



The OFFICE of UNDERGRADUATE
RESEARCH *presents the 6th annual*

2025

**Undergraduate
Research
Conference**

April 11 2025



MISSISSIPPI UNIVERSITY
for **WOMEN**



FROM THE INTERIM COORDINATORS

Welcome to the 6th annual campus-wide Undergraduate Research Conference! Since its inauguration in 2019, the Office of Undergraduate Research has proudly featured numerous oral presentations, dynamic performances, and engaging poster presentations across various formats, including live, in-person, virtual, and recorded sessions. This year, we're excited to further expand that record. We are delighted to share each student's scholarly contributions with you today.

Hosting this event wouldn't be possible without the steadfast financial, intellectual, and logistical support from many dedicated campus entities. First, our sincere appreciation goes to the members of the Undergraduate Research Advisory Committee for their continuous commitment to the programs under the Office of Undergraduate Research (OUR). We also extend our gratitude to the Fant Memorial Library's faculty and staff.

A special thank you goes to Dr. Scott Tollison, whose longstanding dedication and invaluable contributions to the OUR have greatly enriched its programs.



OFFICE of
UNDERGRADUATE
RESEARCH

The mission of The W's Office of Undergraduate Research is to promote and celebrate undergraduate research, empower students to engage in original intellectual or creative work across the curriculum, and collaborate with faculty, staff, and community partners to create and sustain research opportunities.

Office: Fant Memorial Library

Email: our@muw.edu

Phone: (662) 329-7334

Web: muw.edu/our



Special Thanks

Undergraduate Research
Advisory Committee

Fant Memorial Library
Faculty, Staff, and Student
Workers

Interim Dean, Library
Services, Hillary
Richardson

Dr. Scott Tollison and the
Office of the Provost

Office of Development
and Alumni

MUW Alumni Association

Volunteer Faculty
Evaluators

Student Participants

Additionally, we deeply appreciate Hillary's leadership. Despite her numerous responsibilities as the Interim Dean of Library Services, her guidance and support have been invaluable. As Interim Coordinators for Undergraduate Research, we are especially grateful for her ongoing involvement and are proud to assist the OUR in maintaining and advancing its initiatives during this time of transition.

We are also grateful to the Office of Development and Alumni, the MUW Foundation, and the MUW Alumni Association for recognizing and supporting the transformative impact that undergraduate research has on our students' academic journeys.

Our heartfelt thanks go to the faculty evaluators and student volunteers dedicating their Friday to fostering scholarly dialogue. Above all, we extend our deepest appreciation to our student presenters. It is your commitment, curiosity, and hard work that make today's conference possible and meaningful. We eagerly anticipate engaging with your presentations, learning from your insights, and celebrating your academic achievements.

Travis Hagey & Reyna Vergara

Interim Coordinators of Undergraduate Research



GET INVOLVED IN UNDERGRADUATE RESEARCH

HANDS-ON EXPERIENCES

Find conferences, internships, publications, and campus research opportunities in your major. These opportunities can offer experiences (and sometimes pay) that will give you hands-on research experience.

Visit muw.edu/our/opportunities for more.

SUMMER SCHOLARS

Get course credit and a scholarship for tuition, room, and board to do faculty-mentored research over the summer. Applications are reviewed in the spring semester.

Visit muw.edu/our/summer for information on the program and application deadlines.

FUNDING

The OUR lists on-campus programs that offer funding for student research. Apply for a \$500 award toward a project, conduct research through Federal Work-Study, or apply for a summer fellowship.

Visit muw.edu/our/funding for details.

Undergraduate Research Conference Schedule

April 11, 2025

All oral presentations will be in the GPG Multi-Purpose Room and live-streamed via Zoom through the AthenaCommons conference page: athenacommons.muw.edu/urc

