

The background of the entire page is a grayscale photograph of several thick books stacked on top of each other, creating a sense of depth and texture. The books are slightly out of focus, emphasizing the text in the foreground.

# ugs

UNDERGRADUATE SYMPOSIUM  
ON RESEARCH AND  
CREATIVE ACTIVITY 2025



THE UNIVERSITY OF  
SOUTHERN MISSISSIPPI®

# SCHEDULE OF EVENTS

## Saturday April 26, Scianna Hall

|                   |   |
|-------------------|---|
| 7:30 a.m.         | Registration Opens  |
| 8:30-9:45 a.m.    | Concurrent Panels Session I   |
| 10-11:15 a.m.     | Concurrent Panels Session II  |
| 11:30 a.m.-1 p.m. | Lunch and Keynote Address, Trent Lott Center<br>Keynote Speaker: <b>AMY DONHAUSER</b><br>Director of Global Programs at We Care Solar |
| 1-2:30 p.m.       | Poster Presentations  |
| 2:30-3:30 p.m.    | Concurrent Panels Session III   |
| 3:45-4:45 p.m.    | Arts Showcase (Scianna Hall Auditorium)   |
| 5 p.m.            | Awards Ceremony (Scianna Hall Auditorium)   |

# ABOUT THE SYMPOSIUM AND ITS BENEFACTOR



The Symposium began as an annual event in the Department of History under the direction of Dr. Phyllis Jestice. In 2011, Southern Miss alumnus Donald Drapeau began sponsoring a series of awards for student presenters, and the next year, the Symposium was expanded to include students from across campus. The Undergraduate Symposium on Research and Creative Activity has grown since that time to include a keynote address, an arts showcase, and well over 100 oral and poster presentations.

**DONALD DRAPEAU**, the Symposium's generous benefactor, completed his Bachelor of Science in history at Southern Miss before going on to earn a master's degree at the University of Pennsylvania. He has enjoyed great success as founder and chief executive officer

of the Man-Drapeau group of companies, which employs financial engineers and maintains offices on multiple continents. In the 1970s, he founded Drapeau and Co. and became a member of the Chicago Mercantile Exchange.

A Fulbright Fellow in Belgium and a Kress Fellow at the Harvard Business School, Mr. Drapeau is a passionate advocate of undergraduate students at Southern Miss and enjoys the opportunity to foster their sense of initiative, personal drive, and lifelong commitment to education and personal growth. His passion has led not only to his sponsorship of the prizes at the Symposium, but also to his support for Drapeau Summer Research and Eagle SPUR Grants, which provide support for students' research and creative projects. In 2016, Mr. Drapeau announced a gift to Southern Miss that resulted in the renaming of the Center for Undergraduate Research to the Drapeau Center for Undergraduate Research. In 2019, he was inducted in the Southern Miss Alumni Hall of Fame.

The Symposium could not exist without Mr. Drapeau, whose desire to expand research opportunities for undergraduates has driven this enterprise and has shaped the lives of hundreds of Southern Miss students. We thank him for his commitment and generosity

# ABOUT OUR KEYNOTE SPEAKER



**AMY DONHAUSER** received her BA in international studies and French from The University of Southern Mississippi, and she is a Southern Miss Honors College graduate who went on to receive her MA in international relations from Tufts University.

Currently, Amy is the director of global programs at We Care Solar, where she leads a diverse team across six countries to deliver energy solutions to remote healthcare facilities. In this role, she drives the organization's five-year strategic direction and builds impactful coalitions to ensure that healthcare workers and patients across the world have access to reliable electricity. Amy and her team lead initiatives that have long-lasting, transformative effects for both healthcare providers and the communities they serve.

Early in her career, Amy served with the U.S. Peace Corps in Senegal, where she led projects focused on food security and environmental sustainability in rural communities. She went on to work with the U.S. Agency for International Development (USAID) and then the International Organization for Migration (IOM). Amy helped establish programs that addressed migration policy, humanitarian assistance and human trafficking. She successfully launched IOM offices in Madagascar and Malawi, secured key USAID funding, and facilitated the development of MigApp, a mobile application designed to assist migrants. Amy is a passionate advocate for collaborative approaches to global challenges.

# ABOUT OUR HOSTS



## DRAPEAU CENTER FOR UNDERGRADUATE RESEARCH

### THE DRAPEAU CENTER FOR UNDERGRADUATE RESEARCH

(DCUR) was established in October 2011, assuming the name of its benefactor, Donald Drapeau, in 2016. The mission of the center is to enhance the undergraduate experience by promoting and supporting student-faculty collaborations in research, creative projects, and scholarship. The benefits of active participation in faculty-mentored research are myriad both to the student experience and the university community at large.

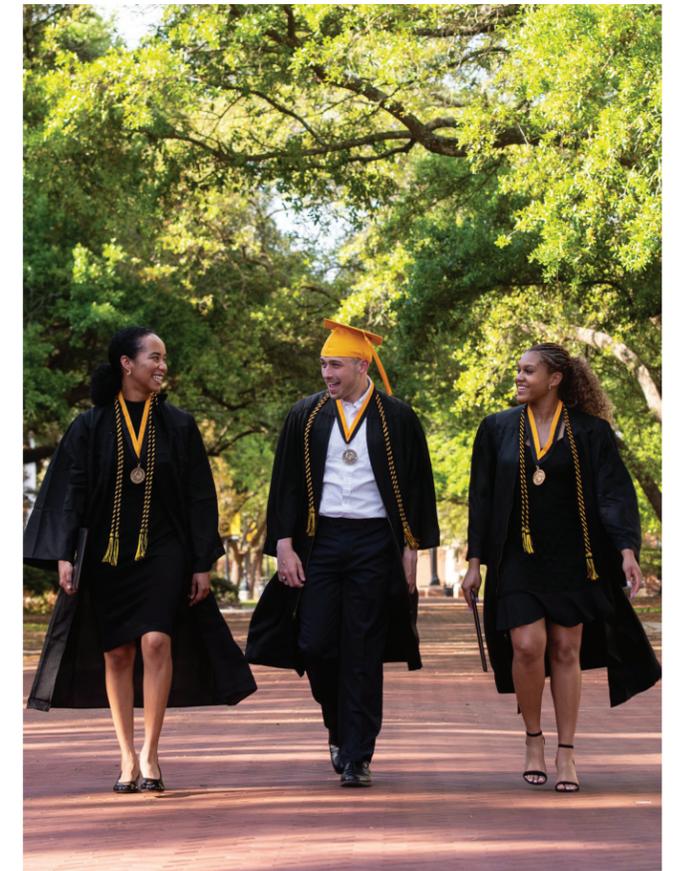


DCUR works with undergraduate students to identify potential faculty mentors and sponsors competitive programs to assist students in their independent scholarship activities. These include the Eagle Scholars Program for Undergraduate Research (Eagle SPUR), which provides funds to support travel, to purchase equipment and supplies, and/or to be used as a stipend, and the Drapeau Summer Research Grants, which allow students to work full-time on their projects during the summer. You may learn more about these programs at [usm.edu/undergraduate-research/drapeau-center.php](http://usm.edu/undergraduate-research/drapeau-center.php).

