

# 2025 Student Research Forum Program

**April 17, 2025**  
**University Union Ballrooms**



## Poster Session 11am-1pm

| Poster number | Presenters         | Title  |
|---------------|--------------------|--|
| 18            | Angela Bellan      | Occupational Engagement and Caregiver Education in the NICU: A Scoping Review of Facilitators and Barriers to Early Intervention Access  |
| 6             | Angela Blankenship | Utilizing the Magic School Chatbot as a Tutoring Tool for Scaffolding Writing in the Inclusive 8th Grade Middle School English Classroom |
| 48            | Sydney Braithwaite | Solvent Effects on Chlorinated and Brominated DBPs   |
| 38            | London Brooks      | Arts and the Honors College: Investigating Perceptions and Realities   |

Poster Session 11am to 1pm, Union Ballrooms

| Poster number | Presenters   | Title   |
|---------------|--|---|
| 32            | Stephanie Colón  | The Experiences of Direct Support Professionals Working with Autistic Adults: An Exploratory Study  |
| 50            | Alyssa Cummings, Eliot DeVita, Emmanuela Onyilokwu, Anna Roth, Sofia Montoro | Labeling of Intimate Partner Stalking Among College Students  |
| 68            | A.J. DePaolis  | Vocal Health: The Anatomy of the Voice  |
| 46            | Mame Diop  | AI & DEXA Scans: Ethical Issues and the Role of Anticipatory Ethics   |
| 58            | Caitlin Fromm  | Exploring Common Assessments of Language and Pragmatics Following Right Hemisphere Damage: A Systematic Review  |
| 54            | Pei Ge   | Investigating The Effectiveness of Using Educational Robotics-Based Storytelling Approaches for Enhancing Children's Expressive Language Development      |
| 40            | Rebecca Harasymczuk  | The Impact of Microplastic Exposure on Vegetable Plants: Iceberg Lettuce ( <i>Lactuca sativa</i> ) and Cherry Belle Radishes ( <i>Raphanus sativus</i> ). |
| 42            | Christina Hatch, Lindsay Deegan, B.S.  | Optimization of Test Time for the Auditory Brainstem Response   |

Poster Session 11am to 1pm, Union Ballrooms

| <b>Poster number</b> | <b>Presenters</b>                             | <b>Title</b>  |
|----------------------|---|---|
| 64                   | Stephanie Heffron, Ben Richter and Emma Vacca | Investigating communication awareness and speech-language pathology referral practices of medical professionals for post-stroke care: Preliminary insights from an international survey |
| 52                   | Ian Holmes                                    | 3D Printed Skin: An Anticipatory Ethical Analysis   |
| 26                   | Eunice Hong                                   | Ethical and Anticipatory Ethical Analysis on Neural Style Transfer  |
| 28                   | Brianna Hughes                                | Differentiated Instruction For Sixth Grade Multilingual Learners  |
| 56                   | Maxwell Kanner                                | The Effects Coal Ash has on the Microbiome of the Wood Frog   |
| 36                   | Joshua Kaufman                                | Analyzing the Relationship Among Team Climate, Athlete Satisfaction, and Transfer Intention in Collegiate Sports  |
| 4                    | Nataly Loza                                   | Navigating Identity: Bilingualism and Cultural Identity   |
| 44                   | Aaliyah Lucius                                | Public Perception of Early CTE Detection in the NFL: Ethical, Social, and Policy Implications   |

