

Cal Poly  
**Humboldt.**



# ideaFest

A Showcase of Research and Creative Projects

**Friday, May 3, 2024**

**3:00-5:00 p.m.**

**Arcata Community Center**





**Marching Lumberjacks • Event Kick-Off  
Arcata Community Center Entrance**

**Reception & Poster Symposium**

**Musical Performances**

**Nursing PSA Video Competition**

**Humboldt College Corps: Serving the North Coast**

# Research Presentations

Listed here in alphabetical order by poster title



## **“Are We Ready?” Disaster Preparedness for People with Chronic Conditions or Disabilities**

**Ashley Stone**, Nursing, Undergraduate Student

### **College of Professional Studies**

Disaster preparedness is critical to improve health outcomes during and after disasters. Climate change is increasing natural disasters. People with chronic conditions or disabilities (PCCD) are more vulnerable and need tailored interventions to maintain health. Collaboration with diverse stakeholders fosters inclusive strategies, enhancing healthcare facility accessibility and addressing systemic biases. Screening, raising awareness, and actions toward readiness with special concern for PCCD promotes health equity and better outcomes. Application/assessment by COPEWELL (Composite for Post-Event Well-Being) for regional recommendations can build community resilience.



## **2024 International Social Work Day - Buen Vivir: Shared Future for Transformative Change**

**Cheuk-Shan Kuang**, Social Work, Undergraduate Student;  
**Ella Green**, Social Work, Undergraduate Student

### **College of Professional Studies**

A project in collaboration with Nord University in Norway to highlight students’ perspectives on International Social Work day 2024. The theme for this year’s international social work day is “Buen Vivir: Shared Future for Transformative Change” with an emphasis to adopt innovative, community-led approaches that are grounded in indigenous wisdom and harmonious coexistence with nature. The video project interviewed social work students at both universities on their perspectives of what it means to be a social worker contributing to a shared future for transformative change.



## **A meta-analysis of the variables affecting tick abundance**

**Curtis Cline**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

I looked at the current literature on ticks to determine the different variables that could impact the abundance of ticks.



## **A Picture Worth a Thousand Words: Factors Influencing Disability Accommodations**

**Alicia Martin**, Psychology;  
**Matias Solorzano**, Psychology, Graduate Student;  
**Jim Nguyen**, Psychology, Graduate Student;  
**Mari Sanchez**, Psychology, Faculty

### **College of Professional Studies**

Not all disabilities are apparent; you cannot identify a person with disabilities just by looking at them. This study aims to address whether professors’ disability-related attitudes, perceptions of accommodation reasonableness, and willingness to provide accommodations differ when a student’s disability is recognizable (student is pictured in a wheelchair), unrecognizable (student is pictured in a chair), or when no visual is present (standard documentation control) and whether the professor’s level of disability-related knowledge and perceptions of institutional support mediates this relationship.



## **A Prediction Model of Nathan’s Jacket Preferences**

**Nathan Boone**, Psychology, Graduate Student

### **College of Professional Studies**

Despite the utility and ubiquity of statistical modeling in everyday life, many introductory statistics students struggle to connect their coursework to their interests. Predictive models can be applied to a broad range of topics, from the global scale to the individual. The current poster presents a model built to predict how highly the author will rate a new jacket, using ratings of 39 other jackets as reference points. Using jacket measurements, marked size, and price as predictors, the model was able to explain 77% of the variation in the author’s jacket preferences. This poster helps show students that they can apply statistical modeling to their own interest.



## **A Review and Possible Interventions of Hypertension Prevalence in the Filipino American Population**

**Jason Arcilla**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

My project reviews the literature of hypertension prevalence within the Filipino American population.



## **A Survey of Shrew (Soricidae) and Mole (Talpidae) Mortality in Arcata, CA**

**Christina Giltzow**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

In the Arcata Community Forest, many moles (Talpidae) and shrews (Soricidae) have been found dead along walkways. I investigated starvation, cold temperatures, age and toxin exposure as possible causes for these mortalities. I performed necropsies on 12 specimens including Trowbridge's shrew (*Sorex trowbridgii*), shrew mole (*Neurotrichus gibbsii*) and coast mole (*Scapanus orarius*), and sent tissues as well as 3 additional specimens to UC Davis for toxicological screening. Body condition, cold temperatures and age did not appear to be linked to mortalities. The toxicological screens were negative for tested organic chemical compounds. The mortalities of these insectivores is still a mystery.



## **Affects of Common Fishing and Recreational Beaches on Dead Seabird Abundance Found Onshore**

**Nikkie Villagrana**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

The objective of this study was to determine whether proximity to fishing communities has an affect on whether or not I will find more dead seabirds on those beaches. There is evidence to suggest that one of the highest causes of plastic pollution is by commercial fishing litter. Plastic pollution has been one of the leading causes of seabird death and I aim to bridge the gap in knowledge by whether or not I find more dead seabirds onshore on the beaches that are linked to popular fishing communities in Humboldt County.



## **Agent-based Modeling of Microglia Behavior in the Context of Alzheimer's Disease**

**Emmanuel Mezzulo**, Mathematics, Undergraduate Student;

**Cheyenne Ty**, Mathematics, Undergraduate Student;

**Amanda Case**, Mathematics, Undergraduate Student;

**Abigail Penland**, Mathematics, Undergraduate Student;

**Kamila Larripa**, Mathematics, Faculty

**College of Natural Resources & Sciences**

Our research investigates the role of microglia, the resident immune cells of the central nervous system (CNS), in the progression of Alzheimer's Disease (AD) using an agent-based model (ABM). Microglia cells, which typically act almost as neuronal guardians in the CNS can, under certain conditions, inadvertently contribute to AD progression if they become dysfunctional. By simulating microglia, neurons, and their interactions with signaling proteins, our ABM sheds light on the complex dynamics underlying the progression of AD, and has a the potential to inform therapeutic targets in AD treatment down the line.



## **Alzheimer's Disease as Type 3 Diabetes? Unconventional Methods to Utilize if AD is Seen as T3DM**

**Frank Tirado**, School of Applied Health, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

In recent years new findings in research have been revealing that Alzheimer's Disease is endocrine disorder: Type 3 Diabetes Mellitus (T3DM). With new evidence of Alzheimer's Disease (AD) being T3DM, there are now new methods of preventing or slowing the progression of AD.



## **American Pikas Responses to Long and Short Alarm Calls During Mid-Summer in Lassen National Forest, California**

**Thomas Butler**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

This project is an Honors Thesis conducted on Richard Brown with the Cal Poly Humboldt Wildlife Department. This project assessed the use of the short and long alarm calls used by American pikas. This project took place in Lassen National Forest NW of Susanville, California.



## **Anabaena Sensory Rhodopsin Membrane Protein Identification and Isolation**

**Jacquelyn Amadeo-Ranch**, Chemistry, Undergraduate Student;

**Jenny Cappuccio**, Chemistry, Faculty;

**David Morales**, Chemistry, Undergraduate Student;

**Valeria Aviles**, Chemistry, Undergraduate Student;

**Frank Cappuccio**, Chemistry, Faculty

### **College of Natural Resources & Sciences**

Rhodopsins are light-sensitive proteins within the G-protein coupled receptor (GPCR) family that convert photons into intracellular chemical signals that perform downstream biological functions. Anabaena sensory rhodopsin (ASR) with a 6x-His tag was isolated and purified using Ni-NTA affinity chromatography after evaluating clones of induced E. coli transformed with a pET15b plasmid. The most viable clones discovered from this study were BU3E and Box A. SDS-PAGE gel electrophoresis confirmed the protein size of 20.65 kDa. These results indicate that these 2 strains can be utilized for further studies on ASR function in nanodiscs.



## **Analysis of Acidity, CO2 and Oxygen Concentration During Summer Upwelling Conditions in Humboldt Bay, Northern California**

**Lindsey Fischer**, Oceanography, Undergraduate Student

### **College of Natural Resources & Sciences**

This project took place over summer of 2023. We set sensors in Humboldt Bay in June and again in August leaving them out for three days. These sensors tracked alkalinity, temperature, and oxygen levels within the water. From this we could look at how summer upwelling changed the water chemistry from June to August.



## **Analyzing Trace Levels of Iron in Seawater: Expanding the Measurable Concentration Range**

**Brooke Stafford**, Geology, Undergraduate Student;

**Elijah Vestal**, Geology, Undergraduate Student;

**Claire Till**, Chemistry, Faculty

### **College of Natural Resources & Sciences**

Seawater samples are to be measured for the iron concentration content. We measured standard samples to better understand what concentration ranges we could measure. We are currently working on optimizing the method to measure higher concentrations.



## **Around the Bay in 80 Days: Investigating the Relationship between Bird Diversity and Plants**

**Quinlan House**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

The goal of this study was to investigate the relationship between plant species richness and bird diversity within the area of Humboldt Bay situated in north-western California. Humboldt Bay hosts a unique array of natural areas such as redwood forests, coastal dune forests, and wetlands. We examined the effect of plant species richness and diversity on bird diversity in these three habitats around Humboldt Bay by conducting point counts, plant species censusing, and plant density sampling across 10 plots at each habitat.



## **Assessing Attitudes Toward Law Enforcement and Civilian Law Enforcement Review Boards in Humboldt, California**

**Joshua Worthington**, Psychology, Graduate Student;

**Chad Hinojosa**, Psychology, Graduate Student;

**Catie Burtch**, Psychology, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

The current state of policing in the United States is a heavily politicized issue. In response to instances of excessive police force on vulnerable populations, civilian law enforcement review boards (CLERBs) were developed to improve accountability. In this study, we investigated support for CLERBs and attitudes toward law enforcement in Humboldt County. Drawing from the social identity theory framework and intergroup contact theory, our work shows that people's beliefs about how marginalized communities are treated by law enforcement predicts their attitudes toward law enforcement, and this in turn predicts support for CLERBs. We discuss these relationships and their implications.



## **Attitudes of Recognizable and Unrecognizable Disabilities in Various Contexts**

**Alicia Martin**, Psychology;

**Alice Zhang**, Psychology, Graduate Student;

**Olivia Ortiz**, Psychology, Undergraduate Student;

**Mari Sanchez**, Psychology, Faculty

### **College of Professional Studies**

Some disabilities are apparent (i.e., recognizable), while other disabilities are not (i.e., unrecognizable). Different situational contexts (i.e. dating, marriage, work, classroom) and the type of disability being judged (recognizable or unrecognizable) may impact one's attitudes towards those with disabilities. In addition, one's own personal characteristics (e.g. gender, sexual orientation, and disability status) may also impact one's disability attitudes.



## **Benefits of Birth by Water Immersion**

**Kylie Dennhardt**, School of Applied Health, Undergraduate Student

### **College of Professional Studies**

Water birth has always been a controversial topic amongst expecting mothers, and I wanted to research the outcomes of water births to see if it really is as controversial as people think. In my research I highlight the benefits of birth by water immersion on both maternal and neonatal physiology.



## **Benefits of Physical Exercise On Motor and Non Motor Aspects in Parkinson’s Disease**

**Ebony Isaiah**, School of Applied Health, Undergraduate Student

### **College of Professional Studies**

Parkinson’s Disease (PD) is a neurodegenerative disease that tends to affect the older adult population. The disease slowly takes away motor functioning and has negative repercussions on the individual’s mental health. My research explores the interventions that physical exercise can have on non-motor and motor functions instead of using the medications that are prescribed for PD. The use of medications that are provided with long term use can be detrimental to motor function. The goal of this research is to help maintain health related quality of life and independence for those with PD.



## **Beyond the Impact: Traumatic Brain Injuries and Long-Term Association with Neurodegenerative Diseases**

**Andrea Lugo**, School of Applied Health, Undergraduate Student

### **College of Professional Studies**

A comprehensive overview of the relationship between traumatic brain injuries (TBI) and the development of neurodegenerative diseases such as Alzheimer’s Disease and chronic traumatic encephalopathy (CTE). The poster delves into the critical roles that the proteins tau and beta-amyloid play in the neurodegeneration associated with TBI, suggesting a strong link between TBI and subsequent neurodegenerative conditions. It calls for increased research into treatment strategies and an improved understanding of TBI’s long-term effects.



## **Black to the Kitchen: A Genealogical Cookbook**

**Dillon Harp**, Other, Graduate Student

### **College of Arts, Humanities & Social Sciences**

“Black To The Kitchen: A Genealogical Cookbook” intertwines culinary exploration with genealogical research to illuminate Afro-cultural foodways. From traditional family recipes rooted in West African heritage to adaptations born out of diasporic experiences, the book celebrates the richness and diversity of Afro-descendant cuisines. Moreover, the book explores the concept of the Black Kitchen as an “under commons,” highlighting its historical significance as a site of resistance, resilience, and community organization, where cultural practices were preserved, solidarity was forged, and resistance movements were incubated.



## **Build a Causal Diagram to Compare Calculus Outcomes Across CSU Campuses**

**Nathan Boone**, Psychology, Graduate Student;  
**Rosanna Overholser**, Mathematics, Faculty;  
**Francesca Messina**, Psychology, Graduate Student

### **College of Natural Resources & Sciences**

20% of CSU students received a failing grade in Calculus 1 between 2019 and 2021. As a required course for many STEM majors, Calculus 1 outcomes have an impact on many students. When staff discuss different teaching strategies and ways to use resources, it’s natural to compare failure rates between campuses. Different CSU campuses have different student populations, so a direct comparison of outcomes may be unfair. The proposed poster describes the process of designing an analysis that could carry out a standardized comparison of calculus outcomes across campuses. Attendees will be invited to interact with the poster by adding relevant variables and pathways with sticky notes and markers.



