

Undergraduate Research and Honors Symposium 2025

Monday, April 21, 2025 8:30AM-5PM

The University of Evansville Honors Program offers highly motivated and talented students the opportunity to participate in unique and stimulating academic experiences alongside peers and faculty who share the love of learning and desire to excel—empowering students to live out UE’s mission of thinking critically, acting bravely, serving responsibly, and living meaningfully.

Honors places a strong emphasis on **interdisciplinary academic excellence**, encouraging students to think beyond the boundaries of their majors and engage with complex ideas from multiple perspectives.

Key features include:

- **Honors-Designated Coursework:** These are often designed to be cross-disciplinary, integrating content and methods from various fields—such as literature, science, history, and ethics—to promote holistic and critical thinking.
- **The Common Read:** Each year, all first year honors students read and discuss a selected book that ties into broader societal, cultural, or global themes, sparking dialogue that connects diverse academic disciplines.
- **Honors Projects:** This capstone experience allows students to pursue original research or creative work that often blends multiple areas of study. Projects are encouraged to be interdisciplinary in nature, promoting innovative inquiry and synthesis of knowledge.
- **A Collaborative Learning Community:** The program fosters an environment where students from different majors interact and collaborate, enriching each other’s academic experiences through varied viewpoints and diverse skill sets.

Presentations (Eykamp 251 and 252)

**Indicates Honors Projects*

8:30-9:00AM: BUSINESS (EYKAMP 252)

“Pitch to Public: Marketing Plan for a New Professional Soccer Player”

Braydon Doll ('25)* He/Him

Major: Marketing

Faculty Supervisor: Dr. Aaron Schibik

Project Description: This project seeks to establish and focus the personal brand of Palmer Ault, a college soccer player at Indiana University, who will be transitioning to the professional game. By leveraging his past connections and exploring new markets, this plan aims to develop strategies to increase his marketability and find new opportunities as he progresses through this stage of his career.

Post Graduation Plans: Braydon will play semi-professional soccer in the NPSL while also gaining work experience in the sports industry. He plans to attend graduate school pursuing either a Masters in Sports Management or an MBA, followed by law school.

“Budgeting Effectiveness of Townships: A Case Study on Indiana”

Ashton Lambert ('25)* *He/Him*

Majors: Accounting, Logistics, and Supply Chain Management

Faculty Supervisor: Dr. Toufiq Nazrul

Project Description: An analysis of local government budgeting with a focus on Indiana Townships

Post Graduation Plans: Ashton intends to pursue his CPA licensure while working as an accountant in the field.

9:00-10:15AM: MUSIC, THEATRE, ENGLISH LITERATURE AND CREATIVE WRITING (EYKAMP 251)

“Chaconne in G Minor”

Annie Kim ('25)* *She/Her*

Major: Biology

Faculty Supervisor: Dr. Michael Chu

Project Description: This project explores *Chaconne in G Minor*'s background and violin techniques. Annie also intends to introduce and demonstrate the basics of playing the violin.

Post Graduation Plans: Annie will be attending Indiana University School of Medicine.

“Little Women: A May Studio Production”

Maya Barry ('25)* *They/Them*

Major: Stage Management with an associated study in Creative Writing

Faculty Supervisor: Wes Grantom, BFA, MFA

Project Description: Little Women was originally written by Louisa May Alcott in 1868-1869, and adapted for the stage by Kate Hamill in 2022. By bringing modern perspectives of queer history to the text, a new interpretation of the play was discovered and brought to life.

Post Graduation Plans: Undecided

“The John David Lutz Theatre Lab Community Campaign”

Emily Burlison ('25)* *She/Her*

Major: Theatre Management **Minors:** Business Administration and Legal Studies

Faculty Supervisor: Sharla Cowden, BA, MFA

Project Description: As a part of a multi-year campaign, Emily was charged with coordinating a final fundraising goal of \$50,000 to ensure longevity and upkeep of the John David Lutz Theatre Lab. Additionally, Emily coordinated the design and implementation of donor recognition within the space.

Post Graduation Plans: Exploring options in the professional theatre world.

“The Value of Adaptation: The Maltese Falcon Across Mediums”

Emily Palmisano ('25)* *They/Them*

Major: English Literature **Minors:** Spanish, Gender, Women's and Sexuality Studies, and British Studies

Faculty Supervisor: Dr. Robert Baines

Project Description: This project examines the effects of censorship, specifically the Hays Code, on adaptations. Emily engaged with the novel, two versions of the film, and the text of the production code.

