



**ASHLAND**  
UNIVERSITY

College of Arts  
and Sciences

Undergraduate Research and Creative Activity  
Symposium  
April 8, 2025  
John C. Myers Convocation Center

**ORAL SESSION I: 8:45 A.M.-10:15 A.M., Trustees Room**

<b>Katherine Brown</b> Dean, College of Arts and Sciences	<b>Welcome and Opening Remarks</b>
<b>Kristyn Conrad</b>	<b>Defining Mechanisms of Golgi Retention in the ATP7A Copper Exporter</b>
<b>Allison Lawrentz Barnhart</b>	<b>Blending Art and Genealogy Together: Exploring Creativity Through Heritage</b>
<b>Jaelyn Palmer</b>	<b>Suggested Methods of Deterrence for Crapemyrtle Aphids (CMA: <i>Tinocallis kahawaloukalani</i>) on Crapemyrtle Trees Using Known Phytochemical and Behavioral Information</b> Faculty Sponsor: Dr. Cynthia Perkovich, Biology

**ORAL SESSION II: 10:30 A.M.-11:45 A.M., Trustees Room**

<b>Gabe Eckstein</b>	<b>Keeping Anne Alive: A Unit Plan for Teaching the Significance of <i>The Diary of a Young Girl</i></b> Faculty Sponsor: Dr. Maura Grady, English
<b>Bryce Bishop</b>	<b>Notepad: Musician Portfolio</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Joshua Carpenter</b>	<b>Musical Midrash: The Passion Narrative and <i>Jesus Christ Superstar</i></b> Faculty Sponsor: Dr. Kirsty Jones, Religion
<b>Steven Short</b>	<b>Assessment of Multi-Class Classification Models in Liver Cirrhosis Stage Identification</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Abigail Hassenzahl</b>	<b>Assassin's Secret</b> Faculty Sponsor: Dr. David McCoy, Digital Media Production

**ORAL SESSION III: 10:30 A.M.-11:45 A.M., Faculty Room**

<b>Brendan Dee</b> <b>Richard Legg</b>	<b>Using Policy to Ensure Ethical Usability of Blockchain</b> Faculty Sponsor: Dr. Abdulbast Abushgra, Cybersecurity
<b>Josie Gorges</b> <b>Juliana Howard</b> <b>Jent Joseph</b>	<b>A Public Relations Campaign for Ashland Main Street</b> Faculty Sponsor: Dr. Olga Monacell, Communication Studies
<b>Jason Formani</b> <b>Reese Redman</b>	<b>Real-Time Gaming Hub: Building a Seamless User Experience</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Leanna Uselton</b>	<b>Through Moss Covered Branches: Falling into the Southern Gothic</b> Faculty Sponsor: Dr. Jason Stevens, Political Science
<b>Gavin Zeager</b>	<b>NetWorksCMS: Improving Web Security and Development</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science

