



**One-Day Conference
Millsaps College
September 12, 2026**

Presentation Schedule

Day at a glance

7:30-8:30 AM	Registration and Breakfast - Olin Hall of Science Lobby
8:30-9:30 AM	Oral Session 1 - Olin 100, Olin 120, and Olin 240
9:40-11:10 AM	Poster Session 1 - Atrium Lounge
11:15 AM-12:15 PM	Workshop Sessions - Olin 100, Olin 120, and Olin 240
12:15-1:15 PM	Lunch and Networking - Millsaps Cafeteria
1:30-3:00 PM	Poster Session 2 - Atrium Lounge
3:15-4:15 PM	Oral Session 2 - Olin 100, Olin 120, and Olin 240
4:20-4:30 PM	Closing Remarks - Olin 100

Sponsors & Acknowledgements



Lunch supported by the National Science Foundation under Grant No. OIA-2433435 through the Mississippi Research Alliance



MERIC thanks Millsaps College for hosting the conference



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Chemistry for Life®

Door prizes and stamp cards sponsored by Belhaven University's American Chemical Society Student Chapter

Workshop Sessions

11:15 AM-12:15 PM

	The Elite Mindset: Leading High-Performing Research Teams Tristan Clemons, PhD Assistant Professor School of Polymer Science and Engineering University of Southern Mississippi Olin 240 – Designed for PUI/ERI Faculty
	Accessing Different Career Paths with your Degree Alex Flynt, PhD Associate Professor Biomedical Engineering University of Mississippi Olin 120 – Designed for Current Graduate Students
	Decoding Grad School (with a Graduate Student Panel) Brandon Magers, PhD, MSDS Professor & Chair Department of Chemistry & Physics Belhaven University Olin 100 – Designed for Undergraduate Students

Oral Presentations

8:30-9:30 AM - Oral Session 1

Olin 100 - Biomedical & Molecular Sciences	
1 8:30-8:42 AM	Targeting Metabolic and Inflammatory Pathways to Resensitize Chemoresistant Ovarian Cancer Debarshi Roy; Ismael Mayo
2 8:42-8:54 AM	Single-Nucleotide Polymorphism in the TAS2R38 Gene: Detection and Functional Analysis of Bitter Taste Sensitivity Tia Scott, Angela Whittom Reiken, Dajanea Christmas, Daylon Daniel, Kylie Dorsey, Carolinny Freitas, Lilyan Harris, Daniel Hawthorne, Anna Hillman, Trebor LeGros, Kyla Lott, Connor Taylor
3 8:54-9:06 AM	Proteasomal inhibition enhances PJ-08-induced $\Delta F508$-CFTR expression Zarin T. Raya, Ethan R. Wilkins, Mayuree Rodrat, Pinaki Talukdar, David N. Sheppard, Ghanshyam D. Heda
4 9:06-9:18 AM	Intracellular Delivery of a p21-Derived Cell Cycle Inhibitory Peptide Using Elastin-like Polypeptides Suppresses Glioblastoma Cell Proliferation Tiffany Quinn
5 9:18-9:26 AM	Crawfish Cray-vings: Farming eDNA Markers Fed by Transcriptomic Analysis Nya Lewis and Winston Q. Wheat, Matthew Brewer, and Jana N. Thoma FUTURE SCHOLARS

Olin 120 - Chemistry & Organic Synthesis	
1 8:30-8:42 AM	Investigation of the Electrophile-Initiated Cyclizations for the Synthesis of 1,2-Difunctionalized Heterocycles Parth Patel, Matthew Donahue
2 8:42-8:54 AM	Synthesis of Achiral Squaramide Catalysts for Use in Organocatalyzed Reactions Francis K. Kekessie, Elizabeth M. Shirley, Julie A. Pigza
3 8:54-9:06 AM	Photochemical Cyclization Reactions involving the Saccharin Chromophores Alex A. Bremond, Braeden P. Brewer, Wolfgang H. Kramer
4 9:06-9:18 AM	Ring-Expansion of Substituted Indoles Vivian C. Jordan, Jacques J. Kessl, Julie A. Pigza, Matthew G. Donahue, Wolfgang H. Kramer
5 9:18-9:30 AM	Identification of Pulque Biomarkers: Comparison of Extraction Techniques Jasmine Brewer, Anjana Danivas, Abby Wiard, Timothy Ward

