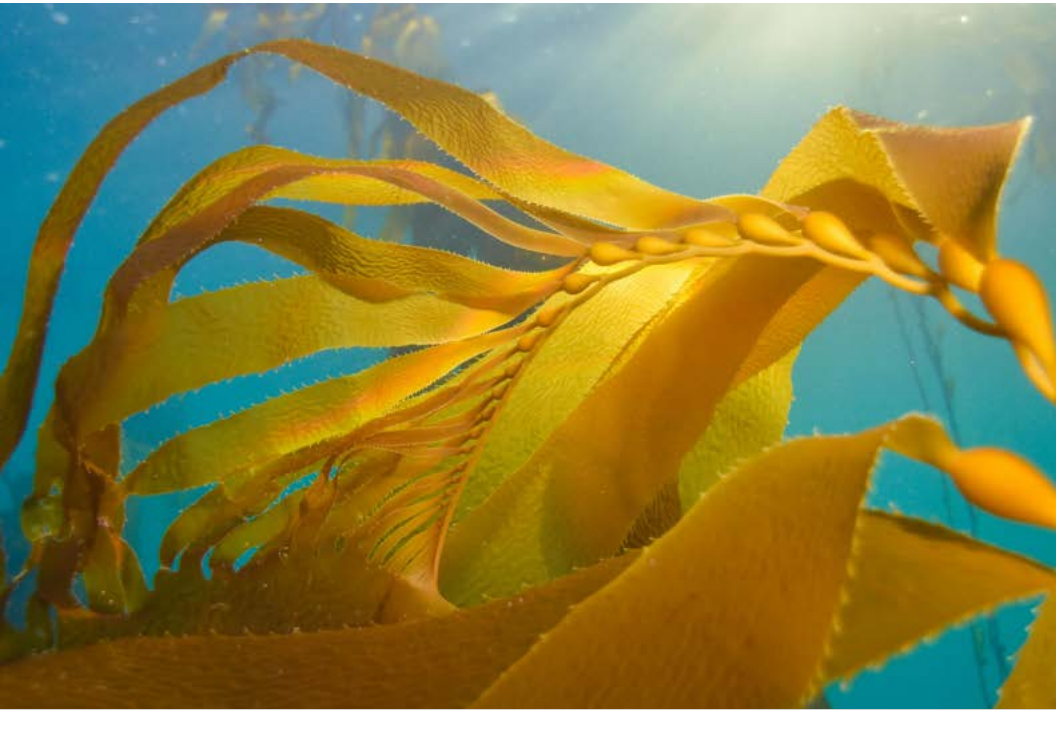
EEB
Undergraduate Research Symposium
Book of Abstracts

9:30AM to 1PM June 5th 2020

Celebrate the accomplishments of EEB's undergraduate students, learn about applying for NSF Grants, and receive advice on how to prepare an academic CV.

Welcome to the Second Annual EEB Undergraduate Research Symposium!

We designed this symposium to celebrate and showcase the hard work of our undergraduates, as well as to provide training for professional development within and outside academia. We welcome your feedback for how to improve this experience in years to come.



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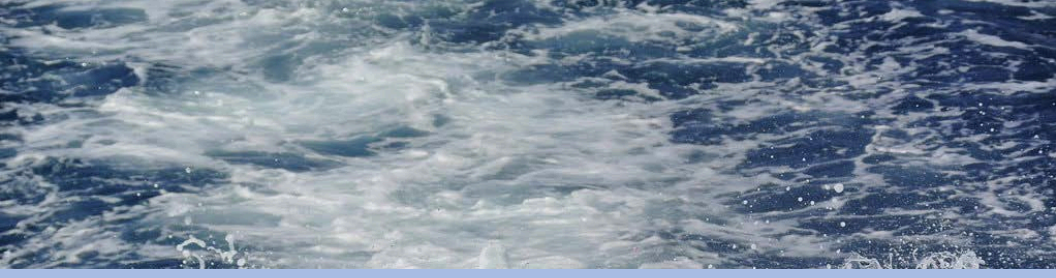
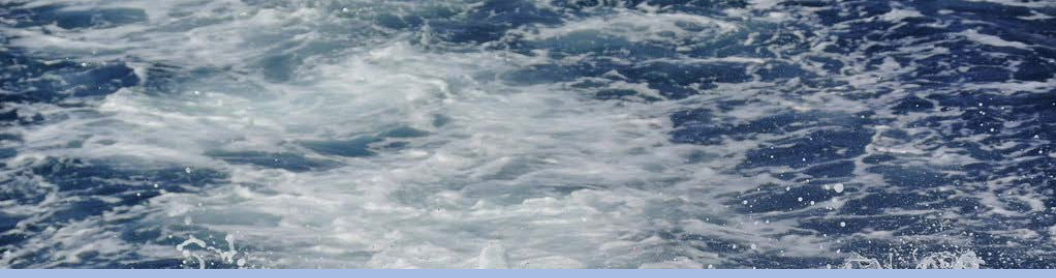


