

2018 Meeting of the Southern Section of the American Society of Plant Biologists

March 24 -26, 2018

Hotel Le Pavillon, New Orleans, Louisiana

PROGRAM BOOK



Organizers: Aruna Kilaru & Jay Shockey

Chair: Nihal Dharmasiri

Vice-Chair: Shahid Mukhtar

We greatly appreciate the help of these sponsors



PROGRAM AT A GLANCE

Saturday, March 24

3:00 P.M. - 6:30 P.M.	Registration
4:00 P.M. - 6:00 P.M.	Executive Committee Meeting
5:00 P.M. - 8:00 P.M.	Poster Set-Up (Gravier Room & Bienville Room)
6:30 P.M. - 8:00 P.M.	Annual Mixer

Sunday, March 25

7:00 A.M. - 8:00 A.M.	Breakfast
7:00 A.M. - 7:30 P.M.	Poster Session Remains Open
8:00 A.M. – 10:15 A.M.	Welcome Remarks & General Session
10:15 A.M. – 10:45 A.M.	Refreshment Break
10:45 A.M. – 12:30 P.M.	Three Concurrent Sessions (Non-Competitive)
12:30 P.M. – 1:30 P.M.	Lunch Break
2:00 P.M. – 3:15 P.M.	Three Concurrent Sessions (Competitive)
3:15 P.M. – 3:45 P.M.	Refreshment Break
3:45 P.M. – 5:15 P.M.	Three Concurrent Sessions (Competitive)
5:15 P.M. – 6:15 P.M.	Undergraduate Poster Competition
5:15 P.M. – 7:15 P.M.	Poster Session
7:30 P.M. to 9:30 P.M.	Dinner & Awards

Monday, March 26

7:00 A.M. - 8:00 A.M.	Breakfast
7:00 A.M. - 10:45 A.M.	Poster Session Remains Open
8:30 A.M. – 12:00 P.M.	Kriton – Hatzios Symposium
10:00 A.M. – 10:30 A.M.	Refreshment Break
12:00 P.M. – 12:30 P.M.	Business Meeting & Concluding Remarks

DETAILED PROGRAM

Saturday, March 24

- 3:00 P.M. - 6:30 P.M. Registration, Denechaud Foyer
- 4:00 P.M. - 6:00 P.M. Executive Committee Meeting, Poydras Room
- 5:00 P.M. - 8:00 P.M. Poster Set-Up, Gravier Room & Bienville Room
- 6:00P.M. - 8:00 P.M. Annual Mixer, Crystal Room (Restaurant in Lobby)

Sunday, March 25

7:00 A.M. - 8:00 A.M. Breakfast, Denechaud Foyer

General Session (GS) 8:15 A.M. – 10:15 A.M. – Denechaud Room

- 8:05 A.M. -8:15 A.M. Welcome Remarks - Nihal Dharmasiri, Chair, SS – ASPB
- 8:15 A.M. -8:25 A.M. Introduction to Symposium, Shahid Mukhtar, Vice Chair
- 8:25 A.M. -8:30 A.M. Announcements, Jay Shockey, Local Organizer

GS 1- 5: Moderator – Jay Shockey

- 8:30 An Integrative Approach to Transcriptional Co-Regulatory Network Construction and Characterization in *Arabidopsis***
Garry Sunter University of Texas-San Antonio
- 8:50 Exploring the Metabolic Network of Alternative Crops Producing Unusual Fatty Acids**
Ana Paula Alonso University of North Texas
- 9:10 Network Biology Discovers Pathogens' Contact Points in Host Protein-Protein Interactomes**
Shahid Mukhtar University of Alabama at Birmingham
- 9:30 Age-Dependent Sensitivity of Eukaryotes To Bacterial Quorum Sensing Signals**
Andrew Palmer Florida Institute of Technology

9:50 Using Big Data and the Appalachian Trail to Evaluate Poison Ivy Preferred Habitat and Population Structure in Southwest Virginia

John G Jelesko

Virginia Tech

10:15 A.M. – 10:45 A.M. Refreshment Break, Denechaud Foyer

Non-Competitive and Competitive Concurrent Sessions (CS):

CS-A: Development/ Growth/ Physiology/ Metabolism (Denechaud Room)

CS-B: Biotic and Abiotic Stress Responses/Mechanisms (Bienville Complex, Orleans Room)

