AUTUMN UNDERGRADUATE RESEARCH FESTIVAL

NOVEMBER 2, 2023

POMERENE HALL TDAI IDEATION ZONE

POSTER PRESENTATIONS

10:00am-11:00am

12:00pm-1:00pm

1:30pm-2:30pm

3:00pm-4:00pm

Message from the Office of Undergraduate Research & Creative Inquiry

Dear students and colleagues,

It is our great pleasure to welcome you to the Autumn Undergraduate Research Festival. 117 undergraduates are presenting their research and creative endeavors throughout the day. Under the direction of their research mentors, students carried out collaborative research projects to solve pressing local, statewide, national and global issues. We would like to extend a special thank you to our research mentors, volunteers and visitors. Congratulations to our students on their research accomplishments. Have a wonderful day.

Sincerely,
The Undergraduate Research & Creative
Inquiry Team

Poster 1: Abby Bush - Psychology

Project Mentor: Vanessa Ivy
"The Future of Women's Reproductive Rights and the Importance of
Collective Action"

Poster 2: Julia Frost - Anthropology

Project Mentor: Grant Coffey
"Survey of Hawkins Preserve (Cortez, CO)"

Poster 3: Jake Schmitt - Pharmaceutical Sciences and German

Project Mentor: Mark Mitton-Fry
"The Synthesis of Novel Agents Targeting Salmonella enterica
Typhimurium by Jake Schmitt and Dr. Mark Mitton-Fry"

Poster 4: Anna Beck - Biochemistry

Project Mentor: Ryan Hooper "The CEVIC Device: Mixing Up New Visions of Vasculature"

Poster 5: Aarti Patel - Biomedical Engineering

Project Mentor: Natalia Higuita-Castro
"Treating Neurofibromatosis Type 1 with Engineered Extracellular
Vesicles"

Poster 6: Rileigh Dunn - Zoology

Project Mentor: Rachelle Adams
"Population Dynamics of a Farmer Ant Host"

Poster 7: Nicole Pickard - Animal Sciences

Project Mentor: Jeffrey Firkins
"Effects of Branch-Chain Volatile Fatty Acid Supplementation
on Intermeal Intervals in Dairy Cattle"

Poster 8: Caitlin Chien - Environmental Engineering

Project Mentor: Daniel Gingerich "Multicriteria Analysis of Water System Capacity in Ohio"

Poster 9: Betsy Cunningham - Sustainable Plant Systems: Horticulture

Project Mentor: Alyssa Essman
"Screening for Herbicide-Resistance in Ohio Waterhemp
Populations"

Poster 10: Enrique Ruiz - Microbiology

Project Mentor: Carlos Castro "Rapid in Vitro Release of ssDNA from Complex Templates"

Poster 11: Hank Kern and Suchir Movaa

Biochemistry | Biomedical Science Project Mentor: Noah Weisleder "MG53 AAV Constructs as a Gene Therapy for Dysferlinopathies"

Poster 12: Khushi Gupta - Chemistry

Project Mentor: Maria Mihaylova "Diet Dependent Effects on Wnt Signaling in the Intestinal Niche"

Poster 13: Yusuf Rasheed - Biology

Project Mentor: Junran Zhang
"Characterization of POLR3D Gene Has Pointed to a Role in the DNA
Damage Response Pathway, Thus Inhibition of POLR3D Reveals a
Novel Target for Breast Cancer Therapy"

Poster 14: Ariana Sanabria - Neuroscience and Spanish

Project Mentor: Erika Kemp
"Investigating the Effectiveness of Goal Attainment Scaling in
Measuring Progression in Aquatic Therapy for Children with ASD."

Poster 15: Aadil Umerani - Neuroscience

Project Mentor: Jonathon Butchar
"Screening the Efficacy of Novel Small Molecule Inhibitors of GSTP1
in Pancreatic Cancer"

Poster 16: Josh Alvarez - Microbiology

Project Mentor: Lorena Rosas

"Upregulation of MOXD1 is Associated with Impaired Copper
Transport in Idiopathic Pulmonary Fibrosis"

Poster 17: Blake Chapman and Maggie Chafin - Landscape Architecture

Project Mentors: Tameka Baba and Halina Steiner "Pipe Up!"