Schedule of Events

9:30- 9:40	**Opening Remarks by Dr. Dunkin**
9:40- 11:20	**5-Minute Lightning Talks by EEB Undergraduate Students** 5 Minute Presentations 2 Minute Question & Answer
11:20- 11:30	**Break**
11:30- 1:00	**Workshops hosted by EEB Graduate Students** NSF Workshop (45Min) & Resume/CV Workshop (45Min)



NSF Workshop (45 minutes)

11:30- 11:50	Presentation on NSF GRFP with Jessie Kendall-Bar
11:50- 12:15	GRFP panel with recipients Arina Favilla, Jessie Kendall-Bar, Doriane Weiler, Kyle Reid, Laura Goetz

Resume/CV Workshop

12:15- 12:25	Presentation on CVs with Regina Spranger
12:25- 12:35	Review examples of CVs
12:35- 12:40	CV questions
12:40- 1	Edit a CV together using participant comments in chat

Sarah Ashlock

Year: Senior
Advisor: Kathleen Kay

Contributions of ecophysiological divergence to Neotropical plant diversity

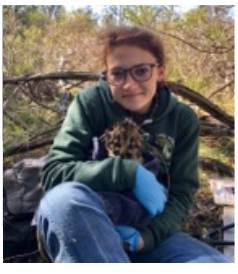
Understanding the evolutionary mechanisms behind the extreme plant biodiversity in the Neotropics remains a focal topic in biology. Adaptation to the environment can lead to species divergence, although empirical evidence for this process in the Neotropics is sparse. An ecophysiological approach can assess the interrelationship between physiological function and environment as a driver for speciation. The diversity and geographic radiation of species in *Costus* render the genus an excellent study system to explore how ecophysiological traits may confer adaptation and contribute to the functional diversity of Neotropical understory herbs. I investigate how a suite of ecophysiological traits measured in *Costus* species in a common greenhouse environment correlate with source climatic conditions and assess the capacity for these relationships to drive speciation. I utilize comparative phylogenetics to evaluate how constrained or labile these traits are over evolutionary time through the calculation of phylogenetic signal and evolutionary rate. Here I show that ecophysiological traits are not tightly correlated with source climatic conditions, and I demonstrate that half of traits display strong phylogenetic signal and low evolutionary rates. This suggests that trait-macroclimate relationships alone do not drive speciation in the Neotropics, but may be one of several abiotic and biotic factors contributing to the diversity of Neotropical flora. This study also contributes to the ongoing dialogue on how phylogenetic signal relates to trait lability and conservatism in the evolutionary process.

Olivia Daniels

Year: Senior
Advisor: Rita Mehta

Organismal Biology Research Analysis at the University of California

As a graduating senior and aspiring graduate student, I chose to explore research diversity within organismal biology focused disciplines. As a Californian, I was particularly interested in focusing on the University of California as it is considered one of the most research-focused postsecondary educational systems in the nation. My preliminary work showcases the broad interests of faculty members in Ecology and Evolutionary Biology or Integrative Biology Departments. I gathered data from websites of all practicing research faculty who were contributing to undergraduate curriculum through their teaching. I also gathered data from each faculty members' publications that came out over the past five years. From the websites and publications I recorded information on where faculty research takes place (field, lab, or both), where field studies are conducted, if studies are within biodiversity hotspots, and whether researchers are focused on marine or terrestrial organisms/ systems. Using collected data, I then categorized faculty as either an ecologist, evolutionary biologist, or both. These preliminary data were analyzed in R. I found that UC faculty generally study in both lab and field settings, that field studies are present in every continent, that there seems to be more focused interest in studying terrestrial systems, and that the biodiversity hotspots receiving the most attention are Indo-Burma, Polynesia/ Micronesia, and the Caribbean. I hope that my study will motivate researchers to keep their websites current. I also hope these results will help to inform students researching biology graduate programs and also motivate UC faculty to pursue research efforts in other biodiversity hotspots around the globe.



