

EIGHTY-SECOND ANNUAL

MISSISSIPPI ACADEMY OF SCIENCES MEETING



February 22-23, 2018

The University of Southern Mississippi
Thad Cochran Center, Hattiesburg, Miss

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Mississippi Academy of Sciences

Volume 63

February 2018

Number 1

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General Schedule

Thursday, February 22, 2018

Time	Event	Location
7:30-5:00 p.m.	Registration	First Floor TCC
8:00-8:00 p.m.	Exhibits	Second Floor TCC
8:00-3:00 p.m.	Divisional Programs	See program for details
8:30-12:00 p.m.	Ecology & Evolutionary Biology Symposium	TCC 226
9:30-12:00 p.m.	Population Health Symposium I	TCC Ballroom II & III
1:00-3:00 p.m.	Bioinformatics Symposium	TCC 229
1:00-3:00 p.m.	Population Health Symposium II	TCC Ballroom II & III
2:00-3:00 p.m.	Science Education Workshop: STEMI	TCC 210
2:05-3:05 p.m.	Chemistry Entrepreneurs Symposium	TCC 218 A
3:30-5:30 p.m.	Dodgen Lecture	TCC Ballroom II/III
5:30-7:30 p.m.	Reception/Poster Session	Thad Cochran Center

Friday, February 23, 2018

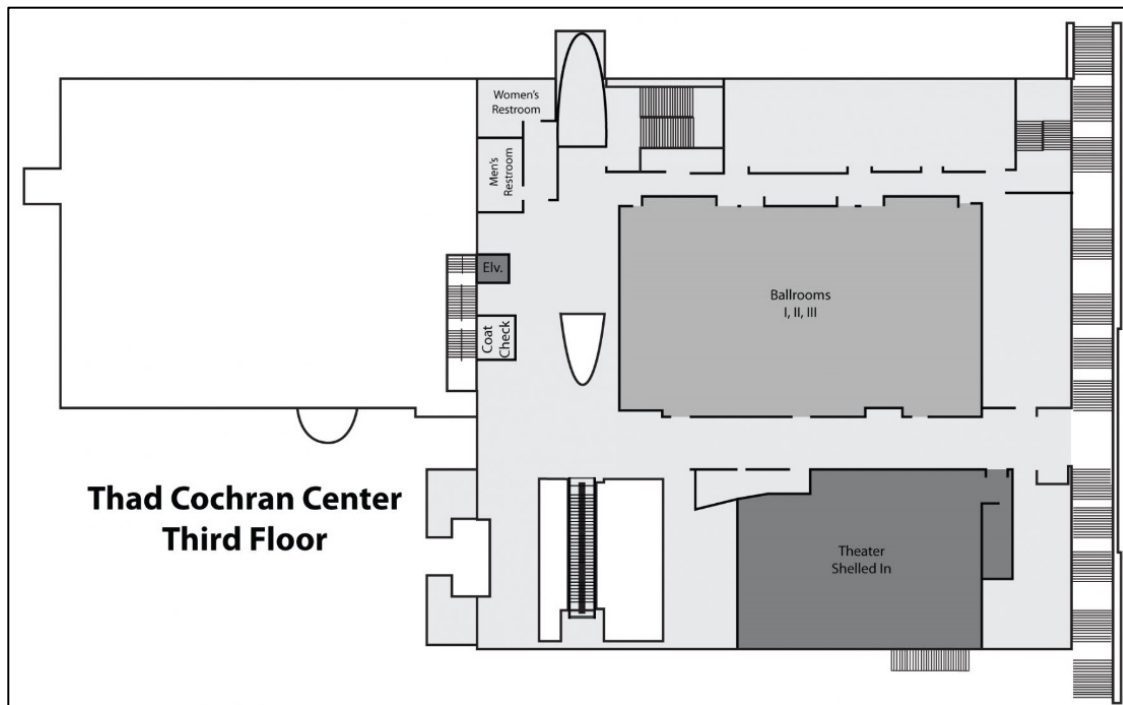
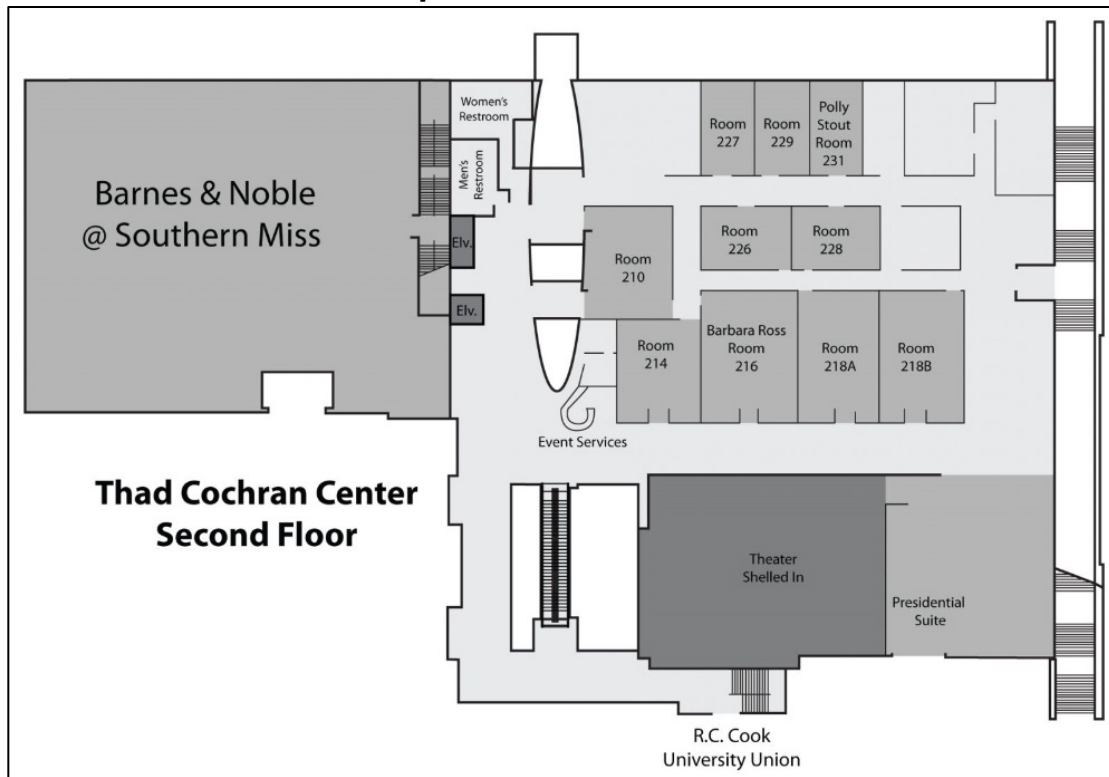
Time	Event	Location
7:15-8:15 a.m.	Past Presidents Breakfast	Union Hall of Honors
8:00-12:00 p.m.	Divisional Programs	See program for details
8:00-11:30 a.m.	Agriculture Workshop	Union C
8:00-4:00 p.m.	Science Education, Wolbachia Rodeo Workshop	WSB 153
9:30-10:30 a.m.	Health Science/Chemistry High School Poster Session	TCC Ballroom I
10:00-11:30 a.m.	Advanced Teaching Methodologies Workshop	TCC 210
10:00-11:55 a.m.	Population Health Interactive Workshop	TCC Ballroom II
11:00-1:00 p.m.	Field Trip to Lake Thoreau Environmental Center	Off Campus
12:00-1:00 p.m.	Plenary Speaker and Lunch (Sponsored by Millsaps/HHMI and Mississippi INBRE)	TCC Ballroom II
1:00-3:00 p.m.	Millsaps/HHMI Undergraduate Symposium and Awards	TCC Ballroom III
1:00-3:00 p.m.	Mississippi INBRE Graduate Symposium	TCC Ballroom II
1:00-2:00 p.m.	MS College and Career Readiness Workshop	TCC 210

	Agriculture & Plant Sciences	Cellular, Molecular & Developmental Biology	Chemistry & Chemical Engineering	Ecology & Evolutionary Biology	Geology & Geography	Health Sciences
Thursday	Registration (Lobby)					
7:30 a.m.						
8:00 a.m.						
9:00 a.m.	Oral Presentations & Business Meeting (Union C)	Oral Presentations (TCC 214)	Oral Presentations (TCC 218A & 218B)	Ecology & Evolutionary Biology Symposium (TCC 226)	Oral Presentations (Union H)	Population Health Symposium I (Ballroom II & III)
10:00 a.m.						
11:00 a.m.						
12:00 p.m.	Lunch					
1:00 p.m.	Oral Presentations (Union C)	Oral Presentations (TCC 214)	Oral Presentations (TCC 218A & 218B)	Oral Presentation & Business Meeting (TCC 226)	Oral Presentations & Student Awards (Union H)	Population Health Symposium II (Ballroom II & III)
2:00 p.m.			Symposium (TCC 218A)			
3:00 p.m.						
	2017 Dodgen Lecture & Presentation of Awards (Thad Cochran Center, Ballroom II & III)					
4:00 p.m.						
5:00 p.m.	Reception & Poster Session					
6:00 p.m.						
7:00 p.m.						
Friday						
8:00 a.m.	Agriculture Workshop (Union C)	Oral Presentations & Business Meeting (TCC 214)	Oral Presentations (TCC 218A)	Oral Presentations & Business Meeting 8 a.m.-2 p.m. (Union H)	Oral Presentations (TCC 227, 228 and Ballroom II)	
9:00 a.m.			High School Poster Session (TCC Third Floor)			
10:00 a.m.			Oral Presentations & Business Meeting (TCC 218A)			
11:00 a.m.			Lake Thoreau Field Trip 11 a.m.-1 p.m.		Population Health Workshop (Ballroom II)	
12:00 p.m.	Plenary Speaker Sponsored by Millsaps/HHMI and Mississippi INBRE (Ballroom II)					
1:00 p.m.	Millsaps/HHMI Undergraduate Symposium & Mississippi INBRE Graduate Symposium (Ballroom II)					
2:00 p.m.						
3:00 p.m.						

	History & Philosophy of Science	Marine & Atmospheric Sciences	Mathematics, Computer Sciences & Statistics	Physics & Engineering	Psychology & Social Sciences	Science Education	Zoology
Thursday	Registration (Lobby)						
7:30 a.m.							
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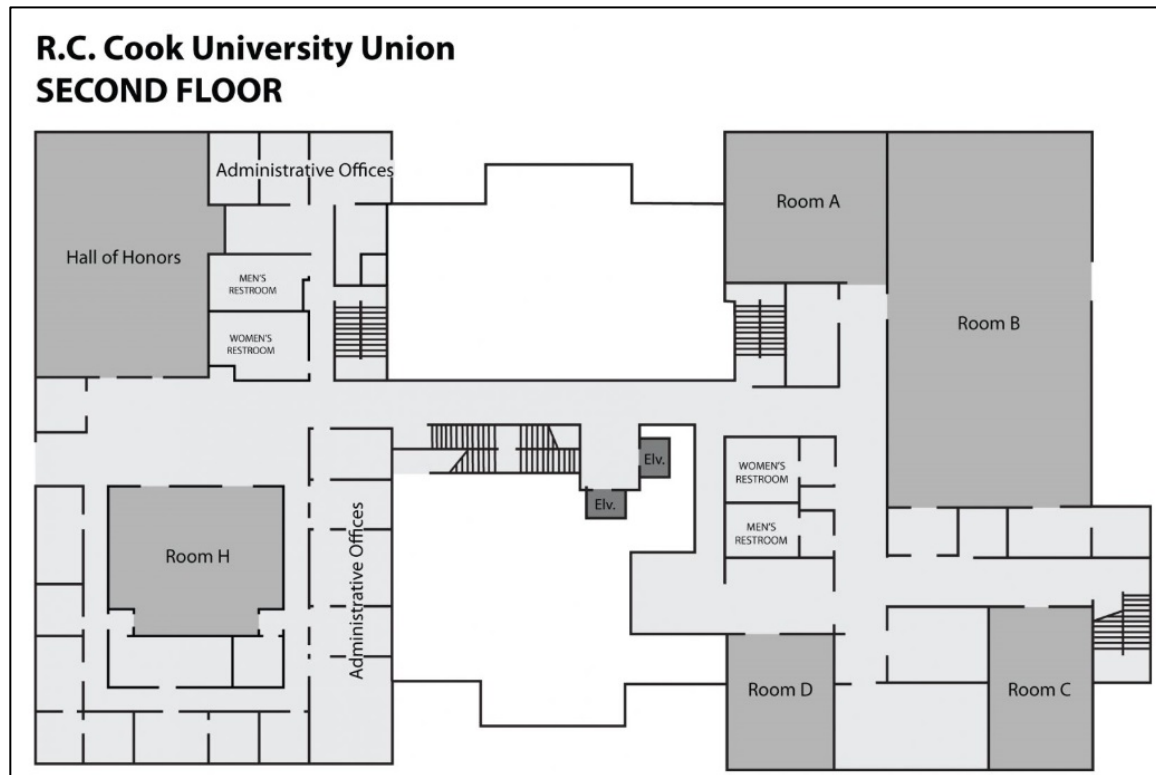


Thad Cochran Center Map





R.C. Cook University Union Map





Mississippi Academy of Sciences, Eighty-Second Annual Meeting

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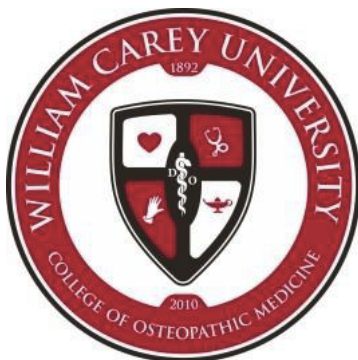
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Mississippi Academy of Sciences Award Winners 2018

Contribution to Science

Sukumar Saha, PhD
USDA/ARS Research Geneticist



Sukumar Saha is working as a Research Geneticist with the Genetics and Sustainable Research Unit, USDA/ARS, Mississippi State, MS. He is internationally recognized as an authority in cotton genomics and cytogenetics. He has developed genetic resources used by the scientists all over in the world.

Dr. Sukumar Saha, a USDA/ARS Research Geneticist, is well known as an international authority in cotton cytogenetics and genomics publishing over 100 peer-reviewed articles. He also received the "2010 Cotton Genetics Research Award" by the U.S. Commercial Cotton Breeders, the "2011 Cotton Researcher of the Year award" by ICAC and the "2016 CSSA International Service Award". He made major impacts in three areas: 1) interspecific chromosome substitution line development; 2) international agricultural research and 3) DNA marker development. He was the lead scientist to demonstrate for the first time that interspecific chromosome substitution line is a novel way for Upland cotton

improvement by targeted introgression of desirable traits from wild species. He also patented a RNAi-Phytochrome A cotton line with early flowering, high yield, and superior fiber qualities in collaboration with other scientists. Currently the Proloq cotton lines using this technology are cultivated over 60,000 hectares in Uzbekistan.

Dudley Peeler Award

Contribution to the Mississippi Academy of Sciences

Ralph Didlake, PhD
Associate Vice Chancellor for Academic Affairs
University of Mississippi Medical Center

Dr. Ralph Didlake was appointed chief academic officer in 2013. A native of New Mexico, Didlake is a graduate of the University of Mississippi and the University of Mississippi School Of Medicine. He trained in general surgery at UMMC, including two years in the study of transplantation research in the experimental surgery laboratory founded by Dr. James Hardy. He later completed a surgical fellowship in organ transplantation at the University of Texas Health Science Center in Houston. After practicing transplant, general and vascular surgery for 23 years, Didlake developed a compelling interest in the human context of modern medical and surgical care. This interest led him to pursue a master's degree in bioethics and health policy from the Neiswanger Institute for Bioethics at Loyola University, Chicago. In 2008, he was appointed director of the UMMC's newly established Center for Bioethics and Medical Humanities, a position he continues to hold. He is also professor of surgery. Dr. Didlake is a life member of the Academy and has been supporter of both our state and national academy of sciences.

Didlake is a fellow of the American College of Surgeons and is a member of the American Society for Bioethics and Medical Humanities, among many other organizations. He is the author of numerous peer-reviewed articles, book chapters and abstracts and has been principal investigator or co-investigator on a number of National Institutes of Health and foundation grants.

Didlake has shepherded the Medical Center's long-range, interdisciplinary commitment to enhancing professionalism. In his spare time, he enjoys restoring antique radios and has an interest in poetry criticism, especially 20th century Russian poets. He and his wife Millie are enjoying their first grandchild.





Community Colleges – Horizon Lifetime Achievement Award

Robert V. Harris, PhD
Holmes Community College
Goodman, MS



Dr. Robert V. Harris is a faculty member at Holmes Community College in Goodman, Mississippi where he has spent his entire 32 year career. Dr. Harris graduated from Mississippi State University with a BS in computer science (1985), a MAT in community college education (1986), and a PhD in community college leadership (2004). He has been honored on several prior occasions with recognitions including the HEADWAE Outstanding Faculty Honoree in 2004, a Mississippi Lamplighter Educator Award in 1996, and the National Institute for Staff and Organizational Development (NISOD) Excellence Award in 1995. Aside from his teaching responsibilities in computer science at Holmes, he serves in administrative roles as associate chair of the Department of Mathematics and Computer Science and director of placement testing. During his tenure, Dr. Harris has selflessly served and supported students and fellow faculty as the Phi Theta Kappa advisor and president and secretary of the Holmes Community College Faculty Association. Throughout these many years of service, Dr.

Harris has consistently maintained an outstanding reputation among both students and peers for his teaching, high expectations of students, communication, professionalism, and leadership.

Executive Director, Welcome Remarks

Ham Benghuzzi, PhD, FAIMBE, FBSE

Welcome to the 82nd Annual Meeting of the Mississippi Academy of Sciences (MAS). This has been a memorable year for MAS. When we look back on this year, all the memories of intensity, stress and responsibilities tend to fade, but the memories of the successes shared with colleagues, students and friends will remain forever. At this time, I wish to thank those unsung heroes. Their diligent behind the scene efforts are what truly made this year the success it has been. The continued success of our academy is directly related to the quality of its leadership in the council and board. Once again, MAS council, division chairs, and board members thank all students, scientists, faculty, staff, sponsors and exhibitors for their dedication and this event could not be possible without their support. This year, the level of abstract submission in every division was phenomenal. The increase in the number of symposia and mini-symposia with highly credentialed speakers arranged by various divisions this year is outstanding. In addition, the number of student involvement in various divisions is most encouraging especially since students are our future. There are many outstanding faculty, scientists and students in our foundations, companies, federal research centers, colleges and universities who often go unnoticed and sometimes they feel unappreciated. The MAS has served in the last 82 years as another way to recognize and express appreciation to all outstanding scientists in academic and nonacademic setting, and students who have excelled in conducting novel research. We would like to congratulate all of the honorees in the divisions, symposia and especially the recipients of Contribution to Science Award (Dr. Sukumar Saha), Dudley Peeler Award (Dr. Ralph Didlake), and Community Colleges- Horizon Lifetime Achievement Award (Dr. Robert V. Harris). Finally, we all need to be aware of young talent and encourage them to participate. With membership benefits including on-line access to the Journal, publishing your manuscripts free of charge, establishing collaborative efforts will lead to exploring and sharing of recourses, which will allow one to realize that being a member of The Mississippi Academy of Sciences is one of the best bargains in science!!!





Mississippi Academy of Sciences, Eighty-Second Annual Meeting

2018 Dodgen Lecture

Thursday, February 22, 2018 at 3:30 p.m.
Ballroom II/III

The Rise of the Machines and the Impact on Mississippi

Presented by Duane Armstrong



Duane Armstrong is the Chief of the Advanced Technology & Technology Transfer branch at NASA's John C. Stennis Space Center in Hancock County, Mississippi. An electrical engineering graduate of Mississippi State University, he has worked for NASA for thirty-one years. Mr. Armstrong is a recipient of NASA's Exceptional Service Medal and numerous other honors. During his tenure at Langley Research Center in Hampton, Virginia, and Goddard Space Flight Center in Greenbelt, Maryland, Mr. Armstrong helped create science instruments that flew on the space shuttle, research aircraft and multiple satellites for NASA and the Department of Defense. These instruments conducted research in Earth science (atmospheric chemistry), space science (mapping micrometeoroids and orbital debris), heliophysics (Earth-Sun interaction), and missile defense. Mr. Armstrong also conducted research in fields such as precision measurement quantum sensors, radiation-hardened electronics for space systems, the fault tolerance of nanoelectronic computing architectures, and novel nanophotonic detectors.

Mr. Armstrong manages NASA's technology development program at Stennis Space Center. Stennis engineers are developing new valves that are more reliable and more cost effective than commercial options, energy harvesting techniques to enable economical monitoring of large systems, novel propulsion systems to enhance the capabilities of small satellites, computational modeling techniques to predict the effects of rocket fuel detonations, and intelligent, autonomous systems to safely and efficiently operate critical systems without human intervention.

Mr. Armstrong also manages NASA's technology transfer program at Stennis Space Center to ensure that technologies developed for NASA missions are broadly available to the public, maximizing the benefit to the nation. Over the last two years Mr. Armstrong negotiated more patent licenses for Stennis technologies than were licensed in the previous twenty years combined. Under his leadership, the intellectual property created by Stennis is now licensed in thirty states across the country and twenty countries around the world. Furthermore, Mr. Armstrong has created a network of over 500 institutions across Mississippi and Louisiana to inform the public about the benefits of NASA research and development in daily life, and to educate students and industry about the opportunities to utilize NASA intellectual property in business.

Finally, Mr. Armstrong serves as a strategist to help Stennis Space Center solve difficult problems and adapt to changing market conditions so the center can thrive for decades to come. His recent team generated new partnerships with Hancock County and the Mississippi Wireless Communication Commission, provided a framework to solve problems that have lingered for decades, and significantly improved critical services while saving approximately \$10M over ten years.

The Rise of the Machines and the Impact on Mississippi

Abstract

Machine learning has emerged as an increasingly powerful force that will transform society in ways unprecedented in the 10,000 year history of human civilization. It will drive market forces that determine which jobs are available and how that work is done. There will be significant benefits; however, Mississippi is vulnerable to the disruptions that will occur. This presentation will provide a brief history of machine learning from its humble beginnings to the powerful systems available today and a look ahead to the next generation of intelligent systems. It will explore the fundamental impact of machine learning and autonomous systems on employment, education, industry, government, medicine and public health, with an emphasis on the potential impacts to Mississippi. Change is coming.



Plenary Speaker

Sponsored by Millsaps and Mississippi INBRE

Friday, February 23, 2018 at 12:00 p.m.

Ballroom II/III

Indispensable Strategies to be a Standout Student: Going Back to Basics

Babu P. Patlolla, PhD, Dean, School of Arts and Sciences & Professor, Department of Biology, Alcorn State University



Dr. Babu Patlolla was appointed Dean of Arts and Sciences at Alcorn State University in 2013. In addition to his current position as a dean, he also is a professor in the biology department at Alcorn State University. Dr. Patlolla received his Bachelor of Science in Biology and Chemistry and a Master of Science in Genetics from Osmania University, India. He received a second Master of Science in Biology and his PhD in Environmental Sciences from Jackson State University. Dr. Patlolla joined Alcorn State University in 1997 as an assistant professor in the Department of Biology and by 2004, he was appointed as Chair. His leadership capability was recognized by the school's administration, and in 2009, he was appointed associate dean of the School of Arts and Sciences. During his tenure at Alcorn

State University, he has secured over 1.7 million dollars in external funding. He has conducted four-week summer workshops for K-12 math and science teachers from neighboring school districts for eight years. With funding from the Mississippi Institutions of Higher Learning, he was able to establish a 'Teacher Resource Center', which lends instructional equipment such as laptops, LCD projectors, digital cameras, scanners, and research experimental kits to K-12 teachers, students and faculty at Alcorn State University.

Dr. Patlolla's life is dedicated to educational service in our state. He serves or has served on prestigious committees at Alcorn State University (Academic Priorities Committee of Presidential Transition Team, Faculty focus group for strategic planning, faculty senate, Chair of the Research Council, NCATE standards committee, and Chairman for the Institutional Review Board (IRB)) and at the state level (Mississippi University Research Authority (MURA) Board and Mississippi K-12 Science Framework Revision Team). On the national level he serves as a peer reviewer for various science journals and as a reviewer for human anatomy and physiology, biostatistics and zoology text books. Dr. Patlolla is a long-time life member, contributor, and supporter for the Mississippi Academy of Sciences.

In his spare time, he enjoys spending time with his wife, Dr. Anita Patlolla, and their children, Shiva and Sapna.



Millsaps Undergraduate Scholars Symposium

Honoring Excellence in Science in Mississippi

Symposium Chairman: Timothy J. Ward | Associate Dean of Sciences, Millsaps College, MS

Event Coordinator: Ms. Gerri Wilson: MAS Executive Assistant

Millsaps College, Jackson, MS

This symposium is intended to expand the scope and depth of opportunities for undergraduate student researchers to meet other student researchers and their mentors as well as to provide a dedicated venue to disseminate and present their research activities. Participation in undergraduate research increases self-confidence, independence, and critical thinking skills. Disseminating one's results by participating in conference symposia develops communication and presentation skills. These experiences create and foster a life-long quest for research and discovery. Howard Hughes Medical Institute (HHMI) is the largest private sponsor of education initiatives in the United States and seeks to strengthen science education at all levels of education and is dedicated to increasing the number of people who pursue science-related careers and to broadening access to science for all. Student researchers who have shown outstanding achievement in science and engineering research may be selected by their division chairs to compete for these outstanding awards.

