Celebrate Earlham Excellence

Epic Expo

April 17, 2024
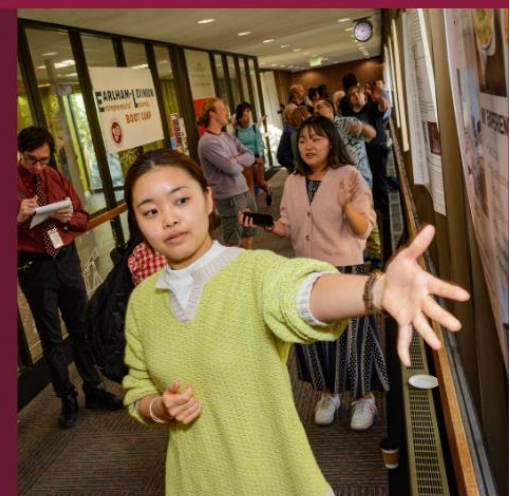
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Spring 2024 Epic Expo

Epic Expo celebrates student achievements including collaborative and individual research, internships and externships, community engagement, fellowships and competitions, the arts and creative pursuits, field study, and much more!

Acknowledgements

Experiences shared today are made possible by these incredibly beneficial and generous programs and donors.

Epic Advantage

Epic Advantage provides a funded career-discerning experience: internship, field experience, professional certification, faculty-led research experience, or faculty-led community-based project.

Summer Collaborative Research

Summer student-faculty collaborative research experiences have been offered on and off campus since 1988 thanks to generous funding from alumni, faculty, and foundation donors.

Freeman Foundation

The Freeman Foundation supports internship experiences in East and Southeast Asia.

Richmond Residency

The Richmond Residency program supports internship and community engagement experiences in Richmond and Wayne County, primarily with nonprofit organizations.

Center for Career Education

The Center for Career Education works to build strategic relationships with employers that offer robust internship experiences for Earlham students.

Center for Global Health Internship Program

The Center for Global Health Internship Program supports health-focused internship and research experiences at major research institutions across the country.

McNair Foundation

McNair Scholars are required to do a research project within their major field at least once during their undergraduate experience and the McNair Foundation supports this requirement.

Thank you to all of our generous donors. Your support is instrumental in empowering Earlham students to pursue their educational goals.

Alan and Peggy Scantland
Earlham Internship Assistance Fund
Faller Family Internship Assistance Fund
Landrum Bolling International Studies Endowed Internship
Libby Yunger Academic Opportunity Endowed Fund
Marcia Solomon Endowed Internship Fund for Health Sciences
Margaret McCoy Health Sciences Internship

Epic Expo Planning Team

Brigitte Franklin, Mila P. Cooper, Brian LaDuca, Kate Boggs, Gaby Carrillo Chacón, Eva Sophia Marotta, O'Jeanique Twyman, Roger Adkins, Nico Quijano Franco, and Katy Morrow.

The team extends gratitude to our campus partners for their support:

Epic Centers & Programs - team members and student staff, Joe Lepone, Ferris Odeh, Rachel Kelly & Campus Printing, Knoll Bendsen, Facilities and Housekeeping, Alexis Maitlen and Dining Services, Maria Landin & Rachael Reavis (Institutional Research), José-Ignacio Pareja, Julia Muse, Keith Cozart and the Hand Drum Ensemble, Judy Wojcik, and Elliot Ratzman.

Special thanks to the Visual and Performing Arts Division for your collaboration and support!

Schedule of Events

| 10:00 AM | | **Welcome Kick-Off** | *Center for Visual & Performing Arts Atrium* |

Concurrent Activities

Ceramics Workshop — *Center for Visual & Performing Arts 102*
Breakdance Workshop — *Hancock Room, Runyan Center*
Drum Circle — *Arts Plaza*
Student Art Sale — *First Floor, Runyan Center*

| 10:45 AM | | **Poster Presentations** | *Center for Visual & Performing Arts* |

| 12:15 PM | | **Lunch Break** |

| 1:30 PM | | **Concurrent Sessions** | *Landrum Bolling Center (LBC)* |

History of Rock – Song Analyses, LBC 211

Engagement Boosters in Education: Movement and Interactions, LBC 201

Exposition of World and Comportment Toward World in Heidegger, LBC 208

Sociology/Anthropology Senior Thesis Presentations, LBC 314

| 2:45 PM | | **Concurrent Sessions** | *Landrum Bolling Center (LBC)* |

Multilingual, Interactive Language "Tasting," LBC 211

A Song of Sweet Subversion: Define "Witch," LBC 201

Recruitment Data and How it Affects Their Student-Athlete Experience, LBC 208

Sociology/Anthropology Senior Thesis Presentations, LBC 314

The Impacts of Formative and Summative Assessments on Students Learning Experience, LBC 316

Poster Presentations | 10:45 AM-12:15 PM

Center for Visual & Performing Arts

My Journey In Medical Humanities
Presented By: Zachariah Andre
Department/Program: Biochemistry, Psychology, and Medical Humanities

During my tenure at Earlham, I have had the enriching opportunity to delve into the interdisciplinary realm of medical humanities. This exploration has provided a platform for my peers and me to critically analyze existing healthcare systems, discerning their strengths and identifying avenues for enhancement to foster inclusivity across diverse demographics. Leveraging insights garnered from academic coursework, I have actively engaged with local communities in Richmond, as well as internationally in locales such as Costa Rica and Peru. These immersive experiences have afforded me the privilege of contributing to the amelioration of health disparities while concurrently shadowing esteemed healthcare professionals. Such exposures have not only galvanized my aspiration to pursue a career within the medical domain but have also catalyzed introspection regarding the archetype of healthcare provider I aspire to embody in the future.

