a.m.	Breakfast- Watt Center Atrium
7:00 a.m. - 10:45 a.m.	Poster Session Remains Open
8:00 a.m. - 8:20 a.m.	Welcome Remarks & Announcements - Watt Center 108
8:20 a.m. - 12:00 p.m.	Kriton Hatzios Symposium - Watt Center 108
10:00 a.m. - 10:30 a.m.	Refreshment Break - Watt Center Atrium
12:00 p.m. - 12:30 p.m.	Business Meeting & Concluding Remarks - Watt Center 108

DETAILED PROGRAM

SATURDAY, MARCH 16

- 1:00-6:00 p.m. Registration, Watt Family Innovation Center Atrium
4:00-6:00 p.m. Executive Committee Meeting, Best Western Plus
3:00 p.m. Botanical Garden Tour
1:00 p.m. Planetarium Show 1
3:00 p.m. Planetarium Show 2
2:00-6:00 p.m. Poster Set-up, Watt Family Innovation Center Atrium
6:30-8:30 p.m. Opening Night Mixer and Welcome Remarks by the Chair, Best Western Plus Hotel

SUNDAY, MARCH 17

GENERAL SESSION (GS) 8:00-10:40 A.M.

WATT CENTER AUDITORIUM W108

- 8:00-8:15 am Welcome Remarks and Opening of the 2019 SS-ASPB Annual Meeting, Shahid Mukhtar, Chair
- 8:15-8:25 am Announcements, Local Organizer, Julia Frugoli, Associate Dean for Inclusive Excellence and Graduate Education, Clemson University
- 8:25-8:35 am Introduction of the 2019 Kriton Hatzios Symposium, Aruna Kilaru, Vice-Chair
- KH1 Moderator: Aruna Kilaru
- 8:35-9:20 am **A Chemical Genetic Roadmap to Improved Tomato Flavor**
Harry Klee University of Florida
- GS 1-4 Moderator: Julia Frugoli
- 9:20 am **IBR5 Regulates Plant Auxin Response through Interactions with Multiple Proteins**
Nihal Dharmasiri Texas State University
- 9:40 am ***Chlamydomonas reinhardtii*: A "Rock Star" Plant Biology Teaching tool for K-16 Students.**
Mautusi Mitra University of West Georgia

10:00 am **Can These Glasses Cure Plant Blindness?**
Richard L. Blanton North Carolina State University

10:20 am **Regulation of a Geminivirus Late Gene Promoter by PRC2**
Garry Sunter University of Texas-San Antonio

10:40-11:15 a.m. Refreshment Break, Watt Family Innovation Center Atrium

NON-COMPETITIVE CONCURRENT SESSIONS

11:15 a.m. - 12:15 p.m. (Parallel session A)

CS-A 1-3 MODERATOR: SHAHID MUKHTAR Watt Center Auditorium W108

11:15 **Insights into the Microtubule-mediated Control of Cotton Fiber Expansion**
Candace H. Haigler North Carolina State University

11:35 **The Role of the MatK Maturase in Chloroplast Group IIA Intron Excision**
Michelle M. Barthet Coastal Carolina University

11:55 **Omics in Crop Wild Relatives: Apply Untapped Genetic Diversity to Meet Global Challenges**
Bao-Hua Song University of North Carolina at Charlotte

11:15 a.m. - 12:15 p.m. (Parallel session B)

CS-B 1-3 MODERATOR: ANDREW PALMER Watt 208

11:15 **Phylogenetic Conservation of Fine Root Chemical Traits in 36 Temperate Tree Species**
Mengxue Xia Clemson University

11:35 **Regulation of Translation in Response to Reactive Oxygen by the Protein Kinase GCN2**
Ansul Lokdarshi University of Tennessee

11:55 **Utilization of Fungal Endophytes as Biofertilizers**
Blake Cleckler University of West Alabama