Sakoya Hart

Year: Senior
Advisor: Chris Wilmers

To den, or not to den, that is the question: Predation risk and prey availability drive den site selection of pumas in the Santa Cruz mountains

Den sites are critical resources that influence the overall population dynamics of many mammalian carnivores. Den sites are likely selected in areas of high quality habitat and based on characteristics including prey availability and predator evasion. Little is known about Puma den site selection, even though den use and availability likely plays an important role in puma fitness and kitten survivorship. We use both spatial and camera trap data to assess puma den site selection in the Santa Cruz Mountains. During 2012-2018 we discovered 10 natal dens belonging to 8 different females. We placed camera traps within the study area of puma den sites and compared them to paired control cameras that belonged to a 1400-km2 grid spanning the central coast mountains of California. We then scored the images to compare the visitation rates of prey species (black-tailed deer: *Odocoileus hemionus),* mesopredators (coyotes: *Canis latrans,* bobcat: *lynx rufus,* gray fox: *Urocyon cinereoargenteus*), and other conspecifics (puma: *Puma concolor)* of the cameras placed in habitat surrounding den sites selected by female pumas with the random control cameras. We assess the tradeoffs between prey availability and proximity to mesopredators and conspecifics in the microhabitats surrounding den sites. We found that females had a significant preference for establishing dens within habitat that had higher prey visitation as well as lower visitation of mesopredators and conspecifics. This study confirmed that pumas select den sites using specific habitat characteristics, including prey access as well as proximity to mesopredators and conspecifics. Our findings have important implications for the conservation planning of pumas, especially when considering habitat suitability for reproductive behaviours.

Jeannie Johnson

Year: Junior
Advisors: Katy Seto, Melissa Cronin

Best Practices to Reduce Mobula Ray Bycatch: A Literature Review for Global Tuna Fisheries

Manta and devil rays (genus Mobula) are a charismatic but poorly understood group of widely ranging, filter-feeding batoid rays. While all species are declining in global abundance, eight mobulid species are Near Threatened or of higher concern by the IUCN Red List, while the other two are Data Deficient, meaning all species of mobulid rays are of conservation concern. Due to their late maturation and very low fecundity and growth rates, mobulid populations are globally threatened as being caught as bycatch. Commercial tuna fisheries managed internationally by tuna Regional Fisheries Management Organizations (tRFMOs) unintentionally catch over 13,000 mobulids in their purse seine nets a year. While some tRFMOs have banned landing mobulid rays, few mitigation efforts have been made to reduce the capture and mortality rates of bycaught mobulid rays. However, both small- and large- scale mitigation efforts have developed solutions and implemented practices to reduce mobulid bycatch. Here, we present a policy analysis of current tRFMO policies that identify the policy and mitigation gaps in existing policies addressing mobulid rays. We also present a comprehensive review of initiatives implemented by both tuna and non-tuna fisheries that address fishing, handling, and practices to reduce mobulid post-release mortality rates. Adopting these results, we present a series of best practices for mobulid bycatch reduction that can be implemented in large-scale tuna fisheries. This work presents tangible conservation solutions for tuna fisheries to reduce their impact on threatened mobulid rays.

Christina Langford

Year: Senior
Advisor: Patrick Robinson

Entanglement rates of *Zalophus Californianus* in Two Rookeries along the Northern California Coast

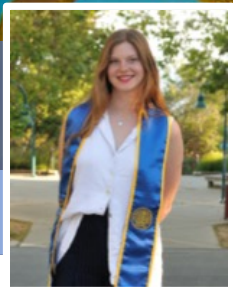
Making up roughly 71% of the earth's surface (Obura, et al. 2012), the Oceans are vast. A once popular human discourse was that the Oceans were in fact so vast, that there was little possibility of having any negative impact on them. However, the negative impacts humans have had, and continue to have on the world's oceans is becoming increasingly apparent as more and more studies are being conducted on the subject. One well publicized consequence of human exploitation of the ocean is entanglements of marine life. To truly understand the implications of our actions and create effective management strategies, further studies into anthropogenic disturbances are critical. This study was conducted on entanglement rates in *Zalophus californianus*, at two rookeries along the Northern California Coast. The results show that the average proportion of entanglements at each site were almost identical. However, there were major differences in the types of entanglements between locations. The Monterey Coast Guard Pier entanglements consisted of 54% monofilament line ($p = <0.0001$), while Ano Nuevo Island had the highest percentage of old entanglements, at 27% ($p = <0.0001$). The age class with the most entanglements was subadult ($p=< 0.0001$). These findings suggest that the data reflect the same population of sea lions, who are entangled at a rate of ~0.3%. The types of entanglements differed by location, likely because there is more risk of entanglement at the Pier due to its public nature, and popular recreational fishing use. Potential conservation efforts could be afforded to better protect *Z. Californianus* from entanglements at the Monterey Coast Guard Pier.