Poster Session 11am to 1pm, Union Ballrooms

| Poster number | Presenters                         | Title  |
|---------------|------------------------------------|--|
| 2             | Judy Martini                       | The Impact of Rhythmical Songs on Attention and Listening Comprehension of Autistic Preschoolers           |
| 62            | Faith Matthews                     | Is Salinization of Freshwater a Driver of Invasive Male Crayfish Success in Maryland?                      |
| 66            | James Minter, Ignacio Burmida-Lima | Green Bank Telescope HI Spectra of Supernova Host Galaxies   |
| 8             | Ezekiel Morris                     | Pinpointing target genes of <i>D. discoideum</i> targeted by Uropathogenic <i>E. Coli</i> Virulence Factor |
| 14            | Michelle Lopez Paez                | Artificial Intelligence & Animation  |
| 70            | Ella Portolese                     | Artificial Intelligence and the Fashion Industry   |
| 12            | Ana Rodriguez                      | Teaching Phonics Fundamentals: Utilizing Play-Based Learning to Strengthen Decoding Skills                 |
| 16            | Benjamin Rozenywaig                | AI Assisted Technology Detects Nanoparticles in Water: Ethical Considerations                              |

Poster Session 11am to 1pm, Union Ballrooms

| Poster number | Presenters  | Title  |
|---------------|---|--|
| 22            | Daniel Sackey   | Antibiotic Overuse and the Effects of TirC in Dictyostelium edited by CRISPR-Cas9                                |
| 10            | Jeremiah Seib, Tyler Hannesson                                      | Preparation and Characterization of Novel High Temperature Superconductors (In, Sn) BaCaCuO                      |
| 30            | Elaine Shaw, Katie Esser, Karina Ball, Courtney King                | Effects of position, age, and hearing status on speech-in-noise recognition                                      |
| 24            | Kristin Tatelman  | Exploring the Relationship Between Sensory Regulation and Occupational Engagement of Autistic Children with Dogs |
| 60            | Christopher Toomer, Kayode Adegbo, Madison Previti, and Marcus Rose | Modulating Oxygen Content in Strontium Titanate (STO) and Calcium Manganese Oxide (CMO)                          |
| 34            | Matthew Vollmuth  | Synthesis of Parabens and (+)-aristoquinoline: Expansion of Mechanistic Pathways in Organic Chemistry            |
| 20            | Ben Wallace, Zaid Qureshi and Jakob Winterle                        | Investigating redox behavior and quantum confinement effects in gold clusters                                    |

**Lunch**  
**University Union Ballroom E**  
**12:00pm**

## Oral Presentations Session A 1pm-3pm

### University Union 323

| Presenter          | Time   | Title   |
|--------------------|--------|---|
| Tara Youngborg     | 1:00pm | Not a town but a landing page: The ghost town of Frenchtown, Maryland and technological loss                                      |
| Folashade Agbolade | 1:20pm | Using Immersive Virtual Reality to Enhance Intercultural Sensitivity  |
| Paige Zaleppa      | 1:40pm | Using AI Assistants in the Creation of an Academic Program of Study (PoS) in CyberAI  |
| Jeff Hanson        | 2:00pm | The Use of Competency-based Statements in Assessing Student Knowledge, Skills, and Abilities: A study in a Network Security Class |
| Alisha Hancock     | 2:20pm | Scholarships for Students Repeating Principles of Microeconomics  |
| Linh Tran          | 2:40pm | Factors that affect retirement or pension income in the United States in 2020 and 2005  |

## Oral Presentations Session B 1pm-3pm

### University Union 319

| Presenter   | Time   | Title   |
|---|--------|---|
| Peter Almonte   | 1:00pm | Studying the Diffusion of 200 nm Nanoparticles in Unentangled Polyethylene Glycol Diacrylate Solutions Using Single-Particle Tracking |
| Madison Previti, Christopher Toomer and Kayode Adegbo | 1:20pm | Modulation of Electrical Transport and Structural Properties of CaMnO <sub>3</sub> Epitaxial Thin Films                               |
| Jorge D. Carballo Morales                             | 1:40pm | Diet evolution and diversification of bats  |
| Katie Esser   | 2:00pm | The Best Seat in the House: How Listener Position Impacts Speech Understanding and Listening Effort in a Simulated, Noisy Environment |
| Morgan Barkhouse                                      | 2:20pm | Acoustic and Non-Acoustic Factors Contributing to the Spatial Release from Masking in Older Adults                                    |
| Ariana Bennaim  | 2:40pm | Gated Word Recognition in Adult Cochlear Implant Users: Effects of Spectral Resolution and Cognitive Function                         |