12:15 p.m. - 1:30 p.m. Lunch, Watt Family Innovation Center Atrium

COMPETITIVE CONCURRENT SESSIONS

Parallel session C - competitive

CS-C 1-6 MODERATOR: NIHAL DHARMASIRI

Watt Center Auditorium W108

- 1:30 **Characterization of Two Putative Nutrient Transporters Required for Symbiotic Nitrogen Fixation in *Medicago truncatula***
Rajashree Pradhan University of North Texas
- 1:45 **Using A Multi-Omics Approach to Identify Essential Genes Involved with Nutrient Redistribution During *Arabidopsis* Innate Immune Response**
Thomas Detchemendy University of Alabama at Birmingham
- 2:00 **Plant Physiological Responses to Phosphorus Stress Could Facilitate Uranium Co-Mobilization from Stable Mineral Forms**
Nimisha Edayilam Clemson University
- 2:15 ***Arabidopsis* Bax Inhibitor 1 (ATBI-1) Interacts with ATIRE1A to Execute its Pro-survival Function**
Danish Diwan University of Alabama at Birmingham
- 2:30 **Nutrient Availability Drives Kin Recognition in the Model Angiosperm *A. thaliana***
Thiara Bento Florida Institute of Technology
- 2:45 **Elucidating the Factors that Regulate Specificity of Crop-AMF Association in Resource-Limited Soils**
Sukhmanpreet Kaur Clemson University, Clemson, SC

Parallel session D - competitive

CS-D 1-6 MODERATOR: MAUTUSI MITRA

Watt 208

- 1:30 **Elucidating the Role of the Pro-survival to Pro-Death Molecular Switch in the IRE1a Signaling Pathway in *Arabidopsis thaliana***
Taiaba Afrin University of Alabama at Birmingham
- 1:45 **Multi-omics Data and Multiple Problems**
Nilesh Kumar University of Alabama at Birmingham
- 2:00 **Fatty Acid Amide Hydrolase in an Early Land Plant, *Physcomitrella patens***
Imdadul Haq East Tennessee State University

- 2:15 **Determining the Role and Regulatory Control of POLTERGEIST and POLTERGEIST-LIKE1 in Plant Stem Cells**
Sean R. James University of North Carolina
- 2:30 **Development and Analysis of an Activation Tagging System in Wheat**
Amanda Askins University of South Carolina Aiken
- 2:45 **Identifying a Suppressor of the SUNN-1 Hypernodulating Phenotype through MutMap and Bulk Segregant Analysis**
Diptee Chaulagain Clemson University

3:00-3:30 pm Refreshment Break, Watt Family Innovation Center Atrium

Parallel session E - competitive

CS-E 1-5 MODERATOR: KENT CHAPMAN Watt Center Auditorium W108

- 3:30 **Identification of Novel Nematode Resistance Strategies in Wild Soybean**
Jan Kofsky University of North Carolina at Charlotte
- 3:45 **Interactions between IRE1 And AGB1 In Pathogen-Induced Unfolded Protein Response**
Katrina Sahawneh University of Alabama at Birmingham
- 4:00 **Unraveling the Role of Vacuolar Invertase in the Establishment of Plant Disease Susceptibility**
Yali Sun University of Alabama at Birmingham
- 4:15 **Accumulation of Iso-Flavonoids and Phenolic Acid Conjugates in Response to Soybean Cyst Nematode in Wild Soybean (*Glycine soja*)**
Neha Mittal University of North Carolina at Charlotte
- 4:30 **Regulation of *Arabidopsis* Floral Organ Development by the Transcription Factor AINTEGUMENTA-LIKE6**
Jorman Heflin University of South Carolina

Parallel session F - competitive

CS-F 1-5 MODERATOR: JAY SHOCKEY Watt 208

- 3:30 **Improved Network Biology Approach Discovers High-Confidence Candidate Host Targets of Pathogen TAL Effector Target Genes in Bacterial Leaf Streak of Rice**
Bharat Mishra University of Alabama at Birmingham

