






# 2025 GRADUATE RESEARCH SYMPOSIUM EVENT SCHEDULE

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- 8 - 9am **REGISTRATION OPENS**  
*Graduate Life Center*
- 9 - 10am **SYMPOSIUM PRESENTATIONS**  
*Rooms B and C*
- 10 - 11am **POSTER SESSION**  
*GLC Multipurpose Room*
- 10 - 11am **FLASH TALKS & PRESENTATIONS**  
*Flash Talks: Room B; Symposiums: Rooms C & D*
- 12 - 1pm **LUNCH**  
*GLC Multipurpose Room*
- 1 - 2pm **SYMPOSIUM PRESENTATIONS**  
*Rooms A, C, and D*
- 2 - 3pm **SYMPOSIUM PRESENTATIONS**  
*Rooms C and D*
- 3 - 4pm **SYMPOSIUM PRESENTATIONS**  
*Room D*
- 4 - 5pm **NETWORKING BREAK**  
*Graduate Life Center*
- 5pm **DINNER, KEYNOTE, & AWARDS**  
*GLC Multipurpose Room*
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# 2025 GRADUATE RESEARCH SYMPOSIUM

# EVENT DETAILS

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9 - 10am

## SYMPOSIUM PRESENTATIONS

Room B

**Karla Piedl**

Explorations of the Moon Snail Egg Collar Microbiome and Potential Ecological Impacts

**Carrie Carpenter**

Microbial Colonization Increases the Ice-Nucleating Activity of Microplastics

**Shuyu Zhang**

Pulse-driven, insect-mimetic microfluidic infusion pumps for drug delivery: Effect of device design and user parameters

Room C

**Jenna Jones Devine**

Altered default mode network resting state functional connectivity: Associations with the trajectory of psychopathology in emerging adolescents

**Oloyede Mary Funke**

The Impact of Visualization in a Dialogic Teaching Structure on the Engagement of English Language Learners in Science

**Vanessa Díaz Benítez**

Child-Centered Parenting During Late Childhood Predicts Adolescents' Mathematics Achievement via Child Working Memory

**Shashank Chinnakkagari**

TMS device for treating neurological disorders

10 - 11am

## POSTER SESSION

*GLC Multipurpose Room*

11am - 12pm

# FLASH TALKS & PRESENTATIONS

Room B  
Flash Talks

Kamla S. Al Amri

Let us CARE: Care Adoption in Remote Environments

Matt F. Park

A Preliminary Investigation into the Language Choices of Chinese International Math Scholars

Minhyuk Ko

So Tell Me What You Want: Participatory Design Workshops With Research Software Engineers

Anhad Viswanath

Transforming Underutilized Airfields and Redefining Aviation on Water.

Nazia Bano

Integrin-driven adhesion in ovarian cancer metastasis

Tran Chau

scGFP: A Single-Cell RNA-Seq Study of Correlation Methods for Promoter-Reporter and Native Gene Expression

Apoorva Khairnar

From Octopus to Automation: Advancing Soft Robotics with Intelligent Control

Kevin Thomas Fernandez

Aircraft Anti-Icing Analysis: Water Droplet Dynamics Under High-Frequency Atomization and Superhydrophobic Effects

Muhammed Camara

MOSQUITO SPECIES DIVERSITY AND ARBOVIRUS PREVALENCE ACROSS DIVERSE HABITATS IN THE GAMBIA

Ariel Liu

Privacy in Group Testing: The Risk of Eavesdroppers

Room C  
Symposiums

Mackenzie S. Rose

Second Person Voice in Narratives: An Action Research Study of Therapeutic and Agentic Outcomes

Saadia Ali

From Pixels to Polyglots: Translanguaging meets Gamification

11am - 12pm

## FLASH TALKS & PRESENTATIONS

Room C  
(cont.)  
Symposiums

Jasmine Burns

How to Think Like a Mathematician: The Role of Intuition in Discovery

Fariha Tabassum

A Qualitative Study On The Role of Companion Animals For Survivors of Intimate Partner Violence