## **Caffeine Supplementation and its Effects on Health and Performance in High School/ College Aged Athletes**

**Jacob Allen**, School of Applied Health, Undergraduate Student

### **College of Professional Studies**

This poster aims to summarize how caffeine supplementation affects health and performance in high school/college aged athletes. Furthermore this poster delves into how caffeine affects general health and anaerobic/aerobic performance. Following that, how caffeine absorption is affected by genetics.



## Cal Poly Humboldt Earth Week Quest/ Treasure Hunt

**Evan Mack**, Recreation Administration,  
Undergraduate Student;

**Joe Watson**, Recreation Administration,  
Undergraduate Student

### College of Professional Studies

Our project idea involves hosting a campus-wide scavenger hunt that will span three days; Mon April 22-25, 2024, featuring four quests/scavenger hunts daily, participants will be given a riddle that will lead to one of 12 buildings on campus. In these buildings, we have hidden a piece of paper with a QR code. Students must bring this QR code back to our table on the quad and win a gift card. This activity is being held in part by WRRAP. Our aim is to offer an exciting recreational opportunity for participants to engage in interactive and social activities outside of their dormitories, fostering a sense of community and camaraderie among students.



## Camp Hall Project Proposal

**Grey Hildebrand**, College Corps, Undergraduate Student

### Humboldt College Corps

Camp Hall is an idea for a summer camp-esque program that could be hosted at the Vet's Hall for elementary aged children. It would take place over the course of a few days and would not be overnight. Veterans/Fellows would be encouraged to participate in the camp and share things like crafts, basic survival skills, story telling, gardening, cooking, and science/exploration themed activities.



## Candidate Landing Sites for Artemis 3 in Two NASA Candidate Landing Regions Nearest The Lunar South Pole

**Steven Gracy**, Physics & Astronomy,  
Undergraduate Student

### College of Natural Resources & Sciences

This will be a poster presentation that is based on summer REU research at SETI. This REU focuses on a landing site for the Human Landing System for the NASA Artemis III mission. This poster is complete with a full abstract and pictures of two of the best candidate sites via satellite imaging from NASA and Arizona State University databases. The sites were chosen based on a list of criteria that must be met inside previously chosen landing site regions near the Lunar South Pole that were set by NASA.



## Carbohydrate phloem loading mechanism in Nicotiana tabacum via the downregulation of sucrose transporter 1

**Jennah Brown**, Forestry, Fire & Rangeland  
Management, Undergraduate Student

### College of Natural Resources & Sciences

Food security has become a growing concern as we look to the future. Having a thorough understanding of plant functioning can help predict effects brought to crops under a changing climate. This study seeks to better understand the carbohydrate phloem loading mechanism in *Nicotiana tabacum* by intentionally downregulating the sucrose transporter gene (SUT1). The phloem loading mechanism transports sugars and amino acids from photosynthetic sites to conducting sieve tubes. Such a process is essential for plant growth, storage, and cellular function. *N. tabacum* resembles those of major crops, and can be used as a model species for addressing food security concerns in other favorable crops.



## Case Study Focusing on ASD, Improving Accuracy in Sports with SDT and Video Modeling

**Cassandra McMillen**, Kinesiology, Graduate Student;  
**David Adams**, School of Applied Health, Faculty

### College of Professional Studies

The purpose of this study is to evaluate the impact of a teacher selected video model on the performance of the golf putt. The researcher believes a systematic approach of instruction will improve skill development for both participants. For this single subject study a changing criterion design was used. Overall, a changing criterion study provides a structured and adaptive approach to skill development, fostering progressive improvement, motivation, and the transfer of learning, all of which contribute to increased accuracy and technique on the skill of putting. Results indicate that there was a gradual upward trend in both participants' successfully attempted putts.



## Challenging Boundaries: Investigating the relationship between human persecution and Coyote behavior in California

**Steven Childs**, Wildlife, Undergraduate Student

### College of Natural Resources & Sciences

This study seeks to examine the relationship between coyote behavior and proximity to areas of public lands where hunting frequently takes place and cosmopolitan areas where coyotes are generally free from being hunted over time using California Department of Fish and Wildlife Wildlife Incident Report data. Insights gained are intended to inform targeted management strategies, aiding in conservation

and coexistence efforts between humans and coyotes. The significance of this research lies in its contribution to addressing the pressing challenges of human-wildlife conflict, a pervasive issue with far-reaching implications.

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### **Changes in Motivation and Intention to Change Multiple Health Behaviors Associated with a College Health Course**

**Joshua Worthington**, Psychology, Graduate Student;  
**Miranda Connelly**, Psychology, Undergraduate Student

#### **College of Professional Studies**

Drawing from the theory of planned behavior, the present study examined changes in self-reported health behaviors, and attitudes and intentions to change behaviors across outcomes of diet, exercise, tobacco smoking, and stress management before and after a health class. Students in several sections of a Health Psychology course (N=477) were invited to complete an online survey assessing self-reported health behaviors, and importance, confidence. Improved intentions, confidence, and importance were reported in most health behaviors observed.

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### **Characterization of a Novel Endocellulase Enzyme for Biofuel Optimization**

**Amanda Ratcliff**, Chemistry, Undergraduate Student;  
**Sarai Tapia**, Chemistry, Undergraduate Student;  
**Priscilla Gamez**, Chemistry, Undergraduate Student;  
**Sienna Mills**, Chemistry, Undergraduate Student;  
**Frank Cappuccio**, Chemistry, Faculty;  
**Jenny Cappuccio**, Chemistry, Faculty

#### **College of Natural Resources & Sciences**

Currently food crops are used to produce bioethanol production, while plant waste cellulose could be used. However, cellulase enzymes are a limiting factor. We sought to characterize a novel cellulase identified by metagenomic analysis of bovine rumen by the JGI and Hess et al. We performed protein expression, genomic analysis, and characterization by SDS-PAGE, CMC and DNS activity assays, and electron microscopy of cellulose degradation. Our data indicates the cellulase is an endoglucanase with an activity of 6.27 cm<sup>2</sup>/ug, or 6x higher than commercial cellulase enzymes. These results have implications for creating efficient biofuels from agricultural waste products versus the current methods.

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### **Climate Action in Humboldt County: College Corps**

**Indigo Thorson**, College Corps, Undergraduate Student  
**Humboldt College Corps**

This project delves into the role of College Corps in fostering community engagement and leadership development in climate action. Through collaborative partnerships with local nonprofit organizations, College Corps provides students with opportunities to address pressing social environmental challenges while deepening their connections within the community. This case study follows my journey as a College Corps fellow who, driven by a passion for environmental and social justice, has made significant contributions in waste reduction and community garden initiatives. My experiences illustrate the programs' efficacy in empowering students to become catalysts for change.

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### **Climate Change and Its Effect on Spring Migrating Waterfowl**

**Xander Gonsalves**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

Climate change is one of worlds greatest threats to ecosystems and biodiversity. Rising temperatures could have increased impact on migratory waterfowl during spring migration periods. I went out and did point counts at three different locations (Arcata Marsh, Hookton Slough, Salmon Creek), measured temperature and other environmental factors and waterfowl abundance. There was no significant impact by temperature on waterfowl abundance. Further research could be done over a longer period of time to measure the impacts climate change and rising temperatures could have on migration timing during the spring.

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### **College Corps and Arcata House Partnership Combating Homelessness in Humboldt County**

**Annika Botha**, College Corps, Undergraduate Student;  
**Amanda Anderson**, College Corps, Undergraduate Student  
**Humboldt College Corps**

College Corps, a collaboration between Cal Poly Humboldt, College of the Redwoods, and Arcata House Partnership (AHP), tackles homelessness in Humboldt County. AHP provides crucial support, offering personalized assistance and essential services to over 1700 homeless individuals, including hygiene products, clothing, case management, food assistance, and empowerment programs. Collaborative efforts like College Corps maximize impact amid resource challenges. AHP's compassionate approach fosters stability and community well-being, striving for lasting change by advocating for safe, affordable housing and continuously improving services.





## College Corps: Big Brothers Big Sisters College Corps Experience

**Ivory Browning**, Religious Studies, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

An in-depth description of what it means to be a Big for Big Brothers Big Sisters (BBBS), a local youth mentoring non profit. Connected to BBBS by the College Corps program, Fellows Ivory Rose, Kai Jones, and Emily Martin share their experiences. They each explain how their relationships with their Littles' have impacted their lives.



## College Corps: Community Service on Wiyot Land

**Seth Beres**, College Corps, Undergraduate Student;  
**Marie Roberts**, College Corps, Undergraduate Student;  
**Nick Salgado-Stanley**, College Corps, Undergraduate Student;  
**Rhiannon Lopez**, Undergraduate Student;  
**Jovanni Flores**, College Corps, Undergraduate Student  
**Humboldt College Corps**

The Humboldt Bay region is and has been the ancestral home of the Wiyot people since time immemorial. The College Corps team was honored to be welcomed into their sacred space to assist in the tribe's efforts to heal and restore the land and its people. A team of 5 College Corps fellows assisted the Tribe in several key areas including: cultural restoration, ecological stewardship, community development, and energy sovereignty. The wisdom and experiences gained from tribal leadership were invaluable to the College Corps team and we will take the lessons learned into our communities wherever we go.



## College Corps: Creating Communities Through Collaboration

**Malcolm Ridings**, College Corps, Undergraduate Student;  
**Zacarias Lopez Torres**, College Corps, Undergraduate Student  
**Humboldt College Corps**

An informational and interpretive poster that showcases the work we did for Jefferson Community Center. As well as showcasing what the Jefferson Community Center.



## College Corps: Food for People's Impact on Food Insecurity in Humboldt County

**Petrira Rodriguez**, College Corps, Undergraduate Student  
**Humboldt College Corps**

College Corps has provided more than 100 full time students to work with nonprofit community partners around Humboldt County. Food for People is one of those community partners and from an intern's perspective, it is not difficult to see just

how big of an impact "the largest food bank of Humboldt County" makes on the residents of Humboldt County. With a variety of pantries and different programs that provide food for seniors and children that are from the low-income community that impact grows even more so with the changing economy.



## College Corps: Increase in Queer Knowledge

**Madison Culp**, College Corps, Undergraduate Student;  
**Alexis Villegas**, College Corps, Undergraduate Student;  
**Ares Munguia**, College Corps, Undergraduate Student;  
**Bee Wilson**, College Corps, Undergraduate Student;  
**Liah Narvasa**, College Corps, Undergraduate Student;  
**Melissa Hernandez**, College Corps, Undergraduate Student  
**Humboldt College Corps**

The Queer Humboldt interns decided to do a study of how many queer icons they have memorized. Based off this activity, we have measured how much queer knowledge has been accumulated over the year. To check out what kind of activity it is, please find us in the College Corps area under the Queer Humboldt table!



## College Corps: Market Watch - Northcoast Growers Association

**Fiona Connors**, College Corps, Undergraduate Student;  
**Robyn Stallman**, College Corps, Undergraduate Student  
**Humboldt College Corps**

Serving 450 hours this year at the North Coast Growers Association has been an incredible learning experience and allowed us to get involved in grass roots movements. The Market Match program allows EBT/SNAP cardholders to use their benefits at local farmers market with an extra incentive - customers will receive an additional \$15 to spend. The North Coast Growers Association is determined to building more sustainable food systems and robust communities and this program is critical for supporting our local community including both farmers and recipients of EBT benefits. Help save this essential program and help our community.



## College Corps: Mental Health Matters in Elementary Schools

**Ruth White**, College Corps, Undergraduate Student  
**Humboldt College Corps**

My project is based on what I've observed during my time in local elementary schools through my work in the College Corps program. It quickly became very clear to me that both teachers and students alike needed more mental health support.



## College Corps: Our Service at Arcata High

**Jazmin Pacheco-Vasquez**, College Corps, Undergraduate Student;

**Eyanna Jones**, College Corps, Undergraduate Student

### Humboldt College Corps

Through our service in College Corps, we bridge the gap between the lack of support for students and staff. With this experience we now understand both perspectives of the student and the staff when it comes to the pressures of the school system. In our time serving the importance of a positive student/staff relationship has become that much clearer. Work at our sites has not only brightened our perspective on the school system, but as well our career paths. As psychology majors, we have a goal to help and understand people's relationships. So with this hands-on experience, it has further confirmed what area we wish to study in.



## College Corps: Potawot Community Food Garden

**Erin Clear**, College Corps, Undergraduate Student;

**Azariah Mohr**, College Corps, Undergraduate Student;

**Angelica Mercer-Garcia**, College Corps, Undergraduate Student;

**Chrys Furrer**, College Corps, Undergraduate Student;

**Karina Juarez**, College Corps, Undergraduate Student;

**Leighanna Jake**, College Corps, Undergraduate Student;

**Lily Green**, College Corps, Undergraduate Student

### Humboldt College Corps

The United Indian Health Services Potawot Community Food Garden aims to supply Native American communities with fresh, organic and locally grown produce in an effort to reduce food insecurity while educating clients about the importance of maintaining a connection to the land. College Corps Fellows joined the Garden's mission to get nutritious food into the hands of those who need it most. Fellows learned a variety of food crops, methods of planting them, and organic ways to manage pests and weeds. After working at the garden, fellows recognize the need for sustained volunteering and help from the community to keep the project running, especially though the summer when students are on break.