## THE UNIVERSITY OF SOUTHERN MISSISSIPPI *HONORS COLLEGE*

The first honors college in Mississippi and one of the oldest in the nation, the Southern Miss Honors College was founded in 1976 in an effort to offer enhanced educational experiences for high-achieving students. From its founding, the Honors College has required every student to undertake original research in the form of an Honors thesis, making the college a fitting host for the Undergraduate Symposium.

Through a supportive and challenging intellectual community and by valuing engaged and active learning, the college encourages its students to seize opportunities and boldly determine their own paths—both at the university and beyond. Upon graduation, Honors Scholars have the independence and confidence to pursue their passions, the knowledge and tools with which to chart a fulfilling future course, and a lifelong commitment to using their capacities for the public good. For more information about the Honors College, visit [usm.edu/honors](http://usm.edu/honors) or contact us at [honors@usm.edu](mailto:honors@usm.edu).



# THANK YOU!

## THE 2025 SYMPOSIUM PLANNING COMMITTEE

This year's Symposium was organized and developed through the hard work of a university-wide committee, which met throughout the 2024-25 academic year to put this event together. These faculty and staff members gave of their time and energy so that students and faculty could enjoy a successful Symposium. Thanks to all of them for their service!

**Dr. Laurie Benvenuti Sutphin**, HONORS COLLEGE

**Dr. Katja Biswas**, SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

**Dr. Jennifer Brewington**, SCHOOL OF HUMANITIES

**Dr. Allen Chen**, SCHOOL OF PERFORMING AND VISUAL ARTS

**Dr. Nicholas Ciraldo**, SCHOOL OF MUSIC

**Dr. Jeremy Deans**, SCHOOL OF BIOLOGICAL, ENVIRONMENTAL AND EARTH SCIENCES

**Dr. Sabine Heinhorst**, DRAPEAU CENTER FOR UNDERGRADUATE RESEARCH

**Ms. Jaide Hollingsworth**, HONORS COLLEGE

**Mr. Jared Hollingsworth**, SCHOOL OF MEDIA AND COMMUNICATION

**Dr. Joyce Inman**, HONORS COLLEGE

**Ms. Brianna Jahn**, SCHOOL OF PERFORMING AND VISUAL ARTS

**Ms. Tegi Jenkins-Rimmer**, OFFICE OF THE VICE PRESIDENT FOR RESEARCH

**Dr. Elena Stepanova**, SCHOOL OF PSYCHOLOGY

**Dr. Joanne Tran**, SCHOOL OF MARKETING

**Dr. Rebecca Tuuri**, HONORS COLLEGE

**Dr. Alexandra Valint**, SCHOOL OF HUMANITIES

**Ms. Cyndi Wyles**, OFFICE OF THE VICE PRESIDENT FOR RESEARCH

THE SYMPOSIUM TAKES A GREAT DEAL OF PLANNING AND SUPPORT, AND WE WANT TO THANK ALL OF THOSE WHO HAVE CONTRIBUTED TO THE EVENT!

## FACULTY JUDGES

We are grateful to the following Southern Miss faculty members for volunteering their time and energy to the UGS.

**Mac Alford**, BIOLOGICAL SCIENCES

**Dale Autry**, UNIVERSITY LIBRARIES

**Kaitlin Baudier**, BIOLOGICAL SCIENCES

**Alyssa Belgiovine**, HEALTH PROFESSIONS

**Katja Biswas**, PHYSICS

**Hali Black**, UNIVERSITY LIBRARIES

**Kelsey Bonfils**, PSYCHOLOGY

**Jennifer Brewington**, ENGLISH

**Alyson Brink**, PALEONTOLOGY

**Heather Broadhead**, POLYMER SCIENCE

**Nikki Camlin**, BIOLOGICAL SCIENCES

**Gordon Cannon**, BIOCHEMISTRY

**Matthew Casey**, HISTORY

**Nicholas Ciraldo**, MUSIC

**Tristan Clemons**, POLYMER SCIENCE

**Kate Cochran**, ENGLISH

**Stacy Creel**, LIBRARY AND INFORMATION SCIENCE

**Nakita Davis**, HEALTH PROFESSIONS

**Jeremy Deans**, GEOLOGY

**Lila de Tantillo**, NURSING

**Ali Dogru**, MANAGEMENT

**Matt Donahue**, CHEMISTRY

**Elif Filiz**, ECONOMICS

**Qingguang Guan**, MATHEMATICS

**Melissa Gutierrez**, BIOLOGICAL SCIENCES

**Timothy Gutmann**, PHILOSOPHY

**Leila Hamdan**, MICROBIOLOGY

**Bridget Hayden**, ANTHROPOLOGY

**Sabine Heinhorst**, BIOCHEMISTRY

**Shohreh Hemmati**, CHEMICAL ENGINEERING

**Jeff Hirschy**, LIBRARY AND INFORMATION SCIENCE

**Andrew Huebert**, PSYCHOLOGY

**Mark Huff**, PSYCHOLOGY

**Luis Iglesias**, ENGLISH

**Joyce Inman**, ENGLISH

**Brianna Jahn**, DANCE

**Shahid Karim**, BIOLOGICAL SCIENCES

**Erica Kennedy**, RESEARCH ADMINISTRATION

**Matthew Kennedy**, MOLECULAR BIOLOGY

**Hyunmin Kim**, PUBLIC HEALTH

**Melissa Kossman**, REHABILITATION SCIENCES

**Brian LaPierre**, HISTORY

**Robert Leaf**, FISHERIES

**Kelly Ferris Lester**, DANCE

**Ujunwa Madububa Mbachu**, COMPUTER SCIENCE

**Alexandre Marques**, BIOLOGICAL SCIENCES

**Ashley Marshall**, LIBRARY AND INFORMATION SCIENCE

**Jose Martinez Cruz**, COMPUTER SCIENCE

**Katya Maslakowski**, HISTORY

**Douglas Masterson**, CHEMISTRY

**Michelle McLeese**, SOCIOLOGY

**Marcus Michels**, VISUAL ARTS

**Gero Nootz**, OCEAN ENGINEERING

**Derek Patton**, POLYMER SCIENCE

**Julie Pigza**, CHEMISTRY

**Margaret Powell**, PSYCHOLOGY

**Bob Press**, POLITICAL SCIENCE

**Nick Rahimi**, COMPUTER SCIENCE

**Aaron Ridall**, MARINE BIOLOGY

**Ramesh Rijal**, BIOLOGICAL SCIENCES

**Maureen Ryan**, ENGLISH

**Bernd Schroeder**, MATHEMATICS

**Partha Sengupta**, COMPUTER SCIENCE

**Ahmed Sherif**, COMPUTER SCIENCE

**Kayla Stan**, GEOGRAPHY

**Elena Stepanova**, PSYCHOLOGY

**Alexis Stoner**, MARKETING

**Kevin Stott**, CHILD AND FAMILY SCIENCES

**Richard Swearingen**, FORENSIC SCIENCE

**Haiyan Tian**, MATHEMATICS

**Joanne Tran**, MARKETING

**Rebecca Tuuri**, HISTORY

**Alexandra Valint**, ENGLISH

**Jessica Valles**, SOCIOLOGY

**Kelly Vera**, BIOLOGICAL SCIENCES

**Amanda Walsh**, COMMUNICATION

**Wei Wang**, MARKETING

**Hao Xu**, BIOLOGICAL SCIENCES

**Sharon Young**, ANTHROPOLOGY

**Tisha Zelner**, UNIVERSITY LIBRARIES

# THANK YOU

## OUR CAMPUS SPONSORS

We would like to extend a special thank you to the College of Business and Economic Development for opening the doors of Scianna Hall to the Symposium, and to these sponsors for their generous support.