Room D  
Symposiums

Ghazal Soleymani

ANTIVIRULENCE AGAINST TYPE IV PILUS ASSEMBLY ATPASE PILB: STRUCTURE-ACTIVITY RELATIONSHIP OF BENSERAZIDE AS A PILB INHIBITOR

Hannah Swarm

Effects of Group 30 Insecticides for Wireworm Control in Virginia Cropping Systems

Hoda Alemrajabi

Integrating Nature into Norms: Evaluating Biophilic Design Attributes in Building Rating Systems

Afsana Kona

Impact of climate change on cropping patterns: An Exploratory Study in the Selected Sub-Districts of Northern Bangladesh

1 - 2pm

## SYMPOSIUM PRESENTATIONS

Room A

Nathan Sambo

Effects of CT and MRI Contrast Agents on the Generation of Acoustic Cavitation: An in vitro study

Ravi Yadav

Comparative Analysis of Fat Sources in Infant Formulas and their Metabolic Consequences in the Development Non-Alcoholic Fatty Liver Disease in a Pediatrics Pig Model

Chin-Hui Chen

Investigating the Role of Intensity in Closed-Loop Auditory Stimulation

Room C

Nabin Bhatta

Can Quantum Mechanics Survive Mutations?

Yulun Li

How the "ghost" particle exposes the universe's disguise.

1 - 2pm

## SYMPOSIUM PRESENTATIONS

Room C  
(cont.)

Siyi Liu

Cosine similarity in organizational research: Review of applications, consistency of methods, and best practice recommendations

Jonathan Gendron

Evaluating Meta-Regression Techniques: A Simulation Study on Heterogeneity in Location and Time

Room D

Abdullah Alwahaimed

Risk Ranking of Selected Veterinary Drug Residues in Cattle

Devin Calpo

Watch the Clock, Watch the Trees: How the Use of Monitoring Data can Inform Phenology and Population Composition of Ambrosia Beetle in Virginia

Ying-Xian Goh

Soil properties, climate, and microbial communities contribute to the pangenome fluidity of *Listeria monocytogenes*

Charly Hartle

An innovative trapping system integrating invasive ant species management and public outreach

2 - 3pm

## SYMPOSIUM PRESENTATIONS

Room C

Medha Sawhney

Diffusion Neural Operators: A Novel Framework for Forward and Inverse PDE Problems

Nathan Daly

Atomic Swap with Adaptor Signatures

Sam Harkness

Minimal Generating Sets for Decreasing Codes

Ivan Tarasenkov

Towards Pseudocodeword Enumeration of Parity-Check Codes over  $\mathbb{F}_{2^m}$

2 - 3pm

## SYMPOSIUM PRESENTATIONS

Room D

Denis Kucherenko

Mechanical and Fluid Transport Properties of the Optic Nerve: A Poroelastic Composite Model

Shadi Ariyanfar

Unique spatial expression patterns in response to Snord116 define mechanisms for Snord116 regulation of Nhlh2: Implications for Prader-Willi Syndrome

Georgina Flynn-Smith

Multimodal Ultrasound Imaging and Radiomics Reveal Structural and Functional Changes to the TLF in Individuals with Low Back Pain

Mona Abadian

Assessing Circularity in the Flexible Polyurethane Foam Industry with analyzing material flow

3 - 4pm

## SYMPOSIUM PRESENTATIONS

Room D

Brooke Hypes

Towards a Humanist Administrative Ethic

Ye Jin

Creative Reputation under Threat: Examining the Source of Creative Reputation Maintenance Concerns

Jacqueline Maciel

Waiting on the Cleanup: The Superfund Program's Impact on Local Governance

A B M Nurullah

The Role of Climate-Induced Disaster in Multidimensional Poverty: A Systematic Review

10 - 11am

## POSTER SESSION

*GLC Multipurpose Room*

**Rythm Agarwal**

Terdiurnal Atmospheric Tides seen with ICON at E- and F-region Altitudes

**Andrea Sofia Alonso**

From Rock Star to Guitar Hero: How off the-job challenges compensate for the de-energizing effects of perceived overqualification at work