Poster 18: Shivani Dhekne - Neuroscience

Project Mentor: Eswar Shankar
"Investigating EZH2 Inhibition as a Therapeutic Target in Triple
Negative Breast Cancer"

Poster 19: Kavya Alagappan - Biology

Project Mentor: Dharini Bhammar "Postural Respiratory Mechanics In Children With Obesity"

Poster 20: Anvitha Gogineni - Neuroscience

Project Mentor: Maryanna Klatt
"Mindfulness in Motion Targeted to Sustaining the Mental and
Physical Resilience of First Responders"

Poster 21: Emily Vais - Molecular Genetics

Project Mentor: Jian-Qiu Wu
"Roles of Septins in Exocytosis through Physical Interactions with
the Exocyst Complex During Fission Yeast Cytokinesis"

Poster 22: Chandni Patel - Biomedical Science

Project Mentor: Latha Ganesan
"The Role of B Cells and TCRβ+CD138+ T Cells in the Pathogenesis of
Kidney Injury in Lupus Nephritis"

Poster 23: Samiksha Prasanna - Public Health

Project Mentor: Nandini Acharya "Deciphering the Neuro-Immune Crosstalk in Glioblastoma"

Poster 24: Alyssa Kadlubowski - Chemical Engineering

Project Mentor: Martina Leveni
"The Use of Underground Hydrogen Storage (UHS) in
Decarbonizing Domestic Heating"

Poster 25: Chase Majkowski - Sociology

Project Mentor: Candice Crutchfield
"Shining the Rust Belt With (In)equality: A Longitudinal Look at
Environmental Racism in Ohio"

Poster 26: Kathryn Turner - Mathematics and Biology

Project Mentor: Lorena Rosas
"Single Cell Fixed RNA Profiling: A Novel Approach to Elucidate the
Diversity of Human Lung Tissue"

Poster 27: Irene Rozenberg - Molecular Genetics

Project Mentor: Hiroki Taniguchi
"Searching for Transcription Factors that Dictate Terminal
Differentiation of Cortical Chandelier Cells"

Poster 28: Kerianne Bowyer - Environmental Science

Project Mentor: Karen Goodell
"Comparing Richness and Abundance of Beneficial Insect Taxa
Across Two Sites and Trapping Methods in Allen County, Ohio"

Poster 29: Madison Frankhauser - Neuroscience

Project Mentor: Kathryn Lenz
"Peripartum Opioid Exposure Impairs Maternal Behavior and
Increases Inflammatory Gene Expression"

Poster 30: Richard Phan - Health Sciences

Project Mentor: Michele Basso
"Can Eccentric Rehabilitation Induce Myelin Plasticity Below Spinal
Cord Injury in Mice?"

Poster 31: Zain Piracha - Neuroscience

Project Mentor: Shahid Nimjee
"Prophylactic Von Willebrand Factor Inhibition Prevents Murine
Venous Thrombosis"

Poster 32: Emma Wang - Biomedical Engineering

Project Mentor: Jie Gao
"Profiling Changes of TREM2 Interactome Caused by Alzheimer's
Disease Associated Variations"

Session 2 12:00 pm-1:00 pm

Poster 1: Kezia Duah - Biology

Project Mentor: Heather Allen
"Quantification of Oceanic Organic Composition through
Vibrational Spectroscopy"

Poster 2: Monica Paredes - Biomedical Science

Project Mentor: Amanda Toland
"The impact of Estrogen Signaling on Proliferation of TP53 Mutant
and Wildtype Isogenic Cell Lines"

Poster 3: Mia Eleid - Neuroscience

Project Mentor: Jenna McCloskey
"Traumatic Brain Injury Causes Risk Aversion in a Probability
Discounting Task but Decreases Optimal Decision-Making on a
Gambling Task"

Poster 4: Celeste Miller - Food Science and Technology

Project Mentor: Rafael Jimenez-Flores
"Positive Impact of Milk Fat Globule Membrane on Mucosal
Proteins Produced by DSS-insulted Intestinal Cells"