Electric Vehicle Optimization (EVO)
Presented By: Zohaib Asif
Department/Program: Environmental Sustainability, Business and Pre-Engineering
Career Community: Entrepreneurship, Innovation & Creativity

EVO is a project that aims to enhance the performance and longevity of Lithium-Ion batteries used in electric vehicles through a sustainable reconditioning process. Lithium-Ion batteries used in cars lose capacity over time, and the current solution is to replace the battery which is detrimental to the environment and is very costly for the consumer. Through reconditioning, we can restore up to 95% capacity and effectively lengthen the lifespan of the battery at a fraction of the cost and with no carbon footprint.

Nature's Wonder: Studying Worker Satisfaction at a Worker's Cooperative in Nigeria
Presented By: Edith Enehi Ameh
Department/Program: Business and Leadership
Career Community: Social Justice, Education & Public Affairs, Entrepreneurship, Innovation & Creativity
Epic Advantage

As a business analyst intern, I worked in close collaboration with the supervising director of Nature's Wonder to facilitate comprehensive data collection and analysis of worker's satisfaction and productivity rates within the workers cooperative business model. Through this research, significant insights into the advantages of the worker cooperative model emerged, particularly in terms of heightened employee engagement, enhanced job satisfaction, and increased stakeholder involvement. Employee feedback highlighted the potential of the cooperative model to positively influence both employee productivity and overall business success when compared to traditional non-cooperative structures.

Feeding Hope: Scholars of Sustenance Transforming Bali's Hunger Landscape
Presented By: Jennifer Calderón
Department/Program: Economics, Environmental Sustainability, International Studies, Peace and Global Studies, Politics, Sustainability and Management, Leadership, Media and Communications, Public Health, Earth and Environmental Science and Sustainable Agriculture. Career Community: Health & Medicine; Science & the Environment; Social Justice, Education, Public Affairs, Entrepreneurship, Innovation & Creativity.
Epic Advantage

Being fortunate to utilize Epic Advantage funding, I participated in an 8-week internship at a food rescue foundation in Bali, Indonesia named Scholars of Sustenance. This foundation, although beloved across Asia, sought to globalize their efforts to reach more audiences in need of the consideration for their livelihoods. The internship encompassed a range of essential tasks and meaningful initiatives aimed at combating food insecurity and advancing sustainability efforts. My experience illuminated how the convergence of American exceptionalism and capitalism can diminish the value and natural beauty of other cultures, as imposed restrictions by dominant cultures like the U.S shape their landscapes. However, most importantly, I witnessed the power of community collectivizing under a singular idea and how that solidarity and relentless dedication transforms lives.

"The Riff's Redemption" and "The Story of the King and the Protectors": Folktales from Morocco
Presented By: Ali Egarima, Dr. Roger Adkins
Department/Program: English, Sociology and Anthropology
Career Community: Social Justice, Education & Public Affairs
Student-faculty collaborative research during the academic year

In the fall semester of 2023, students in Roger Adkins' "Introduction to Folklore" course were engaged in a Global Course Connection with students in Meriem Sahli's "Introduction to Arabic Literature" course at Al Akhawayn University in Morocco. Students in each project group designed and carried out interviews of elders living in Morocco, collecting oral histories and folktales. Students in this group collected two tales that demonstrate the cultural richness of the Amazigh indigenous culture. They then turned one tale into an e-book, designed for children learning English and/or Arabic, and one into a short video. Students will address the project and its processes, the challenges of working in intercultural research teams, and the outcomes of their work.

An Animal Care Smart Home System Built on OpenThread and Integrated in Apple HomeKit
Presented By: Jingwei Dai
Department/Program: Computer Science
Career Community: Science & the Environment
Senior Capstone

The marine aquarium industry has in recent years experimented with IoT (Internet of Things) technologies to automate maintenance and upkeep. This project will explore the latest innovation in IoT connectivity standards, Thread, and its open source implementation, OpenThread. Our aim is to provide an API built on top of OpenThread that empower third-party IoT manufacturers to tailor their Thread-capable products for specific applications within large scale artificial environments, such as marine aquariums and aviaries. In addition, we will develop a smart lighting prototype to demonstrate the distinctive advantages of Thread over the alternatives. Overall, the project will highlight how purpose-built APIs can steer the development of more robust smart animal-care platforms.

Theater for Restoration
Presented By: George Dizard
Department/Program: Business and Humanities

Richmond is due for restoration, and the new grant from Eli-Lilly is going to help, but a forgotten piece of Richmond is the historic Tivoli theater. The goal of this project is to restore the Tivoli theater with new purpose and others like it across the American midwest. This project requires thorough research into the history of performance arts in the midwest. As well as overcoming the obstacles of renovating a commercial property. Restoring historic theaters is very important in a time that is turbulent and confusing. A revival of performance arts in spaces that are meant for them could bring about a necessary resurgance to provide inspiration and creativity.

"The Tale of Wawllot": A Folktale from Morocco
Presented By: Yasmine Chanbari, Oussama Chourdi, Isabel Clawson, Dr. Roger Adkins
Department/Program: English, Sociology and Anthropology
Career Community: Social Justice, Education & Public Affairs
Student-faculty collaborative research during the academic year

In the fall semester of 2023, students in Roger Adkins' "Introduction to Folklore" course were engaged in a Global Course Connection with students in Meriem Sahli's "Introduction to Arabic Literature" course at Al Akhawayn University in Morocco. Students in each project group designed and carried out interviews of elders living in Morocco, collecting oral histories and folktales. Students in this group collected a tale that demonstrate the cultural richness of Moroccan culture. They then turned the tale into an e-book, designed for children learning English and/or Arabic. Students will address the project and its processes, the challenges of working in an intercultural research team, and the outcomes of their work.

