



Eastern Michigan University

Symposium
Undergraduate
Research Fellow
(SURF) Awards



2023-2024 Research Fellows

SURF AWARDS

Through donor support, the SURF program provides an opportunity for outstanding new and current students to extend their educational experience and academic passion beyond the classroom.

Fundraising efforts for the fellows began enthusiastically in the fall of 2006. Supporters of the Undergraduate Symposium were excited to learn of an opportunity to support student research at a more engaged level. Since the program's inception, donors have supported 253 unique students. We have donors who have contributed since the beginning, those who chose to support through their estates, and even new donors who are alumni of the program.

Selected student fellows are immediately matched with a faculty mentor in the student's chosen field of study. SURFS are engaged in a research project that is of mutual interest between the student and faculty. Students are provided with a \$1,000 stipend; faculty are provided up to \$1,000 to support the project. SURF positions are awarded for one year with the possibility of renewal.

As a culmination of the year's work, SURFs present at the EMU Undergraduate Symposium.

**We congratulate the following students
on their research awards!**



Rana Aabed
John Palladino, faculty mentor
Special Education
SURF In Honor of Anthony & Lois Evans

The purpose of this study is to better understand how volunteer certified pet therapy dog-handler teams can add value to already existing special education interventions. Research has confirmed the overall impact dog therapy has on youths' psychological health. However, understanding how volunteer handlers modify the manner in which they have their dogs interact with individuals with disabilities is a present-day need that has otherwise not appeared in the literature. This poster will describe preliminary results of a qualitative, multiple-case investigation regarding the role of volunteer certified handlers and the dog therapy provisions they offer to special education populations.



Hind Al Khashali
Hedeel Evans, faculty mentor
Neuroscience
Dykema

The basic operative mechanisms underlying cisplatin resistance in non-small cell lung cancer (NSCLC) remain poorly understood. Here, we show that blocking casein kinase 2 (CK2) activity increased sensitivity to cisplatin in the human NSCLC cell lines, A549 and H1299. Phosphorylation of IGFBP-3 by CK2 (P-IGFBP-3) reduced its binding affinity to hyaluronan (HA). P-IGFBP-3 was less effective at decreasing cell viability or increasing apoptosis than IGFBP-3 in the absence or presence of cisplatin. IGFBP-3 was more effective at inhibiting HA-CD44 signaling than P-IGFBP-3 and augmented the effects of cisplatin.



Mohammad Ali
Siyuan Jiang, faculty mentor
Computer Science
Dykema

In the ever evolving field of software development, understanding and maintaining complex codebases is crucial. Existing source-code machine learning models aid this, yet they often overlook an important factor: the code's context. Our research focuses on leveraging external contextual information to enhance source-code model performance. We've developed a data pipeline that utilizes CodeQL to extract contextual information from the CodeSearchNet dataset and developed CodeContext, a transformer model that integrates context with code in an effective manner. This approach promises to enhance code comprehension and maintenance, marking a significant advancement in software development tools.



Alyssa Amos
Jonathan Hall, faculty mentor
Biology
William Fennel Endowment

Global human population threatens to overwhelm food systems. Wild food provisioning is an understudied food security practice in the Global North. Here, I build on previous research on deer harvest rates in Appalachia for the midwestern states of Michigan, Indiana, Ohio, and Wisconsin from 2018–2022. I also evaluate whether and how deer harvest rates changed in each state during the global pandemic of 2020–2021. During the study period, I estimate that more than 300 million pounds of deer were harvested. In some state, harvest rates increased during the pandemic suggesting a correlation between food insecurity and increased wild food provisioning.



Meg Bernstein
Robert Erelwine, faculty mentor
Jewish Studies
Center for Jewish Studies EMU

This research will culminate in a paper outlining the social history of Lilith, the mythological mother of demons and supposed first wife of Adam. Beginning with origins in Sumerian and Babylonian mythology, this paper focuses on examining the roles Lilith has played in different cultures and religions throughout history. Particular attention will be paid to Lilith’s role in Jewish folklore and magic, including perceptions of young women, mothers, and female sexuality in Judaism. Finally, in American pop culture, the ways in which the meanings and focus of the myth of Lilith have both shifted to reflect evolving social values will give an understanding of how it still functions today.