Criteria for Selection of recipients:

1. Each division chair(s) and vice chair(s) (13 divisions) selected the **top 20% undergraduate student posters** to represent their division and present in the Millsaps HHMI sponsored lunch award symposium, "Honoring Excellence in Science in Mississippi," on Friday February 19th from noon -2pm. Student's name must appear as first author in the abstract, as well as, the poster.
2. The nominated students agreed to present their posters (after presenting in their division) in the poster symposium over lunch on Friday from noon – 3 pm. Failure to physically present at the respected division, will disqualify the selected presenters to compete in the symposium (must be present to compete and co-author presentation will not be accepted).
3. The award prizes will be presented immediately at the end of event as follows: 1st Place: Certificate plus \$250; 2nd Place: Certificate plus \$200; 3rd Place: Certificate plus \$150; 4th Place: Certificate plus \$100; and honorable mention for 5th – 10th winners. Each selected presenter will receive complementary one year membership to MAS and certificate of achievement.

Symposium Program: All posters have to be assembled by Thursday 2/22/2018 no later than 11:00 AM and dismantled after 3:00 PM on Friday 2/23/2018. All students must be present in both days and lack of adherence with this schedule will result in disqualification from the competition.

Thursday

5:00-7:00 PM: Judging of students posters will begin immediately after Dodgen Event

Friday

12:00-1:00 PM: Symposium Plenary Speaker and Lunch

1:00-3:00 PM: Poster Viewing and Awards



Mississippi INBRE Graduate Scholars Symposium



Honoring Excellence in Science in Mississippi

Symposium Chairman: Dr. Glen Shearer | Program Coordinator, Mississippi INBRE

Event Coordinator: Mrs. Jamie Lott | Events and Public Relations Coordinator, Mississippi INBRE

This symposium is intended to promote and recognize meritorious research conducted by graduate students. It is sponsored by the Mississippi IDeA Network of Biomedical Research Excellence (INBRE) which funded by the National Institutes of Health and housed at The University of Southern Mississippi. The Mississippi INBRE is a network of colleges and universities throughout Mississippi with the goal of enhancing biomedical research and training in the state. The mission of Mississippi INBRE is to reach out to Mississippians in order to improve health throughout the state and to engage talented researchers and students in biomedical research projects that will increase the state's research competitiveness as well as impact the health of citizens of Mississippi. The scientific foci of Mississippi INBRE are obesity, cancer and sexually transmitted diseases.

Criteria for Selection of recipients:

1. Each division chair(s) and vice chair(s) (13 divisions) selected the **top 20% of graduate student** posters to represent their division and present their work in the Mississippi INBRE Graduate Scholars Symposium, a sponsored lunch award symposium, "Honoring Excellence in Science in Mississippi," on Friday, February 19th at 10:00 am -12:00 p.m. The student's name must appear as a first author in the abstract, as well as the poster.
2. The nominated students agreed to present their posters in both their divisional poster session and in the Mississippi INBRE Graduate Scholars Symposium held over lunch on Friday from 10:00 p.m. – 1:00 p.m. Failure to physically present at the respected division will disqualify the selected presenters from competing in the symposium (must be present to compete and co-author presentations will not be accepted).
3. The award prizes will be presented immediately at the end of event as follows: 1st Place: Certificate plus \$250; 2nd Place: Certificate plus \$200; 3rd Place: Certificate plus \$150; 4th Place: Certificate plus \$100; and honorable mention for 5th – 10th winners. Each selected presenter will receive a complementary one year membership to MAS and a certificate of achievement.

Symposium Program: All posters have to be assembled by Thursday 2/23/2018 no later than 11:00 AM and dismantled after 3:00 PM on Friday 2/22/2018. All students must be present in both days and lack of adherence with this schedule will result in disqualification from the competition.

Thursday

5:00-7:00 PM: Judging of students posters will begin immediately after Dodgen Event

Friday

12:00-1:00 PM: Symposium Plenary Speaker and Lunch

1:00-3:00 PM: Poster Viewing and Awards



Divisional Symposia & Workshops

Ecology and Evolutionary Biology Thursday, February 22, 8:30-12:00 p.m. TCC 226

Symposia On Ecological Diversity And The Environment

Organizers: Dr. AHM Ali Reza and Dr. Nina Baghai-Riding, Delta State University



Title: 'Project Magnolia Grandiflora, Mississippi's Digital Herbarium and Plant Atlas'

Mac H. Alford, Ph.D.,
Professor, Department of
Biological Sciences, University
of Southern Mississippi

Dr. Alford will discuss efforts of universities and museums in Mississippi in digitizing (photograph, database, and georeference) their plant collections, and how the digitized records are being used for education and to generate an updated checklist and atlas of vascular plants.

Dr. Alford is a native of Liberty, Mississippi, and developed an early interest in plants from his parents and from 4-H activities. He studied biology and chemistry at Mississippi College, earned an M.S. in botany from Duke University, and then completed a Ph.D. from Cornell University studying the systematics of tropical relatives of willows and cottonwoods. After teaching one year at the Ohio State University, he returned to Mississippi in 2005 to teach at the University of Southern Mississippi, where his research continues to focus on plant systematics.



Title: "Pursuing A Dream – Protecting Mississippi's Natural Resources"

Dr. Cathy Shropshire, Retired
Wildlife Biologist from
Mississippi

Dr. Shropshire's presentation will be a portrayal of Fannye Cook, who helped establish the Mississippi Game and Fish Commission in 1932. She founded and became the director of the agency's first museum and is responsible for much of the comprehensive

research and for many of the first publications concerning the plants and animals of Mississippi. Dr. Shropshire is a wildlife biologist, retired from the Mississippi Department of Wildlife, Fisheries, and Parks. Following retirement she served for over 11 years as Executive Director of the Mississippi Wildlife Federation, and is now the theatrical incarnation of Fannye Cook. Dr. Shropshire is the author of "Pursuing a Dream – Protecting Mississippi's Natural Resources" and she is the costume designer and tailor for her Cook portrayal. She resides in Terry, Mississippi.



Title: "Pursuing A Dream – Protecting Mississippi's Natural Resources"

Dr. Libby Hartfield, Mississippi
Museum of Natural Science
Libby Hartfield has spent forty
years introducing nature to

children and adults through hands-on programs and exhibits. Hartfield joined the staff of the Mississippi Museum of Natural Science and spent a decade as Education Coordinator. She developed science education programs for families, scouts, and schools with an emphasis on the conservation of native plants and animals. In 1988 she stepped up to the directorship of the Museum of Natural Science and began planning the museum's new home in Le Fleur's Bluff State Park. The building was opened to the public in 2000. Hartfield soon began raising funds for a research addition that was dedicated in 2012. After serving as Director of Mississippi State Parks for one year, Libby Hartfield retired in 2015 after 37 years of service to the Mississippi Museum of Natural Science. She currently cohosts the popular radio show Creature Comforts for Mississippi Public Broadcasting.



Title: "Vectors from Space. How Nutrient Stoichiometry Can Help Us Understand the Ecology and Evolution of Mosquitoes"

Donald A. Yee, Ph.D., Associate
Professor, Department of



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Biological Science, The University of Southern Mississippi

Mosquitoes are one of the most important vectors of human and animal disease, however we lack basic knowledge on the ecology of most species. His presentation will focus on how the allocation of nitrogen and carbon (stoichiometry) varies across species and genera of mosquitoes from the United States.

Dr. Yee was born and raised in Michigan and received his B.S. in Biological Sciences from the University of Michigan-Dearborn, his M.S. in Zoology from Texas Tech University, and his Ph.D. in Biological Sciences from Illinois State University. He then completed his post doctoral training at the University of Calgary before joining the faculty in the Department of Biological Sciences at the University of Southern Mississippi. His lab focuses on the ecology of medically important mosquitoes, including their spatial and temporal patterns, interactions with native species, how nutrient stoichiometry affects their ecology and disease, larval feeding behavior, and phylogenetic relationships among species.



Title: "Evolution and Diversification of Malaria Parasites"

Dr. Diana Outlaw, Associate Professor, Department of Biological Sciences, Mississippi State University

Dr. Outlaw will discuss the ongoing search to understand the breadth of diversity in malaria parasites found in wildlife. She will elaborate on some of the possible mechanisms of speciation that are responsible for this diversity. Dr. Outlaw is a native of California, and graduated with a Bachelor's of Science in Biology from Sonoma State University in northern California. She earned her Master's in Biology also from Sonoma State University, and then completed a Ph.D. in Biology at the University of Memphis. She conducted a postdoctoral fellowship focusing on systematics of avian malaria parasites with Dr. Robert Ricklefs at the University of Missouri-St. Louis. Dr. Outlaw was hired in 2009 to the faculty of Biological Sciences at Mississippi State University, and currently works on questions about malaria parasite diversity, host-vector-parasite

transmission and adaptive molecular evolution of hosts and parasites.

Health Sciences

Thursday, Friday 22, 9:30-12:00 P.M.

TCC Ballroom II & III

Population Health Symposium I

Mental Health and Disease



Title: "Mississippi Health Care. Present and Future"

James E. Keeton, MD, University of Mississippi Medical Center
Dr. James E. Keeton will discuss current prospective of health care in Mississippi, the impact on

population health including pediatric health care and future outlook. Dr. James Keeton is an emeritus professor of surgery and pediatrics. He served as UMMC's Vice Chancellor for health affairs and Dean of the School of Medicine from July 2009 to February 2015. He retired in January 2017 and holds emeritus status in these roles. Dr. Keeton is a fellow of the American Academy of Pediatrics and certified by the American Board of Urology.

During his tenure, Dr. Keeton oversaw planning of and secured funding for a new, state-of-the-art School of Medicine building on the UMMC campus that is allowing UMMC to expand its medical class to train more doctors for Mississippi.

Dr. Keeton was instrumental in planning the construction of the University Heart Center, the Translational Research Center and the future planning for expansion of the Blair E. Batson Children's Hospital that will significantly advance pediatric health care in the state of Mississippi. Dr. Keeton guided the UMMC through a multi-year effort to implement an enterprise electronic health record that culminated in conversion from paper to computer records in a single day in June 2012. In addition, Dr. Keeton was instrumental for the UMMC's liver transplant program which was re-established after a 22-year interruption, and the UMMC surgeons performed Mississippi's first pancreas transplant.

He was named the 2014 Distinguished Medical Alumnus for his distinctive contributions to the field



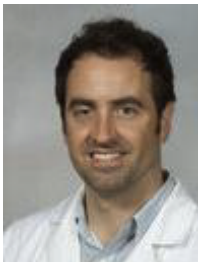
of medicine. Additionally, in 2017 Dr. Keeton was inducted to the "Alumni Hall of Fame".



Title: "Patient-Provider Communication Science and Art"

Julie A. Schumacher-Coffey, Ph.D., University of Mississippi Medical Center

Dr. Schumacher-Coffey will discuss how evidence-based communication strategies developed in the area of substance use disorders are being applied to a broad range of public health issues. Dr. Schumacher-Coffey is an Associate Professor of Psychiatry and Human Behavior and Vice Director of the Clinical Psychology Training Consortium. Dr. Schumacher is a licensed clinical psychologist who practices cognitive behavioral therapy and motivational interviewing. Dr. Schumacher-Coffey joined the UMMC faculty in July 2004. Dr. Schumacher received her PhD. in clinical psychology from the State University of New York at Stony Brook in 2001, then postdoctoral training at the National Institute of Alcohol Abuse and Alcoholism. She continued her fellowship in Alcohol Etiology and Treatment at the University, at Buffalo's Research Institute on Addictions and then remained at RIA as a Research Scientist. Dr. Schumacher's primary research interests are in the areas of drug and alcohol abuse, violent behavior, and motivational interviewing. Her research and educational activities have been funded by the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse.



Title: "Beyond Prescription Opioids: Novel Pain Therapeutics with Reduced Abuse Liability"

Kevin Freeman, Ph.D., University of Mississippi Medical Center

Dr. Freeman will discuss new strategies in drug development aimed at decreasing abuse of prescription opioids. Dr. Freeman received his PhD. in Psychology from American University in Washington, DC in 2007, then completed a postdoctoral fellowship in Behavioral Pharmacology at University of

Mississippi Medical Center in Jackson, MS. He is currently an Associate Professor in the Department of Psychiatry and Human Behavior at UMMC. Dr. Freeman's primary research interests are the development of novel abuse-deterrent formulations for prescription opioids and the study of environmental and biological determinants that increase maladaptive decision-making processes that lead to and maintain drug addiction.



Title: "Approaches to Treating Genetic Neuromuscular Disorders"
S.H. Subramony, MD,

University of Florida
Dr. Subramony is Professor of Neurology at the Center for Neuro-Genetics at University

of Florida, Gainesville, FL. He was trained in Neurology and Electromyography/Neuromuscular diseases at the Cleveland Clinic, Cleveland, OH. He joined the faculty at the University of Mississippi Medical Center from 1980 to 2007, where he was named the Billy Guyton Distinguished Professor of Neurology. Later, at University of Texas Medical Branch in Galveston where he was appointed the Charlotte Warmoth Professor of Neurology (2007 to 2009), before moving to University of Florida in 2009.

His investigative interests have been in the field of inherited ataxias and he brings a wealth of experience in evaluating and managing patients with ataxias. He was involved in the identification and characterization of many families with spinocerebellar ataxias for gene discoveries such as SCA 1, SCA 3 and SCA 6. He has also been involved in identifying novel mutations in some muscle diseases such as central core disease and Bethlem myopathy. He continues to have an active research role in natural history studies of spinocerebellar ataxias and Friedreich ataxia. Dr. Subramony is involved in ongoing research in muscular dystrophies such as myotonic dystrophy and Duchenne muscular dystrophy. As a founding co-member of the Center for Neurogenetics he actively interacts with scientists that have cutting edge lab programs in myotonic dystrophy and spinocerebellar ataxias. He is an active collaborator with the Powell Gene Therapy Center at the University of Florida.



Cellular and Molecular
Thursday, February 22, 1:00-3:00 PM
TCC 229

Bioinformatics Symposium

INBRE Symposium: Metagenomics to Functional Microbiome

Organizer: Dr. Shahid Karim, Biological Sciences, The University of Southern Mississippi



The Mississippi Academy of Sciences annual meeting brings together life and natural sciences from the entire state of Mississippi, and Gulf-South region of the United States to connect, brainstorm, and collaborate. The proposed

symposium will provide a platform to discuss advances in bioinformatics analysis of non-model organisms. Although, the focus of our proposed symposium will be on the “biomedical sciences”, many of the bioinformatic tools can be applied to a much larger audience of the MAS community. This forum will provide an opportunity to researchers to discuss and cross-cultivate ideas with experts. We expect that the proposed symposium might attract more researchers working with non-model organisms at the annual meeting, as well as expand the current research forum for an increased exchange of ideas across research disciplines within biomedical sciences and computational biology. The symposium will consist of 20 minutes talk with an additional 5 minutes for Q & A session; the full symposium lasting approximately 120 minutes.

Health Sciences
Thursday, February 22, 1:00-3:00 PM
TCC Ballroom II & III

Population Health II
Precision/Personalized Medicine



Title: “Mathematical Model of Integrative Physiology”

Robert Hester, Ph.D.

University of Mississippi
Medical Center

Dr. Robert Hester will discuss mathematical model of

physiological processes that are useful in understanding physiological mechanisms and physiological interactions that can be used to predict clinical and experimental responses in a biologic system.

Dr. Hester is Professor of Physiology, Interim Chair of the Department of Data Sciences and the Director of Center for Computational Medicine, at the University of Mississippi Medical Center.

Dr. Hester’s educational background is in Biomedical Engineering. He received his PhD in Biomedical Engineering in 1982 from the University of Mississippi Medical Center.

Dr. Hester’s current research is focusing on the computational simulation of human physiology started by Drs. Guyton and Coleman in the 1970s. HumMod is the latest version of Dr. Coleman computer simulation software. For the last 15 years Dr. Hester has been leading the Center for Computational Medicine in the development of HumMod and other integrative physiological models. HumMod is being used for education, research and clinical trials. Dr. Hester is a member of American Physiological Society, Microcirculatory Society, and Biomedical Engineering Society.



Title: “HumMod: A Tool for Understanding and Predicting Individual Response to Therapy”

William Andrew “Drew”

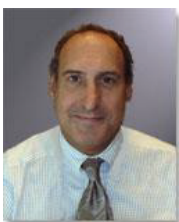
Pruett, Ph.D., University of Mississippi Medical Center

HumMod is an integrated model constructed from multiple simple models. The feedback between these simple models allows unexpected, but observed, phenomenon to occur, including resistance to pharmaceutical or device interventions. Understanding the interaction of these simple models is key to understanding system behavior. In this talk, Dr. Pruet will discuss physiological modeling with HumMod and the simulation of clinically significant populations as a



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means of delivering personalized care to patients. Dr. Pruett is Assistant Professor of Physiology and Biophysics. His educational background is in Mathematics. Dr. Pruett received his PhD in Mathematics, 2010 from Baylor University, Waco, TX. Dr. Pruett is a mathematician trained in representation theory, geometry, and combinatorics with a broad knowledge base in numerical analysis and algorithms. Additionally his training is in cardiovascular, renal, and endocrine physiology. He has in depth knowledge of mathematical modeling of physiological systems in an integrative setting. Dr. Pruett is active member of the Center for Computational Medicine at UMMC. As a member of Dr. Robert Hester's laboratory he has been integral in the development of HumMod and other physiological models utilized in research and clinical trials.



Title: "Vaccines, Population Diversity and Compliance"

Paul Byers, MD, Mississippi State Epidemiologist, Director Dr. Byers will discuss the vaccine effects and population diversity, such that factors that

influencing heterogeneity in the immune responses induced by vaccines may relate to genetic background. Such integral association could contribute to the development of novel vaccines that could be more at personalized/population level instead of a one size fits all approach.

Dr. Byers is a Jackson native and resident. He earned his Bachelor of Science degree from Millsaps College in Biology and Medical Degree from the University of Mississippi Medical Center in 1992.

During his tenure at the Mississippi State Department of Health (MSDH), Dr. Byers has served as a staff physician in Public Health District V, Medical Director of the Office of Epidemiology, Acting State Epidemiologist, and has filled in as acting District Health Officer in several districts. Dr. Byers has been employed with the Mississippi State Department of Health since 1993 in the position of Medical Director for the Copiah County and Hinds County Health Departments. He has previously served as the Deputy State Epidemiologist and Acting State Epidemiologist. Dr. Byers has been an essential part of the Office

of Epidemiology since 2005, investigating outbreaks and responding to all kinds of public health emergencies, said Dr. Mary Currier, the Mississippi State Department of Health Officer. Dr. Byers was "Keynote Speaker" in Population Health Symposium at the 81st Annual Mississippi Academy of Sciences Meeting, 2017.

Chemistry

**Thursday, February 22, 2:05-3:05 PM
TCC 218A**

Chemistry Entrepreneurs

Moderator: Victor Ogungbe, Jackson State University



Title: "Avoiding the Valley of Death for Emerging Materials Science-Based Companies"

Samuel H. Labasky, Ph.D., R & D Specialist at Oxiteno USA

Samuel Lahasky will discuss the challenges and

obstacles that await the entrepreneurial scientist as he/she ventures into the sector of research-based, start-up companies. This presentation will encompass the hurdles associated with small and large businesses, focusing on the issues that pertain to both.



Samuel Lahasky is currently a research and development specialist at Oxiteno USA, one of the world's leading manufacturer of ethoxylated materials and surfactants. His career focus has mainly been associated with the design and manufacture of materials and coatings. After receiving a Bachelor's degree in chemistry from Tulane University, Samuel attended Louisiana State University, where he was awarded a PhD for his work in the production of stimuli-responsive peptidomimetic polymers. From there, he did his post-doctoral research in the Materials Engineering department at the University of Delaware, where he worked on nanoscale assembly of peptide-containing multiblock polymers. After his post-doctoral fellowship, he worked in the small



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business sector, where his research was funded up to nearly a million dollars in military SBIR grant funding, for which he guided the development of personal protective equipment for the wartime fighter. Recently, Samuel took his expertise in small-business start-ups to Oxiteno USA, which is a world leader in the alkoxylation of raw and synthetic materials. Though being a major competitor in the global surfactant industry, Oxiteno is new to the US market, forcing them to adapt the same obstacles as any start-up would. Coupling his past small business experience with his recent move to Oxiteno, his expertise in tech-oriented, start-up companies (large and small) has afforded him a unique vantage point to the obstacles that await entrepreneurs in the materials science sector.



Title: “Scientific Collaboration for Therapeutic Discovery, Development and Delivery: Open Science has no Borders”

Jerome Hamilton, CEO
Open Therapeutics

In the first quarter of 2018, Open Therapeutics plans to launch Therapoid™ a new crowdsourcing collaboration

platform created by



a group of

entrepreneurs led by Jason E. Barkeloo and myself. Therapoid.net is an international scientific platform to develop new drugs and therapies.

For decades, two facts have reigned supreme when it comes to drug development: drug development is slow and it is expensive. A 2014 report from Tufts University found that it costs \$2B and takes more than 12 years to bring a pharmaceutical to the market. Further compounding the challenge is that 93% of drugs that start development never make it to market -- placing tremendous pressure on the drugs that do make it to pay for the investment in the ones that don't.

Our passion is bringing drug and therapy costs down and making healthcare available to all people regardless of geography. We believe strongly that scientific collaboration free of constraints is paramount to promoting diversity in research and

reducing the cost of healthcare. This new web platform — Therapoid — will enable scientists engaged in similar research to collaborate with other researchers in an open environment. Collaborators can then pre-publish their results to a preprint server for publishers to access. Open Therapeutics seeks to enable researchers to provide underserved markets with novel therapeutics. It does this by breaking down silos of knowledge through a copyleft sharing economy, which as many of you know, refers to the practice of offering people the right to freely distribute copies and modified versions of a work with the stipulation that the same rights be preserved in derivative works down the line.

Therapoid's mission is to make healthcare more accessible and affordable by pioneering new approaches to therapeutic research and development, and Open Therapeutics is answering the call.



Title: “You, Entrepreneurialism and Science = Yes”

Monica Tisack, Ph.D. Director
of the Mississippi Polymer
Institute (MPI)

Dr. Tisack will discuss local capabilities available to

scientists and entrepreneurs and other items of consideration for budding entrepreneurs and science-based start-ups: Agenda items include the current state of MS start-ups, common terminology, funding sources, business resources, common pitfalls, and tips on getting started.

Monica is the director of the Mississippi Polymer Institute (MPI), working at the intersection of academia, entrepreneurship, and commercial industry. The non-profit Institute catalyzes and supports the growth of advanced materials at all stages of business maturity, and assists in workforce training and educational outreach. Work at MPI allows collaborative interaction with cutting-edge polymer research at the School of Polymer Science and Engineering, with start-ups located on-site at The Accelerator, local inventors and well-established multinational companies.





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Monica has a Ph.D. in Polymer Science from the University of Southern Mississippi and a passion for commercialization of new products. She was born in Columbus, MS and raised near Leaf, MS. Prior to joining MPI at the University of Southern Mississippi in January 2017, she spent 20 years in the polymer industry working with nylon, Nafion™, ETFE, PTFE, Teflon™, and Tedlar™ polymer products with DuPont and its subsequent spin-off, The Chemours Company. Before graduate school, she interned as a technician at Eastman Chemical Company in their polyester division.

A polymer science background has allowed her to work across many different market spaces, including but not limited to Consumer Packaging, Industrial and Apparel Fibers, Fuel cell Batteries, Pharmaceutical and Agricultural Active Ingredients, Industrial and Consumer Coatings, Chloralkali membrane chemical production, Medical Products, and Solar Energy. Previous roles include R&D principle investigator, technical service scientist, market and business development managers, sales manager, growth leader, platform pricing and competitive intelligence leader, and business and product manager. Her work has taken her all over the world to interface with customers and plant operations.

Science Education

Thursday, February 22, 2:00-3:00 PM
TCC 210

Workshop: STEMI

NIH Science Education Partnership Award (SEPA) Program – Social and Economic Benefits of STEM Education for Early Learners

Tony Beck, Ph.D.

Science Education Partnership Award (SEPA)
Center for Research Capacity Building
Natcher, Building 45, Room 2AS53A
National Institute of General Medical Sciences
National Institutes of Health

Agriculture

Friday, February 23, 8:00-11:30 AM
Union C

Workshop

Organizers: Dr. Raja Reddy and Dr. Nacer Bellaloui



Title: “The Use of Cotton Mutants and Near Isogenic Lines to Enhance Nutrition and Production of Cottonseed and Lint”

Dr. Rick Turley, USDA-ARS, Stoneville, MS

Rick Turley received his B.S. degree in botany with a

minor in chemistry from Brigham Young University in 1983. He spent the next two years at Michigan State University studying the biochemistry of plant peroxisomes with Dr. Ed Tolbert. In 1985, he transferred to Dr. Richard Trelease's lab at Arizona State University and investigated the biogenesis of specialized oilseed peroxisomes, called glyoxysomes, with a focus on the enzymes malate synthase and isocitrate lyase. Rick completed his Ph.D. in 1990 then accepted a position as a Research Physiologist in the Cotton Physiology and Genetics Research Unit (now the Crop Genetics Research Unit) at the USDA-ARS in Stoneville, MS. His primary research interest is focused on understanding the development of cottonseed fibers (trichomes) with an emphasis on fiber initiation. Rick has characterized the genotypes of three different lines of fiberless cotton determining the number of loci in each responsible for fiber initiation. He also evaluated differences in the protein profiles and cell wall complex carbohydrates epitopes between fiberless and wild-type cottons, and developed the experimental line, MD 17, the fifth fiberless seed line reported in the literature. Recently, Rick has established a genetic linkage between the initiation of cotton leaf and cottonseed trichomes. His work is expanding to characterize fuzzless and fiberless diploid mutants. Dr. Turley has provided numerous groups with cotton fiber mutants and is presently collaborating with different groups on mapping and elucidating the transcription factors involved. Dr. Turley has served as an adjunct professor in the Biology Department of Delta State University, Cleveland, MS, and as Assistant Editor of the Journal of Cotton Science. He has been a member of American Society of Plant Biologists (previously the



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American Society of Plant Physiologists) since 1986.

