Office of Research and Creative Activity

Annual Report 2022-23

murraystate.edu/orca

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Contacts

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Advisory Board Members 2022-23

Arthur J. Bauernfeind College of Business

- Dr. Ismail Karabas, Dept. of Management, Marketing, and Business Administration
- Dr. Melony Shemberger, Dept. of Journalism & Mass Communication

College of Education and Human Services

- Dr. Andrea Willson, Dept. of Early Childhood and Elementary Education
- Dr. Miguel Gomez, Dept. of Adolescent, Career, and Special Education

College of Humanities & Fine Arts

- Dr. Tracey A. Garcia McCue, Dept. of Psychology
- Mr. T. Michael Martin, Dept. of Art and Design

Hutson School of Agriculture

- Dr. Megan Taylor, Dept. of Agricultural Sciences
- Dr. Jeffrey Young, Dept. of Agricultural Sciences

Jesse D. Jones College of Science, Engineering & Technology

- Dr. Rupkatha Bardhan, Dept. of Occupational Safety and Health
- Dr. Christopher Trzepacz, Dept. of Cell and Molecular Biology

School of Nursing and Health Professions

- Dr. Kelly L. Taylor, Dept. of Occupational Therapy

University Libraries

- Mrs. Dana Thompson, Associate Dean

21st Annual Posters-at-the-Capitol

TOTAL # of SLOTS ALLOWED: 12
TOTAL # of SLOTS FILLED: 12

Projects on Display

Arthur J. Bauernfeind College of Business

- *Accounting*
  - Students: Christopher Hill, Bria James
  - Mentors: Najib Sahyoun
- *Computer Science / Information Systems*
  - Students: Joel Bulkley
  - Mentors: Marc Beck

College of Humanities & Fine Arts

- Political Science and Sociology
  - Students: Akayla Henson
  - Mentor: Brittany Wood

Hutson School of Agriculture

- *Agriculture Science*
  - Students: Allison Croslin, Anna Griggs, Ashley Himmelsbaugh, Ashton A. Crowe, Ava Isaacs, Eva Brogue, Gracey Moffitt, Madilyn Adamchik, Miranda Rudolph
  - Mentors: Alyx Shultz, Iin Handayani, Megan Taylor, Shea Porr

Jesse D. Jones College of Science, Engineering & Technology

- *Biology*
  - Students: Daniel R. Wahl
  - Mentors: Christopher W. Lennon
- *Chemistry*
  - Students: Elizabeth McGrew
  - Mentors: Kevin M. Miller
- *Earth and Environmental Science*
  - Students: Skylar Ross
  - Mentors: Jessica B. Moon

Murray State University again planned the statewide *Posters-at-the-Capitol* program. All of Kentucky's public universities participated. The event took place on March 2, 2023. The welcome ceremony was emceed by **MSU Provost Dr. Tim Todd**, with special remarks from **KY CPE President Dr. Aaron Thompson**, **Senator Stephen West**, and **Representative James Tipton**.

All projects available at https://digitalcommons.murraystate.edu/postersatthecapitol/2023/Murray/

Fall & Spring Scholars Week 2022-2023

Scholars Week events took place in Waterfield Library, the Curris Center Ballrooms, and other locations on campus and online. During AY 22-23, 350+ students gave presentations with 88 faculty mentors.

5th Annual Fall Scholars Week

Total Number of Events/Panels Included: 12
Total Number of Individual Presentations Reported: 88

Total Number of Individual Faculty Mentors Listed: 31
Total Number of Individual Students Listed: 132

Arthur J. Bauernfeind College of Business

- New Research Insights in Media History
- Public Relations: A Digital Poster Showcase of Research Proposals

College of Humanities & Fine Arts

- Psychology Department Showcase: Completed Projects
- Psychology Department Showcase: Projects In-Progress
- Phi Alpha Theta Panel
- Senior Seminar in Literature

Hutson School of Agriculture

- Soils and Sustainability

Jesse D. Jones College of Science, Engineering & Technology

- Conservation Biology Service Learning Poster Session
- Earth and Environmental Sciences Poster Session

School of Nursing and Health Professions

- Senior Nursing Poster Session (Virtual)

University Libraries

- Images of Research Competition

Honors College

- Senior Thesis Presentations

21st Annual Spring Scholars Week

Total Number of Events/Panels Included: 12
Total Number of Individual Presentations Reported: 143

Total Number of Individual Faculty Mentors Listed: 57
Total Number of Individual Students Listed: 212

College of Humanities & Fine Arts

- Global Languages Senior Colloquium
- Political Science and Sociology Panel
- Psychology Department Showcase: Completed Projects
- Psychology Department Showcase: Projects In-Progress
- Spring 2023 Art & Design Senior Capstone Exhibitions

Jesse D. Jones College of Science, Engineering & Technology

- Conservation Biology Service Learning Poster Session
- Sigma Xi Poster Competition
- Watershed Studies Institute Research Symposium

School of Nursing and Health Professions

- Senior Nursing Poster Session (Virtual)

