



University of Delaware

Winter Showcase of Undergraduate Research, Scholarly, and Creative Works

February 11th, 2026

Welcome to the Undergraduate Research Winter Showcase in partnership with UD's Library, Museums & Press! Please find below a scheduled list of our wonderful presenters.

11:00-11:05pm Introduction

11:05-11:35am Lightning Talk Session 1

Janice Castro	Using Typography for Advocacy
Amira Ahamed	Framework for Success in Upper University Lab Courses
Ashley Binet	E.L.M.: Ephemeral Longevity of Memories
Andres Bolanos Cacho Escobedo	Leveraging Performance Metrics for Surfactant Design
Genevieve Green	Institutional Courage & Betrayal in Sportsworld
Grant Maxa	Central Arterial Wave Reflection in Duchenne Muscular Dystrophy: Potential Effects of Ambulation and Corticosteroid Treatment
Tobias Weichbrod	Chemical Exposure in Art Conservation: An Ethnographic Study on Lived Experiences of Art Conservators
Saynani Gbason-Krah	Museum Paper Wigs - Blank Canvas: 1920s Fashion Exhibition

11:40am-12:05pm Poster Session 1

1 - Lieeba Ahad	Investigating Age Dependent Degeneration of Bone Cells in Human Knee Samples
2 - Samreen Ahmed	Enhancing the Stability and Reproducibility of PEDOT-Based Films Through Controlled Deposition
3 - Keturah Belgrave	Substance Use Risk and Vulnerability of Hispanic-American Immigrant Families
4 - Riddhima Bhasin	Structural evolution of Cu ₂ O catalysts during CO ₂ electrochemical reduction
5 - Elizabeth Bodio	Synthesis of A ₃ B and AB ₃ metalloporphyrins for Magneto Optical Activity
6 - Megan Brook	Exposing Delaware's Food Desert Crisis Through Visual Storytelling
7 - Brian Chreiman	Meniscus Displacement Following Segmental and Total meniscus Allograft
8 - Conor Dowd	Lanthanide transition metal phosphides as electrocatalysts for the hydrogen evolution reaction
9 - Cassidy Driscoll	Determining the biochemical basis of AlkBH4's enzymatic activity
10 - Defne Elbeyli	Spatial Constraints on Synthetic Auxotroph Containment: Evaluating Microbial Interactions in Granular Hydrogels
11 - Hanna Gebrel	Vocal Goal: Visualizing vocal qualities for various communities
12 - Charlotte Higginson	Cultural Influence on Family Roles, Structures, and Expectations: A Literature Review
13 - Natasha Kapadia	Perceptions of Political Bias and Their Impact on Media Trust Among College Students
14 - Josephina Mason	Chemical Recycling of Poly(ethylene terephthalate) via Deep Eutectic Solvent-Assisted Glycolysis
15 - Miles Meadows	Designing 3D Printable Agar-Based Granular Hydrogels to Investigate Bacterial Migration
16 - Phillip Moquin	Analysis of the Ubiquitin Microenvironment via Photocatalytic Dexter Energy Transfer
17 - Lena Morefield	Investigating Vibrio Pathogenesis in the UD Oyster Hatchery
18 - Mizuho Okitani	Stress in Sequence: Predicting Student Stress by Modeling Temporal Sequences with Transformers

19 - Varun Pappu	Detecting Polarizing Language in Everyday News with LLMs: How Reliable Is It?
20 - Tayyaba Sajjad	Optimizing Purification of ABCA4's ECD Domains for Downstream Functional Studies
21 - Liam Stapley	Human Centered Evaluation of CLAP-Based Emotion Annotations for Therapeutic Music
22 - William Taylor	Graph Signal Processing in Spatial and Directed Graphs
23 - Juliette Tzitzis	Optimizing LC Films for Touch Haptics
24 - Lauren Waksman	Sustainable Knitwear Innovation: Minimizing Yarn Waste Through Cable Design
25 - Julie Griesbach	Advances Knit Solutions for Gender-Inclusive Firefighting PPE
26 - James Martin	Integrin Expression Identifies Muscle Progenitor Cell Heterogenenites for 3D Engineered Skeletal Muscle
27 - Lindsay Gallagher	Leveraging Laponite to Control the Release of Regulatory T-Cell Targeting Cytokines from Alginate Hydrogels