## Oral Presentations Session C 1pm-3pm

### University Union 321

| Presenter   | Time   | Title   |
|---|--------|---|
| Milon Biswas  | 1:00pm | Balancing Privacy and Utility: A Unified Approach to Noise Injection Mechanisms for Privacy Preserving Machine Learning.                |
| Usman Musa  | 1:20pm | Digital Twin Empowered Smart Transportation Cyber-Physical System with Deep Reinforcement Learning                                      |
| Papa Pene   | 1:40pm | SHEADP: A Federated Learning Framework Integrating Selective Homomorphic Encryption and Advanced Differential Privacy                   |
| Almustapha Wakili, Almustapha A Wakili, Kamoruddeen A Amuda, Babajide Asaju, Tayyab Ali | 2:00pm | Hybrid CNN+ViT Model (TumorVisNet) for Enhanced Brain Tumor Segmentation  |
| Gabriel Amaizu  | 2:20pm | FedViTBloc: Secure and Privacy-Enhanced Medical Image Analysis with Federated Vision Transformer and Blockchain                         |
| Yixin Chen  | 2:40pm | FSPFEL: Towards Practical Fair Semi-Synchronous and Power-Aware Federated On-Device Learning on Heterogeneous Power-Constrained Devices |

## Poster Session 4pm-6pm

### University Union Ballrooms

| Poster number | Presenters                                     | Title   |
|---------------|--|---|
| 65            | Theresa Abalum                                 | CRISPR/Cas9 Knockout of TirB: Discovering New Pathways in Innate Immune Signaling   |
| 26            | Abdullahi Abdullahi                            | Distributed Misbehavior Detection System for Cooperative Driving Networks   |
| 53            | Claire Alley                                   | Were Oceans Made the Same in the Paleoproterozoic? The Chemostratigraphic Variation Recorded by Metabasalts in the 1.9 Ga Jormua Ophiolite Complex, Finland |
| 43            | Sadie Barrett, Alisa Martin, and Marie Kouassi | Breaking Barriers to the Ballot: A Study on Voter Access and Trust in Elections   |
| 17            | Bailey Borkowski, Morgan Barkhouse             | Spatial Release from Masking with Simulated Hybrid Cochlear Implant   |
| 38            | Natalie Brownlowe, Jeffrey Bowerman            | Modeling Crime on Baltimore City Road Network   |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters                      | Title  |
|---------------|---------------------------------|--|
| 20            | Jainson Cedillo                 | What do you see first?   |
| 58            | Leah Collidge                   | Do Low HDI States Foster Environments Conducive to Radicalization?                                 |
| 44            | Joshua Cronin                   | Does Emotion Influence the Flexibility of Cognitive Control?                                       |
| 34            | Timothy DeLloyd                 | Crime Intensity in Baltimore City: Calculating, Graphing, and Relating to Travel Patterns          |
| 66            | Zachary Dietz                   | Optical Band Gap Variance of STO Induced by Oxygen Reduction                                       |
| 35            | Quinn Donarum, Morgan Barkhouse | A priori knowledge about the signal and binaural processing capabilities                           |
| 49            | Gray Doney                      | Impacts into sub-surface water pockets: A possible mechanism for Chaos terrain formation on Europa |
| 7             | Emily Fabeck                    | The Impact of Childhood Sexual Abuse on Pregnancy-Related Anxiety and Reproductive Intentions      |
| 36            | Isadora Fink                    | Loneliness: Motivations to Change and Actual vs. Desired Social Connections                        |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters  | Title  |
|---------------|---|--|
| 22            | Sylvia Van Fleet                                    | Perceptions of Resources for Teaching and Learning in Family Science   |