Olin 240 - Mathematics, Data Science & Biomedical Engineering	
1 8:30-8:42 AM	Morse Indices and Physics-Informed Neural Networks Miraj Samarakkody
2 8:42-8:54 AM	Predicting E-Commerce Activity in U.S. Manufacturing Using Lagged Economic Indicators: A Data-Driven Framework Deborah Chikwado Okoli, Jason Shin, and Seongjai Kim
3 8:54-9:06 AM	Generalized Bracket Rules for $B(\infty)$ Crystals Phillip Antis, Kiran Bishop, Timo Carlin-Burns, Maren Forrest, Michael Myers, Verity Nwabuisi, Luis Santori, Adam Schultze
4 9:06-9:14 AM	Surface Modification of Implanted Materials Ambika Deo, Olivia G. Bridges, and Amol V. Janorkar FUTURE SCHOLARS

3:15-4:15 PM - Oral Session 2

Olin 100 - Bioinformatics, AI & Computational Science	
1 3:15-3:27 PM	BioFilter-EVTS: Biology-Guided Evaluation and Refinement of RNA Velocity Visualizations in Single-Cell Transcriptomics Xiuquan Wang, Nan Nan, Kai Wang
2 3:27-3:39 PM	Molecular Dynamics and AI-Assisted Ligand Generation Identify a Cryptic Binding Site Candidate in CTX-M-15 β-Lactamase Christopher T. Jurgenson
3 3:39-3:51 PM	Brain-inspired Computing for Energy-Efficient Artificial Intelligence (AI) Hardware Rabiul Islam
4 3:51-4:03 PM	Physics-Inspired Verilog-A Memristor Model for Reservoir Computing Mohammad Mahmudul Hasan Tareq, Abu Nayem Md Noman, Rabiul Islam

Olin 120 - Agriculture, Plant & Food Science

1 3:15-3:27 PM	Identification of Optimal Seeding Densities for Pea and Broccoli Microgreen Production Jingyi Wu, Tongyin Li, Guihong Bi, Qianwen Zhang
2 3:27-3:39 PM	Influence of Central Mississippi Soil Types on Cannabinoids and Terpenes of CBG White Hemp Selah Roberts, Mary Grace Foster, Forrest Aby, Audrianna Green, Trent Selby, and Scoty Hearst
3 3:39-3:51 PM	Biopolymer-based indicator film for real-time monitoring of chicken meat freshness Gbemisola Ayanniyi, Malik Wells, Muhammad Abubakar, and Abdus Sobhan
4 3:51-4:03 PM	Biochar-based Electrochemical Biosensor for Rapid Detection of Carbaryl in Fresh Produce Muhammad Abubakar, Gbemisola Ayanniyi, Malik Wells, and Abdus Sobhan

Olin 240 - Interdisciplinary Research, Innovation & Education

1 3:15-3:27 PM	Exploring the use of the conversation starter game QUONVO™ on the soft skills and STEM identity of undergraduate students Candace King, Alex Flynt, Patrick Kirby, Hannah McDuffie, Kendrick Buford, Rachel Gisewhite, Waikinya J.S. Clanton
2 3:27-3:39 PM	Presentation title to be confirmed Tawfiq Abu-Raqabeh
3 3:39-3:51 PM	Beyond the Lab: Next-Generation Plant Disease Diagnostics Emran Ali and Sumyya Waliullah
4 3:51-4:03 PM	Bioinformatics, Drug Design, and Precision Medicine Hung-Chung Huang

9:40-11:10 AM - Poster Session 1

Location: Atrium Lounge. Poster numbers identify assigned display positions. Future Scholars posters are marked in gold.