- 3:45 **Comparative In Silico Analysis of WRINKLED 1 Paralogs in Angiosperms**
Jyoti Ranjan Behera East Tennessee State University
- 4:00 **The Exploitation of the Glyoxylate Cycle in *Arabidopsis thaliana* by *Pseudomonas syringae* for Glucose Procurement**
TC Howton University of Alabama at Birmingham
- 4:15 **Using Lasercapture Microdissection and RNASeq to Produce a Tissue by Time Transcriptome of Nodulating *Medicago truncatula* Roots**
Jacklyn Thomas Clemson University
- 4:30 **Photosynthetic Responses of Grain and Forage Sorghum to Temperature Stress**
Jhansy Reddy Katta Oklahoma State University, Stillwater

Poster Session: 5:00 p.m. - 7:00 p.m.

Watt Family Innovation Center Atrium

(*All competing undergraduates should be at their poster from 5:00-7:00 p.m.)

5:00-6:00 p.m. Speakers to be present at ODD numbered posters

6:00-7:00 p.m. Speakers to be present at EVEN numbered posters

- P1.* The Effects of Clinorotation on Growth of Different *Arabidopsis thaliana* Genotypes**
Alena Jones University of North Carolina at Greensboro
- P2. Genes Regulating Growth, Phototropic, and Gravitropic Responses in *Arabidopsis thaliana***
Tatsiana Shymanovich University of North Carolina at Greensboro
- P3.* Analysis of Phototropism and Gravitropism in *Arabidopsis thaliana* in a Ground-based Control Experiment**
Megan Toler University of North Carolina at Greensboro
- P4.* Investigation of AIL6 Regulation of the Floral Homeotic Genes AG and AP3**
Alexis T. Bantle University of South Carolina - Columbia
- P5. Investigating the Functions of AINTEGUMENTA Target Genes in *Arabidopsis* Flower Development**
Mekiya Fletcher University of South Carolina - Columbia
- P6.* A Study of Endosperm Developmental Shift in *Arabidopsis* Using the Ectopic Expression of InvLNH1 by KRS Promoter**
Amariah Sledge Spelman College

- P7.* Modeling Metal Uptake in *Arabidopsis thaliana* Plants Exposed to Kanamycin**
Bethany Wairimu Mwaura Spelman College
- P8.* Study on the Effect of Ectopically Expressing InvINH1 by RGP3 Promoter on Embryo Growth Rate in *Arabidopsis***
Tamarah Bratcher Spelman College
- P9.* Delayed Cotyledon Greening Regulates phyB Signaling in *Arabidopsis***
Rafya Islam University of Texas at Austin
- P10.* Evaluation of mPing Transposition in *Arabidopsis thaliana* DNA Methylation Mutants**
Dalton Bodie University of South Carolina Aiken
- P11. Exploring a Potential Interaction between α -Amylase3 and the Catalytically Inactive β -Amylase9 in *Arabidopsis thaliana***
Frances Lowder Western Carolina University
- P12.* Sequence Analysis of a miRNA-Induced *Arabidopsis thaliana* Mutant**
Karah Moulton University of South Carolina Aiken
- P13.* Natural variation of *Arabidopsis thaliana* IRE1a and its roles in stress tolerance**
Minye Seok University of Alabama at Birmingham
- P14.* Identification of a New Mutant in the Autoregulation of Nodulation Regulatory Pathway in *Medicago truncatula***
Cameron Corbett Clemson University
- P15. Gene Expression Pattern of NCR150, A Nodule-Related Gene in Two Supernodulation Mutants and Wild-Type**
Yueyao Gao Clemson University
Note: This poster will be displayed electronically
- P16. Using a Molecular-genetic Approach to Investigate the Interactions between Rice and Nitrogen-fixing Bacteria, *Azospirillum brasilense***
Randall Rainwater University of Central Arkansas
- P17. Chilling Induced Alteration of Warm Growing Degree Hour and Base Temperature for Floral Bud Break in Peach**
Douglas G. Bielenberg Clemson University
- P18. Global Metabolomics Elucidates the Differential Regulation and Inducibility of Plant Stress Responses across Biotypes with Contrasting Glyphosate Susceptibilities**
Elizabeth Leonard Clemson University
- P19.* Lysing *Bacillus cereus* with Phage Amidase**
Grant Stevens University of South Carolina Aiken

