CAL POLY HUMBOLDT

ideaFest

A SHOWCASE OF RESEARCH AND PROJECTS

Friday, May 6, 2022
University Library

Research Posters

2nd and 3rd Floors • 3:00–5:00 pm • Grouped by Department

Humboldt Sculpture Walk

All Floors • Guided Tours at 12:00 pm & 5:00 pm (meet in Lobby)

Dance Performances

2nd Floor • 3:00–4:00 pm

Musical Performances

1st Floor • 3:00–4:15 pm

Celebration of First-Year Writing

2nd Floor, Fishbowl • 3:00–5:00 pm

Theatre: Make-Up & Lighting Demos

2nd Floor • 4:00–5:00 pm

Film Screenings

1st Floor, Room 120 • 4:15–5:00 pm

Film: Emerging Media for the Gallery

3rd Floor • 4:00–5:00 pm

ASSESStivus: Assessment for the rest of us!

3rd Floor • 4:00–5:00 pm

Research Presentations | Library 2nd & 3rd Floors

Listed in alphabetical order by poster title

"You Make Your Own Luck" Building Cultural and Social Capital in a Major-Based Career Course

Mary Virnoche, Sociology, Faculty

College of Arts, Humanities & Social Sciences

This poster presents a pilot assessment of a career seminar required for sophomore or junior Sociology, and Criminology & Justice Studies Majors. On the first day, students completed a self-assessment survey measuring confidence in any existing materials and professional skills. All student indicated that support of their professional tool kit was "very important" to "important." Post-course assessment indicated that most engaged heavily in assignments supporting low confidence areas such as networking, translating their major skills and experiences for a job or internship search, and developing organizing systems for their job/internship search.

2,4-D Presence in Animal Fur

Ghennya E. Shain, Biochemistry, Undergraduate Student
Keith Druen, Biochemistry, Undergraduate Student
Alondra Salazar, Biochemistry, Undergraduate Student

College of Natural Resources & Sciences

2,4-dichlorophenoxyacetic acid, commonly known as 2,4- D, is a widely utilized pesticide in weed control. 2,4-D is considered toxic, and may pose detrimental effects to wildlife if used recklessly. Here we sought to quantitatively analyze for the presence of 2,4-D on the fur of local fauna found in Humboldt county, namely Gray fox, Brush rabbit, and Deer mice. We used purification techniques such as washes, as well as extraction techniques including liquid- liquid extraction, and analysis through gas chromatography (GC) in order to visualize 2,4-D. Positive results could spell trouble for the local wildlife, and have severe consequences.

A Computational Study of the Acidity of Glufosinate Derivatives

Daniel Sabo, Biochemistry, Undergraduate Student

College of Natural Resources & Sciences

Glufosinate is an important agricultural herbicide, and in this project we attempt to use computational chemistry to better understand how modifications to its structure impact the properties of a nucleophilic functional group important to its mechanism of action. Though ultimately the uncertainty of these calculations proved too large to draw useful conclusions about the mechanism, we were able to establish a reasonable range for the functional group pKa that excluded older conflicting literature values and to provide insight into how steric factors may cause the substitutions to behave differently within the active site than they do in solution.

A Journey Through a Mind

Alexandra Chown, Film, Undergraduate Student

College of Arts, Humanities & Social Sciences

"A Journey Through a Mind (an interactive labyrinth game)" is an exploration of my personal experiences as someone with bipolar. It will take you through the daily choices and struggles a person may go through as they are experiencing hypomania or depression. The point is for the viewer to get lost in the labyrinth and for them to struggle to find a suitable solution. It also expresses my frustration with the medical/ mental health system.

A New Ocean Wave Model Applied to Humboldt Bay Entrance

Ken Owens, Math, Faculty
William Hein, Physics, Undergraduate Student
Emma Modrick, Oceanography and Math, Undergraduate Student
River Galaz, Physics, Undergraduate Student
Ana Sammel, Math, Undergraduate Student

College of Natural Resources & Sciences

A new one-dimensional ocean wave model was derived and applied to the Humboldt Bay Channel. This model consists of the continuity equation and momentum equation which describe the incomprehensibility and movement of sea water. This model was digitized on a computer using the Octave programming language and simulations were ran for five different ocean swell scenarios. Wind generated this swell ranging in speed from 10 to 50 nautical miles per hour yielding wavelengths in the range of 8.5 to 212 meters with wave speeds in the range of 2.8-14.8 meters/second. In all cases the measured speeds agreed the the theoretical shallow water wave speed.

Advancing Knowledge on Night smelt/ Spirinchus starksi populations in Humboldt & Del Norte counties

Sarah Moreau, Fisheries Biology, Undergraduate Student
Z Zenobia, Fisheries Biology and Biology, Graduate Student
Jose R. Marin Jarrin, Fisheries Biology, Faculty

College of Natural Resources & Sciences

The Northern California coastline is a valuable ecosystem for many fish species, like Night smelt. Despite the economic, ecological and cultural importance of this species, there is little to no information on their biology, or the effects of abiotic factors. To fill in some of these knowledge gaps we sampled 6 beaches in Humboldt and Del Norte counties from March through September of 2021. Besides abundance, we recorded water temperature, salinity, wave height and sediment grain size. We collected 529 individual fish at the 6 beaches, with an average of 13 fish

per angler per hour (range: 0-126). We found no significant differences among beaches or months, or correlations with the environmental variables measured potentially because their densities are influenced by other variables or our sample sizes were too small.

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American crow (Corvus brachyrhynchos) abundance in relation to different human- altered environments and levels of disturbance

Barbara Larrondo-Soto, Wildlife Department, Undergraduate Student

College of Natural Resources & Sciences

Examining Corvus brachyrhynchos (American crow) habitat selection is valuable in understanding how this generalist species adapts to human-altered environments. Objectives of the study: Are crows utilizing a specific type of anthropogenic environment significantly more than the other? Is human and vehicle presence at the sites is significantly affecting crow abundance? I recorded observations of crow abundance at four sites in Arcata, CA, USA representing two habitat types; urban and agricultural. Analysis of my results showed that crows are significantly selecting urban sites over agricultural.

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American Sign Language Coloring Book

Megan Hardman, English First-Year Writing Program, Undergraduate Student

College of Arts, Humanities & Social Sciences

This creative project consists of a coloring book of basic American Sign Language; such as the alphabet, mannerisms, emergency signs, and other signs that I thought would be important to have within the book. Plus a description in the back explaining what American Sign language is and a brief bit of history within the Deaf community.

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An Intergroup Threat Theory Approach to Support for Political Movements, Symbols, and Candidates

Benjamin Anjewierden, Psychology, Graduate Student
Sophie Timin, Psychology, Undergraduate Student
Corinne Harris, Psychology, Undergraduate Student
Joseph Pang, Psychology, Graduate Student
Christopher Aberson, Psychology, Faculty

College of Arts, Humanities & Social Sciences

This research project utilizes Intergroup Threat Theory to examine how positive and negative contact with African- Americans relate to feelings toward Black Lives Matter, the Confederate Flag, Joe Biden, and Donald Trump. It also examines how this relationship between contact and feelings is mediated by perceptions of realistic and symbolic threat from African-Americans. This project has implications for understanding how having diverse social experiences may influence our political beliefs. This research also shows that Intergroup Threat Theory goes beyond just examining evaluations of groups, and extends to political figures, movements, and symbols as well.

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Anabaena Sensory Rhodopsin nanodisc assisted antifungal transport into Brewer's yeast

Joshua Chapman, Chemistry, Undergraduate Student
Parker Chapman, Chemistry, Undergraduate Student
Vini Buttino, Chemistry, Undergraduate Student

College of Natural Resources & Sciences

Our experiment hopes to answer the question of whether or not nanodiscs make an effective means of transporting medication, specifically in the treatment of fungal infections. We hope this adds to research that is currently examining its effectiveness in the transport of chemotherapy drugs to prevent collateral cell death; there is current evidence to support these assumptions. To do this, we are testing the transport of Terbinafine into Brewer's yeast in the hopes of inducing cell death.

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ASR Membrane Protein and ApoA1 Detection in Nanodisc via Western Blot Analysis

Leila Amrani, Biochemistry, Undergraduate Student
Elsa Balfe, Biochemistry, Undergraduate Student

College of Natural Resources & Sciences

Anabaena sensory rhodopsin (ASR) is a prokaryotic photoactive transmembrane G protein coupled receptor extracted from the cyanobacterium Nostoc. The potential for ASR and its transducer, ASRT, to transcribe/translate prokaryotic genes into products by light signals is an extremely attractive possibility for future membrane research. Nanodiscs are a useful tool for studying membrane proteins because they serve to create a stable amphipathic environment. In the present study, 6x-His ASR has been extracted, isolated, purified, and inserted into a MSP nanodisc with ApoA1 and DMPC. We examine ApoA1 insertion into the nanodisc via SDS-PAGE and chemiluminescent western blot analysis.

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Assessing nocturnal habitat selection of small mammals on an urban-rural gradient using camera trapping

Jessica Whalls, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Urban development forces city and town boundaries to encroach further into wildland habitats and natural landscapes all over the world, causing immense habitat loss and fragmentation. Human-wildlife conflict with mesocarnivores (skunks, foxes, raccoons, etc.) increases as rising rural population densities push more small mammals into anthropogenic areas. This senior thesis study uses trail cameras to assess habitat and resource use vs. availability along the wildland-urban interface among nocturnal small mammals to determine presence of selection.

Autonomy Support Promotes College Student Engagement Through Mastery-Approach Goals and Self-Esteem

Sophie Timin, Psychology, Undergraduate Student
Kevin Cherry, Psychology, Graduate Student
Brandilynn Villarreal, Psychology, Faculty
Maddy Jo Avila, Psychology, Graduate Student
Benjamin Anjewierden, Psychology, Graduate Student
Rose Levy, Psychology, Undergraduate Student

College of Professional Studies

COVID-19 brought about unprecedented difficulties for college students. Challenges associated with online learning, such as one-way interactions, presented obstacles to college engagement. We explored the role that instructors play in fostering greater academic involvement. Specifically, we examined the effects of autonomy support. Autonomy support involves encouraging students to explore their own interests and self-regulate. We posited that autonomy support would predict, respectively, greater self-esteem and mastery-approach goals for students. In turn, we expected that these effects would predict greater engagement. Our findings highlight the importance of autonomy support.

Availability of Perch Structures Correlates with the Abundance and Richness of Raptors in Humboldt County

Jessica Lewis, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Perches are necessary for raptor species in both their foraging and roosting behavior. The distribution of foraging and roosting raptors is influenced by the availability of perches and prey. However, little is known about the influence of different available perch types, within a habitat, has on raptors. My research aimed to address the question of whether local raptor abundance and richness correlates with the availability of a variety of perch types in a habitat.