- |   |   |
|---|---|
| Vice President for Research                                     | College of Nursing and Health Professions |
| Vice President for Student Affairs<br>and Enrollment Management | Graduate School                           |
| College of Arts and Sciences                                    | University Libraries                      |
| College of Business and Economic Development                    | Southern Miss Alumni Association          |
| College of Education and Human Sciences                         | Barnes & Noble                            |

We'd like to extend a special thank you to these donors for their kind support of our student scholars.



Best Presentation on a Biomedical Topic  
Loan of easels and boards



The Virginia Culpepper Award



Best Community-Engaged  
Research or Creative Activity



The Women's and Gender Studies Prize



THE SYMPOSIUM TAKES A GREAT DEAL OF PLANNING AND SUPPORT, AND WE WANT TO THANK ALL THOSE WHO HAVE CONTRIBUTED TO THE EVENT!

## OUR COMMUNITY SPONSORS

Please help us thank our local sponsors by letting them know that Hattiesburg appreciates their support of student achievement at Southern Miss!



### SPECIAL THANKS

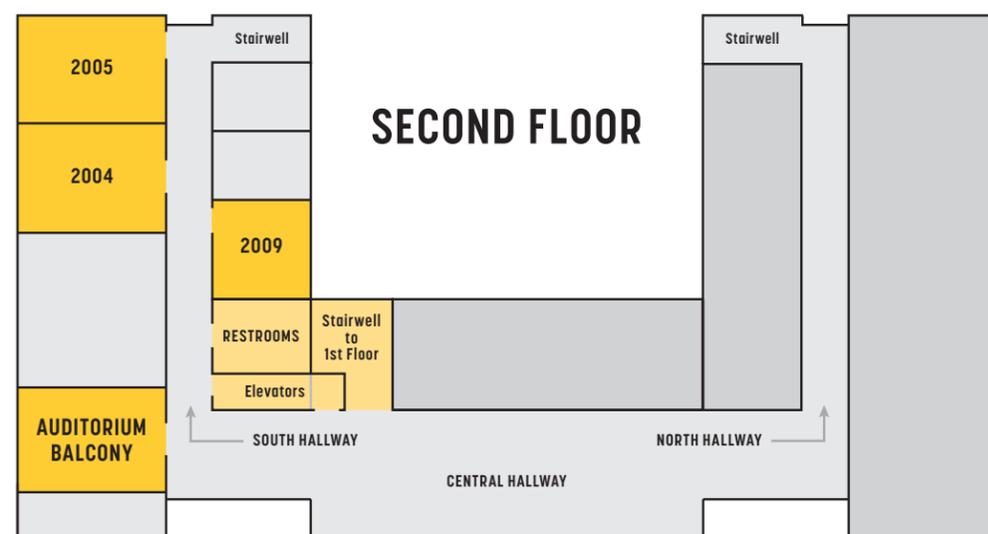
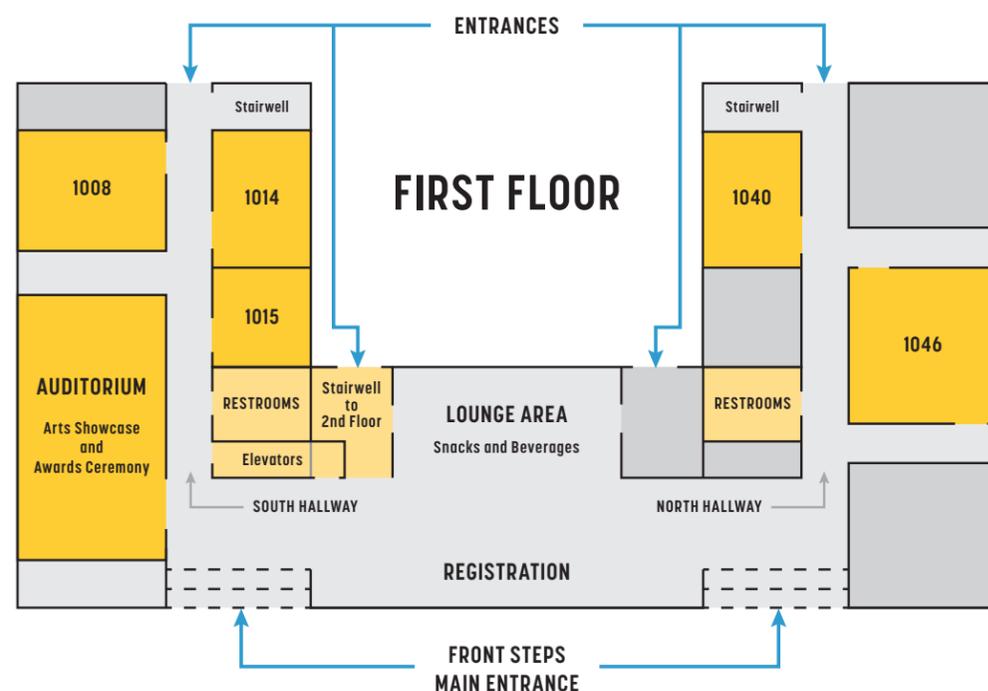
to American Graphics for their especially generous support!



# SCIANNA HALL

# SCHEDULE OF SESSIONS

## SATURDAY, APRIL 26



## 8:30-9:45 A.M. CONCURRENT PANELS SESSION I

### SCI 1008 IMPROVING EDUCATIONAL OUTCOMES A

MODERATOR: MCKENZIE GUNTER, SCHOOL OF PSYCHOLOGY

Filipino Music in the Sphere of Multicultural Music Education: A Survey of Preservice Teachers

LAUREN JOHNSON, MUSIC EDUCATION (INSTRUMENTAL LICENSURE)

Using WebMO to Introduce Computational Chemistry at USM

SADIE PITRE, CHEMISTRY (ACS-CERTIFIED CHEMISTRY)

### SCI 1014 ART AS PRACTICE: REFLECTIONS ON CREATIVE WORK B

MODERATOR: CASANDRA O'ROURKE, SCHOOL OF PSYCHOLOGY

Finding a Choreographic Relationship Between Music and Dance Performance

GRACE DUGAS, DANCE (PERFORMANCE AND CHOREOGRAPHY)