Penn Medicine's Lung Transplant Program
Presented By: Audrey Elliott
Department/Program: Biology and Public Health
Career Community: Health & Medicine
Epic Advantage

During my internship at Penn Medicine, I shadowed a Nurse Practitioner whose primary role is managing the discharge of post-lung-transplant patients. During my internship, my goal was to observe the lung transplant process from as many perspectives as possible. I observed what makes patients need a lung transplant, if they are healthy enough to be eligible for a lung transplant, what happens during a lung transplant, and what life is like after a lung transplant. Because of my career aspirations to be a nurse, this internship was a great experience to see a side of medicine I hadn't been able to see previously.

Critical Pedagogy & Townsend Community Center's Harambee Youth Program
Presented By: James Freiberger
Department/Program: Education, Peace and Global Studies and Philosophy
Career Community: Social Justice, Education & Public Affairs
Richmond Residency

In the summer of 2023, I interned with Townsend Community Center and helped coordinate their harambee youth program, in which students (K-8th grade) engaged with extracurricular material in mathematics, English, and reading. I helped facilitate students' development of critical thought by applying the Socratic method and Paulo Freire's "liberation pedagogy" in my pedagogical framework. Examples of this application includes: responding to students' questions with my own creative questions to help them construct the connections necessary to intuit answers themselves, encouraging students to get a "sense" of the pacing of sentences in order to delineate comma placement, and instructing students in rudimentary etymology to help them uncover the meaning of unfamiliar words. I think this pedagogy benefits the community of Richmond by facilitating critical thought from a young age, a skill that may otherwise go unlearned in public education.

Dog Breed Identification using Deep Learning - CS Senior Capstone
Presented By: Karolayne Gaona Chong
Department/Program: Computer Science
Career Community: Entrepreneurship, Innovation & Creativity
CS Senior Capstone

Pet identification is important for veterinary care, pet ownership, and animal welfare and control. This proposal presents a solution for identifying dog breeds using dog images. The proposed method applies a deep learning approach to identify the dog breeds. The starting point for this method is transfer learning by retraining existing pre-trained convolutional neural networks on the Stanford Dog database. Three classification architectures will be used. These classifiers will take images as input and generate feature matrices based on their architecture. The stages these classifiers will undergo to create feature vectors are 1) Convolution to generate feature maps and 2) Max Pooling: highlight features are extracted from the feature maps. Data augmentation is applied to the database to improve classification performance.

VC Industry Research & Pitch Deck Analysis Externship at Energy Innovation Capital
Presented By: Karolayne Gaona Chong
Department/Program: Computer Science and Environmental Sustainability
Career Community: Science, Environment, Entrepreneurship, Innovation & Creativity

Remote externship for a month at Energy Innovation Capital in collaboration with Extern. Energy Innovation Capital is a venture capital firm specializing in renewable energy and sustainable technology investments to tackle pressing issues like climate change. In this externship, I will analyze emerging trends, evaluate competitive landscapes, and uncover growth opportunities within the energy sector.

Transforming Fighters into Thinkers and Thinkers into Fighters: The History and Lessons of Detroit's GBI
Presented By: Marlenne Garcia
Department/Program: Law and Social Justice
Career Community: Social Justice, Education & Public Affairs
Epic Advantage

The General Baker Institute (GBI) in Detroit, MI, stands today as part of the legacy of General Gordon Baker and the continued work of Marian Kramer and the Baker family. Working as an Education and Community Outreach Assistant, I researched and interviewed leaders in the community to increase the organization's asset mapping efforts. This required outreach efforts, attending community events, and forming 1-on-1 relationships. Learning from organizations like Garage Cultural from the southside, leaders like Charles Ezra Ferrell, and the Bakers themselves, we discussed what it means to be "too political," the role of "student intellectuals," intergenerational leadership, and global movements. The Bakers' long history of human rights work and the community they foster daily as they open their doors to members from all walks of life captures what it means to love your city.

AI Music Recommendation
Presented By: Evan Griswold
Department/Program: Computer Science, Arts, Humanities and Natural Science
Senior Capstone

This project focuses on developing an AI-powered music recommendation system by harnessing diverse music data sources with the main dataset Million Song Dataset (MSD) and having sub-datasets within MSD involving cover songs, lyrics, user data, genre labels, and similarity. Employing content based filtering and deep learning together will achieve the best results, providing users with personalized and diverse music recommendations. The objective is to create an efficient music recommendation system that enhances user music discovery and satisfaction.

Site Collections Intern at Levi Coffin House
Presented by: Neon Guzmán
Epic Advantage

How can you practically apply your knowledge of history and how history is preserved? I spent 10 weeks scanning and organize boxes and boxes of documents at Levi Coffin House, located in Fountain City. The program is generally done as part of Richmond Residency. I spent days alternating between scanning documents and adding them to an huge index of documents, ensuring that they could be found by a search of subject, date, publisher, or keyword. This would require me to understand the local and state-level organizations or events Levi Coffin House carried out, for example. This experience gave me some insight to the level of tedious work that is required to upkeep historical documents or archives. It is easy to think of work within history as being exclusively glamorous, but there is a lot of meticulous work involved in maintaining history accessible.