In Collaboration with: Dr. Mac Alford, The University of Southern Mississippi



Title: Application of Sensors in Irrigation Management, Water Conservation and Crop Production

Dr. Daniel (Ken) Fisher, USDA-ARS, Stoneville, MS

Dr. Fisher serves as a Research Agricultural Engineer with the USDA Agricultural Research Service's Crop Production Systems Research Unit in Stoneville, Mississippi. He received a BS degree in Mechanical Engineering from the University of Central Florida, an MS in Agricultural and Irrigation Engineering from Utah State University, and a PhD in Biosystems and Agricultural Engineering from Oklahoma State University. He has worked in the private sector in the aerospace, electromechanical equipment, and agricultural instrumentation industries, and in university and government research institutions. Dr. Fisher is part of an interdisciplinary team responsible for development and evaluation of technologies for agricultural chemical application, irrigation water management, and improved crop production systems. He is part of a research project entitled "Development of Water Management Technologies for the Mid-South," where his role is to develop and implement novel sensor-based systems for monitoring water resources and detecting crop stress, and to apply improved techniques to aid in irrigation scheduling and water management. His interests include evapotranspiration estimation, irrigation scheduling, microcontroller and sensor circuit design and development, and open-source hardware and software.

**Ecology and Evolutionary Biology
Co-sponsors-Agriculture/Zoology
Friday, February 23, 11:00-1:00 PM
Field Trip**

Field Trip to the Lake Thoreau Environmental Center

Organizers: Dr. AHM Ali Reza and Dr. Nina Baghai-Riding, Delta State University



Lake Thoreau Environmental Center
The Lake Thoreau Environmental Center (LTEC) is a vital part of the function of the

University of Southern Mississippi. It is ideally located just a few miles west of campus and is connected to campus by the Longleaf Trace. The property is rich in history, culture and philanthropy. The mission of the Lake Thoreau Environmental Center is dual-purposed. First, the Center strives to provide an environment that inspires people of all ages to explore their connections with the natural world. Second, the Center provides a model for protection and stewardship of longleaf pine forests.



The guiding principles for the development of the LTEC are education, research, recreation, and conservation. These guiding principles are intended to direct the development of programs and the allocation of physical spaces as they relate to the Center's role and impact.

The Field Trip

The 2-hours field trip to the LTEC will involve a walk through longleaf pine savannah, a mixed hardwood seepage area, and a small lake as well as a tour of the museum facility that houses the USM herbarium and the fish collection.

- ▯ A sign up sheet to participate in the field trip will be provided on Thursday morning.
- ▯ Lunch will be arranged with a minimum cost and will be arranged by our LTEC host.
- ▯ Free transportation will be provided by the organizers.
- ▯ We recommend all participants to have comfortable walking shoes and a bottle of drinking water.

Science Education



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

Friday, February 23, 8:00-4:00 PM
Walker Science Building 153

Workshop: Wolbachia Rodeo

Roping the Future: Using Competition and Biotechnology to Engage Students in STEM

Sponsored by STEMI

Organizer: Dr. Robin Rockhold, University of Mississippi Medical Center



The University of Mississippi Medical Center Science Teaching Excites Medical Interest (STEMI) project is supported by a five-year Science Education Partnership Award (SEPA) from the National Institute of General Medical

Sciences to promote high school teacher professional development. Developed by one of the master teachers for STEMI, Ms. Kathy McKone, the Wolbachia Rodeo program engages high school students in teams to conduct an inquiry-based, hands-on learning event in which student teams incorporate elements of insect identification, DNA extraction and PCR amplification in a friendly competitive activity. Coupled to the Woods Hole Marine Biological Laboratory's Discover the Microbes Within project and with assistance from the Princeton Molecular Biology Training Center (<http://hhmi.princeton.edu/satellite-learning-centers>), the Wolbachia Rodeo has brought high school students together from schools across central Mississippi to engage in rewarding, scientifically productive, and meaningful biomedical education. Roping the Future, hosted by the Division of Science Education, and co-sponsored by the Mississippi INBRE program, the Mississippi Science Teachers Association, as well as the Center for Science and Mathematics Education and Biology Department of the University of Southern Mississippi, is the first formal training event for teachers in the techniques and pedagogy used to support student teams for a Wolbachia Rodeo.

Agenda

Wolbachia Rodeo Timeline for February 23, 2018
 Time

10:00-10:30 - Examine/photograph ants and mosquitoes using dissecting scopes; prepare macerators; review pipetting basics

10:30-11:20 - Insect DNA extraction and purification
 11:20-12:00 - Add primers and template DNA to PCR Ready tubes; start PCR
 12:00-1:00 - MAS Plenary Session: lunch provided during the session
 1:00-2:00 - Presentation by Dr. S. Stray and Dr. D. Sullivan
 2:00-2:30 - Load and run amplified insect DNA into e-Gels
 2:30-3:00 - Analyze electrophoresis results to determine Wolbachia infection rates in local insect pests

This workshop is funded by a Science Education Partnership Award (SEPA) grant, Grant Number 8 R2 5GM129212-03 from the National Institutes of General Medical Sciences (NIGMS), National Institutes of Health (NIH), and by the Mississippi INBRE, funded by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number P20GM103476. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIGMS or NIH.



Lucy (Kathy) McKone, NBCT is currently a part-time instructor at Copiah-Lincoln Community College. Having taught chemistry and biological sciences in the Lincoln county school district for 30 years, Kathy retired from full time teaching in 2016. She earned a BS and MS degree in science education from the University of Southern Mississippi and obtained National Board Certification in AYA Science in 2003. Attending molecular biology workshops at Cornell, Harvard, and Princeton Universities, empowered her to expand her school district's curriculum by implementing a biomedical research course. In the fall of 2009, Kathy became a host for one of only eleven Princeton Satellite Learning Centers in the nation. Participating in the 2009 Woods Hole Marine Biological Lab's workshop on *Wolbachia*, and working with the University of Mississippi Medical Center in developing a *Wolbachia* module (part of "The Muse of Fire" curriculum) inspired her vision of the **Wolbachia Rodeo**. The rodeo, a high-tech competition between high school teams, results in data collection of infection rates in



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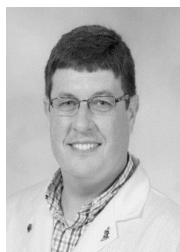
Mississippi's mosquitoes, fleas and red imported fire ants. The first rodeo was held at Copiah-Lincoln Community College in Wesson during December of 2011. During that same year, she received the Presidential Award for Excellence in Mathematics and Science Teaching.



Dr. Betsy Sullivan earned her PhD in Science Education / Biology from the University of Southern Mississippi. She has 33 years of experience in the formal and informal science classrooms. She also adjuncts at Mississippi College in both biology and education departments. She was awarded the Presidential Award for Excellence in Science and Mathematics (PAEMST) in 2013 and has been honored as the 2010 Mississippi Outstanding Biology Teacher of the Year, a 2012 District Teacher of the Year, a 2012 Metro Teacher of the Year, and the 2016 Mississippi Science Teachers Association (MSTA) Distinguished Science Teacher of the Year. She is an active board member of the MSTA. Dr. Sullivan is a lead teacher in the University of Mississippi Medical Center STEMI NIH SEPA grant program.



Denise Thibodeaux earned a BSE in Biology and Chemistry and an MS in Biology from Delta State University. She has taught 24 years on the secondary and community college levels and currently serves as science department chairperson at Cathedral High School and Adjunct Anatomy and Physiology Instructor at Copiah Lincoln Community College in Natchez, MS. She is a lead teacher in the University of Mississippi Medical Center STEMI (Science Teaching Excites Medical Interest) NIH SEPA grant program. Ms. Thibodeaux has been honored as Cathedral STAR Teacher three times, was a state finalist for the PAEMST Award in 2013, and received the Lockheed Martin National Science Olympiad Coaching Excellence Award and the National Association of Biology Teachers Outstanding Biology Teacher Award in 2017. She serves on the Board of Directors of the Mississippi Science Teachers Association.



Dr. Stephen Stray received his undergraduate training at the University of Melbourne (Australia), majoring in Chemistry and Biochemistry, and earned a PhD in Microbiology from the University of Alabama at Birmingham.

Following Postdoctoral training in Immunology at the Oklahoma Medical Research Foundation, and in Biophysics and Biochemistry at the University of Oklahoma Health Sciences Center, he joined the faculty of the University of Mississippi Medical Center, where he is now an Associate Professor of Microbiology and Immunology. Dr Stray's current research interests include evolution of viruses, particularly influenza, and developing new virus-based therapies for cancer. Dr Stray has a keen interest in education at all levels, and is the Director for Medical and Dental School courses in Microbiology and Immunology at UMMC.



Dr. Donna Sullivan earned a BS in biology and chemistry at Millsaps and the PhD in microbiology/immunology from Louisiana State University School of Medicine, with postdoctoral training from that latter institution. She is currently Professor Emeritus of Medicine at the University of Mississippi Medical Center (UMMC) and a co-Principal Investigator on the UMMC STEMI NIH SEPA grant. She served as co-director of the UMMC Howard Hughes Medical Institute Base Pair biomedical research mentorship program from 2005 until 2013. She has contributed to development of droplet digital PCR assays for infectious agents, SNPs, and copy number variants, and developed a Molecular Epidemiology Laboratory in conjunction with the Infection Control Office and Clinical Pathology Department at UMMC to identify and track hospital acquired infections employing DNA sequencing.



Dr. Marie Barnard is an Assistant Professor in Pharmacy Administration at the University of Mississippi. Trained as an epidemiologist, her research interests and expertise include social/behavioral determinants of health, program evaluation, and research methodology. She has



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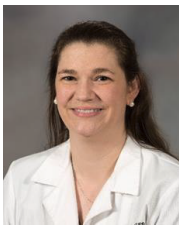
been the lead evaluator on over 30 projects and participated in more than 40 federal, state, and foundation grants and contracts for evaluation and social/behavioral research initiatives. She currently is the lead evaluator for the UMMC STEMI project.

Health Sciences

Friday, February 23, 10:00-11:55 AM
TCC Ballroom II

Population Health Interactive Workshop

Organizers: D. Olga McDaniel, Ph.D.; George Molt, MD, Ph.D.; Jana Bagwell, Ph.D.; Gouri Mahajan, Ph.D.; Jennifer Price, Ph.D.; Raymond Grill, Ph.D.; Frank Spradley, Ph.D.



Title: "Mobile Clinic"
Josie Bidwell, DNP, RN, FNP-C, University of Mississippi Medical Center

Dr. Josie Bidwell will discuss Mobile Clinic in emergency department use and the

association with lowering the health care cost, avoiding ED visits providing health care service to needy population. Dr. Josie Bidwell is an Associate Professor of Nursing and Preventive Medicine at the University of Mississippi Medical Center, where she teaches, Pathophysiology, Pharmacology and Child/Adolescent Health in the undergraduate program. She received her Master of Science degree in Nursing from University of Mississippi Medical Center in 2006, and Doctor of Nursing Practice Degree from UMMC-SON in 2013. Currently, Dr. Josie Bidwell specializes in family medicine, preventive medicine, and school-based health care.

Dr. Bidwell has worked with Southern Remedy since 2012. Dr. Bidwell is the lead author of the Southern Remedy Fitness Prescription. She serves as a Community Health Advocate Master Trainer to provide nutrition, physical activity, and healthy living training to laypersons and health professional students. Dr. Bidwell is the full-time host of Southern Remedy Healthy and Fit on Mississippi Public Broadcasting Think Radio.

Title: "Controlling Diabetes Mellitus – Telemedicine Monitoring and Compliance Enhancement"

George Moll MD, PhD; Keisha Lucky, RN, CDE; Mary K. Armstrong, FNP-CDE; University of Mississippi Medical Center



Dr. Moll will discuss Diabetes mellitus type 1 (T1DM) patient care for long-term survival and introduce progress with patient telemedicine monitoring presented by Keisha Luckey and Mary K Armstrong UMMC Pediatric Diabetes Coordinators/Educators.

Dr. George Moll is Professor of Pediatrics and Pediatric Endocrinology at University of Mississippi Medical Center. He served as UMMC Chief of Pediatric Endocrine Division for 25 years and stayed on to complete 30 years UMMC service and assist expansion of the Division to now include 4 additional Pediatric Endocrinologists.

Dr. Moll received his Biochemistry PhD and his MD from the University of Chicago, Pritzker School of Medicine. He has diverse co-authored publications and practice experience in endocrinology, diabetes mellitus and Pediatric medicine. He has published



50 peer reviewed papers and 100 abstracts with interests in all areas of Pediatric Endocrinology and over 40 years of diverse practice experience in endocrinology and Pediatric medicine. Dr.

Moll actively worked to continue UMMC Sigma XI sponsorship of MAS.

Dr. Moll has co-authored papers regarding hormone receptor and neuroendocrine associated genetic mutations and autoimmune endocrine disorders including T1DM. He has strong interest in childhood obesity quality control projects & research.

Keisha Luckey and Mary K Armstrong have contributed greatly to our UMMC Pediatric Diabetes Care & Teaching Center now recognized as an American Diabetes Association Center of Excellence. Their support of Telemedicine diabetes





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patient home monitoring has added to UMMC
Telemedicine excellence.

Health Sciences
Friday, February 23, 9:30-10:30 AM
TCC Ballroom I

High School Poster Session

Mathematics and Statistics
Friday, February 23, 11:00-12:00 PM
TCC 229

**The Relationship Between Data Science,
Mathematics, Computer Science and
Statistics**

Jamil Ibrahim, Saja Ibrahim, Ibrahim J. Ibrahim
Ibrahim
*University of Mississippi Medical Center,
Jackson MS*

Science Education
Friday, February 23, 10:00-11:30 AM
TCC 210

**Workshop: Advanced Teaching Methodologies
Incorporating Active Learning in the Science
Classroom – Methodology Workshop for
Teaching**

Organizers: Dr. Elizabeth Prewitt, Dr. Virginia
Moore, and Dr. Amber McCoulough

Numerous active learning strategies for the science
classroom at all levels of instruction will be and
discussed during this workshop. We will also model
the use of Team-Based Learning and Problem-
Based Learning during this time. Finally, we will
talk about strategies to improve engagement in
online courses.

Seating is limited to 50 participants. Pre-
registration fee of \$25 guarantees admission and
official certificate of training. On-site registration
available until workshop is full.

Science Education
Friday, February 23, 1:00-2:00 PM
TCC 210

**Workshop: MS College and Career Readiness
Workshop**

Organizers: Dr. Jackie Sampsell, Mississippi
Department of Education

During this workshop, an overview of the 2018
Mississippi College and Career Frameworks for
Science Education will be discussed.



Divisional Program

Key to Abbreviations

O = Oral Presentation

P = Poster Presentation

1st number is Division

- 1 Agriculture and Plant Science (pages,
- 2 Cellular, Molecular, and Developmental Biology
- 3 Chemistry and Chemical Engineering
- 4 Ecology and Evolutionary Biology
- 5 Geology and Geography
- 6 Health Sciences
- 7 History and Philosophy of Science
- 8 Marine and Atmospheric Sciences
- 9 Mathematics, Computer Science, and Statistics
- 10 Physics and Engineering
- 11 Psychology and Social Sciences
- 12 Science Education
- 13 Zoology and Entomology

2nd number is Abstract Number within oral presentations or poster session

Eg., O3.04 = oral presentation (O) number 4 in the division of Chemistry and Chemical Engineering (3)

Agriculture & Plant Science

Chair: Raja Reddy, Mississippi State University

Vice-Chair: Nacer Bellaloui, USDA-ARDS

Thursday, February 22, 2018

Morning

Room Union C

7:50

Welcome

8:00

O1.01 Impact Of Parental Soil Moisture Stress Treatments On Phenotypic Plasticity Of The Offspring

Chathurika Wijewardana, Firas Alsajri, K. Raja Reddy

Mississippi State University, Starkville, Mississippi State, MS, USA

8:15

O1.02 Understanding Grass-Dark Septate Endophytic (Dse) Fungal Symbioses Using Non-Native Grass Host, *Miscanthus Sinensis*

Anna Kazarina, Keerthi Mandyam, Ananda Nanjundaswamy

Alcorn State University, Lorman, MS, USA

8:30

O1.03 Strain Differences Of Heat Adapted *L. Monocytogenes* Cells Exposed To Carvacrol, Alkali, H₂O₂, And Lauric Arginate (Lae)

Nitin Dhowlaghar, Wes Schilling, Ramakrishna Nannapaneni

Mississippi State University, Mississippi State, MS, USA



8:45

01.04 Soybean Growth And Physiological Responses To Flooding And Recovery During Reproductive Stage

Grace Adegoye¹, Firas Alsajri², Chathurika Wijewardana², Swathatra Kethireddy¹, Raja Reddy²

¹Mississippi Valley State University, Itta Bena, MS, USA, ²Mississippi State University, Starkville, MS, USA

9:00

01.05 Dietary Methionine Deficiency May Negatively Affect Pig Antioxidant Capacity And Health In Addition To Growth Performance

Zhongyue Yang¹, M. Shamimul Hasan¹, John Htoo², Mark Crenshaw¹, Shengfa Liao¹

¹Mississippi State University, Starkville, USA, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany

9:15

01.06 Fermentation Optimization And Nutritional Profiling Of Red Yeast Phaffia Rhodzyma Using Sweet Potato As Feedstock

Lydia Batey, Ananda Nanjundaswamy, Keerthi Mandyam, Victor Nijiti

Alcorn State University, Lorman, MS, USA

9:30

01.07 Effect Of Temperature At Reproductive Growth Stages On Soybean Seed Yield And Quality Traits

Firas A. Alsajri¹, Chathurika Wijewardana¹, Nacer Bellaloui², K. Raja Reddy¹

¹Mississippi State University, Starkville, MS, USA, ²USDA-ARS, Crop Genetics Research Unit, Stoneville, MS, USA

9:45

01.08 Development Of Biotechnological Approaches For Improving Sweetpotato With Multiple Viral Disease Resistance

Kyler Holmes, Yan Meng, Chunquan Zhang, Victor Nijiti

Alcorn State University, Lorman, MS, USA

10:00 Break & Business Meeting

10:15

01.09 Effect Of Salt Stress On Rice Genotypes At Seedling Stage

Naqeebullah Naqeebullah¹, Edilberto D Redoña², K. Raja Reddy¹

¹Mississippi State University, Starkville, MS, USA, ²Delta Research and Extension Center, Stoneville, MS, USA

10:30

01.10 Characterization Of *Rotylenchulus Reniformis* Resistant Cotton Lines Based On Growth, Development, And Yield Responses In The Nematode-Infested Fields

Bhupinder Singh¹, Daryl Chastain¹, John Snider², K. Raja Reddy¹, Larry Krutz¹, Salliana Stetina³

¹Mississippi State University, Starkville, MS, USA, ²University of Georgia, Tifton, GA, USA, ³United States Department of Agriculture, Stoneville, MS, USA

10:45

01.11 Greenhouse Study Of Switchgrass Seedling Transplant Establishment In Lower Mississippi River Soils

LaShunda Anderson Hodges¹, Krishna Reddy², Efren Ford²

¹Alcorn State University, Lorman, MS, USA, ²USDA-ARS, Stoneville, MS, USA

11:00

01.12 Growth Responses And Metal Bioaccumulation Of Coffeeweed (*Sesbania Exaltata*) Exposed To Various Levels Of Lead Under Hydroponic Conditions

Stephanie Agusiegbe, Vernaldo Wilson, Gloria Miller, Maria Begonia, Gregorio Begonia

Jackson State University, Jackson, MS, USA

11:15

01.13 Metal Bioaccumulation And Morphological Responses Of Hydro-Ponically-Grown Wheat (*Triticum Aestivum*) At Various Cadmium Concentrations



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Zakaria Gary, Tyeisha Matheney, Gloria Miller, Maria Begonia, Gregorio Begonia
Jackson State University, Jackson, MS, USA

11:30 Divisional Business Meeting

12:00 -1:00 General Sessions

1:00

O1.14 Evaluating Early-Seedling Vigor Variability Of 100 Elite Rice Lines Using Morpho-Physiological Traits

Salah Jumaa, Edilberto Redoña, K. Raja Reddy
Mississippi State University, Starkville, MS, USA

1:15

O 1.15 Seed Germination Responses to Osmotic Stress in Corn Cultivars

Hunt Walne, Chathurika Wijewardana, K. Raja Reddy
Mississippi State, Mississippi State, MS, USA

1:30

O1.16 Whole Genome Sequencing and the Construction of Infectious Popular Mosaic Virus Clones

Daniela Adjaye, Yan Meng, Victor Njiti, Chunquan Zhang
Alcorn State University, Lorman, MS, USA

5:00-7:00 PM Poster Session

P1.01

Impact Of Water Stress On Soybean Seed Physiology, Quality, And Chemical Composition

Chathurika Wijewardana¹, Firas Alsajri¹, Nacer Bellaloui¹, K. Raja Reddy²
¹Mississippi State University, Starkville, MS, USA, ²USDA-ARS, Stoneville, MS, USA

P1.02

PLFA PROFILING OF SOIL BACTERIAL AND FUNGAL COMMUNITIES DURING 4000 YEARS OF PEDOGENESIS

Shankar Shanmugam, William Kingery
Mississippi State University, Mississippi State, MS, USA

P1.03

THE COMPENSATORILY-GAINED PIGS PRODUCED FROM FEEDING A METHIONINE-DEFICIENT DIET HAD MORE FAT AND LESS LEAN BODY MASS

Rebecca Humphrey¹, Zhongyue Yang¹, Shamimul Hasan¹, Mark Crenshaw¹, Derris Burnett¹, John Htoo², Shengfa Liao¹
¹Mississippi State University, Starkville, MS, USA, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany

P1.04

QUANTIFYING FLOODING RESPONSE OF SOYBEAN DURING SEEDING AND SEEDLING STAGES

Grace Adegoye¹, Firas Alsajri², Swathatra Kethireddy¹, Raja Reddy²
¹Mississippi Valley State University, Itta Bena, MS, USA, ²Mississippi State University, Starkville, MS, USA

P1.05

Effects Of L- Vs DL-Methionine On Plasma Concentration Of Nutrient Metabolites In Young Growing Pigs

M. Shamimul Hasan¹, Zhongyue Yang¹, Mark Crenshaw¹, John Htoo², Rebecca Humphrey¹, Shengfa Liao¹
¹Mississippi State University, Starkville, MS, USA, ²Evonik Nutrition & Care GmbH, Hanau-Wolfgang, Germany

P1.06

Effect Of Temperature At Reproductive Growth Stage On Soybean Seedling Shoot And Root Morphology Of The Offspring

Firas A. Alsajri, Chathurika Wijewardana, K. Raja Reddy
Mississippi State University, Starkville, MS, USA



P1.07

Effects Of Drought And Elevated Atmospheric Co2 On Seed Nutrition In Soybean Under Controlled Environments

Nacer Bellaloui¹, Alemu Mengistu², Hamed Abbas³, Kassem My⁴

¹USDA-ARS, Stoneville, MS, USA, ²USDA-ARS, Jackson, TN, USA, ³USDA-ARS, Stoneville, MS, USA, ⁴Fayetteville State University, Fayetteville, NC, USA

P1.08

Effect Of Drought On Rice Genotypes At Seedling Stage

N Nageebullah, Edilberto D Redoña, K. Raja Reddy

Mississippi State University, Mississippi, MS, USA

P1.09

Role Of Lpcat1/2 In Arabidopsis

Kimberton Mai, Phillip Bates, Nischal Karki

University of Southern Mississippi, Hattiesburg, MS, USA

P1.10

Evaluation Of Two Rice Cultivars Based On Sub- And Supra-Optimal Day/Night Temperature Responses Of Carbon Assimilation And Photosystem

Bhupinder Singh¹, Salah Jumaa¹, Chathurika Wijewardana¹, Daryl Chastain², Ed. Redona², K. Raja Reddy¹

¹Department of Plant and Soil Sciences, Mississippi State University, Starkville, MS, USA, ²Delta Research and Extension Center, Mississippi State University, Stoneville, MS, USA

P1.11

Stand-Establishment Of Commercial Cultivar Of Bioenergygrass Freedom® Giant Miscanthus In Mississippi And Its Associated Soil Chemical Properties

Michael Felton, Kenneyon Webb, Margeria Smith, Ananda Nanjundaswamy, Keerthi Mandyam, Victor Njiti