Bacterial expression of G-protein coupled receptor CB2 fusion protein

Nicole L. Womack, College of Natural Resources & Sciences, Undergraduate Student
Hannah Cornwell, Undergraduate Student
David Lopez, Undergraduate Student
Dylan Morris, Undergraduate Student

College of Natural Resources & Sciences

The G-protein coupled receptor (GPCR), CB2, is part of a widespread neuromodulatory system found in all animals and is suspected to play a role in both CNS and immune system functions, yet it is a relatively understudied. We demonstrated a successful method for the expression and purification of the GPCR CB2 protein from BL21(DE3) pLysS competent cells. This method involves the culturing of an E. coli BL21(DE3) pLysS MBP-CB2-6xHis cell line, induction of CB2 receptor expression via IPTG, and the harvest and isolation of expressed CB2 proteins via Ni-NTA Immobilized Metal Affinity Chromatography. This method was proven to be successful based on SDS-page and spectrophotometric analyses.

Bayside Corners

Jasson Flores, Geography, Undergraduate Student
Brooks Spencer, Geography, Undergraduate Student

College of Arts, Humanities & Social Sciences

Bayside Corners is a Nonprofit Organization which seeks to help foster community building in the community of Bayside.

Bee abundance and composition in native vs non-native urban gardens

Adrienne Menduno-Ortbals, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

I studied the abundance of non-native European honey bees, and native bumble bees and others in gardens with mostly non-native plants and those with all native plants. The non- native European honey bee may be better suited to take advantage of urban, non-native gardens than native bee species due to anthropogenic support and domestication. Thus, I made the hypotheses that native bees will be more abundant in in native gardens, and that European honey bees will be more abundant in the non-native gardens. I also predicted that European honey bee abundance would be constant over the study period due to more urban resources from ornamental flowering plants.

Benthic Macroinvertebrates as Bioindicators of water quality on the Mad River

Benjamin Bouchard, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This project sampled benthic macroinvertebrate communities present at three locations in Humboldt County, California totaling 1642 individuals across 19 families. The composition of taxa differed significantly between upstream and downstream sites ($p < 0.0000$). Pollution taxa sensitive (Caenidae, Perlodidae, Pteronarcyidae, and Lepidostomatidae were present in the upstream sites and absent from the downstream site.

Bitches Been Mad

Denise Tomkinson, Film, Undergraduate Student

College of Arts, Humanities & Social Sciences

Society shies away from emotions like rage, because it is scary and uncomfortable, however rage is and always has been a part of the human experience. Especially women, queer and BIPOC women, do not have safety in society to be anything but gentle. All people deserve a safe space to see that we are not crazy, we are just like everyone else,

and express our rage through art. Through art we can experience, release and heal. While all identities should be welcome, it is important to center the feminine, as society has less space for this. I believe there is opportunity to collaborate between departments like counseling and gender studies to create a safe, healing, educational, and FUN space.

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Black bears in suburban areas consume more anthropogenic foods

Alexander Arroyo, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Consumption of human food by black bears (Ursus americanus) is a common and challenging problem for wildlife managers dealing with the species, because bears will readily use human-associated foods as an easily attainable energy source, especially when natural food sources are scarce .The result of human expansion is increased rates of encounters between humans and bears, particularly if bears are being forced to search farther and wider outside their home ranges for food. In this study I assessed variation in anthropocentric foods in bear diets. To accomplish this, I compared scat samples collected in Humboldt, CA from suburban and rural areas.

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Black Phoebes Sing More Often in Noisier Anthropogenic Environments

Nancy Nguyen, Wildlife Conservation and Management, Undergraduate Student

College of Natural Resources & Sciences

My senior thesis research is about how anthropogenic noise, such as traffic noise influences bird communication is an important question to understand how increasing urbanization influences animal populations. A bird that might be affected by traffic noise is the Black Phoebe, a suboscine songbird that occurs in both rural and urban areas. In contrast to oscines, song in suboscines is innate and not learned, so it is thought to be less plastic. My objective was to investigate if Black Phoebes adjust their singing behavior in response to car traffic in urban and rural sites in Arcata, California.

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Bringing Art to the Community

Brad Ellis, Geography, Undergraduate Student
Mark McKenna, Geography, Undergraduate Student

College of Natural Resources & Sciences

The objective of this project is to collaborate with the Cal Poly Humboldt Art Department to create a story of how they have impacted the community. The art department has had many art education majors reach out to the community to help citizens explore the benefits of art. The reached out primarily to elementary schools and the Pelican Bay Prison

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Cage Farm Fishing Restoration Project in South East Asia: Heavy Metals in the Surrounding Ecosystem

Shelsy Morales, Oceanography, Undergraduate Student
Shelby Bishop
Malcolm Edwards-Silva
Louise Parr

College of Natural Resources & Sciences

The proposal for the study is to restore ecosystems near fish farms. Surrounded ecosystems have shown to be harmed by heavy pollutant (lead, mercury, and arsenic). In the long run the research team plans to stop more input of heavy metals into the water with the help of the Philippines community. The outcome for the project is to educate, care for the health of the community, and have cleaner and drinkable water.

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California Black Bear diet composition in the Trinity and Klamath regions

Ethan R. Worthley, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Project presentation on black bear diet composition and diversity between the Klamath and Trinity river regions.

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California Firefighter Annual Magazine

Ian R. Babb, English, Undergraduate Student

College of Arts, Humanities & Social Sciences

This project explores previous English 103 coursework on my discourse community, wildland firefighting, and the atmosphere of the career. It provides a sense of guidance and introduction to the discipline."

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Characterizing the genetic diversity of immune genes in a non-native population of American Bullfrogs in Humboldt County, California

Angel Klawiter, Biological Sciences, Undergraduate Student

College of Natural Resources & Sciences

The American Bullfrog (*Lithobates catesbeianus*) is a highly invasive species that has successfully colonized different habitats around the world. The level of genetic variability in a population may help determine how resistant a population is to pathogens and how persistent an invasive population may be over time. Our project's objective was to isolate and characterize the genetic diversity of a rapidly evolving immune gene in an invasive bullfrog population near the Mad River in Humboldt County, CA. We isolated four genetically distinct alleles from 16 frogs. When included with alleles from related species, we detected positive selection acting on putative binding sites.

Characters Influencing Plethodontid Salamander Microhabitat Selection

Riley Rickman, Department of Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Work was done studying mirohabitat selection of two local plethodontid salamander species, Batrachoseps attenuatus (California slender salamander), and Ensatina eschscholtzii (common ensatina). Results imply that the most significant factor is the relative humidity of the microhabitat.

College Instructors' Perceived Responsibilities: A Descriptive Study

Brandilynn Villarreal, Psychology, Faculty
Hayley Weatherill, Psychology, Graduate Student

College of Professional Studies

College student demographics have been rapidly changing with more students than ever identifying as students of color, low-income students, and first-generation college students. Colleges are working to reduce equity gaps in students' academic achievement where marginalized students typically receive lower grades than their more privileged peers. The present study investigated the perceived responsibilities of college instructors with a focus on highly equitable classroom practices. Results of the study indicate general endorsement of highly equitable classroom practices as instructors' responsibilities. Future research can use perceptions to further assess classroom practices and behaviors.

Comparing Community Structure of Vascular Plant Species on Nurse Logs and Ground Plots in the Arcata Community Forest

Isabella Norton, Wildlife Conservation and Management, Undergraduate Student

College of Natural Resources & Sciences

My study looked at the ecological role nurse logs play in the Arcata Community Forest, and whether they support a different vascular plant community than the forest floor.

Comparing Roadkill Abundance Between Urban and Rural Transects

Emily Cook, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

A study comparing roadkill abundance between urban and rural transects on highway 101.

COVID-19 anthropause significantly altered community science participation in California

Jane Olshefsky, Department of Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My research project is on the effects of the COVID-19 Anthropause on community science participation in California.

CSF1R Inhibition Restores Cognition Following Immunotherapy

Selena Dutton, CIRM Scholar, Graduate Student

College of Natural Resources & Sciences

Patients that undergo CAR T-cell therapy often experience significant side effects, including cognitive decline. We have found that CAR T-cell therapy increases microglial activation and disrupts the myelin sheath that is necessary for saltatory conduction. We seek to understand the long term neurological effects of CAR T-cell therapy and ways to restore cognition in patients undergoing immunotherapy.

Cursing Practices: Transitions, and Rituals

Charlene Duty, Anthropology, Undergraduate Student

College of Arts, Humanities & Social Sciences

The practice of excessive cursing is understood in teens and early adults as a transition into adulthood, by developing code switching skills, and strengthening kinship bonds. However as our world is increasingly digitized and kids find themselves socializing online at an ever increasing rate, taboo language has experienced a shift that is acutely represented within the boundaries of online gaming. Within the borders of popular combat games, a ritual of offensiveness takes cursing and derogatory terms to extreme use over their microphones within "in game chat" features. This poster examines these two cursing practices side by side, allowing participants to analyze how the culture changes.

Cut It Out: Reducing Cesarean Section Rates in Low-Risk First-Time Mothers

Danielle Streb, Nursing, Undergraduate Student

College of Professional Studies

Cesarean section rates have increased 7-fold from 1965 (4.5%) and are now the nation's most common operating–room procedure. One in five deliveries is by C – section according to the World Health Organization. A Healthy People 2030 goal, is to reduce this number to 23.6% or less, in low risk, first - time mothers. On my local unit, C - sections hit an all time high and a change is needed to better maternal child outcomes. This projects examines causes for the increase and strategies aimed at reducing the rate, using evidence based practice interventions. The proposed interventions will be targeted at the patient, nursing, and policy level.

Deciphering the Crosstalk within Human Coronary Atherosclerotic Plaque

Annie Jensen, Biological Sciences, Undergraduate Student

College of Natural Resources & Sciences

Our project investigates the cross-talk between cells contained within the human coronary atherosclerotic plaque using single-cell technologies. We mapped the transcriptome of the plaque using 10x transcriptomics and validated our findings with immunohistochemistry and in vitro assays. We found a predominance of memory T cells suggesting T cells were recruited by antigen engagement with their cognate peptide presented by myeloid cells. Using in vitro assays we also found activation of pro-inflammatory and pro- fibrotic pathways in smooth muscle cells after exposure to T cell cytokines. Our analysis suggests that T cells communicate with myeloid and smooth muscle cells within the plaque"

Decreasing Non-Ventilator Hospital Acquired Pneumonia

Regina Taylor, Nursing, Undergraduate Student

College of Professional Studies

Evidence shows that patients who receive oral care two to four times daily, have their chances of acquiring non-ventilator hospital acquired pneumonia (NV-HAP) decreased by thirty- seven percent. To make this a successful program at our hospital, it would be prudent to create a policy for oral care, train nursing staff and patients of proper oral care and be sure to document in the electronic medical records that oral care has been done. Pneumonia is the number one hospital acquired infection. This information points to a greater need for nurses to perform oral care with patients.

Decreasing patient readmission rates.