Chemistry & Materials	
M01	Pyridine-based HIV Integrase Inhibitors: Pyridine-Core Development Holden J. Cooke, Tyler D. Twedt, Christopher T. Bruni, Sharon E. Suffern, Jacques J. Kessl, Julie A. Pigza, Matthew G. Donahue, Wolfgang H. Kramer FUTURE SCHOLARS Millsaps College
M02	Analysis of Cannabinoids and Terpenes in Hydroponically Grown CBG White Hemp Mallory Brooks, Scoty Hearst, and Trent Selby FUTURE SCHOLARS Mississippi Christian University
M03	Synthesis and Characterization of Acid-Degradable, Imine-Linked Conjugated Polyelectrolytes Alena L. Trotter, Vanessa Phan, Graham Collier Mississippi Christian University
M04	Do stable hydrogen bridge bonds form between boron and silicon? Anna Kathryn Mullen, David H. Magers Mississippi Christian University
M05	Root of the Problem: Cassava in Gluten-Free Foods Annaleigh Bain, Scoty Hearst, and Trent Selby Mississippi Christian University
M06	Calculation of conventional strain energies of small heterocycles of carbon and silicon by model reactions Cedell Hendricks V, Eli Franklin, David H. Magers Mississippi Christian University
M07	Osteo-deer-porosis: XRF analysis of weak antlers in Mississippi white-tailed deer Ella Goolsby, Lee Yelverton, Marguerite Yelverton, Megan Malone, Trent Selby, and Scoty Hearst Mississippi Christian University
M08	GC-MS Analysis of Various Hemp Strains Reveals Medicinal Cannabinoids and Terpenes Forrest Aby, Selah Roberts, Manliang Feng, Trent Selby, and Scoty Hearst Mississippi Christian University
M09	Multiple Reaction Monitoring Method Development for Targeted Metabolomics Heaven M Thomas, Sixue Chen, and Yatendra Singh Alcorn State University & University of Mississippi
M10	Shaking Up Nitrosamine Synthesis: A Cost-Effective Mechanochemical Strategy Jackson M. Stone, Madison K. Beam, Lauren Kenas, S. Ariel Kelley Belhaven University
M11	Computational Studies of the Relative Thermodynamic Energetics of Warfarin Tautomers Ashley Davidson, Brandon Magers, Jeremiah Theisen Belhaven University
M12	Preparation of Conjugated Polyphenylethynylarene Macrocycles Katherine Carney, Alana Latorre and Trent D. Selby Mississippi Christian University
M13	XRF Analysis of Lead Levels in Dental Products Reveals Major Human Health Concerns Maha Obaid, Trent Selby, and Scoty Hearst Mississippi Christian University

Biological & Biomedical Sciences	
M14	Probing the Robustness of Human Kinases by Informed Mutagenesis Anisiah Black, Ashley Davidson, Lillion Hamil, Josiah Leggett, Madison Radichel, Jeremiah Theisen, and John Neiswinger FUTURE SCHOLARS Belhaven University
M15	Binaural Beats Improve Pareidolia Visual Task Angel Bell, Ward Adams, Ella Brown, Sofia Elenkov, Kaitlyn Hamblin, Hannah Hinckley, Emily Huff, Jasmine Kaur, Jonathan Lott, Catalina McCoy, Duha Musa, Christina Raley, Anna Redhead, Kaniqua Fulton, Joshua Khanna, Erick Bourassa and Scoty Hearst Mississippi Christian University
M16	The Effects of Social Media on the Physiology of Sleep Brendon Magee, Zafar Iqbal Mississippi Valley State University
M17	Microtubule-Destabilizing Effects of Vernonia amygdalina Fractions in Cancer Cells Daniel Oyugi Mississippi Valley State University
M18	Comparing RNA Velocity Embeddings in Pancreatic Endocrinogenesis Using the Embedding Velocity Transition Score Gabriela Jeter, Nan Nan and Xiuquan Wang Tougaloo College
M19	Determination of DPPH Radical Scavenging Activity in Artemisia Absinthium (Wormwood) Using Ascorbic Acid as a Standard Marquisia T. Spear, Angela A. Whittom Reiken Mississippi Christian University
M20	Exogenous Lactate administration impairs survival and promotes maladaptive remodeling after myocardial infarction in male mice Rouhi N, Khan M, Barrie C, O'Quinn K, Carmo J, Silva A, Omoto A, Wang Z, Hall J, and Mouton J.A University of Mississippi Medical Center
M21	Quantifying Total Flavonoid and Flavonol Content in Tea Tree Leaves Using Quercetin-Based Spectrophotometry Adkins, R. M., Daniel, E., Guillory, S., and Whittom Reiken, A. A. Mississippi Christian University