| 16            | Daniel Fleming, Zaid Qureshi                        | Physicochemical characterization of various inks and dyes for forensic analysis applications   |
| 13            | Chase Frater, Audrey Gianelle, Aidan Powell         | Graphing as a Tool to Support Covariational Reasoning  |
| 30            | Lloyce Frimpong, Alex Lohse and Naomi Uiyoshiioria. | Synthesis and morphological control of Ag nanoplates using aromatic amines as a reducing agent   |
| 41            | Nikki Golemboski                                    | The Protection of Local Migrant Rights and Well-Being: Comparing Successes, Challenges, and Recommendations from Baltimore and Philadelphia's Government and Nonprofit Sectors |
| 40            | Lukas Hamann, Tyler Hannesson, Thomas Snarski       | Magnetic, Optical, and Electronic Transport Properties of the FeCuB Compounds  |
| 62            | Tyler Hannesson, Lukas Hamann and Thomas Snarski    | Determination of iron and copper content in Fe-Cu-B compositional spread   |
| 64            | Randi Haron   | An Analysis of Thomas Adés's Tevot   |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters  | Title  |
|---------------|---|--|
| 12            | Katelyn Harro, Dariush Aligholizadeh and Efosa Owie             | Interaction of gold nanoparticles with organic gunshot residue components found in gunpowders.                           |
| 8             | Hannah Hinterleiter   | Implicit Biases Against Exonerates   |
| 54            | Lucas Hoffman   | Effects of Sucrose on Chlorination Rates of Phenolic Compounds   |
| 50            | Alex Holtzman   | Utilizing Kernel Density Estimations and Principal Component Analysis to analyze crime, population, and travel patterns. |
| 61            | Shaila Johnson  | EdTPA supporting students with IEP's   |
| 24            | Cayla Johnson   | MAPK/ERK Signaling Pathway in Dictyostelium discoideum as a Potential Target for Escherichia coli TIR Proteins           |
| 19            | Brigid Kane   | But First, Let Me Take a Selfie: Impression Making on Social Media   |
| 37            | Audrey Knight, Chinwendu Uche, Andrew McNeill and Katherine Tan | Quantitative Risk Assessment of Election Infrastructure Using Attack Trees   |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters  | Title   |
|---------------|---|---|
| 60            | Rachel Kramer, Mehnaz Falguni, Grace Igbinosun, Daniah Moultrie   | Will it Cleave? How Lipopolysaccharide Structures Affect Complement Activation  |
| 31            | Kyle Langenfelder   | The Relationship of Dementia Worry, Anxiety, and Predisposition to Neurodegenerative Disease to Memory Self-Efficacy and Working Memory |
| 14            | Emely Larios, Angelika Kipenskaia, Samantha Desi, Gigi Gallagher, Christopher Green, Jonathan Guillen, Jay Ristau, Ian Heathcote, Ava Askandarian, Ella Hoffman, Paul Neary | The Effects of VR Nature on Stress and Anxiety  |
| 3             | Caroline Little   | Reducing Gender Stereotypes in the Beginning Band Classroom   |
| 2             | Georgia Maier   | Life's first breath   |
| 6             | Faith Myers   | The Effect of Professor Age and Gender on Student Perception of Professor Delivery of Course Information                                |
| 55            | Sage Nielson  | Shifting Landscapes: The Style of Aleksandr Porfir'yevich Borodin through Symphony No. 2 and On the Steppes of Central Asia             |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters  | Title  |
|---------------|---|--|
| 9             | Lilly Norbeck   | Gender in the Roman Empire: Norms, Perceptions, and Exceptionalities of a Binary System  |
| 4             | Emmanuela Onyilokwu, Ruisha Prasai, Matthew Abell, Alissa Cabalu, Anna Roth | Examining the Role of Intersectional Identities in Women's Experiences of Stalking   |