Poster 5: Christopher Johnson - Aviation Engineering; Computer Science and Engineering

Project Mentor: Amber Woodburn McNair
"Key Factors in Vertiport Site Selection for Megapolitan Regions"

Session 2 12:00 pm -1:00 pm

Poster 6: Tiffany Nguyen - Health Sciences

Project Mentor: Tasha Posid
"Barriers to Navigating the Medical Path: A Qualitative Focus Group
Study of First-Generation Medical Students and Residents"

Poster 7: Meera Rajeev - Biomedical Science

Project Mentor: Sarah MacEwan

"Patient and Provider Perspectives About the Use of a Patient Portal
to Identify and Address Social Needs During Prenatal Care"

Poster 8: Francesca Dishueme - World Politics

Project Mentor: Hilary Bussell
"Navigating Representative Bureaucracy: Benefits, Barriers, and
Vulnerabilities of Ohio Advisory Diversity Commissions"

Poster 9: James Carpenter - Biomedical Science

Project Mentor: Gina Sizemore "PDGFB Signaling as a Driver of Brain Metastasis in Solid Tumors"

Poster 10: Simon Lococo - Biomedical Engineering

Project Mentor: Drew Nassal

"Mechanism for Cardiomyopathy and Cardiac Arrhythmia

Associated with a Novel Human Titin Variant"

Session 2 12:00 pm - 1:00 pm

Poster 11: Alexa Furukawa - Medical Anthropology and Biology

Project Mentor: Priya Dedhia
"GammaH2AX and Homologous Recombination Overexpression
Correlate with DNA Repair Deficiencies in Adrenocortical
Carcinoma"

Poster 12: Aidan Johantges - Neuroscience

Project Mentor: Jason Wester
"Superficial Pyramidal Cells Preferentially Target OriensLacunosum Moleculare Interneurons in CA1 Hippocampus"

Poster 13: Anvitha Gogineni - Neuroscience

Project Mentor: Tasha Posid
"A Qualitative Review of Patient-Perceived Barriers to Seeking and
Accessing Healthcare in a Local Underserved Patient Population"

Poster 14: Jake Maziarz - Neuroscience

Project Mentor: John Gunn
"The Role of Extracellular Matrix Components in Invasive Non-Typhoidal Salmonella Lineage Biofilm Formation"

Poster 15: Jack Scott - Microbiology

Project Mentor: Paula Agudelo Garcia "Deficient Fatty Acid Oxidation Impairs Lamina B1 Dynamics"

Session 2 12:00 pm - 1:00 pm

Poster 16: Leena Eltilib - Health Sciences

Project Mentor: Brian Foster
"Enamel and Dentin Defects from Dentinogenesis Imperfecta in Secondary Dentition"

Poster 17: Monica Pannett - Pharmaceutical Sciences

Project Mentor: Jason Coronel
"Sexism and Romantic Relationships"

Poster 18: Anitvir Taunque - Biomedical Science

Project Mentor: Lluis Samaranch
"Anti-capsid Immune Response after AAV2-hAADC Repeated Brain
Administration into Nonhuman Primate"

Poster 19: Sara Abul-Khoudoud - Biomedical Science

Project Mentor: Thalia Pacheco-Fernandez
"Targeting Factor H to Prevent L. mexicana Evasion of the
Complement Immune System"

Poster 20: Hasan Abaza and Adrienne Heyrosa - Medical Laboratory Sciences

Project Mentor: Ann-Kathrin Eisfeld
"Differences in Transcription Factor Binding in Inflammation-Related Genes between Black and White Acute Myeloid Leukemia
Patients"

Session 2 12:00 pm - 1:00 pm

Poster 21: Katie Shuster - Biology

Project Mentor: Antoinette Marsh
"Evaluating the Gastrointestinal Trichostrongyle Parasite Field
Challenge in an Alpaca Barbervax® Vaccine Trial"

Poster 22: Pranali Mistry - Neuroscience

Project Mentor: Scott Harper "Optimization of AAV Vector Design to Reduce Cross-Packaging"