### POSTER/EXHIBITION SESSION I: 11:45 A.M.-12:45 P.M. Alumni Room

Poster #1	Melanie Eichler Anna Ramsier	<b>Synthesis and Purification of a Phosphazene Drug Delivery System</b> Faculty Sponsor: Dr. Nicholas Johnson, Chemistry
Poster #2	Jaelyn Palmer	<b>Pre and Post Digestive Cues of the Crapemyrtle Aphid (CMA: <i>Tinocallis kahawaluokalani</i>) Relating to Anti-Nutrit BiologyBive Constituents</b> Faculty Sponsor: Dr. Cynthia Perkovich, Biology
Poster #3	Aaron Mohny Raechel Serafimov Megan Tomasic	<b>Analysis of Cannabinoids and Metals in Legally Distributed CBD and THC Products</b> Faculty Sponsor: Dr. Brian K. Mohny, Chemistry & Toxicology
Poster #4	Sarah McKee William Starnes	<b>Analysis of Antioxidant Glutathione in Eye Lens by High Performance Liquid Chromatography</b> Faculty Sponsor: Dr. Brian K. Mohny, Chemistry & Toxicology
Poster #5	Braeden Geist	<b>GMAC Athletics Tables</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Poster #6	Veronika Khomukha	<b>PennyWise: Financial Tracker for Beginners</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Poster #7	Hannah McCrea	<b>How Uptalk Use Influences the Agreeableness and Confidence of a Listener</b> Faculty Sponsor: Dr. Christopher Chartier, Psychology
Poster #8	Ramey Adkins Chelsea Niedermier	<b>Synthesized Benzimidazole Derivatives and the Utilization of a Phosphazene-Based Drug Delivery System as Potential Anti-Cancer Agents</b> Faculty Sponsor: Dr. Nicholas Johnson, Chemistry
Poster #9	Jihae Dick Samuel Witt	<b>Measuring Thermal Regimes of Streams for Potential Impacts on Aquatic Macroinvertebrate Biodiversity</b> Faculty Sponsor: Dr. Patricia Saunders, Biology
Poster #10	Allison Nonnemaker Walter Vermilya	<b>Investigating the Key Determinants of Air Pollution: A Comprehensive Empirical Study Using Regression Analysis</b> Faculty Sponsor: Dr. Yong Ju Lee, Mathematics
Poster #11	Sebastian Mathews	<b>Synthesis of Nicotine Analogs Utilizing the Click Reaction: Possible Compounds for Therapeutic and Medicinal Applications</b> Faculty Sponsor: Dr. Robert Bergosh, Chemistry
Poster #12	Keegan Arnold Javan Thompson	<b>MarkMaster: A Complete Gradebook Software Solution</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Poster #13	Meredith Morgan	<b>Isolation of <i>E. coli</i> Strains from Different Farm Animals</b> Faculty Sponsor: Dr. Paul Hyman, Biology
Poster #14	Jillian Hull James Mason	<b>Host Range of Bacteriophages on Isolated <i>Bacillus</i> Bacteria</b> Faculty Sponsor: Dr. Paul Hyman, Biology
Exhibition #1	Mason Smith	<b>People and Spaces</b> Faculty Sponsor: Professor Keith Dull, Art & Design

### POSTER/EXHIBITION SESSION II: 12:45 P.M.-1:45 P.M., Alumni Room

Poster #15	Maddison Dolenga	<b>Investigating the Role of the Transcription Factor Cebp<math>\gamma</math> in Zebrafish Lens Development</b> Faculty Sponsor: Dr. Mason Posner, Biology
Poster #16	Colin Pham Madeline Whitticar	<b>The Synthesis of Benzimidazole Compounds and Incorporation of TPP Cations and Transition Metals as Potential Anti-Cancer Agents</b> Faculty Sponsor: Dr. Nicholas Johnson, Chemistry
Poster #17	Jaron Dibert	<b>Synthesis and Doping of YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> Superconductor by Zn and Co</b> Faculty Sponsor: Dr. Nicholas Johnson, Chemistry

Poster #18	Chloe McClure	<b>The Impact of Coaching Style on a Putting Task</b> Faculty Sponsor: Dr. Mitchell Metzger, Psychology
Poster #19	Aubrey Stepanik	<b>Family Dynamics and Perception of Stimuli</b> Faculty Sponsor: Dr. Mitchell Metzger, Psychology
Poster #20	Caleb Dilling	<b>The Degradability of Calixarene-Core Polylactide Star Polymers: Progress Towards the Development of New Biomaterials</b> Faculty Sponsor: Dr. Perry Corbin, Chemistry
Poster #21	Taylor Garver Ella Ives	<b>CRISPR Gene Editing of <i>clqbp</i> and <i>stx3a</i> in Zebrafish to Determine Their Significance in Lens Development</b> Faculty Sponsor: Dr. Mason Posner, Biology
Poster #22	Tori Haggitt Sydney McMillan	<b>Exploring the Effects of Varying PTU Concentrations on <i>cypla</i>, <i>fkbp5</i>, and <i>plin6</i> Gene Expression in Zebrafish</b> Faculty Sponsor: Dr. Mason Posner, Biology
Poster #23	Sydney Vu	<b>Why are Red Cedars Invasive?</b> Faculty Sponsor: Dr. Jeffrey Weidenhamer
Poster #24	Jacob Rose	<b>Dynamic Website for Eagles Association of Computer Machinery</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Poster #25	Delaney Frary	<b>Studies on Management of Crape Myrtle Aphids</b> Faculty Sponsor: Dr. Cynthia Perkovich, Biology
Poster #26	Stephanie Pflaum	<b>Tennessee Ambrosia Beetle Emergence Trends</b> Faculty Sponsor: Dr. Cynthia Perkovich, Biology
Poster #27	Noah Crenshaw Jacob Pielech Zachary Vales Ashton Walker	<b>Faculty Spotlight: Meet the Experts of Math and Computer Science</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Poster #28	Allyson Chapman Dru Johnson Kale Miller Mallorie Norton	<b>Using Virtual Reality 360-Camera for Experiential Learning: A Study Abroad Case Study for Business Students</b> Faculty Sponsors: Dr. Lance Kaltenbaugh Dr. Laura Kruger Dr. Chuck Piscitello
Poster #29	Noah Marsh	<b>Shuffler: An Interactive Music Platform</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science