Alcorn State University, Lorman, MS, USA

P1.12

Macromorphological And Micromorphological Diversity Of Root-Associated Fungal Endophytes Of Giant Miscanthus And Switchgrass

Anna Kazarina, Keerthi Mandyam, Ananda Nanjundaswamy

Alcorn State University, Lorman, MS, USA

P1.13

Using Physiological And Yield-Related Characterizations To Evaluate 100 Elite Rice Genotypes

Salah Jumaa, Edilberto Redoña, K. Raja Reddy

Mississippi state university, Starkville, MS, USA

P1.14

Assessing Genetic Diversity Of Improved *Gossypium Hirsutum* And *G. Barbadense* Lines Using Fiber Associated Nuclear SSR And Newly Developed Cytoplasmic SSR And INDEL Markers

Mirzakamol Ayubov^{1*}, Sukumar Saha², Tokhirbek Norov¹, Dewayne Deng², Sheron Simpson³, Brian Scheffler³, Johnnie N. Jenkins², Zabardast Buriev¹ and Ibrokhim Abdurakhmonov¹

Friday, February 23, 2018

Morning

Union C

9:00-11:00 AM Workshops

The Use of Cotton Mutants and Near Isogenic Lines to Enhance Nutrition and Production of Cottonseed and Lint

This workshop will be led by Dr. Rick Turley, USDA-ARS, Stoneville, MS



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Application of Sensors in Irrigation Management, Water Conservation, and Crop Production

This workshop will be led by Dr. Daniel (Ken) Fisher, USDA-ARS, Stoneville, MS

Cellular, Molecular & Developmental Biology

Co-Chair: Donna M. Gordon, Mississippi State University

Co-Chair: James A. Steward, Jr., University of Mississippi

Thursday, February 22, 2018

Room TCC 214

7:50 Welcome

8:00

O2.01 Connecting The Dots Between Tick Saliva And Red Meat Allergy

Gary Crispell and Shahid Karim

The University of Southern Mississippi, Hattiesburg, MS, USA

8:15

O2.02 The Role Of Phosphodiesterase Pded In Regulating Intracellular Concentrations Of Cyclic Di-Gmp Under Anoxic Conditions In *Listeria Monocytogenes*

Sally White¹, Daniel McClung², Hossam Abdelhamad², Janet Donaldson¹

¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*Mississippi State University, Mississippi State, MS, USA*

8:30

O2.03 Msaabcr Operon Regulates Programmed Cell Death In *Staphylococcus Aureus*

Bibek G.C., Gyan S. Sahukhal, Mohamed O. Elasri

The University of Southern Mississippi, Hattiesburg, MS, USA

8:45

O2.04 The Msaabcr Operon Is Involved In Defending Oxidative Stress In *Staphylococcus Aureus*

Shanti Pandey, Gyan Sahukhal, Mohamed Elasri

The University of Southern Mississippi, Hattiesburg, MS, USA

9:00

O2.05 The Role Of The Msaabcr Operon In Regulating Virulence Of *Staphylococcus Aureus*

Justin Batte, Mohamed Elasri

The University of Southern Mississippi, Hattiesburg, MS, USA

9:15

O2.06 The *Histoplasma Capsulatum* Stress-Response Protein Ddr48 Is Required For Stress Response And Antifungal Drug Resistance

Logan Blancett, Paige Braddy, Gabriella Reyes, Glen Shearer

The University of Southern Mississippi, Hattiesburg, MS, USA

9:30

O2.07 Regulation Of Msab Expression And Its Role In Biofilm Development And Virulence

Gyan S. Sahukhal, Mohamed O. Elasri

The University of Southern Mississippi, Hattiesburg, MS, USA

9:45 **Break**

10:00



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02.08 Molecular Characterization Of A-D-Galactosidase In The Lone-Star Tick, *Amblyomma Americanum*

Cameron Cox¹, Joshua Lange¹, Gary Crispell¹, Shahid Karim¹

¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*MS-INBRE, Hattiesburg, MS, USA*

10:15

02.09 Characterizing The Impact Of The Antifungal Occidiofungin On The Pathogenic Yeast *C. Albicans*

Aaron Albee, Donna M. Gordon

Mississippi State University, Mississippi State, MS, USA

10:30

02.10 Antiviral Rna Interference In Mouse Embryonic Stem Cells Is Virus-Dependent

Chandan Gurung, Biswas Neupane, Fengwei Bai, Yan-Lin Guo

The University of Southern Mississippi, Hattiesburg, MS, USA

10:45

02.11 Virus Capsid Based Metal Complexes For Cancer Chemotherapy

Amber Gardner¹, Stephen J. Stray²

¹*Alcorn State University, Lorman, MS, USA*, ²*University of Mississippi Medical Center, Jackson, MS, USA*

11:00

02.12 A Plant Extract Protects Mice From Zika Virus Caused Eye Damages

Gabriel Gonzalez-Fernandez¹, Biswas Neupane¹, Federico Gonzalez-Fernandez², Fengwei Bai¹

¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*University of Mississippi Medical Center, Jackson, MS, USA*

11:15

02.13 IL17a Signaling Facilitates Chikungunya Virus-Induced Footpad Swelling In Mice

Biswas Neupane¹, Dhiraj Acharya², Gabriel G. Fernandez¹, Elizabeth Ashley Thompson¹, Fengwei Bai¹

¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*University of Chicago, Chicago, IL, USA*

11:30

02.14 The Effects Of Mirna-9 And -21 On Zika Virus Infection

E. Ashley Thompson, Britton Strickland, Alex Flint, Fengwei Bai

The University of Southern Mississippi, Hattiesburg, MS, USA

12:00 General Sessions

1:00

02.15 Identification Of Novel Regulators Of Selective Autophagy In *Tetrahymena Thermophila*

Michael Patterson, Brianna McField and Sabrice Guerrier

Millsaps College, Jackson, MS, USA

1:15

02.16 The Lack Of Innate Immunity - A Potential Self-Protective Mechanism In Mouse Embryonic Stem Cells

Bohan Chen, Yan-Lin Guo

The University of Southern Mississippi, Hattiesburg, MS, USA

1:30

02.17 Effect Of Dcl1 On The Proliferation And Stemness Of Colorectal Cancer Cells

Abednego Commey, Lianna Li

Tougaloo College, Tougaloo, MS, USA

1:45

02.18 Pkc-Dependent Phosphorylation Of Munc18a At Ser313 In Mast Cell Degranulation

Pratikshya Adhikari, Hao Xu

The University of Southern Mississippi, Hattiesburg, MS, USA



2:00

02.19 Effect Of Dietary Carbohydrates On Pupation And Eclosion Of *Drosophila Melanogaster*

Khoula Saleem, Jerry Reagan

Mississippi College, Clinton, MS, USA

2:15

02.20 Synergistic Effects Of Proteasomal And Lysosomal Enzyme Inhibitors On Plasma Membrane Cftr

Shreya Ghimire^{1,2}, Ghanshyam Heda¹

¹Mississippi University for Women, Columbus, MS, USA, ²College of Medicine, The University of Tennessee Health Sciences Center, Memphis, TN, USA

2:30

02.21 Optimization Of Western Blotting For The Detection Of Cftr Expression In Human Pancreatic Cell Lines

Lisa Shrestha¹, Jamie Avery³, Rajiv Heda², Ghanshyam Heda¹

¹Mississippi University for Women, Columbus, MS, USA, ²The University of Tennessee Health Sciences Center, Memphis, TN, USA, ³The University of North Alabama, Florence, AL, USA

2:45

02.22 Hv And I Mtdna Haplotype Analysis By Pcr Restriction Analysis And Primer Binding Methods With Creation Of An Online Database

V. L. Hodges, L. C. Bowlin, C. M. Cruz Rivera, T. Dondla, C. D. Huynh, C. J. Jago, A. A. Whittom Reiken

Mississippi College, Clinton, MS, USA

2:55 Concluding Remarks

5:00-7:00

Poster Session

P2.01

Identifying A Role For Mitochondria In Age-Range Signaling

Shannon Ballard¹, Meghan O'Brien¹, James A. Stewart, Jr.², Donna M. Gordon¹

¹Mississippi State University, Mississippi State, MS, USA, ²University of Mississippi, University, MS, USA

P2.02

The Stress-Response Protein Ddr48 Is Required For Combatting Oxidative Stress In Both Morphotypes Of The Fungus *Histoplasma Capsulatum*

Logan Blancett, Paige Braddy, Glen Shearer

The University of Southern Mississippi, Hattiesburg, MS, USA

P2.03

Identification And Quantification Of *Trichomonas Vaginalis* Viruses In Atcc Strains Of *Trichomonas Vaginalis*

Rachel Bravenec¹, Jacob Mardick¹, Cory Toyota¹, John Meade²

¹Millsaps College, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

P2.04

***Lactobacillus Fermentum* Causes Precocious Confluency And Protects From An Inflammatory Signal In The Caco-2 In Vitro Model Of Transepithelial Resistance**

Kellie Brue, Suwaira Iqbal, Hannah Smith, John Piletz

Mississippi College, Clinton, MS, USA

P2.05

The Effects Of The Environmental Pesticide Imidacloprid (Imid) On Macrophage Polarization *In Vitro*.

William Bryant¹, Stephanie Carmicle¹, Hanna Broome¹, George Howell²

¹Mississippi College, Clinton, MS, USA, ²Mississippi State University, Mississippi State, MS, USA



P2.06

Identification Of Novel Host Association Factors Encoded By *Xenorhabdus Nematophila*

Lauren Carney, Elizabeth Husa

Millsaps College, Jackson, MS, USA

P2.07

Expression Of *Streptococcus Pneumoniae* Surface Proteins For Identification Of Host Cell Ligands

Mary Carr¹, Lindsey Brown², Josi Lott², Leah Drumheller², Yoonsung Hu², Justin Thornton²

¹*Mississippi INBRE - Mississippi University for Women, Columbus, MS, USA*, ²*Mississippi State University, Mississippi State, MS, USA*

P2.08

Neuroprotective Effects Of Estradiol And Genistein In Zebra Finch Cerebellum

Sarah Chong, Ethan Zadrozny, Estelle Blair, Lainy B. Day

University of Mississippi, University, MS, USA

P2.09

Evaluating Effects Of Cell Membrane Lipid Composition On The Resistance To Bile Induced Damage In Avirulent Strains Of *Listeria Monocytogenes*

Amber Coats, Oindrila Paul, Janet Donaldson

The University of Southern Mississippi, Hattiesburg, MS, USA

P2.10

Utilizing Molecular Beacons To Identify *Trichomonas Vaginalis* Virus 1 (Tvv1) In T. Vaginalis Cultures

Hunter Cooper¹, Grant Kalil¹, John Meade², Stephen Stray², Cory Toyota¹

¹*Department of Chemistry and Biochemistry, Millsaps College, Jackson, MS, USA*, ²*Department of Microbiology, University of Mississippi Medical Center, Jackson, MS, USA*

P2.11

Genomic Analysis Of Genes Important For Crassulacean Acid Metabolism In *Kalanchoe Laxiflora*

Clara Diekman, Jiaxu Li

Mississippi State University, Mississippi State, MS, USA

P2.12

Differential Roles Of Hydroxyflavones Against Nicotine Induced Oxidative Stress In Mammalian Cells

Jerrica Gibson, JaNautica Bee, Bidisha Sengupta

Tougaloo College, Tougaloo, MS, USA

P2.13

The Subcloning And Expression Of Alpha-Tubulin In *Escherichia Coli* For Use In Mast Cell Degranulation Reactions

Brandi Goble, Cheri Voth, Hao Xu

The University of Southern Mississippi, Hattiesburg, MS, USA

P2.14

The Stress-Response Protein Ddr48 Is Required For The Cellular Stress Response In The Pathogenic Fungus *Histoplasma Capsulatum*

Mallory Harmon², Paige Braddy¹, Gabriella Reyes¹, Logan Blancett¹, Glen Shearer¹

¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*The University of Mississippi, University, MS, USA*

P2.15

Expression Analysis Of Micrnas And Microna-Like Rnas In *Aspergillus Flavus*-Infected Resistant And Susceptible Maize Inbred Lines

Amanda Harper, Katy Franks, Din-Pow Ma

Mississippi State University, Mississippi State, MS, USA



P2.16

Identification Of Functional Cathepsin B Antibodies In Zebrafish

Mohamed Hegazy, Yvette Langdon
Millsaps College, Jackson, MS, USA

P2.17

Evaluation Of Bone Marrow And Subcutaneous Fat In Ovariectomized Rats Following Sustained Delivery Of Estrogen Or Npy – 1receptor Antagonist

Joshua Hurssey¹, Michelle Tucci², Hamed Benghuzzi², Zelma Cason², Gerri Wilson²
¹Mississippi Valley State University, Itta Bena, MS, USA, ²The University of Mississippi Medical Center, Jackson, MS, USA

P2.18

Screening Of Phytochemicals Found In *Pseudognaphalium Obtusifolium* Extracts For Hydrogen Peroxide Radical Scavenging Activities Using *Saccharomyces Cerevisiae* HBO Strain Cells

Clayton Jago, Niang Ciang, Claudia Cruz Rivera, Brandon Marcella, Angela Whitton Reiken
Mississippi College, Department of Biological Sciences, Clinton, MS, USA

P2.19

Investigating A Role For The Retrograde Signaling Protein, RTG2P, In Its Own Transcription

Kenya Johnson^{1,3}, Donna Gordon²
¹Jackson State University, Jackson, MS, USA, ²Mississippi State University, Mississippi State, MS, USA, ³Mississippi INBRE, Hattiesburg, MS, USA

P2.20

Cytoadherence Of Three *Trichomonas Vaginalis* Mlst Genotypes

Grant Kali¹, Stephen Stray², John Meade², Cory Toyota¹, Hunter Cooper¹
¹Millsaps College, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

P2.21

Differential Regulation Of The Thiol-Specific Antioxidant Gene (Tsa1) In Yeast And Mold Morphotypes Of The Pathogenic Fungus *Histoplasma Capsulatum*

Lauren Kennedy, Logan Blancett, Glen Shearer
The University of Southern Mississippi, Hattiesburg, MS, USA

P2.22

Positional Significance Of Branch Point In Maturation Of Tailed Mirtrons

Sweta Khanal, Britton Strickland, Alex Flynt
The University of Southern Mississippi, Hattiesburg, MS, USA

P2.23

Using Modeling To Identify Point Mutations For Increaseing The Substrate Promiscuity In *Sulfolobus Tokodaii* Hexokinase

Zachary Kinler, Christopher Jurgenson
Delta State University, Cleveland, MS, USA

P2.24

Role Of Msaabcr Operon In *Staphylococcus Epidermidis* Biofilm Development

Shalonda Landrum¹, Erin Riggins¹, Gyan Sahukhal², Mohamed Elasri²
¹Mississippi Gulf Coast Community College, Gulfport, MS, USA, ²The University of Southern Mississippi, Hattiesburg, MS, USA

P2.25

Investigating The Functional Role Of B-1,4-Galactosyltransferase In The Lone-Star Tick, *Amblyomma Americanum*

Joshua Lange, Gary Crispell, Cameron Cox, Shahid Karim
The University of Southern Mississippi, Hattiesburg, MS, USA



P2.26

Correlation Of Double Cortin Like Kinase 1 (Dclk1) With Colorectal Cancer

Kierra Jones, Lianna Li

Tougaloo College, Jackson, Ms, Usa

P2.27

Proteomic Analysis Of Silicate-Responsive Proteins In Leaves Of Crop Plants

Meng Li, Jiaxu Li

Mississippi State University, Mississippi State, Ms, Usa

P2.28

An Analysis Of Surface Proteins In Three Genotypes Of *Trichomonas Vaginalis*

Jacob Mardick¹, Rachel Bravenac¹, John C. Meade², Cory Toyota¹

¹Millsaps College, Jackson, MS, USA, ²University Of Mississippi Medical Center, Jackson, MS, USA

P2.29

Camkii Activity In The Aged Hippocampus

James Mitchum, Jessica Posey, Nicole Ashpole

University Of Mississippi, University, MS, USA

P2.30

Overcoming Rnai Barriers To Recalcitrant Insects Using Next-Gen Approaches

Mosharraf Mondal, Keith Parsons, Charles McCormick, Alex Flynt

The University Of Southern Mississippi, MS, USA

P2.31

A Pathogenic Noncoding Rna Interacts With Ribosomal Protein L5 To Modulate The Alternative Splicing Of Transcription Factor Iiia For Replication

Jian Jiang, Shachintha D. Mudiyanse, Heather Smith, Ying Wang

Mississippi State University, Mississippi State, Ms, Usa

P2.32

A Fluorescent Sensing Platform Using Aptamer-Antisense Oligo Interaction

Jacob Peter, Alex Flynt

The University Of Southern Mississippi, Hattiesburg, MS, USA

P2.33

The *Histoplasma Capsulatum* Stress Response Protein Ddr48 Is Required For Antifungal Drug Resistance

Logan Blancett, Gabriella Reyes, Glen Shearer

The University of Southern Mississippi, Hattiesburg, MS, USA

P2.34

Neurotoxicity Of *Asimina Triloba*

Myriam Sanders, Taghreed Majrashi, Jessica Posey, Nicole Ashpole

University of Mississippi, University, MS, USA

P2.35

ADIPOR1 RS2275737 Modifies The Effect Of PNPLA3 RS738409 On Non Alcoholic Fatty Liver Disease In African Americans

Hannah Scott¹, Stanford Mwasongwe¹, Clifton Addison¹, Brenda Jenkins¹, Solomon Musani², Marinelle Payton¹

¹Jackson State University, Jackson, MS, USA, ²University Of Mississippi Medical Center, Jackson, MS, USA

P2.36

Species-Specific Dicer-Like Proteins Contribute To Plant Defense Against A Pathogenic Noncoding Rna

Heather Smith¹, Yi Zheng², Zhangjun Fei², Ying Wang¹

¹Mississippi State University, Mississippi State, Ms, Usa, ²Boyce Thompson Institute, Ithaca, Ny, Usa



P2.37

Rage Signaling Is Intersected By Rap1a Crosstalk In Fibroblasts In Diabetic Hearts

Stephanie Burr, Jaslyn Langford, Jia Zhao, Rebecca Worsham, James Stewart
University of Mississippi School of Pharmacy, University, MS, USA

P2.38

Curriculum Enhancement Of The Bioinformatics Program At Mississippi Valley State University Utilizing A Bacterial System Exposed To Engineered Nanoparticles

Chelsea Tate, Melvin Johnson, Abigail S. Newsome, Mark A. Dugo
Mississippi Valley State University, Itta Bena, MS, USA

P2.39

The Role Of MSAABCR Operon In *Staphylococcus Epidermis* Biofilm Formation

Haley Utman, Jordan Wildhaber, M. Erin Riggins
Mississippi Gulf Coast Community College, Gulfport, MS, USA

P2.40

Immunolocalization Of Selenoproteins In The Gulf-Coast Tick (*Amblyomma Maculatum*) Tissues

Nancy Vu, Gary Crispell, Shahid Karim
The University of Southern Mississippi, Hattiesburg, MS, USA

P2.41

Astrocyte And Microglia Morphologic Changes In The Nucleus Of The Solitary Tract In A Rat Model Of Thoracic Level Spinal Contusion

Julius Wells¹, Kwamie Harris², Alexandra Himel, Raymond J. Grill² Bernadette E. Grayson²
¹Mississippi INBRE Research Scholar, University of Mississippi, University, MS, ²Department of Neurobiology & Anatomical Sciences, The University of Mississippi Medical Center, Jackson, MS

P2.42

Immunofluorescence Analysis Of The Blood-Brain Barrier In Immunocompromised Mice

Makayla Wiley¹, Chinyere Kemet², Gozde Uzunalli², Tiffany Lyle²
¹Alcorn State University, Lorman, MS, USA, ²Purdue University, College of Veterinary Medicine, Department of Comparative Pathobiology, West Lafayette, IN, USA

P2.43

Implicating Ribonucleases In Mamalian Tailed Mirtron Biogenesis

Mohammad Farid Zia, Alex S. Flynt
The University of Southern Mississippi, Hattiesburg, MS, USA

P2.44

The Structure-Activity Relationship Of Ginsenosides On Hypoxia-Reoxygenation Induced Apoptosis Of Cardiomyocytes

Ruiqi Feng¹, Jia Liu¹, Zhenhua Wang², Jingwen Zhang², Courtney Cates¹, Thomas Rousselle¹, Qingguo Meng², Ji Li¹
¹University of Mississippi Medical Center, Jackson, MS, USA and ²Universities of Shandong, Yantai, China

P2.45

“MHC class I polypeptide-related sequence A (MICA) as a Biological Determinant of Race Disparities in Prostate Cancer”

Authors: Krista Syrigos¹, Marcelo Sakiyama^{2,7}, Deepak Kumar⁵, Ingrid Espinoza^{3,5}, Amit Reddy², Eldrin Bhanat^{4,5}, Xinchun Zhou², Roya Gordji⁶, Christian Gomez^{2,4,6}
Mississippi INBRE Research Scholar¹. Departments of ²Pathology, ³Preventive Medicine, ⁴Radiation Oncology, ⁵Cancer Institute, ⁶School of Medicine. University of Mississippi Medical Center, Jackson, MS. ⁷CAPES Foundation, Ministry of Education of Brazil, Brasília, DF, Brazil.



Friday, February 23, 2018
TC214

7:50 **Welcome**

8:00

O2.23 Transcriptomic Effects Of Dispersed Oil In A Non-Model Decapod Crustacean

Brent Thoma¹, Hernan Vazquez-Miranda³, Juliet Wong⁴, Darryl Felder², Keith Crandall⁵, Heather Bracken-Grissom³

¹Jackson State University, Department of Biology, Jackson, MS, USA, ²University of Louisiana at Lafayette, Department of Biology, Lafayette, LA, USA, ³Florida International University, Department of Biological Sciences, North Miami, FL, USA,

⁴University of California, Santa Barbara, Department of Ecology, Evolution, & Marine Biology, Santa Barbara, CA, USA,

⁵George Washington University, Computational Biology Institute, Ashburn, VA, USA

8:15

O2.24 Reduction Of The Igf-1 Receptor In The Adult Hippocampus Impairs Learning And Memory

Cellas Hayes, Jessica Posey, Erik Hodges, Nicole Ashpole

University of Mississippi, University, MS, USA

8:30

O2.25 Cannabinoid Sensitivity With Advanced Age

Katherine Blackburn, Jessica Posey, Nicole Ashpole

University of Mississippi, University, MS, USA

8:45

O2.26 The Use Of Fetuin-A To Attenuate Calcification Of Smooth Muscle Cells

Jenna Mosier¹, Rachel Hybart¹, Amber Kay², James A. Stewart, Jr.², C. LaShan Simpson¹

¹Mississippi State University, Mississippi State, MS, USA, ²University of Mississippi, University, MS, USA

9:00

O2.27 Histomorphometric Analysis Of The Kidney Of Ovariectomized Rats Following The Release Of An Npy -1 Receptor Antagonist

Zachariah Bashir¹, Joseph Cameron¹, Michelle Tucci², Hamed Benghuzzi², Zelma Cason²

¹Jackson State University, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

9:15

O2.28 Role Of Igf-1 In Astrocytic Regulation Of Learning And Memory

Disha Prabhu, Jessica Posey, Celas Hayes, Katherine Blackburn, Nicole Ashpole

University of Mississippi, University, MS, USA

9:30

O2.29 Neuroprotective Effects Of Estradiol, Genistein, And Aromatase On Cerebellar Lesions

Ethan Zadrozny², Lainy Day¹, Sarah Chong¹, Estelle Blair¹

¹The University of Mississippi, University, MS, USA, ²Hinds Community College, Raymond, MS, USA

9:45 **Break**

10:10 **Divisional Business Meeting and Divisional Awards**

11:00

O2.30 Plant Flavonoid Xanthohumol Induces Human Leukemia HI-60 Cells Death

Maricica Pacuari

Jackson State University, Jackson MS, USA

11:15

O2.31 Identification Of Novel Host Association Factors In *Xenorhabdus Nematophila*



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Elizabeth Hussa, Alycee Moity, Lauren Carney
Millsaps College, Jackson, MS, USA

11:30

02.32 Split Top Regulates Dorsal-Ventral Patterning And Cell Migration In Zebrafish

Yvette Langdon¹, Ricardo Fuentes², Mary Mullins²

¹Millsaps College, Jackson, MS, USA, ²University of Pennsylvania, Philadelphia, PA, USA

11:45

02.33 Identification Of Transcriptome Changes By Dclk1 Over-Expression In Colorectal Cancer Cells Using The Next Generation Sequencing

Lianna Li

Tougaloo College, Tougaloo, MS, USA

Chemistry & Chemical Engineering

Chair: Julie Pigza, The University of Southern Mississippi

Vice-Chair: Ifedayo Victor Ogungbe, Jackson State University

Thursday, February 22, 2018

Room TCC 218A

8:10 **Welcome**

Oral Session I: Synthesis of Biologically Relevant Targets, Moderator: Nick Jentsch

8:15

03.01 Sythesis Of Enantioenriched (R)-A-Methylselenocysteine And Its Enantiomer

Robert Wehrle¹, Robert Hondal², Douglas Masterson¹

¹University of Southern Mississippi, Hattiesburg, Mississippi, USA, ²University of Vermont, Burlington, Vermont, USA