Poster 23: Lawrence Mazzoni - Biology

Project Mentor: Darryl Wesener
"Designing an Ideal Media to Study Bacterial Polysaccharide Cross-Feeding in the Human Gut Microbiota"

Poster 24: Ashu Patel - Health Sciences

Project Mentor: Xin Feng
"Physiological Responses in Disappointment Task as Predictors of
Pre-Schoolers' Social Withdrawal"

Poster 25: Sanjana Ranade - Neuroscience and Spanish

Project Mentor: Benedetta Leuner
"Microglial Alterations Following Adolescent Hormonal
Contraceptive Administration"

SESSION 2 12:00PM-1:00PM

Poster 26: Bryan Crase - Neuroscience

Project Mentor: Rolf Stottmann
"BRWD3 as a Candidate Gene to Model Human Polymicrogyria in
Mice"

Poster 27: Giulia Tasso - Psychology and Human Development and Family Science

Project Mentor: Allen Mallory
"Plurisexual Identities, Stigma, and Mental Health"

Poster 28: Samuel Gill - Environmental Engineering

Project Mentor: Karen Dannemiller
"Microbial Growth on Materials from the International Space
Station (ISS)"

Poster 29: Zaida Jenkins - Public Administration

Project Mentor: Josh Hawley

"Ohio's Youth Comprehensive Case Management and Employment Program Lifetime Enrollment and Performance Metric Analysis"

Poster 30: Neil Thakkar - Biomedical Engineering

Project Mentor: Gallego Perez

"Nanoengineering Myeloid Cells for the in-situ Deployment of EVs to Enhance Cerebrovascular Function in Alzheimer's Disease"

SESSION 3 1:30PM-2:30PM

Poster 1: Skylar Lynch - Biomedical Engineering

Project Mentor: Jessica Winter
"Investigating Effects of Astrocytes on Breast Cancer Tumor Spheres
Growth and Migration Using 3D In-Vitro Hydrogel Models"

Poster 2: Andrew Gotschall - Biomedical Science

Project Mentor: Daniel Gallego-Perez "Non-viral Co-transfection of Plasticity-inducing and β Cell Patterning Transcription Factors Mediates Pro- β Cell Reprogramming in Fibroblast Cultures"

Poster 3: Unni Shreram - Mathematics and Spanish

Project Mentor: Tasha Posid
"Viewpoints of Patients Regarding Their Reasons for Undergoing a
Vasectomy: Impact of the Dobbs vs. Jackson Women's Health
Organization Decision"

Poster 4: Christina Isckarus - Biochemistry

Project Mentor: Namal Liyanage
"A Novel Adjuvant to Enhance NK Cell Response in HIV Preventive
Vaccines"

Poster 5: Alicea Gosal - Neuroscience

Project Mentor: Ahmed Yousef
"Enhancing Production of Nisin with Sequential Drug Resistance
Screening"

Poster 6: Matthew Lincicome - Forestry, Fisheries, and Wildlife Project Mentor: Mazeika Sullivan

"Predator-Prey Interactions of Largemouth Bass in Response to Artificial Lighting at Night and Turbidity"

Poster 7: Katelyn Fulcher - Sustainable Plant Systems Project Mentor: Kristin Mercer

"Seed and Seedling Characteristics of Chile Pepper (Capsicum annuum L.) Across a Domestication Gradient"

Poster 8: Colleen Booth - Molecular Genetics Project Mentor: Ginny Bumgardner

"Investigating the Memory Capacity of CXCR5+ CD8+ T Cells"

Poster 9: Maxine Xu and Samantha Caffin Data Analytics and Lingustics | Health Science

Project Mentor: Nikole Patson
"The Lingering of Mentioned and Unmentioned Alternatives"

Poster 10: Kailee Kretzinger - Environmental Science

Project Mentor: Ieva Roznere

"Assessing Trends in Water Quality at the Freshwater Mussel
Conservation and Research Center"

Poster 11: Laurel Fleszar - Molecular Genetics

Project Mentor: Anna Dobritsa
"Investigating the Effect of Truncated ELMOD Proteins on Pollen
Aperture Formation"

