The Aggie Brickyard

assembling the blocks of ecology at UC Davis

FALL 2024

VOL. XIV

FACULTY Q&A
DR. RYAN MEYER

FEATURES
JUST SCIENCE

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MOSAICS

GGE PhD student Sidney Woodruff holds a female Northwestern pond turtle after removing it from a turtle trap during fieldwork.

- ***COVER:*** *Photo by Tali Caspi. A coyote looks over the city skyline in Bernal Heights, San Francisco. Learn more about Tali's research on coyotes in the Student Perspectives section of this issue.*

LETTER FROM THE EDITORS

Hello and welcome to our 14th issue of the Aggie Brickyard-Mosaics!

The goal of this issue is to showcase the mosaic that is GGE, in which many singular, unique, and worthy components come together to create an even greater whole. The research, teaching, and community built by our students, faculty and staff is truly more than the sum of its parts and we are excited the Brickyard can continue to be a venue to showcase that. We hope this selection of work from our GGE students, staff, and faculty show how our diversity of experiences, perspectives, and science create the larger picture of the GGE. To kick off the issue the Chair of our Joint Doctoral Program in Ecology (JDPE), Dr. Walter Oechel, contributed this issue's letter from the chair to highlight the history and benefits of the program. His reflections help us recognize how UC Davis and San Diego State University created a mosaic of stronger science and community by joining forces for this program. As always, the Brickyard also combines art and science content from across the GGE, which we felt fit the varied art and science definitions of our Mosaic theme:

- The ecological mosaic is an aggregation of patches of different types in which the interactions are determined by the functions that this mosaic is developing. **In other words, a mosaic is the representation of the emergent properties of component patches (**Ecology Center 2023)
- The word "mosaic" is from the medieval Latin "musaicus' ' and **means a creation from the Muses** (**nine Greek divinities of arts and sciences**, daughters of Zeus and Mnemosine). Mosaic was originally used to describe artistic creation using **small pieces** of material **placed close to each other to build figures** (Ecology Center 2023)
- Landscape mosaic is a **heterogeneous area, composed of different communities or a cluster of different ecosystems** (Foreman, 1995)
- Mosaic coevolution is a theory in which **geographic location and community ecology shape differing coevolution** between strongly interacting species in multiple populations. These populations may be separated by space and/or time (Wikipedia)

We touch upon the art form of Mosaic with literal mosaics created during the EGSA Picnic Day outreach event, and the ways our students fit art and poetry into our lives (see our Art & Science section). Our ecological research contributes to understanding the landscape or ecological mosaic by building understanding of the many working parts of diverse ecosystems (see our Student Publications section). As you browse the issue, we hope you see the many ways GGE contributes to or creates larger mosaics with our individual contributions!

In particular, we wanted to highlight how our work in the GGE fits into larger communities particularly by showcasing the great science communication, citizen science, and outreach and education that we do everyday in the GGE (see the Student Reflections and Faculty Interview). Students and faculty are hard at work everyday to ensure our research has positive impacts for the communities and ecosystems in which we work (check out our global research map in the Loose Bricks section). We are also building our own community within the GGE. Check out the event write-ups to see more of recent GGE events like the EGSA's Ecology Art Show, Picnic Day engagement, and Charity Event or involvement at the Undergraduate Research Fair. Each of us is an important component of the GGE mosaic and we hope this issue provides a chance to see some of those great contributions and reflect on your own. We appreciate you and all that you contribute to the GGE; like an essential piece of a mosaic the GGE wouldn't look the same without you!

Sincerely,
Your Aggie Brickyard Editors

SHARED FROM SAN DIEGO

Letter from the Joint Doctoral Program in Ecology Chair, Dr. Walter Oechel

The Joint Doctoral Program in Ecology (JDPE) between UC Davis and San Diego State University (SDSU) is an integral part of the GGE. The chair of the JDPE, Dr. Walter Oechel, wrote our letter from the chair for this issue to share the history and value of this unique program that unites our two campuses.

June 19, 2024

The San Diego State University (SDSU) and University of California Joint Doctoral Program in Ecology (JDPE) is an excellent example of the depth, extent, and success of the GGE "mosaic".

The SDSU/UC JDPE was formed by legislative order in the early 1970's between SDSU and UC Riverside (UCR). However, Dr. Boyd Strain, the key ecologist at UCR and the person responsible for the formation of the JDPE on the UC side, left UCR for a position at Duke University. This loss prompted the move of the program from UCR to UC Davis (UCD) in 1977.

The goal of the program originally was, and still is, to provide excellent training in ecology for a limited number of doctoral students. There are several distinct advantages to a joint program, particularly from a student's viewpoint. Among the perceived advantages at the time were:

1. Making available to students a broad range of faculty members, a large diversity of courses, and a variety of possible research experiences.
2. Providing a broad variety of field areas for ecological research. Representations of nearly-all the major biomes of California are close to one or the other of the two campuses and their field stations.
3. Providing a range of sources of support for qualified students.
4. Providing a variety of teaching experiences for doctoral students.

In addition to this goal and these advantages, it was felt that faculty members on both campuses could benefit from a joint doctoral program by exchanging ideas and experiences with persons at the cooperating campus, by having a greater range of possible field sites available, by enhancing the possibilities for joint research programs, and, for UC Davis faculty members, by having students supported by SDSU available as research assistants while they are on the Davis campus. Although the benefits to the students in the joint program were the primary concerns, these potential advantages to the participating faculty members were also explicit goals.

Almost 5 decades later, these goals and objectives seem to be well fulfilled. JDPE students benefit from the large range of faculty and courses at UCD and interactions at events such as the Odyssey. The students have appreciated and benefited from the breadth of expertise of faculty and students at Davis, as well as the range of courses at Davis and the friendships and exchanges formed while in the program and beyond.

However, the benefits are not meant to be one way. GGE students have valued the interactions with students and faculty from SDSU including the diverse student body at SDSU. SDSU makes all its facilities and field stations in ecology available to GGE faculty and students. SDSU also makes lectureships available to GGE students nearing completion of their Ph.D. when there are openings in course offerings. This is a source of income but all excellent experience to be able to add to one's CV. Students in the GGE have benefited through interaction with JDPE students and SDSU faculty. SDSU faculty have served on QE exams, dissertation committees, proposals, publications with GGE faculty and students.