"If I Be Waspish, Best Beware My Sting": Women's Role in Stage Combat

KYLIE PRICE, THEATRE (ACTING)

Chemistry of Crystal Glazes

KAYLA BEELES, ART (SCULPTURE)

Middle Eastern - A Poem

HASAN BUKHARI, COMPUTER SCIENCE

### SCI 1015 CHEMICAL SYNTHESIS AND CHARACTERIZATION C

MODERATOR: LEAH CASE, SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

High-Yield, Environmentally Friendly and Sustainable Synthesis of Silver Nanowires Using Tannic Acid and Their Application in Conductive Ink Preparation: Economic Analysis and Rheological Investigation

FINLEY NEAL, CHEMISTRY (ACS-CERTIFIED CHEMISTRY)

The Synthesis and Testing of Halofuginone Derivatives for the Treatment of Tick-Borne Diseases

ABIGAIL TAYLOR, CHEMISTRY (BIOCHEMISTRY)

The Effect of a Targeting Ligand on Transfection Efficiency of Polymeric Nanoparticles to Dendritic Cells

ANTHONY RADKA, POLYMER SCIENCE AND ENGINEERING

### SCI 1040 DATA SCIENCE D

MODERATOR: ANIL KATWAL, SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

Predicting COPD Risk from PFAS Exposure Using Machine Learning Models

BIPUL ADHIKARI, COMPUTER SCIENCE, MATHEMATICS

Model Order Reduction by Deep Neural Network for the Continuous-Time Markov Chain Model

LUKE FONTAN, MATHEMATICS

Heuristical Comparison of Vision Transformers Against Convolutional Neural Networks for Semantic

Segmentation on Remote Sensing Imagery

ASHIM DAHAL, COMPUTER SCIENCE

Adversarial Machine Learning for Robust Password Strength Estimation

PAPPU JHA, COMPUTER SCIENCE

HANZLA HAMID, COMPUTER SCIENCE

### SCI 2004 SPACE, CULTURAL DISLOCATION AND VIOLENCE E

MODERATOR: BRIDGET O'NEIL, SCHOOL OF PSYCHOLOGY

Aesthetic Violence in *Anthology of the Killer*

OLIVIA PIERCE, ENGLISH

The Erosion of Authenticity in a Post-COVID Culture as Seen Through Lorenzo Redaelli's *Mediterranean Inferno*

LEE JOHNSON, ENGLISH (ENGLISH EDUCATION)

Spatiality to Psychogeography

BILLIE MOORE, ENGLISH (ENGLISH EDUCATION)

**SCI 2005 MATHEMATICAL SOLUTIONS F**

MODERATOR: PEYTON CHAMPION, SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

Ghost-Point Enhanced Meshless Methods for Solving Eigenvalue Problems

BIMARSH BHUSAL, MATHEMATICS (MATHEMATICS EDUCATION)

An Enhanced Localized Method of Approximate Particular Solutions (LMAPS) for Solving Two-Dimensional Incompressible Navier–Stokes Equations

NIRUPAM KHANAL, MATHEMATICS, PHYSICS

GUNJAN SAH, MATHEMATICS, COMPUTER SCIENCE

Asymmetric Differentiation in Quasi-Metric Spaces

PRAJWAL NEUPANE, MATHEMATICS, PHILOSOPHY

There Are 88 Advance Paths That Allow a Knighted Pawn's Tour

MORGAN WILSON, MATHEMATICS

**SCI 2009 HISTORICAL MEMORY G**

MODERATOR: ARELI OROZCO, SCHOOL OF PSYCHOLOGY

Southern Punk: Hattiesburg's Music Scene, 1980-99

TYLER SPERRY, ANTHROPOLOGY, HISTORY

Brian Epstein, The Beatles and a Quick Buck: Evaluating the Reliability of Autobiographies in the Face of Queer Scandal

PIERRE BOMHOLD, ANTHROPOLOGY

"Sel All You Can Spare": The Economic Hardships of Families in the Confederacy Through the Eyes of the Belchers

GRACE CHANDLER, HISTORY (SOCIAL STUDIES EDUCATION)

**10-11:15 A.M. CONCURRENT PANELS SESSION II****SCI 1008 CYBERSECURITY AND PRIVACY H**

MODERATOR: CLYDE RAIBLE, SCHOOL OF PSYCHOLOGY

Key-Based Authentication Scheme for Drones Using Chaotic Maps

SAMIR BHATTARAI, COMPUTER ENGINEERING

Examining the Implementation and Effectiveness of the Oculus Permissions Framework

SUVI LAMA, COMPUTER SCIENCE, SOCIOLOGY

Higher Education Cybersecurity: A Vulnerability Assessment of the U.S. South's Institutional Websites

VIVI VO, COMPUTER SCIENCE

Insider Threat Detection Using Principal Component Analysis

SURAMYA ANGDEMBAY, COMPUTER SCIENCE, MATHEMATICS

**SCI 1014 BLACK BEAUTY, CULTURE AND APPROPRIATION I**

MODERATOR: KAMERON YATES, SCHOOL OF PSYCHOLOGY

The Politics of Beauty: Black Hair and the Fight for Identity, Respect and Empowerment

ASHLYNN STEINER, HISTORY

Grills: How Jewelry Marks the Progression of Cultural Appropriation

JASMINE BARNER, ART

**SCI 1015 EXPLORING MOLECULAR MECHANISMS IN BIOLOGY J**

MODERATOR: KAREN ROBLES LOPEZ, SCHOOL OF BIOLOGICAL, ENVIRONMENTAL AND EARTH SCIENCES

Transcriptional Analysis of Inflammatory Responses of Mouse Trophoblast Stem Cells to Interferon Gamma

ARNAZ MARYAM TARIQ, BIOLOGICAL SCIENCES (MICROBIOLOGY)

Exploring Immune Mechanisms and Vaccine Potential of Qb-Tc85pep in Chagas Disease Pathogenesis

SYED MOHAMMED ASHFAQUE UDDIN, BIOLOGICAL SCIENCES (MICROBIOLOGY)

Mouse Trophoblast Stem Cells Are Deficient in the TNF- $\alpha$ -Activated NF- $\kappa$ B Signaling Pathway and Inflammatory Response

YESEUL BAE, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)

Investigation of the Molecular Basis of Growth Defects in Yeast Cells Containing Overexpressed NIPP1

NETA NNABUENYI, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)

**SCI 1040 EXPLORING OUR ENVIRONMENT K**

MODERATOR: GABRIEL HESKETH, SCHOOL OF OCEAN SCIENCE AND ENGINEERING

A Comparison of Evaporation Effects on Groundwater and Open Water Isotope Ratios

DEVIN SCHNEIDER, MARINE SCIENCE

Carbonate and Serpentine Vein Growth Related to Extension and Hydration of the Oceanic Lithosphere, Atlantis Massif, Mid-Atlantic Ridge

LYNDSEY TUTOR, GEOLOGY

PAYTON TOWNSEND, GEOLOGY

From Wildfires to Oceans: Exploring the Link Between Aerosols and Algal Blooms

AYDEN KING, OCEAN ENGINEERING

Forensic Search Methods: Comparing Effectiveness and Efficiency in Grassland Environment