Kaili Brooks
Carla Damiano, faculty mentor
World Languages
Tom Layher

In 2024, Eastern Michigan University celebrates its 175 years. Located in the Literary Archive lies the sole comprehensive history of the university from its founding to 1963. Spurred on by his desire to reignite campus tradition and community, Professor Egbert R. Isbell, a former dean, set out to unite educational and historical heritage within its pages. After Dr. Isbell and his wife Florentine’s passing, their two daughters have continued to pour life into the institution through historical tales and generous scholarships. Join me as I tell their story, from Germany to Ypsilanti and beyond, gaining insight into a family that has helped shape the University’s chronicle as we know it today.



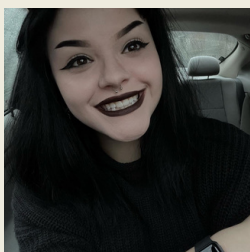
Hadlie Daigle
Rusty McIntyre, faculty mentor
Psychology
Ed & Suzanne Jakeway

Ableism is a form of systemic oppression of disabled people. Ableist views perpetuate the idea of being non-disabled as the ideal and being disabled as a flaw or weakness to avoid. This study compared how different reasons for disabilities might lead to ableism toward auditory and cognitive disabilities. Results from the study supported our hypothesis that ableism is more strongly expressed when the disabled person might be seen as responsible for the disability as compared to when they are seen as less responsible. The results have implications for how individuals who hold ableist views might perceive specific disabilities and how that leads to the continuation of such beliefs.



Eridian Dempsey
Christina Topolewski, faculty mentor
Social Work
Retirement Income Solutions

Bibliotherapy is a therapeutic approach that is used for a wide variety of experiences across the lifespan. There are many bibliotherapeutic materials that address a wide range of issues impacting children; however, there are no resources for Avoidant/Restrictive Food Intake Disorder (ARFID). Through dedicated research to understand ARFID, along with research on developing children's bibliotherapy, the book "Sam Sleeps Over" was created. The story centers on the challenge of dinner at Sam's first sleepover, exploring Sam's diagnosis, treatment, worries, and successes.



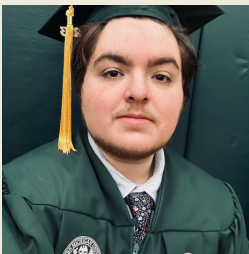
Coreena Forstner
Kimberly Barrett, faculty mentor
Sociology, Anthropology & Criminology
Bank of Ann Arbor

Solitary confinement is commonly used in U.S. correctional facilities, particularly affecting individuals with severe mental illnesses like bipolar disorder and schizophrenia. Existing literature often lumps these conditions together, overlooking their unique aspects. This study addresses this gap by examining the distinct experiences of incarcerated individuals with bipolar disorder and schizophrenia during solitary confinement. The project highlights potential discrepancies in the use of solitary confinement for these specific mental health conditions. Findings indicate an increased likelihood of individuals with bipolar disorder/ mania or schizophrenia being placed in solitary confinement.



Sofia Ivanko
Catherine Gammon, faculty mentor
Exercise Science
Dale and Gloria Heydlauff & AEP

The amount of physical activity (PA) to promote and maintain health has been researched for many years. Currently, there is a knowledge gap regarding the existence of a dose-response curve between PA and mental health in general, and specifically in college students. The purpose of this study was to examine if there is a dose-response relationship between PA and mental health in college students. A sample of 757 EMU students responded to an online survey about mental health and PA. We observed graphical evidence of a dose-response relationship between PA and mental health, although this was not consistently supported by statistically significant differences between PA doses.



James Kirk
Robert Erlewine, faculty mentor
Jewish Studies
Center for Jewish Studies EMU

In Northern Syria in 1928, several stone tablets were excavated at the ancient site of Ugarit. Some of these tablets told religious epics with their own pantheon of gods, goddesses, and monsters. Many of these deities, myths, and religious concepts were absorbed into Yahweh as the Hebrew Bible presents him. By further exploring these connections, a more rounded historical picture of the Biblical God is gained. This historical picture of the Biblical God adds to the discussion of the formation of monotheism by highlighting how deep its polytheistic roots go and how integral they are to the Hebrew Bible.



Luke Lass
Dennis O'Grady, faculty mentor
Communication, Media & Theatre Arts
Molly Luempert-Coy & DTE Energy Foundation

Previous research has examined the kinds of uncertainty college student-athletes face and how they manage this ambiguity communicatively. In this study, public statements of professional athletes facing uncertainty are analyzed to compare and contrast their communication with the college student sample.