## College Corps: Senior Voices

**Katie-Hope Hennessy**, College Corps, Undergraduate Student

### College of Arts, Humanities & Social Sciences

Senior Voices is a book project where the residents of SilverCrest, Eureka share their life stories in a book. You're invited to learn more about how this project unfolded.



## College Corps: Six Rivers Charter High School Battling Chronic Absenteeism

**Kaelyn Trapsi**, College Corps, Undergraduate Student;

**JuliAnn Johnson**, College Corps, Undergraduate Student

### Humboldt College Corps

With the implementation of Rule School at 6 Rivers Charter High School, we have begun to see improvement in the attendance of the student. Continuing forward we are hoping that the issue of attendance will only continue to improve.



## College Corps: Students Helping Students

**Alex Votaw**, College Corps, Undergraduate Student;

**Midalia Garcia**, College Corps, Undergraduate Student;

**Marlon Wexler**, College Corps, Undergraduate Student;

**Julian Wan**, College Corps, Undergraduate Student

### Humboldt College Corps

Our project examines our experience as student assistant volunteers at Arcata High School as a part of the College Corps program. We discuss what our job entails and how this model of student volunteers can be beneficial to the younger students, their teachers, and the volunteers themselves.



## College Corps: Sustainability, Art & Community at the Arcata Creative Sanctuary

**Stella Stahl**, College Corps, Undergraduate Student;

**Joseph Meihak**, College Corps, Undergraduate Student;

**Ally Hair**, College Corps, Undergraduate Student;

**Bella Virgen**, College Corps, Undergraduate Student;

**Marisabel Moreno**, College Corps, Undergraduate Student;

**Carter Daniel**, College Corps, Undergraduate Student;

**Yocelin Rios**, College Corps, Undergraduate Student;

**Mack Barker**, College Corps, Undergraduate Student;

**Leonela Bolanos**, College Corps, Undergraduate Student

### Humboldt College Corps

At the Arcata Creative Sanctuary, community members come together to socialize, create art, and enjoy music. As College Corps Fellows, we got to help facilitate these activities, and help the Sanctuary better achieve its goal of becoming a space for sustainable, creative living and education.



## College Corps: The Importance of Community Service

**Luis Reyes**, College Corps, Undergraduate Student

### College of Arts, Humanities & Social Sciences

This creative project is a reflection of my year of service through College Corps and my placement at the Veterans Hall in Arcata. The project contains some descriptions and pictures of events that my site has been a part of over the year, those events include North Coast Stand Down, Veterans

Day at McKay, and Sunday brunch. Throughout this project I reflect on my time at the Veterans Hall and my experience with College Corps, as well as describing the importance and benefits of providing community service. I end with a conclusion of how a program like College Corps is beneficial towards community outreach and how the program has benefited me.



### **College Corps: Trinidad Coastal Land Trust**

**Jael Villamil**, College Corps, Undergraduate Student

#### **Humboldt College Corps**

I would like to share the importance of working with the community and the impact we can have on climate change when we do so. As well as showing how we help keep our coast clean.



### **College Corps: Valor and Verse Book Club**

**Melanie Sanchez**, College Corps, Undergraduate Student

#### **Humboldt College Corps**

A book club hosted for Veterans and community members to come together to read and discuss topics meaningful to the veteran community.



### **College Students vs. Textbook: collaborating on the creation of a sustainable tourism textbook**

**Ara Pachmayer**, School of Applied Health, Faculty;

**Andrew Blessum**, School of Applied Health, Undergraduate Student;

**Ashley Bowers**, School of Applied Health, Undergraduate Student;

**Justin Claus**, School of Applied Health, Undergraduate Student;

**Zac Claus**, School of Applied Health, Undergraduate Student;

**Mckenzie Coen**, School of Applied Health, Undergraduate Student;

**Lavender Deng**, School of Applied Health, Undergraduate Student;

**Benny Helms**, School of Applied Health, Undergraduate Student;

**Keegan Henry**, Undergraduate Student;

**Skye MacLachlan**, School of Applied Health, Undergraduate Student;

**Joe Watson**, School of Applied Health, Undergraduate Student;

**Jillian Wells**, Journalism & Mass Communication, Undergraduate Student

#### **College of Professional Studies**

Students in REC 435 Sustainable Tourism teamed up to write a textbook about Sustainable Tourism. In their efforts, students brainstormed a list of potential topics, clustered finalized topics around main categories, agreed on an overall format for the textbook and required elements for each chapter, researched their individual topics and completed multiple chapter drafts. The completed textbook will be published through Creative Commons and used as a resources in future tourism classes offered through the Recreation Administration program.



### **College Corps: Greenwood Cemetery: Preserving Veteran Legacies**

**Nizhoni Kears**, College Corps, Undergraduate Student

#### **Humboldt College Corps**

Founded in 1851, Greenwood Cemetery is one of Humboldt County's oldest resting places, hosting hundreds, including veterans from the Civil War to modern conflicts. In preparation for Memorial Day, I've meticulously cleaned and mapped veteran gravestones over three months. This ensures accurate flag placement, honoring their service beyond symbolism. Let's preserve their legacies for generations to come.



### **Combating opioid use disorder through the power of exercise**

**Kyle Winton**, Undergraduate Student

#### **College of Professional Studies**

A literature review involving the history of Opioid Use Disorder, its physical, psychological, and emotional effects; and how exercise and physical activity could alleviate some of the difficulties faced by those who experience opioid use disorder.



### **Comparative Anatomy of Mouse, Zebrafish, and Trout**

**Adnan Alyan**, Psychology, Graduate Student

#### **College of Professional Studies**

Perineuronal nets (PNNs) are specialized extracellular matrix structures that surround certain neurons in the central nervous system. PNNs are an key component of the closure and onset of critical periods, synaptic signaling, memory modulation and neural plasticity. The current study aims to compare the brain tissue of zebrafish and trout to mouse, the current animal model of choice for PNN research. Imaging with chemical stains revealed structures consistent with the appearance of PNNs in zebrafish and trout. The promising findings of this study have the potential to usher in a new wave of research pursuing a deeper level of understanding towards PNNs through a zebrafish model.



## **Connecting Care: Advancing Diabetes Management in Rural Areas Through Telehealth and Community Empowerment**

**Ana Ocegueda**, Nursing, Undergraduate Student

**College of Professional Studies**

Rural areas do not have enough providers leading to a lack of availability for appointments. Rural patients often have difficulty with transportation for essential health services, such as appointments, labs, and pharmacy. Patients with T2D require technology to ensure timely healthcare, including urgent healthcare needs. Nurses can connect patients with T2D to essential health services and education using an interdisciplinary team approach along with technology to modify education for each patient's needs, including language. The theoretical outcomes will be evaluated using short- and long-term measures.



## **Culturally-Informed Interventions for Self-Harm in Indian Country**

**Elizabeth Caplan**, Nursing, Undergraduate Student

**College of Professional Studies**

The suicide rate for young Indigenous men is 2x-4x higher than for other demographic groups. Causes include cultural disruption, historical trauma, grief, and health and social inequities. Prevention of self-harm is a core responsibility of healthcare. A rural clinic serving Indigenous people will implement a Zero Suicide Framework with input from local tribal members. Community members will help develop risk assessments, quality of life surveys, and the facilitation of participation in traditional cultural activities. This will protect by strengthening of belonging, connection, strong spirituality and physical health, and relationship within the community and with the natural world.



## **Depressive Symptomology Mediates the Relationship Between Self-stigma and Mental Health Help-seeking Intention**

**Carrie Aigner**, Psychology, Faculty;

**Jena Cruces**, Psychology, Graduate Student;

**Kim Polanco-Mendoza**, Psychology, Undergraduate Student;

**Kyle Ruelas**, Psychology, Undergraduate Student

**College of Professional Studies**

Undergraduate students (N=712) completed an online survey about help-seeking, stigma, and depression symptomatology. Mental health self-stigma was found to partially mediate the relationship between depression and help-seeking intentions, controlling for gender. This study suggests that the nature of depression itself may present a barrier to help-seeking, adding important context to outreach efforts on campuses.



## **Do bears know when trash pickup day is?**

**Amber Elving**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

This project aimed to answer whether or not bears frequented homes more often on trash pickup day. I placed 20 trail cameras around Humboldt County and was able to capture thousands of photos. Through the collaborative efforts with homeowners and myself, I was able to capture seventy photos of bears, of which 42 were independent events and 48% of the bears were actively foraging on trash.



## **Do bumblebees pollinate when they are scared? The Effect of Simulated Danger on Bumblebee Foraging Habits**

**Audrey Fowler**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

A study looking at how bees perceive danger, and if it affects their foraging behaviors. This was determined by the use of simulated dangers, in this case artificial black capped chickadees. These dangers were placed in bushes and the number of bumblebees that visited each bush (either with or without dangers) was counted. The research finds that the presence of danger is significant to bees when choosing which flowers or bushes to forage.



## **Does cleft palate repair surgery restore normal neural processing for infant faces?**

**Francesca Messina**, Psychology, Graduate Student;

**Nathan Boone**, Psychology, Graduate Student;

**David Harris**, Psychology, Graduate Student;

**Amanda Hahn**, Psychology, Faculty

**College of Professional Studies**

Infant faces readily capture our attention and elicit enhanced neural processing, likely due to their importance in facilitating bonds with caregivers. Cues of poor health are associated with a lower degree of parental investment and facial malformations have been shown to negatively impact early infant-caregiver interactions, possibly due to altered perceptual processing of these faces compared to unaffected infant faces. The current study used eye tracking and electroencephalography (EEG) to investigate responses to infant faces before and after cleft palate repair surgery.



## Does Handedness Affect Lateralization of Facial Emotion Processing

**Shairy Jimenez Delgado**, Psychology, Graduate Student;  
**Alice L. Zhang**, Psychology, Graduate Student

**College of Arts, Humanities & Social Sciences**

Behavioral and neuroimaging work on the visual processing of facial stimuli has consistently demonstrated a right hemisphere bias in face perception generally as well as in emotion perception. Research on lateralization of other cognitive functions such as language has found differential patterns of lateralization between right-handed and left-handed individuals. Several neuroimaging studies found evidence between handedness and degree of lateralization for face processing. The current study seeks to extend previous work by investigating the relationship between degree of handedness and degree of hemispheric lateralization for the processing of faces displaying positive and negative affect.



## Does the Thatcher Effect extend to infant faces?

**Adnan Alyan**, Psychology, Graduate Student;  
**Nathan Boone**, Psychology, Graduate Student;  
**Amanda Hahn**, Psychology, Faculty

**College of Professional Studies**

You will spend more time looking at faces than any other type of object in your lifetime. Because faces are such an important social signal, humans have developed a perceptual expertise for faces. Decades of research on the mechanisms of face processing have demonstrated that although faces contain both featural and configural information humans rely more heavily on configural processing strategies when viewing faces. However, this work has been done using almost exclusively adult facial stimuli. The current study uses a well-established configural disruption known as the Thatcher Effect (TE) to investigate the use of configural processing for infant faces.



## Don't get caught with a CAUTI

**Jill Williams**, Nursing, Undergraduate Student

**College of Professional Studies**

Urinary tract infections (UTIs) are the 5th most common healthcare-associated infection. Of hospital-acquired UTIs, 75% are associated with urinary catheters. 12-16% of people hospitalized require a urinary catheter. There is a 3-7% increased risk of a UTI each day the catheter is in. The negative effects of catheter-associated urinary tract infections (CAUTI) are pain and discomfort, as well as longer hospital stays, increased cost, complications like secondary

infections and mortality (estimated 13,000 deaths/year). The proposed outcomes of are after 1 year, there will be a 50% reduction in CAUTI rates and after 1 year, there will be a 2-day reduction in length of hospital stay.



## Drug Decriminalization

**James Brother**, Social Work, Graduate Student

**College of Arts, Humanities & Social Sciences**

I've been conducting research regarding drug decriminalization because of the harmful effects on people's future, the disproportionate impacts on people of color, and the opportunities to develop other forms of restorative justice and recovery.



## Eelgrass beds impact on juvenile Dungeness crab in Humboldt Bay, California.

**Jillian Hodge**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

The Dungeness crab (*Metacarcinus magister*) is a pivotal decapod species along the Pacific coast, playing a significant role both economically and ecologically. This study aimed to investigate the influence of common eelgrass (*Zostera marina*) beds on juvenile Dungeness crab populations within Humboldt Bay, California. Utilizing crab hoop traps deployed across 30 sites at four distinct beach locations, the research sought to identify habitat preferences and better understand the ecological dynamics shaping juvenile Dungeness crab distributions.



## Effects of cleft lip and palate on visual scanning and neural processing of infant faces

**Nathan Boone**, Psychology, Graduate Student;  
**Amanda Hahn**, Psychology, Faculty

**College of Professional Studies**

Infant faces rapidly capture our attention and elicit enhanced neural processing compared to adult faces, likely due to their evolutionary significance. Cleft lip/palate is estimated to affect 1 in 700 live births worldwide and is associated with difficulties in early caregiver interactions. Behavioral studies have shown that cleft lip/palate reduces perceptions of cuteness; however, the underlying neural and perceptual mechanisms governing responses to cleft lip/palate remain relatively understudied. The current study uses eye tracking and electroencephalography (EEG) to explore visual scanning patterns and neural responses to infants with and without cleft lip/palate.