Anna Branson, Nursing, Undergraduate Student

College of Professional Studies

Patient readmissions within 30 days of discharge not only cost hospitals around 15,000 dollars per incident but also indicate increased mortality rates and worse patient outcomes. Readmissions occur for multiple reasons such as, lack of clear discharge instruction, delayed primary care follow-up, medication issues, or worsening symptoms. Hospitals must take a multidisciplinary approach to addressing this issue. Interventions can be implemented to improve readmission rates, like discharge calls within 48 hours, creation of hospital policy to guide the call, and primary care follow-up within 10 days. With better transition from hospital to primary care, patient readmissions will decrease.

Delirium at end of life: Improving outcomes

Hilary Bagnell, Nursing, Undergraduate Student

College of Professional Studies

Terminal delirium is a common condition seen in the hospice setting. Unlike delirium, terminal delirium is usually not reversible. It manifests in the final days or weeks of life and typically causes distress and safety issues for caregivers and patients. Caregivers depend on nurses to educate them on what to expect as their loved one declines. Since terminal delirium is a common occurrence, preparing these caregivers ahead of time is essential. Since terminal agitation can be difficult to assess, organizations may adopt an assessment tool, training nurses on its use. Organizations may also create a nurse-driven protocol that utilizes evidence-based interventions.

Determining Habitat Preferences of Great Egrets through Foraging Rates

Marian Porter, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My research project looked into determining habitat preferences of Great Egrets through foraging rates across Arcata, CA. The three habitats I chose were the Arcata Marsh, Mad River Slough, and Agricultural Fields.

Determining Iron Concentrations in Seawater using Flow Injection Analysis

Laura Martin, Chemistry, Undergraduate Student
Laurel Tappert, Chemistry, Undergraduate Student

College of Natural Resources & Sciences

Iron concentrations in the ocean are important for the health and success of the ocean because it is an essential micronutrient for phytoplankton. However, iron is insoluble in oxygenated seawater and so most iron precipitates and sinks out of the water column. Here we present a method to analyze these low concentrations of iron using flow injection analysis, which we built following Lohan et al. (2006).

Developing a three-dimensional culture system to improve the yield of placental mesenchymal stem cell derived extracellular vesicles

Juan-Maria Lopez, Biology, Graduate Student

College of Natural Resources & Sciences

In this study, we developed a novel approach to produce placental mesenchymal stem cell derived extracellular vesicles (PMSC-EVs) by utilizing a three-dimensional (3D) cell culture system to potentially use in regenerative medicine applications. CELLine bioreactors are a 3D culture system that is comprised of a polystyrene scaffold, to support a high-density culture, encased in a semipermeable membrane to concentrate all proteins produced by the cells within. When con-

ditioned medium is collected from the compartment PMSC-EVs were produced over an eight-week continuous culture. This method potentially could be used as an alternative to conventional culture methods to improve PMSC-EV yield.

Do Dabbling Ducks Forage More in the Morning or at Night?

Dylan Van Kampen, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My research project looked at if dabbling ducks forage more in the morning or afternoon. My hypothesis was that they would forage more in the morning than afternoon.

Do Song Sparrows Alter Song in Noisy Natural Environments?

Sharmaine Lindahl, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This project studied the minimum song note frequencies of Song Sparrows in two different environments. Our results suggest that vocal plasticity arose as an adaptation in response to loud ocean surf, rivers, and wind.

DOC Sampling from Little River and Mad River

Mark A. Moreno, Chemistry, Undergraduate Student
David Zeitz, Chemistry, Undergraduate Student
Claire Till, Chemistry, Faculty

College of Natural Resources & Sciences

Dissolved Organic Carbon (DOC) is a fraction of organic carbon with size less than 0.2 micrometers. DOC comes from decomposed plants, bacteria, and algae. Abundant in marine and freshwater systems, it serves as the primary food source for aquatic webs. Generally, rivers have higher concentrations of DOC than the ocean does.in the estuary a linear relationship between salinity and DOC indicates that the DOC concentration is fully due to mixing of freshwater and saltwater and not any significant additional source or removal terms. DOC concentrations decreased from river to ocean. Scholarly articles have pointed this to be normal. Interpretation of data will continue.

Drop the Ramp

Michele Janelli, Film, Undergraduate Student
Adrian Terccero, Film, Undergraduate Student

College of Arts, Humanities & Social Sciences

'Drop The Ramp' explores creating a landscape of the invasion on Omaha beach on D-day through immersive and intimate screenings. Sitting in the middle of the larger projection will be a smaller screen showing a war veteran Frank Devita as he recounts a story never told about storming the beaches of Omaha. Inverting the interview footage to make it a color negative ... viewers will need to view through their phones inverting their screens to view Frank as a color positive. This plays on newer generations' relation to war and how we've only ever experienced it through screens. It also plays on our relationships with older generations and how their stories might go unappreciated in a modern age"

Dunsmuir

Jacob Varelas, Film, Undergraduate Student

College of Arts, Humanities & Social Sciences

Dunsmuir is a small town. A film project.

Effectiveness of Trailhead Signs

Jed Parker, Wildlife Conservation and Management, Undergraduate Student

College of Natural Resources & Sciences

I went to three different trailheads to interview willing participants based on the information found on trailhead signs. Using this information, I was able to compile data to find the amount of visitors who looked at these signs, and which topics visitors answered most correctly.

Effects of Human Activity on Urban Birds

Aracely Arreguin, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

The rapid expansion of urban areas has reduced and eliminated habitats for birds. For the purpose of this study, the goal was to evaluate how bird abundance and species richness varied from sunrise to sunset along a gradient of human activity, and how it influenced the presence of species richness and abundance of birds throughout the day.

Effects of Supplemental Feeding on Migratory and Resident Hummingbirds

Hunter C. Perez, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This is my Senior project where I analyzed which feeding preference hummingbirds preferred in relation to hummingbird feeders and natural flowers given equal access to the two variables. Supplemental feeding has a massive effect on foraging behavior of all species, and research on how this effects populations is needed to inform citizens on how to safely and properly partake in this popular pastime.

Electroporation of E. coli and Agar Gel Electrophoresis of FB5α

Tyler Nagle, Biology, Undergraduate Student
Noah Glick, Chemistry, Undergraduate Student
Nick Zuniga, Biology, Undergraduate Student

College of Natural Resources & Sciences

Chitin is the second-most abundant polysaccharide after cellulose, and a rich source of nitrogen and reduced carbons which is currently underutilized. Chitinases have the potential to put this sustainable resource to use. In this experiment a plasmid purported to contain the ChiA endochitinase gene was extracted from FB5-alpha E. coli and transformed into BL21(DE3) E. coli. The plasmid was analyzed by agar gel electrophoresis to determine that the gene was not present in the plasmid. To confirm the lack of the gene, protein isolation will be attempted, and samples will be analyzed by SDS-PAGE

Equity Gaps in Basic Needs Security for CSU Students during COVID-19: Preparing for future pandemics and climate crises

Delaney Kelly, Social Work, Undergraduate Student
Jennifer Maguire, Social Work, Faculty
Marissa O'Niell, Social Work, Faculty

College of Professional Studies

University students, along with programs and services that serve them have been deeply impacted by COVID-19. The goal of this study was to explore students' statuses and their ability to access campus programming and supports that helped meet their basic needs such as, food, housing, and financial supports before and during the COVID-19 pandemic to evaluate their efficacy. This study had a particular focus on the context of diverse needs of students and campuses. This research adopted a mixed-methods approach to better understand basic needs insecurity, we focused on the survey data for this report.

Evaluating the Effects of Grazed and Ungrazed Habitat on Raptor Abundance

Evan Burnett, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

I examined the effects of ungrazed and grazed habitats on two raptor species, Northern Harriers and Red-tailed Hawks. The study evaluates how raptor abundance varies between the two habitat types, as well as, how factors such as rodent abundance and perch availability influence their distributions.

Evaluation of the behavior of yttrium and lanthanum in surface seawater

David Zeitz, Chemistry, Undergraduate Student
Claire Till, Chemistry, Faculty

College of Natural Resources & Sciences

The biogeochemical cycling of trace metals in the ocean, as the name implies, is a cycle that describes the complex interplay of a broad range of physical and chemical processes that govern the behavior of metals in the ocean. Input of trace metals into surface ocean water can come from any of several sources including anthropogenic input from the continental surface, airbound particles, or upwelling from the deep ocean, among others. Metal concentrations for yttrium and lanthanum were obtained from surface Pacific Ocean water and the data sets were interpreted to evaluate the behavior of each of the two metals in the context of this cycling.

Functional impact of alternative splicing on the transcriptomic landscape and fate of multipotent skeletal stem cells and osteosarcoma

M. Gohazrua K. Butler, Biology, Graduate Student

College of Natural Resources & Sciences

Greater than 90% of all protein-coding genes in the human genome undergo post-translational alternative splicing (AS), giving rise to many unique isoforms from a single gene. Our work with human skeletal stem cell (hSSC) has demonstrated the need to examine AS as it relates to cancer, development, aging, skeletal regeneration and skewing of hSSCs towards non-skeletogenic lineage fates. Here we explored the relationship between AS and function of hSSCs. Using RNA microarray technology we discovered RNA-binding proteins involved in hSSC function; inhibition of these proteins prevents differentiation and formation of osteosarcoma. Our current work reveals other essential roles of AS in hSSCs.

Great Egret (Ardea alba) Abundance Between the Brackish Pond and Restored Tidal Habitat During High Tide and Low Tide

Giselle Rangel, Wildlife Department, Undergraduate Student

College of Natural Resources & Sciences

Brackish and tidal habitats are one of many habitat types that support an extensive amount of bird populations in wetland ecosystems (Stolen et al. 2007). However, tidal fluctuations can be of an influence in abundance for Great egrets between many habitat types. The objective of this study is to understand if Great egret abundance is influenced between the brackish pond and the restored tidal habitat as well as certain tide periods of the day.

Greenwood Cemetery

Randall Starba, Geography, Undergraduate Student
Ashely Miller, Geography, Undergraduate Student

College of Natural Resources & Sciences

We are creating a digital archive of the greenwood cemetery to spark interest in the community.

Growing Up On This Side Of The Mountain

Jacob D. Imlay, English First-Year Writing Program, Undergraduate Student

College of Arts, Humanities & Social Sciences

My project contains a list of a few selected free-style poems that I've combined to make a short poetry book that discusses how literacy sponsors have affected my academic worldview, and how their influences have affected my opportunities inside different academic communities and academic fields. Also how literacy sponsors impact everyone's development inside of the academic world as well.

Habitat Selection of Black Bears Based on Heavy to Light Vegetation

Logan Scherf, Wildlife, Graduate Student

College of Natural Resources & Sciences

A research project that investigates what type of habitat black bears choose when it comes to vegetation density.

Habitat Selection of Mule Deer in Northern California Coastal Ecosystem

Arthur Ingrham, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Determining if Mule deer select a specific habitat type in a Northern California ecosystem.

Habitat Use of Pacific Banana Slugs in Natural Recreational Areas in Humboldt County

Jahaira Sierra, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

The goal of this study was to determine whether factors such as vegetation type, temperature, shrub canopy coverage, and tree canopy coverage contribute to Pacific banana slug habitat use in natural recreational areas in Humboldt County, CA.