8:30

03.02 Synthesis Of A Thiazole Sulfonamide As A Potential Hiv Integrase Inhibitor

Andrea Briscoe, Jacques Kessl, Matthew Donahue, Julie A. Pigza

University of Southern Mississippi, Hattiesburg, MS, USA

8:45

03.03 The Use Of Chiral, Non-Racemic Homoallylic Amines As Building Blocks For Piperidine Synthesis

Hayley Allen, Matthew Donahue

University of Southern Mississippi, Hattiesburg, MS, USA

9:00

03.04 Exploration Of Pyrrole Side Groups On The Enantioselectivity Of Pig Liver Esterase

Brian Long, Douglas Masterson

University of Southern Mississippi, Hattiesburg, MS, USA

9:15

03.05 Investigation Of Synthetic Strategies For The Development Of Heterocyclic Small Molecule Hiv-1 Integrase Inhibitors

Nicholas Jentsch, Jian Sun, Jacques Kessl, Matthew Donahue

University of Southern Mississippi, Hattiesburg, MS, USA

9:30 **Break**



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

Oral Session 2: Medicinal Application, Moderator: Sharon Hamilton

TCC 218A

9:45

03.06 Synthesis Of Bifunctional Dna-Cleavage Reagents Based On N-Substituted Quinolines

Taylor Sledge, Reagan McGuffee, Shizhe Zhang, Leon Karekezi, Wolfgang Kramer
Millsaps College, Jackson, MS, USA

10:00

03.07 Synthesis Of Meta-Trisubstituted Quinolines As Drug Candidates For Hiv-1 Integrase Inhibition

Alison Hart, Nicholas Jentsch, Jared Hume, Julie Pigza, Jian Sun, Jacques Kessl, Matthew Donahue
University of Southern Mississippi, Hattiesburg, MS, USA

10:15

03.08 Diastereoselective Synthesis Of 2,4,6-Trisubstituted Piperidines Via Aza-Prins Cyclization

John Hood, Matthew G. Donahue
University of Southern Mississippi, Hattiesburg, MS, USA

10:30

03.09 Therapeutic Electrospun Natural Polymer-Based Fibers For Biomedical Applications

Kathryn Penton, Amber Wilson, William Weeks, Zachary Kinler, Ana Daisy Camarillo, Tia Brown, Melody Lyon, Virginia Baker, Sharon Hamilton
Delta State University, Cleveland, MS, USA

Oral Session 3: Radicals and Antioxidants, Moderator: Wolfgang Kramer

TCC 218B

9:45

03.10 Understanding Electrochemical Performance Of Biosensors For Oil Leak Detection

Hariteja Nandimandalam, Veera Gnaneswar Gude **Mississippi State University, Mississippi State, MS, USA**

10:00

03.11 2,2'-Diphenyl-1-Picrylhydrazyl Radical Scavenging Assay Reveals Antioxidant Potential Of Pseudognaphalium Obtusifolium Phytochemicals Surpassing That Of L-Ascorbic Acid

Navpreet Kaur, Leah Bowlin, Claudia Cruz Rivera, Victoria Hodges, Carson Huynh, Navjot Kaur, Angela Whittom Reiken
Mississippi College, Clinton, Mississippi, USA

10:15

03.12 Fluorometric And Colorimetric Sensing Of Citrate With A Macrocyclic-Based Dinuclear Copper Complex In Water

Md Mhahabubur Rhaman¹, Mohammad H. Hasan², Azmain Alamgir¹, Ritesh Tandon², Md. Alamgir Hossain¹
¹Jackson State University, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

10:30

03.13 Spectroscopy Of Heteroaromatic Salts As Precursors Of Reactive Species

Wolfgang Kramer¹, Courtney Mullins¹, Melinda Solomon¹, Luaren Hoth¹, Anna Allred¹, Irene Corrao¹, Ian Gould²
¹Millsaps College, Jackson, MS, USA, ²Arizona State University, Tempe, AZ, USA

10:45 Break

Oral Session 4: Electronics and Computational Chemistry, Moderator: Colleen Scott

TCC 218A

11:00

03.14 Effect Of The Protonation On The Stability Of Polyra Duplex: Computational Studies

Anastasiia Golius¹, Leonid Gorb², Margarita Zarudnaya², Andriy Potyahaylo², Jerzy Leszczynski¹



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

¹Jackson State University, Jackson, MS, USA, ²Institute of Molecular Biology and Genetics, Kyiv, Ukraine

11:15

03.15 Computational Chemistry Approaches To Investigate Contaminants Fate And Development Of Polymer Nanocomposite Materials

Manoj Shukla

US Army Engineer Research and Development Center, Vicksburg, MS, USA

11:30

03.16 Directly Measuring The Complete Stress-Strain Response Of Ultrathin Organic Electronic Films

Xiaodan Gu

University of Southern Mississippi, Hattiesburg, MS, USA

11:45

03.17 Polyrrhodamine: Towards The Design Of A Polyaniline Mimic

Colleen Scott, Ranganath Wahalathantrige Don, Brandon Butler

Mississippi State University, Mississippi State, MS, USA

12:00-1:00 Lunch

Oral Session 5: Biologically Active Targets, Moderator: Pransanta Das
TCC 218A

1:00

03.18 Drug-Release Studies For Alginate- And Chitosan-Based Nanofibers For Modern Wound Healing

Kathryn Penton, Amber Wilson, Melody Lyon, William Weeks, Zachary Kinler, Tia Brown, Sharon K. Hamilton

Delta State University, Cleveland, MS, USA

1:15

03.19 Discovery Of A Pentacyclic Triterpenoid From *Tabernaemontana Longipes* As An Antitrypanosomal Agent

Ifedayo Victor Ogungbe, Simira Carothers, Huaisheng Zhang, Jasmine Collins

Jackson State University, Jackson, MS, USA

1:30

03.20 Asymmetric Synthesis Of Nitrogen Heterocycles Via Iminium Ion Triggered Intramolecular Cyclizations

Matthew G. Donahue

University of Southern Mississippi, Hattiesburg, MS, USA

1:45

03.21 Halo-Peroxidation Mediated Three Step Syntheses Of Novel Spiro-Peroxo-Isoxazolines: Potential Anti-Cancer And Anti-Malarial Agents

Prasanta Das, Ashton T. Hamme II

Jackson State University, Jackson, MS, USA

Oral Session 6: The Environment and Remediation, Moderator: Zikri Ardan
TCC 218B

1:00

03.22 Characterization Of Mercury-Contaminated Soils From Oak Ridge Tn For Methylmercury By Cold Vapor Generation Icp-MS

Zikri Arslan¹, Iris Denmark¹, Ermira Begu¹, Fengxiang Han¹, Jennifer Seiter-Moser²

¹Jackson State University, Jackson, MS, USA, ²U.S. Army Engineer Research and Development Center, ERDC, Vicksburg, MS, USA



1:15

03.23 Photoelectrochemical Studies On Electrodeposited Fe₂O₃/Fese Photoanodes For Solar Water Oxidation

Arun Siddarth Sridhar, Wujian Miao

University of Southern Mississippi, Hattiesburg, MS, USA

1:30

03.24 Electrochemical Performance Of Anammox Bioelectrochemical Systems

Umesh Ghimire, Veera Gnanaswar Gude

Mississippi State University, Mississippi State, MS, USA

1:45

03.25 Biogeochemistry Of Depleted Uranium And Its Remediation

Fengxiang Han¹, Georgio Proctor¹, Steven Larson², John Ballard², Fande Meng¹, Decheng Jin¹, Jiangxia Li¹, Zikri Arslan¹, Charles Waggoner³

¹Jackson State University, Jackson, MS, USA, ²U.S. Army Engineer Research and Development Center, Vicksburg, MS, USA, ³Mississippi State University, Mississippi State, MS, USA

2:05-3:05 Chemistry Entrepreneurs, Divisional Symposium

Avoiding the *Valley of Death* for Emerging Materials Science-Based Companies, Samuel H. Halasky, PhD, R&D Specialist at Oziteno USA

Scientific Collaboration for Therapeutic Discovery Development, and Delivery: Open Science Has No Borders, Jerome Hamilton, CEO Open Therapeutics

You, Entrepreneurialism, and Science = Yes, Monica Tisack, PhD, Director of Mississippi Polymer Institute (MPI)

5:00-7:00

Poster Session

P3.01

Accessing Cryptic Space In Myxobacteria

Barbara Adaikpoh, Cole Stevens

University of Mississippi, Oxford, MS, USA

P3.02

Predation Based Activation Of Cryptic Biosynthetic Pathways In *Cystobacter Ferrugineus* Cbfe23

Shukria Akbar, David Cole Stevens

University of Mississippi, Oxford, MS, USA

P3.03

Spectroscopic And Molecular Modeling Studies On A Novel Fluorescence Sensor

Ja'Nautica Bee¹, Chirantan Sen Mukherjee¹, Sandipan Chakrabarty², Bidisha Sengupta¹

¹Tougaloo College, Tougaloo, MS, USA, ²Indian Association for the Cultivation of Science, Jadavpur, Kolkata, India

P3.04

Maleimide-Coupled Doxorubicine: Conjugation Of Elps For Improved Drug Delivery

Deandrea Hawkins¹, Jacob Pruett², Valeria Zai-Rose², John Correia², Wolfgang Kramer¹

¹Millsaps College, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

P3.05

Photochemical Synthesis Of Small Rings Via Photodecarboxylative Cyclization

Saihou Ceesay¹, Axel Griesbeck², Wolfgang Kramer¹

¹Millsaps College, Jackson, MS, USA, ²University of Cologne, Koeln, Germany

P3.06

Synthetic Approaches To Photoactivatable Aromatic Heterocycles For Photoinduced Cell Death

Reagan Mcguffee, Taylor Sledge, Wolfgang Kramer

Millsaps College, Jackson, MS, USA



P3.07

Aminoalkyl Isoquinoline Synthesis For Bifunctional 1,8-Naphthalimides

Shizhe Zhang, Wolfgang Kramer
Millsaps College, Jackson, MS, USA

P3.08

Quinoline Synthesis For Bifunctional 1,8-Naphthalimides

Leon Karekezi, Reagan McGuffee, Taylor Sledge, Wolfgang Kramer
Millsaps College, Jackson, MS, USA

P3.09

Design And Synthesis Of Multifunctional Tungsten Sulfide Quantum Dots For Cellular Imaging Of Targeted Triple Negative Breast Cancer Cells

Kaelin Gates, Avijit Pramanik, Paresh Chandra Ray
Jackson State University, Jackson, MS, USA

P3.10

Finite Element Analysis Simulations Of Diffusion And Stress In Polymer Coatings

Joseph Tyson, James Rawlins, Gopinath Subramanian
University of Southern Mississippi, Hattiesburg, MS, USA

P3.11

Development Of Novel Sens Probe For Selective Screening Of Healthy Prostate From Malignant Prostate Cancer Cells Using Zn(II).

Avijit Pramanik, Suhash Reddy Chavva, Bhanu Priya Viraka Nellore, Kelli May, Tejus Mathew, Stacy Jones, Aruna Vangara, Paresh Chandra Ray
Jackson State University, Jackson, MS, USA

P3.12

Synthesis Of Novel Biorenewable Poly(Ether Amides)

Guery Saenz, Colleen Scott
Mississippi State University, Mississippi State, MS, USA

P3.13

Development Of A Synthetic Strategy For Para-Functionalized Aromatic Substituents On A Tri-Substituted Quinoline As Drug Candidates For Hiv-1 Integrase Inhibition

Jared Hume, Nicholas Jentsch, Alison Hart, Jian Sun, Jacques Kessl, Matthew Donahue
University of Southern Mississippi, Hattiesburg, MS, USA

P3.14

Sulfonamide-Based Receptors For Anion Binding

Amber Gardner, Bobby Portis, Syed Haque, Md. Alamgir Hossain
Jackson State University, Jackson, MS, USA

P3.15

Halide Binding Studies With An M-Nitrophenyl-Functionalized Hexaurea Receptor

Bobby Portis¹, Mohammad H. Hasan², Corey R. Johnson¹, Ritesh Tandon², Md. Alamgir Hossain¹
¹*Jackson State University, Jackson, MS, USA*, ²*University of Mississippi Medical Center, Jackson, MS, USA*

P3.16

Analysis And Comparison Of Tobacco Alkaloids In Cigarettes, E-Liquids And E-Cigarettes Using GC/MS

Griffin Jones, Shivangi Patel, Co Quach, Max Harrigill, Ardith Bravenec, Timothy Ward
Millsaps College, Jackson, MS, USA



P3.17

Analysis Of Caffeine, Theobromine, And Theophylline Using Lc/Ms: Applications In Archaeology

Zahra Faizi, Andrew Hollenshead, Anna Wilson, Jacob Niehaus, Scottie Dennis, Ramya Sarna, Timothy Ward
Millsaps College, Jackson, MS, USA

P3.18

A Simple Dipodal Schiff's Base For Colorimetric Sensing Of Cobalt Ion

Saadman Alamgir¹, Md Mhahabubur Rhaman², Md. Alamgir Hossain²

¹Madison Central High School, Madison, MS, USA, ²Jackson State University, Jackson, MS, USA

P3.19

A Tripodal Thiourea Receptor For Naked-Eye Detection Of Sulfate Via Fluoride Displacement Assay

Corey Johnson¹, Mohammed Hasan², Maryam Emami Khansari¹, Ratesh Tandon², Md. Alamgir Hossain¹

¹Jackson State University, Jackson, MS, USA, ²University of Mississippi Medical Center, Jackson, MS, USA

P3.20

Interaction Of Modified And Unmodified Biodegradable Nanoparticles With Bovine Serum Albumin (BSA).

Georgette-Vanelle Wandji¹, Elissa Salinas¹, Santosh Aryal², Seong-O Choi², Matthewos Eshete¹

¹Mississippi Valley State University Chemistry Department, Itta Bena, MS, USA, ²Kansas State University, Nanotechnology Innovation Center of Kansas State (NICKS), Manhattan, KS, USA

P3.21

Formulation And Utility Of Enzymatic "Self-Cleaning" Caulk

Kyle Wilhelm¹, Tyler Hodges¹, Steven McDaniel²

¹William Carey University, Hattiesburg, MS, USA, ²Reactive Surfaces Ltd., Hattiesburg, MS, USA

P3.22

Adsorption Of Bentazon On The Surface Of Nanoparticles Of Metallic Oxide And Carbon

Erryon Clark, Hattie Spencer, Matthewos Eshete

Mississippi Valley State University, Natural Science and Environmental Health, Itta Bena, MS, USA

P3.23

In Vitro Cellular Imaging Of Breast Cancer Cells By Using Vegetable And Fruits Carbon Dots

Salma Begum, Avijit Pramanik, Paresch Chandra Ray

Jackson State University, Jackson, MS, USA

P3.24

The Diastereoselective Investigation Of Various Grignard Reagents When Reacted With The Schiff Base N Salicylidene-4-Amino[2.2]Paracyclophane

Yousef Dawoud, Robert Wehrle, Douglas Masterson

University of Southern Mississippi, Hattiesburg, MS, USA

P3.25

Analysis Of Various Wintergreen Rubbing Alcohols Using Elsd And Hplc

Kathryn Penton, Charles Smithhart

Delta State University, Cleveland, MS, USA

P3.26

Graphene Oxide As A Novel Carrier Of Plant Flavonoids

Justin Coleman, Manliang Feng, Bidisha Sengupta

Tougaloo College, Tougaloo, MS, USA



P3.27

Preparation And Characterization Of Natural Polymer-Antibiotic Bioconjugates: Towards Antibacterial Electrospun Fibers

Ana Daisy Camarillo, Virginia Baker, Sharon Hamilton
Delta State University, Cleveland, MS, USA

P3.28

Discovery And Optimization Of Novel Benzimidazole Derivatives As Antitrypanosomal Agents.

Chidalu Utojiabu, Jasmine Collins, Huaisheng Zhang, Ifedayo Victor Ogungbe
Jackson State University, Jackson, MS, USA

P3.29

Adamantane: A Symmetry Lesson

Joseph Bentley
Delta State University, Cleveland, MS, USA

P3.30

Myoglobin Catalyzes The Oxidation Of Tryptophan

Brandi Winters¹, Jamease Williams¹, Yiming Liu², Manliang Feng¹
¹Tougaloo College, Tougaloo, MS, USA, ²Jackson State University, Jackson, MS, USA

P3.31

Identification Of Chemical Additives In Herbal Incense Products Using Gc-Mass Spectrometry

Asha Lewis, Myshawn Smith, Cassandra McCullum, Yolanda Jones
Alcorn State University, Alcorn State University, USA

P3.32

Development Of Carbon Nanotube-Embedded Alginate- And Chitosan-Based Fibers

Melody Lyon, Kathryn Penton, Zachary Kinler, Sharon Hamilton
Delta State University, Cleveland, MS, USA

P3.33

Investigating Oxidized Alginate-Based Fibers For Biomedical Applications

Amber Wilson, William Weeks, Scarlett Salter, Ashley Rollins, Kathryn Penton, Sharon Hamilton
Delta State University, Cleveland, Mississippi, USA

P3.34

Investigation Of The Effects Of Hydrogen Bonding On The Enantiomeric Excess Of Pig Liver Esterase Hydrolysis Products

Matthew Hasler, Douglas Masterson
University of Southern Mississippi, Hattiesburg, MS, USA

P3.35

Investigation Of Heavy Metal Concentrations In Mississippi Delta Soil Using Icp-Ms And Xrf Methods

Georgio Proctor, Fengxiang Han
Jackson State University, Jackson, MS, USA

P3.36

Matrix Removal For Determination Of Heavy Metal And Radionuclide Impurities From Multivitamin Tablets By ICP-MS

Jeremy White, Tasia Mitchum, Zikri Arslan
Jackson State University, Jackson, MS, USA



P3.37

Determination Of Total Mercury And Other Elements In Soil Samples From Oak Ridge, Tennessee

Ermira Begu, Zikri Arslan

Jackson State University, Jackson, MS, USA

P3.38

Method Optimization For Extraction Of Silver Nanoparticles From Oils Used In Cosmetics

Jeremy White, Ermira Begu, Zikri Arslan

Jackson State University, Jackson State University, USA

P3.39

Comparative Study On The Cytotoxicity Of Silver, Copper, And Zinc Nanoparticles On Pathogenic And Nonpathogenic E. Coli

Denise Yancey-Gray, Zikri Arslan

Jackson State University, Jackson, MS, USA

P3.40

Assessment Of Cytotoxicity Of Powder And Aqueous Forms Of Nanosilver On A-431 Cells

Shaloam Dasari and Zikri Arslan

Jackson State University, Jackson, MS, USA

Friday, February 23, 2018

Room TC 218A

Oral Session 7: Analytical Techniques, Moderator: Md. Alamgir Hossain

8:30

O3.26 Investigation Of Benzyl Isothiocyanates For Use As Chiral Derivatizing Agents For Nmr Spectroscopy

Emily Crull, Matthew G. Donahue

University of Southern Mississippi, Hattiesburg, MS, USA

8:45

O3.27 Selective Separation And Eradication Of Drug-Resistant Superbugs By Using Multifunctional Fluorescentmagnetic Carbon-Dots

Avijit Pramanik, Stacy Jones, Paresh Chandra Ray

Jackson State University, Jackson, MS, USA

9:00

O3.28 Synthesis Of Novel Water Soluble Semiconducting Polyrhodamine

Ranganath Wahalathantrige Don, Colleen Scott

Mississippi State University, Starkville, MS, USA

9:15

O3.29 Design And Synthesis Of Metallocomplexes For Colorimetric Sensing Of Anions

Md. Alamgir Hossain¹, Md Mhabubur Rhaman¹, Douglas R. Powell²

¹*Jackson State University, Jackson, MS, USA*, ²*University of Oklahoma, Norman, OK, USA*

9:30-10:30

High School Poster Session (Co-Sponsor with Health Sciences)

P3.41

Development Of Synthesis Strategies Of Quinolines For Inhibition Of Hiv-Integrase

Amy Pham¹, Matthew Donahue², Jacques Kessi², Nicholas Jentsch²

¹*Oak Grove High School, Hattiesburg, MS, USA*, ²*University of Southern Mississippi, Hattiesburg, MS, USA*



P3.42

Homoallylic Amines As Precursors To Chiral Trisubstituted Piperidines

Tanica Davis¹, Hayley Allen², John Hood², Matthew Donahue², Julie Pigza²

¹Purvis High School, Purvis, MS, USA, ²University of Southern Mississippi, Hattiesburg, MS, USA

P3.43

Imaging And Targeted Capturing Of Breast Tumor Heterogeneity Using Multicolor Fluorescence Of Fruit Based Carbon Quantum Dot Conjugated Magnetic Nanomaterials

Rimika Banerjee¹, Avijit Pramanik², Salma Alamgir², Paresh Ray²

¹Madison Central High School, Madison, MS, USA, ²Jackson State University, Jackson, MS, USA

P3.44

[2.2]Paracyclophane As A Chiral Director

Rachelle Speights¹, Douglas Masterson²

¹ Oak Grove High School, Hattiesburg, MS, USA ² University of Southern Mississippi, Hattiesburg, MS, USA

10:30-11:30

Oral Session 8: Theoretical Calculations and Modeling, Moderator: David Magers

10:30

O3.30 Computational Modeling Of Nylon 6 Nanocomposites

Michael Roth¹, Sanjiv Jha¹, Manoj Shukla², Gopinath Subramanian¹

¹University of Southern Mississippi, Hattiesburg, MS, USA, ²US Army Engineer Research and Development Center, Vicksburg, MS, USA

10:45

O3.31 Spectroscopic And Modelling Studies On A Novel, Synthetic Aniline Derivative

Bidisha Sengupta¹, Chirantan Sen Mukherjee², George Armstrong¹, William Gladney¹, Maria Muhammad²

¹Tougaloo College, Tougaloo, USA, ²Mississippi State University, Starkville, USA

11:00

O3.32 Adsorption Of Insensitive Munitions Compounds On Silica Surfaces: An Ab-Initio Approach

Rajiv K. Chouhan¹, Gopinath Subramanian¹, Manoj K. Shukla²

¹School of Polymers and High-Performance Materials, University of Southern Mississippi, Hattiesburg, MS, USA, ²Environmental Laboratory, Engineer Research and Development Center, Vicksburg, MS, USA

11:15

O3.33 The Ring Strain Of Cyclopropane Revisited

David Magers

Mississippi College, Clinton, MS, USA

11:30 Divisional Business Meeting

11:35 Thank you to our sponsors and student awards ceremony

Sponsors: University of Southern Mississippi, College of Science & Technology; Jackson State University, Department of Chemistry; University of Southern Mississippi, Department of Chemistry and Biochemistry; Chemglass Life Sciences; Fisher Scientific; Sorbent Technologies



Ecology & Evolutionary Biology

Chair: AHM Ali Reza, Delta State University

Vice-Chair: Nina Baghai Riding, Delta State University

Thursday, February 22, 2018

TCC 226

9:00-12:00 **Symposium on Ecological Diversity and Environment**, Organizers: Dr. AHM Ali Reza and Dr. Nina Baghai-Riding, Delta State University

1:00

04.01 Use Of A Scanning Electron Microscope In Wildlife Research And Management

Aaron Sassenrath-Cole, AHM Ali Reza

Delta State University, Cleveland, MS, USA

1:15

04.02 A Preliminary Evaluation Of Using Trail Cameras For Surveying Mammal Species

Mitchell Coleman¹, Christian Frew¹, Peyton Hamblin², Joshua Glover¹, Matthew Galloway¹, Eric Blackwell¹

¹*Delta State University, Cleveland, MS, USA*, ²*Mississippi Department of Environmental Quality, Oxford, MS, USA*

1:30

04.03 Population And Behavioral Study Of Feral Cat (*Felis Catus*) On Delta State University Campus, Cleveland, Ms

Hope Edge, Bethany Walker, AHM Ali Reza

Delta State University, Cleveland, MS, USA

1:45

04.04 Preliminary Analysis Of Population Dynamics Of *Amphiuma Tridactylum* And Siren Intermedia In The Mississippi Delta

Karoline Lambert, Hannah Taylor, Sara Barrett, Shelby Babb, Eric Blackwell

Delta State University, Cleveland, MS, USA

2:00

04.05 Morphological, Genetic, And Environmental Characterization Of An Unusual Population Of Isoetes (*Isoetaceae*, *Lycopodiophyta*)

Shannon Walker, Mac Alford

The University of Southern Mississippi, Hattiesburg, MS, USA

2:15

04.06 Diversity Of The Mosquito (*Diptera: Culicidae*) Community Along An Elevational Gradient In Puerto Rico

Nicole Scavo, Joseph Nelsen, Donald Yee

University of Southern Mississippi, Hattiesburg, MS, USA

2:30 **Divisional Business Meeting**

5:00-7:00 **Poster Session**

P4.01

Uncovering Selection In Hemoglobin Degradation Genes Of Haemosporidian Parasites

Haley Bodden¹, Diana Outlaw¹, Susan Perkins², Olof Hellgren², Staffan Bensch²

¹*Mississippi State University, Starkville, MS, USA*, ²*Lund University, Lund, Scania, Sweden*, ³*American Museum of Natural History, Manhattan, NY, USA*

P4.02



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

Vernal Pools At Dahomey National Wildlife Refuge In Mississippi

Tyler Kitchings, Cade Francis, Maverick Harrison, Brady Chambley, Nina Baghai-Riding
Delta State University, Cleveland, MS, USA

P4.03

Suitability Of Time-Lapse Photography To Quantify Vertebrate Activity Patterns

Kelsey E. Houghton, Hannah L. McGuire, D. Michael Reeves, Frank R. Hensley
Mississippi College, Clinton, MS, USA

P4.04

Isolation And Identification Of Antibiotic Producing Microbes From *Maldon Dasystemous* (Coleoptera: Cerambycidae)

William Neal¹, Arnold Spiers¹, Tanya K. McKinney¹, Ellen S. Green¹, Nathan M. Schiff²
¹*Delta State University, Cleveland, MS, USA*, ²*USDA Forest Service, Center for Bottomland Hardwoods Research, Stoneville, MS, USA*

P4.05

Analyzing The Change In Mississippi Forest Structure – A Century Of Change In The Relative Abundance Of Tree Species

Donaven McLaurin, Mac Alford
The University of Southern Mississippi, Hattiesburg, MS, USA

P4.06

Cerebellar Morphology And Display Complexity In Manakins (Pipridae)

Mary Harvey, Lainy Day
University of Mississippi, Oxford, Mississippi, USA

P4.07

Does How Much You Weigh Affect Your Dance Moves?