## Effects of Freshwater on Purple Sea Urchin and Bull Kelp Dynamic at the Mouths of Rivers Along the Mendocino Coast

**Marina Storey**, Biological Sciences, Graduate Student;  
**Izzy Shirah**, Biological Sciences, Undergraduate Student

### College of Natural Resources & Sciences

Urchins are voracious herbivores that mow down kelp forests turning them into urchin barrens. This regime shift from kelp forests to urchin barrens has led to the closer of the red abalone fishery which had an estimated value of \$44 million dollars. In Mendocino CA, bull kelp has been observed persisting at the river mouths in making an interest to local and scientific communities. Urchins are known to not do well with lower salinities possibly leading to this phenomenon.



## Effects of Participation in a Deliberative Democracy Initiative on Sense of Community

**Marissa Morales**, Psychology, Undergraduate Student;  
**Elka Medina**, Psychology, Undergraduate Student;  
**Kat Singer**, Psychology, Undergraduate Student;  
**Audrey Ashdown**, Psychology, Undergraduate Student;  
**Ben Graham**, Psychology, Faculty;  
**Adrian Lopez**, Psychology, Graduate Student

### College of Professional Studies

This poster examines the effects of participation in a deliberative democracy on neighborhood and city sense of community (SOC). The study consisted of 15 qualitative interviews of panelists, focusing on how their neighborhood and city SOC changed by taking part in the citizens' assembly. Interviews were coded and resulted in six primary themes: Pride in neighborhood; Knowledge of community; Working as a representative of the community on the panel; Social connectivity within neighborhood; Multiple perspective-taking; and Community advocacy. This study adds to the literature by highlighting ways citizens' assemblies improve participants' sense of community more broadly.



## Efficacy of Blood Flow Restriction Training on Muscle Growth and Pain Management Post-ACL Reconstructive Surgery

**Abby Borg**, School of Applied Health,  
Undergraduate Student

### College of Professional Studies

For my project I conducted a literature review on the efficacy of blood flow restriction training (BFRT) on muscle growth and pain management among the population of post-operative ACL patients. BFRT is a proposed therapy for combatting quadriceps atrophy following ACLR. This therapy consists of placing cuffs that act as a tourniquet

on the proximal part of the lower limbs and inflating them to a pressure that partially restricts blood flow to the lower limbs. Through this review, I found that BFRT is a promising therapy for ACLR patients.



## Environmental Storytelling for a Hopeful Planet

**Deidre Pike**, Journalism & Mass Communication, Faculty  
**College of Arts, Humanities & Social Sciences**

Environmental Storytelling for a Hopeful Planet is a website collaboration with original content -- from videos to slideshows -- created by students in journalism and environmental studies. Students met in Spring 2024 to practice a mix of environmental journalism and science communication, devising innovative storytelling modes to communicate verifiable ecological truths -- curated and presented with a healthy dose of hope. Students crafted stories about the removal of the Klamath Dam, the Arcata Marsh as wastewater treatment, Humboldt's Birding Club, composting, foraging for edible native plants, and the bliss of living near the world's tallest carbon sequestering trees.



## Envisioning a Better Future for the Tijuana River Using an Anthropological Approach

**Kimberly Cramer**, Anthropology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

The Tijuana River is currently polluted by sewage leaks and other waste which impacts water quality, ecosystems, and human health. The river bisects the U.S.-Mexico border and is controlled by differing policies between the two nations. The poor wastewater infrastructure and binational context of the issue creates concern for environmental and public health. In this poster, I analyze conservation methods to explore the causes and potential solutions for water pollution in the Tijuana River. My findings prioritize a solution focused on community involvement, Indigenous perspectives, and collaboration between national governments to address root problems and advocate for structural change.



## Ethics in forensic anthropology: Racial profiles and the obstruction of finding missing persons

**Nicolette Svitenko**, Anthropology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

The use of racial biometrics in forensic anthropology poses significant harm in identifying the deceased. Despite the absence of a valid biological basis for race, its persistence in forensic analysis raises ethical concerns. Societal structures perpetuate racial categories, affecting individuals' experiences

and access to resources. My research delves into this tension, questioning the ethical implications and consequences for accuracy and equity in forensic investigations, especially for marginalized communities. By advocating for more ethical and evidence-based practices, this inquiry aims to ensure integrity and equitable outcomes in forensic work. Keywords: Forensics, racism, ethics.

### • • •

## Evening Bike Ride Extravaganza

**Ernesto Roide**, School of Applied Health,  
Undergraduate Student

### College of Professional Studies

I put on an event as my senior project for my recreation administration degree. It is an evening community bike ride in McKinleyville at Roger's Market! There will be backyard games, music, snacks, drinks, and a whole lot of fun. Everyone will meet at Roger's, which is right next to the Hammond Trail. Participants can ride their bikes along the trail, play backyard games, and purchase refreshments at the market. I will be tabling the event and making sure every attendee gets a stamp! This stamp will mean they signed the necessary waiver and know the risks involved during the event. I'll have a first aid kit and bike repair kit at my table just in case.

### • • •

## Examining the potential interference of Scandium on Iron Uptake Mechanisms in Phytoplankton, through the lens of Nutrient Consumption

**Isabel Perez-Zoghbi**, Chemistry, Undergraduate Student;  
**Claire Till**, Chemistry, Faculty

### College of Natural Resources & Sciences

Iron is an essential micronutrient for phytoplankton growth, however oceanic concentrations of iron are very low and little is understood about its chemical cycling. In this study, we examine how scandium (which is similar to iron in size but has simpler redox chemistry) affects the uptake of macronutrients in hopes to further understand the uptake and usage of iron by marine microorganisms, and eventually better understand iron cycling in the ocean.

### • • •

## Expression of Olfactory G-Protein-Coupled Receptors in Axolotls During Development

**Josafath Aparicio**, Biological Sciences,  
Undergraduate Student

### College of Natural Resources & Sciences

G-protein-coupled receptors are responsible for binding to odorants and initiating responses in vertebrate olfactory neurons. These receptors are coupled to specific G proteins, whose expression can be used as markers for olfactory neuron maturation during embryonic development. My project focused on developing a quantitative reverse-transcriptase PCR assay to investigate the expression of the G-protein Golf in an aquatic caudate amphibian (the Axolotl, *Ambystoma mexicanum*). The developmental expression of other caudates has been thoroughly investigated, but not in Axolotls. I designed an absolute quantification assay and tested it on late stage embryos and larvae.

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## Female Athletes using therapy to manage PMS

**Vanessa Saltos**, School of Applied Health,  
Undergraduate Student

### College of Professional Studies

I am doing a literature review on the effects PMS has on mental health within female collegiate athletes and how to help manage these symptoms. I'm researching the best resources in order to help combat these symptoms.



## **FISH 480: Challenges that Women Scientists Encounter Conducting Fieldwork-Based Research**

**Cynthia Le Doux-Bloom**, Fisheries Biology, Faculty;  
**Rebecca Colyar**, Biological Sciences,  
Undergraduate Student;

**Raili Makela**, Biological Sciences, Undergraduate Student;

**Natasha Mayo**, Fisheries Biology, Undergraduate Student;

**Raven Mcadams**, Fisheries Biology, Graduate Student;

**Elizabeth Meisman**, Wildlife, Graduate Student;

**Sarah Moreau**, Fisheries Biology, Graduate Student;

**Cheyenne Nelson**, Wildlife, Undergraduate Student

**Kyleigh Perry**, Biological Sciences,  
Undergraduate Student;

**Madison Richardson**, Fisheries Biology,  
Undergraduate Student;

**Anna Schweke**, Wildlife, Undergraduate Student;

**Isidro Trejo**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

Despite closing the gender gap for women scientists in some STEM careers, field-based research remains heavily dominated by men. We investigated if women scientists encounter challenges while conducting fieldwork that our male colleagues do not. Results indicated challenges exist around parity, recruitment, retention, and workplace dynamics.



## **Food preference of backyard birds in Siskiyou County, California.**

**Cheyenne Nelson**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

This project examined the food preferences of backyard birds in Siskiyou County, California in Spring 2024. We used Nature's Way CWF3 Cedar Platform Tray Bird Feeders at eight different locations. For each trial, feeders presented two food types: nut n' berry mix and sunflower seeds. Feeders were left out for 72 hours. We recorded the weather conditions (i.e. cloudy, windy, rainy, sunny), as well as the minimum and maximum temperature, and feeder height. A combination of direct observation and game cameras was used to determine bird species present. We predicted that birds, on average, will prefer the nut and berry mix due to the higher fat content relative to sunflower seeds.



## **Fort Humboldt: The Development of Redwood Logging in Humboldt, 1878-1950**

**Qasim Naqvi**, Anthropology, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

In this poster, I describe the process by which we inventoried items and analyze how technology evolved in concert with broader shifts in the Redwood timber industry. This research contributes to a deeper understanding of how archival

research and data collection processes are conducted within the realm of historical archaeology and also reflects Humboldt County's independence. The material analysis presented in this project will showcase logging technology's environmental, cultural and economic impacts on the landscape and lifestyles of the region's inhabitants.



## **GIS Data Archive**

**Thomas Rocha**, Forestry, Fire & Rangeland  
Management, Undergraduate Student;

**James Graham**, Geography, Environment  
& Spatial Analysis, Faculty

### **Library**

Discover, Access, and Preserve GIS Data, Maps, and Aerial Photographs is easy thanks to Cal Poly Humboldt's CanvasMap GSP dataset repository. Explore historic maps and aerial photos of Humboldt County, superimposed with student GSP projects. The GIS Data Archive was created from the need to preserve GIS projects, as well as, to make them discoverable and accessible. Our main objective is to have an organized space for easy access to GIS works of all types for research, student projects, and general use, and to provide a persistent location to the data and scholarship.



## **Habitat Preferences and Distribution Patterns of Salamanders in the Arcata Community Forest**

**Tristan Ray**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

This study investigates the spatial distribution and habitat preferences of plethodontid salamanders within the Arcata Community Forest in Humboldt County, California. By examining salamander abundance in relation to surface water proximity and soil moisture content during the winter-spring period, I aim to identify key environmental factors influencing their distribution. This research highlights the importance of understanding seasonal variations and the complex interrelationships between salamanders and their habitat within diverse forest ecosystems.



## **Habitat Selection of American Crows in Eureka, California.**

**Christina Parra**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

I looked at habitat selection of crows within the city of Eureka. I conducted point count surveys to compare the number of crows within residential/commercial areas (urban) and park areas to see which habitat type crows prefer.





## Harmonic Analysis of Currents in Humboldt Bay

**Taylor Juchau**, Physics & Astronomy, Undergraduate Student;

**Tamara Barriquand**, Physics & Astronomy, Faculty;

**Noe Camarillo**, Physics & Astronomy, Undergraduate Student;

**Steven Gracy**, Physics & Astronomy, Undergraduate Student

### College of Natural Resources & Sciences

Multiyear time series of current data measured by two horizontal SonTek/YSI Acoustic Doppler Current Profilers (ADCPs) placed mid-depth in the water column (~4.8m depth) at two locations in Humboldt Bay, CA, a shallow, tidally-driven estuary in northern California (USA), were analyzed to determine the contributions of the different harmonic frequencies within the bay. Spectral analysis of the time series revealed that the currents are dominated by several tidal harmonics. The three dominant frequencies include M2, K1, and O1, but their contribution varies spatially between the two station locations. Additional frequencies in the data indicate overtones and variable influences like wind.



## Harmonic Analysis of Currents in Humboldt Bay

**Steven Gracy**, Physics & Astronomy, Undergraduate Student;

**Noe Camarillo**, Physics & Astronomy, Undergraduate Student;

**Taylor Juchau**, Physics & Astronomy, Undergraduate Student;

**Caitlin Williams**, Oceanography, Undergraduate Student;

**Tamara Barriquand**, Oceanography, Faculty

### College of Natural Resources & Sciences

Currents can shape the structure and ecology of estuarine environments. Multiyear time series of current data measured by two Acoustic Doppler Current Profilers (ADCPs) in Humboldt Bay, CA, one near the entrance channel and one at the Chevron Port, were analyzed to determine the contributions of the different harmonic frequencies. Spectral analysis of the time series data revealed that the flow is dominated by several tidal harmonics. The three dominant frequencies include M2, K1, and O1, but their contribution varies spatially between the two stations. Additional frequencies in the data indicate interference with topography as well as the more variable wind-induced currents.



## How Ankle Braces affect Mobility in Multidirectional sports

**Kazimierz Parks**, School of Applied Health, Undergraduate Student

### College of Professional Studies

This is my senior project about how ankle braces or taping affects mobility in multidirectional sports.



## How Shoelace Conditions Impact Foot Ergonomics

**Eon Ebuna**, School of Applied Health, Undergraduate Student

### College of Professional Studies

Various lacing methods have been employed to enhance running performance and mitigate the risk of injuries. Runners have experimented with these patterns to identify the optimal configuration for their running form, anatomy, and sport. This research emphasizes the pivotal role of shoelace techniques in the broader context of ergonomics and injury prevention, highlighting the relationship between how the foot is laced within the shoe and its implications for the overall well-being of the runner. Tight laces with additional contact points adhere the foot to the shoe best but must also leave enough room in the shoe for the runner's anatomy to perform natural anatomical mechanisms.