Developing a Public Budget Allocation Algorithm with Artificial Intelligence for the Japanese Government
Presented By: Momoha Hirose
Department/Program: Computer Science, Natural Science, Interdisciplinary
Career Community: Entrepreneurship, Innovation & Creativity
Senior Capstone

This is my senior capstone project for computer science. My study focuses on the research and development of an algorithm for allocating Japan's national budget for the following year based on past data, using artificial neural networks and genetic algorithm methods. It takes classified categories and Japan's past budget data and considers the normalized importance of each in terms of its impact on economic indicators, and returns a proposal for specific public budget allocations.

Childcare Enhancement Initiative
Presented By: Cordelia Holst
Department/Program: Business
Entrepreneurship, Innovation & Creativity Career Community
Epic Advantage

I am addressing the critical issue of affordable and high-quality childcare in Wayne County, Indiana, particularly for Earlham College's staff and the broader community. To tackle this challenge, my project will focus on establishing a daycare center on Earlham's campus. With thorough research and understanding of Richmond's parental struggles, it is evident that proactive measures must be taken. My approach has begun with conducting comprehensive surveys targeting parental needs and concerns, ensuring the proposed daycare meets their expectations and provides the peace of mind they seek. Engaging with the school board is pivotal to gaining the support and resources for the initiative's success. Securing suitable property for the daycare facility and integrating students into the staff who pursue relevant fields of study like teaching, social work, and child development emphasizes our commitment to holistic support and educational opportunities. Ultimately, the envisioned nonprofit organization aims to create a symbiotic relationship benefiting the children, parents, and the border community.

HyaNova- Management through Utilization: A Sustainable Approach to Tackling Invasive Species
Presented By: Christine John
Department/Program: Business
Science, Environment, Social Justice, Education & Public Affairs
Career Community: Entrepreneurship, Innovation & Creativity

At HyaNova we aim to transform local communities through creativity, innovation and technology, in seamless unity with nature. Our mission is to craft sustainable pathways to positively enrich communities through creatively harnessing the power of invasive species through manufacturing eco-friendly solutions. As its initial offering HyaNova aims to manufacture and sell clean burning fuel briquettes for our two main target consumer segments- low- income rural communities and outdoor camping venues and resorts, and increase their access to a clean burning, affordable, more sustainable alternative fuel source. We hope to sell our products at ration stores and government owned stores in addition to selling through our website. We hope to create demand through word-of-mouth, youtube and

newspaper advertisements. As of now, HyaNova still remains a dream on paper. Through networking, mentorship and fundraising, I hope to create a positive change in the lives of many back home in Kerala and beyond.

A Stakeholder Analysis of Guyana
Presented By: Kiyomi Johnson, Katrina Lohan, Steven Canty
Department/Program: Biology, Environmental Sustainability, Sociology and Anthropology, Sustainability and Management and Public Policy
Natural Science and Social Science
Epic Advantage

An essential part of environmental conservation project planning is a stakeholder analysis which is what I will be doing in this remote research based internship. The Smithsonian Environmental Research Center (SERC) has interests in doing conservation work in Guyana. However, they do not enter a country unless they are explicitly invited. I will be conducting a stakeholder analysis to determine what groups within Guyana would be interested in environmental conservation and how can the SERC's resources be best used to assist them. Although this will be mostly a desktop study there will be opportunity to travel both in the United States as well as travel to Guyana. Travel within the United States will be to interact with the Guyanese diaspora within the U.S. to create a strong network for stakeholder analysis. Travel to Guyana will be to better understand the culture and communities within Guyana. It also will be useful to connect with communities that do not have a strong online presence.

Improving Generalizability of Multimodal Sentiment Analysis Models
Presented By: Arata Katayama
Department/Program: Computer Science
Career Community: Entrepreneurship, Innovation & Creativity
Senior Capstone

Sentiment analysis, a domain within artificial intelligence and nat- ural language processing, focuses on interpreting emotions, atti- tudes, and sentiments primarily from written text. However, recent research has extended this analysis to include audio and visual data, creating a burgeoning field known as Multimodal Sentiment Analysis (MSA). MSA is an evolving discipline dedicated to com- prehending emotional expressions in not only text but also audio and visual inputs. Many MSA models have been built in recent years with different frameworks [10], from statistical non-machine learning techniques, to complex neural networks. However, not many focus on generalization performance, which is the ability to predict unprecedented data. This

project focuses on using pre- trained state-of-the-art Convolutional Neural Network (CNN) together with Select-Additive Learning algorithm (SAL) to improve the accuracy of the state-of-the-art MSA model. Furthermore, this project will focus on enhancing the generalization performance of the model within and across existing datasets.

School Shootings in the United States (K-12) & Relevance of Month, Day of the Month, and Weekday

Presented By: Kevin Le
Department/Program: Social Services and Public Health, Social Science

School shootings are something that are very common in America today. We have seen an increasing in school shootings post pandemic with shootings reaching up into 300 school shooting in a year, compared to the 100 that happened pre pandemic. I wanted to look at recent school shootings that have happened in the last 6 months and categories them by the school (elementary, middleschool, high school, college), the number of victims shot, and the type of gun used in the shooting. I am trying to identify a trend to see if the number of victims per shooting has gone up depending on the type of gun and the setting of the school.

Euchre AI

Presented By: August Nord
Department/Program: Computer Science
Career Community: Science, Entrepreneurship, Innovation and Creativity
Senior Capstone

Euchre is a cooperative-style, imperfect information card game played using a subset of cards from a standard playing card deck. Players are paired with a partner and attempt to win the most points for their team while not being able to know the cards in anyone's hand but their own. This presentation overviews the work I am doing for my capstone in computer science where I am creating and testing computerized agents to play this game.

