

MISSISSIPPI
ACADEMY OF SCIENCES



Summer Student Science Symposium

Wednesday, July 26, 2017

**Charles W. Capps Entrepreneurial
Center (CAPPS), Delta Research and Extension Services, Stoneville, MS 38776**

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**Mississippi Academy of
Sciences: What We Do**

Communication Among Scientists

Each year, the Academy holds an annual meeting to present addresses, symposia, workshops, scientific papers, and exhibits of interest to its members. Research is presented in divisional meetings (see back panel for list of MAS divisions). The meeting provides an excellent forum for members to exchange ideas and information. MAS publishes abstracts of the presented papers as part of the meeting program and as a supplement to its annual Journal.

The Academy also publishes *Science in Mississippi* (the Journal of the Mississippi Academy of Sciences). *Science in Mississippi* contains news and articles of interest to members and the scientific community. The Academy also helps to coordinate and organize scientific seminars and symposia in Mississippi.

Science Education

The Academy encourages potential scientists, engineers, and mathematicians through its youth activities. MAS sponsors the Mississippi Junior Academy of Science and participates in the Westinghouse Science Talent Search and other science-related programs at several educational levels. A number of research awards and grants are also available from MAS. The Academy encourages science education activities and programs throughout the state and maintains a

liaison with the Mississippi Museum of Natural Science.

Assistance to the Community

MAS provides an inventory of science and technology expertise within the state. This information is available to members, state government agencies, the state legislature and other appropriate organizations and institutions. When called upon by state government, the Academy also offers information and counsel concerning science-related problems.

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Center (CAPPS), Delta Research and
Extension Services,
Stoneville, MS 38776**

Major Sponsors

**USDA-ARS, Stoneville, MS
Mississippi State University
Starkville, MS**

Symposium Coordinators:

Dr. Nacer Bellaloui, Chair
nacer.bellaloui@ars.usda.gov

Dr. Sukumar Saha, Co-Chair
Sukumar.saha@ars.usda.gov

Dr. Ham Benghuzzi, Advisor
hbenghuzzi@umc.edu

Dr. Krishna Reddy, Advisor
Krishna.Reddy@ars.usda.gov

Summer Student Science Symposium

Goal: The symposium is designed to bring student researchers (undergraduates and graduates) across all branches of science divisions to present their research findings through **poster presentation** and interact with their peers and the scientific communities; explore career opportunities; make personal contacts that can lead to job opportunities; receive information from potential employers; enhance communication and networking skills; establish professional relationships; find out about internships and job opportunities with companies, universities, and USDA-ARS.

Who should attend: Students conducting research in the areas of agriculture and plant sciences; molecular biology, pathology, entomology, genetics, chemistry, health sciences, outcomes and population or related subjects are highly encouraged to participate and compete for prestigious awards.

Awards and Recognitions: The first, second, and third place of poster presentations (Undergraduate and Graduate) will receive a Certificate and cash awards; and fourth, fifth, and sixth will receive Certificates; all student participants will receive honorable mention certificate from the Mississippi Academy of Sciences.



Program

Wednesday, July 26th, CAPPS Center

9:00-11AM: Registration

11:00 AM: Opening and Welcome Remarks:
Dr. Nacer Bellaloui, Chair;
Dr. Sukumar Saha, MAS Past
President and Co-Chair

11:05 AM: MAS Remarks
Dr. Ken Butler, MAS President

General Session: Room CAPPS A

Keynote Speakers

11:10 AM: Dr. Nacer Bellaloui,
Introducing Dr. Ellen W. Harris

11:15 AM: Dr. Ellen W. Harris
Associate Area Director for the
Southeast Area, Agricultural
Research Service, USDA,
Stoneville, MS.
“From Field to Fork Research in
the Southeast Area”

11:45 AM: Dr. Sukumar Saha,
Introducing Dr. Scott T. Willard

11:50 AM: Dr. Scott T. Willard
Professor and Associate Dean,
College of Agriculture and Life
Sciences, Mississippi State
University, Starkville, MS.
“The Research Continuum: From
Undergraduate Researcher to
Leading Change”

12:20 PM: Lunch (Provided)

Poster Session

General Session: Room CAPPS B

1:20-3:15 PM: Poster Presentations and
Judging

3:45 PM: Presentation of Awards:
Dr. Nacer Bellaloui joined by Drs.
Butler, Saha, and Benghuzzi