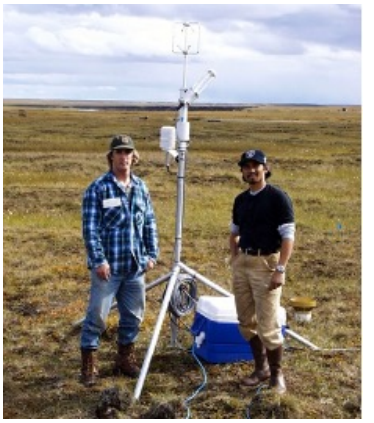
As an indication of the successful collaboration between SDSU and UCD faculty, staff, and students, it is estimated that there have been more than 125 publications in Ecology and Marine Biology with joint JDPE and GGE authors since 1995. These papers are estimated to have been cited more than 12,500 times with an average of more than 100 citations per paper and up to 1,700 citations per year.

More than 150 JDPE students have graduated since the first student was accepted into the JDPE with UC Davis in 1978 and almost all have gone on to successful positions appropriate to a Ph.D. in Ecology including in academia, government agencies, and private enterprise.

SDSU faculty and students value the JDPE program with UC Davis and the interaction with GGE faculty, staff, and students. Further, the JDPE program welcomes additional use of SDSU facilities and opportunities by GGE students and faculty. The students and faculty at SDSU especially value the large and diverse faculty, student body, research expertise, and course offerings of the GGE that form part of the rich mosaic that is the GGE.

Many lasting personal and professional friendships have been formed between students and faculty on both campuses, through this program.

— Dr. Walt Oechel, SDSU



Scenes from SDSU (clockwise from top left): **SDSU Main Campus, Studying Global Change and Kelp Forest Ecology, Studying Behavioral Ecology and Conservation, Arctic Research with Rommel Zulueta (JDPE Student), Sea Turtle Conservation Research, Sky Arrow Research Aircraft Determining Ecosystem Metabolism**

FACULTY Q & A

Interview with Dr. Ryan Meyer

By Brandi Goss

Read on to learn about Dr. Ryan Meyer, GGE faculty and Executive Director of the Center for Community and Citizen Science, and his thoughts on the mosaic of ecology and the role of citizen and community science!

BG: What led you to your position as the executive director of the center for community and citizen science here at UC Davis?

RM: My background is broader than community and citizen science. It focused on the dynamics between science and society - the role of science in decision making, the role of science in institutions in shaping how knowledge advances. And it draws on different social science disciplines such as science and technology studies, science and technology policy, philosophy of science, and history of science a bit. I became interested in those things coming out of an undergraduate degree in biology where I wanted to study ecology and save the world and I started to feel less clear about the connection between those two things. I got lucky enough to get a job at the Earth Institute at Columbia University where there was this huge interdisciplinary effort to leverage knowledge about sustainable development on behalf of communities. I got exposed to a lot of the ways in which that is enormously complicated and intertwined with politics and institutions and history and just realized 'Okay, this is what's really interesting to me'.

I love science, but I don't know that I would be a really good natural scientist. I struggled to come up with answerable questions and I started to realize 'I want to make this connection between science and society better; we have all this public investment in science and it's not clear how we steer it toward benefit and how we deal with ethical issues related to those choices.' I wouldn't have been able to express that in that way back then, but I was amazed to find that 'hey, there are whole disciplines focused on this stuff!' So I kind of made the jump into social science and did a dissertation focused on climate science and the funding of climate science in the United States and a little bit in Australia as well. Then, I started working at a non-profit called the California Ocean Science Trust, where I got a lot of really great hands-on experience with trying to improve that link between state agencies and scientists focused on ocean issues in California. That's where I realized 'Okay, I like the academic side of this, but I also like figuring out how to do it in practice.' And I always knew that I might want to come back to a university if it could be more like a mission driven thing that had more connection to the outside world and the opportunity to start the center seemed like exactly that. Citizen science was something I had gotten a lot of exposure to at the Ocean Science Trust because there's such an amazing array of programs already working with state agencies in California, so I wanted to explore how we could work on those connections through public participation in science and so that's what we've been doing for the last 8 years.

BG: In this issue, our theme is mosaics - the patchwork of skills, backgrounds, and perspectives that make up the whole in ecology. How do you imagine citizen and community science contributing to the mosaic of ecology and why is it an important piece of the puzzle?

RM: That is such a great metaphor especially when you think about the role of different community and citizen science approaches and practices within ecology. Our Center has a fellowship program that is specifically aimed at helping students understand and gain experience in this. *(continued on next page)*

RM (cont.): We sometimes say community and citizen science is a tool in the toolbox. People who are pursuing a career in science are not necessarily all doing citizen science all the time. However, with this program we're hoping to increase the number of scientists that are aware of it and understand why it's important, why it's becoming such a widespread practice, and how it can have value. Citizen and community science is not just valuable for advancing knowledge, but also for identifying the role of that knowledge in the world, for producing benefits for the communities that are involved, and for the scientists themselves who really can be changed and benefit from these processes. So in that sense, I think as a puzzle piece or mosaic piece it has been growing in it's prominence and we need the institutional response to embrace it and show where it fits and how it should fit, and normalize the idea that people should learn this alongside any number of other methods and approaches that they learn.

BG: A friend of mine recently told me that one of their mentors was told not to engage in community-engaged research until they get tenure because it takes too long. As someone who facilitates this kind of work, what would you say in response to that?

RM: That's a tough one because I'd like to say 'No! That's wrong, everyone should do it if they want!' But there is the reality of our science system and the way it is set up and a question about who should be responsible for pushing back against that and at what levels. I think those sorts of warnings are not necessarily bad, but what I think I would rather hear is 'Let's talk together about how we can make your case compelling even though you're doing this thing that's really important to you and that is not always seen the way it should be seen by this university or department.' UC Davis has an Office of Public Scholarship and Engagement that is trying to not only lift up cool examples of community engaged research, but also change the way the institution values and acknowledges the work that goes into citizen and community science. But, there are really thorny issues buried deep in the bureaucracy of science that make this hard. When I write a grant I'm typically doing it with an external partner who's taking a big chunk of the budget because I'm doing it equitably. So, not only is my work more expensive, but dollar for dollar, traditional science productivity metrics are often lower because we have fewer researchers who publish papers. But, we also have other kinds of products that are coming out of it that are of value to the community and we are putting some of our time and energy into making sure that those land the way they need to land. So, in a million dollar grant, the amount that's going toward traditional metrics of science is lower. Right now there's a new practice of allowing a community engaged scholarship statement to go along with the tenure file and I think that's a nice step, but until people see that as not just an add on, but as a replacement of other kinds of scientific work of equal value, we have a challenge. And individuals especially are going to have a challenge in some departments where that stuff hasn't been normalized and isn't evaluated correctly.