Avery Laing

Year: Senior
Advisor: Doriane Weiler

Temperature affects male sexual harassment rates in two populations of Western mosquitofish *(Gambusia affinis)*

Over the past year I have been participating in research on western mosquitofish reproductive behavior with my graduate student mentor Doriane Weiler. Our study explores the short-term as well as long-term evolutionary effects of temperature on mating behavior using two different populations of the male Western mosquitofish, *Gambusia affinis,* as our study system. We compare male harassment rates, defined as male copulation attempts, between two populations with different average local temperatures (18.8ºC and 33.3ºC) across five different test temperatures. Conducting this research was the highlight of my academic undergraduate experience and I could not be more grateful for everyone that gave me this opportunity.



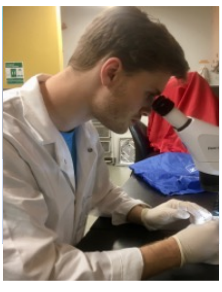
Brynn Lowry

Year: Senior

Advisor: Jarmila Pittermann

Stratigraphy of leaf structure and stable isotope ratios within a tropical rainforest canopy in West Africa: implications for primate feeding and isotope ecology

The composition of isotopic ratios of carbon, nitrogen, and oxygen within leaf tissues varies significantly from the lower to upper canopy in a dense forest. Location within vertical strata of the canopy may impact the ratios of isotopes within the tissue of leaves in a predictable and measurable way; this is referred to in primatology and plant physiology as “the canopy effect”. “The canopy effect” is useful in reconstructing the diet and habits of arboreal primates by comparing body tissue isotopic values to the values in the leaves they are consuming. To date, there is a lack of robust isotopic data available for most sites of primate research. Here we establish a comprehensive database of plant isotopic variability within a forest canopy of Taï National Park located along the Ivory Coast of West Africa. We found consistent patterns of fractionation of $\delta^{13}C$ and $\delta^{15}N$ values within the canopy as well as trends in light availability, nitrogen content, and leaf mass per area (LMA) which may be drivers of stable isotope variability. This dataset is useful in the reconstruction of habit and diet of primates and arboreal animals within the forest and may reveal potential drivers of food preference with height.

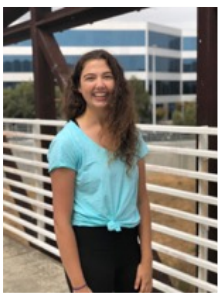


Sean McCollum

Year: Senior
Advisor: Rita Mehta

Functional composition and diversity of three zooplankton communities of Santa Catalina Island

Understanding zooplankton communities is crucial to understanding the trophic ecology of marine ecosystems. Zooplankton ecosystem functions are diverse and can be defined with functional traits, such as diet, size, reproductive strategy, and trophic level. In coastal marine habitats, the environmental conditions that these animals inhabit vary greatly across space, but pelagic dispersal enables potential mixing between populations. It is not well understood how invertebrate zooplankton communities vary between inter-connected sites. I used a functional trait approach to analyze the difference in community composition between environmentally different sites off northern Santa Catalina Island in the California Channel Islands. I compared communities using the trait-based multidimensional functional diversity indices of functional richness, evenness, divergence, and dispersion, as well as standard taxonomic indices. Additionally, I evaluated how Marine Protected Area (MPA) designation, substrate type, and geographic position were correlated with community composition. Through hierarchical clustering, I found nine distinct functional groups. Our results show that functional group composition and functional diversity do not vary significantly between these communities. Taxonomic analyses revealed that Shannon diversity was significantly greater within MPAs while Simpson diversity did not show significant differences, suggesting the prevalence of rare species, which may have potential impacts on functional redundancy. These results expand our understanding of the invertebrate zooplankton community structure and function around Santa Catalina Island, CA. Future investigations would examine samples from different seasons and quantitatively measure environmental variables.