High-Touch, Low-Tech: Managing Postpartum Engorgement

Cassandra Schmidt, Nursing, Undergraduate Student

College of Professional Studies

Chest/breast engorgement is a common source of pain in the postpartum period. According to Huda et al. (2021) breast engorgement and pain are the leading cause of early discontinuation of breastfeeding. Breastfeeding is life-saving, cost-effective, sustainable for the planet, and keeps parents, and babies healthier. A high-touch, low-tech approach to the management of engorgement can be utilized through gentle breast massage and hand expression. The implementation of supportive patient-centered care can increase in-hospital breastfeeding rates. Human milk is the optimal first food to support overall health and provide food security for infants in any situation.

How Moon Illumination, Cloud Cover, and Temperature Influence Capture Rates for Small Mammals

Shalom Fletcher, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This research project uses small mammal trapping data that was collected over the summer of 2021 on Green Diamond Resource Company land in Humboldt and Del Norte County. There was a total of 841 captures (nocturnal = 694, diurnal = 147) over the course of 39 trap nights. Data was extracted and analyzed to determine if there was any correlation between moon illumination levels and capture rate success. This study uses diurnal species as a control, however both diurnal and nocturnal species may be influenced by temperature.

Human Disturbance Influences the Long-billed Curlew's Foraging Behavior (Numenius americanus)

Isaac Rath, Department of Wildlife, Undergraduate Student

College of Natural Resources & Sciences

There have been a lot of studies done on the Long-billed Curlew around the Humboldt bay (Colwell and Mathis 2001, Leeman et al. 2001, Mathis et al. 2006) however not many on the impact of humans on them. This study looked at whether humans are affecting the foraging behavior of the Long-billed Curlew around Humboldt bay.

Humboldt In The Time Of COVID Digital Archive

Dawn Nystrom, Library Special Collections, Undergraduate Student

Library

This poster serves as a visual presentation of some of the items collected from the community in the Humboldt in the time of COVID digital archive. Submissions in the archive have mainly been audio, video, or written submissions but many of the images also show some of the life of Humboldt residents on and off campus.

Hummingbird Flower Use at the Humboldt Botanical Garden

Eliana Palomares, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My research investigated further into the feeding preferences of hummingbirds, particularly on individuals in the Humboldt Botanical Garden. I focused on how hummingbirds select flowers to feed on based on color, as well as how they select which garden patch they feed at.

Identification of a Type 1 Regulatory T Cell Master Regulator

Colin Waichler, Biology, Graduate Student

College of Natural Resources & Sciences

Type 1 regulatory T cells (Tr1s) are critical for regulation of autoimmunity and acceptance of hematopoietic stem cell transplants. One major limitation of Tr1 research is the lack of known master regulator, which is a transcription factor that has essential roles in both differentiation and function of the cell type. My research leverages CRISPR-Ca9-induced knockouts and in vitro Tr1 differentiation to screen potential Tr1 master regulators.

Improving Health Outcomes for Rural Parent Caregivers of Neurodiverse Children

Amy Neff, Nursing, Undergraduate Student

College of Professional Studies

The prevalence of developmental disabilities (DD) is about 17% in the United States, with rates higher in rural communities (Robinson et al., 2017). Children with DD (also known as "neurodiverse") have individual strengths and face unique challenges. Due to adversity in accessing specific and much-needed support, parent caregivers often experience clinical levels of parenting stress (Davis & Carter, 2008, as cited in Roberts et al., 2019). Parents in rural communities are particularly affected. Chronic, unaddressed stress can lead to worsened mental and physical health including depression, hypertension, and cardiovascular disease (Robinson et al., 2017).

Increase Cervical Cancer Screening Participation in a Rural FQHC

Jennifer Webster, Nursing, Undergraduate Student

College of Professional Studies

Cervical cancer (CC) is the fourth most common cancer and typically caused by human papillomaviruses (HPV). The American Cancer Society's preferred screening method is HPV testing, which is detectable in the vagina. The FDA has not approved this test, but some private labs offer this screening with patients collecting their own vaginal swab. The goal is to increase participation in CC screening in patients who decline traditional testing. Most CC cases are in patients who are not up to date on screening frequency or never received screening before. If positive on self-swab, patients are more likely to follow up, receiving the care they would never have received if not given this option.

Influence of Canopy Cover on Artificial Refugia Color Selection in Pacific Tree Frogs (Pseudacris regilla)

Stephanie Norman, Department of Wildlife, Undergraduate Student

College of Natural Resources & Sciences

I studied Pacific Tree Frogs (Pseudacris regilla) at the Arcata Marsh to observe how canopy cover in the environment would influence how the frogs select microhabitats. Pacific Tree Frogs actively use color cues when selecting microhabitats and will use artificial refugia when it is available. Using PVC pipes painted either white or brown as artificial refugia, I set up one white and one brown PVC pipe sample at four sites around the Butcher Slough Log Pond. Two sites had no canopy cover while the other two had high canopy cover. I then tested whether Pacific Tree Frogs would select white or brown artificial refugia under the influence of low or high canopy cover in the environment.

Influence of Human disturbance on the ranging patterns of wildlife on college campuses

Mary Standish Lehman, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

In a world with increasing urban sprawl wildlife is finding habitat remnants of green spaces such as college campuses. These campuses provide many green spaces, anthropogenic food sources, and a unique set of challenges for wildlife to face. My study looked at how wildlife species on the campuses of Cal Poly Humboldt and College of the Redwood are responding to the human disturbance rates across the two campuses.

Institutional Autonomy Support Predicts College Student's Achievement Goals Through Psychological Need Satisfaction

Sophie Timin, Psychology, Undergraduate Student
Kevin Cherry, Psychology, Graduate Student
Brandilynn Villarreal, Psychology, Faculty
Maddy Jo Avila, Psychology, Graduate Student
Benjamin Anjewierden, Psychology, Graduate Student

College of Professional Studies

We explored the role that instructors play in predicting college student's achievement goals during the COVID-19 pandemic. Achievement goals help us explain the motives behind engagement. Certain types of goals tend to be more adaptive than others. We predicted that greater institutional autonomy support would predict greater psychological need satisfaction. In turn, psychological need satisfaction would

predict, respectively, greater mastery approach goals and lower performance-avoidance goals. We found partial support for our hypotheses, yet our findings highlight the importance of encouraging students to self-regulate and explore their own interests.

Intimations of Mortality

Jack DeCorso, Religous Studies, Undergraduate Student

College of Arts, Humanities & Social Sciences

This interactive exhibit on death and dying aims to give each individual a guide they can use while navigating mortality from a start to an end. We all have birth in common with each other, and most of us have been promised death by some authority in our lives, but it seems that this modern world often denies people the space to unpack and become familiar with this foreshadowed similarity. We hope you leave here with the tools and language to find peace in the deaths that pass your way.

Investigating Shotgun shell and wad waste around Humboldt Bay

Daniel Montoya, Fisheries Biology, Undergraduate Student
Noah Jenkins, Fisheries Biology, Undergraduate Student
Madison Richardson, Fisheries Biology, Undergraduate Student
Sarah Moreau, Marine Biology
Jose R. Marin Jarrin, Fisheries Biology, Faculty

College of Natural Resources & Sciences

Shotguns are often used for hunting and when they are fired, they produce a plastic wad and shell that are ejected and often left behind. In order to estimate the abundance of shotgun wads and shells, eight randomly selected sites around Humboldt Bay were sampled once each during the month of March 2022. The sites sampled included the beach and bay side of the Samoa Peninsula, Arcata, and Eureka. At these selected sites, 400-m2 was inspected for wads and shells. While sampling at each site, trash was collected and weighed. Only one shotgun wad and one shell was collected at two different sites, for an abundance of 0.25 wads and shells per 100 m2, and an average of 0.26 kg of trash per 100 m2

Investigation into Cyanide Levels at the Arcata Wastewater Treatment Facility

Danny Brown, Department of Chemistry, Undergraduate Student
Jack McLaughlin, Department of Chemistry, Undergraduate Student
Matthew Hurst, Department of Chemistry, Faculty

College of Natural Resources & Sciences

The City of Arcata Wastewater Treatment Facility (AWTF) was issued a National Pollution Discharge Elimination System permit in 2019, which set a water quality objective for cyanide of 1.0 ×g/L to protect saltwater ecosystems. Since enactment, the AWTF has exceeded the daily maximum effluent limit. This study used distillation and colorimetric analysis to investigate cyanide formation by comparing the cyanide levels in preserved and unpreserved samples taken concurrently with monitoring samples that were sent to a certified lab. Results found that found that unpreserved samples had no detectable levels of cyanide while preserved samples demonstrated a cyanide concentration of 0 to 1.7 ×g/L.

Isolation & Nanodisc Assembly of Submitochondrial Particles

Sissi Crisanto, Chemistry, Undergraduate Student
Pedro Moreno, Chemistry, Undergraduate Student
Monica Rodriguez, Chemistry, Undergraduate Student
Dean Roell, Biology, Undergraduate Student
Dr. Jenny Cappuccio, Chemistry, Faculty

College of Natural Resources & Sciences

The mitochondrion is a subcellular location for varied metabolic processes and pathways relevant to undergraduate biochemistry courses at Cal Poly Humboldt. At the core of such pathways are integral membrane proteins (IMPs) whose structure and enzymatic activity can be examined to better understand not only their overall function, but also the role of specific subunits. One such enzyme is cytochrome c oxidase (complex IV). Nanodiscs are invaluable tools for examining IMPs. In this experiment, we isolated mitochondria and submitochondrial particles for incorporation into nanodiscs. Future work will include purification and selection for nanodiscs containing only cytochrome c oxidase.

It's like, I have to feel guilty cuz I'm white: Fear and Frenzy around Critical Race Theory in K12

Daniela Tierra, Sociology, Graduate Student

College of Arts, Humanities & Social Sciences

Since 2020, Critical Race Theory in schools has become a controversial topic nationwide, particularly among conservatives. Despite this, most public schools are not teaching or talking about CRT - So, where does this misinformation originate? This presentation explores the origin of this issue, common narratives of opposition and their sources, and examines who the people opposed to CRT are - behind the Facebook comments. This presentation expands on the roots of resistance to CRT to understand obstacles to implementing future liberatory, anti-racist curricula in predominantly conservative communities and learning environments.

Kenosha Mural Project

Jessica Janecek, Geography, Undergraduate Student
Keith Staats, Geography, Undergraduate Student

College of Arts, Humanities & Social Sciences

Working with photographer Ron Larson from the Kenosha Creative Space, a nonprofit organization in Kenosha, Wisconsin. Following the BLM protests, artists took to the streets of Kenosha, Wisconsin to express their feelings and emotions. Ron Larson began photographing the art around the city. We are here to share an interactive story map created to showcase the art around the city.