- P20. Enhanced Unusual Fatty Acid Accumulation in Exotic Euphorbiaceae Species Requires Specialized Lysophosphatidic Acid Acyltransferases**
Jay Shockey United States Department of Agriculture
- P21.* Isolating an Autoinducer that Regulates Quorum Sensing in *Chlamydomonas reinhardtii***
Joseph A. Goode Florida Institute of Technology
- P22.* Understanding the Responses of Poplar to its Most Damaging Pathogen, *Sphaerulina musiva***
Kayed Al Dahabi Clemson University
- P23. Small Stem Assay for Chestnut Blight Resistance in Segregating Full-Sib Families of F2 Chestnut Trees**
Meg Miller University of Tennessee at Chattanooga
- P24.* Exploring the Unique Beta-amylase2 and Its Novel Potential Binding Partner**
Natasha Kreiling Western Carolina University
- P25. Proteomics of Pierce's Disease Tolerant and Susceptible Grape Xylem Sap Ra**
Ramesh Katam Florida A&M University
- P26.* Determining if *Arabidopsis*-Produced Phage Proteins Can Inhibit *Erwinia amylovora***
Reese King University of South Carolina Aiken
- P27.* A Transient Receptor Potential Ion channel is Involved in the *Chlamydomonas reinhardtii* CO₂ Concentrating Mechanism**
Rowan Christensen Georgia Southern University
- P28.* The Effect of Fungal Endophytes on Plant Production Under Abiotic Stress**
Evan Osborn University of West Alabama
- P29.* Fungi: Bio-Fertilizer to Improve Crop Productivity**
Hunter Reid University of West Alabama
- P30. 3D Printer Solutions for the Plant Biology Laboratory**
Thiara Bento Florida Institute of Technology
- P31.* Plants Display Age Specific Responses to Bacterial Quorum Sensing Molecules, N-acyl-Homoserine Lactones (AHLs) on Adult *Arabidopsis thaliana***
Prerana Mantri Florida Institute of Technology
- P32.* Evaluating Structure-Activity Relationships in Reactive Oxygen Associated Molecules at the Root Surface of *A. thaliana***
Roma Ballena Florida Institute of Technology
- P33.* RNASeq Analysis of Wild Type, *sun1-4* and *rdn1-2* *Medicago truncatula* plants During Early Nodule Development**
Elise Schnabel Clemson University

P34.* Analyzing the Effect of Promoter 5' Deletions on InvINH1 during Early Seed Development

Adriane McDonald Spelman College

7:30 pm - 9:30 pm Dinner, Best Western Plus Hotel
8:30 pm Student Awards

MONDAY, MARCH 18

7:00 am - 8:00 am Breakfast, Watt Family Innovation Center Atrium
7:00 am - 10:45 am Poster Session Remains Open, Watt Family Innovation Center Atrium
8:00 am - 8:10 am Welcome Remarks, Shahid Mukhtar
8:10 am - 8:20 am 2020 SS-ASPB meeting venue and KH symposium, Mustafa Morsy
8:20 am - 8:25 am Announcements, Julia Frugoli