12:10-12:40pm Lightning Talk Session 2

Marcus Beardsley	The Communal Identities of Roman Port Laborers
Anoushka Buddhikot	Toward an L-Threonine Transaldolase with Enhanced L-Threonine Affinity via Machine Learning
Ceili Corey	Toward a TraumaInformed Courtroom: Practices for Justices with Compassion
Chloe Dobbins	Evaluating the Sustainability of Maasai Dress: Maasai Clothing Practices Through a Fashion Sustainability Lens
Maya Morefield	Fine-Tuning a Sediment Classification Model
Favour Onu	Conceptual Character Design Inspired by Nigerian Mythology
Frohar Sarwari	Urban Sociology and Urban Health: Linking Space, Society & well being
Julio Carrillo Soto	Disproving Conjectures in Spectral Graph Theory with a Little Help from AI

12:50-1:15pm Poster Session 2

1 - Avneet Aurora	Deep Learning for Forest Fingerprints
2 - Heaven Boisclair	Investigating BDNF Gene Methylation Status in Prenatally Opioid-Exposed Infants Following Attachment and Biobehavioral Catch-Up Intervention
3 - Ethan Bowen	Building a Modular 3D Printer For Embedded Soft Material Printing
4 - Alexander Broadhurst	Changes in Mouse Activity Following Medial Meniscus Destabilization
5 - Jacob Gordon	Towards More Efficient LLM Prompting: Few Shot Versus Zero Shot Prompting
6 - Eric Grinnage	Hidden Structures of Tolerance and Predicting Belongingness: Implications for Interpersonal, Social, and Emotional Dynamics
7 - Kathleen Higgins	Severity-Dependent Bias in LLM Detection of Polarizing Language: Implications for Scalable Misinformation Detection
8 - Alexander Hinton	Characterizing the native transposases of <i>Neocallimastix frontalis</i> to activate natural product formation
9 - Samantha Ingerson	Chemical Targeting of Hypoxic Signaling to Enhance Chondrocyte Repair Potential
10 - Aubryanna Jarchow	Solvent Swelling of Low-Density Polyethylene Potentially Increases Dye Decolorizing Peroxidase Oxidation
11 - Elissa Kouemeni	NFIX Regulation of Muscle Development in Cerebral Palsy
12 - Faiz Madiwale	Development of a Tunable Fuse for Biocontainment
13 - Megan Maurer	Electrochemical deposition of metallic copper catalyst for CO ₂ electrochemical reduction
14 - Francis Murphy	Using Exams as Learning Tools: Automated Feedback for CS1 Programming Exams
15 - Jackson Myers	Designing PDMS Devices to Investigate Bacterial Behavior in Structured and Multiphase Environments
16 - Miranda Protack	Healthy Lies: The Packaging of Deception
17 - Cody Rager	Greater Relative Left Vs. Greater Relative Right Resting Data Measured in Substance Abuse Individuals
18 - Daniel Ruoff	Synthesis of Copper Iodide Nanoparticles: Effects of Precursors and Reaction Conditions
19 - Abigail Rus	Examining the Influence of Gender Identity, Gender Expression, and Race on Pain Perception
20 - Zaria Singleton	Functional characterization of new short prokaryotic Argonaute systems for molecular diagnostics
21 - Gabrielle Smith	Soft Substrate Biomedical Adhesive Peel Mechanics
22 - Oliver Solar	Geochemical investigation of melting processes in mantle peridotites from the Talkeetna Arc
23 - Ethan Stoecker	Assessment of Subchondral Bone Structure in Osteoarthritic Mixe
24 - Zachary Tapper	Expansion, Corruption, and Normalization of Violence in the Roman Republic
25 - Oviyanna Umoh	Epigenetic Changes in FKBP5 Following a Modified Attachment and Biobehavioral Catch Up Intervention
26 - Kacey Veeck	Prevalence and Diversity of Avian Malaria Parasites Across Elevational Gradients in Montane Papua New Guinean Birds
27 - Alyssa Wronski	Exploring the relationship between emotional trauma and voice disorders
28 - Nicolas Kristensen	Acts of Self Sabotage: How America's Foreign Aid Policy is Alienating Its Closest Allies
29 - Olivia Szulc	Effects of Substance Exposure on Parent BDNF Gene Methylation Across Time

