Student Office of SUSTAINABILITY

Spring 2023

Human-wildlife Interactions: Squirrels as UWEC Ambassadors for the Natural World

Primary Proposal Contact(s)

Student Leadership:

The project will support the success of multiple UWEC students majoring in Biology, with an environmental focus: Maddie Mueller *(voting member of SOS; (muellemm7247@uwec.edu), Tia Ravara (ravarata6378@uwec.edu),* Grace Wainwright (WAINWRGL5112@uwec.edu), Ellie Williamson (williael9652@uwec.edu), Ilka Malin (malinim4780@uwec.edu), Ashleigh Kroschel (kroschad4962@uwec.edu), and Tori Carlsten (CARLSTVS0398@uwec.edu).

Collaboration

Contact information: Dr. Jennifer Smith (SmitJenn@uwec.edu)

Background: Dr. Smith (www.uwec.edu/profiles/smitjenn/) is a new tenure-track Assistant Professor of Biology. For the past decade, Dr. Smith has directed the Long-term Behavioral Ecology Project on California Ground Squirrels (www.JenniferElaineSmith.com) with her undergraduate team at Mills College, a Hispanic-serving women's college in urban Oakland, California. In the Fall of 2022, Dr. Smith joined the Biology Department at UWEC. Dr. Smith is excited to introduce the benefits of this project to enhance campus engagement with the natural world. Dr. Smith will train and mentor student leaders in all aspects of the project from question development through dissemination (e.g., presentations, publications, signage) on-campus to support student success and through media outlets (e.g., film, website presence, and news stories) to promote student recruitment. Her projects promote equity and access for undergraduates (www.jenniferelainesmith.com/team.html). Her internationally recognized research informs sustainability practices (www.jenniferelainesmith.com/research.html)and is regularly covered by media outlets (https://www.jenniferelainesmith.com/press.html).

Contact information: Dr. Sonja Wild (swild@ucdavis.edu)

Dr Sonja Wild (https://sites.google.com/view/sonjawild) is a behavioral ecologist whose research focuses on the drivers that lead to behavioral diversity in wild animal populations. In November 2022, she joined the University of California Davis as a postdoctoral researcher on a 2-year mobility fellowship awarded by the Swiss National Science Foundation to study the impact of human disturbance on social network structure in California ground squirrels. Dr. Wild will assist in all phases of the scientific aspects of this research project, particularly with field research documenting human-wildlife interactions. Dr. Wild is also an outstanding photographer and will document the lives of squirrels for signage to help promote them as ambassadors for the natural world. Dr. Wild's fellowship funds will cover Dr. Wild's living expenses and supplies and equipment to support this UWEC student project but are not permitted to cover the student travel, housing, or stipends. Research: https://sites.google.com/view/sonjawild/science/research-projects
Photography: https://sites.google.com/view/sonjawild/photography

Contact information: Jesse Yang (YANGJESS@uwec.edu)
Videographer, Integrated Marketing & Communications
Jesse Yang is an UWEC alumna who is currently collaborating with Dr. Smith's class to create a short film. Our future goal is to seek funds for a squirrel ambassador film for UWEC.

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Project Abstract

As humans expand across the globe, we are significantly impacting the distribution, behavior, and physiology of other animals. This undergraduate research project in California aims to elucidate the impacts of humans on wildlife using ground squirrels as a model. The research project will assess (1) short-term impacts of humans on animal learning strategies, social networks, and physiology by studying squirrels that reside at two site that differ in their levels of human disturbance and (2) long-term effects of human-induced climate change on population and community level processes by contributing to a decadal data set on ground squirrels. Students and collaborators will share their knowledge gained from this project to positively impact sustainability practices and awareness within the UWEC community through presentations, publications, public outreach, and efforts to foster student retention/recruitment.

Long-term Behavioral Ecology Project at Briones Regional Park

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Narrative

Sustainability Area(s) Addressed

The project supports sustainability efforts including campus ecology, human-wildlife interaction research, community-engaged partnerships, environmental education, and climate change.

Sustainability Outcomes

Sustainability is valuing the interdependence of our economic, environmental, and social systems. Please explain how your project addresses these three components of sustainability.

1. Economic Responsibilities

The project is a sound investment in the UWEC community. It will establish our campus as host for the Long-term Behavioral Ecology Project on California Ground Squirrels. It will invest in the research program of a new faculty member and her undergraduate collaborators. This project will serve as a foundation for future research and extramural funds to contribute to the local economy. Dr. Smith plans to apply for a Long-Term Research in Environmental Biology Grant from the National Science Foundation to support the next ten years of this long-term project. A continuous long-term data set is required to be eligible for this generous external grant so that this seed funding would provide an investment toward this goal. The training of student researchers made possible by this project will also help to retain local biologists with a passion for sustainability in our workforce. This project is funded in part through the Office of Research and Sponsored Projects through the Biology Scholars Research Program which provides students with a small living stipend of $2,300 for the entire summer; these funds are insufficient to cover travel and housing expenses in the Bay Area and therefore additional funds are required to achieve the project goals. Whenever possible, costs will be reduced (e.g., ride bikes rather than pay $6/gallon for fuel) to get to and from the field site each day. We have also identified the most economical housing possible. All Green Funds allocated towards this project will be fully acknowledged in publications, outreach events, and websites.