BG: You are a faculty member in three different graduate groups on campus - Education, Ecology, and Environmental Policy & Management - can you talk about what has allowed you to be so multidisciplinary at UC Davis?

RM: I don't have an education background formally in terms of my academic training, so I'm a bit of a sore thumb here at the school of education where this research center is located. I'm learning a ton all the time from education researchers and that's been a really rich experience, but I also feel a bit more at home with some of the faculty and students in these other groups. I think one thing that's really cool about UC Davis, which is definitely not true at the vast majority of universities, is that there's a specific focus on environmental science education and there's a real openness to non-formal education in addition to formal education. That opens up a lot of potential for connections between education and these other fields which is super exciting and it's one of the reasons why I was so excited to come and do this here. My background is as a social scientist but I've always liked working with natural scientists and that's always kind of been my zone. A lot of our collaborations generally – not just in terms of my grad group involvement – are outside the school of education and in natural science areas such as our Spinning Salmon program with the Center for Watershed Sciences.

BG: What do you want your role in the GGE mosaic to be?

RM: Selfishly I just learn so much from GGE students. I love hanging out with GGE students and hearing about their research. Teaching this Spring seminar on community and citizen science has been so eye opening to see what students bring into their practice as early career ecologists. It's just really fun! I don't know if that's a role so much as motivation. I think for me and for our center we'd like to be a resource for the GGE and for other groups as well. There's a lot of interest and demand for support related to *(continued next page)* ...

RM (cont.): … citizen and community science and just community engagement more broadly. Helping with that is a major reason I wanted to come and start the center, not just to help external partners do this, but to help scientists do this and take this stuff into their long careers.

Learn more about the Center!

UCDAVIS Center for Community and Citizen Science

Visit https://education.ucdavis.edu/center-community-and-citizen-science

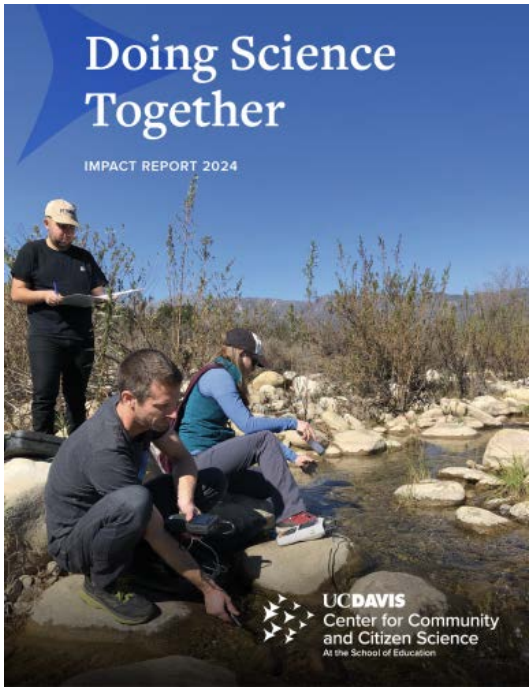
Mission Statement: Through its research and programming, the Center for Community and Citizen Science helps scientists, communities, and other members of the public collaborate on science to address environmental problems as a part of civic life. The center researches ways to broaden and improve participation in science by diverse communities, use citizen science to effectively improve scientific learning, and develop resources and tools for building successful citizen science programs.

Check out the Community and Citizen Science in Conservation Fellowship:

"provides graduate students in conservation with the opportunity for training, funding , and guided hands-on experience with Community and Citizen Science"

In Dr. Meyer's Words: "We are an organization that helps many different kinds of partners do citizen or community science - whether that's working with professional scientists, community groups, teachers and students, or natural history museums. And we bring a certain set of experiences and knowledge to that but also values about ethics, equity, and what it means to collaborate productively toward mutual benefit. So we are not just supporting collaboration, we're also kind of shaping it. Our notion is that not only does citizen science benefit the participants who are volunteering their time; it should change how science works. It should change science institutions to be more open, accessible, and responsive to the communities scientists are working in."

Read the Center's 2024 Impact Report!



STUDENT PUBLICATIONS

El-Khattabi, A.R., **Gmoser-Daskalakis, K.**, & Pierce, G. 2023. Keep your head above water: Explaining disparities in local drinking water bills. *PLOS Water, 2*(12): e000190.

Farruggia, M. J., Brahney, J., Tanentzap, A. J., Brentrup, J. A., Brighenti, L. S., Chandra, S., Cortés, A., Fernandez, R. L., Fischer, J. M., Forrest, A. L., Jin, Y., Larrieu, K., McCullough, I. M., Oleksy, I. A., Pilla, R. M., Rusak, J. A., Scordo, F., Smits, A. P., Symons, C. C., **Tang, M.**, Woodman, S. G., & Sadro, S. 2024. Wildfire smoke impacts lake ecosystems. *Global Change Biology,* 30:e17367.

View a press release with a summary of the findings here: https://tinyurl.com/FarruggiaWildfires

Green, J. C., Solins, J.P., Brissette, L.E., Benning, T.L.,Gould, K., Bell, E.M., & Cadenasso, M.L. 2024. Patterns of water-wise residential landscaping in a drought-prone city. *Journal of Urban Ecology*, 10(1), juae003.

Kerlin, K. 2024. "U.S. Reservoirs Hold Billions of Pounds of Fish: Better Reservoir Management Could Aid Food Security and Fisheries Conservation". *UC Davis*. https://tinyurl.com/KerlinUSreservoirs

The above UC Davis news article summarizes findings of the full research article by the team: **Parisek, C.A.**, De Castro, F.A., Colby, J.D., Leidy, G.R., Sadro, S., & Rypel, A.L. 2024. Reservoir ecosystems support large pools of fish biomass. *Scientific Reports, 14:* 9428.