9:00 am - 1:00 pm	<u>REGISTRATION</u>	Library Lobby
	Volunteers and participants may check in to retrieve conference materials and nametags at the registration table.	
10:00 am - 2:30 pm	<u>VOLUNTEER AND PARTICIPANT RECEPTION</u>	Seminar B
	Student presenters, faculty evaluators, and student volunteers are invited to enjoy food and beverage in between presentations.	
10:00 am - 10:30 am	<u>OPENING REMARKS</u>	AthenaCommons & GPG Multi-Purpose Room
	Reyna Vergara - Welcome	
	Maggie Ellis , MUW Class of 2022 - Kickoff Keynote	
	<u>STUDENT PRESENTATIONS</u>	
10:30 am - 11:30 am	ORAL PRESENTATIONS I SOCIAL SCIENCES AND HUMANITIES	AthenaCommons & GPG Multi-Purpose Room
	Anna Sandlin* - Emma Ody Pohl: The Untold Story of “Miss MSCW” and Her Influence on Southern White Women	
	Andi Brabham* - HB 1557 Impact on Family Functions	
	Jakaia A. Crockett - Scrolling into Selfhood: Youth, Identity, and Influence	
	Amberianna Shorter* - Inside the Mind of a Prisoner	
11:30 am -12:00 pm	MID MORNING BREAK	
12:00pm - 12:30pm	ORAL PRESENTATIONS II STEM AND HEALTH SCIENCES	AthenaCommons & GPG Multi-Purpose Room
	Ethan Wilkins - Comprehensive Detection of Endogenous CFTR Expression in Epithelial Cell Lines: Biochemical and Molecular Approaches	
	Keona Sanders, Anna McDowell, Dr. Sarah McCrary - Natal And Neonatal Teeth In Mississippi Newborn	

*Presentation is asynchronous



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1:00 pm - 2:00 pm	POSTERS	South Hallway, Fant Library
	Olivia Reese Carlisle, Jess Holden Collins, Kaliyah J. Moore, Nikeria J. Pratt- Discovery and Identification of MUWow Bacteriophage from Columbus, MS	
	Zerin Tasnim Raya- Genome Analysis of Aeromonas hydrophila strain s14-452	
	Carlee Griste, Allee Weathers- The perception of IUDs on Social Media	
	Lori Leachman- Difference or Disorder? Misidentification of Speech and Language Disorders in Mississippi's Public Schools	
	Nina M. Coker, Kenzie Priest, Claire Leak, Callie Abraham- How do SLP's in Mississippi Incorporate Religious Activities in Adult Therapy Sessions	
	Madison K. Jones - Does Awareness of Behavioral Challenges Impact the Preparedness of Recent SLP Graduate Students for Their Professional Practice?	
	Abby E. Hannnon Ms, Kaitlyn Clark Ms, Olivia Lewis Ms- Closing the Gap: Preschool Quality Affect on Language Acquisition Across Socioeconomic Statues	
2:30 pm	CLOSING REMARKS AND AWARDS ANNOUNCEMENT	Athena Commons & GPG Multi-Purpose Room
	Travis Hagey- Closing Remarks	
	Hillary Richardson- Award Announcements	



STUDENT ABSTRACTS

Andi Bradham

HB 1557 Impact on Family Functions

Families are often noted as the foundation of this country, so it is important to consider all families when implementing new policies. In 2022, the Parental Rights in Education bill (HB 1557) was approved in Florida. It was put into place with the intention of benefitting children and families, however, not every family was considered. Main points from HB 1557 include giving parents the right to know any information obtained on their children, the right of parents to have more control over decision making for their children, and the prohibition of discussions or teachings on sexuality and gender identity within school settings. The family impact lens was utilized to assess which family functions were impacted the most by this policy. Childrearing and economic support are family functions that are directly affected by HB 1557. For some parents, teaching about sexuality and gender identity is important for their children to learn; this policy gives them less control over their child's education compared to other parents. Concerns of safety are also a matter for some parents. Solutions include homeschooling or moving out of state; however, this is not possible for families who do not have the economic standing to afford these changes. Two perspectives of the policy were found: those in agreement, and those in disagreement. Those who disagreed with the policy expressed concerns for the family functions mentioned. In the end, parents should not have to worry about their children's safety or financial stress outcomes from HB 1557.