## Human Disturbance and Anthropogenic Noise Impacts on Foraging Egrets at the Arcata Marsh

**Yesenia Cerrillo**, Wildlife, Undergraduate Student

### College of Natural Resources & Sciences

Human disturbance and assessing the effects of humans' recreational activities and anthropogenic noise on foraging opportunities of migratory and non-migratory shorebirds needs to be studied further. This study aims at determining how foraging in 2 species of egrets found in Humboldt County in a human-used recreational area are impacted.



## Human Impacts on Songbird Abundance and Diversity

**Chloe Good**, Wildlife, Undergraduate Student

### College of Natural Resources & Sciences

My study investigates how human disturbances affect songbird diversity and abundance in Arcata, CA. Many songbirds try to adjust their behavior in response to human populated environments; however, adjustments can have intense effects on their survival, and serious ramifications

beyond urban settings (Marzluff 1997). My findings aim to better inform conservation efforts of species-specific requirements and minimize areas with human disturbances as needed.



## **Humboldt County Population Growth Correlated to Unidentified Flying Object Reports 1920 - 2021**

**Starsong Brittain**, History, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

This project looked to see what correlations could be found here in Humboldt County between population changes and annual number of Unidentified Flying Objects (UFO) reports from the years 1920 to 2021.



## **Humboldt Forensics: Lumberjack Speech and Debate 1926 - 2023**

**Aaron Donaldson**, Communication, Faculty

**College of Arts, Humanities & Social Sciences**

A summary of Intercollegiate Forensics at Humboldt from the founding of the program in 1926 to cancellation in 2023.



## **Hummingbird Nectar Preference in Urban and Forested Areas**

**Bridget Blanco**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

My study investigated the nectar preference of Anna's hummingbirds and whether foraging increased as the temperature increased from winter to spring. The results of this study will aid in determining the best plants to maintain and restore in natural areas in order to maintain a healthy environment. By providing the best nectar solution, we can contribute to maintaining robust hummingbird populations.



## **Impacts of the edge effect on avian species distribution in the Arcata Community Forest**

**Christy Wheatley**, Environmental Science & Management, Undergraduate Student

**College of Natural Resources & Sciences**

Our study aimed to discover the impacts of the edge effect on bird species distributions within the secondary redwood (*Sequoia sempervirens*) Arcata Community Forest (ACF). We used the Merlin Bird ID app to record the number of species present at three edge and three interior sampling sites to determine if there was a statistically significant difference

between the number of species present. We found that edge sites averaged 7.3 species while interior sites averaged 5.5 species. Our results indicate that the edge effect is being represented in bird habitat selection.



## **Increasing Chiropractic Prevalence in Black Communities**

**McKenna Bartlett**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

This paper aims to analyze the significant disparities in chiropractic care for Black communities in the United States. Considering there is a substantial difference in the quality of care for Black Americans, it is imperative to be aware of the implications this can have on a community and their trust in healthcare systems. Some of these disparities discussed in this analysis consist of historical segregation, overprescribing opioids for chronic lower back pain, and overall lack of access to care. Efforts to improve care are discussed, such as improving doctor-patient race concordance by increasing the number of Black chiropractic students.



## **Increasing Motivation and Fitness Levels in Pre-adolescents with Disabilities: A Study in Self-Determination Theory**

**Adam Thomas**, Kinesiology, Graduate Student;  
**David Adams**, School of Applied Health, Faculty

**College of Professional Studies**

The researcher believes that using self-determination theories of autonomy, competence and relatedness will intrinsically and extrinsically motivate the study participant to achieve a predetermined goal. The purpose of this study was to determine the impact of SDT on the number of jumps completed with a jump rope with a student diagnosed with phonological processing and visual motor coordination deficits within a general education class. The participant displayed incremental improvements in Intervention Phases 3, 4 and 5 but did not reach their goal during any of the five intervention phases.



## **Indigenous Cultural Enrichment Event**

**Benny Helms**, Recreation Administration, Undergraduate Student

**College of Professional Studies**

For my Senior project I decided to host an event that was based around two indigenous tribes from California, The Luiseno tribe from Southern California and the Hoopa tribe from Northern California. For this event I had went through the process of gaining sponsorships and demonstration

groups to offer 4 types of ceremonial practices. The goals for this event was to highlight diversity, foster understandings, and promote cultural awareness throughout the campus and community of Cal Poly Humboldt.



## **Indigenous Occupation and Projectile Chronology of the Kern Plateau in Tulare County, California**

**Nick Mavrolas**, Anthropology, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

This poster explores indigenous occupational activity within the Upper Kern River Valley and aims to build a timeline of site use based on the projectile point typologies found at eight different sites.



## **Individual differences in the coordinated behavioral and physiological immune response to pathogenic threat**

**Povheng Yam**, Psychology, Graduate Student;

**Amanda Hahn**, Psychology, Faculty

**College of Professional Studies**

Infectious diseases pose a significant threat to an organism's fitness and have been a strong selective pressure throughout human evolution. Although we have evolved a sophisticated biological response to pathogenic threat, it can be quite costly to engage the physiological immune system. The Behavioral Immune System encompasses a suite of psychological mechanisms that bias our cognitions and behaviors to facilitate pathogen avoidance. The potential link between the behavioral and physiological immune systems is relatively understudied. The current study aimed to replicate and extend previous work on this link by introducing an additional live pathogenic cue (a "sick" confederate).



## **Influence of Running Shoes on Running Economy, Injury Performance, and Biomechanical Efficiency**

**Sawyer Stoddard**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

Delve into the effects of running shoes on athletic performance, biomechanical efficiency, and injury prevention. Examine the relationship between footwear selection, running economy, and influence it has when running. Assess various shoe characteristics, including design, weight, and midsole

properties, to elucidate their impact on stride mechanics and energy usage. Allowing valuable insights to guide optimal shoe choices for maximizing performance and ensuring long-term well-being for all types of runners.



## **Insight into the Morphology of Human Induced Pluripotent Stem Cells**

**Josafath Aparicio**, Biological Sciences, Undergraduate Student

**College of Natural Resources & Sciences**

Human induced pluripotent stem cells have revolutionized the medical world. These cells come from adult somatic cells and have the ability to differentiate into the three germ layers of development: mesoderm, ectoderm, and endoderm. To better understand the nature of these cells this project attempted to provide insight into the morphology through the use of scanning electron microscopy.



## **Intergenerational Connections: Silvercrest Eureka, Salvation Army**

**Myranda Felton**, College Corps, Undergraduate Student

**College of Natural Resources & Sciences**

Seniors at Silvercrest are a good example of the troubling statistics for Humboldt County. Over thirty people die of suicide in this county, ages ranging from forty to sixty, each year. BMC Public Health also says that "Approximately 50% of individuals aged over 60 are at risk of social isolation and one-third will experience some degree of loneliness later in life." The answer is intergenerational connections. Harvard has found that people ages sixty five and older have "higher levels of energy with increased connections." They have connected this with longer lifespans, which is what we are trying to implement at Silvercrest through volunteering.



## **Intravenous Vitamin C in Cancer Treatment**

**Nick Weil**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

Senior project literature review of high-dose intravenous vitamin C therapy, and its applications in oncology. This treatment is very safe, and low-cost, making it very valuable, and in need of more attention. This review discusses the history, chemistry, current research, concerns, and the future of this treatment.



## **Invasive plant removal at coastal dunes impacts invertebrate assemblages**

**Theodore Lee**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

The effects of habitat restoration on invertebrate communities is poorly studied. This project compared the diversity, evenness, and differences in terrestrial invertebrate species composition between 5 local coastal dunes.



## **Investigating How LGL1 Loss Affects the Murine Brain Cytoarchitecture**

**Madison Gutierrez**, Biological Sciences, Graduate Student;  
**Ashley King**, Biological Sciences, Graduate Student  
**College of Natural Resources & Sciences**

Lethal (2) giant larvae 1 (Lgl1) maintains cell polarity and regulates cell migration. Its dysregulation is linked to gliomas, suggesting a role in tumor development. Glioblastomas may originate from neural stem/progenitor cells (NSPCs) accumulating mutations. Loss of Lgl1 in NPCs leads to cancer-like traits, including increased migration and altered signaling. Scanning electron microscopy can reveal morphological changes. This study compares WT and Lgl1 KO murine brain tissue, aiming to uncover changes associated with Lgl1 loss, offering insights into gliomagenesis.



## **Is ice effective for acute injuries or should it go away?**

**Cali Martino**, School of Applied Health,  
Undergraduate Student  
**College of Professional Studies**

My research project is about whether ice for acute injuries is effective. Evidence of how the body naturally heals damaged tissue doesn't line up with why we use ice on injuries. Ice helps with pain and swelling. Ice limits blood flow known as vasoconstriction which the body already naturally does. Staying in extended time in vasoconstriction may affect the healing of the injury. Ice has more negative effects that no one thinks of. PEACE & LOVE injury management is new and more people should know about it. Research should be done for the effectiveness of all elements.



## **KCACTF Poster**

**Sophia Escudero**, Dance, Music & Theatre,  
Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

A small collection of photos from my trip to the Kennedy Center American College Theatre Festival in Spokane.



## **KCACTF: Opportunity, Experience, Expression and Knowledge**

**Stephan Chittenden**, Art + Film, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

I will be sharing my experiences at KCACTF with an emphasis on sharing the opportunities available, but also how to manage time and expectations. In terms of opportunities I will be covering workshops but also NEXSTEP and the callbacks for summer internships, schools or jobs that can result from this experience. Beyond this, I want to cover when to take opportunities, and knowing when you've taken on too much.



## **KCACTF: Community, Art, Activism**

**Filip Amborski**, Engineering, Graduate Student  
**College of Arts, Humanities & Social Sciences**

A presentation of the benefits for students looking to expand their network and skills in terms of acting, singing, and technical production knowledge. The Kennedy Center American College Theatre Festival provides opportunities to connect with peers from other schools, instructors from across the region, and working industry professionals. Students build their capacity to work in teams, expand their understanding of performance arts, and engage with the most contemporary material that is currently being developed. This experience can provide key exposure to new methodologies, and also offer opportunities to pursue summer and graduate programs, with additional scholarship considerations.



## **Kennedy Center American College Theatre Festival**

**Benji Salisbury**, Dance, Music & Theatre,  
Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

I attended so many amazing workshops, keynotes, and auditions at the Region VII Kennedy Center American College Theater Festival held in Spokane, Washington that blew me away...



## **Macroinvertebrate Abundance Decreases Waterfowl Diversity**

**Rachel Higuera**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

The relationship between macroinvertebrate communities and waterfowl is still an understudied topic. I wanted to know how macroinvertebrate richness could influence waterfowl species and their abundance. I conducted my study at the Arcata Marsh and Wildlife Sanctuary, setting up random systematic sites 100 meters from each other. Each site was

sampled for waterfowl point counts within a 50 meter radius and invertebrates were collected via D-net sweeps and a core sample. Invertebrates collected were then euthanized in 70% ethanol and identified to family in the lab. My results showed a negative correlation between macroinvertebrate abundance compared to waterfowl diversity.

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### **Mammal presence in coastal foredunes dominated by European beachgrass.**

**Ethan Franco**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

My research project investigates the relationship between the invasive European beachgrass, *Ammophila arenaria*, and mammal presence in the foredunes of Gold Bluffs beach within Prairie Creek Redwoods State Park.

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### **Manual Therapies in Myofascial Pain and the Application of Trigger Point Therapy**

**Alexandria Sekulski**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

Myofascial manipulation techniques have gained prominence in pain management due to their ability to address musculoskeletal issues, alleviate pain, and improve overall function. This review encompasses various manual therapy approaches such as trigger point release therapy, and self-myofascial release. These techniques target main symptoms of fascial restrictions, muscle tightness, and trigger points. The aim of these techniques can improve blood flow and as a result restore pain perception in the tissue. Integrating myofascial manipulation techniques with regular exercise therapy and stretching protocols interventions provides a comprehensive approach to pain management.

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### **Maternal Nutrition & Gut Microbiota Quality: Determining Fetal Immune Development Outcome**

**Gessica Stepanenko**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

Pregnancy nutrition determines the strength of connection between maternal gut microbiota quality and the developing immune system of the fetus (also known as the Maternal-Fetal Gut Microbiota Axis.)

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### **Mathematical Modeling of Adaptive Sex Ratios in Sea Lamprey Populations**

**Jaxon Tuggle**, Mathematics, Undergraduate Student

**College of Natural Resources & Sciences**

An extension of our research conducted during the Mathematical Competition in Modeling (MCM), we examined the effect that species possessing adaptive sex ratios have on their local ecosystem. We constructed a model using computer software (NetLogo) allowing multiple simulations to be run of our digital ecosystem with various parameters. This allowed us to highlight adaptive nature of the gender ratio of the selected species, the sea lamprey, and the consequences on the broader ecosystem. This project included an examination on population dynamics as well as prey-predator relationships using implementations of applied mathematics and the field of ecology.