Kinetic Evaluation of Putative Cellulase Enzymes for Cellulosic Biofuel

Jasmine Collins, Chemistry, Undergraduate Student

College of Natural Resources & Sciences

Cellulose composed of glucose monomers is the most abundant biopolymer on earth, as the primary component of the plant cell wall. The enzyme cellulase breaks down the polysaccharide through hydrolysis at the _-1,4-glycosidic linkages. As cellulose is the most ample renewable biological resource and has a low-cost energy source based on energy content. The objective of this study is to evaluate clones of putative cellulases for their activity compared to commercially available products and identify potential cellulase protein activity found in cow rumen in order to optimize biofuel production.

Lineage Tracing of HoxB5 Cells of the Yolk Sac and their Contribution to the Adult Hematopoietic System

Joe Olage Pasillas, Biology, Undergraduate Student

College of Arts, Humanities & Social Sciences

Understanding the origins of hematopoietic stem cells has been a challenge due to the lack of a marker specific to this cell type. Recently, our lab has functionally proven that HoxB5 is a unique marker for long-term HSCs in adult murine models. Whether HoxB5 is also a marker for HSCs in development, has not been studied. Here, we are labeling HoxB5+ cells found in the yolk sac blood islands at E7.5 by using a genetic tool we generated. We will then analyze all marked cells at several time points during development and adulthood. This project will discover if HoxB5+ cells from the yolk sac contribute to the adult hematopoietic system and the LT-HSC pool.

Mapping Species Ranges in the California Floristic Province

Alex Rumbel, Biological Sciences, Undergraduate Student
Cameron Jones, Biological Sciences, Undergraduate Student
Dr. Oscar Vargas, Biological Sciences, Faculty
Ava Guillen, Biological Sciences, Undergraduate Student
Brittany Long, Biological Sciences, Undergraduate Student
George Sabbagh, Biological Sciences, Undergraduate Student
Luis Angel Gonzalez, Biological Sciences, Undergraduate Student
Stephanie Sandoval, Biological Sciences, Undergraduate Student
Tristan Roach, Biological Sciences, Undergraduate Student
Victor Garcia Balderas, Biological Sciences, Undergraduate Student
Zoe Draheim, Biological Sciences, Undergraduate Student

College of Natural Resources & Sciences

The California Floristic Province (CFP) is a global hot-spot of biodiversity. Creating a database of plant distributions for the CFP is pivotal to define species's conservation status. Students associated with the Herbarium used R to create precise polygons for the range of 62 species in the CFP. We accessed publicly occurrence repositories for our target species and used a protocol to remove outliers. Using these cleaned coordinates, we created polygons of the ranges and inferred the area in square kilometers. This information was used to create a preliminary histogram for CFP plant distribution, highlighting a high percentage of plant taxa with ranges smaller than Humboldt county.

Mediated Representations of Romance in Popular Culture

Jessie Cretser-Hartenstein, Journalism & Mass Communication, Faculty
Whitney McCoy, Journalism & Mass Communication, Undergraduate Student
Brianne Beronilla, Journalism & Mass Communication, Undergraduate Student
Abraham Navarro, Journalism & Mass Communication, Undergraduate Student

College of Arts, Humanities & Social Sciences

The concept of romance is mass produced in American popular culture. Television audiences consume a myriad of mediated representations of courtships and relationships in fictional, and often unrealistic, tales of true love. Over the past 25 years, reality dating shows have blurred the line between fact & fiction, creating a new platform for delivering the mediated messages that shape the hearts and minds of viewers across the country. This study utilizes content analysis and survey research to examine portrayals of romance on reality TV.

Meds to Beds

Katie Ohlsen, Nursing, Undergraduate Student

College of Professional Studies

Hospital readmissions that occur within 30 days of discharge due to medication adherence are largely preventable. CMS, the largest insurance payer, does not cover hospital admissions that occur within 30 days of discharge. Our rural area lacks critical access to pharmacies. Frequent hospitalizations and medication non-adherence increase patient mortality and reduce the quality of life for the patients and their families. Providing patients with a 30-day supply of their medications prior to leaving the hospital, along with patient education and a nurse follow-up phone call 48 hours later, can reduce ER visits and 30-day hospital readmissions.

Micro Affirmative Text

Dr. Marisol Ruiz, Education, Faculty
Anayeli Auza, Undergraduate Student
Jonni Segura, Undergraduate Student
Elizabeth Rubio, Undergraduate Student
Mia Page, Undergraduate Student
Briana Ruiz, Undergraduate Student
Jasmine Chavez, Undergraduate Student
Abran Neri, Undergraduate Student
Kate Ramirez, Undergraduate Student
Amelya Rose Madrigal, Undergraduate Student
Chelsea Rios Gomez, Undergraduate Student
Tania Estrada Rodriguez, Undergraduate Student

College of Professional Studies

Micro Affirmative Text- This is a qualitative Critical Action Research which uses Critical Race theory to design lessons on microaffirmative text. Our research wanted to document how youth engaged in critical microaffirmative text.

Minority Stress and Psychological Adjustments Moderated by Stress Appraisals

Bernardo Sosa-Rosales, Psychology, Graduate Student
April Perez, Psychology, Undergraduate Student
Edgar Jimenez- Madora, Psychology, Graduate Student
Emilia Bumgardner, Psychology, Undergraduate Student
Kevin D. Cherry, Psychology, Graduate Student
Maria I. Iturbide, Psychology, Faculty

College of Professional Studies

During the pandemic, students experience a series of academic, structural, social, and personal stressors. For example, some students experienced abrupt closure of colleges and universities; some students' households did not have access to needed resources such as an internet connection, and limited resources for remote online learning. Students of color experience these stressors in addition to ethnic minority stress which may have been exacerbated because of the current social climate. The current study examined associations between minority student achievement stress on self-esteem and academic sense of belonging and the possible moderating effects of challenge-focused stress appraisals.

Mock Codes, Emergent Scenarios, Nursing Confidence and Team Performance

Kelsey Lee, Nursing, Undergraduate Student

College of Professional Studies

Critical care nurses specialize in caring for human responses to life-threatening problems. Nursing confidence in codes has shown direct correlation in improved patient outcomes, reduced time to compressions and adherence to American Heart Association guidelines. Currently, in a high-acuity critical care unit in Northern California, mock code scenarios and simulations are not a common practice. A quality improvement program is being developed to improve resuscitation efforts on this unit. It will include a self-assessment, mock codes and emergency scenario days. The goal is to increase nursing and staff confidence in resuscitation efforts, as well as improve team performance.

Modeling Pregnant Elk Presence in Alberta, Canada

Nariman Moussavizadeh, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

The aim of this research is to better understand pregnant Cervus elaphus relationship to climatic and topographic elements.

Nano Adventures: The Role of Adventure in the Lives of Humboldt Students & Beyond

Haley Uriz, Recreation Administration, Undergraduate Student

College of Professional Studies

When was your last adventure? How did you know it was an "adventure"? If you felt like it was an "adventure" that's a good start and likely means that it was! That is because the meaning of the term adventure is fairly personal and based on what you personally perceive as unique, unusual and exciting. It may also include a certain level of risk, potentially some dangerous risk, such as swimming with sharks in Australia or riding a motorcycle on a mountainous road in Italy. But risks don't need to be life threatening or thousands of miles away.

Nanodisc assisted terbinafine transport into Saccharomyces cerevisiae

Joshua Chapman, Chemistry, Undergraduate Student
Parker Chapman, Chemistry, Undergraduate Student
Vini Buttino, Chemistry, Undergraduate Student

College of Natural Resources & Sciences

We wish to answer whether or not nanodiscs make an effective means of transporting medication, specifically in the treatment of fungal infections, seeing as research is currently examining its effectiveness in the transport of chemotherapy drugs to prevent collateral cell death. We tested nanodisc transport of the antifungal terbinafine, which is often used as a topical ointment for direct application, to determine if naondiscs improve its effectiveness as a fungal killer. We treated cultured samples of Brewer's yeast (Saccharomyces cerevisiae) with DMPC lipid nanodiscs wrapped in Apo-A1 protein and loaded with terbinafine and observed fungal cell death, as compared to direct application.

Novel Tests of Gravity Below Fifty Microns

Claire Rogers, Department of Physics and Astronomy, Undergraduate Student
Jesse Mendez, Department of Physics and Astronomy, Undergraduate Student
Tanner Hooven, Department of Physics and Astronomy, Undergraduate Student
Kevin Chung, Department of Physics and Astronomy, Undergraduate Student
Alyssa Johnson, Department of Physics and Astronomy, Graduate Student
Alexandra Papesh, Department of Physics and Astronomy, Undergraduate Student
Charles Hoyle, Department of Physics and Astronomy, Faculty

College of Natural Resources & Sciences

Physical processes regarding gravity are well understood on the scale of planetary distances but pose challenges in measurements at very short distances. Theories such as the Inverse Square Law (ISL) and Einstein's Weak Equivalence Principle (WEP) of General Relativity have been tested over distance scales from 1 cm to infinity [1]. Reliable measurements of gravitational forces at scales smaller than a centimeter carry significant challenges. The non-gravitational forces that are generally negligible at the scale of everyday objects have a much more substantial effect in the sub-centimeter regime. Our experiment seeks to measure gravity at these close distances.

Old Town Eureka: A Historic Tour and Photo Collection

Christopher Tuck, Geography, Environment, and Spatial Analysis, Undergraduate Student
Benjamin Cook, Geography, Environment, and Spatial Analysis, Undergraduate Student

College of Arts, Humanities & Social Sciences

We have been working directly with the Humboldt County Historical Society over this past semester in an effort to offer them a way of gaining the community's attention and ultimately producing more members of the society. By making a Story Map, we offer the local communities in and around Eureka, California a way to digitally and physically make their way through Old Town Eureka so that they can compare the historical photos of the area to what is now there. We hope that this educates our local communities of the history that surrounds them, and encourages them to visit and support the Humboldt County Historical Society whenever and however they can.

Pacific Banana Slug Habitat Selection using occupied and paired-random microhabitat analysis in the Arcata Community Forest

Rainey Strippelhoff, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

The Pacific banana slug (Ariolimax columbianus) is a key detrivore and herbivore in Pacific Northwest forests. Understanding how this species utilizes different habitats in a heterogenous forest is important from a management perspective due to their wide distribution, abundance in the Pacific Northwest, and significant ecological roles in nutrient cycling, seed dispersal, and endemic predators. I hypothesized that banana slugs will show habitat selection within a heterogenous forest and tested this using an occupied and paired-random sampling method in four sites within the Arcata Community Forest. My results showed evidence of selection for several habitat variables.

Perceiving immigrants as American and its Relationship to Attitudes Toward Immigrants

Joseph Pang, Psychology, Graduate Student
Sophie Timin, Psychology, Undergraduate Student
Christopher Aberson, Psychology, Faculty

College of Arts, Humanities & Social Sciences

We examined the relationship between intergroup contact and intergroup threat on measures of discrimination against Hispanic/Latino immigrants in the United States. Specifically, we are interested in if contact and threat can predict perceptions of immigrants as "American". Our results found that negative contact experiences with immigrants predict perceiving immigrants as threats and categorizing them as not American.