Olivia Reese Carlisle, Jess Holden Collins, Kaliyah J. Moore, Nykeria J. Pratt

Discovery and Identification of MUWow Bacteriophage from Columbus, MS

Bacteriophages are an abundant type of virus with the ability to infect and kill bacteria while using them to replicate through lytic or lysogenic processes. Bacteriophages play a key role in the regulation of bacterial populations in various environments and are being explored as potential tools in phage therapy. The aim of this study was to isolate, characterize, and manually annotate the genome of the bacteriophage MUWow collected from the campus of the Mississippi University for Women in Columbus, MS at GPS coordinates 33.493021 N, 88.419611 W. MUWow was isolated from a soil sample on *Arthrobacter globiformis* B-2979. Plaque assays, spot tests, and serial dilutions were used to purify the lysate and transmission electron microscopy (TEM) were performed to determine phage characteristics. MUWow DNA was sequenced at the Pittsburgh Bacteriophage Institute. Various bioinformatics tools, including PECAAN, GeneMarkS, Phamerator, BLASTP, HHPred, TMHMM, and SOSUI, were used to determine open reading frames and predict gene function. MUWow belongs to cluster AY and displays Siphoviridae morphology, with a head diameter of approximately 50 nm and a tail length of 100 nm. Its genome has 55,034 base pairs, a GC content of 62.4%, and 98 unconfirmed genes. A subset of these genes code for proteins that have determined functions, including minor tail proteins, membrane proteins, and helix-turn-helix DNA binding domain. The annotation of the MUWow phage will advance current understanding of bacteriophage diversity, and further bioinformatic analysis is being performed to explore the structure and function of predicted proteins.

Nina M. Coker, Kenzie Priest, Claire Leak, Callie Abraham

How Do SLP's in Mississippi Incorporate Religious Activities in Adult Therapy Sessions

Our research study proposes that Speech-Language Pathologists (SLPs) in Mississippi consider including religious activities in therapy sessions with adult clients, highlighting the impact of these practices on the clinician-client relationship. The purpose of this research proposal is to gain information on how SLPs can incorporate religious activities in therapy sessions. It also seeks to emphasize the importance of clinicians' cultural awareness regarding religious practices and how their awareness can impact their client's experience. This study will consist of two surveys. The first survey will be completed by clinicians to gain knowledge of their awareness and incorporation of religion within therapy settings. The second survey will be completed by clients to gain knowledge of their religious or nonreligious beliefs and backgrounds and if they would prefer religion to be incorporated in their therapy. The surveys will be completed electronically. With this study, we hope to determine if clinicians and clients would prefer incorporating religious activities into speech-language therapy sessions to enhance therapy outcomes for individuals who practice religion. Additional benefits may include promoting emotional engagement, increasing motivation, and offering a sense of comfort and familiarity, which in turn may improve participation, accelerated communication progress, and promotion of overall well-being.



Jakaia A. Crockett

Scrolling into Selfhood: Youth, Identity, and Influence

Social media has become a significant influence in shaping the experiences and identities of young people in emerging adulthood. This presentation will explore the significant impact that social media platforms and influencers have on the youth as they navigate through this crucial stage of life. With constant exposure to curated content and idealized lifestyles, young individuals increasingly turn to social media to explore their identities, understand social concepts, and process emotional changes. We will examine how social media has redefined traditional coming-of-age experiences, providing a digital space for self-discovery, peer connections, and cultural exploration. The discussion will also address how social media influencers directly impact the lifestyles of youth, affecting their choices and behaviors. We'll address both the positive and negative effects, such as increased self-expression and awareness, heightened social comparison, and mental health challenges. This presentation aims to provide a comprehensive understanding of how social media influencers shape youth identity, values, and development. Ultimately, it seeks to spark a conversation about the evolving role of digital spaces in the lives of emerging adults and their future well-being.

Carlee Griste, Allee Weathers

The Perception of IUDs on Social Media

We analyzed YouTube videos about intrauterine devices (IUDs) to evaluate the information being shared. Using Apify, we scraped videos and randomly selected 30 videos and used a random number table to find 5 videos for review using the DISCERN scale. We also assessed interrater reliability to average DISCERN scale across raters. On average, the videos were 5 minutes and 28 seconds long, with varying view counts and low likes. Most videos were positive, despite mentioning negative side effects of IUDs, but none addressed insertion pain, which was a concern of patients in prior studies. The shortest video had the most views and likes, but its DISCERN score was low due to limited content. Healthcare providers could take this information into account to create shorter, engaging, and informative videos to reach a broader audience.