Wave Moretto

Group member: Allegra Stahl

Year: Junior

Advisor: Rita Mehta

Knotty Behavior: Impacts of acute temperature changes on the unique feeding behaviors of *Gymnothorax mordax*

The California moray eel, *Gymnothorax mordax,* is a benthic predatory resident of the southern California kelp forests. Opportunistic feeders, *G. mordax* employ a variety of interesting prey handling behaviors that enable them to manipulate large prey. These behaviors include ramming prey against objects, spinning, shaking, and knotting. After observing the feeding behaviors of several *G. mordax* under laboratory conditions, we decided to vary water temperatures to mimic the differences in temperatures *G. mordax* experience throughout their geographic range. The temperature differential from Winter to Summer months, especially during El Nino events can be as much as 12 degrees fahrenheit. We hypothesized that higher temperatures would facilitate more manipulation of large prey. Six *G. mordax* were acutely exposed to four treatment temperatures and their subsequent feeding behaviors were filmed and quantified. We compared the means of several time and temperature variables across the different temperature treatments. Our preliminary data show a significant relationship between temperature and the number of knots observed ($p=0.0468$, $F=3.0573$) and the total time spent ramming prey ($p=0.0417$, $F=3.1714$). Understanding the limitations of prey handling behaviors and the environmental factors that affect the feeding behaviors an individual moray can employ has major implications on predator-prey relationships in the marine community. Additionally, examining the effects of temperature change on an animal's feeding behavior is a timely and prevalent topic considering rising global temperatures today.

Bianca Ramirez

Year: Senior
Advisor: Robin Dunkin

Ten Years of Domoic Acid Surveillance in Stranded Marine Mammals of Monterey Bay 2009-2019

Pseudo-nitzschia australis is a common, naturally occurring diatom first identified in Monterey Bay and Santa Cruz counties in 1991 (Fire et al., 2008; de la Riva et al., 2009; Bargu et al., 2010). *P. australis* produces domoic acid (DA), a neurotoxin that negatively impacts marine mammals and other wildlife along the central and Southern California Coasts. Previous studies have investigated the impact of domoic acid on marine mammal populations including clinical symptoms, histological evidence of impact, and impacts during known algal blooms. In this study, we investigate the presence of domoic acid in at least one of the three main body fluids (urine, feces, and stomach contents) of all fresh stranded marine mammals collected between 2009 and 2019 on the Central Coast of California. During the study period, 152 animals stranded and included 13 different species of marine mammals. Animals collected for necropsy were either fresh dead (code 2) and in rare cases, moderately decomposed (code 3). I found that 75.7% of fresh dead animals had DA present in at least one body fluid, regardless of their cause of death. Notably, 78.9% of our most commonly collected species, the California Sea Lion (*Zalophus californianus)* tested positive in at least one fluid sample for domoic acid. The data from this study indicate domoic acid is widespread in the environment when a major bloom has not been detected. Given the known chronic neurological effects of DA, as well as the reproductive harm it can cause, the high prevalence of this neurotoxin in the marine environment may be having impacts on marine mammals.

Breanna Rodgers

Year: Senior
Advisor: Greg Gilbert

Impact of Mass Dieback of Tanoak and Madrone on Forest Structure

Species-specific dieback in forest ecosystems creates gaps in the structure of the forest canopy. Regeneration in canopy gaps can lead to major shifts in community composition. Mass dieback is occurring in *Arbutus menziesii* and *Notholithocarpus densiflorus* in mixed evergreen forests in Santa Cruz, California, and may trigger transitions in forest community structure as regeneration within gaps unfolds. The objective of this study is to project consequences of mortality of the focal species on the canopy structure in the forest. By developing allometric relationships between crown area and trunk diameter (DBH), the direct influence of the focal species on canopy structure could be explored. The influence of dieback of each focal species was found to differ significantly due to the growth form and position each species filled in the vertically stratified canopy. A typical *A. menziesii* occupies 5-fold larger area of canopy than does an individual of *N. densiflorus.* While the stem abundance of *N. densiflorus* is 9.4-fold greater than that of *A. menziesii*, the greater stature of *A. menziesii* means that complete loss of *N. densiflorus* would represent only twice the impact on forest structure as would loss of *A. menziesii*. Complete mortality of both focal species would represent an increase in canopy openness by 26.59%, with plot-wide relative stem abundance of overstory species declining by 37.10%. Future researchers can use these findings to explore how the ecosystem reacts to such monumental loss in species abundance and canopy cover as regeneration occurs.