Alicia Hobbs, Lainy Day
University of Mississippi, Oxford, MS, USA

P4.09

Distribution Of Aromatase In The Brain Of The Golden-Collared Manakin (*Manacus Vitellinus*)

Blake McClure, Kaitlyn Duda, Steven Wilkening, Patrick Ayers, Lainy Day
The University of Mississippi, Oxford, MS, USA

P4.10

The Controversial Nature Of Hydraulic Fracturing

Chirantan Sen, ²Bidisha Sengupta, ³M. S. Zaman
¹*Department of Electrical Engineering, Bagley College of Engineering, Mississippi State University, Starkville, MS USA*,
²*Department of Chemistry, Tougaloo College, Tougaloo, MS, USA*, ³*Department of Biological Sciences, Alcorn State University, Lorman, MS, USA*

Friday, February 23, 2018

Union C

9:00-11:00

Workshops

The Use of Cotton Mutants and Near Isogenic Lines to Enhance Nutrition and Production of Cottonseed and Lint, Dr. Rick Turley, USDA-ARS, Stoneville, MS
Application of Sensors in Irrigation Management, Water Conservation, and Crop Production, Dr. Daniel (Ken) Fisher, USDA-ARS

11:00-1:00

Field Trip to Lake Thoreau Environmental Center



Geology & Geography

Chair: R. Tyler Berry, Mississippi Department of Environmental Quality-Office of Geology

Vice-Chair: Andrew O'Reilly, University of Mississippi

Thursday, February 22, 2018

Union Room H

8:15 **Welcome**

8:30

O5.01 Analysis Of Cotton Valley Production In The Northeastern Mississippi Interior Salt Basin

Theresa Woehnker

The University of Southern Mississippi, Hattiesburg, MS, USA

8:50

O5.02 Distribution Of Elements And Polycyclic Aromatic Hydrocarbons In A Commercial Retention Pond Sediment: Colony Crossing, Madison, Mississippi

Austin Harris, Stan Galicki

Millsaps College, Jackson, MS, USA

9:10

O5.03 Exploring The Oxbow Lake Facies Model At Mayes Lake State Park

Maya Willis, Zachary Musselman

Millsaps College, Jackson, MS, USA

9:30

O5.04 Near-Surface Geophysical Imaging Of Deformation Associated With The Daytona Beach Sand Blow Deposits, Lee County, Arkansas

Michael Rohrer¹, James Harris¹, Mark Teague², Cooper Cearley¹

¹*Millsaps College, Jackson, MS, USA*, ²*Teaco Geophysical, Clinton, MS, USA*

9:50

O5.05 Shallow Seismic Reflection Analysis Of The Bliss Creek Lineament In The Big Black River Valley Near Edwards, Mississippi

Andrez Aguilar, James Harris, Michael Rohrer, Cooper Cearley

Millsaps College, Jackson, MS, USA

10:10

O5.06 Groundwater And Surface-Water Interaction Characterization Of The Mississippi Delta Using Hydrograph-Separation Techniques And Trend Analyses

Courtney Killian², Jeannie Barlow¹, Paul Barlow³, Wade Kress¹, Darrel Schmitz²

¹*U.S. Geological Survey, Jackson, MS, USA*, ²*Mississippi State University, Mississippi State, MS, USA*, ³*U.S. Geological Survey, Reston, VA, USA*

10:30

O5.07 Investigating The Need Of Public Education For Nourishing Beaches Using Cullet

Claire Babineaux, Kathy Sherman-Morris, Brenda Kirkland, Darrel Schmitz

Mississippi State University, Mississippi State, MS, USA



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

10:50

05.08 Groundwater Depletion And Drought Frequencies: A Global Analysis

Aynaz Lotfata, Shrinidhi Ambinakudige

Mississippi State University, Starkville, MS, USA

11:10

05.09 Using Adsorption Isotherms To Describe The Fate And Transport Of Anatoxin-A In Texturally Different Soils In Grenada County, Mississippi

Justin Hobart, Andrew O'Reilly

University of Mississippi, University, MS, USA

11:30

05.10 A Comparative Case Study Of Reflection Seismic Imaging Method

Moones Alamooti, Adnan Aydin

University of Mississippi, University, MS, USA

12:00 General Session

1:00 Guest Speaker, Dr. Ezat Heydari

"What is Curiosity Rover Doing in Gale Crater, Mars?"

1:30

05.11 Chloride Transport In Heterogeneous Formation-A Case Study In West Texas

Arindam Mukherjee, Robert M. Holt

University of Mississippi, University, MS, USA

1:50

05.12 Generalized Radial Transport Model For Interpreting Convergent Flow Tracer Tests In Fractured Rock

Md Lal Mamud, Robert M Holt

University of Mississippi, University, MS, USA

2:10

05.13 Estimating Groundwater Recharge From An Oxbow Lake-Wetland System To An Aquifer Based On Hydrologic Monitoring And Temperature Tracing

Michael Gratzer¹, Gregg Davidson¹, Andrew O'Reilly¹, James Robert Rigby²

¹*University of Mississippi, University, MS, USA*, ²*USDA Agricultural Research Service, Oxford, MS, USA*

2:30 Division Student Awards

5:00-7:00 Poster Session

P5.01

Structural Synthesis And Spatial Distribution Of A 335 Ma Igneous Suite From The Eastern Blue Ridge, Alabama, Southern Appalachians

Avery Rosenbalm, Jeremy Deans

University of Southern Mississippi, Hattiesburg, MS, USA



P5.02

Trace Metal Distribution And Potential Isotope Systematics (E.G. Mg, Sr) In Tufa; Turner Falls, Oklahoma

Parsa Rafatian, Inoka Widanagamage

University of Mississippi, MS, USA

P5.03

Locally Grown Fruit Retains Its Soil Signature: An Elemental Study Of Regional Variation In Noncommercial Jams And Jellies

Callie Masterson, Raven Allison, Dana Rico, William Whittington, Breana Randle, Gregory Peacock, Nina Baghai-Riding, Charles Smithhart

Delta State University, Cleveland, MS, USA

P5.04

Sedimentology, Petrography, And Mineralogy Of The Tallahatta Formation Near The Town Of Meridian, Mississippi

Kiana McFadden, Ezat Heydari

Jackson State University, Jackson, MS, USA

P5.05

Publication Of A Surface Geologic Map Of Jackson County, Mississippi

James Starnes¹, Lindsey Stewart²

¹MDEQ, Mississippi Office of Geology, Jackson, Mississippi, USA, ²MDEQ, Mississippi Office of Land and Water Resources, Jackson, MS, USA

Friday, February 23, 2018

Union H

9:00

05.14 Excavation Of An Archaeocete Whale, *Zygorhiza Kochii*, From The Late Eocene Yazoo Formation Near Sherman Hill In Scott County, Mississippi

James Starnes¹, Paul Parrish¹, Andrew Newcomb¹, George Phillips²

¹MDEQ, Mississippi Office of Geology, Jackson, Mississippi, USA, ²MDWFP, Mississippi Museum of Natural Science, Jackson, Mississippi, USA

9:20

05.15 History Of The Paleontology Program At The Mississippi Museum Of Natural Science

George Phillips

Mississippi Museum of Natural Science, Jackson, MS, USA

9:40

05.16 Juvenile *Micropogonias Undulatus* Otoliths From A *Rangia Johnsoni* Bed In The Upper Pascagoula Formation (Late Miocene), Stone County, Mississippi

Gary Stringer¹, James Starnes²

¹University of Louisiana at Monroe, Monroe, LA, USA, ²MDEQ, Mississippi Office of Geology, Jackson, MS, USA

10:00

05.17 The Inaugural Usm-Msu Field Geology Course Of Summer 2017

Franklin Heitmuller¹, Darrel Schmitz², Evan Bagley¹, Claire Babineaux²

¹The University of Southern Mississippi, Hattiesburg, MS, USA, ²Mississippi State University, Starkville, MS, USA



10:20

05.18 Orthoquartzite In The Upper Claiborne Cockfield Formation, Archaeology, And The Publication Of The Tchula, Mississippi 7.5min. Geologic Map

James Starnes¹, R. Tyler Berry¹, David Abbott²

¹MDEQ, Mississippi Office of Geology, Jackson, MS, USA, ²Mississippi Department of Archives and History, Jackson, MS, USA

10:40

05.19 Structural Synthesis And Spatial Distribution Of A 335 Ma Igneous Suite From The Eastern Blue Ridge, Alabama, Southern Appalachians

Avery Rosenbalm, Jeremy Deans

University of Southern Mississippi, Hattiesburg, MS, USA

11:00

05.20 Completing A Mentor's Geological Maps

Darrel Schmitz

Mississippi State University, Mississippi State, MS, USA

11:20

05.21 Environmental Geology Division's Web Page: Statewide Shallow Geophysical Information

Paul Parrish, Andrew Newcomb

Mississippi Office of Geology, Jackson, MS, USA, Mississippi Office of Geology – Environmental Geology Division, Jackson, MS USA

11:40

05.22 Provincialism And Evolution Of Late Cretaceous Ostracodes Of The U.S. Gulf Coastal Plain

Terry Puckett

University of Southern Mississippi, Hattiesburg, MS, USA

12:00-1:00 Lunch on your own

1:00

05.23 Paired Wells Telemetry Project For The Mississippi Delta

Madison Kymes

Mississippi Department of Environmental Quality, Jackson, MS, USA

1:20

05.24 Mississippi River Basin Geology

David T. Dockery III

Mississippi Department of Environmental Quality, Jackson, MS, USA

1:40

05.25 Depositional Systems Analysis Of The Kosciusko Formation (Middle Claiborne Group) In Southern Mississippi

R. Tyler Berry

Mississippi Department of Environmental Quality, Jackson, MS, USA



Health Sciences

Chair: Ray Grill, University of Mississippi Medical Center

Chair: Jennifer Harpole, University of Mississippi Medical Center

Vice-Chair: Frank Spradley, University of Mississippi Medical Center

Vice-Chair: Gouri Mahajan, University of Mississippi Medical Center

Program Committee: Olga McDaniel, University of Mississippi Medical Center

Program Committee: Jana Bagwell, University of Mississippi Medical Center

Program George Moll, University of Mississippi Medical Center

Population Health Consultant: Joshua Mann, University of Mississippi Medical Center

Thursday, February 22, 2018

TCC Ballroom II/III

9:30-12:00 Population Health Symposium I, Moderators: D. Olga McDaniel, PhD; George Moll, MD, PhD;

9:30 Welcome

9:45 Mississippi Health Care, Present and Future, James Keeton, MD; University of Mississippi Medical Center

10:15 Addictions and Violent Behavior, Julie A. Schumacher-Coffey, PhD; University of Mississippi Medical Center

10:45 Beyond Prescription Opioids: Novel Pain Therapeutics with Reduced Abuse Liability, Kevin Freeman, PhD;
University of Mississippi Medical Center

11:15 Approaches to the Treating Genetic Neuromuscular Disorders, S.H. Subramony, MD; University of Florida

11:45 Panel Discussion

1:00-2:55 Population Health Symposium II, Precision/Personalized Medicine

1:05 Mathematical Model Or HumMod, An Integrative Physiology, Robert Hester, University of Mississippi Medical Center

1:35 Application of HumMod, Diagnostic Validation, Drew Pruett, University of Mississippi Medical Center

2:05 Vaccines, Poulation Diversity and Compliance, Paul Beyers, MD, Mississippi State Epidemiologist, Director

2:35 Panel Discussion

5:00-7:00 Poster Session

P6.01

Histopathological Assessment Of Sustained Delivery Of EGCG On An Sk-Ov-3 Ovarian Cancer Like Cell Line

Jennifer Price^{1,2}, Michelle Tucci¹, Hamed Benghuzzi¹

¹University of MS Medical Center, USA, ²Copiah-Lincoln Community College, USA

P6.02

Fractal Analysis Of Clinically Failed Zirconia Dental Implants Is Independent Of Measuring Location

Kartikeya Jodha¹, Susana Salazar Marocho¹, Susanne Scherrer², Yuanyuan Duan¹, Jason Griggs¹

¹University of Mississippi Medical Center, USA, ²University of Geneva, Switzerland

P6.03

Anti-Inflammatory Activity Of *Pseudognaphalium Obtusifolium* Extracts Via Inhibition Of Protein Denaturation

Claudia Cruz Rivera, Carson Huynh, Angela Whittom Reiken

Mississippi College, USA



P6.04

Celecoxib Attenuates Neonatal Systemic Lipopolysaccharide-Enhanced Adult Vulnerability Of Nigrostriatal Dopaminergic System To Rotenone Neurotoxicity

Jonathan W Lee¹, Silu Lu¹, Lu-Tai Tien², Asuka M Kaizaki³, James P Shaffery⁴, Xiaoli Dai⁵, Norma B Ojeda¹, Yi Pang¹, Abhay J Bhatt¹, Renate D Savich¹, Lir-Wan Fan¹

¹Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, USA, ²School of Medicine, Fu Jen Catholic University, Taiwan, ³Department of Pharmacology, Toxicology & Therapeutics, Division of Toxicology, School of Pharmacy, Showa University, Japan, ⁴Department of Psychiatry and Human Behavior, Animal Behavior Core, University of Mississippi Medical Center, USA, ⁵Department of Anesthesiology, University of Mississippi Medical Center, USA

P6.05

Stress-Enhanced Motivation For High Fat Food Reward In Satiated Rats: Independence Of The HPA Axis Activity

Ariel DeCoteau², Asem Singh¹, Thuy Tran¹, Xiu Liu¹

¹University of Mississippi Medical Center, USA, ²Millsaps College, USA

P6.06

Maximum Temperature Through Y-Tzp Ceramic After Er,Cr:Ysgg Laser Irradiation

Laurel Stringer², Sarah Malley¹, Darrell Hutto¹, Susana Salazar Marcho¹, Jason Griggs¹

¹University of Mississippi Medical Center, USA, ²Millsaps College, USA

P6.07

Modeling Cue-Exposure Therapy For Alcohol Use Disorder

Tanya Pareek, John Overton, Donna Platt

University of Mississippi Medical Center, USA

P6.08

Gastrin-Releasing Peptide Signaling Is Altered In A Rodent Model Of Vertical Sleeve Gastrectomy

Redin Spann, Michael Garrett, Bernadette Grayson

University of Mississippi Medical Center, USA

P6.09

Altered Blood-Barrier Function In A Rat Model Of Thoracic Level Spinal Contusion

Kwamie Harris, Alexandra Himel, Brittany Duncan, Gene Bidwell, Raymond Grill, Bernadette Grayson

University of Mississippi Medical Center, USA

P6.10

Ability Of Select Bacteria On Various Surfaces Found In Healthcare Facilities

Taylor Smith, Mary Lux

University of Southern Mississippi, USA

P6.11

Total Flavonoid Contents Of Traditional Medicine Plant Extracts Reveal Potential For Producing Phytochemicals Important For Treatment Of Certain Cancers

Rachael Drake, Taruni Dondla, Arieon Guillory, Leah Bowlin, Kaymin Carter, Niang Ciang, Claudia Cruz Rivera, Victoria Hodges, Carson Huynh, Brandon Marcella, Angela Whittom Reiken

Mississippi College, USA

P6.12

Bone Density Of Patients In The Jackson Heart Study

William Varner¹, Candace Howard², Andrew Smith²

¹University of Mississippi, USA, ²University of Mississippi Medical Center, USA, ³University of Alabama at Birmingham School of Medicine, USA



P6.13

The Effect Of Sexual Education On Condom Usage In Teenagers, Ages 12-19 In Hinds County

Aleah Allen¹, Deja Abdul-Haqq², Maranda Joine²

¹Jackson State University, USA, ²My Brother's Keeper, Inc., USA

P6.14

The Association Between Condom Perception And Condom Usage Among MSM

Haley Bender¹, DeMarc Hickson², Deja Abdul-Haqq²

¹Jackson State University, USA, ²My Brother's Keeper, Inc., USA

P6.15

Not Really The Way You Pictured Your First Crib?

Sahtiah Cage¹, Jayla Collins¹, Krystal Phillips²

¹Alcorn State University, USA, ²Hinds Community College, USA, ³My Brother's Keeper, Inc., USA

P6.16

Cervical Cancer Risk Factors For Women With Hiv: Recommendations To Decrease Mortality

Joanna Stevens¹, Neha Dhaliwal², Daniel Chavez-Yenter³

¹Hinds Community College, USA, ²Mississippi College, USA, ³My Brother's Keeper, Inc., USA

P6.17

Reducing Adolescent Obesity Through A High School Intervention Program In Mississippi

Jasmine Grays¹, Corbin Divinity², Henry Fuller³

¹Jackson State University, USA, ²University of Mississippi, USA, ³My Brother's Keeper, Inc., USA

P6.18

Assessing The Priorities Of Urban And Rural Communities Related To Farmers Markets

Kyla Lewis¹, Deja Abdul-Haqq¹

¹Belhaven University, USA, ²My Brother's Keeper, Inc., USA

P6.19

The Importance Of The Language Access Plan

Yolanda Asumu¹, Tonya Adams¹

¹Millsaps College, USA, ²My Brother's Keeper, Inc., USA

P6.20

Are People Living With Hiv More Depressed Than People Living Without HIV

Ilivia Jackson¹, Tonya Adams¹

¹Jackson State University, USA, ²My Brother's Keeper, Inc., USA

P6.21

Investigating The Environmental Factors Of Birth Defects Among Children Nationally Vs. State Level

Aironese James¹, Wayneisha Williams², Angela Johnson³

¹Alcorn State University, USA, ²Alcorn State University, USA, ³My Brother's Keeper, Inc., USA

P6.22

Assessing The Effectiveness Of Many Men, Many Voices (3mv) Intervention In The Mississippi Gulf Coast Region

Tracey Le¹, Zedekiah Toy², Telvin Harrington³, Joseph Lindsey⁴

¹University of Mississippi, USA, ²Alcorn State University, USA, ³Alcorn State University, USA, ⁴My Brother's Keeper, Inc., USA

P6.23

The Association Between Patient-Reported Exposure And Rectal Gonorrhea And Chlamydia In Young Black MSM

Jazmyn Nash¹, Alexis Williams², Tameka Curtis²

¹Tougaloo College, USA, ²Alcorn State University, USA, ³Open Arms Healthcare Center, USA



P6.24

Histopathological Analysis Of The F344 Rat Lung Upon Exposure To Retenoic Acid, Ovalbumin, Mold Spores And Citral

Ibrahim Farah¹, Carlene Holt-Gray¹, Joseph Cameron¹, Michelle Tucci², Hamed Benghuzzi²

¹Jackson State University, USA, ²University of Mississippi Medical Center, USA

P6.25

Metabolic Disease In A Rodent Model Of Thoracic Level Spinal Contusion

Brittany Duncan, Kwamie Harris, Alexandra Himel, Raymond Grill, Bernadette Grayson

University of Mississippi Medical Center, USA

P6.26

Reversal Of Alcohol-Induced Cognitive Deficits By An Inverse Agonist Selective For A5 Gabaa Receptors

John Overton, Cassie Chandler, Daniela Rüedi-Bettschen, Jaren Reeves-Darby, Ian Taylor, Donna Platt

University of Mississippi Medical Center, USA

P6.27

Does Hypoxia And/Or Endothelin Affect Cyr61 Protein Expression In Smooth Muscle Cells Derived From Uterine Fibroids?

Alexis Brookins, Krystal Chatman, Venessia Johnson, B. Babbette LaMarca, Kedra Wallace

University of Mississippi Medical Center, USA

P6.28

The "Haves" And "Have Nots": An Analysis Of The Impact Socioeconomic Status Has On Teen Pregnancy Rates In Central Ms

TreOnna Readus¹, Rushunna Harris², T'Juan Rucker³

¹Jackson State University, USA, ²Mississippi State University, USA, ³My Brother's Keeper, Inc., USA

P6.29

Does The Mental And Emotional Impact Of Stress Cause Psychological Consequences?

Kayla Rice¹, Kheri Strong², Tameka Curtis³

¹Jackson State University, USA, ²Alcorn State University, USA, ³My Brother's Keeper, Inc., USA

P6.30

Body li Body: A Reproductive Health Awareness Campaign For Adolescent Students Ages 13-18

Ambresha Johnson¹, Tybrea Vivians², Terra Cousin³

¹Jackson State University, USA, ²Alcorn State University, USA, ³My Brother's Keeper, Inc., USA

P6.31

Is Your Friendzone Beneficial? The Influence Of Social Support On Body Image, Optimism, And Sexual Practices

Kambria Badgett¹, Xavier Short², Obie McNair²

¹Alcorn State University, USA, ²Rust College, USA

P6.32

Histomorphometric Analysis Of The Kidney Glomeruli Of Ovariectomized Rats Following Sustained Deliever Y Of Estrogen Replacement Therapy

Alexis Crockett¹, Michelle Tucci², Joseph Cameron¹, Hamed Benghuzzi², Zelma Cason²

¹Jackson State, USA, ²University of Mississippi Medical Center, USA

P6.33

Aif-1 In Association With Tlr-2 Induces Proinflammatory Response In Monocytes After Ischemia Reperfusion (Ir)

Olga McDaniel, Allen Simeone, Larry

McDaniel University of Mississippi Medical Center, USA



P6.34

MCF-7 Breast And Caco-2 Colorectal Adenocarcinoma Cell Apoptotic Protein Signaling Pathways Based On Antibody Array Analysis Following Dichloromethane-Derived Phytochemical Treatment

Carson Huynh, Leah Bowlin, Brandon Marcella, Angela Whittom Reiken
Mississippi College, Clinton, MS, USA

Friday, February 23, 2018

Oral Presentations I: Molecular/Cell Biology, Moderators: Larry McDaniel, PhD and Gouri Mahajan, PhD
TCC Ballroom II

8:00

06.01 Virulence Of Encapsulated Streptococcus Pneumoniae Is Increased Upon Expression Of Pneumococcal Surface Protein K.

Haley Pipkins, Jessica Bradshaw, Lance Keller, Larry McDaniel
University of Mississippi Medical Center, Jackson, MS, USA

8:15

06.02 Altered Neuro-Inflammatory Gene Expression In Hippocampus In Major Depressive Disorder.

Gouri Mahajan¹, Eric Vallender¹, Michael Garrett¹, Lavanya Challagundla¹, JC Overholser², G Jurjus³, Lesa Dieter², Maryam Syed¹, Damian Romero¹, Hamed Benghuzzi¹, Craig Stockmeier¹
¹University of Mississippi Medical center, USA, ²Case Western Reserve University, USA, ³Louis Stokes Cleveland VA Medical Center, USA

8:30

06.03 Evaluation Of Ryanodine Receptors In Lymphatic Muscle Cells.

Michelle Everett², Brittney Garner¹, Terry Fletcher¹, Amanda Stolarz¹, Nancy Rusch¹
¹University of Arkansas for Medical Sciences, USA, ²Mississippi College, USA

8:45

06.04 Oligopeptide Binding Proteins Alic And Alid Alter Protein Expression And Mediate Virulence Of Non-Encapsulated Streptococcus Pneumoniae.

Jessica Bradshaw, Haley Pipkins, Larry McDaniel
University of Mississippi Medical Center, Jackson, MS 39216, USA

9:00

06.05 Interactions Between Genetics And Ligands In Mu-Opioid Receptors Bias The Downstream Signaling Pathways.

Xiao Zhang¹, Shaurita Hutchins², Robert Gilmore², Eric Vallender²
¹Program in Neuroscience, University of Mississippi Medical Center, USA, ²Department of Psychiatry and Human Behavior, University of Mississippi Medical Center, USA

9:15

06.06 Prevalence And Associated Virulence Of Non-Encapsulated Streptococcus Pneumoniae.

Caleb Martin, Jessica Bradshaw, Haley Pipkins, Larry McDaniel
University of Mississippi Medical Center, Jackson MS, USA

9:30

06.07 Dynamin Is Critical For Mouse Cytomegalovirus Maturation And Envelopment.

Mohammad Hasan, Rinkuben Parmar, Leslie Davis, Ritesh Tandon
*Department of Microbiology and Immunology
University of Mississippi Medical Center, Jackson, MS, USA*



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

Oral Presnetation II: Applied and Social Sciences, Moderators: Jana Bagwell, PhD and Olga McDaniel, PhD
TCC 227

8:00

06.08 Policies Addressing Distracted Driving Due To Mobile Device Use-Potential Next Steps For Mississippi.

Amy Radican-Wald

Center for Mississippi Health Policy, Jackson, MS, USA

8:15

06.09 Stress Behavior And Hypothalamic-Pituitary-Adrenal Axis Alterations In A Female Rat Model Of Vertical Sleeve Gastrectomy

Alexandra R. Himel, Sharon A. Cabral, James P. Shaffery, Bernadette E. Grayson

University of Mississippi Medical Center, Jackson, Mississippi, USA

8:30

06.10 IS Breastfeeding Associated With School Performance Among 4th Graders In The USA?

Norma Ojeda¹, Mina Qobadi², Lei Zhang², Nancy West¹, Fazlay Faruque¹

¹University of Mississippi Medical Center, USA, ²Mississippi State Department of Health, USA

8:45

06.11 Perceptions Of Concussion Risk At The University Of Mississippi.

Madison Frerker, Nicole Ashpole.