CS-C: Biodiversity/Conservation/Genetics/Quantitative Biology (Gravier Complex, Baronne Room)

10:45 A.M. – 12:30 P.M. (Non-Competitive)

CS A1-5. Denechaud Room: Moderator - Ana Paula Alonso

10:45 Insights on the Eukaryotic Pathway of Leaf Lipid Synthesis from Acyl Flux Analysis within the *Arabidopsis act1/lpcat1/lpcat2* Triple Mutant

Philip D. Bates

The University of Southern Mississippi

11:05 *Arabidopsis* Bax Inhibitor 1 (AtBI-1) Interacts with AtIRE1a to Execute Pro-survival Function

Xiaoyu Liu

University of Alabama at Birmingham

11:25 Plant Pathogenic Fungi as a Source of Secondary Metabolites with Pesticide Activity

Kumudini M.Meepagala

USDA-ARS, The Natural Products Utilization Research

11:45 Novel Polyunsaturated *N*-acylethanolamines and Their Implications in *Physcomitrella patens*

Suhas Shinde

East Tennessee State University

12:05 Understanding the Role of Castor DGAT2 in Increased Unusual (Hydroxy) Fatty Acid Accumulation in Transgenic *Arabidopsis thaliana*

Hari Kiran Kotapati

The University of Southern Mississippi

CS B1-5. Bienville Complex - Orleans: Moderator - Andrew Palmer

10:45 Can a Single Fungal Endophyte Increase Crop Productivity and Stress Tolerance?

Blake Cleckler

The University of West Alabama

11:05 De Novo RNA-Seq Transcriptome and Biochemical Analysis of the Resurrection Fern, *Pleopeltis polypodioides*.

Susan John University of Louisiana at Lafayette

11:25 Reveal the Mystery of Endophytic Fungus-Mycovirus-Plant Symbiosis that Controls Plant Thermotolerance

Chengke Liu The University of West Alabama

11:45 Translation Regulator GCN2 Controls ABA Homeostasis and Stomatal Immunity in Arabidopsis

Karolina Mukhtar University of Alabama at Birmingham

12:05 Root to Shoot Signaling in Symbiosis

Julia Frugoli Clemson University

CS C1-5. Gravier Complex – Baronne: Moderator – Nathan Hancock

10:45 Splicing Inhibitors, Spliceostatin C and Herboxidiene, Cause Different Rearrangements of Transcripts from Arabidopsis Seedlings

Joanna Bajsa-Hirschel USDA-ARS, The Natural Products Utilization Research

11:05 Role of Na⁺ Transporters in Vertical Distribution of Excess Na⁺ in Salt Stressed Plants and Its Association with Tolerance Variation in Tetraploid Gossypium Germplasm

Kevin Cushman Texas Tech University

11:25 Current Applications of Next Generation Sequencing for Plant Research

Xiaolan Rao University of North Texas

11:45 *In Vitro* Propagation of Pine Varieties at Arborgen

Weiming Wang ArborGen Inc

12:05 Splicing Factor For Phytochrome Signaling (SFPS) Forms a Complex with the SR Protein RRC1 to Promote Photomorphogenesis in Arabidopsis

Praveen Kumar Kathare University of Texas at Austin

12:30 P.M. – 1:30 P.M. Lunch, Versailles Ballroom & Josephine

2:00 P.M. – 5:15 P.M. (Competitive)

CS A1-11. Denechaud Room: Moderators –Karolina Mukhtar & Phil Bates

- 2:00 Metabolite Imaging and Transcriptome Analyses of Jojoba (*Simmondsia chinensis*) Seed Tissues Suggest Unexpected Differential Localization of Pathways for Storage Lipid Accumulation**
Drew Sturtevant University of North Texas
- 2:15 Digalactosyldiacylglycerol Lipids Play an Important Role in Plant Systemic Acquired Resistance Signaling**
Ruiying Liu University of Kentucky
- 2:30 Characterization of Select Avocado Acyltransferases by Transient Expression**
Md Mahbubur Rahman East Tennessee State University
- 2:45 Characterization of Long Chain Omega-3 PUFA Utilization by Enzymes PDAT or DGAT in Engineered *Arabidopsis thaliana* Seeds**
David J Sliman II The University of Southern Mississippi
- 3:00 Fatty Acid Amide Hydrolase in NAE Metabolic Pathway in *Physcomitrella patens***
Imdadul Haq East Tennessee State University