Plastics in the Gut's of Leach's Storm Petrels in Humboldt County, California

Grace Cunningham, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

For this project, we looked at the plastics that were found in the Guts of Leach's Strom Petrels in Humboldt County, CA. In 2020, 57 of these storm petrels were found dead of natural causes and stored at Cal Poly Humboldt. In my project, I analyze if these storm petrels had plastics in their stomachs at the time of their death, and if so, how much plastic. This is the first of such studies done on Leach's Storm Petrels on the Pacific Coast. The results help to contribute to the ever-growing knowledge of how plastics in our oceans are affecting wildlife.

Plethodontid Salamander Proximity to Surface Water Relative to Ocean Distance

Eagan Maguire, Wildlife Department, Undergraduate Student

College of Natural Resources & Sciences

My research was conducted on the coast of Humboldt County, where I measured salamander proximity to a freshwater source relative to the distance to the ocean. I used two study sites, one in the Arcata Community Forest and one in Trinidad. I found 38 salamanders while sampling 60 1x1 meter quadrats.

Punk Influence

Zoe Bryant, Undeclared, Undergraduate Student

College of Arts, Humanities & Social Sciences

A look at how the echoes of 70s and 80s are still seen today.

Raccoon (Procyon lotor) Foraging in Relation to Storm Drains

Christian Placet Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Human-animal conflicts are becoming more relevant as urban areas expand. Let's take a look at the raccoons on Cal Poly Humboldt's campus as an example of how to handle other species that may come into conflict with people. In my project I looked at storm drain distance from trashcans to see if there is any relation to how often they are used by the raccoons.

Raccoon Abundance in Regards to Trash Cans Around Cal Poly Humboldt

Jeremy Dodds, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This is a project about raccoon abundance

Raccoon use of Storm Drains on Cal Poly Humboldt's Campus

Shannon Lamb, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

I will be presenting a poster concerning raccoon use of the storm drains on Cal Poly Humboldt's campus. This study was conducted through the use of motion sensing camera traps, and did not involve any direct capturing or handling of animals.

Redtail Surfperch Population Dynamics in Humboldt County

Jonathan Kang, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Redtail surfperch population dynamics when comparing urban and remote beaches in Humboldt County.

Reducing polyamine levels favors osteogenic differentiation of MSCs

David Morales, Chemistry, Undergraduate Student

College of Natural Resources & Sciences

Snyder-Robinson Syndrome (SRS) is a disorder that is characterized by severe osteoporosis. SRS is caused by a mutated gene coding for Spermine Synthase (SMS). SMS converts spermidine into spermine. Therefore SRS patients show increased spermidine/spermine ratios. Using bone marrow-derived Multipotent Stromal Cells, we found that supplementation with spermidine inhibits differentiation. During osteogenic differentiation the polyamine catabolic enzyme Spermidine/Spermine Acetyltransferase (SAT1) is upregulated. Also, inhibition of polyamine synthesis directly promotes osteogenesis. Therefore our results in vitro suggest that reduction of polyamines is necessary for osteogenic differentiation.

Resources vs Co2 on Humboldt Bees'

Alli Chevalier, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

The effects of urbanization and Co2 car emmissons on local bee abundance and species richness. Testing to see what drives bee populations and if there is a negative correlation between Co2 levels and bees' in urban, agricultural, and natural settings and which areas provide the most abundant resources.

REUSE- REDUCE-REMOVE

Cassandra Avila-Estrada, Geography, Environment, and Spatial Analysis, Undergraduate Student
Dulce K. Vallejo, Geography, Environmental, and Spatial Analysis, Undergraduate Student

College of Arts, Humanities & Social Sciences

Buying a new water bottle seems easier for some, but harder for our planet. The use of plastic is a global issue and should be concerning. We partnered up with Zero Waste Humboldt (ZWH), a nonprofit organization, to assist in their Refill-not- Landfill Network Project, which is a project that has saved over 100,000 water bottles from the landfill. We assisted in this project by updating their website with an updated map of the 10 water refilling stations that were donated by them through a federal grant. We are presenting at IdeaFest so community members can gain an awareness and interest in being conscious about waste production and mindful about single-use plastic bottles.

Sacred Drugs

Sam SchulmanCommunicationsUndergraduate Student

College of Arts, Humanities & Social Sciences

This Ideafest presentation aims to argue that our society might be studying drugs wrong. I will explore this topic using a problem/solution model. The problem is that drugs are stigmatized, causing a reluctance to talk openly about their role within society. I suggest the validation of drugs through pragmatic discussions within all appropriate avenues of study. Gary Laderman and Michael Pollan prove ideal examples of this solution. Quotes from Laderman highlight the integration of drugs in religion courses and academia at large. Michael Pollan is another example, and exploring his work presents another case of the topic of drugs being discussed in academic and such public settings.

Salinity influence in feeding of dabbling and diving ducks

Cesar Rocha, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Tested to see if salinity levels in water had an affect on feeding in water fowl. Looking at dabbling and diving ducks, I saw which one exhibited most feeding. Species studied were Buffleheads as diving ducks(Bucephala albeola) and Mallards (Anas platyrhynchos) as dabbling ducks.

Shorebird Abundance in Response to Human Disturbance within Protected and Non-protected Beaches

Alissa Lachance, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My study focused on shorebird abundance in response to human disturbance within beaches that are protected or non protected by the county in Humboldt County, California.

Skeletal Muscle Induced, BDNF-Mediated Secretions Retrogradely Initiates Pro- Neuroplastic Signaling Cascade That Increases Cognitive Function in Adults with Autism Spectrum Disorder

Julie Dalmolen, Kinesiology, Graduate Student

College of Professional Studies

Autism is a neurological condition that impairs cognitive function (CF). Changes to the CNS and diminished neuro physiologic pathways could contribute to the pathology of autism and the decreased responsiveness of neuronal networking and neurotransmitter release. Growth factors are important in regulating neuronal function. This study investigates exercise as an effective therapy for improving CF in autism. We hypothesize that the contraction of skeletal muscle during moderate intensity exercise will upregulate BDNF into a cascade of cellular events that enhance neuroplasticity. The study will involve a 6-week exercise intervention with bio fluid analysis to measure BDNF and changes in CF.

Song dialect recognition in White-crowned Sparrows

Nathan Chavez, Wildlife Department, Undergraduate Student

College of Natural Resources & Sciences

White-crowned sparrows have different dialects in their songs depending on the region. This project was done to determine if sparrows local to Humboldt County are capable of recognizing dialects from different regions throughout the U.S.

Spatial and Temporal Variations of Microplastics within Humboldt Bay

Isabelle Marcus, Oceanography/Physical Sciences, Undergraduate Student
Bennett Hosselkus, Oceanography/ Physics, Undergraduate Student
Cole Hutson, Oceanography (graduated)
Michael Jacobs, Oceanography (graduated)
Connor McNeil, Oceanography (graduated)
Stephanie Olivarez, Oceanography (graduated)
Leah Newton, Oceanography (graduated)
Rebecca Thompson, Oceanography (graduated)
Tamara Beitzel Barriquand, Oceanography and Physics, Faculty
Jeffrey Abell, Oceanography, Faculty

College of Natural Resources & Sciences

This study was conducted by the students of OCN496 in the fall of 2020. The goal of this study was to quantify the amount of microplastics in Humboldt Bay by observing its sediment and water column at specific locations during the tidal cycle. Additionally, we wanted to observe how tidal fluctuations impact the concentration and transport of microplastics in the water column.

Students' Experiences with Diversity, Equity, and Inclusion in Research Methods Courses

Brandilynn Villarreal, Psychology, Faculty
Maria I. Iturbide, Psychology, Faculty
Edgar Jimenez-Madora, Psychology, Graduate Student
Shelley Magallanes, Psychology
Luis Lara, Psychology, Graduate Student
Leti Armenta Villa, Psychology, Undergraduate Student

College of Professional Studies

Researchers have noted a historical lack of coverage of diversity, equity, and inclusion (DEI) topics in Psychology Research Methods courses (RMCs). We hypothesize that Psychology RMCs' coverage of DEI will be positively correlated with indicators of academic integration and negatively correlated with minority stress, especially for marginalized students (e.g., students of color). DEI in RMCs were associated with greater science identities and networking in white students and perceptions of positive campus climate for all students. However, for students of color, DEI in RMCs were associated with a greater number of social climate stresses. Given the small sample, more research is needed.

Supporting Military Women and Families Through Policy

Cassidy Gordon, Child Development, Undergraduate Student

College of Professional Studies

This presentation highlights my time as a Fall 2021 Panetta Congressional Intern for Cal Poly Humboldt. Also covered, is a policy research paper I completed as an internship requirement discussing ways to support military women and families through policy. In this presentation, I also cover the impacts of gender discrimination in the Military.

Sustainable Learning For Student Success

Jesse Mendez, Physics, Undergraduate Student
Kyle Morgan, Library, Faculty
Kimberly Stelter, Library, Faculty

Library

Rising textbook costs and the shift to the subscription model licensing has negatively impacted student success across the nation. The CSU Affordable Learning Solutions (AL$) program was created to support CSU campus initiatives for implementing strategies to reduce the cost of materials and foster more equitable student access to required course materials. This poster highlights the results of our outreach since the Cal Poly Humboldt Library joined the AL$ program. Our department has saved Cal Poly Humboldt students over $1M in course materials costs. Our primary methods are researching free OER material for possible adoption and supporting Cal Poly Humboldt faculty who publish new content.

Talking to Yourself: Let's Talk About Intrapersonal Communication!

Kasandra Marguerite Colwell, Communication, Undergraduate Student

College of Arts, Humanities & Social Sciences

Intrapersonal communication consists of the internal communication that occurs within each of us, where we send and receive messages within ourselves. Intrapersonal communication highly impacts the more well-known concept of interpersonal communication, which occurs between two or more people. Yet, intrapersonal communication isn't listed as an interest group under the National Communication Association! Consequently, student exposure to this concept is often limited to a small section in introduction to communication courses. In this presentation, I argue that California Polytechnic Humboldt should offer a course in intrapersonal communication and I share a potential syllabus I've created.

Targeted Education and Monitoring to Reduce Diabetes Complications in Spanish-Speaking Patients on the North Coast

Basilia Lopez, Nursing, Undergraduate Student

College of Professional Studies

Inconsistent follow-up care for Spanish-speaking patients with type 2 diabetes leads to unfavorable health outcomes and inequities for this population due to various socioeconomic barriers. With proper diabetes self-management, many patients can keep their A1C below 7%. Diabetes education incorporating culturally humility can improve patients' health outcomes. Interventions at multiple levels are evaluated to address this practice disparity. The objective for Spanish- speaking low-income patients is diabetes care continuity so they can self-manage their illness and reduce complications. Process and impact evaluation strategies were analyzed to find the effectiveness of these implementations.