University of Mississippi, University, MS, USA

9:00

06.12 Hypercalcemia With Hyperactivity: Mutation Directed Therapy

Rachel Palmer, George Moll.

University of Mississippi Medical Center, Jackson, MS, USA

9:15

06.13 Mississippi's Gastroschisis Burden: Necrotizing Enterocolitis And Intestinal Atresia In Neonates With Gastroschisis

India Byrd, Emily Turbeville, Brent Ferguson, Minal Patel, Jaimin Patel, Mobolaji Famuyide

University of Mississippi Medical Center, Jackson, MS, USA

9:30

06.14 Assessing Vitamin D Consumption In Non-Institutionalized Aging Adults In The Us Population: Nhanes 2011-2012

Shamonica King and Hamed Benghuzzi

University of Mississippi Medical Center, Jackson, MS, USA

9:45

06.15 Rocky Mountain Spotted-Fever (Rmsf) Acute Metabolic Encephalopathy, Meningitis And Stroke: A Case Report

Kori McDaniel, Nikhil Chinmaya, Richard Kazibwe

Danville Medical Center, SOVA Health Danville, Danville, VA, USA

Oral Presentation III: Clinical and Material Sciences, Moderators: Jennifer Price, PhD and Frank Spradlet, PhD
TCC 228

8:15

06.16 Diabetes Mellitus Control Hemoglobin A1c Clinical Disparity.

George Moll

University of Mississippi Medical Center, Jackson, MS, USA



8:30

O6.17 Phytochemicals Of Dichloromethane-Derived Pseudognaphalium Obtusifolium Extract Possibly Combat Oxidative Stress-Driven Proliferation Of Human Colorectal Adenocarcinoma Cells.

Brandon Marcella, Niang Cing, Carson Huynh, Whittom Reiken
Mississippi College, Clinton, Mississippi, USA

8:45

O6.18 Er,Cr:YSGG Laser Treatment For Debonding Of Y-TZP Structures To A Resin Cement

David Remley, Steve Magee, Darrell Hutto, Jason Griggs, Susana Salazar Marcho
University of Mississippi Medical Center, Jackson, USA

9:00

O6.19 Deciphering The Role Of Fatty Acids In Bile Induced Membrane Damage In Listeria Monocytogenes.

Oindrila Paul¹, Dominique Clark², Jessica Wilson³, Janet Donaldson¹
¹*The University of Southern Mississippi, USA*, ²*Tougaloo College, USA*, ³*Mississippi State University, USA*

9:15

O6.20 Anticonvulsant Bioactive Secondary Metabolites From Tapinanthus Globiferus A. Rich

Vimal Sharma¹, James Fajemiroye², Cammi Thornton¹, Christianah Elusiyan³, Nicole Ashpole¹, Kristine Willett¹, Ikhlas Khan¹, Jordan Zjawiony¹
¹*The University of Mississippi, USA*, ²*Federal University of Goiás, Brazil*, ³*Obafemi Awolowo University, Nigeria*

9:30

O6.21 Dichloromethane-Derived Extract From Pseudognaphalium Obtusifolium Contains Phytochemicals That Exhibit Extreme Hydrogen Peroxide Radical Scavenging Activities.

Navjot Kaur, Leah Bowlin, Claudia Cruz Rivera, Victoria Hodges, Carson Huynh, Navpreet Kaur, Angela Whittom Reiken
Mississippi College, Clinton, MS, USA

9:30-10:30 **High School Poster Session**

P6.35

Cyclophosphamide Protects Against Renal Injury But Not Hypertension In An Experimental Mouse Model Of Systemic Lupus Erythematosus

Breanna McNair, Victoria Wolf, Michael Ryan
University of Mississippi Medical Center, USA

P6.36

Virus Like Particles With Selected Peptides For Targeting Cancer Cells

Sophia Bowley¹, Stephen Stray²
¹*Base Pair, USA*, ²*University of Mississippi Medical Center, USA*

P6.37

The Role Of Inhibiting AT1-AA To Improve The Pathophysiology Observed In A Rat Model Of Preeclampsia

Shyanne McDuffy², Mark Cunningham¹, Lorena Amaral¹, Denise Cornelius¹, Tarek Ibrahim¹, Nathan Campbell¹, Ventaka Ramana Vaka¹, Babbette B. LaMarca¹
¹*University of Mississippi Medical Center, USA*, ²*Murrah High School, Base Pair Program, USA*

P6.38

Geographic Health Disparities In Mississippi: Pilot With Acute Care Hospitals

Christian Johnson, Fazlay Faruque
University of Mississippi Medical Center, USA

P6.39

Ischemia/Reperfusion-Induced Liver Injury In Obese Female Rats

Ryan Nichols², Frank Spradley³, Barbara Wilson³, Christopher Anderson³
¹*Murrah High school, USA*, ²*Base Pair Program, USA*, ³*Department of Surgery UMMC, USA*



P6.40

Interleukin-1 Receptor Antagonist Attenuates Lipopolysaccharide-Induced Brain Hippocampal Injury And Improves Cognitive Impairment In Juvenile Rats

Oluwatosin Akinyemi¹, Donisha Lard¹, Tembra Jones³, Emily Turbeville⁴, Camilla Wright², Iman Washington⁵, Brenkeevia Langston⁵, Jonathan Lee², Silu Lu², Norma Ojeda², Yi Pang², Abhay Bhatt², Renate Savich², Lir-Wan Fan²

¹Base Pair Program, University of Mississippi Medical Center/Murrah High School, USA, ²Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, USA, ³School of Nursing, University of Mississippi Medical Center, USA, ⁴School of Dentistry, University of Mississippi Medical Center, USA, ⁵Mississippi INBRE Research Scholars Program, USA

P6.41

Finite Element Modeling Of An All-Ceramic Three-Unit Fixed Dental Prosthesis

Alton Chambers, Matthew Araujo, Yuanyuan Duan, Jason Griggs
University of Mississippi Medical Center, USA

P6.42

Mito-Tempol Has No Effect On Blood Pressure In Male Shr

Jaylen Sandifer, Jane Reckelhoff, Carolina Dalmasso
University of Mississippi Medical Center, USA

10:00-11:30 Population Health Interactive Workshop, Coordinators: Olga McDaniel, PhD; George Moll, MD, PhD; Jana Bagwell, PhD; Gouri Mahajan, PhD; Jennifer Price, PhD; Frank Spradley, PhD

Speaker: Josie Bidwell, DNP, RN, FNP-C; University of Mississippi Medical Center
Title: "Mobile Clinic"

Speakers: George Moll, MD; Keisha Luchey, RN, CDE; Mary K. Armstrong, FNP; University of Mississippi Medical Center
Title: "Controlling Diabetes Melitus – Telemedicine Monitoring and Compliance Enhancement"

History & Philosophy of Science

Chair: Nick Gilbert, University of Mississippi Medical Center

Chair: Katie Alford, University of Mississippi Medical Center

Vice-Chair: Mary Ball Markow, University of Mississippi Medical Center

Vice-Chair: Rachel Sharp, University of Mississippi Medical Center

Thursday, February 22, 2018

Option 1

9:30-12:00 Population Health Symposium I, Moderators: D. Olga McDaniel, PhD; George Moll, MD, PhD
Co-Sponsored with Health Science

9:30 Welcome

9:45 Mississippi Health Care, Present and Future, James Keeton, MD; University of Mississippi Medical Center

10:15 Addictions and Violent Behavior, Julie A. Schumacher-Coffey, PhD; University of Mississippi Medical Center

10:45 Beyond Prescription Opioids: Novel Pain Therapeutics with Reduced Abuse Liability, Kevin Freeman, PhD;
University of Mississippi Medical Center

11:15 Approaches to the Treating Genetic Neuromuscular Disorders, S.H. Subramony, MD; University of Florida

11:45 Panel Discussion



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Population Health Symposium II, Precision/Personalized Medicine

1:00-2:55

1:05 Mathematical Model Or HumMod, An Integrative Physiology, Robert Hester, University of Mississippi Medical Center

1:35 Application of HumMod, Diagnostic Validation, Drew Pruett, University of Mississippi Medical Center

2:05 Vaccines, Poulation Diversity and Compliance, Paul Beyers, MD, Mississippi State Epidemiologist, Director

2:35 Panel Discussion

Option 2

9:00-11:00

Symposia on Ecological Diversity and the Environment, Organizers: Dr. AHM Ali Reza and Dr. Nina Baghai-Riding, Delta State University

Title: "Project *Magnolia grandiflora*, Mississippi's Digital Herbarium and Plant Atlas," Mac H. Alford, Ph.D., Professor, Department of Biological Sciences, The University of Southern Mississippi

Title "Pursuing a Dream – Protecting Mississippi's Natural Resources," Dr. Cathy Shropshire, Retired, Wildlife Biologist from Mississippi

Title "Vectors from Space. How Nutrient Stoichiometry Can Help Us Understand the Ecology and Evolution of Mosquitor," Donald A. Yee, Ph.D., Associate Professor, Department of Biological Sciences, The University of Southern Mississippi

Title "Evolution and Diversification of Malaria Parasites," Dr. Dianan Outlaw, Associate Professor, Mississippi State University

Friday, February 22, 2018

TCC 226

8:30

07.01 Metrics Of Social Justice In Health Care

Laura C. Kebert, Ralph H. Didlake

University of Mississippi Medical Center, Jackson, MS, USA

8:50

07.02 A History Of Homeostasis: From Physiological Regulation To Biological Species

Kenneth J Curry¹, Paula J. Smithka²

¹Independent Scholar, Hattiesburg, MS, USA, ²University of Southern Mississippi, Hattiesburg, MS, USA

9:10

07.03 Grounding Homeostatic Property Clusters For Biological Species In Systems And Complexity Theories

Paula J. Smithka¹, Kenneth J. Curry²

¹University of Southern Mississippi, Hattiesburg, MS, USA, ²Independent Scholar, Hattiesburg, MS, USA

9:30

07.04 Confirmation And Psychological Explanation

Gregory Johnson

Mississippi State University, Meridian, MS, USA

9:50

07.05 Etheldred Benett: A Woman's Contributions To Geology Before Anning's "Seashells On The Seashore"

Renee Clary

Mississippi State University, Mississippi State, MS, USA



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

12:00-2:00 **Asylum Hill Research Consortium, Hall of Honors**
Sponsored by: Center for Bioethics and Medical Humanities, University of Mississippi Medical Center

1:00-2:00 **MS College and Career Readiness Workshop,**
Organizer: Dr. Jackie Sampsell, Mississippi Department of Education

Marine & Atmospheric Sciences

Chair: Dr. Remata Reddy, Jackson State University

Vice-Chair: Francis Tuluri, Jackson State University

Thursday, February 22, 2018
TCC 227

9:00

O8.01 Numerical Simulation Of A Storm Surge In The Gulf Of Mexico

Duanjun Lu, P.C. Yuan, Hui-Ru Shih

Jackson State University, Jackson, MS, USA

9:30

O8.02 Relative Frequencies Of Two Species Of Cownose Rays (Elasmobranchii: Rhinopteridae) In The Gulf Of Mexico

Helen Weber¹, Christian Jones², Jill Hendon³, Gregg Poulakis⁴, David Wells⁵, Nicole Phillips¹

¹The University of Southern Mississippi, Hattiesburg, MS, USA, ²National Marine Fisheries Service, Pascagoula, MS, USA,

³Gulf Coast Research Laboratory, Ocean Springs, MS, USA, ⁴Florida Fish and Wildlife Conservation Commission, Port Charlotte, FL, USA, ⁵Texas A&M University, Galveston, TX, USA

9:45

O8.03 Hurricane-Spawned Tornadoes Under Anthropogenic Climate Change

Dereka Carroll¹, Jeff Trapp²

¹Jackson State University, Jackson, MS, USA, ²University of Illinois at Urbana-Champaign, Urbana, IL, USA

10:00 Break

10:15

O8.04 Looking Back For The Future: Using Historic Rostra To Further Sawfish Conservation

Annmarie Fearing¹, Kelcee Smith², Tonya Wiley³, Jeff Whitty⁴, Kevin Feldheim⁵, Peter Kyne⁶, Nicole Phillips¹

¹University of Southern Mississippi, Hattiesburg, MS, USA, ²Louisiana State University, Baton Rouge, LA, USA,

³Havenworth Coastal Conservation, Palmetto, FL, USA, ⁴Florida Fish and Wildlife Conservation Commission, Pensacola, FL, USA, ⁵Field Museum of Natural History, Chicago, IL, USA, ⁶Research Institute for the Environment and Livelihoods, Charles Darwin University, Darwin, NT, Australia

10:30

O8.05 Utilizing Bayesian Belief Networks To Model The Ocean-Atmosphere Interface

Warith Abdullah, Remata Reddy, Cary Butler

Jackson State University, Jackson, MS, USA



10:45

08.06 Studies Of Large-Scale Surface Fluxes, Vertical Motions, Intensity Change And Track Prediction Associated With Land Falling Hurricane Katrina

Remata Reddy, Duanjun Lu, Francis Tuluri, Meheri Fadavi
Jackson State University, Jackson, MS, USA

11:00

08.07 Air Quality, And Meteorology Association For Asthma Prevalence In Mississippi Gulf Coastal Region

Francis Tuluri¹, Amit Gorai², Travis Johnson¹, Reddy Remata¹
¹*Jackson State University, Jackson, MS, USA*, ²*National Institute of Technology, Rourkela, Odisha, India*

11:15

08.08 Observations With The Jsu Mobile Meteorology Unit During 2017: From The Mountains To The Sea And A Total Solar Eclipse

Loren White, Anthony Thornton
Jackson State University, Jackson, MS, USA

11:30-12:00 **Divisional Business Meeting**

5:00-7:00 **Poster Session**

P8.01

An Overview Of Ncep: Products, Services, And Impacts

Mariama Feaster¹, Genene Fisher²
¹*Jackson State University, Jackson, MS, USA*, ²*NCEP, College Park, MD, USA*

P8.02

Measuring Solar Coronal Magnetism During The Total Solar Eclipse Of 2017

Keon Gibson¹, Scott Sewell², Steve Tomczyk², Andrea Smith²
¹*Jackson State University, Jackson, MS, USA*, ²*NCAR/UCAR, Boulder, CO, USA*

P8.03

Sawfish CSI: Optimizing Environmental Dna Protocols To Search For The Critically Endangered Smalltooth Sawfish In Northern Gulf Of Mexico Waters

Ryan Lehman¹, Jill Hendon², Gregg Poulakis³, Nicole Phillips¹
¹*The University of Southern Mississippi, Department of Biological Sciences, Hattiesburg, MS, USA*, ²*The University of Southern Mississippi, Center for Fisheries, Research, and Development, Ocean Springs, MS, USA*, ³*Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, Charlotte Harbor Field Laboratory, Port Charlotte, FL, USA*

P8.04

Age And Growth Of Red Drum In The North-Central Gulf Of Mexico

Beckah Campbell, Corbin Bennetts, Robert Leaf
University of Southern Mississippi, Long Beach, MS, USA

P8.05

Development Of Environmental Dna Methods To Assess Habitat Usage In Bull Sharks (*Carcharhinus Leucas*)

Katherine Schweiss¹, J. Marcus Drymon², Toby Daly-Engel³, Nicole Phillips¹
¹*The University of Southern Mississippi, Hattiesburg, MS, USA*, ²*Mississippi State University, Biloxi, MS, USA*, ³*Florida Institute of Technology, Melbourne, FL, USA*

P8.06

Comparisons Of Mid-Altitude Radial Convergence Signatures In Severe Storms From KDGX And KULM

Janae Elkins, Eric Carpenter, Duanjun Lu, Todd A. Murphy, Anne Hanks
Jackson State University, Jackson, MS, USA



P8.07

Exploring The Capabilities Of The Chm 15k Ceilometer To Detect Icing Conditions Within Clouds

Jaylond Harvey¹, Scott Landolt², Jamie Wolff²

¹Jackson State University, Jackson, MS, USA, ²National Center for Atmospheric Research, Boulder, CO, USA

P8.08

Geostationary Lightning Mapper Comparison To Cloud Optical Depth In Various Storm Environments

Robert Garrett¹, Remata Reddy¹, James Sims², Curtiss Burnett³

¹Jackson State University, Jackson, MS, USA, ²NASA, Greenbelt, MD, USA, ³ARSC, Greenbelt, MD, USA

P8.09

Analyzing The Impact Of Synoptic Weather On The Surface Energy Budget Of A Large Inland Water Body

Justin Bonds¹, Raleigh Grysko², Zhongming Gao², Heping Liu², Remata Reddy¹

¹Jackson State University, Jackson, MS, USA, ²Washington State University, Pullman, WA, USA

P8.10

Climate Change And Global Warming: Anatomy Of Weather Patterns, Global And Health Effects

Abhay Cheruku¹, Nathan Massey¹, Aditya Remata¹, Remata Reddy²

¹Clinton High School, Clinton, MS 39056, USA, ²Jackson State University, Jackson, MS, USA

P8.11

Examining Diurnal Variability Across The Equatorial Pacific Basin Associated With Enso

Tony Hurt¹, Tony Hurt², Naoko Sakaeda³, Juliana Dias⁴, George Kiladis³

¹Jackson State University, Jackson, MS, USA, ²Significant Opportunities in Atmospheric Research and Science, Boulder, CO, USA, ³NOAA Earth System Research Laboratory, Boulder, CO, USA, ⁴Cooperative Institute for Research in Environmental Sciences, Boulder, CO, USA

P8.12

An Investigation Of The Large-Scale Heat Fluxes And Air-Sea Interactions Of Hurricane Harvey By Using Satellite Data

Arvind Loganathan¹, Xavier Brown², Remata Reddy²

¹Northwest Rankin High School, Flowood, MS, USA, ²Jackson State University, Jackson, MS, USA

P8.13

Inferring Ocean Velocity From Sequences Of Ocean Images

¹Courage Klutse, ¹Dmitri Nechaev, ²Hans Ngdock, ²Innocent Souopgui

¹University of Southern Mississippi, Stennis Space Center, MS, USA and ²Naval Research Laboratory, Stennis Space Center, MS, USA



Mathematics, Computer Science and Stastics

Chair: Dr. Jamil Ibrahim, University of Mississippi Medical Center

Vice-Chair: Ping Zhang, Alcorn State University

Thursday, February 22, 2018

TCC 229

8:30

09.01 Compare Big Data Security Analytic Tool Performance

Yong Wang

Alcorn State University, Lorman, MS, USA

8:50

09.02 Survey Of Artificial Intelligence Applications

Devontrae Williams, Ping Zhang

Alcorn State University, Lorman, MS, USA

9:10

09.03 Human Activity Recognition Using Wearable Devices

Sarbagya Ratna Shakya, Zhaoxian Zhou

University of Southern Mississippi, Hattiesburg, MS, USA

9:30

09.04 Implementation Of Algorithms For Analytical Approaches To Massive Data Experimental Validation Of Context

Ramakalavathi Marapareddy, Sowmya Wilson Saripalli

University of Southern Mississippi, Hattiesburg, MS, USA

9:50

09.05 College Algebra - Online Vs Traditional Classes

Lixin YU

Alcorn State University, Lorman, MS 39180, USA

10:10

09.06 The Impact Of Mobile Technology On Student Engagement In Learning Activities

Jamil Ibrahim, Saja Ibrahim, Ibrahim J. Ibrahim Ibrahim

University of Mississippi Medical Center, Jackson MS USA

10:30

Break

10:45-11:45

Invited Lecture

Demonstration of How to Perform Meta-Analysis Using Comprehensive Meta-Analysis Software
Elgenaid Hamadain, University of Mississippi Medical Center

11:45

Divisional Business Meeting



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Population Health Symposium II, Precision/Personalized Medicine

1:00-2:55

1:05 Mathematical Model Or HumMod, An Integrative Physiology, Robert Hester, University of Mississippi Medical Center

1:35 Application of HumMod, Diagnostic Validation, Drew Pruett, University of Mississippi Medical Center

2:05 Vaccines, Poulution Diversity and Compliance, Paul Beyers, MD, Mississippi State Epidemiologist, Director

2:35 Panel Discussion

P9.01

Finite Element Analysis Of Zygomatic Implant-Supported Maxillary Prostheses

Denise Cherry, Evan Theilman, Ravi Chandran, Yuanyuan Duan

University of Mississippi Medical Center, Jackson, MS, USA

P9.02

Finite Element Analysis Of Two Reduced-Diameter Zirconia Dental Implants

Justina Boles¹, Jason Griggs¹, Yuanyuan Duan¹, Susanne Scherrer²

¹University of Mississippi Medical Center, Jackson, MS, USA, ²University of Geneva, Geneva, Switzerland

P9.03

Access To Pediatric Dermatology Care In Mississippi

Fitzpatrick A, BA¹, Braswell MA, DO², Ibrahim J, PhD³, Brodell RT, MD², Jacks SK, MD⁴

School of Medicine¹, Department of Dermatology², School of Health Related Professions³, University of Mississippi Medical Center, Assistant Professor of Dermatology and Pediatrics, Baylor College of Medicine⁴

Friday, February 23, 2018

TCC 229

8:30

09.08 A New Up-Winding Weighted Compact Scheme For Shock Capturing

Caixia Chen¹, Yonghua Yan², Fan Yang³

¹Tougaloo College, Tougaloo, MS, USA, ²Jackson State University, Jackson, MS, USA, ³University of Shanghai for Science and Technology, Shanghai, China, China

8:50

09.09 Computational Mechanics Analysis Of Bio-Inspired Structural Systems

Reena Patel¹, Guillermo Riveros¹, David Thompson², Felipe Acosta³, Carlos Colon³, Edward Perkins¹

¹U.S. Army Engineer Research and Development Center, Vicksburg, MS, USA, ²Mississippi State University, Starkville, MS, USA, ³University of Puerto Rico-Mayaguez, Mayaguez, PR, Puerto Rico

9:10

09.10 Fruit Bruise Detection Using Image Processing Techniques And Matlab

Hemantha Ramamurthy, Ping Zhang, Babu Patlola

Alcorn State University, Lorman, MS, USA

9:30

09.11 Bruised Apple Recognition Using Deep Learning Algorithm

Ping Zhang¹, Zilong Hu², Jinshan Tang², Babu Patlolla¹

¹Alcorn State University, Lorman, USA, ²Michigan Technological University, Houghton, USA

9:50

09.12 Some Results Of 2-Backbone Coloring Of K-Trees

Co Quach, Emilee Nicholson

Millsaps College, Jackson, MS, USA



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

10:10

O9.13 Finite Element Modeling Of An All-Ceramic Three-Unit Fixed Dental Prosthesis

Alton Chambers, Matthew Araujo, Yuanyuan Duan, Jason Griggs

University Medical Center, Jackson, MS, USA

10:40

Divisional Business Meeting

11:00-12:00

Symposium: The Relationship Between Data Science, Mathematics, Computer Science and Statistics

Jamil Ibrahim, Saha Ibrahim, Ibrahim J. Ibrahim Ibrahim, University of Mississippi Medical Center

Physics & Engineering

Chair: Cecille Labuda, University of Mississippi

Vice-Chair: Shanti Bhushan, Mississippi State University

Thursday, February 22, 2018

Union A

8:30

High-Performance Computational Modeling and Simulation in an Interactive Python Environment with the Open Source Proteus Toolkit

Chris Kees, Ph.D.