3:15 P.M. - 3:45 P.M. Refreshment Break, Denechaud Foyer

- 3:45 Biochemical Characterization of Tomato Fatty Acid Amide Hydrolase**
Sujan Shrestha East Tennessee State University
- 4:00 IBR5 interacts with GTP binding proteins to regulate epidermal cell patterning in Arabidopsis.**
Idrees Ahmad Texas State University
- 4:15 IBR5 affects steady-state levels of SCFTIR1/AFBs components to regulate auxin response**
Timothy Cioffi Texas State University
- 4:30 Nitrogen Uptake Continues During Dormancy Induction in Poplar, Enhances Stem Diameter Growth**
Richard Sample University of Arkansas at Monticello
- 4:45 Can Schrenkiella parvula, an extremophyte relative of Arabidopsis, help determine a genomic blueprint in adapting to boron toxicity?**
Guannan Wang Louisiana State University
- 5:00 AnnAt1 and AnnAt2 regulate Arabidopsis primary root growth in response to sugar**
Jing Wang University of Texas at Austin

CS B. Bienville Complex – Orleans: Moderators – Magaly Rincon-Zachary & Mustafa Morsy

- 2:00 A Targeted RNA-Seq Approach Revealed That Epigenetic Components are Involved in the Induction Dynamics of Defense Genes in Arabidopsis**
Dinesh Singh Pujara Texas State University, San Marcos
- 2:15 SIP68, A Glucosyltransferase Protein and Its Role in SABP2 Signaling Pathway**
Saroj Chandra Lohani East Tennessee State University
- 2:30 SIR2 Like Deacetylase Enzyme and Its Possible Role in SABP2 Signaling Pathway**
Bal Krishna Chand Thakuri East Tennessee State University
- 2:45 Unraveling the role of ATVI2 in the establishment of plant disease susceptibility**
Yali Sun University of Alabama at Birmingham
- 3:00 Pathogen Effector and Receptor Kinase Interaction Screening Reveals Novel Innate Immune System Players**
Thomas Detchemendy University of Alabama at Birmingham

3:15 P.M. - 3:45 P.M. Refreshment Break, Denechaud Foyer

- 3:45 Characterization of SIP470, a Lipid Transfer Protein, in Defense Signaling Mechanism**
Shantaya B. Andrews East Tennessee State University
- 4:00 The exploitation of the glyoxylate cycle in *Arabidopsis thaliana* by *Pseudomonas syringae* for glucose procurement.**
Timothy C. Howton University of Alabama at Birmingham
- 4:15 IBR5-AtNRPB4 Interaction Suggests a Role for IBR5 During Heat Stress**
Rohit Katti Texas State University, San Marcos
- 4:30 Abscisic Acid-Activated Protein Kinase Modulates Drought Stress Response in Soybean (*Glycine max*)**
Saroj Kumar Sah Mississippi State University
- 4:45 Natural Variation and Heat Stress Tolerance of IRE1a and IRE1b Genes of *Arabidopsis thaliana***
Taiaba Afrin University of Alabama at Birmingham

5:00 Arabidopsis Wild-Relatives Adapted to Salt Reveals Modified Salt Stress Response Pathways Determined by Their Genomic Structural Variation
Kieu-Nga Tran Louisiana State University

CS C. Gravier Complex - Baronne: Moderators – Nathan Hancock & Arceo-Gerardo Gomez

2:00 Selective Thinning in a Bottomland Hardwood Plantation to Improve Species Diversity: A Case Study Supporting the Intermediate Disturbance Hypothesis
Marshall Hart University of Louisiana, Monroe

2:15 Physiological Approaches to Identifying Mechanisms Contributing to Invasive Plant Competitive Success
Molly M. Miller University of South Alabama

2:30 Direct and Indirect Effects of Invasive Cirsium Arvense on Pollination in Southern Appalachian Floral Communities
Jesse Daniels East Tennessee State University

2:45 Creation and Mapping of a New Population to Identify Novel QTLs for Aflatoxin Accumulation Resistance in Maize
Oluwaseun Felix Ogunola Mississippi State University