Oliver, R.Y., Chapman, M., Emery, N., Gillespie, L., Gownaris, N., Leiker, S., Nisi, A.C., **Ayers, D.**, Breckheimer, I., Blondin, H., Hoffman, A., Pagniello, C., Raisle, M., & Zimmerman, N. 2024. Opening a conversation on responsible environmental data science in the age of large language models. *Environmental Data Science*, 3.

Pozzi, T., & Hillis, V. 2023. Social networks impact flood risk mitigation behavior: A case study of lidar adoption in the Pacific Northwest, US. *Climate Risk Management,* 41: 100527.

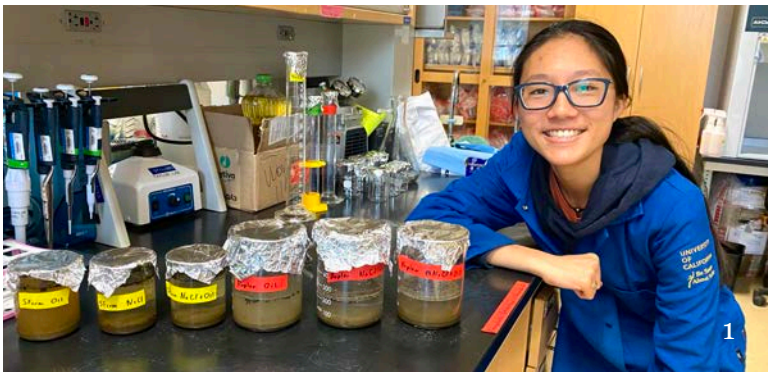
Shukla, I., Gaynor, K.M., Worm, B., & Darimont, C. 2023. The diversity of animals identified as keystone species. *Ecology and Evolution,* 13(10): e10561.

Smith, J.A., **McDaniels, M.E.**, Peacor, S.D., **Bolas, E.C.**, Cherry, M.J., Dorn, N.J., **Feldman, O.K.**, Kimbro, D.L., **Leonhardt, E.K.**, Peckham, N.E., Sheriff, M.J., Gaynor, K.M. 2024. Population and community consequences of perceived risk from humans in wildlife. *Ecology Letters* 27(6): e14456.

Tattoni, D.J., & LaBarbera, K. 2023. A simple method to estimate capture height biases at landbird banding stations: opportunities and limitations. Journal of Field Ornithology 94(6).

Tattoni, D.J. 2023. An eccentric preformative molt with incomplete replacement of primary coverts in a Dark-eyed Junco. *Western Birds,* 53: 248-251.

Zeeshan, N., Freer-Smith, P., Murtaza, G., **Wong, A.E.**, and Taylor, G. 2024. His dark materials: quantifying the problem of particulate matter in the agricultural landscape of California. *Atmospheric Environment*, 120562.



(1) Amanda Wong tests methods for extracting microplastics from soil using salt and canola oil. (2) Elk spotted by Michelle See while checking camera traps for the Road Ecology Center. (3) Two undergraduate students (left) assist Sidney Woodruff in measuring the shell width of a red-eared slider in the Arboretum. (4) Sidney retrieving turtles captured in a large hoop net and (5) holding a juvenile Northwestern pond turtle. (6) Captured by Tessa Putz. (7) To test if bees affect the microbiota of watermelon, bees are first prevented from visiting flowers to set a baseline and controls. (8) Interns Karen (left) and Carina (center) help Gillian (right) with this experiment. Control flowers were hand-pollinated, but (9) experimental flowers were visited by honeybees.

Is it Just Science?

By Brandi Goss and Gillian Bergman

We are trained to be scientists. We are trained to examine the natural world; ask curious questions; engage in the magic of statistical analysis to attempt to explain those mysteries; imbue those findings with meaning; garner funds to support this pursuit of knowledge. Increasingly, we cannot "just" do science; we are asked to be Communicators. Educators. Problem-solvers. Artists. Canaries.

Advocates?

One aspect of the GGE student body that I find most invigorating and hope-inspiring is how justice-oriented so many of my peers are. Historically, my experience in environmental science was a deep sense of conflict between human and environmental needs. And maybe in some ways that is still true. But for the first time in my career I see pathways to justice for the Earth and its people; I see them in all of you. I have spoken with many about the importance of doing ethical research with local communities that prioritizes co-benefits and co-production of knowledge and is less extractive in nature than some historical research methods. I have seen the increasing interest in approaching ecological problems through a social-ecological lens that considers the fundamental interconnectedness of human and natural systems. I hear the emphasis of traditional ecological knowledge and the calls for indigenous sovereignty and management practices to be reinstituted. I am hopeful that the broader field of ecology is considering some of the important ethical questions that I see rising scientists continue to grapple with at Davis.

However, as a fourth year graduate student and someone who aims to do applied work that impacts both human and non-human communities, many of my important questions about how to be a "good" scientist remain unanswered:

- When the currency of our field necessitates speed, how do I slow down enough to build the relationships necessary to do more ethical work?
- How do I make my science most useful to both people and the planet?
- What is my role as a scientist? A question-answerer? An environmental educator? A community advocate?

GGE student, Serina Moheed, in a community needs assessment activity she created with other UC Davis graduate students and NOAA researchers.

- Who decides what questions get asked? The scientist? The community? The funders?
- Does prioritizing community values come with a personal cost under the current academic system? Who is most likely to bear the burden of those costs?

There is a growing body of literature on some of these subjects, but I worry that the current academic system may not be equipped to support young scientists in finding their individual answers to these questions. The inherent time constraints and reduced financial and academic freedom of graduate school often leave little room for engaging with the local communities that we work in before deciding on a research question. This makes experiential learning on these issues difficult, and there is also often a lack of coursework that addresses these key questions. Perhaps some of this knowledge can be garnered through interactions with community engaged faculty advisors, but that could result in inconsistent acquisition of an important skill set based on previous generations' values, knowledge, and limited bandwidth.

More consistent structured coursework on how ecological science becomes actionable and how to engage with communities and social scientists to produce mutually useful science is needed in the GGE. This might also be part of a larger training gap in the GGE regarding science ethics, a knowledge set which applies to all students, regardless of where they sit on the theoretical to applied spectrum. Dedicated space in the curriculum to think about science ethics and support students in identifying their values as a scientist is a broader area of need that could also encompass community-based science ethics. In an increasingly human-dominated planet and one with a violent history of settler colonialism, ecologists are recognizing that we don't have the luxury of separating the social and ecological elements of our systems. However, without these skills, it is difficult to put those pieces together in... (*continued on next page)*

… a meaningful way that aligns with self-identified values and serves communities, funders, and publishers.