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### **Media Coverage of the Klamath Dam Removal**

**Jessie Cretser-Hartenstein**, Journalism & Mass Communication, Faculty

**Oden Taylor**, Journalism & Mass Communication, Undergraduate Student;

**Jillian Wells**, Journalism & Mass Communication, Undergraduate Student;

**Emma Wilson**, Journalism & Mass Communication, Undergraduate Student;

**Gabriel Zucker**, Journalism & Mass Communication, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

This study examines media representations of the removal of the Klamath Dam, a development in Northern California's Indigenous land restoration efforts. Recognizing the historical underrepresentation of Indigenous voices in mainstream media, this research analyzes local coverage of the Klamath dam removal project by Humboldt County's leading news organizations: North Coast Journal, Times-Standard, and Lost Coast Outpost.

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### **Mesocarnivore Temporal Niche Partitioning in Response to Anthropogenic Presence in Northern California**

**Anna Schwecke**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

The study aimed to determine (1) If mesocarnivores use temporal niche partitioning to reduce resource conflict, then interspecific species will have minimal activity overlap and (2) If anthropogenic presence alters temporal niche partitioning among mesocarnivores at my study site, then mesocarnivores will display circadian overlap where it typically does not occur.



## Miné Okubo: Art as Social Commentary and Cultural Expression

**Ariana Mallery**, Art + Film, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

I was assigned to do a research paper in my capstone art history class (410W). This poster explores the life and art of Miné Okubo, highlighting her experiences as an artist and her commitment to using art as a tool for social commentary and cultural expression. Okubo's journey is traced from her early artistic training with Fernand Léger in Paris to her internment in the Topaz camp during World War II and her subsequent artistic endeavors.



## Molecular and Serological detection of Rickettsia species Phylotype G022 and R. tillamookensis in Dogs

**Nicholas Woronchuk**, Biological Sciences, Graduate Student

**College of Natural Resources & Sciences**

Rickettsia bacteria cause several human diseases. Ixodes pacificus, a common human biting tick, vectors Rickettsia species phylotype G022 (G022) and Rickettsia tillamookensis. Both species shares an evolutionary lineage with known rickettsial pathogens and have a low prevalence in I. pacificus. Recently the incidence of rickettsial diseases has increased, along with vector borne diseases (VBD). Between 2004-2016 a total of 491,671 cases of tick-borne diseases were reported in the United States (76% of all VBD). The pathogenicity of G022 and R. tillamookensis has never been documented. Here we report that G022 and R. tillamookensis have the capacity to be horizontally transmitted to mammals.



## Multifaceted: SEM analysis of Entolomatoid basidiospores

**Casey Ledford**, Biological Sciences, Undergraduate Student;

**Frank Cappuccio**, Chemistry, Faculty

**College of Natural Resources & Sciences**

The Entomlomataceae (Agaricales, Basidiomycota) are a relatively speciose and highly variant family of fungi. They are identified by their salmon-pink pigmented basidiospores that are multifaceted/multiangular in polar or in all views. Known complexities in erecting species concepts and deciphering taxonomic groups exist, including extensive phenotypic plasticity. Scanning Electron Microscopy (SEM) images portraying basidiospore morphological nuances may serve as a powerful tool in solving the taxonomy of the group.



## Nest Tree Selection of Swainson's and Red-Tailed Hawks in Butte Valley, CA

**Cristina Portillo**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

We collected microhabitat data at nest trees to determine if Red-tailed Hawks and Swainson's Hawks showed a preference for certain tree characteristics. Microhabitat data included tree height, nest height, number of primary trunks, diameter at breast height, density of canopy, the presence or absence of lichen, lichen type, and local tree density. We used logistic regression to test the expectation that Red-tailed Hawks and Swainson's Hawks select older and larger trees relative to local availability. The implications of these results could inform which trees are selected for western juniper removal, which is an anticipated treatment conducted by the U.S. Forest Service in Butte Valley.



## Orchid Micropropagation and the Potential for Conservation

**Rebecca Bendzick**, Biological Sciences, Undergraduate Student;

**Heidi Rutschow**, Biological Sciences;

**Valori Mraz**, Biological Sciences

**College of Natural Resources & Sciences**

Orchidaceae is one of the most diverse flowering plant families. Despite the worldwide popularity of Phalaenopsis for floral aesthetics, many other ecologically important species are either endangered or threatened and require elaborate cultivation strategies. Currently one of the top conservation approaches utilizes clonal propagation techniques via tissue culture, resulting in vegetative propagation in mass numbers. We present successful sterile introduction, cultivation and maintenance of Phalaenopsis seedlings with the hope that this tissue culture method can be applied to native orchid species here in Humboldt County.



## Pacific Purple Sea Urchin Movement Trends

**Holly Elbert**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

Pacific purple sea urchins (*Strongylocentrotus purpuratus*) have seemingly slow movement. I asked if it was possible for them to travel to uninhabited pools that neighbor their inhabited sites within a 6-week period occurring February through March of 2024. I used manual counting methods to determine sea urchin abundance in each pool. I utilized a divided quadrat to assess the percent of red algae cover of targeted sites to analyze whether adult urchin movement was correlated with food abundance. Overall, there was no evidence that sea urchin movement correlates with the algae cover percentage. Although, there was evidence that occasional colonization of pools occurred.



## Perching Height Preference in Raptors

**Jacob Scholar**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

This research investigated the relationship between various raptor species and their preferred perching heights, employing a laser rangefinder and binoculars to determine these heights. My objective was to explore if different raptor species exhibit distinct perching height preferences, potentially impacting the diversity of raptors in an area, deal with various pest species using predators, and possible solutions to bring back extirpated raptor species.



## Physical Education Teacher Burnout

**Nelson Na**, School of Applied Health,

Undergraduate Student

**College of Professional Studies**

Physical Education aims to educate students in Physical Education. The understanding of physical competence will enable knowledge of safety and movement. Physical Education (PE) aims to develop students' understanding of PE as an active, healthy lifestyle. This will allow students to learn and cooperate with the instructor to develop their motor skills, gain knowledge, and understand their behavior and physical activity in class - the main reason this is so serious for teachers is that it leads to burnout in PE. There is a lack of resources within the field of PE, and the school cannot provide enough money within the field.



## Physiological and Psychological Differences Between 20% Grade Incline Walking and Level-Grade Jogging at Isocaloric Intensity

**Motoki Sato**, School of Applied Health, Graduate Student

**College of Professional Studies**

High-incline walking is a relatively new trend with little comparative information. This study aimed to compare physiological (indirect calorimetry, relative oxygen consumption, heart rate) and psychological (enjoyment, affective valence, rating of perceived exertion) differences between 20% incline-walking and level-grade jogging at isocaloric intensity in young adults. A secondary purpose of this study was to establish an isocaloric protocol to compare 20% incline walking with level-grade jogging using relative VO<sub>2</sub> as the primary measure while maintaining constant duration and relative work intensity.



## Plastic Ectotherm Plasticity

**Jacob Mackenzie**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

Comparison of different anthropogenic materials as coverboards for ectotherm surveying, including two different kinds of plastics, Lexan and Acrylic, using temperature, humidity and occupancy status differences. The increased soil temperatures found from plastics compared to other materials may have further impacts on global warming and ectotherm ecosystems.



## Pollinator Response to Ultraviolet Light Reflection in Flowers

**Carina Trentini**, Wildlife, Undergraduate Student

**College of Natural Resources & Sciences**

This research project was the capstone project for my Wildlife degree, in which I researched the impact short-wave UV light reflection by flowers affects pollinator behavior. Insects can see into the ultraviolet light spectrum, and plants are known to reflect these light wavelengths for aiding pollinators. I studied the correlation between pollinator visitation frequency and the proportion of flower surface area that is reflective of UV light. I focused on 3 main pollinator groups: bumble bees, native bees and flower flies. I found that pollinators are significantly more likely to visit flowers with high UV light reflection than flowers with low amounts of UV light reflection.



## Preparation and Evaluation of Polylactic Acid-Quinoa Composite films

**David Schmitz**, Chemistry, Undergraduate Student;

**Rafael Bernard**, Chemistry, Undergraduate Student;

**Priscilla Gamez**, Chemistry, Undergraduate Student;

**Gavan Jones**, Chemistry, Undergraduate Student;

**Jenny Cappuccio**, Chemistry, Faculty;

**Frank Cappuccio**, Chemistry, Faculty

**College of Natural Resources & Sciences**

Quinoa (*Chenopodium quinoa* Wild.) was evaluated as a starting material for the preparation of biodegradable composites with polylactic acid (PLA), a bio-renewable polymer. Incorporation of natural plant fibers into composite material has been shown to generate active packaging materials with a variety of benefits as well as increasing the rate at which these materials degrade back into the environment. Films with varying amounts of quinoa combined with PLA were prepared and studied in a variety of methods to evaluate their usefulness as bio-renewable materials.



## Prevalence of Iridovirus in Terrestrial Isopod Colonies

**Aang Younger**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

Presentation on a study conducted in Arcata, CA on the prevalence of an understudied virus in terrestrial isopods: Iridovirus. This study aimed to detect if there are associations among soil moisture level, density of potential isopod hosts, and/or temperature with the prevalence of Iridovirus. Across 7 study sites, a significant association was detected between soil moisture level and prevalence of Iridovirus, and density of potential isopod hosts and prevalence of Iridovirus.



## Prevalence, Risk, and Treatment of Muscle Dysmorphia in Transgender Populations

**Briseyda Alvarado**, School of Applied Health, Undergraduate Student  
**College of Professional Studies**

The review overviews the prevalence, characteristics, risk factors, and possible treatment of transgender persons with MD symptomatology. Little is known about the prevalence and presentation of MD among gender minorities and far fewer is known on how to treat MD.



## Reclaiming Turtle Island: Decolonizing Anthropological Narratives of Migration

**Sadie Neff**, Anthropology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

The Western-centric focus on early habitation of Turtle Island (North America) has often disregarded Indigenous oral histories as myths. It is critical to question how migration theories can dismiss Indigenous credibility. This objectification of western science perpetuates oppression of Indigenous peoples and assists in validating settler-colonial narratives. Academia has historically denied, or labeled controversial, North American archaeological sites older than 12,000 years, silencing advocates in the process. My goal is to highlight these injustices and underscore the importance of honoring Indigenous oral histories. I advocate for an inclusive, decolonized approach to archaeology.



## Recreational Beach Day

**Grace Shanahan**, School of Applied Health, Undergraduate Student  
**College of Professional Studies**

My project took place in the form of an event. I organized a community event at Clam Beach to get others outside and learn the importance of recreating. Various activities were offered, and this event was free for all participants. Different learning resources were provided to highlight the benefits and importance of recreating and spending time outside.



## Redefining Career Prep for Environmental Studies

**Ashley Keya**, Environmental Studies, Undergraduate Student; **Imran Rashid**, Environmental Studies, Undergraduate Student; **Athens Marron**, Sociology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

Previous studies have examined the outcomes of different career development strategies for Environmental Studies students across the country and have found that programs with strong career preparation also utilize the curriculum and community when advising their students. Cal Poly Humboldt's ENST department has yet to contribute to this research and implement all of these strategies. We conducted research, funded by the LAEP Program (including student surveys, interviews, peer-reviewed journals, and comparative analysis) to determine best practices to support our students in achieving their career goals.



## Resistance Training and Kinesiophobia Post Hip Replacement

**Ian Blank**, School of Applied Health, Undergraduate Student  
**College of Professional Studies**

A research review looking into the role that progressive resistance training plays in improving kinesiophobia outcomes in post operative hip replacement patients.



## Revised and Enriched 'Where to Go Camping Guide' for Boy Scouts of America, California Inland Empire Council

**Andrew Blessum**, School of Applied Health, Undergraduate Student  
**College of Professional Studies**

The purpose of this project is to revise and enrich the 'Where to Go Camping Guide' for my home council of the Boy Scouts of America by updating campground descriptions, adding current pictures, ensuring hyperlinks and contact



information is correct, and adding a section on sustainability and outdoor ethics, in order to create a valuable resource for Scout Units to use when planning outings, in an easily navigable and updateable format.



## Revisiting the Five Finger Discount: Shoplifting as a Reproductive Strategy

**Shairy Jimenez Delgado**, Psychology, Graduate Student  
**College of Arts, Humanities & Social Sciences**

Using social media to conduct human ethological research, this study seeks to replicate previous findings that online shoplifting displays are motivated by reproductive strategies to increase mate value. It involves the analysis of 150 Tumblr posts showcasing stolen items, which together feature 1,744 identifiable items. Items with the intended use of improving attraction by enhancing physical appearance, scent, or sexual allure include: personal care items, makeup, cosmetic applicators, and jewelry were categorized as mating relevant. The results of this study replicate previous work by showing a significant difference between mating relevant and non-mating relevant items.



## Role of Recreational Trailways and Cover Objects in Relation to Terrestrial Salamanders

**Anthony Gomez**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

Recreational trailways are becoming an ever-present component within community forests, nature reserves and national parks, with the effects on local wildlife just beginning to be understood. Prior research holds that regular trailway maintenance increases microhabitat availability for salamanders and results in increased densities. I conducted a 3-month study in a community forest in northwestern California, and used a standardized nighttime paired-field survey technique to assess for cover objects and salamander surface activity.



## Scanning Electron Microscope Imaging of Nitropentaamminecobalt(III) Chloride ([Co(NH<sub>3</sub>)<sub>5</sub>NO<sub>2</sub>]Cl<sub>2</sub>) Crystal Structure

**David Morales**, Chemistry, Undergraduate Student  
**College of Natural Resources & Sciences**

Inorganic chemistry is the study of molecules that have properties and behaviors of inorganic compounds, such as metals, minerals, and organometallic compounds. Students in organic chemistry lab used knowledge of coordination

compounds to synthesize nitropentaamminecobalt(III) chloride ([Co(NH<sub>3</sub>)<sub>5</sub>NO<sub>2</sub>]Cl<sub>2</sub>) crystals. Imaging of these crystals using a scanning electron microscope was performed to get a closer look at these crystals to characterize them further.