University Libraries

- Images of Research Competition

Honors College

- Senior Thesis Presentations

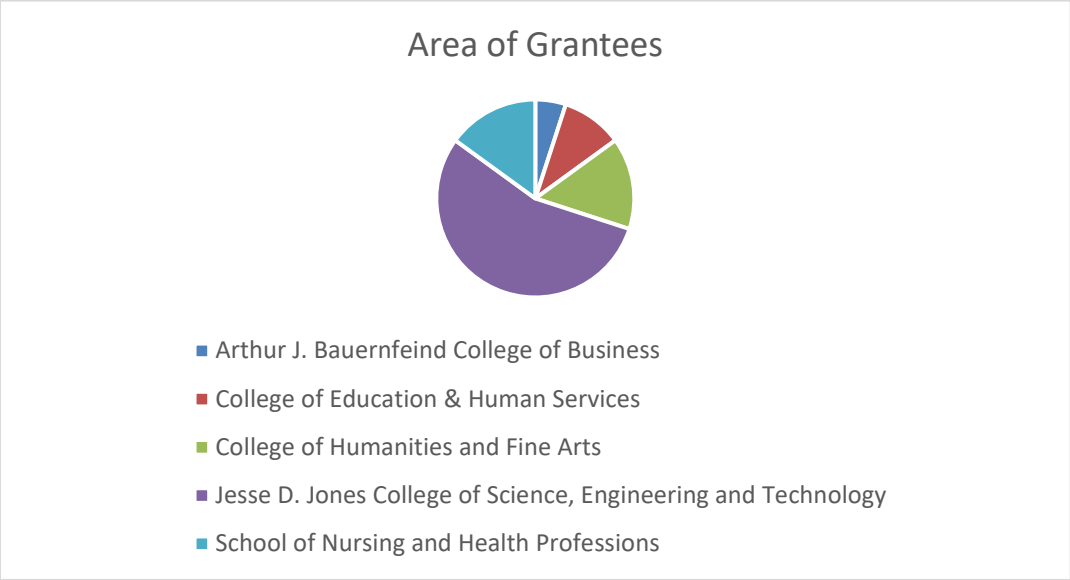
Phi Kappa Phi

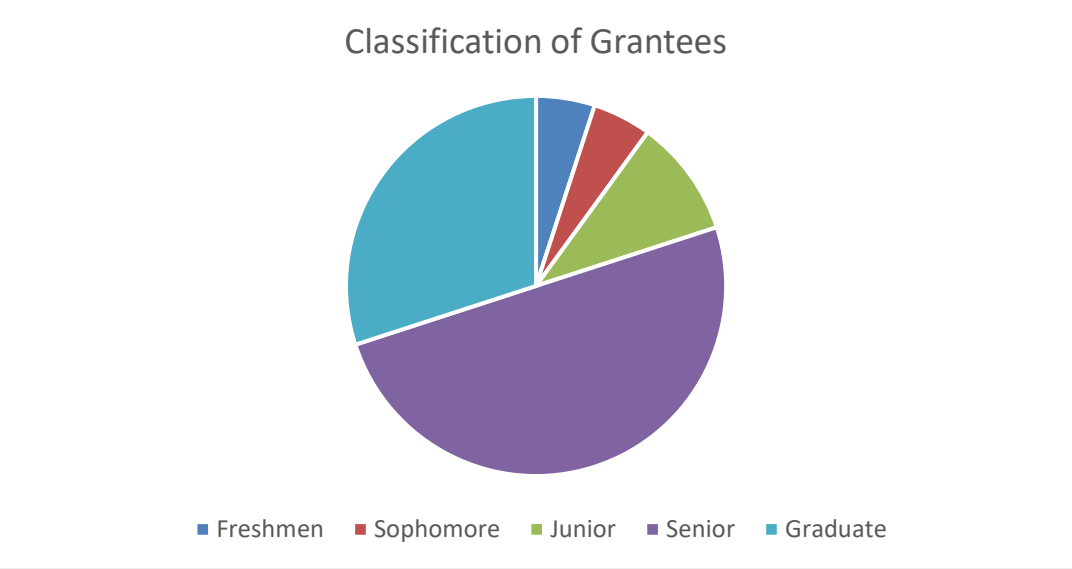
- "Love of Learning" Panel

Research & Travel Grants

ORCA has a modest amount of funds available to assist faculty-mentored, student research projects **or** to assist students in support of travel to present, perform, or exhibit their faculty-mentored research or creative activity at off-campus professional conferences or gatherings. Research Grants are vetted by the full ORCA Advisory Board whereas Travel Grants are awarded based upon receipt of conference acceptance notification for the student and remaining funds.