Ishana Shukla

Year: Senior
Advisor: Roxanne Beltran

From Above, Below, or Within? Drivers of Sleeping Strategies in Mammals

Mammals must optimize their sleeping strategies to maximize foraging opportunities while minimizing predation risk or competition. However, predominant sleeping strategies and the degree to which sleep is driven by bottom-up and top-down factors across terrestrial and aquatic taxa remains largely unknown. Here, we review findings from 232 publications and classify sleeping responses of 147 species into four categories: grouping, physiological adaptations, temporal avoidance, and nesting. We evaluate the frequency of distinct sleep strategies across phylogeny, trophic level, and habitat. Furthermore, we show that human presence affects the sleeping habits of all trophic levels, especially apex predators. Human induced behavioral changes in top predators cause cascading changes to sleeping behavior, leading to asynchronous predator-prey activity and a positive feedback loop towards nocturnality.

Allegra Stahl

Group member: Wave Moretto

Year: Junior

Advisor: Rita Mehta

Knotty Behavior: Impacts of acute temperature changes on the unique feeding behaviors of *Gymnothorax mordax*

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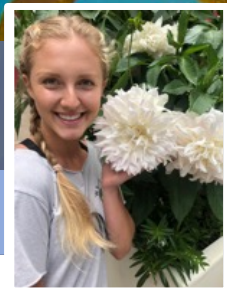


Hannah Thacker

Year: Senior
Advisors: Suzanne Alonzo, Doriane Weiler

Thermal influences on courtship behavior in male *Gambusia affinis*

Ectotherm metabolic rates and body temperatures are largely influenced by ambient temperature. Because of this, physiological processes including performance and fitness characteristics are also inherently reliant on temperature (Huey and Kingsolver 1989; Angilletta 2009). Consequently, environmental temperature can place performance constraints on ectotherms by lowering the pace at which their bodies operate (Zuo et al. 2012). Here we show how temperature affects male courtship behavior in the Western mosquitofish, *Gambusia affinis,* in two populations whose average ambient temperatures fall at opposite ends of the thermal range in which this species is found. Additionally, we compared courtship rates between these populations at each test temperature to determine whether populations differ in courtship patterns. We found that male courtship behavior is lowest at extreme temperatures, but does not differ within the range of temperatures that fish are found in the wild. This suggests that exposure to extreme temperatures severely limits courtship behavior in male *G. affinis*. Temperature effects on courtship did not differ between populations which is likely the result of a thermal generalist life history strategy in mosquitofish throughout most of their evolutionary history.

Samantha Wong

Year: Senior
Advisors: Suzanne Alonzo, Doriane Weiler

Context-dependent male mate choice in western mosquitofish

Mate choice evolved under conditions in which matings are costly as a way to conserve energy. Mate choice can be complex, as multiple traits can interact to influence mating behavior. In this study, we measured and compared male mate choice preferences in two populations of the western mosquitofish (*Gambusia affinis*). We found that in the cold-sourced population, male preference was seen only when the degree of difference between female gravid spots was large. This suggested that variation in male preference in mosquitofish may be due to cognition. We concluded that male preference in mosquitofish is a complex process governed by many interacting factors and recommend future research to further describe the evolution of male choice and its influence on female traits.

Funding & Research Opportunities

UCSC Undergraduate Research Funding Resources

- Korret Scholars: $2000 Scholarships for Undergraduate Research
- Norris Scholars: Up to $1000 for projects related to natural history
- Seymour Center Student Research and Education Awards: Up to $1000 for undergraduate research and education projects in marine and coastal sciences
- Webster Fellows Awards: Up to $3000 to support a senior internship or thesis that promotes collaborations between the Norris Center and the Santa Cruz Museum of Natural History
- College-specific resources
- Other (not UCSC-specific): Sigma Xi: Up to $1000 to support research in STEM

Undergraduate Research Internships

- CAMINO: Provides inclusive research opportunities, funding and professional community to students exploring careers in field science and environmental conservation
- NSF REU: NSF-funded research opportunities at universities and museums
- Summer Undergraduate Research Fellows:
- Smithsonian Tropical Research Institute Internships: Conduct field research in Panama
- NOAA Ernest F. Hollings Scholars: Scholarships for tuition and summer internships in oceanic and atmospheric science.
- Sign up for listservs ECOLOG, EVOLDIR (Evolution Directory)
- Check job boards: Department of Wildlife and Fisheries Sciences Job Board

Graduate Fellowships

- NSF GRFP: Three years of fellowship funding to support graduate students complete scientific research in STEM fields
- NDSEG: Three years of fellowship funding from the Department of Defense for doctoral students working in STEM fields