Coastal and Hydraulics Laboratory, US Army Engineer Research & Development Center

9:00

O10.01 Dns Of The Nonlinear Growth Of Asymmetric Perturbations In A Boundary Layer

Yonghua Yan¹, Caixia Chen², Fan Yang³

¹Jackson State University, Jackson, MS, USA, ²Tougaloo College, Tougaloo, MS, USA, ³Shanghai Key Laboratory of Multiphase Flow and Heat Transfer in Power Engineering, Shanghai, Shanghai, China

9:20

O10.02 The Behavior Of High Intensity Focused Ultrasound (Hifu) - Induced Shear Waves In A Viscoelastic Micellar Fluid

E.G. Sunethra Dayavansha, Cecille Labuda, Joel Mobley

National Center for Physical Acoustics and Department of Physics and Astronomy, University, USA

9:40

O10.03 Numerical Predictions Of Hydrokinetic Turbine Wake And Free-Surface Signatures

Oumnia El Fajri, Shanti Bhushan

Mississippi State University, Starkville, MS, United States

10:00

O10.04 Evaluating The Influence Of Particulate Matter On Spectroscopic Measurements Of A Combusting Flow

Jonathan Herlan, Nathan Murray

University of Mississippi -- NCPA, Oxford, MS, USA

10:20

Break

10:40

O10.05 Optimizing Mri Sequences For Mri-Based Stereotactic Radiosurgery Treatment Planning

Somayeh Taghizadeh¹, Ali Fatemi², Cecille Labuda¹

¹University of Mississippi, University, USA, ²University of Mississippi Medical Center, Jackson, USA



11:00

O10.06 Strain Rate Deformation Of Bead-Spring Elastomers

Gopinath Subramanian

University of Southern Mississippi, Hattiesburg, MS, USA

11:20

O10.07 Analytical Investigation Of Corrosion-Tolerant Pre-Stressed Cfrp Fatigue Mitigation For Improved Waterway Lock Reliability

Christine Lozano

University of Arkansas, Fayetteville, USA

11:40

O10.08 Fatigue Testing Validation Of Crack Propagation In Steel Structures Using The Paris Law

Daniel Martinez, Guillermo A. Riveros

US Army Engineer Research & Development Center, Vicksburg, MS, USA

12:00-1:00

Divisional Business Meeting

1:00

O10.09 Reflection And Transmission Of Radiation By An Enz Interface

Zhangjin Xu, Henk F. Arnoldus

Mississippi State University, Starkville, MS, USA

1:20

O10.10 Particle Detectors On Causal Sets Embedded In Minkowski Space

Benjamin Pilgrim, Emad Aghili, Luca Bombelli

University of Mississippi, Oxford, Mississippi, USA

1:40

O10.11 Gravitational Waves From Ultralight Scalar Field

Richard Brito², Shrobona Ghosh¹, Enrico Barausse³, Emanuele Berti¹, Vitor Cardoso⁴, Irina Dvorkin³, Antoine Klein³, Paolo Pani⁵

¹*University of Mississippi, Oxford, MS, USA*, ²*Max Planck Institute of Gravitational Physics, Potsdam, Golm, Germany*,

³*Institut d'Astrophysique, Sorbonne Universités, Paris, France*, ⁴*CENTRA, Departamento de Fisica, Instituto Superior Tecnico, Lisbon, Portugal*, ⁵*Dipartimento di Fisica, University of Rome, Rome, Italy*

2:00

O10.12 Using Most Probable Path To Find The Dimension Of A Causal Set

Mir Emad Aghili, Luca Bombelli, Benjamin Pilgrim

University of Mississippi, University, MS, USA

2:20

O10.13 Vibrometric Characterization Of A Full-Scale And A Scaled Model Tn-32 Dry Storage Cask For Spent Nuclear Fuel

Kevin Y. Lin^{1,2}, W. Prather², Z. Lu², G. Priyadarshan², J. Mobley^{1,2}, J. Gladden^{1,2}

¹*Department of Physics and Astronomy, University of Mississippi, Oxford, MS, USA*, ²*National Center for Physical Acoustics, Oxford, MS, USA*

2:40

O10.14 Sensitivity Analysis Of Error In Bilayered Three-Point Flexure Test

Jason Griggs

University of Mississippi Medical Center, Jackson, MS, USA

5:00-7:00

Poster Session



P10.01

Hydrodynamics Of Turtle Shells

Gaurav Nag¹, Bryan Robinson²

¹Center for Advanced Vehicular Systems, Starkville, MS, USA, ²Delta Airlines, Atlanta, GA, USA

P10.02

Torque Properties Of Porcine Patellar Tendon

Jasmine Ferrell, Cameron Boswell, Lakeisha Williams

Mississippi State University, Starkville, MS, USA

P10.03

Study Of Elastic Properties Of Thermoelectric SnSe

Ashoka Karunarathne¹, Josh Gladden¹, Gautam Priyadarshan², Pai-Chun Wei³, Yang-Yuan Chen³, Sriparna Bhattacharya⁴, Apparao Rao⁴

¹Department of Physics and Astronomy, University of Mississippi, University, MS, USA, ²National Center for Physical Acoustics, University of Mississippi, University, MS, USA, ³Institute of Physics, Academia Sinica, Taipei, Taiwan,

⁴Department of Physics and Astronomy, Clemson Nanomaterials Institute, Clemson University, Clemson, SC, USA

P10.04

Cyber Security Awardness And Community

Pao-Chiang Yuan¹, Kawandrea Spann², Niwan Fan³

¹Jackson State University, Jackson/Mississippi, USA, ²Jackson State University, Jackson/Mississippi, USA, ³Jackson State University, Jackson/Mississippi, USA

P10.05

Object Identification And Tracking For Autonomous Vehicles Using Computer Vision And Multi-Sensor Decision Fusion

Jon Steele¹, Balakrishna Gokaraju¹, Kyle McLellan¹, Anish Turlapaty³, Raymond Tesiero¹, Rajeev Agrawal²

¹Department of CIST, University of West Alabama, Livingston, Alabama, USA, ²Information Technology Laboratory, ERDC, Vicksburg, MS, USA, ³Department of Electrical and Communications Engineering, International Indian Institute of Technology, Chittoor, INDIA, Madras, Chennai, India

P10.06

Green Synthesis Of Gold Nanoparticle For Biological Sensing

Aysha Evans, Israel Thompson, Yolanda Jones, Sandra Barnes, Anant Singh

Alcorn State University, Lorman, Mississippi 39096, USA

P10.07

Conjugated Gold Nano-Structures For Selective Sensing Of Heavy

April Whitehead, Kiera Bridges, Angela Hairston, Yolanda Jones, Sandra Barnes, Anant Singh

Alcorn State University, 1000 ASU Dr. 780, Lorman MS, USA

P10.08

Intraarticular Drug Therapy With Genipin And Punicalagin To Slow The Progression Of Osteoarthritis

Anna Hinton, Steve Elder

Mississippi State University, Starkville, Mississippi, USA

P10.09

Synthesis And Characterization Of Hybrid Organic Inorganic Perovskites

Kayla Cole¹, Hamidreza Khassaf²

¹Brown University, Providence, RI, USA, ²Tougaloo College, Tougaloo, MS, USA

P10.10

Elucidating Ligand Selective Responses Of Androgen Receptor Through Protein-Ligand Hydrogen-Bonding Contacts



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Pradip Biswas, Raquema Williams
Tougaloo College, Tougaloo, MS, USA

Friday, February 23, 2018
Union A

8:20

O10.15 Amateur Radio For Emergency Communications

HuiRu Shih, Mia Griffin, Taneshia Davenport, Kawandrea Spann
Jackson State University, Jackson, MS 39217, USA

8:40

O10.16 Runway Detection By Unsupervised Classification Techniques Using Uavsar Data

Ramakalavathi Marapareddy, Sowmya Wilson Saripalli
University of Southern Mississippi, Hattiesburg, MS, USA

9:00

O10.17 Achieving The Precision And Accuracy Of Autonomous Vehicles Through Pid And Statics Control Variables

Jonathan B. Steele¹, Balakrishna Gokaraju¹, Kyle Mclellan¹, Adrian D. Doss¹, Samit Bhattacharya²
¹*Department of CIST, University of West Alabama, Livingston, AL, USA*, ²*Department of Computer Science, Fayetteville State University, Fayetteville, AL, USA*

9:20

O10.18 Scaling Of A Non-Linear Schrodinger Equation And Its Application To Multicellular Tumor Growth

Pradip Biswas
Tougaloo College, Tougaloo, MS, USA

9:40

O10.19 Building A Satellite Engineering Program From The Ground-Up

Lokesh Shivakumariah
Mississippi State University, MGCC Campus, Gautier, MS, USA

10:00

Break

10:40

O10.20 Relation Between Hyper-Uniformity And The Static Structure Factor Of Amorphous Silicon

Devilal Dahal¹, Raymond Atta-Fynn², Parthapratim Biswas¹
¹*The University of Southern Mississippi, Hattiesburg, Mississippi, USA*, ²*University of Texas at Arlington, Arlington, Texas, USA*

11:00

O10.21 Surface Enhanced Raman Spectroscopy Of Rh6g At Au-Nano Surface And Application For Biosensing

Aysha Evans, Anant Singh
Alcorn State University, Department of Chemistry & Physics, Lorman, MS, USA

11:20

O10.22 Simulation Of Small-Angle X-Ray Scattering In Amorphous Silicon

Pramod Acharya, Durga Paudel, Parthapratim Biswas
The University of Southern Mississippi, Hattiesburg, MS, USA

11:40

O10.23 Tight-Binding Calculations Of Electronic Density Of States: Applications To Crystalline And Amorphous Solids

Sujan Subedi, Parthapratim Biswas
The University of Southern Mississippi, Hattiesburg, USA



Psychology & Social Sciences

Chair: Gary Chong, Tougaloo College

Vice-Chair: Mehrun Laiju, Tougaloo College

Vice-Chair: Frederick Hunter, Tougaloo College

Thursday, February 22, 2018

Union D

10:30 Panel Discussion: Interdisciplinary Research and Teaching

Gary Chong, Mehrun Laiju, Frederick Hunter, Tougaloo College

Oral Presentations

TCC 227

1:00

O11.01 A Body In Motion: Neurocognitive Profiles And Rural Health

Rodney Wilson

Mississippi State University - Meridian, Meridian, MS, USA

1:15

O11.02 Gateways To Pro-Anorexia And Factors Influencing Continued Engagement: A Pilot Study

Rachel Bravenec, Louwanda Evans, A. Kurt Thaw

Millsaps College, Jackson, MS, USA

1:30

O11.03 Comparative Study Of Dietary Intake, Perception Of Weight Status And Measured Weight Status Of Preschool Children And Parents

Martha Ravola¹, Priscilla Houston²

¹Alcorn State University, Lorman, MS, USA, ²Alcorn State University, Lorman, MS, USA

1:45

O11.04 Use Of Heart Rate Variability Resiliency Training Techniques For The Management Of Stress

Juliette Schweitzer, Taunjah Bell Neasman

Jackson State University, Jackson, MS, USA

2:00

O11.05 Self-Attitudes Among Heterosexual And Sexual Minority Members

Tacangeria Morgan, Gary Chong

Tougaloo College, Tougaloo, MS, USA

2:15

O11.07 Different Types Of Music And Its Effects On Memory Retention

Jasmine Younger, Gary Chong

Tougaloo College, Tougaloo, MS, USA

2:30

Business Meeting

5:00-7:00

Poster Session

P11.01

Cyber Security And Homeland Security: An Evaluation Of The Cyber Security Related Practices Of A Mid-Sized Public Educational Institution



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Alaba Oludare, Christopher Lanclos, Bianca Watkins, Mubarak Ibrahim
Mississippi Valley State University, Itta-Bena, MS, USA

P11.02

At-Risk Youth Summer Camp Programming: The Effects Of Equine Assisted Learning In Relation To Emotional Safety

Mattie Dunlap, Katherine Cagle, Julie Parker
Mississippi State University, Starkville, MS, USA

P11.03

Sex Dependent Effects Of Novel Kappa Agonist, Nalfurafine, On The Analgesic Quality And Abuse Liability Of Oxycodone

Shelley Rae Edwards¹, Hina Qureshi¹, C. Austin Zamarripa², John Yi², Kevin Freeman²
¹*Millsaps College, Jackson, MS, USA*, ²*University Of Mississippi Medical Center, Jackson, MS, USA*

P11.04

Examination Of The Impact Of Classification, Age, Gender, And Collegiate Sport On Anxiety, Depression, And Stress In Student-Athletes

Ronella Gollman, Taunjah Bell Neasman, Myron Gilmore
Jackson State University, Jackson, MS, USA

P11.05

Correlation Between Listening To Certain Types Of Rap Music And Endorsing Specific Psychological Variables

Jesse Anderson, Briana Frizell, Anthony Jones, Garrett Watson, D'Erica Williams, Juliette Schweitzer, Taunjah Bell Neasman
Jackson State University, Jackson, MS, USA

P11.06

Administration Of KRM-II-81, An A-1 Sparing Gaba Receptor Ligand, Exhibits Decreased Respiratory Depressing Effects Compared To Alprazolam

Patrick Davis¹, Sean Duke², Kevin Freeman², Jussara Do Carmo², James Rowlett²
¹*Millsaps College, Jackson, MS, USA*, ²*University of Mississippi Medical Center, Jackson, MS, USA*

P11.07

Attitudes Of African Americans Toward Crime Reporting In Jackson, Mississippi

Sheridan Snell and Meherun Laiju
Tougaloo College, Tougaloo, MS,, USA

P11.08

Using Arcgis To Map Disaster Effects On Mississippi

Danielle Magee, Shanterell Redd, Alex Hopkins, Courtney Mangum, Santanu Banerjee
Tougaloo College, Tougaloo, MS, USA

P11.09

Mate Selection Preferences Among HBCU College Students

Mahalia Crawford, Meherun Laiju
Tougaloo College, Tougaloo, MS, USA

P11.10

Role Of Effective Communication In Disaster Preparedness

Jamille Bryant, Courtney Hill, Madison Bibbs, Deja Boler, Shaila Khan
Tougaloo College, Tougaloo, MS, USA



Mississippi Academy of Sciences, Eighty-Second Annual Meeting
Friday, February 23, 2018
TCC 210

10:00 Workshop: Incorporating Active Learning in the Science Classroom – Methodology Workshop for Teaching

Organizers: Dr. Elizabeth Prewitt, Dr. Virginia Moore, Dr. Amber McCoulough

1:00 Workshop: MS College and Career Readiness Workshop

Organizers: Dr. Jackie Sampsell, Mississippi Department of Education

Science Education

Chair: Elizabeth Prewitt, Blue Mountain College

Vice-Chair: Shana Lee, Mississippi State University

Thursday, February 22, 2018

TCC 210

8:00

O12.01 General Biology Students' Perception Of The Existence Of Global Climate Change

Johnny Mattox

Blue Mountain College, Blue Mountain, MS, USA

8:20

O12.02 Agassiz's Glacial Theory: How A Past Controversy Can Inform Modern Climate Change Discussions

Renee Clary

Mississippi State University, Mississippi State, MS, USA

8:40

O12.03 Career Explorations In The Stem Classroom

Shana Lee, Ryan Walker

Mississippi State University, Starkville, MS, USA

9:00

O12.04 Freshman Biology Majors Knowledge & Perceptions Of Pharmacy Careers

Brooke Lewis, Elizabeth Prewitt

University of Mississippi, University, MS, USA

9:20

Break

9:35

O12.05 Effective Design And Rendering Of Photogrammetric Assets For Virtual Field Trips

Youngwoo Cho, Renee Clary

Mississippi State University, Mississippi State, MS, USA

9:55

O12.06 Changing Students' Perceptions Of The True Nature Of Science

Johnny Mattox¹, Elizabeth Prewitt²

¹Blue Mountain College, Blue Mountain, MS, ²University of Mississippi, University, MS



10:15

O12.07 Impact Of Teacher Professional Development In The Sciences: Variation In Teachers' Content Retention By Scientific Discipline

Renee Clary¹, Anastasia Elder¹, James Dunne¹, Svein Saebo¹, Debbie Beard¹, Charles Wax¹, Joshua Winter¹, Deborah Tucker²

¹Mississippi State University, Mississippi State, MS, USA, ²Independent Science Education Consultant, Nappa, CA, USA

10:35

O12.07 Active Learning's Impact On Underprepared Students

James Gerald

Delta State University, Cleveland, MS, USA

10:55

O12.08 The Skit Benefit: The Impact Of Role Playing In An Introductory Undergraduate Biology Course

Jada Mills

Itawamba Community College, Fulton, MS, USA

11:15

O12.09 The Science-Humanities Interface At An Academic Health Science Center

Anna Grace Stout, Mary Elizabeth Butts, Amanitare Bailey, Caroline Compretta, Ralph Didlake

University of MS Medical Center, Jackson, MS, USA

11:35

Science Education Business Meeting

12:00

General Session

2:00-3:00

STEMI Workshop

5:00-7:00

Poster Session

P12.01

Reviewing The Impact Of Educational Technologies As It Relates To Virtual Laboratories: A Meta Analysis

Shavonda McDaniel¹

¹Alcorn State University, Lorman, MS, USA, ²The University of Southern Mississippi, Hattiesburg, MS, USA

P12.02

Curriculum Enhancement Of The Environmental Health Program At Mississippi Valley State University - Experiential Investigations Of Nanotoxicity In Chlamydomonas Reinhardtii

Mark Dugo, Grace Adegoye, Abigail Newsome, Ariel Jackson

Mississippi Valley State University, Itta Bena, MS, USA

P12.03

Exploration Of Experiential Stem Education Programs In Mississippi And Their Use In Mississippi Public Schools

Randi Robison

Mississippi State University, Starkville, MS, USA

P12.04

Effective Design And Rendering Of Photogrammetric Assets For Virtual Field Trips

Youngwoo Cho, Renee Clary

Mississippi State University, Mississippi State, MS, USA

“MHC class I polypeptide-related sequence A (MICA) as a Biological Determinant of Race Disparities in Prostate Cancer”

Authors: Krista Syrigos¹, Marcelo Sakiyama^{2,7}, Deepak Kumar⁵, Ingrid Espinoza^{3,5}, Amit Reddy², Eldrin Bhanat^{4,5}, Xinchun Zhou², Roya Gordji⁶, Christian Gomez^{2,4,6}



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

Mississippi INBRE Research Scholar¹. Departments of ²Pathology, ³Preventive Medicine, ⁴Radiation Oncology, ⁵Cancer Institute, ⁶School of Medicine. University of Mississippi Medical Center, Jackson, MS. ⁷CAPES Foundation, Ministry of Education of Brazil, Brasília, DF, Brazil.

Friday, February 23, 2018

TCC 210

8:00

O12.11 Training Graduate Students For Teaching Biology Labs: Including Active Learning Strategies

Sarah Lanier

Mississippi State University, Starkville, MS, USA

8:20

O12.12 Sharing A Small World: Introducing Pre-Service Teachers To Activities On People And The Environment

Virginia Moore

University of Mississippi, Oxford, MS, USA

8:40

O12.13 Escape Rooms In Science Education

Elizabeth Prewitt

University of Mississippi, Oxford, MS, USA

9:00

O12.14 Using The 5e Model Of Instruction To Bring Out The Science Behind Doing A Problem Based Challenge

Joe Sumrall¹, Kelle Sumrall²

¹University of Mississippi, University, MS, USA, ²Lafayette Middle School, Oxford, MS, USA

9:20

O12.15 The Lost Art Of Inquiry-Abstract

Elizabeth Martin¹, Chelsea Barber²

¹Mississippi State University, Starkville, MS, USA, ²Shannon High School, Shannon, MS, USA

9:40

Break

10:00

Workshop: Incorporating Active Learning in the Science Classroom

Dr. Elizabeth Prewitt, Dr. Virginia Moore, Dr. Amber McCoulough

1:00

Workshop: MS College and Career Readiness Workshop

Dr. Jackie Sampsell, Mississippi Department of Education



Zoology

Chair: Alex Acholonu, Alcorn State University

Vice-Chair: Julius Ikenga, Mississippi Valley State University

Thursday, February 22, 2018

TCC 228

8:50 **Welcome**

9:00

O13.01 Comparing Metabolic Rates Of *Puntigrus Tetrazona*, Tiger Barb (*Characiformes: Characidae*) And *Hyphessobrycon Eques*, Serpae Tetra (*Cypriniformes: Cyprinidae*) At 21-22o C.

Amber Haymer, Julius Ikenga

Mississippi Valley State University, Itta Bena, MS, USA

9:15

O13.02 Pool Level Reduction Simulations On The Feeding And Conspecific Behavior Of *Phylloicus Pulchrus* (*Trichoptera: Calamoceratidae*) From A Tropical Rainforest Stream

Limarie Reyes-Torres¹, Alonso Ramírez²

¹University of Southern Mississippi, Hattiesburg, MS, USA, ²University of Puerto Rico, Río Piedras, USA

9:30

O13.03 Water Quality Studies On Otamiri River In Egbu, Imo State, Nigeria

Alex D. W. Acholonu

Alcorn State University, Lorman, MS, USA

9:45

O13.04 Comparison Of Water Quality Of Lower Mississippi River In Port Gibson, Ms And Otamiri River In Egbu, Imo State, Nigeria

Alex D. W. Acholonu, Stephanie Austin, Ashley Bonds, Katlyn James, Sharkiesha Jackson

Alcorn State University, Lorman, MS, USA

10:00

O13.05 Infection Of *Ixodes Scalpularis* By An Artificial Membrane Feeding System

Latoyia Downs, Shahid Karim

University of Southern Mississippi, Hattiesburg, MS, USA

10:15

O13.06 Fungi Inhabiting Young Stems Of Standing Loblolly Pine (*Pinus Taeda*) In Kemper County, Mississippi

Frank Mrema, Vennessa Valentine, Franklin Chukwuma, Leonard Kibet, Alex D. W. Acholonu

Alcorn State University, Lorman, USA

10:30 **Break**

11:00

O13.07 Recent Additions And Developments In The Mississippi Entomological Museum

Ryan Whitehouse, Terence Schiefer, Richard Brown, JoVonn Hill

Mississippi State University, Mississippi State, MS, USA

11:15

O13.08 Can Trees Influence Mosquito Populations? Effects Of Acorns On *Aedes* Performance

Rachel Rogers, Donald Yee

The University of Southern Mississippi, Hattiesburg, MS, USA



11:30

O13.09 Stoichiometric Differences In The Mosquito Species *Aedes Aegypti*: Effects Of Detritus Environments Across Body Parts

Catherine Dean, Rachel Rogers, Donald Yee

The University of Southern Mississippi, Hattiesburg, MS, USA

11:45

O13.10 Tick-Pathogen Interaction: Connecting The Dots Between Innate Immunity And Redox Signaling Pathways.

Faizan Tahir, Shahid Karim

The University of Southern Mississippi, Hattiesburg, MS, USA

12:00-1:00

Lunch

1:00

O13.11 An Overlooked Cryptic Habitat- Oviposition Preference, Larval Survival, And Development Of The Asian Tiger Mosquito In Household Downspout Extensions

Joseph Nelsen, Donald Yee, Hunter Deerman, Taylor Price

University of Southern Mississippi, Hattiesburg, MS, USA

1:15

O13.12 Occurrence Of Flour Beetle (*Tribolium* Sp(Insecta;Terebrionidae) In Pancake Mix Marketed By One Of The Supermarkets In Vicksburg, Ms

Alex D. W. Acholonu

Alcorn State University, Lorman, MS, USA

1:30

O13.13 A Preliminary Study On The Impact Of Hybrid Biological Laboratories On College Students' Achievements, Aptitudes, And Attitudes

Shavonda McDaniel

Alcorn State University, Lorman, MS, USA

1:45

O13.14 On Disturbances: Aquatic Insect Recolonization Of *Heliconia* Systems In Puerto Rico

Jaclyn Everly, Donald Yee

University of Southern Mississippi, Hattiesburg, MS, USA

2:00

O13.15 Trends In The Prevalence Of Hiv/Aids In The State Of Mississippi: A Five Year Review

Alex Acholonu

Alcorn State University, Lorman, MS, USA

2:15

O13.16 The Effects Of Population Densities And Tree Canopy On Mosquito Abundance And Species Richness Across Southern Mississippi

Nicole Mackey, Catherine Dean, Donald Yee

University of Southern Mississippi, Hattiesburg, MS, USA

2:30

O13.17 Characterizing Water Quality In Southwest Mississippi Watershed

Leonard Kibet, Emary Smith, Lee Jones, Jacqueline McComb, Frank Mrema, Girish Panicker, Alex D. W. Acholonu

Alcorn State University, Lorman, MS, USA



Mississippi Academy of Sciences, Eighty-Second Annual Meeting

2:45

O13.18 Egg Laying Male Has Androgynous Song System And Plumage Coloration

John Aaron Howell¹, Richard Buchholz², Lainy Day²

¹Mississippi INBRE Research Scholar, MS, USA, ²University of Mississippi, Oxford, MS, USA

3:00-3:15

Divisional Meeting

5:00-7:00

Poster Session

P13.01

Freshwater Resources: A Critical Factor In The Sustenance Of Human Health And Global Ecosystem

M. S. Zaman, Robert C. Sizemore

Alcorn State University, Lorman, MS, USA

P13.02

Do Squalene-Containing Vaccines Result In The Production Of Potentially Harmful Anti-Squalene Antibodies?

Robert C. Sizemore, M. S. Zaman

Alcorn State University, Lorman, MS, USA

P13.03

A Preliminary Study On The Impact Of Hybrid Biological Laboratories On College Students' Achievements, Aptitudes, And Attitudes

Shavonda McDaniel

Alcorn State University, Lorman, MS, USA

P13.04

Endemic And Protected Honey Plants In Mississippi

Elena Kostyleva

Alcorn State University, Lorman, MS, USA

P13.05

The Functional Role Of *Amblyomma Maculatum* Innate Immunity Genes In The Regulation Of Tick Pathobiome

Kenneth Boucher, Faizan Tahir, Shahid Karim

The University of Southern Mississippi, Hattiesburg, MS, USA

P13.06

Surface Microbiota Of Fish Pectoral, Dorsal, And Caudal Fins

Leah Bowlin, Angela Whittom Reiken, Theodore Snazelle

Mississippi College, Clinton, MS, USA

P13.07

A Survey Of Mississippi Mosquitoes' Feeding Patterns And Their Relation To Malaria Parasites.

Jessica Aycock, Jerome Goddard, Diana Outlaw

Mississippi State University, Mississippi State, MS, USA

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