Post Graduation Plans: Emily plans to work as an administrative assistant, substitute teacher, or paraprofessional, with the goal of a doctorate in a few years.

“Mortuary Research for Creative Writing”

Samantha Fowler ('25)* *She/Her*

Major: Creative Writing **Minor:** Communication

Faculty Supervisor: Dr. Katie Mullins

Project Description: In order to write what you know, one must read about it first; to this end, Sam has been exploring a variety of books on the death industry and will showcase how underappreciated hard-working industry employees are, as well as the humor that can be found in such a profession.

Post Graduation Plans: Sam plans to continue her work as Head Editor of Mania Magazine and as an Assistant Reader for Kelsay Books Poetry Press.

10:15-11:00AM: HISTORY AND POLITICAL SCIENCE (EYKAMP 252)

“Evansville’s Suffragists: Female Leaders, Economic Connections, and Lasting Legacies”

Carmen Worthington ('25)* *She/Her*

Major: History **Minor:** Archaeology

Faculty Supervisor: Dr. James Macleod

Project Description: This project examines the lives of several Evansville women involved in the local suffragist movement, emphasizing the pivotal role that socio-economic status played in their strides toward progress and the powerful legacies they left behind that still impact our community today.

Post Graduation Plans: Carmen plans to pursue a Master of Library and Information Science.

“An Insight on War Reenacting”

William Guzman ('25)* *He/Him*

Major: History **Minors:** Political Science and British Studies

Faculty Supervisor: Dr. Daniel Byrne

Project Description: This project aims to shed light on the niche hobby of war reenacting. William aims to prove that it is an interesting hobby that deserves more good attention and less negative attention.

Post Graduation Plans: William plans to attend graduate school and pursue a career in either public or foreign service.

“Party Identification and Abortion: A Complicated Issue”

Lauren Wuebbels ('27)* *She/Her*

Major: Political Science **Minors:** Legal Studies, Sociology, and Spanish

Faculty Supervisor: Dr. Robert Dion

Project Description: This project considers why the Republican states, Arizona and Missouri, passed pro-abortion referenda in the 2024 election. It considers the party I.D. Factors that help explain why Arizona and Missouri are Republican and then potential reasons as to why they voted yes on an abortion referendum such as incorrect voting, retrospective voting, and the plain language used in referenda.

Post Graduation Plans: Lauren plans to attend law school.

11:00AM-12:00PM: EXERCISE SCIENCE AND BIOCHEMISTRY (EYKAMP 251)

“Aquatic Therapy for Rehabilitation of Lower Extremity Athletic Injuries”

Kaitlyn Sansone ('25)* *She/Her*

Major: Exercise Science (Pre-PT)

Faculty Supervisor: Dr. Kate Schwartzkopf

Project Description: A systematic review of published research regarding the uses and effectiveness of aquatic therapy for injured athletes.

Post Graduation Plans: Kaitlyn is currently pursuing her Doctorate of Physical Therapy at UE and continuing her participation in the UE/USI ROTC program.

“Synthesis and Characterization of Novel Donor-Acceptor Stenhouse Adducts”

Lincoln Smith ('25)* *He/Him*

Major: Biochemistry

Faculty Supervisor: Dr. Michael Slade

Project Description: The goal of this project was to synthesize a new generation of Donor-Acceptor Stenhouse Adducts using substituted furaldehydes and pyrrole-aldehydes. Success has been seen with substituted furaldehydes while progress has been slower with pyrrole-aldehydes.

Post Graduation Plans: Lincoln will be attending the University of Kentucky College of Medicine.

“Efforts Toward Merging Interceptive Decarboxylative Allylation and Hexadehydro Diels-Alder Chemistry”

Ali Scott ('25)* *She/Her*

Major: Biochemistry

Faculty Supervisor: Dr. Michael Slade

Project Description: This project seeks to merge two heretofore separate regions of chemical space. The final products would be densely functionalized and substituted aromatic cores, brought together in a mechanistically new and interesting way.

Post Graduation Plans: Ali is applying to Physician Assistant graduate programs (Hoping for UE!)

“Using Non-Covalent Interactions to Tune Excited State Properties of Cyclometalated Ruthenium Complexes”

Kenzie Combs ('25)* *She/Her*

Major: Biochemistry

Faculty Supervisor: Dr. Michael Turlington

Project Description: The synthetic development of a novel cyclometalated ruthenium complex with photocatalytic properties that are tunable using non-covalent interactions.

Post Graduation Plans: Kynzie will be attending Indiana University School of Medicine.