Dr. Robin Dunkin

Assistant Teaching Professor, UCSC

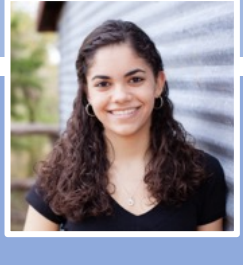
PhD, EEB UCSC Williams Lab

Dissertation Topic: Ecophysiology/Conservation of African Elephants

MS Biology University of North Carolina Wilmington

Through both formal scientific investigation as well as everyday classroom practices I am working to incorporate evidence-based teaching methods to create rigorous, inclusive, and effective classrooms at UCSC. I am honored to be working with several excellent campus partners, and with support to UCSC through HHMI, to study current teaching practices as well as apply evidence-based methods to large lecture and active learning courses. In addition to teaching, I also run the Marine Mammal Stranding Program and mentor undergraduates through several different programs.

Contact me: Email: rdunkin@ucsc.edu - Website: dunkin.eeb.ucsc.edu/



Arina Favilla

3rd year PhD Student

Advisor: Dan Costa

Dissertation topic: Diving behavior and ecophysiology of marine megafauna

BS in Biomedical Engineering, Double Major in Marine Science University of Miami

I studied Marine Science and Biomedical Engineering at the University of Miami. Initially, I had a broad interest in marine animals, and through two summer REUs and an internship that involved shark tagging fieldwork, I became particularly interested in the movement ecology and ecophysiology of marine megafauna. As a graduate student, I am studying the diving behavior and physiology of one of the deepest diving marine mammals, the northern elephant seal. Using biotelemetry, I aim to integrate physiological data with movement data to better understand their physiological ecology and vulnerability to anthropogenic disturbances and a changing environment. Aside from research, I have been involved with WiSE and love sharing my passion for science with younger generations. I also organize and lead a Seafood Fraud Project at a local high school, where students get to do science that investigates a relevant, real-world issue.

Contact me: Email: afavilla@ucsc.edu

Jessie Kendall-Bar

3rd year PhD Student

Advisors: Dan Costa & Terrie Williams

Dissertation topic: Neurophysiology of Marine Mammals

BA in Marine Science & Integrative Biology - UC Berkeley

I studied Marine Science and Integrative Biology at UC Berkeley. I've conducted research projects on a wide range of marine topics, including oceanic geochemistry, cephalopod and arthropod mating behavior, moray eel movement, and marine mammal sleep. Now, I am fascinated by how the brains of marine mammals, which have evolved convergently with our own, have developed such incredible resistance to oxygen and sleep deprivation.

I also create multimedia illustrations, animations, children's books, and infographics to accompany my own science as well as the science of others. At the interface of science and art, I endeavor not only to make meaningful discoveries, but also to convey those results broadly and creatively to impact diverse populations within and outside academia.

Contact me: Email: jkb@ucsc.edu - Website: jessiekb.com - IG: @jessiekb_art

Kyle Reid

Current PhD Student

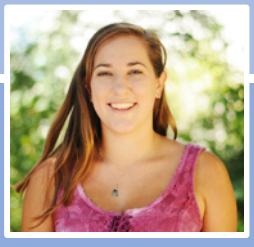
Advisor: Erika Zaveleta

Dissertation topic: Impacts of agricultural development on California bat species

Growing up on Chicago's south side, a former high school drop out, Kyle Reid turned his love for research into an opportunity to turn his life around, becoming an award-winning educator and researcher. After earning his Associate Degree in Science at Olive Harvey College, Kyle began researching through a number of fellowships and found a love for field research, ecosystem services, and bat ecology.

Kyle's research looks at the impacts of agricultural development on California bat species. He also continues to support under-represented students through his work with the Doris Duke Conservation Scholar Program and the Center to Advance Mentored Inquiry-Based Opportunities (CAMINO).

Contact me: Email: kyreid@ucsc.edu - Website: https://reidaboutbats.wordpress.com/



Regina Spranger

4th year PhD Candidate

Advisor: Barry Sinervo

Dissertation topic: Thermal Biology of Salamanders

BA in Integrative Biology - UC Berkeley

I study how ectotherms will respond to the stressors of climate change. I am currently studying if salamanders have the potential to acclimate to rising temperatures. I am raising salamanders in different climate change scenarios and measuring if they can adjust their thermal traits accordingly. With this work, I will be able to predict salamander extinction risk for the future and can use it for conservation planning!

I am also the pedagogy fellow for the EEB department, working with the university to train our TAs to better assist undergrad learning and develop inclusive and equitable teaching strategies. I also love sharing science with our community and I am an outreach officer for the Women in Science and Engineering group. I bring science experiments to elementary school and give lab tours to local middle and high schools.