3:00 Novel Adaptive Mechanisms for Transgressive Salinity Tolerance Revealed Through Transcriptome Analysis of Rice Recombinant Inbred Lines from Genetically Diverse Parents
Isaiah Pabuayon Texas Tech University, Lubbock

3:15 P.M. - 3:45 P.M. Refreshment Break, Denechaud Foyer

3:45 Multidimensional Data and Multiple Problems
Nilesh Kumar University of Alabama at Birmingham

4:00 Mapping of Quantitative Trait Loci Associated with Drought Tolerance Traits at Reproductive Stage in Rice
Uttam Bhattarai Louisiana State University

4:15 Homologous Recombination Repair Facilitates Replicative Transposition of the mPing Element from Rice
Lisette Payero University of South Carolina Aiken

- 4:30 Dynamic Transcriptional Regulatory Network Modeling in Senescence**
 Bharat Mishra University of Alabama at Birmingham
- 4:45 The Genome and Transcriptome of the Extremophyte, Schrenkiella Parvula Reveal Unique Adaptations to Survive High K⁺ in its Native Soils**
 Pramod Pantha Louisiana State University
- 5:00 PIFs and COP1/SPA: Key Players in the Transition from Skotomorphogenesis to Photomorphogenesis**
 Vinh Pham The University of Texas at Austin

Poster Session: 5:15 P.M – 7:15 P.M. (Gravier Room & Bienville Room)

(*All competing undergraduates should be at their poster from 5:15 – 6:15 P.M. for discussion and judging)

5:15 P.M. – 6:15 P.M. : Odd numbered posters

6:15 P.M. – 7.15 P.M. : Even numbered posters

P1*. Quorum sensing regulates motility in the unicellular eukaryote *Chlamydomonas reinhardtii*

Kirstin Cutshaw Florida Institute of Technology

P2. Proteomic Changes in *Calendula officinalis* L. in Response to Low Temperature Stress

Riffat John University of Kashmir, Srinagar

P3*. Identification of the Cis-Element in the INVNH1 Promoter in *Arabidopsis*

Dania Brewster Spelman College

P4. Ectopic expression of psNTP9, a pea apyrase, promotes the expansion of root system architecture and nodulation in soybean

Greg Clark The University of Texas at Austin

P5*. miRNA-Induced Gene Silencing Tagging in *Arabidopsis thaliana*

Karah Moulton University of South Carolina-Aiken

P6. Tracking transposable elements in *Arabidopsis thaliana* in response to *Pseudomonas* infection

Sung-II Kim Texas State University

P7*. Molecular Characterization of Two High Light-Sensitive Mutants of *Chlamydomonas reinhardtii*, defective in a novel uncharacterized gene, LSR1

Kenneth Kim & Kevin Nguyen University of West Georgia

P8. Histological analysis and genetic mapping of the petal size trait in peach

Douglas G. Bielenberg Clemson University

P9*. Analysis of F2 Activation Tagging Wheat Lines

Amanda Askins University of South Carolina-Aiken

P10. Isolation and characterization of a stress-inducible promoter from the grass halophyte, *Spartina alterniflora* L.

Sonali Sengupta Louisiana State University Agricultural Center

P11*. Investigating the mPing Transposition Complex through Overexpression of ORF1 and Transposase Proteins

Reese King University of South Carolina-Aiken

P12. Mapping genes associated with drought stress resistance in rice

Andres Gutierrez Louisiana State University Agricultural Center

P13*. Applying CRISPR cas-9 Gene Knockout Technology to the Arabidopsis Model Organism in the Small College Research Environment

Robert I. Jackson Hampden Sydney College

P14. Incorporation of Technology into the Undergraduate Biology Laboratory

Ashlee McCaskill University of North Georgia

P15*. Recycling Regolith - Making Martian Dirt into Soil for Sustainable Agriculture

David Masaitis Florida Institute of Technology

P16. Overexpression of Arabidopsis thaliana small GTPase nucleolar GTP-binding protein NOG1 and NOG2 confer drought tolerance in rice

Bikram D. Pant Noble Research Institute

P17*. *Chlamydomonas reinhardtii* responses to bacterial quorum sensing signals indicate an important role in the microbiome

Brianna Richardson Florida Institute of Technology

P18. Virus-Induced Gene Silencing in Monocot Plants as a tool to Understand Lignin biosynthesis.