1:20-1:50pm Lightning Talk Session 3

Sarah Lovett	Investigating the Neurogenetics of Social Isolation-Induced Food Choice Changes in <i>Drosophila</i>
Alyssa Burlack	Altered DMN Connectivity Following Traumatic Stress

Renee DeBellis	Perceptions of Personality Traits Among Men Who Are Potential Job Candidates
Brooke Emeigh	Nylon & Seaford, Delaware
Genevieve Gore	Postcards of Newark
Lauren Karpyn	The H-2A Visa and Immigration under the Trump Administration
Katelyn Miller	Exploring 3D-Printed Implants for Bone Regeneration
Aadhi Narayan	Evaluating Alginate Microparticle Generation & Encapsulation Strategies for Targeted Drug Delivery

2-2:25pm Poster Session 3

1 Jacob Nicosia	Conditional Protein Degradation using RNA Aptamers
2 Peyton Swanson	Quantification of the Partition Coefficient of Binary Solvents between Liquid and Microporous Zeolite Phases
3 Maxwell Weaver	Mouth Gape as a Means to Inform Ecology in Lamniform Sharks
4 Summer Nies	Trashateague National Seashore
5 Benjamin Zifcak	Is Canvas failing its neurodivergent users?: The affects of integrated learning resources on the academic confidence of neurodivergent students
6 Ava Vitabile	Visually Depicting the Rafinesque's Big-Eared Bat
7 Ryan Stewart	Developing a hybrid bacterial–yeast platform for MHC-peptide screening
8 Jacob Escobar	Using CRISPR-Cas9 Genome Editing for Point Mutations in the Eukaryotic Release Factor of CHO (Chinese Hamster Ovary) Cell Lines
9 Ahmed Alkaye	The Effect of Added Mass on Limb Contributions to the Lateral Center of Mass Trajectory During Walking
10 Isabella Doncel	Developing a Cervical Epithelial Microphysiological Model for Disease Studies
11 Kingsley Royal	Analysis of ACL Reconstructed Graft Sites Using Shear Wave Tensiometry and Marker-less Motion Capture
12 Daniel Sloyer	Support and Opposition for Different Periods of Desegregation in Claymont, Delaware
13 Andrew Cagliostro	Evaluating Collagen Mimetic Peptide Functionalization in Polyplex Nanoparticles for Enhanced Plasmid DNA Delivery
14 William Snyder	Defining A Cytoplasmic Role For A Histone Methyltransferase In <i>C. elegans</i> Muscle
15 Thomas Dick	Leveraging Design of Experiment Sampling Method in the search for an active Cu2O electrode for glucose electrochemical detection
16 Emma Aucker	Evaluating Just-In-Time Digital Interventions Using the Consumer Food Insights Survey
17 Bianca Murtha	Identifying Colorimetric Sensors to Detect Warfare Agents
18 Lana Kelly	Investigating how the radical SAM Elp3 manipulates acetyl-CoA to modify tRNA
19 Manav Patel	Electrochemical behavior of copper(II) with organic additives
20 Michael Guarino	Determining the Material Resistance of Carbon Paper GDLs Using a Compression Rig Measuring Through-Plane Resistance
21 Marian Wehner	The Impact of Sublethal Doses of Irradiation on Behavior and Marker Expression in Glioblastoma Stem Cells
22 Ethan Speerli	Advanced Biomass-Derived Copolymers for Circularity
23 Rebekah Tuminaro	Circular RNA as a Potential Biomarker for Ewing's Sarcoma
24 Nolan Vasil	Automating Viral Replication Module Detection: A Pipeline for Environmental Phage Metagenomics
25 Lily Hearn	Ceramics Use, Social Expectations, and Economic Stressors for People in Northern Delaware, 18th-19th Centuries: The Augustine Creek North and South Sites
26 Nikita Lachke	Potential Actin Modulating Therapeutics in Regulating Chondrocyte Phenotype in Passaged Chondrocytes
27 Dakota Galangue	Student Belonging and Self-to-Peer Evaluation: A Structural Equation Modeling Approach to Group Project-Based Learning
28 Kaeden Monroe	Frame Ingestion Pipeline for Gaussian Splatting
29 Joseph Farley	Path Planning for a Watermelon Harvesting Robot
30 Kyle Wodehouse	Ruthenium Supported Ion Exchange Resin as a Glucose Hydrogenation Catalyst
31 Tayah Burnett	Simulation-Based Device to Support Accessible Sexual Health Education and STI Prevention