ROBERT BROWN II, FORENSICS (CRIMINAL JUSTICE)

**SCI 2004 VERTEBRATES, INVERTEBRATES AND THEIR HABITATS L**

MODERATOR: MUSA RABIU, SCHOOL OF BIOLOGICAL, ENVIRONMENTAL AND EARTH SCIENCES

Tree Size and Species as Factors in Nest Site Choice of Trap-Jaw Ant *Odontomachus haematodus*

CAROLINE MARLEY, BIOLOGICAL SCIENCES

Habitat Analysis of the Smalltooth Sawfish (*Pristis pectinata*) Along the Coast of the Gulf of Mexico

HANNAH PARKER, BIOLOGICAL SCIENCES

Contrasting the Distribution of Aquatic Macroinvertebrates in Relation to a River Impediment

NATALIE SANTIAGO, MARINE BIOLOGY

**SCI 2005 NOVEL ENVIRONMENTAL TECHNIQUES AND DEVICES M**

MODERATOR: KRISTIN ROBINSON, SCHOOL OF BIOLOGICAL, ENVIRONMENTAL AND EARTH SCIENCES

Gentle, Soft Robotic Gripper for Safe Handling of Marine Life

GAVIN FRIEND, OCEAN ENGINEERING

Cellular Telemetry for Real-Time River Flow Velocity Data from Fluvial Acoustic Tomography Loggers

JOSHUA SEYMOUR, OCEAN ENGINEERING

Secure and Privacy-Aware AI-Based Agricultural Monitoring Using Internet of Drones

BEN HOSSAIN, COMPUTER SCIENCE

Using Terrestrial Laser Scanning to Evaluate the Impacts of Forestry Management Practices on the Understory

Complexity of a Longleaf Pine Savanna in Southern Mississippi

NOAH WILLIAMSON, BIOLOGICAL SCIENCES (CONSERVATION BIOLOGY), GEOGRAPHY

**SCI 2009 RELIGION, VIRTUE AND HUMAN BEHAVIOR N**

MODERATOR: SPENCER SHUMATE, SCHOOL OF PSYCHOLOGY

Judgement and Doom: Apocalyptic Anxiety and Rhetoric in Anglo-Saxon England

LAUREN COGLAN, HISTORY

Where God Meets Mother Earth: Spirituality and Its Impact on Environmental Stewardship

MATTIE SPEARS, ENGLISH (ENGLISH EDUCATION)

Political Virtues and Non-Ideal Theory

JACOB SLOAT, PHILOSOPHY

**1-2:30 P.M. POSTER PRESENTATIONS****SCI FIRST FLOOR, NORTH HALLWAY**

- Identifying Novel Cytotoxic Mycobacteriophage Xavia Genes 1–23 with Antibacterial Potential Against *Mycobacterium smegmatis*  
ABIGAIL BROOKS, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
HAYLEY WHITE, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
MADELYN FUTRAL, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
DAPHNE FAIRCHILD, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
KAYCI WALLACE, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
ISABELLE KRONENBERG, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
SAMANTHA GRAVES, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
NATALIE TAYLOR, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
ANNA HOBEN, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
KACEY NGUYEN, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)
- A Survey of Accounting Department Leaders Dealing with Faculty Summer Compensation  
ABBY BOX, ACCOUNTING
- Implementing Storytelling Into the Elementary School Classroom: A Best Practice Guide with Adaptable Lessons  
CALI REINHART, ELEMENTARY EDUCATION
- Smoking and Oral Health in the Tipu Maya: A Study of Nicotine in Dental Calculus  
EMILY BYRD, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)
- Mathematical Melodies: The Exploration of Music Using Fourier Signal Analysis  
COURTNEY FRANCOIS, MATHEMATICS
- Stress, Depression and Health Perception Among Hypertensive Population  
IBTESHAM AHMED, PSYCHOLOGY  
NEONTA MAHJABIN, PSYCHOLOGY

7. Secreted Phosphate Polymer Regulates Cellular Pathways and Bacteriolysis in an Amoeba Model for Immunity  
JAELYN DAVIS, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)
8. Exploring a Filter System to Reduce Degradation Rates of Cellulose Acetate Archival Films  
ADDISON BOYETTE, POLYMER SCIENCE AND ENGINEERING
9. Synthesis of Azomethine Imines for Use in Organocatalyzed Addition Reactions  
BRANDON PULLIAM, CHEMISTRY (BIOCHEMISTRY)
10. Molecular Responses of Young Honey Bees to Nosema Infection  
ASTRID GOMEZ, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)
11. Relationships Between the Social Deprivation Index and Mental Health Outcomes in Sexual and Gender Minority Adults  
B. TWILBECK, PSYCHOLOGY, SOCIOLOGY

### SCI FIRST FLOOR, SOUTH HALLWAY

12. Elevating an Orthopedic Practice: A Journey Toward Becoming a Premier Center of Excellence  
MADELYN HARRIS, PUBLIC HEALTH (ALLIED HEALTH)
13. The Sexual Assault Survivor Experience of Medical Forensic Examinations  
BRIELLE SIMONSEN, FORENSICS (BIOLOGICAL SCIENCES)
14. Identifying Novel Cytotoxic Mycobacteriophage Xavia Genes 48–71 with Antibacterial Potential Against *Mycobacterium smegmatis*  
PARKER YARBOROUGH, BIOLOGICAL SCIENCES  
JUSTIN ADONIS, BIOLOGICAL SCIENCES  
MADELINE BENT, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
TAYLOR JOHNSON, BIOLOGICAL SCIENCES (MICROBIOLOGY)  
SERGIO VALDIVIA, BIOLOGICAL SCIENCES (MICROBIOLOGY)  
GIAVANNA STRENGTH, BIOLOGICAL SCIENCES (MICROBIOLOGY)
15. A Study of Compositional and Physical Properties to Elucidate Depositional Conditions at the Coon Creek Type Section  
SAM CHAPMAN, GEOLOGY  
MAKAYLA CAPASSO, GEOLOGY
16. Polyphosphate and *Mycobacterium tuberculosis* Alter Macrophage Immune Responses Differently in Males and Females  
ELLA KING, BIOLOGICAL SCIENCES (MICROBIOLOGY)  
ERIC HARDING, BIOLOGICAL SCIENCES (MICROBIOLOGY)
17. Supplementation of Magnesium Glycinate: Testing the Acute Effects of Magnesium Glycinate on the Stress Levels of College Students  
MEAGAN BUBECK, KINESIOLOGY (EXERCISE SCIENCE)
18. Environmental Indicators of Lemon Shark Nursery Habitats  
MIKAYLA CAULEY, MARINE BIOLOGY
19. Synthesis, Photophysical and Electrochemical Studies of Oxime-Functionalized Coumarin-Quinoline Molecular Probes  
NISHRENIKA POKHREL, CHEMISTRY (ACS-CERTIFIED CHEMISTRY)
20. Chemotaxis of the Beneficial Rhizosphere Bacterium *Pseudomonas synxantha* 2-79 to the Plant-Derived Osmolyte Glycine Betaine  
GARRETT MANNS, BIOLOGICAL SCIENCES (MICROBIOLOGY)
21. Blood Pressure Responses During Dynamic Metaboreflex Activation in Metabolic Syndrome  
CARSTELL LEE, KINESIOLOGY (EXERCISE SCIENCE)
22. Designing a Flowmeter for Measuring Flow in Natural Bodies of Water  
MATT ANDERSON, OCEAN ENGINEERING