Poster 12: Radhika Abeywickrama - Molecular Genetics

Project Mentor: Anna Dobritsa
"Uncovering Genes involved in Exine and Aperture Formation in
Arabidopsis thaliana Pollen Grain"

Poster 13: Mingxuan Wu - Engineering Physics

Project Mentor: Leonard Brillson
"Defect Formation and Diffusion in Nitrogen-Annealed Gallium
Oxide"

Poster 14: Rachel Obler - Environmental Science

Project Mentor: Ieva Roznere
"Assessing the Quantity and Quality of RNA Extracted from
Freshwater Mussels"

Poster 15: Mia Schmittenberg - Psychology

Project Mentor: Daniel Strunk
"Stick with It or Change Strategy? An Examination of Therapist
Options When Working with Low Engaging Patients"

Poster 16: Megan Bartoszek - Psychology and Molecular Genetics

Project Mentor: Anthony King
"Investigating Interleukin-6 Levels in Relation to Post-traumatic
Stress Disorder Symptom Severity and Therapeutic Response"

Poster 17: Laksh Dhir - Neuroscience

Project Mentor: Sudarshan Jadcherla
"A Comparative Analysis of Nutritive and Non-Nutritive Suck in
Human Neonates"

Poster 18: Audrey Odier - Pharmaceutical Sciences

Project Mentor: Lalit Sehgal
"Understanding the Contribution of Bone Marrow-Derived Stromal
Cells to Drive Proliferation in Mantle Cell Lymphoma"

Poster 19: Brianna Michel - Biochemistry

Project Mentor: Maryanna Klatt
"Enhancing Quality of Patient Experience via an Innovative
Reduction of Pre-Operative Anxiety"

Poster 20: Katie Vatke - Environmental Engineering

Project Mentor: Patrick Sours
"Optimization of Sand Filtration for Passive Water Treatment"

Poster 21: Dena Mossad - Health Science

Project Mentor: Jerry C.W. Lio
"Targeted Reactivation of Endogenous Retrovirus to Elicit AntiTumor Response"

Poster 22: Owen Meadows - Biomedical Science

Project Mentor: Amanda Toland
"Investigating PIK3CA and MAP3K Pathways in Breast Cancer"

Poster 23: Madeline Riley - Biomedical Science

Project Mentor: Lorena Rosas "Inhibition of TGF-β/Smad Signaling Attenuates Extracellular Matrix Accumulation in a Human ex-vivo Model of Pulmonary Fibrosis"

Poster 24: Xander Carroll - Computer Science and Engineering and Astronomy and Astrophysics

Project Mentor: Darren Drewry

"Utilizing the Process Network Statistical Model to Better
Understand Terrestrial Systems"

Poster 25: Rheanna Velasquez - Neuroscience

Project Mentor: Melissa Palma

"Filipino Young Leaders Program (FYLPRO) tayohelp.com:
Evaluating Heart Health Education Materials and
Recommendations for Community Outreach"

Poster 1: Ally Lewis - Food, Agricultural, and Biological Engineering

Project Mentor: Gonul Kaletunc
"Effect of Particle Size on the Mechanical and Physical Properties of
Ultrasonically Compressed Nutrition Bars"

Poster 2: Abigail Kraynak - Biology

Project Mentor: Billur Akkaya "Identification, Enrichment, and Expansion of Antigen-Specific Regulatory T Cells"

Poster 3: Jaden Zelidon - Neuroscience

Project Mentor: Bin Gu
"Automated Detection and Classification of Flurothyl-Induced
Seizure in Collaborative Cross (CC) Mice Using DeepLabCut (DLC)
and B-SOiD"

Poster 4: Alora Brown - Animal Sciences

Project Mentor: Sara Mastellar "Effects of Meal Frequency on Heart Rate in Horses"

Poster 5: Dalia Einstein - Psychology and Neuroscience

Project Mentor: Jasmeet Hayes
"Investigating a Novel Measurement for PTSD White Matter
Damage"

Poster 6: Mateo Zevallos - Biomedical Science

Project Mentor: Aaron Goldman
"Translation Initiation Factor Homologs' Role During Cardiac
Regeneration in Zebrafish"