We are trained to be scientists. How do we rise to the challenge of all the other things we must be in the pursuit of *just* science?

Table 1: Places to start; a suite of options to explore for beginning to implement these ideals into the curriculum and community of the GGE.

Seminar and symposium	Dedicating a quarter of the E&E seminar each year to scientists in non-academic or community-engaged (e.g., extension) roles. Recognizing that this seminar is run by the Ecology and Evolution department, another option would be developing a separate seminar series in the GGE or as a collaboration with the geography, community development, or environmental policy and management graduate groups that prioritizes work from non-academic or community-engaged professionals.
	Professional development events for introducing students to NGO's. It's important to start these conversations early in the students' career so that they can partner with relevant groups from the beginning of their graduate work, where appropriate. This could happen during Odyssey (similar to the tour of UC reserves) or as a virtual "collaborators" fair in conjunction with the GGE symposium.
Coursework additions or modifications	Including more social scientists and ecologists from diverse perspectives (e.g., scientists from NGOs, tribes etc.) as speakers in the core ecology curriculum.
	Development of courses/ECL290s on community-based science and science to action/ policy. Two recent 290's do this (citizen science in spring 2024 and one co-led by Brandi on making science useful in fall 2024), but more consistent offering of these types of participatory seminars or courses is needed.
	Co-development of a research methods course that provides a broader overview of methodological approaches from both ecological and social science disciplines and that is open to a variety of graduate groups and facilitates cross-discipline collaboration between these graduate groups (e.g., ecology, geography, community development, environmental policy and management, horticulture and agronomy, hydrologic sciences, plant biology, population biology).
	Develop a course on science ethics that could be guest-lecture based with collaboration from other departments (community development, horticulture and agronomy, environmental science and policy, philosophy, etc.) and cover a range of topics that would be applicable for a range of students (more theoretical to more applied). Possible topics could include: General science ethics, objectivity/subjectivity in environmental science & public policy, community-based science ethics, effective collaboration, publishing ethics, intellectual property, and data sharing.
EGSA Committee	Creation of a committee or sub-committee in the EGSA on science ethics that could lead development of trainings and events on a variety of ethics topics and potentially include recent efforts on field safety training as well. This committee could be a driving force in supporting longer-term maintenance of this kind of education in the graduate group and keeping this kind of education in line with student interests and needs.

Ecology Graduate Student Association: 2023-2024 Update

By Emily Mensch and Saba Saberi (Co-Chairs)

Hello from your 2023 - 2024 EGSA Co-Chairs, Emily and Saba! What an inspiring year of creativity and fun in the EGSA, from this year's leadership:

Diversity Committee: Cody Pham, Kay Garlick-Ott
Executive Committee: Katie Lauck, Becca Nelson
Treasurer: Mia Reed
Technology and Media: Gabby Yang
Academic/Symposium Committee: Sylvie Finn, Tessa Putz, Zoe Wood
Public Engagement Committee: Tatum Bernat, Serina Moheed
Social Committee: Andrea Odell, Sophia Simon, John Veon
Open Lab Meeting: David Mitchell, Amanda Wong
Charity Committee: Mary Badger, Francis Ulep
Field Safety Committee: Caroline Newell, Elsie Platzer

This year, we welcomed a lot of NEW! Caroline and Elsie led the push to integrate a new committee, Field Safety, to build a legacy of safe fieldwork for our community through training and resources. We reinstated our technology & media committee for the first time in a few years, and Gabby breathed fresh air into fun social media posts and the creation of a new and improved EGSA website (https://egsa.sf.ucdavis.edu/)! Tatum and Serina hosted a wonderful art show in collaboration with Third Space Art Collective, and Mary and Francis dreamt up a new theme for our wildly successful charity event. We also continued traditions which are EGSA staples- including a wonderful welcome picnic and weekly GGE happy hours hosted by Andrea, Sophia and John, and continuation of Open Lab Meetings from David and Amanda, a great opportunity to seek and provide academic peer support. Finally, Sylvie, Tessa and Zoe put on another inspirational academic symposium including a mix of research talks, discussions of diversity in ecology, and art from our student body.

We believe that EGSA acts as a great representation of the *mosaic* that makes up the GGE. When we come together and provide our unique expertise and background to our community, we make our grad group more interesting, more safe, more welcoming, and more fun! Each incoming cohort represents a new and expanded mosaic with different interests and ideas. Looking forward, we hope EGSA continues to build on our collective creativity and support of one another as the GGE grows and changes. May we build off of traditions from past GGE-ers, make them our own, and make new traditions entirely.

We can't wait to see what all of you come up with next.
With love and hope,
Emily and Saba

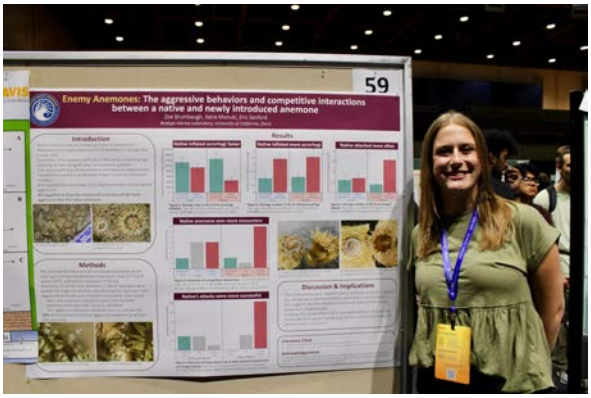
Event Reviews

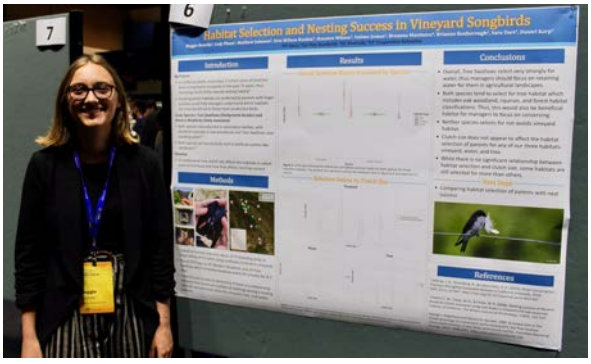
Read about great events in the UC Davis Ecology community over the past year from your fellow GGE students who where there!