Computational, Data & Engineering	
M22	CRISPR-Cas9 Target Identification in Breast Cancer Using RNA-Seq Analysis JaMya Peoples, Victor Bii, Charles Bland FUTURE SCHOLARS Mississippi Valley State University
M23	Embedding Robustness and Topology Preservation in RNA Velocity Analysis Dania Zein and Xiuquan Wang Tougaloo College
M24	Molecular Dynamics of Urea and Benzamide Candidates at a Non-Active-Site Pocket in CTX-M-15 β-Lactamase Christopher Jurgenson and Parker Lovett Delta State University
M25	Bioinformatic Analysis of the Overproduction of Red Pigment, Averufin, in Aspergillus flavus Strains from Peanuts Ty'Jeodian Forest, Victor Bii, Ryan Paulk, Hamed Abbas Mississippi Valley State University

Computational, Data & Engineering

M26	Comparative Analysis of AI-Generated Responses for Academic Plagiarism Detection Kwabena Agyepong, Erol Sarigul, Manoj Bolugallu Padmayya, Jeremiah Billa, John Adjaye rn State University
M27	AI-Driven Comparative Analysis of Student Learning Outcomes in Traditional and Virtual Reality-Based STEAM Education Kwabena Agyepong, John Adjaye, Jeremiah Billa, Ping Zhang, Manoj Bolugallu Padmayya Alcorn State University
M28	Circuit Breaker Robot: Design and Development of a Robotic Claw Erol Sarigul, Manoj Bolugallu Padmayya, Jeremiah Billa, John Adjaye Alcorn State University

Agriculture, Food & Environmental Sciences

M29	Removing the Muck, Revealing the Micros: Digestion Protocols for Microplastic Analysis in Delta Lakes Grace A. Rogers, Jana N. Thoma Mississippi Christian University
M30	Assessment of Natural Radionuclide Transfer from Agricultural Soils to Sweet Potato Tubers in Mississippi Kwabena Agyepong, Erol Sarigul, Manoj Bolugallu Padmayya, Jeremiah Billa, John Adjaye Alcorn State University

Mathematics

M31	Applications of Graphs and Matroids in the Strategy of Dominoes Justice Smith, Jeremiah Theisen, Ciaran Colvin, Jonah Moore, Tripp Tucker FUTURE SCHOLARS Belhaven University
M32	Inter-League Baseball Predictive Analytics Cameron Butterfield, Evan Claxton, Melissa Lopera, Gracyn Martin, McKenna Matthews, Lily Theisen, Philip Kains FUTURE SCHOLARS Belhaven University

Behavioral, Education, Business & Social Sciences

M33	Active Learning Strategies Across Modalities: Evaluating Their Effectiveness in Face-to-Face, Synchronous, and Asynchronous Courses Mahmuda Alam, Grace Olaitan FUTURE SCHOLARS Mississippi State University
M34	Data Centre Sustainability Under Demand Growth: Evidence, Mechanisms, and Governance Babu George Alcorn State University
M35	A Behavioral Audit of LLM Sycophancy in Humanities Learning Environment Kallen Zhou, Manning Littlejohn, Isabella Garrard, Jonathan Barlow Mississippi State University
M36	Students' Emotion Regulation Difficulties and Their Association with Parental Overprotection and Care Karoline Calonge, Chloe O'Dell, Nora Charles, Sara Jordan University of Southern Mississippi

1:30-3:00 PM - Poster Session 2

Location: Atrium Lounge. Poster numbers identify assigned display positions. Future Scholars posters are marked in gold.