The Alien Movie Project: studying the narrative, affective, and production politics of alien cinema via podcast

Dr. Aaron Donaldson, Communication, Faculty

College of Arts, Humanities & Social Sciences

The Alien Movie Project is a 91-part podcast series about alienhood rhetoric in cinema. Dr. Donaldson will overview and summarize podcasting as a form of education as well as the lessons learned from critically interrogating nearly 100 alien movies from throughout history and across the globe.

The Art of Script: Humanity's Creative Abilities to Give Sound and Thought a Body

Starsong Brittain, Native American Studies and Anthropology, Undergraduate Student

College of Arts, Humanities & Social Sciences

Script is an overlooked art form in our society today. This project puts a spotlight on the creative bandwidth humanity has had in developing script. Along with the work done to revive forms of script and the language it takes shape from. Script extends throughout human time. Shifts from the realm of the sacred to that of mundane. Script gains its shape from the culture that develops it. At the end the viewers concepts of; what script is, how it functions, and what it can be, should be shifted. As well as causing for a reevaluation of how script is looked at by our society.

The Benefits of Smiling & Laughing

Krysteanna Cabanas, College of Arts, Humanities, and Social Sciences, Undergraduate Student

College of Arts, Humanities & Social Sciences

There were many different ideas that popped into my head when I first heard the idea of Ideafest, the idea that made me the most excited was the Benefits of Smiling and Laughing. I believe that this is a good Ideafest contribution for two reasons, one being that we are two years into a worldwide pandemic, where we have had to cover out beautiful smiles, and it has removed the normalization of smiling with one another, and secondly we are all adults and college students who tend be stressed out and forget to take a second for ourselves. There were many articles that I used to do the research for my poster and the pictures I used were to make me people smile while they are reading my poster.

The Effect of Grazing on Frog Abundance

Abigail Simon, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This study compares the abundance of frogs in landscapes that are grazed by livestock to lands that are non-grazed. This study found no influence of grazing activity on frog abundance. This information will be an important consideration for the conservation efforts of frog species as development of lands for urbanization and agriculture continue to increase as well as for conservation managers as they work to restore and maintain quality frog habitat by reverting agricultural lands back to native landscapes.

The Effect of Salinity on the Concentration of Various Trace Metals in The Little River Estuary

Shelby C. Bishop, Oceanography and Chemistry, Undergraduate Student

College of Natural Resources & Sciences

Trace metals are crucial to many biological processes in marine environments. In estuaries linear relationships between salinity and concentration indicate that mixing is the main determinant of concentration, while exponential relationships indicate active removal. In this study it was expected that scandium would have an exponential relationship with salinity due to its similar ionic size to iron, however, Sc displayed a linear relationship while elements that were expected to be linear were exponential. To the author's knowledge, this data represents the first river and estuary measurements of Sc, Ce, Zr, and La, and the reasons for these surprising relationships are not fully known.

The Hippie: From Conception to Today

Amanda Trujillo, Communication, Undergraduate Student

College of Arts, Humanities & Social Sciences

Beatniks, Free Spirits, Tree Huggers, Bohemians, and even Freaks some may say, are all words commonly used to describe what one might generalize as a "Hippy". This subculture has been a highlighted group synonymous with fashion, mass media recognition, environmental conservationism, musical creation, music culture, nomadism, drugs, and various other connotative associations. This analysis seeks to identify the media correlation between the identified subculture of the "Hippy" from its conception to today and how the evolution of this culture has manifested itself in today's mass media- flooded society as well as media of the past.

The Impact of a Teacher Developed Physical Fitness Program on the Self-Perception and Basketball Skills of Two High School Students

Melaina Valdez, Kinesiology, Graduate Student

College of Professional Studies

This study has two purposes: (a) to determine the effect of a teacher-developed physical fitness program on the performance of specific participant goals for the game of basketball and (b) to determine the impact of this same program on the overall perception of the participants amongst their peers when participating in the game of basketball. The participants in this study included two high school males. Participant 1 had diagnosis of attention deficit hyperactivity disorder (ADHD) and was provided services through a 504 plan. This study occurred over a 7-week period with the pre and post assessments taking place in the 1st and 7th week.

The Impact of COVID on Academic Stress and Achievement Goal Orientations in College Students

Edgar D. Jimenez-Madora, Psychology, Graduate Student

College of Arts, Humanities & Social Sciences

Since the start of the pandemic, college students report experiencing more stress, more burnout, and more negative academic perceptions which in turn have affected persistence rates. College students' are experiencing more academic stress due to having a hard time adjusting to online format which has been associated with lower academic persistence. Students' goal orientation may be influenced by stress. Achievement goal orientations refers to a student's motivation and approach to educational goals. We hypothesize that COVID-19 stress would mediate the relationship between perceived academic stress and achievement goal orientations.

The Impact of Mandated Physical Fitness Testing on Mental Health

Kourtney Avila, Communication, Undergraduate Student

College of Arts, Humanities & Social Sciences

For my project I wanted to focus on the impact that mandated Physical Fitness Testing has on students. The state of California mandates that students receive a physical fitness test. The test then categorizes the results and measures health based on these results. What it fails to take into account are biological, psychological, and socioeconomic components that can contribute to the students results. Body image and eating disorders are a prevalent issue amongst our society. What I hope this project addresses is the limited research we have on the detriment of physical fitness testing and if and how it impacts the mental health of students.

The Impacts of Copper use in Lily Bulb Cultivation on Juvenile Coho Salmon in the Smith River Plain

Logan Wolfe, Geology and Chemistry, Undergraduate Student
Ethan Villalta, Geology, Undergraduate Student

College of Natural Resources & Sciences

Copper is used as a fungicide in the lily bulb industry and is water soluble. Previous laboratory studies have shown that acute copper toxicity in juvenile salmonids can occur at extremely low copper concentrations. These low levels of copper induce predatory avoidance behavior and the loss of olfactory sensory function, which lowers the survival rates of the juvenile salmonids. The objective of this study was to provide scientific information to determine whether the copper levels in the Smith River Plain are toxic to juvenile Coho salmon. Water quality parameters were measured to determine how lily bulb cultivation is altering the water chemistry in fish habitat.

The Importance of Stretching Everyday

Ahmad Shah, Communications, Undergraduate Student

College of Arts, Humanities & Social Sciences

For this assignment/project, I wanted to create a poster that information, relatable, and quick. When you see a poster, you kind of have to soak it all in at once. It isn't moving or talking to give you the bigger picture of what it is. You just have to look and kind of go with it however you like. That is why I wanted something that was grounded to Earth, quick, and knowledgeable. I wanted to do an awareness poster on The Importance of Stretching. The importance of stretching is something that is overlooked in our daily lives because individuals are wrapped up in their everyday busy lives. I cannot blame them, so am I!

The Influence of Hiking Trails on Salamanders

Emily MacDonald, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

It is a field research project looking at the species diversity and individual abundance of salamanders in the Arcata Community Forest.

The influence of lupine (Lupinus arboreus) on habitat selection by black-tailed deer (Odocoileus hemionus) in coastal dunes

Ray Turner, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

Invasive plant encroachment threatens native fauna and flora in the coastal dunes. Herbivores play an important role in the composition of plant communities. In this study, I measured black-tailed deer habitat use in relation to the invasive coastal lupine in order to better understand the relationship between herbivores and the dune ecosystem.

The Rate and Incidences of Non-Predictive Concussions among Adolescents Participating in High School Sports Using SCAT-5 and TRAZER

Denise Leininger, Kinesiology, Graduate Student

College of Professional Studies

There are many barriers to reporting symptoms after a head injury, especially among adolescents. This research study aims to help identify and implement a more detailed approach that will raise awareness of the clinical vigilance and maintenance of Sports-Related Concussions (SRC) that assist in return play decision-making for athletes. The primary purpose of this presentation is to identify non-predictive incidences of sub-concussions among participating subjects using neurocognitive assessments SCAT-5 and TRAZER. Neurocognitive assessments like SCAT-5 and TRAZER can help with the early recognition of sub-concussive impacts and is most beneficial in tracking concussion recovery.

The Relationship between Hardiness, Stress, and Mental Health in College Students with Disabilities during COVID-19

Hayley Weatherill, Psychology, Graduate Student
Kevin Cherry, Psychology, Graduate Student
Maddy Jo Avila, Psychology, Graduate Student
Lila Taylor, Psychology, Undergraduate Student
Brandilynn Villarreal, Psychology, Faculty

College of Professional Studies

The purpose of this project is to explore how hardiness relates to the mental health outcomes of college students with disabilities during COVID-19. We hypothesize that Hardiness will negatively correlate with: (H1) perceived stress, (H2) COVID-19 stress, (H3) anxiety, (H4) depressive symptoms, and (H5) substance use. Twenty-nine students from the campus student disabilities center participated in the study

(age M = 23.3, SD = 3.1; range 19-33 years). Participants completed an online survey during Spring 2021, including the following scales: Perceived Stress Scale; COVID Stress Scale; Beck Anxiety Inventory; Center for Epidemiological Studies Depression Scale; and Substance Use Scale.

Threat Stress Appraisals Moderate the Relationship Between Social Support and Degree Commitment

Sophie Timin, Psychology, Undergraduate Student
Maria Iturbide, Psychology, Faculty
Brandilynn Villarreal, Psychology, Faculty
Bernardo Sosa-Rosales, Psychology, Graduate Student
Edgar Jimenez-Madora, Psychology, Graduate Student

College of Professional Studies

We examined the role of social support and perceptions of stress in predicting college students' degree commitment during the COVID-19 pandemic. Students high in threat appraisals tend to interpret stressors as harmful or anxiety- inducing. These negative dispositional perceptions of stress are linked to lower motivation. Meanwhile, greater social support is related to greater college persistence, although students' ability to cope can mitigate the beneficial effects of social support. We found support for a moderating effect of threat appraisals on the relationship between social support and degree commitment. Implications for student success and the importance of reappraisals are discussed.

Time Series Analysis of Acoustic Doppler Current Profiler in Humboldt Bay

Isabelle Marcus, Oceanography/Physical Sciences, Undergraduate Student
Emma Modrick, Oceanography/ Applied Math, Undergraduate Student
Bennett Hosselkus, Oceanography/Physics, Undergraduate Student
Tamara Beitzel Barriquand, Oceanography & Physics, Faculty
Amanda Admire, Geology, Faculty

College of Natural Resources & Sciences

The OCN 499 extended independent study is a time series analysis of an Acoustic Doppler Current Profiler (ADCP) in Humboldt Bay in collaboration with NOAA's Physical Oceanographic Real-Time System (PORTS) project.

Trail Map of The Humboldt Botanical Gardens

Cristina Sarabia, Geography, Undergraduate Student
Yuichi Ambiru, Geography, Undergraduate Student

College of Arts, Humanities & Social Sciences

The Humboldt Botanical Garden, located in southern Eureka, is where the Lost Coast Brewery Native Plant Garden thrives. Our project for The Humboldt Botanical Garden will focus on the described main role of botanical gardens. Given The Humboldt Botanical Garden is focusing on exhibiting endemic species to the Northern California region, we would like to emphasize its role as a place for understanding plants and recognizing the species diversity in the region. One of the ways to make it possible is to expand access to the botanical garden. Through making a trail map that displays whole paths in the garden, people will gain another way to navigate the garden.