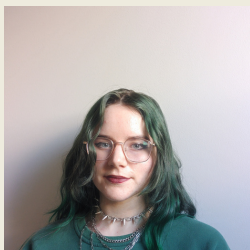
Arnecia Paul
Jessica Grimone-Hopkins, faculty mentor
Early Childhood Education
Ian Pendelton & Vertex Pharmaceuticals

Early childhood is the most vital period in a child's life because the essential building blocks for lifelong learning are being developed. Early childhood education programs such as child care centers, preschools, and HeadStarts are important spaces where children's development can flourish. ECE programs are associated with academic, emotional, and well-being benefits. Unfortunately, many children don't have the opportunity to attend such programs due to various barriers. This literature review will explore the benefits of preschool, the detriments of not attending preschool, the barriers to attending preschool, and the effects of COVID-19 on preschool attendance in the United States.



Alyssa Peterson
Michael McVey, faculty mentor
Teacher Education
Tom Sidlik

An important topic in elementary education is classroom management. I explored this topic through interviews and surveys with second-grade teachers around Michigan in order to learn more about the question: "What classroom management systems and strategies are being used in Michigan second-grade classrooms today and are they effective at creating a supportive learning environment?" I obtained an in-depth picture of seven different classrooms and the differing methods the teachers use to manage their classrooms. Emphasized elements in the majority of classrooms include flexibility, relationships with students, expectations and routines, and communication with families.



Briana Render
Metaphor Brown, faculty mentor
Art & Design
Retirement Income Solutions

Lighting and atmosphere are key players for everyday lives in society. These two elements can completely change a person's emotions, and play a vital role in storytelling. By using light and color, an animator is able to establish a mood immediately, and carry it through the entire story. Building the scene's composition forms a sense of depth and belonging for the story to take place; once built, an animator creates textures by building layers onto every object. Afterwards, highlighting the textures through lighting helps complete the atmospheric mood between the environment and the character. The lighting conveys information that a character can't and forms an emotional tie for the viewer



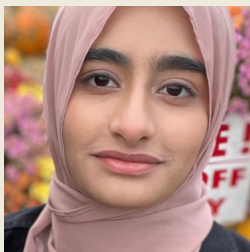
Olivia Robinson
Dennis O'Grady, faculty mentor
Arts Management
William Fennel Endowment

In 2022, The EMU Arts Management & Administration (AMA) Program unveiled its new landing page, branding, & future goals. A project in its third year of development, EMU AMA has worked with EMU's School of CMTA, AMA alums, EMU's Amplifying the Arts, & Washtenaw Community College to establish its identity within the university & in the greater community. This presentation intends to share AMA's most recent marketing strategies & its goals for 2024 & beyond. It will report on the recent design & distribution of new marketing materials, its PR internship opportunity, a 2023 national advertising campaign, its published alum interviews, & collaborations with its WCC affiliation program.



Jason Rousell
Ryan English, faculty mentor
Art & Design
Joe Sesi

In the world of 3D computer graphics, an often-overlooked aspect of the process is simulated hair, fur, and cloth/skin (further referred to as dynamics). In the Simulation, Animation, and Gaming (SAG) program at Eastern Michigan University, there is only one class that specifically deals with dynamics—aptly named “Simulation and Animation Dynamics.” Students in SAG don't get the chance to learn about dynamics early enough to be able to focus on that area as a potential career until their final two semesters in the program. This project showcases my exploration into these often neglected areas of simulation, to encourage students to explore other pathways in SAG.



Basmah Shahid
Hannah Seidel, faculty mentor
Biology
William Fennel Endowment

Ball pythons are popular pets due in part to their wide range of heritable color morphs. Genetic testing for these morphs helps owners predict breeding outcomes, but genetic testing is currently cumbersome because tests require multiple steps. Our goal was to streamline genetic testing by developing allele-specific PCR assays for morph-associated genetic variants. These PCR assays can detect the presence or absence of a specific DNA sequence. Thus far, we have developed allele-specific PCR assays for variants in color-associated genes EDNRB2 and TFEC. We are currently expanding our approach to other genes. Our findings expand the genetic testing toolkit for pet owners and breeders.