Chemistry & Materials	
A01	Synthesis of Isoindolone Piperidines As Kinase Inhibitors: Preparation of Photochemical Starting Materials and Photoreactions Jackson Tillmann, Caleb A. Solangi, Zoe O. Elder, Christian N. Hart, Tynai J. Bridges, Matthew G. Donahue, Wolfgang H. Kramer FUTURE SCHOLARS Millsaps College
A02	Calculating enthalpies of formation of amino and nitro derivatives of phenol and toluene by homodesmotic reactions Maggie Jones, David H. Magers FUTURE SCHOLARS Mississippi Christian University
A03	Quinoline Synthesis by Ring-Expansion of Substituted Indoles Richard T. Wells, Vivian C. Jordan, Jacques J. Kessl, Julie A. Pigza, Matthew G. Donahue, Wolfgang H. Kramer FUTURE SCHOLARS Millsaps College
A04	Viscosity of Mars-Relevant Ternary Brines: $\text{NaClO}_4 + \text{NaCl} + \text{H}_2\text{O}$, $\text{Na}_2\text{SO}_4 + \text{NaCl} + \text{H}_2\text{O}$, and $\text{NaNO}_3 + \text{NaCl} + \text{H}_2\text{O}$ Abigail Wiard, Anjana Danivas, Jasmine Brewer, Ardith D. Bravenec, and Timothy Ward Millsaps College
A05	Vibrational and Aromaticity Analysis of Non-Planar PAHs Andrew Stoda, Ryan Fortenberry, Nolan White William Carey University
A06	To Boldly Go Where No Undergraduate Has Gone Before: Star Spectral Analysis Braden Clark, Emily Huff, Forrest Aby, Alena Trotter, David Magers, and Scotly Hearst Mississippi Christian University
A07	Gas Station Cannabinoid Products: The Risk They Pose to Motor Function and Human Health Catalina McCoy, Angel Bell, Ward Adams, Ella Brown, Sofia Elenkov, Kaitlyn Hamblin, Hannah Hinckley, Emily Huff, Jasmine Kaur, Jonathan Lott, Duha Musa, Christina Raley, Anna Redhead, Kaniquia Fulton, Joshua Khanna, Scotly Hearst Mississippi Christian University
A08	The Chemistry of Magic: Analysis of Witches' Flying Ointments and Entheogenic Plants Isabella Shidler, Vivian Mcree, Annaleigh Bain, Katherine Browning, Gabriella Mulligan, Ellie Slay, Trent Selby, and Scotly Hearst Mississippi Christian University
A09 withdrawn	Measuring Tooth Demineralization and Decay Caused by Poor Dietary Choices Josey Clark and Scotly Hearst Mississippi Christian University
A10	Conventional strain energies of selenagermirane and the selenagermetanes Kelsey R. Clackler, David H. Magers Mississippi Christian University
A11	Paper Analytical Devices for Colorimetric Pharmaceutical Analysis Lillion Hamil, Natasja Bechtold, Rachel M. Roller Belhaven University
A12	Conventional strain energies of small heterocyclic compounds of boron, carbon, and sulfur Sarah G. Murley, Summer L. Nash, David H. Magers Mississippi Christian University
A13	GCMS Analysis of Magic Mushroom Edibles Reveals Illegal Substances of Human Health Concerns Selah Roberts, Forrest Aby, Manliang Feng, Trent Selby, and Scotly Hearst Mississippi Christian University