12:00-1:00PM: BIOLOGY AND BIOCHEMISTRY (EYKAMP 252)

“Development and Characterization of 2 Novel Purine-Based Antibiotic Candidate Compounds”

David Schultz ('25)* *He/Him*

Major: Biology

Faculty Supervisor: Dr. Roslyn Lampkins

Project Description: This project's intent is to synthesize two new purine-based compounds with possible antibiotic activity to target E. Coli protein Gyrase B. Organic chemistry and molecular modeling techniques were employed.

Post Graduation Plans: David will be attending Indiana University School of Medicine.

“Developing a Methodology for In Vivo Inhibition Testing of Escherichia Coli Antibacterial Resistance”

Abbey Daniel ('25)* *She/Her*

Major: Biochemistry

Faculty Supervisor: Dr. Roslyn Lampkins

Project Description: This project focuses on the development of a methodology for determining the effectiveness of novel scaffold molecules in inhibiting ParE and GyrB in *Escherichia coli*. Additionally, NMR examination will be done to better characterize the successful synthesis of scaffold molecules.

Post Graduation Plans: Abbey plans to attend Indiana University School of Medicine.

“Genome Sequence of Streptomyces Phage JPandJE”

John Erickson ('25)* *He/Him*

Major: Biology

Faculty Supervisor: Dr. Elizabeth Powell

Project Description: The project is a highlight on bacteriophage JPandJE, investigating its genome, characterizing the new phage species, and looking at the importance of *Streptomyces* phage research.

Post Graduation Plans: John is taking a gap year and applying to medical school.

“Winogradsky Columns for Comparative Soil Microbe Biodiversity”

Rachel Shultz ('25)* *She/Her*

Majors: Biology and Medical Spanish

Faculty Supervisor: Dr. Mark Davis

Project Description: Soil from six water sources in Evansville was collected and enriched for bacterial growth in Winogradsky columns. Comparisons were later drawn between microbes found in each, including what information can be gained about land use and soil health.

Post Graduation Plans: Rachel will be attending Indiana University School of Medicine.

1:00-2:30PM – ARCHAEOLOGY AND CLASSICS (EYKAMP 251)

“Beyond the Gender Gap in U.S. Archaeological Academia: Understanding the Different Responses to Systemic Sexism in North American and Ancient Mediterranean Archaeology”

Julia Riblett ('25)* *She/Her*

Major: Archaeology **Minors:** Anthropology and Art History

Faculty Supervisor: Dr. Jennie Ebeling

Project Description: Recently, more academic archaeologists working in the United States have come to realize that sexism was, and remains, a systemic problem in the discipline. This project explores the possible reasons why more North American archaeologists than Ancient Mediterranean archaeologists continue to recognize and fight against gender inequity.

Post Graduation Plans: Julia is taking a gap year and applying to graduate school.

“Interpretations of a Bollinger Co, MO. Collection of Native American Lithics”

Anna Robbins ('25)* *She/Her*

Major: Archaeology **Minors:** Art History and Studio Art

Faculty Supervisor: Dr. Jennie Ebeling

Project Description: This project involved the preservation of a private collection of lithics including projectile points, spearheads, knives, scrapers, etc. from Bollinger County Missouri. The lithics were then analyzed and used to date the site.

Post Graduation Plans: Anna will be attending graduate school.

“Anglo-Saxon Glass Beads: A Study in Experimentation in Archaeology”

Sara Wilkens ('25)* *She/Her*

Major: Archaeology **Minors:** Anthropology

Faculty Supervisor: Dr. Jennie Ebeling

Project Description: This project examines the process of Anglo-Saxon glass bead making. Sara consulted archaeological evidence and conducted her own experimental replication of glass beads to gain a better understanding of the process of manufacture as well as attempting to answer remaining questions about the beadmakers.

Post Graduation Plans: Sara is taking a gap year to gain experience and eventually plans to attend graduate school for Archaeology.

“Treating the Dead With Respect: The Legal Display of Human Remains”

Sophia Caci ('25) *She/Her*

Majors: Archaeology and Anthropology

Faculty Supervisor: Dr. Jennie Ebeling

Project Description: Every culture has a different method for showing respect to their dead, which ultimately creates issues for museum professionals tasked with displaying these remains both legally and ethically. Over the past 50 years, significant legal work has been done to protect pieces of cultural significance, including human remains in many cases, though it is ultimately up to the country housing the remains to determine how best to store and display them. Unfortunately, despite shifting attitudes and ethical practices surrounding cultural property and the rights of communities to protect and respect their dead, there is no universal approach to caring for human remains, and the issue ultimately arises of who owns the dead.