Contact me: rsprange@ucsc.edu - Website: https://rsprange.wixsite.com/reginaspranger

Doriane Weiler

4th year PhD Student

Advisor: Suzanne Alonzo

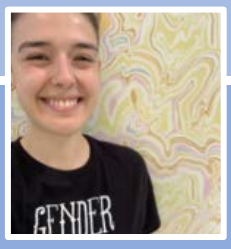
Dissertation topic: Sexual selection & eco-evo dynamics

BA in Marine Science & Integrative Biology - UC Berkeley

I study the evolution and ecology of sexually selected traits in mosquitofish, the world's most widespread invasive freshwater fish. I'm interested in how temperature shapes selection on sexually selected traits, how populations diverge in these traits, and whether this divergence has ecological consequences.

In addition to my research on mosquitofish, I've also studied mantis shrimp mating behavior, marine geochemistry, the evolution of animal multicellularity, and the effects of ocean acidification on squid behavior.

Contact me: dweiler@ucsc.edu - Website: doriweiler.wordpress.com – IG: @doriweiler



Laura Goetz

2nd year PhD Candidate

Advisors: Devon Pearse & Grant Pogson

Dissertation topic: Genetic basis of migration in steelhead

BA in Marine Biology & Gender Studies - Northeastern University

Laura is a second year graduate student in the Ecology and Evolutionary Biology department and NOAA affiliate. They are co-advised by Devon Pearse and Grant Pogson. Laura studies genetic and epigenetic influences in steelhead and rainbow trout life history expression through experimental rearing at Mokelumne River Hatchery. They have been a NSF fellow for 2 years. Laura grew up in Minneapolis, MN and did undergrad at Northeastern University in Boston, MA.

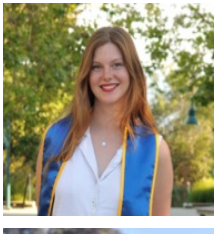
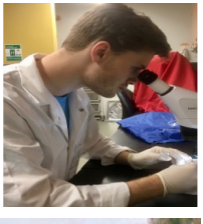
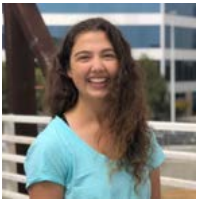
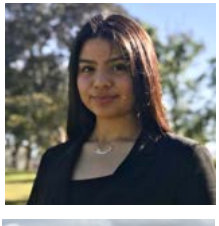
Contact me: Email: lgoetz@ucsc.edu - Website: lauracgoetz.com - IG: @lauragexplorer

Thank you undergraduate researchers!







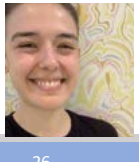


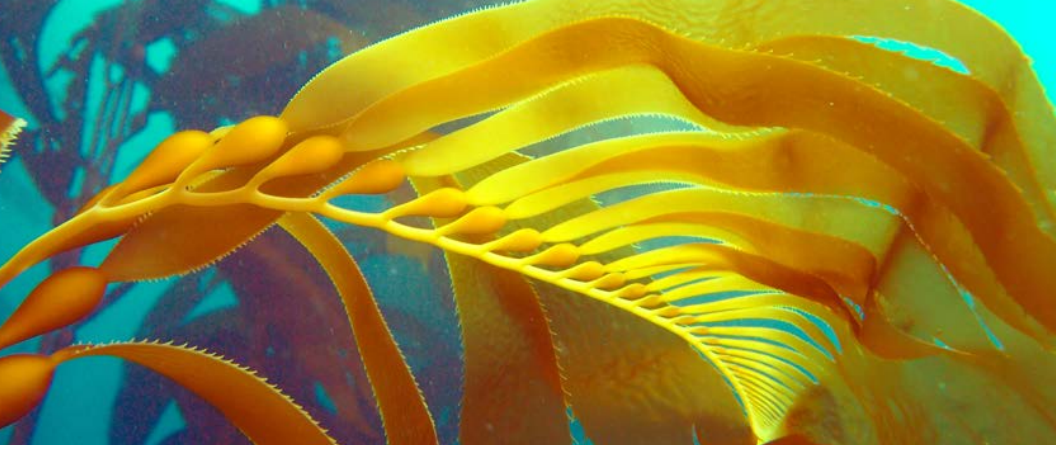

Robin Dunkin | Arina Favilla | Jessie KB | Dori Weiler | Kyle Reid | R. Spranger | Laura Goetz











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