Conclusion Remarks

Dr. Nacer Bellaloui and Dr. Sukumar Saha

11:15 AM



Dr. Ellen W. Harris

Dr. Ellen W. Harris has over 27 years of service with the federal government. Presently, she is an Associate Area Director for the Southeast Area, Agricultural Research Service, USDA where she helps support and direct agricultural research programs in 8 states (AL, AR, FL, GA, LA, MS, NC, SC) and Puerto Rico. Before coming to Mississippi Dr. Harris was the Director for the USDA Beltsville Agricultural Research Center (BARC) in Beltsville, MD. She, also, has served as the Beltsville Human Nutrition Research Center (BHNRC) Associate Director and the Research Leader for the BHNRC Community Nutrition Research Group. In 2010/2011, Dr. Harris completed a special assignment with the USAID Bureau for Food Security serving as a Senior Nutrition Advisor for the Collaborative Research Support Program conducted in Uganda and Nepal. She is a past recipient of a Fulbright Senior Scholar Fellowship and taught nutrition at the University of Zimbabwe in Harare, Zimbabwe. Prior to joining USDA in 1990, she taught as an Assistant Professor in the Department of Nutrition & Food Sciences at Drexel University in Philadelphia, PA. Dr. Harris holds a doctorate in public health with an emphasis in public health nutrition and epidemiology from the University of Texas Health Science Center at Houston, School of Public Health.

11:50 AM



Dr. Scott T. Willard

Dr. Willard started at Mississippi State University as an Assistant Professor in the Department of Animal and Dairy Sciences in 1999, and later moved to the position of Professor and Head of the Department of Biochemistry and Molecular Biology. Dr. Willard was also appointed to an additional administrative role as Head of the Department of Entomology and Plant Pathology, and in 2011 oversaw the merger of these two departments into a combined unit. Dr. Willard has twenty-five years of teaching and research experience in reproductive and environmental physiology, among other areas, and works with both domestic and non-domestic animal species. Dr. Willard co-directs (along with Dr. Peter Ryan and his numerous cooperators) the “Biophotonics Initiative” on the Mississippi State University campus, which investigates and develops new methods for the real-time monitoring of cellular and molecular mechanisms in living systems. Dr. Willard has also been successful in the competitive granting arena as PI, co-PI, or cooperator on federal grants and private funds ranging from USDA-NIFA, IMLS, NIH-COBRE, NSF-EPSCoR, AZA, etc. His prior work also includes assisted reproduction and conservation efforts related to Giant Panda conservation, and more recently endangered amphibian species which has been funded by a series of cooperative National Leadership Grants by the Institute of Museum and Library Services (IMLS). Dr. Willard is author/co-author on 98 peer-reviewed scientific publications and has published numerous abstracts, extension, and popular press publications in areas ranging from applied animal production and stress physiology, to the real-time monitoring of gene expression in

living cells. Dr. Willard is a past Fellow of the Food Systems Leadership Institute (FSLI), and a recent Fellow of the Southeastern Conference Academic Leadership Development Program (SEC-ALDP). Dr. Willard has most recently begun coordinating The World Food Prize affiliated Mississippi Youth Institute (MSYI) to create opportunities for youth across the state to consider careers in agriculture, and to inspire them to join the fight against global hunger and poverty. Dr. Willard has been recognized for his research, teaching, and service by prior awards from the American Society of Animal Science, MSU Gamma Sigma Delta – The Honor Society for Agriculture, MAFES Team Grantsmanship Award, DAFVM Rosalind and Rodney Foil Teamwork Award, CALS/MAFES Research Award, and, most recently, the 2017 MSU President’s Commission on the Status of Minorities Diversity Award.

Organizing Committee

Dr. Daniel (Ken) Fisher (USDA-ARS)
Daniel.fisher@ars.usda.gov
Mrs. Sandra Mosley (USDA-ARS)
Sandra.mosley@ars.usda.gov
Dr. Raja Reddy (Mississippi State University)
krreddy@pss.msstate.edu
Ms. Tempestt Palmer (USDA-ARS)
Tpalmer1@okramail.deltastate.edu
Mrs. Jennifer Tonos (USDA-ARS)
Jennifer.tonos@ars.usda.gov
Mrs. Cuwanda Simmons (USDA-ARS)
Cuwanda.Simmons@ars.usda.gov
Dr. Rickie Turley (USDA-ARS)
Rick.turley@ars.usda.gov

Mississippi Academy of Sciences

PO Box 55907
Jackson, MS 39296-5907
T: 601-366-2995
F: 601-366-2998
<http://msacad.org/>

MAS Council FY 2017-2018

President, Dr. Ken Butler
Past President, Dr. SuKumar Saha
President Elect, Dr. James Stephen
Executive Officer, Dr. Ham Benghuzzi
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Director, Dr. Lashan Simpson
Journal Editor, Dr. Shelly Tucci

AAAS/NAAS Representative, Dr. Joseph A. Cameron (Ex-Officio)
Alternate (FY 17) Past resident, Dr. Zelma Cason (Ex-Officio)



Judging Committee

Chair: Dr. Shelly Tucci

Co-Chair: Dr. Daniel (Ken) Fisher

Judges

Group 1 (Abstract #: 96-108)