Undergraduate Research Scholarship and Creative Activities Conference

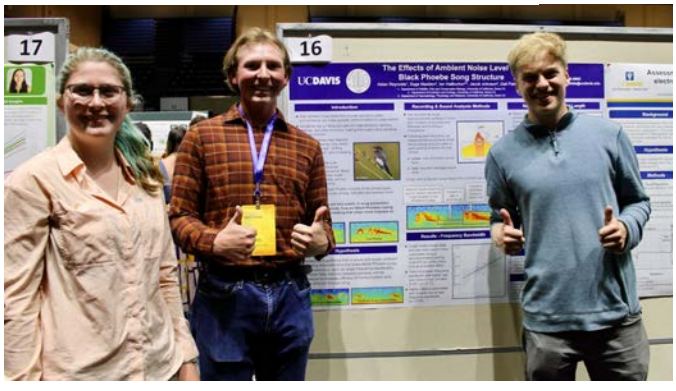
Review by Kay Garlick-Ott

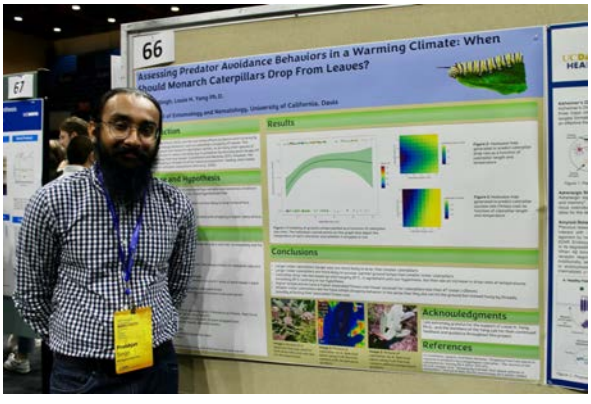
The Graduate Group in Ecology's outstanding undergraduate research volunteers, assistants, and associates had the chance to showcase their work from April 26-27, 2024, at the 35th Annual Undergraduate Research Scholarship and Creative Activities Conference. On day one, the University Credit Union Center was teeming with people; from our bright-eyed, well-dressed undergraduate presenters to the peers, professors, and family who came to learn from, support, and celebrate them. Chancellor Gary May estimated that over 880 presenters registered to present posters and to give talks, which were held on day two in Wellman Hall. For many students, the conference provided a professional platform for presenting their research, possibly for the first time, and marked the culmination of projects they have worked on for months. This year, the undergraduate projects in ecology were notably impact-oriented, focusing on consequences of climate change, invasive species, and habitat alteration.





Undergraduate Researchers (clockwise from top right): Zoe Brumbaugh (Sanford Lab), Joey Nguyen (Hull Lab), Maggie Bourda (Karp Lab), Aidan Reynolds (Patricelli Lab), Prabhjot Singh (Yang Lab)

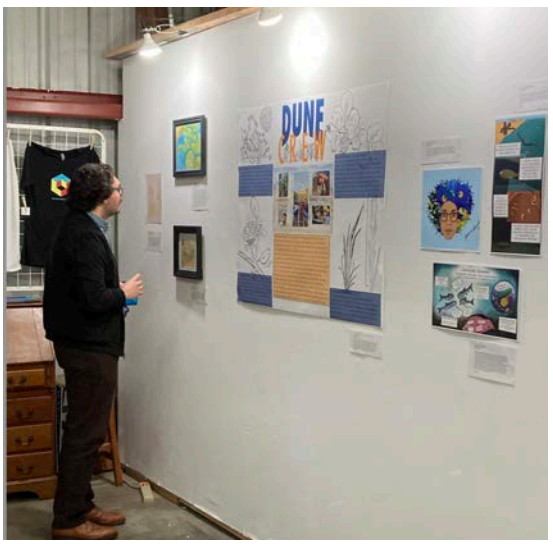




Ecology Art Show

Review by Kyra Gmoser-Daskalakis

On a bustling evening in March in Downtown Davis, the monthly 2nd Friday ArtAbout was in full swing. People meandered in and out of galleries and mingled with friends, family, and art alike- and the GGE joined in! On Friday March 8, the EGSA hosted its first ever Ecology Art Show at the Third Space Art Collective, the community art space at 17 Arboretum Drive. Organized by EGSA's Public Engagement Committee chairs Tatum Bernat and Serina Moheed, the event was an opportunity for GGE students to showcase art they created centered around ecology. With about 20 pieces from an array of mediums (painting, photography, collage, animation to name a few) and over 200 attendees from GGE and the general public, the event was a great success! For Tatum, a big highlight was seeing "people from the community looking happy and surprised" as they stopped in to view the art and even hear duck calls performed by John Veon and poetry by Becca Nelson. A major goal of the committee, according to Serina, was to "expand beyond Picnic Day [...] there's a lot of potential for cool outreach events". With the wide attendance and enthusiastic response, they certainly achieved their goal. The committee hopes the event will continue in the future, with the opportunity to connect GGE to the community, educate about ecology in new ways, and share our students' many talents and inspirations.



Attendees mingle and view the ecological art at Third Space Art Collective

EGSA Picnic Day Engagement

Review by Kyra Gmoser-Daskalakis

The EGSA Public Engagement Committee hosted their annual outreach event at Picnic Day on April 20th to showcase the GGE for the UC Davis community and visitors. Picnic Day is the annual UC Davis Open House and a chance for the various departments and campus groups to connect with the public and show some of what we do for education and research. The EGSA tables at Academic Surge were packed with visitors eager to engage in fun activities like looking at animal pelts and tracks or even seeing a live snake! The Aggie Brickyard even joined in the action, with an arts and crafts table for participants to create their own ecological mosaic or contribute to a community mosaic. Throughout the event, we hung the art creations in our very own gallery wall!