Post Graduation Plans: Sophia will be attending Eastern Carolina University pursuing a Master of Arts in Anthropology.

“The Dispensation of the Mound Builders Myth through Indiana County Histories”

Andrew Norrington ('25) *He/Him*

Majors: Archaeology and Anthropology

Faculty Supervisor: Dr. Jennie Ebeling

Project Description: The purpose of this research is to answer the question of what role local history publications played in the spread of the Mound Builders Myth throughout Indiana during the late 19th and early 20th centuries, and if there were any overarching goals or coordination between the publishers, authors, and other figures engaged in their production.

Post Graduation Plans: Andrew intends to go into the field of Cultural Resource Management as an Archaeology Field Technician with a consulting firm.

“A Study in Greek Pottery Recreation”

Olivia Oswald ('25)* *She/Her*

Majors: Classical Studies and Writing

Faculty Supervisor: Todd Matteson, BA, MFA

Project Description: This project seeks to recreate the forms, decorations, and construction techniques of various ancient Greek pots and compare them to modern studio practices. The project showcases both the creative and academic process, as well as the challenges encountered throughout the process.

Post Graduation Plans: In addition to further pottery study at KC Clay Guild, Olivia will continue serving as co-founder and editor at *earworms mag*, as well as an Editing Assistant at *Kelsay Books*.

2:00-3:00PM: PSYCHOLOGY AND NEUROSCIENCE (EYKAMP 252)

“Direct Role of Endothelin B Receptors on Renal Afferent Nerves on Blood Pressure Control”

Nathan Bradford ('25)* *He/Him*

Major: Neuroscience

Faculty Supervisor: Dr. Lora Becker

Project Description: This project investigated the effects of antagonizing Endothelin B Receptors in the kidney on blood pressure and sympathetic tone. This research was investigated via a rat model during the summer of 2024 at the University of Alabama at Birmingham, through the KURE program.

Post Graduation Plans: Nathan is taking a gap year and plans to apply to medical school.

“Chronic Illness, Chronic Pain, Illness Uncertainty, and Mental Health”

Seph Kier ('25)* *They/Them*

Major: Psychology **Minors:** Sociology and Anthropology

Faculty Supervisor: Dr. Lora Becker

Project Description: Exploring the comorbidity between chronic pain and mental health issues, the importance of disease classification, and the barriers to treatment.

Post Graduation Plans: Seph intends to attend the University of Evansville Clinical Psychology PsyD program.

“Breaking the Sixth Wall: Fighting Psychic Numbing in the Age of AI Warfare”

Zorah Mehrzad ('25)* *She/Her*

Majors: Neuroscience and Writing

Faculty Supervisor: Dr. Desiree Seponski

Project Description: This project is an investigation into how we perceive risk, specifically looking at perception of potentially catastrophic risk. An understanding of the ways we are able to assess and respond to critical situations will lead to improved policy and intervention in the case of genocides, wars, and other forms of violent upheaval.

Post Graduation Plans: Zorah is applying to medical school.

“The Effects of Activity Based Anorexia on the Avoidance Response of Adolescent Female Rats”

Elnora Stewart ('25)* *She/Her*

Major: Neuroscience **Minor:** Chemistry

Faculty Supervisor: Dr. Vincent Campese

Project Description: The goal of this study was to look at how anorexia may have long lasting effects on the anxiety and fear-based learning in adolescent females using a population of female rats. While the results of our study were inconclusive, the research did inform how we can further explore the topic of anorexia and anxiety.

Post Graduation Plans: Elnora is currently pursuing a Doctorate of Physical Therapy at UE and plans on working with a neuro population post grad, pursuing research in acute care and rehabilitation settings.

3:00-4:30PM – ENGINEERING AND COMPUTER SCIENCE (EYKAMP 251)

“Aerodynamic Effect on a Formula Student Car”

Gracie Davidson ('25)* *She/Her*

Major: Mechanical Engineering **Minors:** Chemistry and Mathematics

Faculty Supervisors: Dr. Douglas Stamps and Dr. John Layer

Project Description: This year UE Engineering restarted the Formula student racing team! Gracie's section of the project was to complete the body and aerodynamic design for the car including a Venturi undertray through design iterations and the use of Computational Fluid Dynamics.

Post Graduation Plans: Gracie is currently looking for positions in mechanical engineering involving machine design or biomedical engineering.