Towards a Sound Installation

Presented By: Noelle Patterson, Dove Rice-Snow, Karol Zetzsche Silva, Liesl Nunemacher and Dr. Forrest Tobey

Department/Program: Music, Arts

The Sound Design and Interactive Systems class will showcase an interactive sound installation in the CVPA, allowing visitors to remix their input with various audio effects like reverb, delay, distortion, vocoding and more using a drum pad, microphone, and MIDI keyboard. The installation may also feature Arduino microcontrollers for motion sensing and real-time control of digital sound and images.

A Fusion of SCN and Transfer Learning-Based DCNN for Facial Emotion Recognition

Presented By: Tien Phan

Department/Program: Computer Science, Natural Science

Senior Capstone

Recent advancements in deep learning, especially the application of Convolutional Neural Networks (CNNs), have guided significant progress in Facial Emotion Recognition (FER). CNNs excel at automatically extracting facial features, leading to the development of robust FER systems. Deep Convolutional Neural Networks (DCNNs) have further elevated FER capabilities, outperforming traditional CNNs. However, DCNNs still face a limitation concerning their demand for high-dimensional datasets. To address this constraint, this paper proposes an ensemble model combining Self-Cure Network (SCN) with DCNN, bolstered by transfer learning.

Navigating the Shadows: The Plight of Refugees in Malaysia's Legal Limbo

Presented By: Aaditya Pillai

Department/Program: Economics, Business and Public Policy

Career Community: Social Science, Interdisciplinary, Entrepreneurship, Innovation & Creativity

Refugees in Malaysia face significant challenges due to a lack of legal recognition, barring them from formal employment, education, and healthcare. This precarious situation leaves them vulnerable to exploitation and dependent on informal, unstable jobs. Two innovative solutions aim to address these issues: the RefuBees project and the Refugee Center Malaysia E-commerce Platform. RefuBees introduces a B2B model connecting refugees with Western startups for ethical, affordable labor, offering refugees professional training and financial

independence. Meanwhile, the e-commerce platform empowers refugees by providing a marketplace to sell products and services, fostering financial independence and community integration. Both solutions strive to enhance refugees' livelihoods, offering paths toward stability and societal inclusion in the face of legal and social barriers.

Instability in Francophone Africa
Presented By: Laetitia Rakotoarisoa, Rio Obe, Jennifer Seely
Department/Program: Politics, Social Science
Student-faculty collaborative research during the academic year

In recent years, countries in Francophone Africa - in particular Mali, Chad, Burkina Faso, Central Africa Republic, and Benin - have been rethinking their relationship with each other and with France, the former colonial power. These countries publicly voiced their rejection of French influence, increasingly looked to China and Russia for military and financial support, and, as of recent news, threatened to leave regional cooperation agreements like ECOWAS. A key indicator of these changes is insurgency in the region. A series of coups have taken place in Francophone Africa, and ties to France, including military and financial support systems, have broken down. This project aims to understand how insurgency and insecurity in Francophone Africa can be linked to excessive French pressure and weak institutions, which undermine stable governance. Moreover, It will also aim to identify trends in Francophone African nations to examine if French colonialism led to unique impacts on the region.

Exercising the Brain: A Glimpse of the Benefits of Wellness Activity Incorporation in Education
Presented By: Diana Guzman Rivera
Department/Program: Social Services
Career Community: Social Justice, Education & Public Affairs
Epic Advantage

This poster presentation summarizes an experience leveraging the EPIC Advantage Program for three weeks in South Africa. Showcasing how the Youth Holiday Program with the Outreach 2 Enrich team created programming based on sports and wellness activities for six to seventeen-year-olds from the Capricorn community in Muizenberg, as well as nurturing three- and four-year-olds with the Sunrise Educare Centre in Capricorn. While also exploring how space, tourism, and international volunteer work have a long-lasting impact on communities and youth.

Building a Climate Initiative for Japanese Design Consultancy
Presented By: Isao Sakai
Department/Program: Enviornmental Sustainability and Peace and Global Studies,
Interdisciplinary
Science & the Environment Career Community, the Social Justice, Education & Public Affairs
Career Community: Entrepreneurship, Innovation & Creativity
Epic Advantage

As the entire market shifts to the sustainability transformation, design studios are not the exception. For the summer 2023, I interned at Takram, a renowned Japanese design innovation studio in their office in New York City and Tokyo for 3 months. While most of my co-workers were trained designers and engineers, I was hired as an environmental activist to research and become part of their sustainability transformation initiative. During my 3 months internship, I got involved with experts interview of Carbon emission reporting frameworks and facilitated Takram's involvement in "Design Declares!" which is an international initiatives of designers to tackle climate crisis. This experience gave me the opportunity to understand how designers are tackling the climate crisis from their work, and the potential for the climate activism to collaborate with.

Naturopathic Care: A Dive Into The Field Of Chiropractic
Presented By: Donovan Shea
Department/Program: Biology and Excersize Sports and Health Studies
Career Community: Health & Medicine
Epic Advantage

My Epic experience was exploring and understanding the business and practice of chiropractic care, by shadowing and helping Cook Chiropractic in Colorado Springs for two weeks. My main goal was to experience and learn the day to day business and dealings of a chiropractic office both on the business end and with the Doctor during appointments. I was able to learn about different techniques in the chiropractic field, how to interact with patients, and how to manage insurance and bill patients while shadowing the office. This is relevant because chiropractic care is a growing field that more patients are going to for pain relief and treatment compared to the pharmaceutical heavy approach. Through this experience I was also able to see if this was really the profession I wanted to pursue and if it was what it sells itself as.