### SCI SECOND FLOOR, NORTH HALLWAY

23. *Nosema ceranae* Infection of the Honey Bee (*Apis mellifera*) Suppresses Antimicrobial Peptide Expression  
LONDON MURIN, BIOLOGICAL SCIENCES (MICROBIOLOGY)
24. A Spectroscopic Survey of Super-Earths  
LUKE BRUST, PHYSICS
25. The Mere Presence of Smartphones, Even When Silenced, Can Be Costly to Attentional Control  
COLIN BRUFF, PSYCHOLOGY
26. Targeting Vector: Identification of the  $\alpha$ -Gal Epitope in *Aedes aegypti* for Transmission-Blocking Immunological Strategies  
TABASSUM SIDDIQUE, BIOLOGICAL SCIENCES (MICROBIOLOGY)
27. Harnessing Random Linear Motion: An Educational Wave Energy Conversion System  
CHARLES HEATHERLY, OCEAN ENGINEERING
28. Directed Forgetting Works to “Forget” Associative False Memories, Especially for Speeded Memory Responses  
VIVIAN CHANDLER, PSYCHOLOGY
29. Evolution of Four-Body Central Configurations from Unequal Masses to Equal Masses: A Numerical Study of Concave Forms  
RUPAK RAUT, MATHEMATICS, COMPUTER SCIENCE  
NISHAN POUDEL, MATHEMATICS, COMPUTER SCIENCE
30. Fraternity and Sorority Recruitment: The Queer Experience  
EMILY CRANDALL, PSYCHOLOGY
31. Comparative Survival Analysis of Sheepshead (*Archosargus probatocephalus*) Between Sub-Basins in the Mississippi Sound  
LOGAN BUFKIN, MARINE BIOLOGY
32. Performance Comparison of Machine Learning and Federated Learning for Intrusion Detection in Vehicular Ad-Hoc Networks  
TIM LEONHARDT, COMPUTER SCIENCE
33. Generating Drawings Enhances the Drawing Effect Relative to Replicating Drawings  
ELIZE JACKSON, PSYCHOLOGY  
HALLIE CULPEPPER, PSYCHOLOGY

### SCI SECOND FLOOR, CENTRAL HALLWAY

34. Analysis of the Site of the Most Complete Dinosaur Through the Description of Non-Dinosaurian Material, from the Coffee Formation (Late Cretaceous, Campanian)  
KEISHAWN SMITH, GEOLOGY
35. Contrasting the Abundance of Fish Eggs Above and Below the Sill in the Bouie River  
SARA HARLEN, MARINE BIOLOGY
36. Tough Love or Just Tough? The Effect of Juvenile Military Boot Camps on Externalizing Behaviors  
PARIS LABADIE, PSYCHOLOGY
37. Periwinkle Perception of Predators  
AMELLIA OLLIS, MARINE BIOLOGY
38. Framing the Creative Struggle: The Mythic and Cinematic Language of Elsewhere  
AMANDA MYRICK, MEDIA AND ENTERTAINMENT ARTS (VIDEO ARTS)
39. Identifying Novel Cytotoxic Mycobacteriophage Xavia Genes 24–47 with Antibacterial Potential Against *Mycobacterium smegmatis*  
COURTNEY FOXWORTH, BIOLOGICAL SCIENCES  
SHIKELYA CHAMBLISS, BIOLOGICAL SCIENCES  
CARSON WARD, BIOLOGICAL SCIENCES  
PAIGE WILSON, BIOLOGICAL SCIENCES (MICROBIOLOGY)  
DEISY LEMUS, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
JALYN BROWN, BIOLOGICAL SCIENCES  
KAMIYA GIVAN, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)  
KENDRICK KELLY, BIOLOGICAL SCIENCES (BIOMEDICAL SCIENCE)
40. Self-Healing Nanofiber Scaffolds to Promote Skin Regeneration  
JESSICA SHRESTHA, POLYMER SCIENCE AND ENGINEERING
41. The Interplay Between Attribution Bias and Psychotic-Like Experiences: The Roles of Social Media and Sleep  
JORDAN LEGGETT, PSYCHOLOGY
42. Influence of Adiposity on Tissue Oxygenation Responses to Dynamic Exercise in Individuals With Versus Without Metabolic Syndrome  
RHETT SCHIMPF, KINESIOLOGY (EXERCISE SCIENCE)
43. Living Shorelines  
LEILANIE MARTINEZ, OCEAN ENGINEERING
44. The Effects of Chamber Configuration on Ozone Stability  
SALLIE ANN SCHMIDT, PHYSICS  
EVA CHALONA, PHYSICS
45. When a Song Feels Familiar: Is There Sequential Significance?  
MAKAYLA STEWART, PSYCHOLOGY  
SUZANNA HADDOX, PSYCHOLOGY  
SCARLETT SCOTT, PSYCHOLOGY
46. Effects of Postural Sway and Illumination on Affordance Perception  
PRATIMA RAJBANSHI, COMPUTER SCIENCE
47. Phosphate Polymer Secreted by *Mycobacterium tuberculosis* Links Lysosomal Storage Disease Pathways to Bacterial Pathogenesis in Macrophages  
MADDIE MORESI, BIOLOGICAL SCIENCES  
ETHAN SMITH, BIOLOGICAL SCIENCES
48. Free Clinics Bridge Healthcare Gaps  
MAKAYLA LEIGH HERBERGER, NURSING