Fathy El-Gebaly The University of North Texas

P19*. Altering mPing transposition behavior using different plant promoters

Haley Stone University of South Carolina Aiken

P20. Exploring 'Omics' Data with R and R Shiny

Stephen C. Grace University of Arkansas at Little Rock

- P21*.** **AGL37-AGL62 dimer Bounded Cis-Element Identification in the Inv1NH1 Promoter of Arabidopsis**
 Alexandria Daniels Spelman College
- P22.** **Tissue- and Lipid-Specific Transcriptomes Provide Novel Insights into Arabidopsis Acylethanolamide Signaling Pathways in Early Seedling Development**
 Ashley E. Cannon University of North Texas
- P23*.** **Developing a yeast one-hybrid assay for evaluating protein binding to the mPing transposable element**
 Jacob Michael Reagin University of South Carolina Aiken
- P24.** **Oilseed Lipid Metabolic Engineering via Targeted Genome Editing**
 Jay Shockey USDA-ARS, New Orleans
- P25*.** **Niche Narrowing Restrictions on Metabolomic and Metagenomic Diversity limit Resilience in Response to Urbanization**
 Prerana Mantri Florida Institute of Technology
- P26.** **Improved Mathematical Model Enhances Understanding of Endoreplication in Arabidopsis Trichomes with 4D Visualization**
 Renee Dale Louisiana State University
- P27*.** **Regulation of gene expression in rice roots during interactions with nitrogen-fixing bacteria**
 Ha Ram Kim University of Central Arkansas
- P28.** **Effects of Invasive Plant Species on Pollen Transfer Networks in Southern Appalachian Floral Communities**
 Daniel Barker East Tennessee State University
- P29*.** **Evaluation of Protein and Amino Acid Levels in Developing Cottonseeds**
 Charles Anderson University of North Texas
- P30.** **Isolation and Identification of Bacterial Endophytes in Seeds with Varying Melatonin Content: Survival Implications**
 Meaghan Rose Midwestern State University
- P31*.** **Evaluation of Cottonseed Protein and Oil Reserves in Wild Accessions Cotton (*Gossypium* sp.) Grown Under Rain-fed or Irrigated Conditions**
 Akila Muthukumar University of North Texas,
- P32.** **Bulk-segregant whole genome sequencing to clone wi1, Wi2, Wi3 and Wi4 mutants of maize**
 Anuradha Dhingra Texas Tech University

- P33*. The Role of Proteins and Oxidative Stress Tolerance in Halotolerant Algae**
 Caroline Barnes University of South Alabama
- P34. Novel Post Translational modifications of Key Arabidopsis ER Stress Sensor IRE1a**
 Danish Gulab University of Alabama-Birmingham
- P35*. Biological Inoculum: A tool to improve crop productivity**
 Nelson Kimutai The University of West Alabama
- P36. Spatiotemporal analysis of phosphatidic acid formation during osmotic stress in Arabidopsis thaliana.**
 Ruth W. Ndathe Louisiana State University
- P37. Characterization of the putative elicitor from cotton boll weevil (*Anthonomus grandis*) in cotton (*Gossypium hirsutum*) defense responses**
 Stéfanie Menezes de Moura Texas A&M University
- P38. A lesson from the spreading earthmoss *Physcomitrella patens*: How do plant cell-surface receptors evolve?**
 Ana Marcia Escocard de Azevedo Manhaes Texas A&M University
- P39. Interactions between IRE1 and AGB1 in pathogen-induced unfolded protein response.**
 Katrina Sahawneh University of Alabama at Birmingham
- P40. The effects of urbanization on avian seed dispersal success of *Toxicodendron radicans* (Anacardiaceae)**
 Amber Stanley East Tennessee State University
- P41. Comparative genomics of cis-regulatory elements in cytokinin response factors**
 Rachel V. Powell Auburn University
- P42. Photosynthetic Characteristics of *S. habrochaites* Under Drought Stress**
 Dane A. Hudson University of Arkansas at Little Rock
- P43. Salt and oxidative stresses uniquely regulate tomato cytokinin levels and transcriptomic response**
 Erika Keshishian Palacky University and Institute of Experimental Botany, Czech Republic
- P44. Virus vector-based transient and stable gene editing via CRISPR in Arabidopsis and cotton**
 Brendan Mormile Texas A&M University
- P45. Improving Salt-Tolerance by Overexpressing Multiple Genes in Transgenic Cotton**
 Ruvini Mathangadeera Texas Tech University