**Kristen Crane**

Competitive Synapse Formation in the Cerebellum

**Arpita Das**

First Successful Collagen Induced Arthritis and Synovial Fluid Extraction in MRL/lpr mice

**Shiyu Deng**

Changes in Visual Strategies during Psychomotor Skill Training in Laparoscopic Surgery: A Longitudinal Eye Tracking Study

**Maria DeNunzio**

Recommended Communication Theories for Use in Healthy Food Retail Partnerships for Planetary Health Promotion

**Indunil P. Dharmasiri**

Extractive Entrepreneurship: The Tale of Two Grains

**Kenneth Distefano**

Slow spatial migration can help eradicate cooperative antimicrobial resistance in time-varying environments

**Rana Estaleen**

Depletion of the gut microbiota reduces inflammatory cytokines in murine lupus mice

**Emily R. Fuller**

A multimodal mentoring mechanism for supporting early career scholars' research agenda development

**Charlie Galluscio**

Improved Coupling Methods for a Meander Metasurface Array

10 - 11am

## POSTER SESSION (CONT.)

*GLC Multipurpose Room*

**De'Yana Hines**

Cranial Osteopathic Manipulation Modulates Glucose Uptake in Rat Model of Alzheimer's Disease: Insights from FDG-PET Imaging

**Sean Horner**

Converting Olive Oil Byproduct to Biochar for Improved Sustainability and Economic Feasibility

**Md Sifat Hossain**

Exploring the Synergistic Effect of Mo and Fe Interaction in Zeolite-Based Catalysts for Methane Aromatization

**Garrett Hosterman**

Executive Functioning as a Mediator of Relations Between Bilateral Cerebellar Volume and Transdiagnostic Psychopathology in Pre-Adolescents from the ABCD Study

**Jinsol Jung**

Predictive Engine Model Incorporating Physics-based Model Estimation and Machine Learning

**Md Mahir Asef Kabir**

Detecting Metadata-Related Bugs in Enterprise Applications

**Sanchari Kundu**

Fine tuning marker gene detection in Non-Model Plants: The power of single cell 3'UTR annotations

**Joseph Leo**

Faba Bean as a Cover Crop in the Mid Atlantic

**Mingsi Liao**

Predicting Dairy Calf Body Weight from Depth Images Using Deep Learning and Threshold Segmentation with Cross-Validation and Longitudinal Analysis

**Rowan Martnishn**

Real Time Filtering and Forecasting of Negative Sentiment on Reddit using NLP and XGBoost

**Kimiya Mohammadi-Jozani**

Equitable Vaccine Allocation through a Dynamic Epidemic-Supply Chain Model



10 - 11am

## POSTER SESSION (CONT.)

*GLC Multipurpose Room*

**Hilary Montano**

The Role of Adenosine Receptor Modulation on Systemic Lupus Erythematosus Disease Progression

**Hector Montilla**

Optimizing Post-Extreme Natural Hazard Event Habitation Recovery: A System Dynamics Approach to CIIS Classification, Procedural Delays, and Mitigation Strategies

**Chizoba Obunadike**

Scalable Synthesis and Characterization of Recyclable Elastomers from Lipoic Acid and its Derivatives

**Adwait Hoge Patil**

Computer simulations to predict accurate fluid dynamics

**David Rivera**

Review of biopesticides and biological control agents against the invasive box tree moth to inform future research in the US

**Rowan Scott**

Food for Thought: Understanding how Mussel Restoration drives Macroinvertebrate Community Composition, Function, and Water Quality

**Aida Shakeri**

Role of gut microbiota in Cx3cr1 deficiency-mediated exacerbation of murine lupus

**Nart Shalqini**

**Mayank Sharma**

The distance of quasar outflows from the central source: The first consistent values from emission and absorption determinations.

**Firoozeh Tarkesh**

Impact of Perchlorate Exposure on Thyroid Function and Metabolism in Endurance - Trained Female Runners