## Sea Star Wasting Disease and Species Biodiversity

**Lily Green**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

My project studied the effects of sea star wasting disease on sea star populations at Trinidad Beach and Baker's Beach. I surveyed sea stars with the disease and without the disease in approximately half-a-meter quadrant plots. In these plots, I centered the sea stars, counted the number of diseased and or healthy sea stars, and calculated the species biodiversity through point count and percent cover. My point count data results showed a positive correlation between species biodiversity and sea star wasting disease. On the other hand, I found that my percent count data supported a negative correlation between species biodiversity and sea star wasting disease.



## Sea Stars and Wave Action

**Jackson Gershanoff**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

Undergraduate research project for the Wildlife Department researching to see if being protected or exposed to wave action affects where sea stars are found



## Seabirds and Their Effects on Plant Growth

**Hunter Green**, Wildlife, Undergraduate Student  
**College of Natural Resources & Sciences**

Seabirds play an important role in transporting nutrients such as nitrogen (N) and phosphorus (P) from sea to land that are vital for both plants and animals.

My study investigates how seabird guano effects plant growth using native wild strawberries. I conducted a two-month long study where I transplanted native strawberries to grow in soil that I mixed seabird guano in and soil without guano to compare its impact on plant growth. I found there was no significant difference between the plant growth in the soil with compared to without seabird guano. However, I believe a more extensive study is required to determine the precise impact of seabird guano on the growth of native plants.



## Senior Speed Mixer

**Charlie Gittings**, School of Applied Health,  
Undergraduate Student;

**Grace Daverson**, School of Applied  
Health, Undergraduate Student

### College of Professional Studies

Our creative project, the Senior Speed-Mixer, fights social isolation among older individuals while fostering community bonds. Inspired by past events, we've crafted a welcoming program promoting interactions among seniors in Humboldt. With help from local organizations, we secured a venue and gathered support from businesses for raffle prizes. The event will feature one-on-one discussions to cultivate new connections. With a goal of twenty participants, we aim to bring joy and companionship to Humboldt's seniors, showcasing Cal Poly Humboldt's commitment to social responsibility.



## Shifting the Paradigm from Weight to Health

**Aubrey Lyn Flores**, School of Applied  
Health, Undergraduate Student

### College of Professional Studies

Current guidelines recommend that "overweight" and "obese" individuals lose weight through engaging in lifestyle modification involving diet, exercise, and other behavior change. This approach reliably induces weight cycling and weight stigma. Individuals deemed as obese are blamed for their weight, with common perceptions that weight stigmatization is justifiable and may motivate individuals to adopt healthier behaviors. Contrary to that belief, many individuals are unable to maintain weight loss long-term and do not achieve improved morbidity and mortality rates. The Health at Every Size (HAES) program encourages body acceptance, supports intuitive eating, and supports active embodiment.



## Small Mammal's Abundance in Relationship to Distance and Water Type

**Mitchell Owen**, Wildlife, Undergraduate Student

### College of Natural Resources & Sciences

I went out to see if rodent abundance was impacted by how far they were from a water source and if there was a difference between flowing and standing water. There were many studies on water's impacts on rodents in deserts but not in forests, so I went out to change that.



## Small Mammals vs. Understory Plant Diversity and Health at L.W. Schatz Farm

**Puyao Zhang**, Wildlife, Undergraduate Student

### College of Natural Resources & Sciences

The experiment aims to gain insight into the ecology of small mammals and vegetation in an understory ecosystem.



## Somos Semillas-Ethnic Studies as Liberatory Joy in Rural California

**Marisol O. Ruiz**, Education, Faculty;

**Nancy Perez**, Critical Race, Gender &  
Sexuality Studies, Faculty;

**Georgina Cerda Salvarrey**, Education, Graduate Student;

**Athens Marron**, Sociology, Undergraduate Student;

**Audri Penaloza**, English, Graduate Student;

**Noemi Maldonado**, English, Graduate Student;

**Priscilla Cuellar**, Critical Race, Gender & Sexuality  
Studies, Undergraduate Student;

**Joahna Tool**, Critical Race, Gender & Sexuality  
Studies, Undergraduate Student;

**Arianna Bucio**, Critical Race, Gender & Sexuality  
Studies, Undergraduate Student

### College of Professional Studies

This is a Collective Auto-Ethnographic Participatory Action Research that uses critical race-gendered epistemologies (Bernal Delgado, 2002, pp.109-110) as a theoretical framework to understand our Ethnic Studies work in schools. Teaching Ethnic Studies is a creation process where we are not only denouncing injustice, we are creating our own sovereign spaces of knowledge production through Courageous Cuentos and healing individually and collectively. Findings show that we experience transformation as we co-create, define, collectively heal, and document what it means to be a LatinE/ChicanX social justice educator in rural Northern California through Courageous Cuentos.



## Stage Management for The Life of Galileo

**Evan Pierce**, Dance, Music & Theatre,  
Undergraduate Student

### College of Arts, Humanities & Social Sciences

In the Fall 2023 semester, I worked as the stage manager for our show of "The Life of Galileo" by Bertolt Brecht. Being a stage manager requires a lot of organization, attention to detail, communication, collaboration, and paperwork. You are there from the beginning with auditions and concept meetings to the end with strike (clearing the stage of the show). During this process, you are a main point of contact between departments and once the show opens, you are

the one leading the shows to ensure they happen the way they are intended to. This show was my first time stage managing. It is a very difficult role to step into, but I had lots of fun and wanted to share my work and learning.

## Strategies to Reduce Heart Failure Readmissions in Rural Hospitals

**Xee Lee**, Nursing, Undergraduate Student  
**College of Professional Studies**

Heart failure is a significant public health concern, contributing to high morbidity, mortality, and healthcare costs. Patient education, telephone follow-up after discharge, and referring patients to a cardiac telehealth program are ways to reduce readmissions in rural communities. Within three months of implementation, the inpatient unit will complete education within 90% of HF patients, the 30-day readmission rate for HF patients will be below 40%, and the nurse care coordinator will have successful contact via a post-discharge follow-up telephone call to 75% of HF patients. Community-based rural hospitals must implement these interventions to reduce heart failure readmission rates.

## Studies of Bio-Sustainable Materials by Scanning Electron Microscopy

**Priscilla Gamez**, Chemistry, Undergraduate Student;  
**Frank Cappuccio**, Biological Sciences, Faculty

**College of Natural Resources & Sciences**

Biomaterials derived from plants can provide stocks for biofuels and additives for sustainable bioplastic composites. Here, scanning electron microscopy (SEM) was used to image cellulase enzyme-exposed samples vs. controlled samples, which indicated cellulose degradation. SEM examination of PLA-quinoa composites indicated successful incorporation of quinoa chaff into these biodegradable plastics. This study of cellulase contributes to understanding its role in enhancing biofuel feedstock production. Moreover, our PLA-quinoa composites show promise as biodegradable and biorenewable materials. Future studies will analyze cellulase-treated PLA-quinoa composites.

## Stylohyoid-tympanic articulation in shrews and its possible implications for echolocation

**Silvia Pavan**, Biological Sciences, Faculty;  
**Aviva Saadatfar**, Wildlife;  
**Jesyka Meléndez Rosa**, Biological Sciences

**College of Natural Resources & Sciences**

Echolocation has evolved in several mammals, including shrews. In bats, echolocation may occur through the larynx via the stylohyoid-tympanic articulation (ST-A). Using CT scans, we studied the morphology of the inner ear to determine if the ST-A is present in echolocating shrews. Of the nine sampled genera, three have behavioral data suggesting echolocation. Six species presented ST-A, including four species not known to echolocate. Given the limited behavioral data and the small data set, a few interpretations are possible, all of which highlight the need for additional research in this understudied mammalian group in order to reveal the role of the ST-A in shrew echolocation.

## Subjective versus objective language proficiency: An investigation of age of acquisition and exposure in multilinguals

**Mari Sanchez**, Psychology, Faculty;  
**Anastina Steiber**, Psychology;  
**Sofia Gutierrez Johnson**, Psychology, Undergraduate Student;  
**Gianna Giacomotto**, Psychology, Undergraduate Student

**College of Professional Studies**

Multilinguals can differ in their level of proficiency for each language they speak. Factors that can impact one's language proficiency include age of acquisition (AoA), which refers to the time point when beginning to learn a language and exposure, which refers to the amount of contact a person has with the language. Proficiency is often assessed subjectively, via one's self-report of one's perceived proficiency level and less often objectively, via observed and/or measured performance on proficiency tests. This study investigated the relationship between subjective and objective language proficiency as impacted by age of acquisition and exposure.

## Sudden Death Among Athletes

**Aleksander Teplicki**, Kinesiology, Undergraduate Student  
**College of Professional Studies**

I preformed a literature review regarding sudden cardiovascular death among athletes. In my review I found that sudden cardiovascular death is primarily caused by atherosclerotic coronary artery disease and hypertrophic cardiomyopathy. In my presentation I aim to discuss these two conditions, their prevalence, and why they are difficult

to diagnose amongst athletes. I also aim to discuss the current athletic screening protocols in the United States, as well as what can be done going forward to prevent or limit the cases of sudden cardiovascular death in athletes.



## **Temperatures Impact on Insect Capture and Black Phoebe Foraging Activity**

**Alyssa Lomeli**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

This project is a study I conducted which will be portraying the data I have collected. The data and additional outside research was done to depict temperatures' impact on Black phoebe foraging activity and insect capture within the city of Arcata.



## **Testing Gravitational Interactions Below Fifty Microns**

**Alexandra Papesh**, Physics & Astronomy, Undergraduate Student

### **College of Natural Resources & Sciences**

Attempts to unify the Standard Model and General Relativity often include features that violate the Weak Equivalence Principle (WEP) and/or the gravitational Inverse-Square Law (ISL). To investigate this, researchers at Cal Poly Humboldt are conducting precision measurements of gravitational interactions below 50 microns. This project employs a torsion pendulum configured as a composition dipole with equal masses of titanium and aluminum. The twist angle and frequency of the pendulum is measured as an attractor mass in a parallel-plate configuration oscillates within submillimeter separations. \*Supported by NSF grants PHY-1065697, PHY-1306783, PHY-1606988, PHY-1908502.



## **The Best Parts of KCACTF 2024**

**Aly Greaver**, Dance, Music & Theatre, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

From February 18th-23rd, students from the Humboldt Theater Program attended KCACTF, this poster depicts the top 5 events this year.



## **The Body's Adaptations to Facilitate Motor Learning and Injury Prevention for the Overhand Throw Skill in Baseball Players**

**Dominic Gallardo**, School of Applied Health, Undergraduate Student

### **College of Professional Studies**

This poster presentation explores motor learning of the overhand throw skill specifically for baseball players. The research describes the necessary variables contributing to adequate development of the skill and how the skill should be performed. In addition, injury prevention is a vital component in performing a skill that should be critical for high level athletes.



## **The Clarke Museum College Corps Fellows - Pitch Fest 2024**

**Carrie White**, College Corps, Undergraduate Student;  
**Valentin Velazco**, College Corps, Undergraduate Student;  
**Lucia Rodriguez**, College Corps, Undergraduate Student

### **Humboldt College Corps**

Hosted at Cal Poly Humboldt, Pitch Fest is an opportunity for College Corps Fellows to participate in an authentic learning experience focused on the learning objective of grant writing. Many community partners had their College Corps students take the initiative to identify a project, create a budget to accomplish their respective strategic goals, and develop an argument as to why their needs were crucial for the institution they worked for and the greater community. Together, three College Corps Fellows serving The Clarke Museum, Eureka, won the top grant prize to protect "The Sun Set Twice on the People that Day" Mural, painted by Native artists Brian Tripp and Alme Allen.



## **The Educational Development Center: A Stepping Stone to Sustainable Development**

**Jazzmin Fontenot**, Anthropology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

At the intersection of anthropology and development, this project explores the efficacy of Participatory Action Research (PAR) through a case study of the Educational Development Center (EDC) and their Basa, Pilipinas! project. PAR utilizes ethnographic methods and emphasizes the importance of collaboration with developers and the community they wish to serve. This is a response to the critiques of educational Development as a method of perpetuating the legacy of colonialism by implanting Western epistemology from imperialist nations into developing countries. While PAR is an attempt to decolonize Development, it is not without critique itself.



## The Effectiveness of Different Teaching Methods in Physical Education

**Brayan Calel**, Undergraduate Student  
Library

The Effectiveness of Different Teaching Methods in Physical Education. This will be the topic I'll be addressing.



## The Effects of Combined Oral Contraceptives on Mood and Affect: A Meta-Analysis

**Camille Burns**, Psychology, Graduate Student;  
**Shairy Jimenez-Delgado**, Psychology, Graduate Student  
College of Professional Studies

Combined oral contraceptive (COC) pills are widely used by women of reproductive age, but there is still little conclusive evidence about their mood-related side effects. This meta-analysis examined the relationship between oral contraceptive use and mood effects such as depression and anxiety. The results of the meta-analysis suggest that COCs contribute to a small but significant improvement in women's overall moods. However, methodological challenges and inconsistencies make it difficult for researchers to establish any firm conclusions about the role COCs play in mood changes.