Under The Sign Of The Dollar - Demythologizing The Dollar

Joshua Chavanne, Communication, Undergraduate Student

College of Arts, Humanities & Social Sciences

Money is used as a means to mediate exchange of commodities and services between parties in our economy. Semiotics is a mode of inquiry that endeavors to examine symbolic mediation of meaning through the concept of the "sign". The purpose of this project is to use the United States dollar as a reference point to open a plane of inquiry into the messages of the dollar from its graphical elements to its textual content.

Understanding NAGPRA

Chalene Duty, Archaeology, Undergraduate Student
Dawn Nystrom, Archaeology, Undergraduate Student
Virginia Vance, Archaeology, Undergraduate Student

College of Arts, Humanities & Social Sciences

This poster provides a deeper look into the history, legislation, enforcement, and weakness of NAGPRA. Alongside our analysis we include an in-depth discussion of the White VS University of California court case in which NAGPRA was enacted. The case study explores the difficulties in dealing with the vagueness of NAGPRA and applying this legislation to real world problems. This poster above all encourages critical discussions of our cultural resource management laws in this country and the necessary steps we must take to improve them. NAGPRA holds an integral place in our cultural management, and we must work to hold it accountable to the highest standards.

Using an unmanned aerial vehicle (uav) to survey Black Brant use of Sand Island in Arcata Bay

Tristen Draper, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

This study was done on Black Brant commonly found in Arcata Bay during migration season. Preliminary camera trap data showed Brant to be utilizing Sand Island in the bay, so I used that to determine the optimal time to use a drone to survey the behavior of the birds. I conducted three different uav flights during the month of April, and obtained approximately 120 photograph stills and 15 videos. From these videos I'm going to count the number of Brant using the island within the timeframe of when the flights were conducted, and then calculate the proportion of birds engaged in gritting behavior- a process where birds swallow sand to help break down food in their gizzard.

Utilization of the Arcata Marsh and Wildlife Sanctuary by North American River Otters

Kaitlyn Zedeker, Department of Wildlife, Undergraduate Student

College of Natural Resources & Sciences

North American river otters are a regular sight to see in the Arcata Marsh and Wildlife Sanctuary and have been observed to exhibit different behaviors and activities in various locations of the marsh. By using ArcGIS Pro, visual observations of river otters made by Jeff Black over the course of two years have been mapped out depending on their behavior and activity. I focused on mapping three main behaviors that otters exhibit in the marsh: fishing for fish or invertebrates, hunting for birds, or traveling to/from or through the marsh.

Validation of FLT3-ITD in CD34+ Human Cord Blood Cells using CRISPR-Cas9 editing to investigate pre-leukemic stem cells as therapeutic targets in Acute Myeloid Leukemia

Andrew Schenker, Biology, Graduate Student

College of Natural Resources & Sciences

Acute Myeloid Leukemia (AML) is an aggressive cancer of the bone marrow that results from the uncontrolled growth of abnormal hematopoietic stem cell (HSC) populations. The goal of this project is to characterize the mechanisms for the transformation of genetically engineered human primary HSCs to AML. My aim is to validate FLT3-ITD CRISPR-Cas9 reagents to contribute to the sequential editing matrix scheme of the larger project of investigating preleukemic stem cells as therapeutic targets in AML. Understanding the genetic components of preleukemia can help inform clinical decisions of which patients to provide transplants and in what stage of remission this therapy can be most effective.

Variation in Mallard Foraging Strategy in Relation to Group Size

Kyle Rader, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

It is commonly believed that many animals, especially prey species, benefit from foraging while in a group. Using point- count surveys, I observed Mallard at the Arcata Marsh and Wildlife Sanctuary in an effort to determine their propensity for foraging at an increased rate while in a group. I also attempted to determine whether or not group size altered the preferred foraging strategy of mallard.

Water Temp. & Clarity Effects on Diving Duck Duration Under Water

Kayli Tibbs, Wildlife, Undergraduate Student

College of Natural Resources & Sciences

My research project took place at the Arcata Marsh looking at two diving duck species (Greater Scaups and Buffle Heads) and determining whether water temperature or water clarity effect the the duck's duration underwater.

Wellness Center at Eureka City Schools (ECS)

Emma Davis, Social Work, Graduate Student

College of Arts, Humanities & Social Sciences

We are developing and implementing a Wellness center in Eureka City Schools (ECS). The collaboration includes Two Feathers Native American Family Services, Open Door Community Health Center, Humboldt County Office of Education, Cal Poly Humboldt, various consultants, grant writers, and ECS students and employees. Student feedback identified the needs, health disparities, and gaps in wellness services and informed how to best support diverse student populations. We collected student feedback via a survey and feedback groups which were student-led and driven. The findings suggest the wellness center should be an inviting space, be a space to regulate, and offer clinical/non-clinical support.

Humboldt Sculpture Walk

All Floors • Guided Tours at 12:00 pm & 5:00 pm (meet in Lobby, 1st Floor)

The sculpture walk will take you on a journey through the Library, as pieces are displayed in different locations appropriate for each piece. Once again, you will find that there is an abundance of high quality art created on this campus. This is part of the annual Humboldt Sculpture Walk, presented by the Associated Student Sculptors, which is an event designed to showcase the wide variety of artwork produced by the Humboldt Sculptor program and usually occurs April to May of every year, closing with commencement.

Coordinated by Sondra Schwetman, Humboldt Sculpture Lab

Dance Performances

2nd Floor • 3:00–4:00 pm

Excerpts from the Dance Program's "Dance Visions" plus other student-created dance works in the styles of contemporary, Middle Eastern, and Jazz.

Coordinated by Linda Maxwell, Department of Theater, Film & Dance

Celebration of First-Year Writing

2nd Floor, Fishbowl • 3:00–5:00 pm

First-year students at Cal Poly Humboldt will showcase academic and creative writing in various formats, including spoken word, digital posters, empirical research, and presentations. Come celebrate first-year student writing.

Coordinated by Lisa Tremain, Department of English

Theatre

2nd Floor • 4:00–5:00 pm

Make-Up Demo

Theatre Course 221 'Makeup Design for Stage & Screen' happens every Spring and we create all sorts of makeup effects for stage productions and other projects. Contouring for glamorous looks, creepy latex and gelatin for fleshy creatures, sculpting and mask making and more; our students have a great time turning characters on a page into flesh and blood for audiences.

Coordinated by L. Rae Robison, Department of Theater Arts

Lighting Demo

Students in Lighting Design for Stage & Screen (TA333) implement the elements of lighting design and explore the elements of light with color theory, drawing, and technology. Students creatively shift the audience's focus, set the mood, and transform the space. Light is "more to this than meets the eye!"

Coordinated by Dionna F. Ndlovu, Department of Theater Arts

Musical Performances

Library 1st Floor • 3:00–4:15 pm

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

Coordinated by Cindy Moyer and Virginia Ryder, Department of Music

Move On — Stephen Sondheim (1930–2021)
from Sunday in the Park with George

Dulcie Feinstein, voice • Pablo Murcia, voice • John Chernoff, piano

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Violin Concerto no. 4, in D Major — Wolfgang Amadeus Mozart (1756–1791)
Allegro moderato

Emma Marquez, violin • John Chernoff, piano

Moon — Adam Tan (b.1994)

Jamison Maciel, marimba

Fiesta — Juan Carlos Allende (b.1954)

Isn't She Lovely — Stevie Wonder (b. 1950)

Christopher Antolin-Wilczek, guitar • Nicholas De Anda, guitar

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Caprice en Forme de Valse — Paul Bonneau (1918–1998)

Rebekka Lopez, alto saxophone

Romance and Troika — Serge Prokofiev (1891–1953)
from the Lieutenant Kije Suite

Alyssa Harford, bass clarinet • John Chernoff, piano

Wedding Song — Edvard Grieg (1843–1907)

Mia Costales, violin • Rebecca Cuevas, piano

Sonata V — Johan Ernst Galliard (1687–1747)
Allegro
Allegro e Spiritoso

Evan Jackson, euphonium • John Chernoff, piano

Last Chance — Traditional
Peach Bottom Creek — Traditional

Charlie Deible, banjo • Grayson Prater, banjo • Jennifer Trowbridge, banjo

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"God. I hate Shakespeare" — Wayne Kirkpatrick & Karey Kirkpatrick
From *Something Rotten!*

Nick: JeremyStolp • Nigel: Austin Meisler
Troupe: Mollie Donaldson, Jake Hylsop, Pablo Murcia, Zoe Saylor
John Chernoff, piano

2+1 — Ivan Trevino (b. 1983)

Makani Bright, marimba • Travis Strong, marimba

Film Screenings

1st Floor, Room 120 • 4:15–5:00 pm

The Film Program will feature outstanding short films by students made between Fall 2019 and Spring 2021. These collaborative works of art demonstrate the accomplishments of Cal Poly Humboldt's emerging filmmakers and their progression through our foundational Filmmaking I-IV production classes. Over two years, students hone creative and technical skills by producing original films and videos spanning the genres of narrative, documentary, social change and experimental. The films explore personal visions, social topics, internal worldscapes and even alien abductions. In sum they are the creative output of a diverse and talented group of up-and-coming filmmakers.

Coordinated by Dave Jannetta, Department of Film

Film: Emerging Media for the Gallery

3rd Floor • 4:00–5:00 pm

Get ready for some visceral and irrefutably powerful works, and possibly at times just 'weird' digital art, to be experienced through the human senses! Cal Poly Humboldt's Film Program has ventured into 'Emerging Media for the Gallery' this Spring. Students from the Film 378 course will be exhibiting a range of works that will explore and express their voices through new communications technologies, experimental filmmaking processes and multiple screen projections. As a practice for visual storytelling and sensory experience, these collaborative works of 'emerging art' un-work to re-negotiate the borders of the screen that challenge human perception and demonstrate new narrative frame-works through 360-degree camera work and VR gaming platforms, augmented reality and sonic labyrinths, screen sculpture and other works of digital media translated through non-conventional presentation methods.

Coordinated by Michelle L. Cartier, Department of Film

ASSESStivus: Assessment for the rest of us!

3rd Floor • 4:00–5:00 pm

Join us to celebrate and recognize staff and faculty who have worked diligently this past year on all types of assessment: academic, co-curricular, and operational. Assessment is undertaken to improve student learning and development; to improve the abilities and satisfaction of students, staff, and faculty; and to improve the design and delivery of university programs and services. Assessment is viewed as an iterative cycle, not an endpoint, and so we pause this day to celebrate how far we've come. The reception program will start promptly at 4:00pm and include short presentations by both faculty and staff showcasing best practices.

Coordinated by Amy Moffat, Institutional Assessment, Mark Wicklund, Academic Assessment, and Lisa Bond Maupin, Office of the President

Notes

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, in person, once again.