“Dimensionality Reduction for Embeddings: A Pattern-Based Approach with Comparative Benchmarks”

Alejandro Malla ('25)* *He/Him*

Majors: Computer Science and Mathematics

Faculty Supervisors: Dr. Maxwell Omwenga

Project Description: With the growing use of artificial intelligence and natural language processing, high-dimensional word embeddings have become an essential part of various applications. However, storing these embeddings is costly in terms of both storage space and computational resources. This project aims to develop a novel embedding compression algorithm that reduces dimensionality while preserving performance. The technique will be compared against existing methods, including OpenAI's embedding compression, and evaluated using the Massive Text Embedding Benchmark (MTEB).

Post Graduation Plans: Alejandro will be working full-time as a Software Engineer in Seattle. He is considering graduate study in the future.

“A Study on Modeling Roman Numeral Analysis Progressions Using the Encoder-Decoder Transformer”

Aaron Tucker ('25) *He/Him*

Major: Computer Science **Minor:** Mathematics

Faculty Supervisors: Dr. Maxwell Omwenga

Project Description: This project aims to evaluate the efficacy of utilizing Roman numeral analysis (RNA) as a means of procedurally generating harmonic progressions using a Transformer architecture as well as explore the current state of the intersection between computational musicology and natural language processing.

Post Graduation Plans: Aaron is exploring graduate school and employment opportunities.

“Fall Prevention for Elderly and At-Risk Populations”

Adilet Sharshekeev ('26) *He/Him*

Majors: Computer Science

Faculty Supervisors: Dr. Maxwell Omwenga

Project Description: The project explores fall prevention solutions for elderly and at-risk populations. Ultimately, the research proposes two different types of approaches to positively affect healthcare.

Post Graduation Plans: Adilet will take an educational gap to apply gained knowledge and work on projects.

“Revolutionizing Basketball: An AI-Driven Approach to Game Analysis”

Jose Ocampo ('26) *He/Him*

Majors: Computer Science and Legal Studies

Faculty Supervisors: Dr. Maxwell Omwenga

Project Description: The project seeks to improve the efficiency and overall performance of basketball coaches and teams by utilizing artificial intelligence to analyze game performance.

Post Graduation Plans: Jose intends to attend graduate school.

Additional Computer Science Presentations:

- **Chase Savage** – “AI Assistant Teaching the Elderly” Faculty Supervisor: Dr. Maxwell Omwenga
- **Jakub Nowicki** – “AI for Traffic Safety: Real-Time YOLO-Based System for Detecting Road Incidents” Faculty Supervisor: Dr. Maxwell Omwenga
- **Alejandro Navarrete** – “PPOmaha: Harnessing Trinal Clip Proximal Potential Optimization in Pot Limit Omaha” Faculty Supervisor: Dr. Maxwell Omwenga

Honors Project Exhibition and Regalia Presentation

3:30-5PM (1959 Lounge)

The Honors Project is the pinnacle of the Honors experience, offering students a unique opportunity to deeply explore their passions. Whether through research or creative works, these projects help students stand out for future success – including graduate school and post-graduate employment.

Projects fall into three categories:

1. **Independent Projects** – An original work created beyond a student's major requirements
2. **Expanded Senior Thesis** – A expansion of a major specific senior thesis with increased research depth or scope, as determined by the Faculty Supervisor and Honors Program leadership
3. **Honors-Level Senior Thesis** – A senior thesis that alone meets a higher standard of excellence, as determined by the Faculty Supervisor and Honors Program leadership

The Honors Project is more than just an academic requirement—it's an opportunity to make a meaningful impact and showcase excellence in interdisciplinary study. All Honors Projects are presented at UE's Undergraduate Research and Honors Symposium annually.

New This Year! In addition to formal, conference-style presentations, Honors students will showcase their projects in a poster exhibition for the public. This event invites the entire university community, prospective students, and guests to explore the breadth of UE's Honors experience. During the exhibition, guests can walk through the hall, view student posters, and engage in discussions about student work. We are excited to highlight this year's outstanding projects and celebrate the achievements of our Honors students!

The **Undergraduate Research and Honors Symposium** will conclude with a brief presentation of Honors regalia at 4:30PM with remarks from Interim Executive Vice President for Academic Affairs and Provost Mary Kessler, PT, MHS and Associate Provost for Student Success and Academic Excellence and Chair of the Department of Chemistry, Dr. Kristy Miller.

Special Thanks: The Honors Program would like to extend special thanks to Dr. Kevin Gray and Dr. Jennie Ebeling for their support and guidance of this year's symposium.