2019 KRITON HATZIOS SYMPOSIUM

MODERATOR: ARUNA KILARU

Watt Center Auditorium W108

8:25 am Introducing 2019 KH symposium
8:30 am KH2. Medicines from Plants— A Nexus of Biodiversity and Biotechnology
 Toni M. Kutchan Donald Danforth Plant Science Center
9:15 am KH3. High Value Enzymes and Bio-Pharmaceuticals Made in Chloroplasts
 Henry Daniell University of Pennsylvania
10:00-10:30 a.m. Refreshment Break, Watt Family Innovation Center Atrium
10:30 am KH4 . Biotechnology and Gene Editing Approaches to Improving the Protein and Oil
 Content of Oilseed Crops
 Tony Kinney Corteva, Agriscience Division of DowDuPont
11:15 am General Business Meeting & Concluding Remarks

CLEMSON UNIVERSITY PARKING & TRANSPORTATION

Parking on Campus for non-students & non-employees is limited to metered visitor spaces marked on the map below, with the exception of cars carrying state-issued handicap permits, which can park in any handicap space on campus when displaying the permit.

Tiger Transit shuttle buses (14 passengers) will run loops between the hotels and the Watt Center on the schedule below. If you need transportation to the Botanical Garden (15 minutes walk) on Saturday, please tell us when you register so that we can arrange carpooling from the Watt Center. The planetarium is very close to Watt and can be accessed in under 5 minutes by walking. If you have accessibility issues, please tell us at registration.

BUS SCHEDULE:

A 14 passenger bus will run loops on the following route (route takes ~30 minutes)

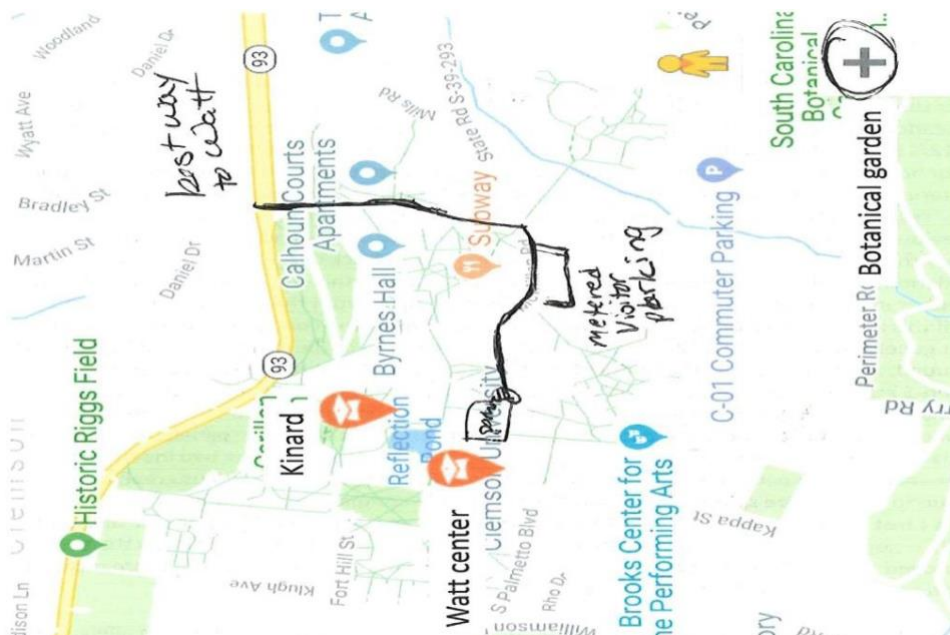
- 1) Hampton Inn
- 2) Best Western Plus
- 3) Hotel Tillman
- 4) Abernathy Hotel
- 5) Martin Inn
- 6) Watt Center

Saturday March 16: bus will run every 30 minutes 1:00 PM-6:00 PM

Sunday March 17: bus will run every 15 minutes 7:00 AM-9:00 AM and 5:00 PM-7:00 PM

Monday March 18: bus will run every 30 minutes 7:30 AM- 9:00 AM and 11:30 AM- 1:30 PM

Finally note the Uber is available in Clemson and may be an option for transportation on off hours. A free bus system (CAT bus) also runs between many locations (<http://www.catbus.com>)





Visiting parking