Cunning Cowbirds: Long-term impacts of brood parasites on imperiled grassland birds
Presented By: Megan Steinhiser, Harley Pickett, Sara Lindower, Jaime Coon, Wendy Tori
Department/Program: Biology
Career Community: Natural Science and the Science & the Environment
Summer Collaborative Research

Brown-headed Cowbirds are obligate brood parasites native to the grasslands and woodlands of North America. Their populations have increased significantly due to habitat alterations after European settlement. This has potentially detrimental effects on their hosts, which include obligate grassland birds. Grassland birds are rapidly declining and are a conservation priority. The main goal of our research is to study the factors that influence Brown-headed Cowbird abundance and parasitism of obligate grassland bird nests. We specifically examined the effects of land management (grazing and fire) in the Grand River Grasslands over 15 years. From 2009-2023, our long-term research monitored 1509 nests of 5 obligate grassland species at 6-12 sites. In addition, bird surveys were conducted at 12-18 sites from 2007-2023 to record cowbird presence and usage of those sites. We will use an AICc statistical framework to examine cowbird population responses, discuss implications, and offer recommendations for the management and conservation of this threatened ecosystem.

Social Psychology Replication Project
Presented by: Nour Al-Sheikh, Murphy Anderson, Caylee Brandes, Jay Bright, Liz Burley, Faith Butler, Peyton Chanley, Trenton Connolly, Raiden Edseth-Griffin, Devin Fitzgibbon, Kyle Gaffney, Logan Galliano, Cecilia Gitt-henderson, Gabby Gerardi, Jenna Gerber, Josie Haile, Patrick Hardimon, Aniyah Harrington, Keely Hubbard, Makayla Hurey, Ashley Jennings, Eliza Karnopp, Jalyn Kelsey, Lina Kremer, Grace Larson, Ashley Lewis, Katia Marchenko, Cristobal Martinez, Mbali Mhlongo, Tertulle Nivrose, Luke Peters, Willa Pettit, Tien Phan, Cameron Powell, Laetitia Rakotoarisoa, Meerab Rasheed, Fallon Redding, Hannah Reyes, Ethan Rose, Giulianna Russell, Aisha Samal, Armen Sargsyan, Bella Schatko, Lauren Seibert, Katelyn Trotto, David Turner, Mj Williams, Nic Wilson
Department/Program: Psychology, Social Science

The posters presented by groups of students in Social Psychology (PSYC 210) are the result of a semester-long project wherein each group attempted to replicate published social psychological research on Earlham's campus. These replications include investigations of topics such as persuasive techniques, helping behavior, relationship behaviors, groups, personal space, interpersonal interactions, and the effect of the situation on behavior. All groups will provide the theoretical background for the study, the original method for the study, any

modifications necessary for their replication, the results of the original research and the results of their replication, and a discussion of why the two sets of results may or may not differ.

Forty Studies that Changed Psychology Presentations
What is Love? Presented by: Kiley Bohart, Natalee McCann, Diane Scalise
40 Studies that Changed Psychology Presented by: Maliyah Buford, Katia Marchenko, Tatum Rickert
Acting as if you are Hypnotized Presented by: Cassidy Calcaterra, Rio Obe, Sarah Petzold
Cap or No Cap Presented by: Matthew Garcia, Destiny Gray, Armen Sargsyan, Madison Short
Are you a "Natural"? Presented by: Sam Katinsky, Casey Keesee, Brady Shaw
Department/Program: Psychology, Social Science

The posters presented by groups of students in Introduction to Psychology (PSYC 115) are the result of a semester-long project wherein each group read about one of forty studies that significantly changed the field of psychology. Students chose to present studies on varied topics, including attachment styles, hypnosis, and dreaming. All groups will provide the theoretical framework behind their study, information about the researcher(s), the results of the original study, beliefs of laypersons about the study, and future directions based on this research.

Movie Recommendation System Using Genre Correlation
Presented By: Long Trinh
Department/Program: Computer Science and Data Science
Career Community: Science & the Environment
Senior Capstone

Recommendation systems are important emerging research technologies in computer science. They can be used to help customers find products they want. Recommendation systems use past users' preferences to predict future users' preferences and make suggestions to users. Recommendation system algorithms have been applied to movies to build movie recommendation system algorithms.

Comparison of Optimizations of Elastic Bunch Graph Matching
Presented By: Patrick Wande
Department/Program: Computer Science
Career Community: Science & the Environment
Senior Capstone

Facial recognition technology has emerged as a pivotal force in security, surveillance, and identity verification. Among the various techniques, Elastic Bunch Graph Matching (EBGM) stands out for its adept capture of facial structural information. Elastic Bunch Graph Matching (EBGM) is a facial recognition technique that captures and analyzes the structural information of facial images. It utilizes a graph-based approach to represent facial features and landmarks, allowing for robust recognition. Despite its effectiveness, EBGM faces challenges related to computational intensity This project aims to research the computational shortcomings of EBGM by conducting a comparative analysis of two proposed two optimization techniques: Principal Component Analysis (PCA) and Harmonic Search Optimization (HSO). Both methods seek to enhance the efficiency of EBGM without compromising its accuracy. By exploring the potential of PCA and HSO in optimizing EBGM, we offer practical insights that contribute to the ongoing dialogue on efficient facial recognition technologies.