Dr. James Smith

Dr. Jodi Scheffler

Dr. Katherine Parys

Dr. Heather Tyler

Dr. Pradip Biswas

Group 2 (Abstract #: 109-120)

Dr. Nathan Little

Dr. Reginald Fletcher

Dr. Clint Allen

Dr. Maribel Portilla

Group 3 (Abstract #: 121-130)

Dr. John Erpelding

Dr. M. Golli

Dr. Linghe Zeng

Dr. Nathan Schiff

Group 4 (Abstract #: 131-144)

Dr. Lisa Woodruff

Dr. Ken Butler

Dr. Joe Cameron

Dr. Zelma Cason

Dr. Vijay Nandula

Dr. Nagaraj Chatakondi

Remark: The posters will be divided among the judge groups as per the suggestions of the **Chair:** Dr. Shelly Tucci and **Co-Chair:** Dr. Daniel (Ken) Fisher so that each poster is graded by all of the members of each group and awards can be presented according to the schedule time. Each member of the judging committee will receive a package at the registration desk for grading the posters. For any questions, please contact Dr. Shelly Tucci or Dr. Ken Fisher; they will be available at the registration desk/judging desk in CAPPS.

Parking: Park anywhere next to CAPPS

Directions:

-Using Google Maps on your smart phone, type “CAPPS Center Stoneville MS” and follow the instructions.

-Using Mapquest, type “Delta Research and Extension Center Stoneville MS”

Complete Address:

Charles W. Capps Entrepreneurial Center (CAPPS), Delta Research and Extension Services, 82 Stoneville Road, Stoneville, MS 38776

Posters

Abs#=Abstract number

N/A=Not part of the competition

Abs #	Title	Presenter	Type
96	Effect Of Soil Moisture Stress On Post Harvest Seed Physiology, Quality, And Chemical Composition Of Soybean	Chathurika Wijewardana	Graduate MSU
99	Hydrodeoxygenation Of Phenol Over An Nimop Catalyst: A Density Functional Theory Study	Alicia Brown	Undergraduate MSU
100	Identification Of Early Flowering Candidate Qtls In Rice (Oryza Sativa) With Qtl-Seq Method	Xiaoxi Meng	Graduate MSU
101	Assessing Species-Habitat Relationships In Priority Open Pine Ecological Systems In Mississippi	Amber Owen	Undergraduate MSU
103	Colon Cancer Could Be Minimized By An Eating A Healthy Diet That Consists Of Fruits And Vegetables!	Marquiza Bernard	Graduate MVSU
104	The Effect Of Cotton Growth Stage On Injury And Yield Effects When Exposed To Sub-Lethal Concentrations Of The Auxinic Herbicides 2,4-D And Dicamba	John Buol	Graduate MSU
105	Safety Of Chronically Inhaled Vegetable Glycerin Vapor In Mice	Brittany Szafran	Graduate MSU

106	Survival Of <i>Listeria Monocytogenes</i> Planktonic Cells In Lethal Concentrations Of Quaternary Ammonium Compounds After Exposure To Its Sublethal Concentrations	Amruta Jadhav	N/A MSU
107	Land Preparation Method And Irrigation Strategy Impacts On Peanut Canopy Closure, Pod Yield, Water Use Efficiency And Net Return Above Tillage And Irrigation Costs	Stephen Leininger	Graduate MSU
108	Evaluation Of Cotton Lines From Different Breeding Programs For Low Temperature And Drought Tolerance.	Bhupinder Singh	Graduate MSU
109	Screening And Characterization For Competitive Traits Among Weedy Rice Germplasm.	Swati Shrestha	Graduate MSU
110	The Economic Feasibility Of Implementing Center Pivots On Mississippi Dairy Farms	Rebecca Keefer	N/A MSU
111	Soybean Seed Germination Response To Temperature	Firas Alsajri	Graduate MSU
112	Rice Germplasm Characterization For Tolerance To Nutrient Stress Using Root, Shoot, And Physiological Traits	Salah Jumaa	Graduate MSU
113	Impact Of <i>Beauveria Bassiana</i> Strain Ni8 On <i>Lygus Lineolaris</i> (Hemiptera: Miridae) And Beneficial Arthropods.	Cristofer Gutierrez	Undergraduate USDA-ARS
114	Effect Of Sodium Bicarbonate As An Inorganic Carbon Source In Photosynthetic Microbial Desalination	Thomas Arana	Undergraduate MSU
115	Electronic Monitoring For Agricultural Production	Manuel Perez	Undergraduate USDA-ARS