### SCI SECOND FLOOR, SOUTH HALLWAY

49. A Systematic Review: Technology-Mediated Versus Traditional Interventions for Improving Whole Number Operation Skills  
REBECCA ROWAN, PSYCHOLOGY  
BJ BRUMLEY, PSYCHOLOGY  
DELILAH CHAMBERLAIN, PSYCHOLOGY, SOCIOLOGY
50. Studying the Energy Landscapes of Spin-Glasses on the Elongated Triangular Lattice  
BRADFORD SMITH, PHYSICS
51. circRNA Accumulation on Neurodegeneration and Fitness in *Drosophila melanogaster*  
JOSEPH SERIO, BIOLOGICAL SCIENCES
52. Improved Thermal Conductivity of UV-Curable Thiol-ene Composites with Boron Nitride Filler  
CONNOR COCHRAN, POLYMER SCIENCE AND ENGINEERING
53. Investigating the Role of Sleep Quality in the Link Between Stressful Childhood Experiences and Loneliness  
AIMEE SCHACHERER, PSYCHOLOGY, SOCIOLOGY
54. Paralympic Athletes' Perspectives on Necessary Factors to Improve the Health and Performance Among Team USA  
HEATHER THORNHILL, KINESIOLOGY (EXERCISE SCIENCE)
55. Turbidity Effect on Mississippi Sound Fish and Shellfish  
YZABELA PEOPLES, MARINE BIOLOGY
56. Comparing Urban and Rural Mississippi Residents' Health Literacy of Sexually Transmitted Infections  
LEAH TUCKER, BIOLOGICAL SCIENCES
57. From Home to Screen: The Influence of Parenting Styles on Cyberaggression in Young Adults  
LAUREN RUNNELS, PSYCHOLOGY
58. Ionospheric and Meteorological Response to Total Solar Eclipses  
PRITESH THAKUR, PHYSICS, MATHEMATICS
59. Bicyclic Bio-Based Building Blocks for Epoxy-Amine Thermosets  
ALIYA PURYEAR, POLYMER SCIENCE AND ENGINEERING
60. Motives and Mistakes: Factors Influencing False Claims of Sexual Crimes  
ZOE ROBINSON, PSYCHOLOGY

## 2:30-3:30 P.M. CONCURRENT PANELS SESSION III

### SCI 1008 CONSUMER BEHAVIORS AND DESIRE

0

MODERATOR: KHADIZA AKTER, SCHOOL OF PSYCHOLOGY

Unpacking Tourists' Organic Food Consumption Behavior: The Moderating Role of Consumer Consciousness and Involvement

ALONDRA ABAD, HOSPITALITY AND TOURISM MANAGEMENT, INTERNATIONAL BUSINESS

Moderators of Change: Student Engagement, Barriers and Perceptions of Consumer Activism at USM

MARCUS KIRKLAND, MARKETING

Bring Me Coffee or Tea: A Paradox of Desire

ANTHONY PANELLA, PHILOSOPHY

### SCI 1014 SOCIAL MEDIA, SOCIAL PAIN AND MENTAL HEALTH

P

MODERATOR: ZACH BUCKNER, SCHOOL OF PSYCHOLOGY

Evaluating the Effects of Social Ostracism on Attentional Control and Episodic Memory

AIDAN BROWN, PSYCHOLOGY, SOCIOLOGY

The Intersections of Black Identity, Media Consumption and Mental Health in the Experiences of Black American College Students

ARIANNA YOUNGER, SOCIOLOGY

A Study on How Dopamine Affects the Way Hallucinations Form in Schizophrenia

HAILEY KAY SCARDINO, PSYCHOLOGY, PEARL RIVER COMMUNITY COLLEGE

### SCI 1015 COMING OF AGE NARRATIVES

Q

MODERATOR: SRIVIDYA KARUTURI, SCHOOL OF MEDIA AND COMMUNICATION

Life, Death, Culture and Time: An Adolescent's Developing Concept of Reality Through Rivers

JESSICA WADE, ENGLISH

Girlhood in *This One Summer*

EMILY RUTLAND, ENGLISH

American Girlhood: A Sociological Exploration of Gender Identity

MARY CAROL DASSAU, MUSIC

### SCI 1040 ORIENTALISM, DESIRE AND VISUAL IMAGERY

R

MODERATOR: J. TAYLOR WRIGHT, SCHOOL OF PERFORMING AND VISUAL ARTS

Cleopatra VII Through the Eyes of the Italian Baroque

AMIRA MOUSSA, ART

Desire and Sexuality: The Lute in Baroque Paintings and Today

ROSE SERRANO, ART

Orientalism and Native Americans

CONNOR CASE, POLITICAL SCIENCE (PRE-LAW)

### SCI 1046 EXPLORING PHYSICAL EFFECTS

S

MODERATOR: MARWAH WALID ALI ALZARA, SCHOOL OF BIOLOGICAL, ENVIRONMENTAL AND EARTH SCIENCES

Noise in Quantum Systems: Effects on Entropy, Concurrence and State Purity

NISHANT CHAUDHARI, PHYSICS, MATHEMATICS

Time-Dependent Numerical Modeling of Quantum States Using the Crank-Nicolson Scheme

DWAYNE PROSPERIE, PHYSICS

Examination of the Underlying Chemical Physics of the Mpemba Effect in Water and Other Liquids

M.K. RAYAN, COMPUTER ENGINEERING

WARREN CUMMINGS, MARINE BIOLOGY

### SCI 2004 IMPROVING HEALTH OUTCOMES

T

MODERATOR: ANGELA GARRETT, SCHOOL OF PSYCHOLOGY

U.S. Adults Sex Education Experiences: The Good, Bad and Ugly

KENNEDY BURNS, SOCIOLOGY, LEGAL STUDIES (PARALEGAL)

Unhealthy Behaviors in Adult Romantic Relationships and Effects of Social Media

KAMI KIRKENDALL, PSYCHOLOGY

Perceptions and the Gender Disparity in Healthcare

COOPER LANDECHE, KINESIOLOGY (EXERCISE SCIENCE)

### SCI 2005 BUILDING BETTER BUSINESSES AND COMMUNITIES

U

MODERATOR: JESI PIGG, SCHOOL OF PSYCHOLOGY

Corporate Activism and Authenticity as Perceived Costliness: Consumer Perception of Firm-on-Firm Activism

JIMENA PAREDES VILLELA, STRATEGIC COMMUNICATION

Revitalizing Hattiesburg Downtown: A Brand Experience Replication and Extension

GRACIE LEWIS, MARKETING

Swiped In: Redefining Hiring

SUSHANT ARYAL, COMPUTER SCIENCE, MATHEMATICS

### SCI 2009 THE NATURAL WORLD IN LITERATURE

V

MODERATOR: BRITT PAGE, SCHOOL OF HUMANITIES

Radical Botanicals: Flowers as Medium in Margaret Fuller's *The Magnolia of Lake Pontchartrain*

JENNA MCCLAIN, ENGLISH

Birds and Boats: Parallel Freedom and Self-Discovery Symbolism in *Jane Eyre* and *Jane*

ERIN JORDAN, ENGLISH

The Symbolism of Rivers in Literature Focusing on *The Wind in the Willows* and *The River*

MOLLIE SELLERS, ENGLISH

## 3:45-4:45 P.M. CREATIVE AND PERFORMING ARTS SHOWCASE

### SCIANNA HALL AUDITORIUM

Join us for a celebration of creative activity by undergraduates at Southern Miss.