Inside the life of a Physical Therapist: Athletico Physical Therapy
Presented By: Nate Whetstine
Department/Program: Exercise Sports and Health Studies
Career Community: Health & Medicine
Epic Advantage

With the support of the Epic Advantage Program, I participated in a 4-week internship at Athletico Physical Therapy in Franklin, Indiana. The physical therapy business I worked for values themselves in working with and helping patients recover and return to normal activity function. My experience invited me to connect and build relationships with patients in order to help provide them with the best possible care.

Volunteering in South Africa - Discovering what Community means
Presented By: Mia Wong
Department/Program: Social Services, Peace and Global Studies and Leadership
Career Community: Social Justice, Education & Public Affairs
Epic Advantage

As I look back on my journey of volunteering with children in South Africa, I can truly say that it has been an enriching experience, marked by meaningful connections, wholesome experiences and invaluable lessons learned. I would say that my role as a volunteer extended beyond conventional boundaries, as I also took on roles as a teacher, care worker and most importantly friend to the children of the Muizinberg community. Through collaborative efforts with the local volunteer program O2E, I contributed to initiatives aimed at fostering community outside of homes and neighborhoods, enhancing educational access and nurturing a safe and healthy environment. Reflecting on the work done, I am humbled by the tangible impact that the O2E volunteer group had on these children. My favorite part of this program was that we had so much time and space to truly get to know and love each child. This program has taught me again that each child is different and they express themselves in different ways. This experience was truly amazing and I hope to get a chance to go back. Through sharing my experience of volunteering with children in South Africa, I hope that this poster presentation inspires others to embark on their own transformative experiences, fostering empathy, understanding, and impactful contributions to the lives of children and communities in need.

Concurrent Sessions #1 | 1:30 PM-2:30 PM

Landrum Bolling Center (LBC)

History of Rock- Song Analyses, *LBC 211*
Presented By: Keith Cozart, Justin Boritzki, Anthony Gough, E.J. Upton, Levi Call, Connor Del Carmen, Ben Pratt, Charles Bowen-Rayner, Devin Fitzgibbon, Alex Deutsch, Lily Doyle, Art Crockett, Cas Bowman, Neon Guzmán Delgado, Julia Stein-De Turck, Ian Bullis, Mitch Roether, Ethan Hear, Phoenix Guzzi, Mac Moore, Kasey Blair, Nate Whetstine, Dillon Fischer, Hayden Scalf, Austin Snider, Brendon Gibson
Department/Program: Music and Arts

Students from the music course History of Rock present within small groups multi-media presentations, focusing on the inner details of some of the Rock Era's most memorable recordings and the artists that created them. Each group presentation is short and sweet, one pivotal song, 10 minutes maximum, with a brief Q&A wrap up.

Engagement Boosters in Education: Movement and Interactions, *LBC 201*
Presented By: Mateo Quinonez, Kate Wallace, Max Fries and McGee Catlett
Department/Program: Art, Athletics, Wellness, and Physical Education, Graduate Programs in Education and Museum Studies

This panel brings together research conducted on various educational settings to explore diverse approaches that aim to increase engagement and performance the learning environments. The presenters will delve into distinct aspects of their respective fields, sharing insights and research findings that shed light on experimental strategies for fostering meaningful interactions and optimizing learning outcomes. The presenters focus on the practical application of the experimental strategies in their own fields, including museum, arts education, and athletics. By bringing together these diverse perspectives, this panel aims to inspire educators, museum professionals, and sports coaches alike, fostering a rich exchange of ideas that can be applied across various educational contexts. Join us in exploring the transformative power of intentional practices to enhance learning and performance in your respective domains.

Exposition of World and Comportment Toward World in Heidegger, *LBC 208*
Presented By: James Freiberger
Department/Program: Philosophy and Humanities
Student-faculty collaborative research during the academic year

In this session, I will be presenting an essay concerning Martin Heidegger's notion of world, the "world picture," or people's contemporary mode of comporting themselves toward world, and how people attempt to capture the particularities of world through modern science and representation. Additionally, I provide a brief description of the essential modes of encountering being Heidegger attributes to the Greek, Medieval, and post-Cartesian (or modern) ages. I draw primarily from Heidegger's Questions Concerning the Essence of Technology and Other Essays and Timothy Mitchell's Colonizing Egypt, which I argue contains a correct application of Heidegger's ontology. Furthermore, I argue that turbulence is especially withdrawn from the representational understanding qualifying the post-Cartesian age. I affirm this premise through a conceptual elaboration of representation as a re-evocation of something fixed and unchanging. Join me as I explore these ideas and their implications.

Sociology/Anthropology Senior Thesis Presentations, *LBC 314*
Presented By: Tyler Smith, Meryl Pawlick, Haider Ali
Department/Program: Sociology/Anthropology

Join the Sociology/Anthropology seniors as they present their multifaceted theses in this session. Tyler Smith will share his comprehensive study on the student-athlete experience at Earlham College, offering insights into the challenges and triumphs of balancing academics and athletics. Meryl Pawlick will take us on a journey to Costa Rica, exploring the cultural significance of sloths and their portrayal in the tourist industry. Haidar Ali will provide a Marxist analysis of working-class conditions in the United States, drawing from firsthand experiences with labor organizing efforts at Amazon and beyond.

Concurrent Sessions #2 | 2:45 PM-3:45 PM

Landrum Bolling Center (LBC)

Multilingual, Interactive Language "Tasting," *LBC 211*
Presented By: Maria Duran, Stephanie Lane, Jacob Gurt, Sie Richardson, Eleanor Venditti, Abby White and Mia Wong
Department/Program: Comparative Languages and Linguistics and Teaching English to Speakers of Other Languages

Join the CLL/TESO 344: Studies in Language Learning and Teaching course for an interactive language tasting event consisting of a rotation of multiple stations at which participants can enjoy brief samples or "tastings" of interactive lessons in multiple languages.