2:30-3pm Lightning Talk Session 4

Aryan Ajesh	How Craving and Drinking Tendencies Shape Motivation: Using a Mobile Alcohol Approach-Avoidance Task
Evan Borodin	Reconstructing Bottom Water Oxygenation in the Labrador Sea Using Stable Carbon Isotope Geochemistry
Sophia Gupman	Material Reinterpretation as Research: Sustainable Color and Zero-Waste Garment Design Inspired by Letty Esherick
Joshua Koppel	Nothing we could've done: Attribution of Blame in the Media for the July 2025 Texas flood
Julia Querey	Can Patient-Derived Ovarian Tumor Organoids Predict Chemotherapeutic Response?
Austin Safadi	Mitochondrial Termination
Taran Kermani	Can Plants Inherit Memories of Beneficial Bacteria from their Parents?
Arielle Mahugu	Hyperglycemia Impairs Endothelial Kir2.1

Digital Posters

Digital posters are not displayed at the Winter Showcase. Scan the QR code below to access selected digital posters.

Ava Barrera	Linking Ecological and Life History Traits to Ventilatory Behavior in Sharks
Bear Figueroa	For Me to Know and You to Find Out: Trans Identity Through Mixed Media
Kelly Irwin	Vocal Health Stigma: Perceptions in Undergraduate Music Programs
Grace Lyons	Perineuronal Nets in the Thalamic Reticular Nucleus after Postnatal Alcohol Exposure in a Rodent Model of FASD
Tessa Marion	Synthesis of Biotinylated NAB2 for Nedd4-Tau AUTAC Molecule Proximity Ubiquitination
Sarah Pienkos	Right Tibia MRI: Bone Marrow Edema and Knee Joint Effusion
Jessica Rauch	Investigating the role of the RAB-28 GTPase on the Biogenesis and Uptake of Extracellular Vesicles
Shelby Serrano	Effect of combination homofermentative and heterofermentative inoculants on corn silage fermentation
Lindsey Wang	Towards a Quantitative & Open-Source Assessment of PMT Performance

Digital Posters



3-4pm Fulbright Panel

Sponsored by the Office of National Fellowship

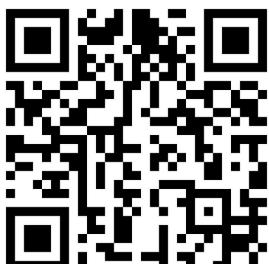
Ellery Berman Chudnow, Semi-Finalist for the Fulbright MA Degree Award to Israel

Jack Mullarkey, Semi-Finalist for the Fulbright English Teaching Assistantship to Spain

Nivedita Prabhu, Semi-Finalist for the Fulbright-Tampere University Graduate Award to Finland

Amber Tiongson, Semi-Finalist for the English Teaching Assistantship to Uruguay

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