| 39            | Erin Ormsby   | Speech Complexity and Spatial Release from Masking with Simulated Cochlear Implant Speech  |
| 27            | Efosa Owie, Dariush Aligohlizadeh   | Engineered Ag Nanorods for the Detection of N-nitrosodiphenylamine   |
| 57            | Isabella Papaleonti, Nia Lamptey-Mills, Ruisha Prasai, Bria Smith           | Differentiating Physiological Responses Between Moral and Physical Disgust   |
| 29            | Riley Petrick   | Lab-Based, Self-Report, and Naturalistic Prospective Memory Performance: Exploring the Relationship with Working Memory Capacity in Young Adults |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters   | Title  |
|---------------|--|--|
| 32            | Diana Portillo   | The Musculoskeletal Health of Musicians  |
| 68            | Evan Powell  | Decoding the origin(s) of ultramafic-mafic bodies in PA and DE   |
| 42            | Zaid Qureshi   | Detection of Volatile Organic Compounds using SERS from p-PDA Coated Nanoplates  |
| 51            | Attia Robinson, Hailey Christoph                         | Passing the Microbial Baton: Maternal Microbiota Transfer in Northern Map Turtles  |
| 5             | Gynelle Sackie-Mensah                                    | Lights, Camera, Acceptance?: The Role video characteristics play in shaping public opinion on the legitimacy of transgenderism |
| 18            | Mauro Sgromo   | Nuclear Binding Energy and Violations of the Equivalence Principle   |
| 25            | Emma Shartle   | Exploring the use of artificial intelligence to identify brain wave patterns associated with auditory processing disorder.     |
| 59            | Sarah Smith  | Creating Authentic Tasks in a 6th Grade Mathematics Classroom  |
| 48            | Sena Sogut, Keely DeGasperis, Ian Quill, Robert Eastwood | Worry and Rumination's Impact on Anxiety: The Role of Emotional Reactivity   |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters  | Title   |
|---------------|---|---|
| 11            | Sabrina Srouf   | The Identities and Orthographies of Arabic-English Student Writers                |
| 56            | Emilie Stoudt, Teodora Consoli, Chloe Tran, Collin Ralph              | The Influence of Mood Congruency on Attentional Control in the Simon Task.        |
| 15            | Noam Straus   | How Does Social Media Firm-Generate Content Influence Stock Performance?          |
| 70            | Sebastian Tanguay   | Attention in the World  |
| 52            | Lauren Terrell, Kathryn Engler, Caroline Cassano, and Stephanie Duque | Relationship Between Task-Switching and Emotion                                   |
| 28            | Luke Thress   | Nanolithography and Art using Atomic Force Microscopy                             |
| 10            | Lukas Tibbels, Jakob Winterle   | Synthesis and characteristics of Size Controlled Nanoclusters                     |
| 33            | Naomi Uiyoshioria, Dariush Aligholizadeh and Alex Lohse               | Manipulation of surface energy to engineer 2D-anisotropic nanoparticle substrates |

Poster Session 4pm to 6pm, Union Ballrooms

| Poster number | Presenters   | Title  |
|---------------|--|--|
| 46            | Emma Vacca   | Prosody in Cochlear Implant Users: A literature Review   |
| 47            | Dana Wall  | Accuracy or Appeal? What Drives Political News Sharing   |
| 23            | Kay Walter   | Effects of Position on Energetic and Informational Masking in Normal and Hearing-impaired Adults |
| 1             | Alexandra Watts  | Gendered Economics   |
| 21            | Amanda Wisoky, Mya Freeman, Brooke McConnell   | Supporting Algebra-Intensive Courses for STEM Majors   |
| 63            | Gabrielle Yeldell, Alyssa Cummings, Neelie DeVett Maatouq, Inna Ionin, Erin Mucha, and Lila Ward | Does emotion dysregulation influence positive emotion in worried and ruminative states?          |