## The Effects of Positive and Negative Reinforcement From Coaches in Collegiate Student-Athletes

**Ciera Pyle**, School of Applied Health,  
Undergraduate Student  
College of Professional Studies

Research on the effects of positive and negative reinforcement from coaches in collegiate student-athletes and how it affects performance and an individual's sense of autonomy. Coaching has been found to influence not only the individual internally and externally, but the environment around them aiding in the development of the athlete, student, and individual as a whole.



## The Effects of Sleep Loss on Collegiate Athletic Performance

**Grace Rosebrook**, School of Applied  
Health Undergraduate Student  
College of Professional Studies

This project is on the effects of sleep loss on collegiate athletic performance. Specifically, I assess research on the influence of sleep deprivation and sleep restriction surrounding aerobic and anaerobic capacities, and cognitive and psychological function. Additionally, I synthesize research behind the reasoning of college athletes experiencing sleep

loss disproportionately when compared to non-athletic counterparts. I also suggest further research, specifically, variables that may affect sleep loss in college athletes, and the possible effect of sleep extension on athletic performance.



## The Fun Factor: A case for focusing on fun and enjoyment in Physical Activity

**Dorian DeNisi**, School of Applied Health,  
Undergraduate Student

College of Professional Studies

As part of this semester's Kinesiology Students' Senior Seminar, I will be presenting my research on why we should emphasize having fun in our physical activity, over traditional exercise regimens.



## The Impact of a Structured Exercise Program on the Pre-Established Exercise Goals for an Individual with Autism Spectrum Disorder

**David Adams**, School of Applied Health, Faculty;  
**Gary Smith**, Graduate Student;  
**Paige Mccollum**, Graduate Student;  
**Emily Batini**, Graduate Student

College of Professional Studies

The purpose of this study was to determine the impact of a structured exercise program on the total amount of exercise completed by the participant. The researchers believe that providing an environment that included the major components of Self-Determination Theory (SDT) would support the participants' increase in exercise output. This study used a changing criterion design over the course of 6 weeks. Results suggest that the structured exercise program along with the major components of SDT had a positive impact on the exercise levels of the participant.



## The Lumber Games

**Skye Maclachlan**, School of Applied  
Health, Undergraduate Student

College of Professional Studies

My capstone project as a recreation administration student is the creation of The Lumber Games event. The Lumber Games is a fun and exciting event for students of Cal Poly Humboldt. This free event includes a mobile ax throwing truck, pizza, yard games, board games, and a raffle. Participants are able to win raffle tickets by participating in the variety of recreational activities offered. The goals of my project include providing inclusive recreational opportunities to students, making this a recurring event hosted by The Recreation Club of Cal Poly Humboldt, and furthering my professional development as an event producer.



## **The Moderating Effects of Age on the Relationship Between Cannabis and Tobacco Smoking and Pain**

**Joshua Worthington**, Psychology, Undergraduate Student  
**College of Arts, Humanities & Social Sciences**

Higher rates of tobacco and cannabis smoking have been observed among people with chronic pain. The reciprocal model of pain and smoking suggests that a positive feedback loop underlies the relationship between pain and smoking, with pain motivating smoking (as a means of coping) and smoking exacerbating painful conditions with chronic use. Despite initial evidence of differential effects by age in pain-motivated smoking, no research has examined age by smoking interactions among both tobacco and cannabis users. Results suggest smoking was related to greater likelihood of having pain, and that this effect was moderated by age group.



## **The Role of Exercise Addiction and Overtraining in Collegiate Athletics and the Effects on Collegiate Athletes**

**Carmella Baldassarre**, School of Applied Health, Undergraduate Student

**College of Professional Studies**

My research poster is on Exercise Addiction in college athletes and is a collection of my findings from different research articles on the subject, as well as what is missing and is needed in further research.



## **The Therapeutic Potential of Exercise for Substance Use Disorder: Targeting Stress Resilience, Neuroplasticity, and Reward Pathways**

**Lillian Maddock**, Kinesiology, Undergraduate Student

**College of Professional Studies**

The purpose of this research is to investigate the therapeutic potential of exercise as an adjunctive treatment for substance use disorder, with the focus on three target problematic areas, in chronic use and relapse. 1. Regulation of the stress response or the HPA axis. 2. Promotion of neuroplasticity through BDNF expression. 3. Activation of natural dopamine reward pathways. This research will evaluate exercise's efficacy in building stress resilience, facilitating neural repair, and satisfying altered reward circuitry - thereby reducing susceptibility to relapse triggers. Potentially legitimizing its use as a low-cost, sustainable adjunct to current rehabilitation strategies.



## **Thinking Globally, Acting Locally: Stories about Global Health in Humboldt County**

**Eden Donahue**, Nursing, Faculty;  
**Amanda Dinscore**, Library, Staff

**College of Professional Studies**

In a collaborative RSCA-funded project, the Cal Poly Humboldt Library and Nursing Program created five activities focused on global health. The inspiration for the project came as Cal Poly Humboldt was selected to host the National Library of Medicine traveling exhibition Making a World of Difference: Stories about Global Health. With a focus on activism within the local community, the Library and Nursing Program engaged students in a variety of projects and invited the community to events showcasing those projects. Come learn how local actions and activism make a significant impact on global health!



## **Through The Eyes of Liberian Americans: The Post-Civil War Consequences on Liberia**

**Joy Mehn**, Politics, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

The research will focus on the experiences of Liberian Americans while fleeing the civil war. This displacement is shaped by the policies made by the Liberian Government and the United States government. The relevance of this study is the placement of value on the experiences of those who experienced displacement. More often than not, the focus of migration in the global south is the economic factors and how those factors affect the Western world. This research is a way to project the stories of those who are often not heard, the Liberian people.



## **Transitioning Faiths: Assimilation of Polytheistic Traditions into Monotheistic Institutions**

**Justin Andrew**, Anthropology, Undergraduate Student

**College of Arts, Humanities & Social Sciences**

This research project delves into the profound transition witnessed across civilizations from polytheistic belief systems to monotheistic religions. It investigates the intriguing process of absorbing polytheistic traditions and adapting them to harmonize with monotheistic institutions, highlighting how historical contexts and societal dynamics catalyzed this transformation.

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## **Ulterra-Nigma: An Experimental Exercise in The Study of Myth**

**Jared Benham**, Anthropology, Undergraduate Student;  
**AJ Doegris**, Anthropology, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

This project introduces "Ulterra-Nigma," an experimental ethnography that constructs a fictional universe to explore the depths of cosmic themes and cultural themes with mythology and its importance of myth; the hope for the project is to eventually become an open-source mythology of sorts that can be studied by anthropologists in the future and be added onto as if it were a genuine living document. Also, it is of a more artistic nature so the font choice is a lot more characteristic of the theming than most posters.

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## **Using the California Mussel as a Bioindicator for the Presence of Heavy Metals on the Humboldt County Coastline**

**Emily Curry**, Biological Sciences, Undergraduate Student;  
**Dana Johnstun**, Biological Sciences, Graduate Student

### **College of Natural Resources & Sciences**

The Humboldt coastline has a long history of industrial development and heavy disturbance. In 1999, the California State Water Resources Board surveyed Humboldt Bay, classifying it as a toxic hot spot. Clean-up efforts have been ongoing since the release of this report. Utilizing California mussels as bioindicators, we can quantify the levels of toxins found in the waters on our coasts with the help of Flame AA and correlate with the visual health of gill tissues. Using this new data, we can better understand the pollution problem and aid in the clean-up efforts.

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## **V.R. Gaming Could Break Our Sedentary Habits**

**Tyler Voner**, Kinesiology, Undergraduate Student

### **College of Professional Studies**

My research is on Virtual Reality or "Active Gaming" and how it can indirectly have the potential to reduce Obesity and Heart Disease, by being a leisurely activity with some amount of activity rather than something sedentary.

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## **Vigilance Rates in Shorebirds in Marsh and Beach Habitat During the Non-Breeding Season**

**Jennifer Alvarado**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

A behavioral study on 5 common shorebirds of Humboldt County, CA during the non-breeding season; primarily on their vigilance rates in relation to different habitat types and disturbance categories. Two main habitats of marshland and beach habitats were compared with 3 sites chosen from the Arcata Marsh in Arcata and 2 beach habitats: Mad River Beach of Arcata and Centerville Beach of Ferndale. Shorebirds observed included Dunlin, Willets, Western Sandpipers, Least Sandpipers, and Short-billed Dowitchers with a total sample of 370 individuals. Focal studies were performed on defined vigilance behaviors for 2 minute segments per individual with 1 hour of study dedicated to each location.

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## **Visualization of Broadleaf Cattail Root Biofilm from the Arcata Marsh via Scanning Electron Microscopy**

**Lillian Caballero**, Chemistry, Undergraduate Student  
**Frank Cappuccio**, Chemistry, Faculty

### **College of Natural Resources & Sciences**

The Arcata Marsh is responsible for treating the wastewater of the City of Arcata so it is clean enough to release into the ocean. After undergoing preliminary processing, treatment ponds are used to remove organic matter and pollutants such as nitrogen and phosphorus from wastewater, using the symbiotic work of plants like the native broadleaf cattail (*Typha latifolia*), and the nitrogen-fixing and nitrifying bacteria that grow on their roots, to absorb these chemicals from the water. For this experiment, we observed cattail roots and root microbiota at the inlets and outlets of the pond using scanning electron microscopy, looking at the samples with up to 5000x magnification.

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## **Water Adsorption/Desorption on Environmental Metal Oxides Determined by the Diffuse Reflective Infrared Fourier Transform Spectroscopy (DRIFTS) Technique**

**Cesar Fernandez**, Chemistry, Undergraduate Student;  
**Jill Mochizuki**, Chemistry, Undergraduate Student;  
**Jack DeCorso**, Chemistry, Undergraduate Student

### **College of Natural Resources & Sciences**

Clouds affect terrestrial cooling by scattering solar radiation back to space. Particulate matter (PM) suspended in the air can initiate cloud seeding. This process is directly related to the relative humidity above the PM surface and water adsorption. In the initial stages of this process, PM collects

sparingly small layers of water, known as monolayers. Details of water uptake at this level are still lacking in the literature and we desire to quantify water uptake on atmospheric PM to enhance literature values.



## **Weight Cycling and Rapid Weight Loss and its Effect on Athletic Performance in Combat Sports**

**Jack Stewart**, School of Applied Health,  
Undergraduate Student

### **College of Professional Studies**

This poster covers Weight Cycling and Rapid Weight Loss and its Effect on Athletic Performance in Combat Sports. It discusses what weight cycling is, the groups most likely to weight cycle, and how weight cycling affects those who participate in combat sports.



## **What were the Religious Beliefs of the Neolithic Irish?**

**Joseph Walsh**, Anthropology, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

Research on the studies and methods of understanding what the religious practices in Neolithic Age Ireland were.



## **When the forest goes silent: Effects of human foot traffic on communication and diversity of passerine birds.**

**Ruby Andes**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

This project looked at the effects of human foot traffic on the vocalization frequency of passerine birds throughout three popular trails in Arcata. Results suggest pets have a greater impact on bird vocalizations than humans and that there may be differences in predator presence between trails that birds are responding to.



## **White-crowned sparrow song adjustments to anthropogenic noise**

**Lucca Faccini**, Wildlife, Undergraduate Student

### **College of Natural Resources & Sciences**

An undergraduate Wildlife senior research project about understanding the relationship between white-crowned sparrow songs and anthropogenic noise.



## **Wicked Problems: An Interdisciplinary Podcast Produced by Students in the Individualized Degree Program (IDP)**

**Rebecca Robertson**, Interdisciplinary Studies, Staff

### **Individualized Degree Plan**

Wicked problems are complex issues that resist straightforward solutions. Whether it's climate change, poverty, or healthcare disparities, these problems are shaped by countless variables and often lack clear boundaries. No single discipline holds the key to addressing wicked problems; instead, it requires a collaborative effort that draws on insights from various fields, including science, humanities, social sciences, and more. The aim of the Wicked Problems podcast is to showcase the power of interdisciplinary approaches in addressing the pressing challenges of our time.



## **Women are disproportionately impacted by food insecurity: How activists are connecting to local food systems**

**Allison Hair**, Anthropology, Undergraduate Student

### **College of Arts, Humanities & Social Sciences**

Food insecurity is not being able to have access to fresh, nutritious food and the ability to have stable access to food. Millions of people suffer from food insecurity in the United States alone. This project describes how women are specifically vulnerable to being food insecure and the different factors that have led to this.

## **Musical Performances**

The music department will showcase Humboldt students as soloists, composers, and performers in chamber ensembles.

Coordinated by Cindy Moyer, Music

## **Nursing PSA Video Competition**

View Cal Poly Humboldt Nursing Program students' capstone poster presentations on evidence-based practice in healthcare. In addition, students will be sharing their public service announcement (PSA) videos created as part of the Making a World of Difference: Stories About Global Health exhibit and programming. Vote on your favorite PSAs to award cash prizes to our hard-working nursing students!

Coordinated by Amanda Dinscore, Library





This year's ideaFest is sponsored by the Office of Research & Sponsored Programs, Marketing & Communications, and the Library in collaboration with the Colleges. We are all excited for the opportunity to support the development and dissemination of research & creative activities at Cal Poly Humboldt.