Abby E. Hannnon Ms, Kaitlyn Clark Ms, Olivia Lewis Ms

Closing the Gap: Preschool Quality Affect on Language Acquisition Across Socioeconomic Statuses

Language acquisition is impacted greatly in the early years of life by many contributing factors. Children begin to have the conscious ability to acquire, learn, and develop language in exponential capacities around the age of 3-4 years old. These years are vital for the future of individuals' speech and communication. Preschool education is the beginning building blocks that lead to K-12 language learning and development. Socioeconomic statuses differ across all preschool aged children's homes, consequently affecting the language heard and learned in the household. Our goal is to examine whether the quality of preschool education reduces the language acquisition gap among preschoolers from different socioeconomic backgrounds. To research the preschool's educational impact upon language in different socioeconomic statuses we would carry out a plan to conduct a survey during the first week of school by sending a questionnaire home for the parents to fill out regarding annual household income. The annual household income of each family would be compared to the rankings of socioeconomic status annual income average rankings in the U.S. Then, the Preschool Language Scale - 5th Edition would be conducted on a class of 3-4 year olds in the preschool in August, and then again in May to compare the results. We will have gathered the socioeconomic statuses of each child while comparing score results to view the growth of language across this timeline.



Madison K. Jones

Does Awareness of Behavioral Challenges Impact the Preparedness of Recent SLP Graduate Students for Their Professional Practice?

This research aims to explore how awareness of behavioral challenges, such as aggression, defiance, and hyperactivity, affects the preparedness of recent Speech-Language Pathology (SLP) graduates. With over 84% of children receiving SLP services also facing emotional or behavioral difficulties, it is crucial to examine whether new SLPs feel prepared to manage these challenges. The study seeks to assess whether increased awareness of behavioral issues correlates with greater confidence and readiness in addressing them during the first year of clinical practice. The study will involve administering a survey to first-year Speech-Language Pathologists. The survey will focus on their preparedness and their confidence in handling behavioral challenges encountered in clinical settings. This method will help gauge the relationship between awareness and preparedness among new professionals in the field. The findings aim to highlight the importance of having behavioral management training in SLP education. By identifying gaps in current training and linking awareness to preparedness, the research intends to inform educational practices and improve the support given to future SLP. This research will aid in determining recent graduate SLP students' exposure to behavioral challenges and strategies to effectively manage such behaviors. Ultimately, the study seeks to encourage changes to better equip students with the necessary skills to manage behavioral challenges in their clinical practice, enhancing their overall effectiveness as clinicians.



Lori Leachman

Differences or Disorder? Misidentification of Speech and Language Disorders in Mississippi's Public Schools

Students who are misdiagnosed with speech and language disorders often miss out on necessary class time and can fall behind their peers. In order to decrease the prevalence of misdiagnoses due to dialectal and linguistic differences, we must first understand how SLPs currently differentiate between typical and disordered speech. In this study, information will be gathered on the current abilities of Mississippi public school SLPs to identify the difference between a speaker that is linguistically diverse and a speaker with disordered speech or language. SLPs will listen to AI generated speech samples—some disordered, some typical, but with non-mainstream dialects—and be asked to rate the speech on a scale of typical to disordered. The findings of this study will indicate the current strengths and weaknesses of public school SLPs in the identification of disorders in linguistically diverse students, allowing a greater understanding of possible educational needs and, in turn, less linguistically diverse students being misidentified as having a disorder.

Zarin Tasnim Raya

Genome Analysis of *Aeromonas hydrophila* strain S14-452

The *Aeromonas hydrophila* are gram-negative, opportunistic bacteria that can infect many groups of organisms, mainly fish and amphibians. In channel catfish, *A. hydrophila* causes fatal bacterial septicemia, leading to massive economic losses for catfish farmers. Therefore, an understanding of its genome will aid in identifying its virulence factors, metabolic pathways and survival mechanisms within the host. This study details the draft genome sequence of *A. hydrophila* strain S14-452, isolated from channel catfish exhibiting bacterial septicemia during a disease outbreak at a catfish farm. *A. hydrophila* strain S14-452 was sequenced using the Illumina iSeq 100 System. Assembly was performed with SPAdes, producing 218 contigs which were annotated using the Rapid Annotations Subsystem Technology (RAST) server and the SEED viewer. The draft genome comprises 5,047,785 bp and has a G+C content of 60.8%. It has 5,013 predicted genes, of which 4,903 are coding sequences (CDS), 110 tRNA, and 5 rRNA.