Total Number of Grants Awarded:	**20**
Total Number of Individual Faculty Mentors:	**17**
Total Amount Awarded:	**$15,485**





ORCA Research & Travel Awarded Projects, 2022-23

A Bayesian Examination of the Effect of a Mental Health Psychosocial Education Vignette on Stigma Toward Persons with Schizophrenia and Depression	Lainie	Krumenacker	Graduate	Clinical Psychology
Addressing Burnout in New Graduate Nurses	Shan	Gordon	Graduate	Nursing
Amplifying the "A" in STEAM Education	Grace	Floerke	Freshmen	Middle School Education
Analyzing Post-fledging Movements, Survival, and Space Use of First-year Black Vultures (Coragyps atratus) in Kentucky	Philip	Kavouriaris	Graduate	Biology
Assessing the Influence of Urban Greening on Urban Arthropods	Brendon	Lawrence	Senior	Wildlife and Conservation Biology
Competitive Marching and Psychological Needs	Xavier	Brown	Graduate	Major: Psychology Minor: Biology
Does Real-Life Location Matter in The Electronic World? How New Esports Fans Choose What Team to Support	Gavin	Nolin	Senior	Marketing
Dual-ionic liquid functionalized cellulosic materials: Thermal, mechanical and conductive properties	Elizabeth	McGrew	Senior	Biochemistry
Engineering Technology Undergraduates Assisting PhD Research through Automation	Jake	Hildebrant	Junior	Electromechanical Engineering and Technology with a focus in Automation
Immersion and Handicapping	Tyler	Robinson	Graduate	Psychology
Interactive Addressing of Body Image Insecurity in Adolescent Females	Haylee	Cox	Senior	Middle School Education- ELA
One-Dimensional and Two-Dimensional Simulations of Helical Homopolymers	Matthew	Hooks	Senior	Engineering Physics

Physicochemical properties of urethane-containing imidazolium ionic liquids from a non-isocyanate synthetic approach	George	Timmermann	Senior	Chemistry/Materials Science/Mathematics and Physics
Standardized Oral Care Regimen	Abigail	Breite	Graduate	Family Nurse Practitioner
Structure-property behavior of ionenes-based polyurethanes	Jeremiah	Coughlon	Sophomore	Chemistry
Swelling behavior of poly(ionic liquids) in different solvents and salt solutions	Pierson	Perdue	Senior	Polymer and Materials Science/Mathematics
The Relationship Among Vertical Jump Height, Sprint Time, and Fatigue Index in College Students	Makenna	Morefield	Senior	Exercise Science
Titer Concentration Testing for Leptospirosis in Equine	Ashley	Himmelsbaugh	Senior	Equine Science
Wastewater-based epidemiological determination of drugs discharged at the rest areas and truck servicing facilities during federal holidays in the U.S.	Andrew	Windhorst	Junior	Biollogy/Chemistry
Water solubility structure activity relationship of chalcones for aqueous applications	Grace	Yocum	Senior	Chemistry Polymer/Material Science

Steeplechase: An ORCA Student Journal

Current Issue: Volume 6, Issue 2 (2023) Spring 2023
digitalcommons.murraystate.edu/steeplechase/vol6/iss2/

- Letter from our outgoing Student Editor
- One feature research summary
  - *A Bayesian Examination of the Effect of a Mental Health Psychosocial Education Vignette on Stigma Toward Persons with Schizophrenia and Depression*, Lainie Krumenacker
- Four ORCA Travel Grant Spotlights
  - Three posters
  - One recorded presentation
- One "Inside Research" recorded interview
  - Research Discussion with Philip Kavouriaris
- Five *Images of Research* Competition winners
  - 1st Place: *Hoy No Hoy Gasolina* by Jesus Moreno [featured below]

Volume 6, Issue 1 (2022) Fall 2022
digitalcommons.murraystate.edu/steeplechase/vol6/iss1/

- Featured *Images of Research* Competition winners
  - "Bald and Beautiful" (1st Place)
    - Evan Barr
  - "Automotive Decline" (2nd Place)
    - Kaylee Vanlue
  - "Regrowth" (3rd Place)
    - Madison Hernandez
  - "Infinity Ingress" (Honorable Mention)
    - Boaz Burnett
  - "Wonder" (Honorable Mention)
    - Bethanie Bailey

Note: In 2023-24, Steeplechase will move from a once-per-semester publishing schedule to a once-per-academic year publishing schedule. Additionally, Steeplechase will focus more narrowly on highlighting recipients of ORCA Grantees.

University Distinguished Mentor Award

ORCA continued the tradition of coordinating Murray State University's 17th annual University Distinguished Mentor Award (UDMA). The Office of the Provost, in conjunction with the Office of The Office of Scholarly and Creative Activity, is present the Distinguished Mentor Award in recognition of extraordinary efforts of Murray State faculty in the area of undergraduate and graduate student mentoring, which is understood as a sustained partnership of mutual concern significantly fostering students' intellectual, ethical and academic development above and beyond expectations of even excellent advising and teaching.

UDMA 2023 Recipient

Dr. Miguel Gomez, Middle School Education Program

Award Chair, 2021-22

Dr. Amanda Joyce

Selection Committee Members

Arthur J. Bauernfeind College of Business

- Dr. Brian Perna

College of Education and Human Services

- Dr. Donna Crouch

College of Humanities & Fine Arts

- Dr. Jie Wu

Hutson School of Agriculture

- Dr. Brian Parr

Jesse D. Jones College of Science, Engineering & Technology

- Dr. Michael Flinn

School of Nursing and Health Professions

- Nancy Armstrong, RN, DNP

University Libraries

- Mrs. Megan Wilson

Previous Recipient Serving on Committee

- Dr. Iin Handayani