- P46. A Custom Microarray Dataset for Discovery of Drought Stress Responses and Breeding for Water Use Efficiency in Sorghum Bicolor**
Heshani De Silva Weligodage Texas Tech University
- P47. Co-overexpression of AVP1 and RCA in Arabidopsis thaliana for improved tolerance to drought, salinity and heat**
Inosha S. Wijewardene Texas Tech University
- P48. Metabolic Pathway Elucidation of Triacylglycerol Assembly in Lesquerella**
Sajina Bhandari The University of Southern Mississippi
- P49. Functions of CDKB1 and CYCD3;1 in Endoreplication Regulation by the CDK Inhibitor SIAMESE**
Kai Wang Louisiana State University
- P50. Identification of alternative splicing events in Schrenkiella parvula regulated by NaCl stress**
Chathura Wijesinghe Louisiana State University
- P51. Spatial patterns of endogenous element distribution in growing peanut radicle**
Aniruddha Acharya University of Louisiana at Lafayette
- P52. Coordination of Phototaxis and Chemotaxis in Chlamydomonas**
Gabela Nelson Louisiana State University
- P53. Maize Metabolomics: discovery of antifungal metabolites**
Jeremy Winders Mississippi State University
- P54. Studying Pit/Mound Ecology in Russel Sage Wildlife Management Area**
Alex Fields University of Louisiana at Monroe
- P55. The Arabidopsis Mediator Complex Subunit9, a MORC1 interacting protein, is a positive regulator of plant immunity**
Ji-Chul Nam Texas State University, San Marcos
- P56. A case study in gene family evolution post-allopolyploidization**
Pierce Jamieson Texas A&M University
- P57. Composition of and Responses to N-acylethanolamines in the Oil Seed Crop Camelina sativa**
Chase Corley University of North Texas
- P58. COP1, a negative regulator of photomorphogenesis, positively regulates plant disease resistance via double-stranded RNA binding proteins**
Timothy Hoey University of Kentucky

P59. Gene Expression Analysis for Candidate Genes Related to Reduced Aflatoxin Accumulation in Maize

Dafne Alves Oliveira

Mississippi State University

7:30 P.M. to 9:30 P.M.

Dinner Crystal Room (Restaurant in the Lobby)

8:30 P.M.

Student Awards, Crystal Room

Monday, March 26 - (Denechaud Room)

7:00 A.M.

Breakfast Buffet, Denechaud Foyer

8:05 A.M. - 8:10 A.M.

Welcome - Nihal Dharmasiri

8:10 A.M. - 8:15 A.M.

ASPB Student Ambassadorship Program - Kelly Gillespie

8:10 A.M. - 8:15 A.M.

2019 SS-ASPB Meeting - Julia Frugoli

8:10 A.M. - 8:15 A.M.

Announcements, Aruna Kilaru

2018 Kriton – Hatzios Symposium: Moderator – Shahid Mukhtar

8:20 A.M.

Introductions – Shahid Mukhtar

8:30 A.M.

KH1. Underground Signaling

Philip Benfey, Department of Biology and HHMI, Duke University

9:15 A.M.

KH2. Mapping and exploiting functional variation in crop genomes

Bob Schmitz, Department of Genetics, University of Georgia at Athens

10:00 A.M. – 10.30 A.M. Refreshment Break, Denechaud Foyer

10:30 A.M.

KH3. Microbial sensing and signaling from the plant cell membrane

Libo Shan, Department of Plant Pathology and Microbiology, Institute for Plant Genomics and Biotechnology, Texas A & M University

11:15 A.M.