Poster 7: Maxine Berger - Neuroscience

Project Mentor: Lalit Sehgal
"Examining the Role of Venetoclax in the Bone Marrow
Microenvironment"

Poster 8: Anna Le - Biomedical Engineering

Project Mentor: Sara McBridge-Gagyi "Lead-Based Nanoparticle Contrast Agent for Vascular MicroCT Imaging"

Poster 9: Zahra Khuhro - Neuroscience

Project Mentor: Tasha Posid
"Improving Resident Autonomy via Scaffolding and SelfDetermination Theory: Results from a Qualitative Research Study"

Poster 10: Zaida Jenkins - Public Adminstration

Project Mentor: Josh Hawley
"Ohio's Youth Comprehensive Case Management and Employment
Program Lifetime Enrollment and Performance Metric Analysis"

Poster 11: Debbie Hodson - Mechanical Engineering

Project Mentor: Ajay Shah
"Applications and Energy Sources of Pico-Grid Systems for Agricultural Mechanization for Smallholder Farmers"

Poster 12: Geoffrey Xue and Jordan Neal

Psychology | Chemistry
Project Mentor: Kamalakannan Palanichamy
"Metabolic and Methylation Profiling of Isogenic IDH1(R132H) and
MTAP to Understand Methylome Remodeling for Therapeutic
Intervention in Gliomas"

Poster 13: Rebecca Morton - Microbiology

Project Mentor: Kristine Yoder
"Investigations of Prototype Foamy Virus Integration"

Poster 14: Emma Spirollari - Biology

Project Mentor: Mark Rubinstein
"The Effect of Chemotherapy on Immune Cells"

Poster 15: Abigail Fisk - Chemistry

Project Mentors: Christopher Callam and Christopher Hadad
"Synthesis of Phenol-Based Quinone Methide Precursors as
Potential Resurrectors and Reactivators of Aged and Inhibited
Acetylcholinesterase"

Poster 16: Sravani Konakalla - Health Sciences

Project Mentor: Natalia Vanegas
"Epithelial- IPF Fibroblast Crosstalk and its Effects on Gene
Expression of Airway Epithelial Differentiation Markers In 3D
Organoids"

Poster 17: Joshua Jeyandran and Hasan Abaza

Medical Anthropology | Medical Laboratory Science
Project Mentor: Lilly Hetson
"Enhancing Referral Success for Underserved Hispanic Patients
through Follow-Up Calls"

Poster 18: Robert Smallwood - Biomedical Engineering

Project Mentor: Sara McBride-Gagyi
"Effects of Estradiol (17-alpha) on Osteoarthritis in Genetically
Heterogeneous Het3 Male Mice"

Poster 19: Elizabeth Yirava - Statistics and Public Policy Analysis

Project Mentor: Joshua Hawley
"OHFA and OERC Data Analysis and Visualizations"

Poster 20: James DeMarsh - Neuroscience

Project Mentor: Ruth Barrientos
"Regional Disparities in High-Fat Diet Effects on
Neuroinflammation and Amyloid Beta Pathology in 3xTg-AD Mice"

Poster 21: Holden DeVassie - Health Sciences

Project Mentor: Brittany Hand
"Development of PREPARE for Autistic Adults: An Adult Autism
Training for Resident Physicians Designed with Autistic Adults and
Family Members"

Poster 22: Cordelia Van der Veer - Public Policy Analysis and Political Science

Project Mentor: Joshua Hawley
"Machine Learning and Data Analysis to Improve Public Sector
Vocational Program Placement"

Poster 23: Payton Compton - Health Sciences

Project Mentor: Jessica Brown
"DNA Barcoding of Cryptococcus neoformans to Understand
Pathogen Dissemination"

Poster 24: Ethan Harpster - Computer Science and Engineering

Project Mentor: Raghu Machiraju
"Using Machine Learning for the Automation of Wet Lab
Procedures to Increase Reproducibility"

Poster 25: Sylvia Ghotra - Microbiology

Project Mentor: Natalia Vanegas

"Identification of Secreted Proteins by IPF Senescent Human Lung
Fibroblasts"