Biological & Biomedical Sciences	
A14	Clinically-based Mutagenesis of the Human Kinome Mary Gallarno, Anna Jablonski, Karley Rouse, and John Neiswinger FUTURE SCHOLARS Belhaven University
A15	The Art of Sclerites: Merging SEM and Illustration for Octocoral Blueprints Wing Wai “Vivian” Leung and Jana N. Thoma FUTURE SCHOLARS Mississippi Christian University
A16	Exploring the Impact of Phytochemicals that Cross the BBB on Neurological Cells Angela A. Whittom Reiken, Samuel C. Derrick Mississippi Christian University
A17	Phytochemical Analysis of the Antioxidant Properties of Nigella Sativa through DPPH Assay Weathersby C., Barr. C., Guillory, S., Riley, K., and Whittom Reiken, A. Mississippi Christian University
A18	Measuring the Presence of Alpha-Gal in Trypanosoma cruzi (Brazil Strain) Lemly H. Bumgarner, Godspower N. Okeke, Ugochukwu K. Oduwe, Giorgi Kenkebashvili, Shefa Tabassum, Bradley Hopkins, Alexandre F. Marques University of Southern Mississippi
A19	Mississippi River Borrow Pits: Important Wetland Habitats Connecting Trematodes and Bird Hosts Matthew Brewer, Lilyan Harris, Frank Hensley, Trent Selby, and Scoty Hearst Mississippi Christian University
A20	Quantitative Analysis of Flavonoid and Flavonol Compounds in Withania somnifera Russell, R., Scott, T., Whittom Reiken, A. A. Mississippi Christian University
A21	Impact of Oseltamivir Treatment Timing on Cardiopulmonary Pathology Tiairra D. Williams, Xavissa M. Molina, Reanna M. Hales, Brigitte E. Martin University of Mississippi Medical Center
A22	Structural Studies of Tetrahydroprotoberberine Oxidase and Canadine Synthase Kent Humphries and Christopher T. Jurgenson Delta State University
Computational, Data & Engineering	
A23	Mega-Scale Cell-Cell Similarity Network Analysis of Embryonic Mouse Brain Transcriptomes Damirah Moore, Xiuquan Wang Tougaloo College
A24	Multi-Omics Machine Learning for Optimizing Retroviral Gene Correction in iPSC-Derived Motor Neurons for ALS Joi Green, Victor Bii, Charles Bland Mississippi Valley State University
A25	Comparative Molecular Dynamics of Phenylacetic Acid and Diazaphenalene Candidates at an Allosteric-Site Pocket in CTX-M-15 β-Lactamase Larson Ingram, Christopher Jurgenson Delta State University
A26	Brain Autonomy and Resiliency (BAR) for Intelligent and Trustworthy Human-Centered Systems Saman Sargolzaei Belhaven University

Computational, Data & Engineering

A27	Detecting Phishing in the Age of Generative AI: An Analysis of Machine Learning Performance on AI-Created Emails Kwabena Agyepong, Erol Sarigul, Manoj Bolugallu Padmayya, Jermiah Billa, John Adjaye Alcorn State University
A28	Target Acquisition using Electro-Optical and Infrared Systems Kwabena Agyepong, Erol Sarigul, Manoj Bolugallu Padmayya, Jermiah Billa, John Adjaye Alcorn State University
A29	An Explainable AI-Driven Self-Healing Framework for Autonomous Network Anomaly Detection and Recovery Kwabena Agyepong, Erol Sarigul, Jermiah Billa, John Adjaye Alcorn State University

Agriculture, Food & Environmental Sciences

A30	Duration-dependent plasma metabolomic response to 1% clove supplementation in broiler chickens F. Okorie, A.T. Abolude, R. Laing, D.A. Ekunseitan. Alcorn State University
A31	A Biopolymer-Based Indicator Film for Food Packaging in Visually Monitoring Food Freshness Malik Wells, Abdus Sobhan, and Lin Wei Alcorn State University

Mathematics

A32	Matroid-ish Daniel Call, Grayson Sykes, Timotei Sanduleac, William Walker, Emmanuel Emenike. FUTURE SCHOLARS Belhaven University
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Behavioral, Education, Business & Social Sciences

A33	Beyond the Chocolate Bar: The Financial Cost of Ethical Cocoa in Ghana Soha Maan, Momin Maan, Yasmeen Ahmed FUTURE SCHOLARS Mississippi State University
A34	Structural SDOH and Mental Healthcare Access in Rural Mississippi Annyasha Mukherjee; Debarshi Roy Jackson State University
A35	Locking In at the Coffee Shop: Do Noise-Filtering Earplugs Improve Attention and Executive Functioning? Cece Craft, Ethan Flurry Mississippi University for Women
A36	Discourse and Topic Modeling of AI–HEI Partnership Documents Kallen Zhou, Manning Littlejohn, Isabella Garrard, Phoenix Cao Mississippi State University