A Song of Sweet Subversion: Define "witch," *LBC 201*
Presented By: Blaise Rzeszut
Department/Program: Religion and Women's Gender and Sexuality Studies
Student-faculty collaborative research during the academic year

How we think about the word witch has much to do with how the word has evolved historically. Just like definitions, cultural associations also change drastically over time, especially in contemporary forums in which bite-sized content about witchcraft, however a creator may define it, is promoted to global audiences. With such a wide variety of definitions and uses, there cannot be one final definition; however, you can analyze the usage of the word witch across society and the general impact it has had throughout history. But witches are also far more nuanced than general: they can be dangerous, they can be sweet or tameable, or witches can be righteously angry at a misogynistic and patriarchal society that has wronged them. The witch could also be a media tool meant to capture your interest. Whether you love or hate witches, they are vital fixtures in the spiritual landscape of today.

Recruitment Data and How It Affects Their Student-Athlete Experience, *LBC 208*
Presented By: Darin Douglas, Richard Annorat and Blake Peterson
Department/Program: Athletics, Wellness, and Physical Education, Leadership, Media and
Communications and Sports Management
Senior Capstone and Student-faculty collaborative research during the academic year

In this presentation, we will discuss our research exploring the recruitment process and
student-athlete experience at Earlham College. We'll discuss the multifaceted nature of college
athletics recruitment, including talent assessment and character evaluation. The combination of
athletic prowess, academic excellence, and philosophical principles contributes to their holistic
development. Join us as we explore how these principles cultivate mental resilience, enabling
student-athletes to thrive in both sports and academics, while also nurturing essential life skills.

Sociology/Anthropology Senior Thesis Presentations, *LBC 314*
Presented By: Jessica Ongole, Marlenne Garcia, Cierra Schreck
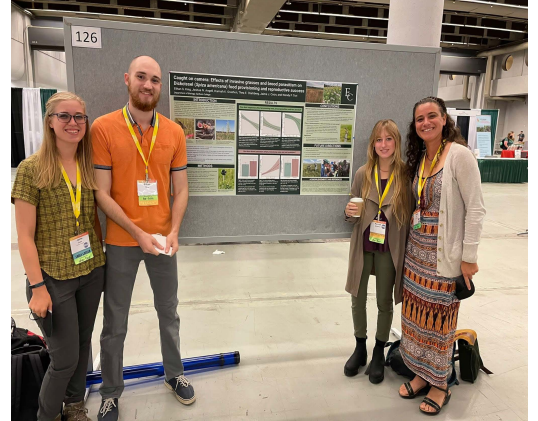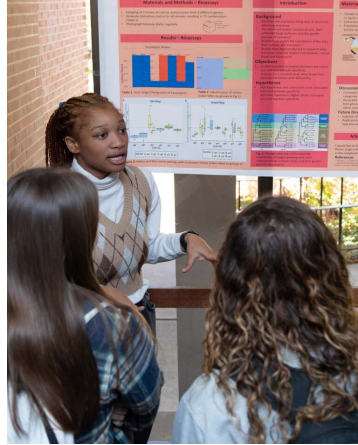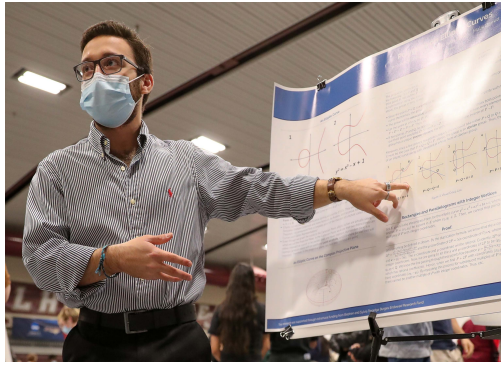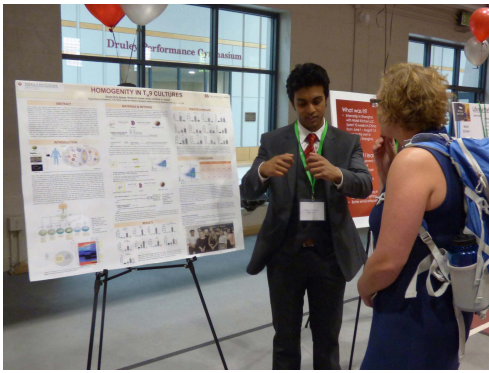Department/Program: Sociology/Anthropology

Join the Sociology/Anthropology seniors as they present their multifaceted theses in this
session. Jessica Ongole will delve into the rich history of the Black Student Union at Earlham
College, highlighting its enduring impact on campus culture. Marlenne Garcia will share
compelling stories from her ethnographic research on the socialization of workers, offering
insights into their past, present, and future in the workforce. Cierra Schreck will explore the
intersection of surveillance, art, and technology through her investigation of photographic
surveillance in Prague.

**The Impacts of Formative and Summative Assessments on Students Learning
Experience, LBC 316**
Presented By: Karina Steitz, Claire Gerlach, Elijah Gambier and Daniel Cox
Department/Program: Athletics, Wellness, and Physical Education and Education
Social Justice, Education & Public Affairs Career Community

This session explores the influence of formative and summative assessments on student
learning experience, behavior, and confidence levels, both in the classroom and in practice,
including among student-athletes. Attendees will gain insights into different assessment
methods and their effects on student performance, with practical recommendations for
educators. Join us for a discussion on how assessments shape educational outcomes and
student growth.

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