Keona Sanders, Anna McDowell, Dr. Sarah McCrary

Natal And Neonatal Teeth in Mississippi Newborn

In recent years, we have seen a growth in Mississippi infants being born with or growing teeth at an earlier stage. This may be caused by several things, like gestational age, maternal age, or possibly the mother's diet. We are now looking for common similarities between these infants to see what the possible cause may be. Although this may not seem detrimental, this is still very harmful for infants, causing diseases like Riga Fede Disease. This is a disease that is caused by mandibular incisors and creates ulcers at the bottom of the tongue. This is very painful and can create issues for mothers who are breastfeeding. METHODS: We will go through an Honest Broker and have them access patient charts in Epic. The Honest Broker will send the data and help us determine if there are similarities between the infants and their mother's gestational age. RESULTS: Our research is still ongoing, and the information is held confidential at UMMC. We are hoping to better understand potential common factors of patients with natal and neonatal teeth in Mississippi, so we can educate future mothers on ways they can prevent this from occurring.

Anna Sandlin

Emma Ody Pohl: The Untold Story of "Miss MSCW" and Her Influence on Southern White Women

I conducted an in-depth research project on Emma Ody Pohl, the Director of Physical Education at Mississippi University for Women from 1908 to 1955. I wanted to highlight Pohl's significance on her students and the college. I used the records, letters, and documents in the Pohl Papers at the Beulah Culbertson Archives and Special Collections to analyze Pohl's importance and create a biography of her time at the college. I also conducted further research into the idea of Southern White Womanhood throughout the twentieth century. Through this information, it is evident that the life and teaching of Emma Ody Pohl demonstrate how faculty and students at southern white women's colleges and universities challenged white women and provided them a place to reconsider what they thought they knew about themselves. Pohl used her talent of teaching and passion for dance to orchestrate a sisterhood among the white women of the college and the community, to change and influence the school's curriculum and history, contribute many lasting memories and traditions for the entire college, and empower her students to expand their past ideas of what they believed women could physically do.



Amberianna Shorter

Inside the Mind of a Prisoner

Life behind bars is an alternative way of living that is typically reserved for those who violate statutory law. Prisoners' mental health are usually put on a back burner due to the nature of their environment. Citizens in the civilized world tend to disregard people housed in the jail, understandably, but it is important to try to view them with an open mind. Health professionals noticed the effects of those incarcerated and conducted several studies to better understand the mind of a criminal. Incarcerated individuals were gathered in polls to retrieve their thought process and the reasons behind the way they behave in certain manners. There is a common theme amongst all the findings: depression. Their state of mind is not where it needs to be, and this can be pointed back to the justice system. The United States focuses more on punishment rather than rehabilitation which is why this country has recidivism (return) rate in the world.

Ethan Wilkins

Comprehensive Detection of Endogenous CFTR Expression in Epithelial Cell Lines: Biochemical and Molecular Approaches

Cystic fibrosis (CF), primarily affecting Caucasians of northern European descent, results from mutations in the CFTR gene. DF508, the most common of CFTR mutations, results in dysfunctional Cl⁻ channels in epithelial cells. Detecting CFTR protein expression at endogenous levels poses challenges, prompting this study to employ biochemical and molecular methods for its detection in non-transfected epithelial cell lines. Human pancreatic epithelial cell lines expressing endogenous wild-type CFTR (Capan-1) and DF508-CFTR (CFPAC) were treated with 5mM sodium butyrate for 60h to upregulate the CFTR expression. Additionally, a human lung epithelial cell line stably transfected with wild-type CFTR gene (CFBE-wt) was employed as a positive control. CFTR protein expression levels were assessed using biochemical techniques such as immunoprecipitation and improved western blotting [Heda et al, BioTechniques, 68(6), 319-325, 2020] using anti-CFTR polyclonal antibody MD1314. Concurrently, CFTR mRNA expression levels were determined by RT-qPCR, serving as a complementary approach to biochemical detection methods. The results demonstrated the successful detection of endogenous CFTR expression through both biochemical and molecular methodologies, where western blotting was employed for the first time in such detection. RT- qPCR emerged as the most convenient method, allowing us to quantitate the detection of endogenous CFTR expression, albeit at the mRNA level. However, biochemical detection of CFTR protein expression levels posed challenges due to the need for substantial quantities of antibodies and/or protein samples. Nevertheless, these detection methods hold promise for CF diagnosis using patient specimens.



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