#### ORAL SESSION IV: 2:00 P.M.-3:15 P.M., Trustees Room

Landen Gooley	<b>The Grate Ashland Serial Killer</b> Faculty Sponsor: Dr. Herb Homan, Criminal Justice
Tyler Davis	<b>Analyzing the Integrity, Vulnerabilities, and Cryptographic Issues of BMD Machines</b> Faculty Sponsor: Dr. Abdulbast Abushgra, Cybersecurity
Nolan Kern Enoch Oye Owen Reynolds	<b>Connecting Faith and Community: Dynamic Web Design for Vitality Church</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
Mikayla Alcantar Dana Krukovska Katelyn Meeks Max Polianskyi	<b>A Public Relations Campaign for EveryLibrary</b> Faculty Sponsors: Dr. Jeffrey Delbert, Communication Studies Dr. Olga Monacell, Communication Studies
Camron Criddell	<b>Shark Attack</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science

## ORAL SESSION V: 2:00 P.M.-3:15 P.M., Faculty Room

<b>Lauren Gulden</b> <b>Ethan Jenkins</b> <b>Joseph Monteith</b> <b>Stephen Struckmann</b>	<b>Producing Election '24</b> Faculty Sponsor: Ms. Kelly Meyer, Journalism and Digital Media
<b>Elliot Blake</b>	<b>Cycles and Cycles and Cycles: The Destruction of Self for Ultimate Creation</b> Faculty Sponsor: Dr. Sharleen Mondal, Languages & Literature
<b>Anna Bielawski Wilson</b>	<b>Synagogue of Satan: The Anti-Jewish Origin of the Witch-Hunt</b> Faculty Sponsor: Dr. Kirsty Jones, Religion
<b>Dhruval Anandkar</b> <b>Ben Berglund</b> <b>Caleb Kaminski</b> <b>Aniket Patel</b> <b>Owen Reynolds</b>	<b>AgriScience: Embedded IoT and Machine Learning Solution for Agriculture</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Garrett Raymont</b>	<b>The Effects of Visual &amp; Auditory Stimuli on Participants' Emotional Ratings</b> Faculty Sponsor: Dr. Mitchell Metzger, Psychology

## ORAL SESSION VI: 3:30 P.M.-4:30 P.M., Trustees Room

<b>Robert Pope</b>	<b>Privacy Enhancing Technologies in Healthcare: A Case Study Approach</b> Faculty Sponsor: Dr. Abdulbast Abushgra, Cybersecurity
<b>Katelyn Meeks</b>	<b>How College Students Reconcile the Use of Generative AI with Their Personal Ethical Principles</b> Faculty Sponsor: Dr. Olga Monacell, Communication Studies
<b>Nathan Schaubert</b> <b>Rian Spangler</b>	<b>Project Retro</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Ben Berglund</b>	<b>Eagles Store E-Commerce Site Demonstration</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science

## ORAL SESSION VII: 3:30 P.M.-4:30 P.M.-Faculty Room

<b>Heath Johnston</b>	<b>The Tyranny of Two I's: Isolation and Individualism in Democracies</b> Faculty Sponsor: Dr. Gregory McBrayer, History and Political Science
<b>Adam Harrington</b> <b>Jeremiah McKee</b> <b>Anthony Meier</b> <b>Robert Pope</b>	<b>Overview of a Modern-Day Weather App: RainCheck</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Ian Kirchuchak</b>	<b>BetterUFitness: A Complete Fitness Tracking App</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science
<b>Dhruval Anandkar</b>	<b>Craft My Folio: A Digital Portfolio Platform for Creative Professionals</b> Faculty Sponsor: Dr. Selvanayaki Kolandapalayam Shanmugam, Computer Science