2. Environmental Responsibilities

This project seeks to reduce the negative environmental impacts of UWEC and its students through increasing awareness about the (1) short-term consequences of human presence on wildlife communities (e.g., human interactions influence behavior and physiology and native mammals) and (2) long-term consequences of human-induced climate change through decadal studies of populations – using squirrels as a lens. Shared insights from this project will promote awareness to UWEC students and community members' day-to-day influence on natural systems. This project will specifically promote environmental sustainability by educating community members about how their actions have short-term consequences on wildlife communities through human presence in parks and long-term consequences through of human-induced climate change – using squirrels as a lens.

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3. Social Responsibilities

The project will benefit the UW-Eau Claire campus community by sharing our findings regarding how humans are impacting animals all around the world – using squirrels as ambassadors – to promote a sense of connection to and responsibility for the natural world. This highly visible project will be a cornerstone in the Biology Department – used for recruitment of new students – with results disseminated broadly through various presentations, scientific publications, and signage (in or near Putman Park, depending upon regulations). Sustainability will also be fostered through equity, diversity, and inclusion efforts to foster a sense of belonging on Team Squirrel and with campus community members the new cultural perspectives gained around achieving sustainability goals from partnerships with LatinX community members in the Bay Area of California. This project will therefore also address social responsibility to promote awareness on the UWEC campus based on new perspectives gained from interacting with diverse voices and community members across the nation.

Project Timeline

In Spring 2023: Student-faculty collaborations commenced on the UWEC campus in preparation for the summer months. Dr. Smith has already booked a podcast interview for Spring 2023 with PBS (Public Broadcasting Service) all about squirrels. All permissions from government agencies and UWEC are also in place.

In Summer 2023, Team Squirrel will travel to California for their educational experience and data collection. Photos of squirrels, primarily by Dr. Wild, will be taken for poster and outreach events. We will also aim to film squirrels in the area to support media efforts. ***The success of this project rests on securing travel and housing funding for the field component.***

In Fall 2023, lab research will continue in Eau Claire to analyze biological samples and observational data. We will communicate with local media outlets and school programs to share our summer adventures and their sustainability implications with the public.

During this time, we will explore internal grant opportunities to create a film about our project. In Spring 2023, ecological data will be disseminated to professional audiences through posters at CERCA (Celebration for Excellence in Research and Creative Activity) and the preparation of scientific manuscripts to share our findings to promote sustainability practices. We aim to host a table in collaboration with SOS on the UWEC mall and/or at Beaver Creek to target community members on one or more of the following holidays: Darwin Day, Ground Hog Day, National Squirrel Appreciation Day, and Earth Day.

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Assessment

This project will be assessed based on the ability for ecological data to be collected safely and effectively in California by UWEC students. Expected outcomes include publications, presentations, and public outreach. We will quantify our success in monitoring ground squirrels by reporting the numbers observed and samples collected. We will also assess our ability to disseminate our findings at local and national meetings, in international journals and through interactions with students and the public attendance at tabling/outreach events.

Maintenance

Dr. Smith will oversee the database management in collaboration with the Learning and Technology Services. Dr. Smith will also collaborate with the ASK (Administrative Support Knowledge) Center to arrange safe transportation and accommodations to support the data collection in California. She will also work with members of the Biology Department to continue to recruit new students to the program to ensure it is sustainable going into future years.

Communication

This project will be communicated to the student body through various means, presentations at CERCA, tabling on/off campus, recruitment events for admitted students, contacts at local news, and through Jesse Yang and her colleagues in Integrated Marketing & Communications. This project will also be promoted by the Biology Department to our student body, particularly in Dr. Smith's ecology courses and the Biology Research Scholars Program.

Project Budget

InteRЯesidential Student Housing at Mount Diablo Community College:

*$900/month/person * 7 individuals for 2 months each……..**$12,600***

(NOTE: Apartment rentals are ~$3-5K/month; this negotiable rate is best available)

Round Trip Travel to and from the Bay Area:

*Flights from MSP to SFO: $480 * 7 individuals……....**$3,360***

*Shared Ground Transportation to and from airports……..**$500***

Sustainable Ground Transportation to and from Briones Regional Park (via bikes!)

*7 bike rentals from UC-Davis * $50/per individual……**$350***

(NOTE: Fuel for automobiles is roughly $6.00/gallon in the Bay Area)

*Fuel for carrying equipment to and from the field site……..….**$500***

Supplies: Printing for Posters & Stickers**……...**$500

Requested budget…**……..….**$17,810

Budget narrative. *The cost of housing in the Bay Area far exceeds that of Eau Claire. The team will need support to travel to Briones Regional Park in California this summer. We will rent bikes to get to and from the field site and purchase minimal supplies for promoting awareness. One field vehicle will be required to carry equipment to and from the remote site each day.*

Other budget considerations. *Capital Expenditures: None; Advertising/Publicity: none (will fundraise for film production outside of this grant); Student Stipends: $2,300 secured from Biology Research Scholars Program; Installation: None; Permits/Licensing Travel: Scientific Permits Current (already secured); Additional Funding Sources: $2,500 to cover field vehicle and supplies, pending from Save Mount Diablo; Reoccurring maintenance funds: None.*