KH4. Data, Data Everywhere, Nor any a Drop to Drink

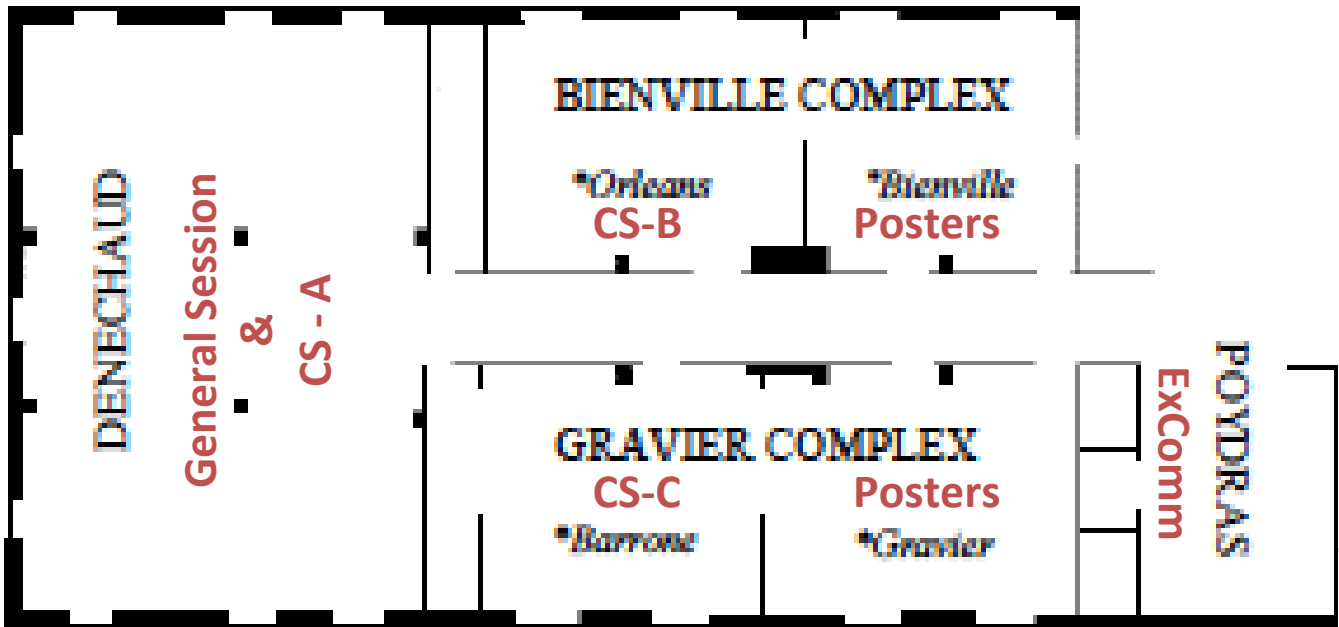
Jason Williams, CyVerse EOT, Cold Spring Harbor Laboratory

12:00 P.M.

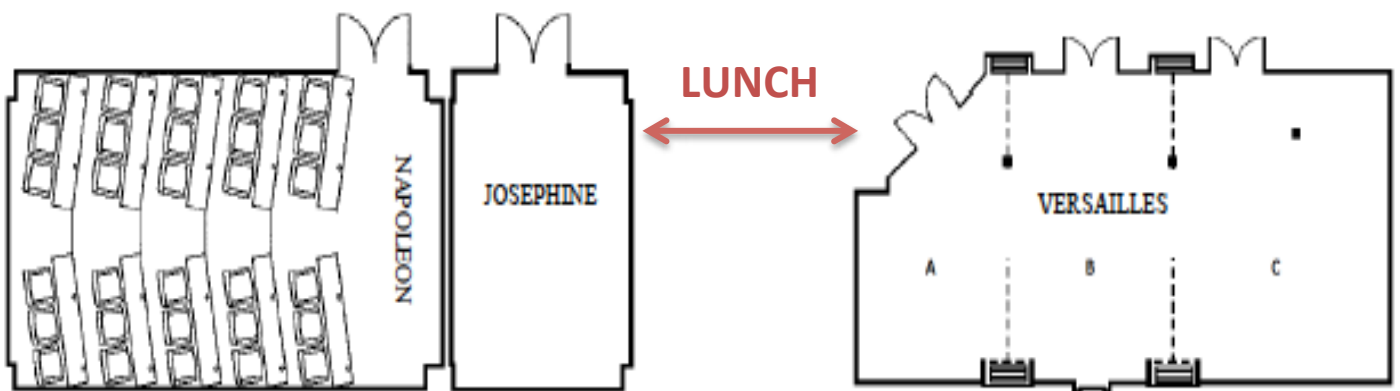
General Business Meeting & Concluding Remarks

FLOOR MAP

SECOND FLOOR



LOWER LEVEL



CRYSTAL ROOM IS THE RESTAURANT IN THE LOBBY

(FOR MIXER & DINNER)