116	Uavs In Agriculture	David Fisher	Undergraduate USDA-ARS
117	Annexin-V Targeting By Magnetic Nanoparticles And Fluorescent Staining Is An Effective Indicator Of Pre-Apoptotic Cell Content Of <i>Anaxyrus Fowleri</i> Sperm Samples	Allison Julien	Graduate MSU
118	The Effects Of Nanoparticle-Purification Of Amphibian Sperm On Cold- Storage And In-Vitro Fertilization Rates	Addison Hoven	Graduate MSU
119	Investigation Of Antimicrobial Peptide Genes Associated With Fungus And Insect Resistance In Maize	Joseph Noonan	pending/staff MSU
120	Evaluation Of Food Safety Practices At Mississippi Farmers' Markets	Sara Farmer	Undergraduate MSU
121	Long Term Development And Metamorphic Parameters Of An Endangered Anuran Species Produced By In-Vitro Fertilization	Auriana Tucker	Undergraduate MSU
122	Evaluating Osmolality As A Normalization Method For Urine In Amphibian Species	Lauren Agcanas	Undergraduate MSU
123	Adoption Of On-Farm Bacteriologic Milk Culturing: Evaluating Farmer Perception And Impact On Management Decisions	Brittany Bowman	Undergraduate MSU
124	Optimizing Parameters For Electrospun Alginate- And Chitosan-Based Nanofibers	Kathryn Penton	Graduate DSU
125	Mapping QTL For Insect Resistance On Chromosome 9 In Corn	Roger Davis, Jr.	Undergraduate MSU

126	Characterization Of The Maize Lipoxygenase Genefamily In Relation To Aflatoxin Accumulation Resistance	Oluwaseun Ogunola	Graduate MSU
127	Survival Of Low, Medium And High Heat Tolerant <i>Listeria Monocytogenes</i> Strains Upon Exposure To Carvacrol	Nitin Dhowlaghar	Graduate MSU
128	Biofilm Formation Of <i>Listeria Monocytogenes</i> On Four Food-Contact Surfaces Containing Catfish Extract	Nitin Dhowlaghar	Graduate MSU
129	Assessment Of Grassland Bird Abundance Within Agriculture Conservation Landscapes In The Black Belt Prairie Of Mississippi	Marty Ellard	Undergraduate MSU
130	Application Of Magnetic Nanoparticles For Post-Collection Semen Manipulation	Mark Lewis	Undergraduate MSU
131	Bactericidal Effects Of Silver-Coated Carbon Nanoparticles On Pathogenic <i>Escherichia Coli</i> , <i>Salmonella Typhimurium</i> , And <i>Salmonella Anatum</i>	Sarah Hartung	Undergraduate MSU
132	Potential Physical And Emotional Benefits For People From Working With Horses	Jillian Emma Hatcher	Undergraduate MSU
133	Evaluating The Effects Of Vista Pre-T On Feed Efficiency In Heat-Stressed Dairy Cattle	Alyssa Rulewicz	Undergraduate MSU
134	Cation Exchange Capacity Of Soils And Effects On Crop Growth	Samuel Patterson	Undergraduate MSU
135	Diet And Vial Bioassays For Monitoring Resistance Levels In Tarnished Plant Bug	Tamiya Philips	Undergraduate USDA-ARS

136	Characterization Heat Tolerant Weedy Rice (<i>Oryza Sativa</i>) For Rice Improvement	Shandrea Stallworth	Undergraduate MSU
137	Experience: Using Remote Sensing And Drone Photogrammetry Software, Creating Orthomosaics In Georeferenced Format Or Geotagging, Field Study Of Pigweeds	Daniel Yue	Undergraduate USDA-ARS
138	Stomatal Density And Carbon Dioxide Leaf Peel Study Of Four Woody Plant Species In The Mississippi Delta	Hannah Taylor	Undergraduate DSU
139	Evaluating Cotton Seed Gland Initiation By Microscopy	Jennifer Tonos	N/A USDA-ARS
140	Histomorphometric Analysis Of The Kidney Of Ovariectomized Rats Following The Release Of An Npy 1 Receptor Antagonist	Zachariah Bashir	Undergraduate UMC
141	Evaluation Of Bone Marrow And Subcutaneous Fat In Ovariectomized Rats Following Sustained Delivery Of Estrogen Or NPY 1Receptor Antagonist	Joshua Hurssey	Undergraduate UMC
142	Histomorphometric Analysis Of The Kidney Glomeruli Of Ovariectomized Rats Following Sustained Delivery Of Estrogen Replacement Therapy	Alexis Crockett	Undergraduate UMC
143	Evaluation Of Genetic Diversity In <i>Gossypium Hirsutum</i> And <i>G. Barbadosense</i> Cotton Lines With Diverse Fiber Properties	Tokhirbek Norov	Graduate USDA-ARS
144	Neuro-Inflammation, Mediated By Microglia And Astrocytes	Gouri Mahajan	Graduate UMC