Gallery Wall of Creations from the Brickyard Mosaic Activity

EGSA Charity Event

Review by Gabby Yang

The EGSA Charity Committee co-chairs, Francis Ulep and Mary Badger, hosted the annual Charity Event at Ruhstaller's in Dixon, CA. Students, faculty, and friends wore their best thrifted outfits for the event's theme: Philan-Thrifty. Every year, the Charity Committee decides on an organization to support. This year, it was NorCal Resist, a non-profit that provides community aid from food distribution, brake light repair, deportation defense, and so much more. Anyone interested can get involved by volunteering their time at their brake light repair events and having fun in the sun at NorCal Resist's mutual aid farm on Sunday and Thursday evenings. In addition to purchasing tickets, a silent auction and themed cup sales provided extra donations to the organization. Local businesses and GGE students offered highly-anticipated items such as rock climbing passes, fishing trips, guided birding trips, baked goods, yoga classes, massages, museum tickets, and more! With the community support from event ticket sales, the cup fundraiser, silent auction, and direct donations, the GGE donated $3,220!

Thank you to all the businesses and GGE students that donated to the silent auction:
A Seat at the Table Books, Akasha Yoga, Asha Urban Baths, Bradyn O'Connor, Caroline Newell, Crocker Art Museum, Diana Munoz, Emily Mensch, Emily Phillips, Estreet Hair Salon, Francis Ulep, Goodwater Fly Fishing, Kyra Gmoser-Daskalakis, Laura Kojima, Lily Klinek, Lynette Williams, Masullo Wood Oven Pizza, Megan McDaniels, Meow Meow Tweet, Pachamama Coffee, Rocknasium, Room of Our Own Massage, Sacramento Pipeworks, UC Davis Craft Center, UC Davis Scientific Illustration Club: Project Logo, Upper Crust Baking, Woodstock's Pizza, Zoe Wood

Guests participating in the silent auction (left); and Peter Geoghan, GGE student and volunteer at NorCal Resist, making an announcement at the event (right)

STUDENT Q&AS

This issue, we are highlighting three students who are involved in citizen science and community outreach in their research!

Tali Caspi

Interviewed by Ava-Rose Beech

Tali Capsi is a 5th year PhD candidate working in the UC Davis Mammalian Ecology and Conservation Unit. She uses genomic tools to understand nutritional ecology of urban coyotes in the San Francisco area. As an urban ecologist, citizen science and community outreach are central to Tali's research. She initiated her citizen science based research project by reaching out to the first author of a paper focused on "The Urban Wildlife Information Network," run out of the Urban Wildlife Institute. After noticing that San Francisco and Oakland were partner cities of this network, she contacted the natural resources director of San Francisco Recreation and Parks. This connection catalyzed her project and since then has generated numerous opportunities for outreach and citizen science collaborations. Tali leans on community science for her data, using resources such as i-Naturalist to build reference libraries for her DNA work.

Tali has been involved in many outreach efforts related to her research. Notably, she worked with Day's Edge Production and was featured in a PBS documentary called "Human Footprint." Tali was interviewed in episode five, "The Urban Jungle." She has also been interviewed for children's magazines and her work was also featured in SF Gate Magazine. Most recently, Tali collaborated with Cal Academy of Science in San Francisco, working as a consultant for a recent exhibit on urban wildlife. Tali is featured in the exhibit with videos of her discussing her work and other information about her urban coyote research. Lastly, Tali has been working with a New York Times journalist working on a piece about urban coyotes that will be published in the coming months. Tali is passionate about research that both integrates local community partnership, and is accessible for the general public. She notes that working with Cal Academy was a particularly special experience as she feels that museums are an essential source of science education for the public, and the museum is in golden gate park, where much of her research is based!

Tali at the Cal Academy of Sciences Urban Ecology Exhibit

For students interested in fostering community science opportunities, Tali says that considering research questions that the public are interested in is a great way to encourage community collaboration. Within academia, Tali feels that teaching graduate students how to incorporate outreach and citizen science methods into their research is something she would like to see more of in coming years. She mentions that the UC Davis Citizen and Community Science in Conservation seminar (taught every spring by Dr. Ryan Meyer and Dr. Heidi Ballard) is an incredible example of this kind of education, and she highly encourages anyone interested to take the seminar. For Tali, "Outreach can take many shapes and forms. It can be as formal as a nature documentary or a science exhibit… and it can be as informal as when I'm collecting a coyote scat and someone walks by and we have a very casual conversation about what I'm doing… that's also science outreach."

Tali Capsi continued…

She emphasizes that there are many ways to engage in community outreach and feels that "outreach is a mindset." For those who are inspired by Tali's work but feel like they do not know how to create similar opportunities, she says that "building relationships with community members so there is trust takes a lot of time." She has built close relationships and friendships with community members ranging from people working in wildlife conservation to local photographers and casual hikers. Tali says that "there needs to be a personal relationship to build trust between the public and academia. Academia doesn't incentivize this because it does take time." Something like having tea with a local naturalist for an hour takes time that won't result in data or a paper," she says. However, Tali feels that spending time fostering these close relationships is equally important for engaging in science built on community partnerships and participation.

Tali collecting coyote scat in San Fransisco, copyright: Gayle Laird (C) California Academy of Sciences

Becca Nelson

Interviewed by Ava-Rose Beech

Becca Nelson is a PhD candidate in the Harrison and Valdovinos labs studying how anthropogenic change impacts wildflower pollinator interactions. Becca is involved in many outreach activities, including working as a science mentor for Science Olympiad at Mountain View High school in the Bay Area. This program pairs high school students with mentors, and allows them to compete in science based team competitions. Becca was in Science Olympiad herself as a high school student, which inspired her to work as a mentor for the organization. She works with students primarily in earth and environmental related science fields. In her role with Science Olympiad, she is also able to talk with these students about applying to college, career goals and other future aspirations. Becca is also the chair of the student section for the California Invasive plant council, a small non-profit that works on management of weeds and invasive plants in California, a major topic related to Becca's research. Through this role, Becca says that she is able to "interface with different more applied audiences and bring together conversations around land management." She has also led other activities such as creating a career council and job board for the organization.

Becca conducting fieldwork at McLaughlin UC Natural Reserve.

Becca says that her most rewarding experiences for her have been "working with students who are very early career scientists. Working with high schoolers it is really cool, to see them grow as people as they start out a little interested in the topic and by the end they are experts and are able to ask in-depth questions and think like scientists." Becca has been involved with Science Olympiad for about eight years and has stayed in touch with her mentees and seen them go on to do their own research in college and beyond. Becca sees outreach as "an ongoing conversation and dialogue between herself as a scientist and the folks [she] works with." Becca studies plant-pollinator interactions, and sees outreach as "more of a mutualism where [she] is sharing mentorship and career support … and when working with land managers [she] is able to provide an academic perspective on invasive species management… but it is a mutualisms where the learning goes both ways and [she] gets a window into more applied management." She also says that working with younger students gives her a perspective into future directions in environmental research.