Q&A and Recognition of Visual Artists

*The Bear*

BY MADALIN COSTELLA,  
ART (SCULPTURE)

*A Faint Breeze*

BY ALEXIS DUCKSWORTH,  
ART (DRAWING AND  
PAINTING)

*Magnificence in the Mundane*

BY LORIN MUSGROVE, FINANCE

*Homelessness in a Small Town*

BY ADAMARI POSADAS,  
PHOTOGRAPHER, STRATEGIC  
COMMUNICATION

*Sonder* (excerpt)

DIRECTION, WRITING AND EDITING BY SHRIJAL THAPA, THEATRE (ACTING)

DIRECTOR OF PHOTOGRAPHY: NISHIT THAPA

SOUND DESIGN BY NASON PARKMAN

ORIGINAL SCORE BY SHRIJAL THAPA

PERFORMED BY MAKENNA BERKA, SHRIJAL THAPA, SETH RODIVICH, SOPHIA O'NEAL, PETRON BROWN, GWYNYTH WEBER

*Those Lost in the Wood* (excerpt)

POETRY AND READING BY EMILY RUTLAND, ENGLISH

*To Be a Woman* (excerpt)

CHOREOGRAPHY BY SEANA RAINS MARTINEZ, DANCE (DANCE EDUCATION)

PERFORMED BY MARY AUSTIN CONNER, JORDAN DAVIS, ALYSE HUGUET, SEANA RAINS

MUSIC BY NANCY SINATRA, THE LITTLE DIPPERS, TAKE CARE, AMERICA FERRERA AND GRETA GERWIG

*Stained Glass Heart* (excerpt)

WRITTEN AND READ BY CLAIRE CADLE, DIGITAL JOURNALISM

*A "Little" Solution to a Big Problem* (excerpt)

PRODUCED BY SAVANNAH HUMBER, MEDIA AND ENTERTAINMENT ARTS (VIDEO ARTS) IN COLLABORATION WITH SHANNON EARWOOD

DIRECTED BY MAKAGAN MASSINGILL, MEDIA AND ENTERTAINMENT ARTS (VIDEO ARTS)

*Ashes of Banhang*

WRITTEN AND READ BY LAURA RENFROE, ENGLISH

*Elsewhere*

PRODUCED BY AMANDA MYRICK, MEDIA AND ENTERTAINMENT ARTS (VIDEO ARTS) IN COLLABORATION WITH SHANNON EARWOOD,

MEDIA AND ENTERTAINMENT ARTS (VIDEO ARTS)

PERFORMED BY PAYTON DYE, EMMA HOLSTON, SHANNON EARWOOD, AMANDA MYRICK

*We Were Born to Be Radicalists and Middle Eastern – Poems on Identity, Nostalgia and Unapologetic Resistance*

POETRY AND READING BY HASAN BUKHARI, COMPUTER AND INFORMATION SCIENCE

*Increase* (excerpt)

CHOREOGRAPHY BY GRACE DUGAS AND DANCERS, DANCE (PERFORMANCE AND CHOREOGRAPHY)

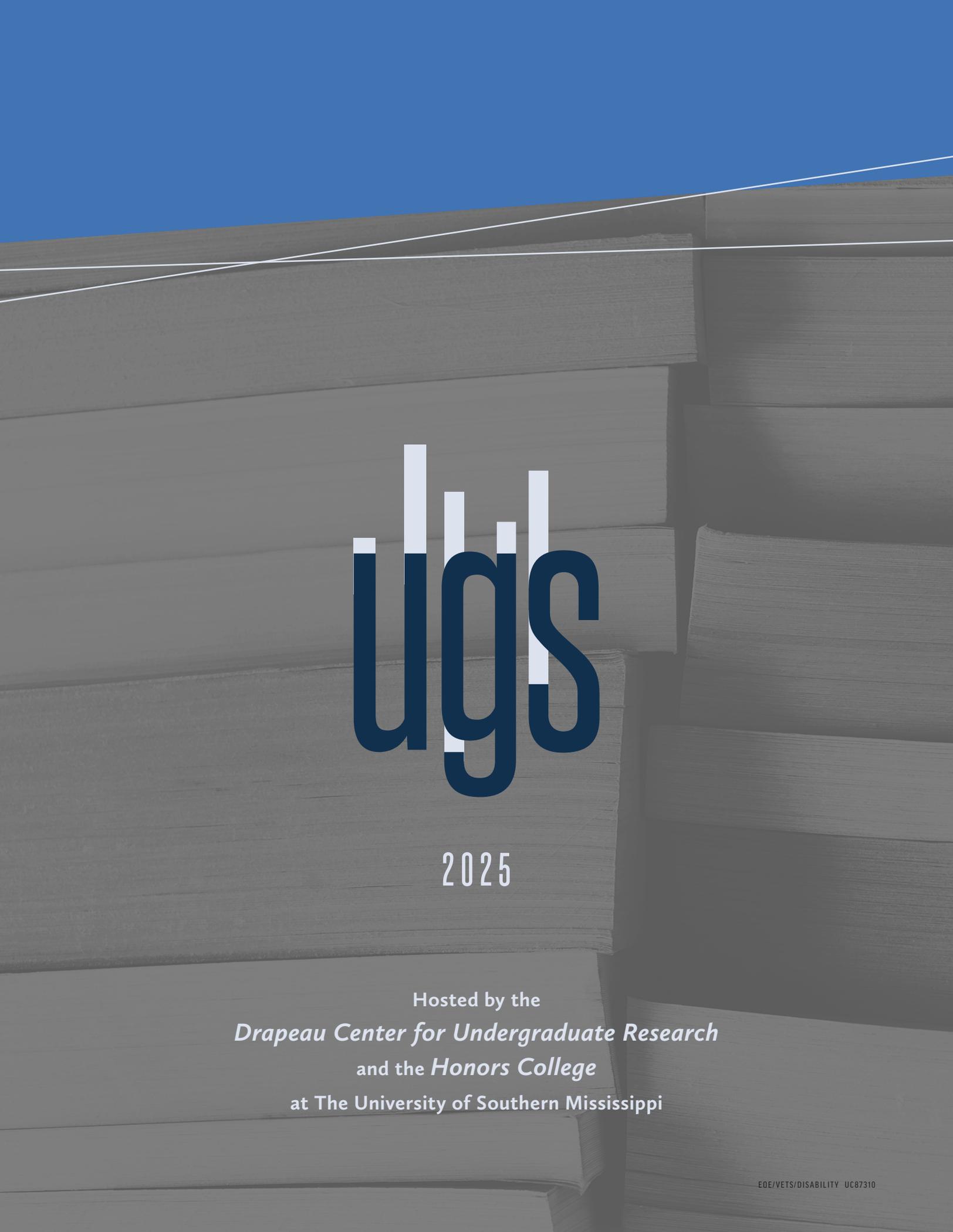
PERFORMED BY JORDAN DAVIS, ALYSE HUGUET, SEANA RAINS MARTINEZ

MUSIC BY DAVID LAND, ALARM WILL SOUND, ALAN PIERSON

## 5 P.M. AWARDS CEREMONY

### SCIANNA HALL AUDITORIUM

Please join us for the Awards Ceremony as we recognize all our competitors for their hard work and dedication to research and creative activity and award prizes to the top presentations of the Symposium.

A background image showing a stack of several thick, greyish-brown books. The books are stacked in a way that creates a sense of depth and texture. The top of the stack is slightly uneven, and the pages are visible between the covers. The overall color palette is muted, with greys and browns, set against a solid blue sky at the top of the frame.

# ugrs

2025

Hosted by the  
*Drapeau Center for Undergraduate Research*  
and the *Honors College*  
at The University of Southern Mississippi