Becca Nelson continued…

Becca says that outreach can at times seem "unidirectional and that scientists are coming down from an ivory tower to disseminate information," but she strives for "something more dynamic and mutualistic," and sees outreach as "an ongoing collaboration" and strives to dismantle these power dynamics. For others looking to get involved with similar outreach projects, Becca encourages students to "talk to people or respond to different email postings or organizations you think are cool. If you see a program that looks like the kind of thing you want to be a part of just reach out to them." She emphasizes the importance of "being intentional about what you're involved in." She suggests asking yourself: Is what I'm doing the type of outreach I find fulfilling? Becca says "that can mean different things for different people… it should feel like a really welcoming and fun experience."

Moving forward, Becca wants to see more acknowledgment of folks doing outreach-based research within academia so students can see examples of people who prioritize outreach while also doing science-based research. Becca would like to see "more celebration of the people who are doing this, especially when folks with marginalized or underrepresented identities are putting in time and emotional labor to engage with outreach." Becca also shares that she would like to see different definitions of what "high-impact" research means, and that outreach focused work can be equally as high impact as publishing papers.

Becca exploring Lassen Field Station.

Tessa Putz

Interviewed by Ava-Rose Beech

Tessa Putz is a third year PhD student in the Safford Lab studying the use of prescribed burning to reduce wildfire risk and improve climate resilience. Due to the applied nature of her research, she is strongly involved with outreach and cooperative extension related to prescribed burning in California. One of the most impactful events she has been involved with recently was the Science Translator Showcase (also attended by GGE graduate Paige Kouba). During this event, the organization hosted several training events building up to a day-long event at the capital. The showcase was organized by the California Council on Science and Technology (CCST) – a nonprofit organization aiming to provide non-partial information on science and technology to inform policy work.

Tessa at the CCST Science Translator Showcase.

The CCST selected graduate students and postdocs across California who were able to meet and work together to hone their skills in science communication. Tessa says it was amazing to "meet people across the state who are doing really different work … to talk to someone who is working on impacts on kids' health and interactions with social media… that was really interesting." At this event, students met with policy and decision makers about the importance of their research to policy. The week before the capitol event, attendees were a part of multiple trainings such as coming up with an elevator pitch, and learning how to pivot your pitch to be applicable to different policy members.

Tessa Putz continued…

Tessa Putz participating in a prescribed burn.

She says that at the actual event at the capital she was able to "speak with different policy makers, state representatives and people on different committees… they briefed us on understanding what science policy is and how policy works in our state." Tessa had opportunities to "talk about [her] research… and why [policy makers] should think it is important too." The event inspired Tessa to continue working at the intersection of science and policy, and following the Science Translator Showcase, she, along with fellow GGE graduate student Saba Saberi, attended the 2024 Sierra Day at the Capitol.

This event was slightly more " advocacy focused… [they] joined with many environmental groups that were there to represent the interest of the Sierra to advocate for a climate bond to fund environmental and climate work." Tessa recently found out that this 10 million dollar bond proposal was in fact passed by senators, and will be on ballots this fall. At Sierra Day, Tessa was scheduled with staffers and different representatives explaining why the Sierras are important, and the consequences of not putting money and resources into research in these areas. She feels that "it's fun to learn how to think about your research from new angles and feel comfortable talking about it in many contexts."

Tessa's overarching approach to outreach is that "it is very multifaceted, which is super exciting and means you could take it in any direction." She feels inspired by all the diverse opportunities available in the GGE for outreach work. Tessa's journey in community outreach began when she was working for Cooperative Extension prior to beginning her PhD. Because "the basis of extension is translating knowledge," she knew she wanted to have elements of that in her future research. While Tessa is mostly involved in policy related outreach work, she also feels that "prescribed fire is in a period where it is expanding to people who haven't known about it in the past, so now could be the time to talk to kids or other communities about it." Tessa notes that one of the most challenging aspects of outreach is learning how to make your research relevant, applicable, and engaging for different communities.

As a scientist interested in policy, Tessa also mentions that the state of politics can be a "heated landscape to argue for things that should be basic rights" and that this can be challenging. She says that for her work, having a "better understanding of how to manage the forest so people don't lose their homes and lives" shouldn't be political or controversial just because it is related to the environment. Her hope is that in the coming years, politics don't become "more divided, making it difficult to support research informing important environmental decisions."

Art and Science

A Lens on Urban Wildlife: Photographing San Francisco's Coyotes

Series by Tali Caspi

With the second-highest population density in the United States, San Francisco seems like far from ideal habitat for a wild carnivore. But coyotes are making it work. From Golden Gate Park to Coit Tower, spanning golf courses, urban parks, and soccer fields, these urban predators are thriving in the City. And if you know where to look, they're easy to find. – Tali Caspi

Illustration and Poetry by Becca Nelson

My soul crept out last night
or maybe two nights ago
a soft click
and then nothing
but silence and runny shades
across the floor and to the window
then up on dark and spindly
legs
it rose, peeking
out at the night's mysteries, slow
head shape turning
this way and that and then
a slender paper flat arm
lifted from its side
a feeble hand raised in greeting
to the moon

- Eric Post

Photo by Tali Caspi

Illustration and Poetry by Becca Nelson

Early one morning
awake before the others
I set out for a walk beneath
blurry dawn-faded stars
when ahead
beyond the bend
and through the redwoods
appeared the bones
of a dead man
crawling my way
slowly
over moss wet
with thought and worry

afraid to look closer
and thereby know
whether those bones
were mine
I turned back
and headed home

- Eric Post

Photos by Tali Caspi

Field Safety Communication

By Caroline Newell

Pop Quiz: Who is responsible for each of the following safety items at UC Davis?

1. Evaluate and identify workplace hazards.
2. Implement measures to prevent or control workplace hazards.
3. Assure employees, postdoctoral fellows, visiting scientists, and students are fully trained on workplace hazards.
4. Report all injuries, accidents, and near misses to the supervisor.

According to UC Davis policy 290-15, the responsibility for items 1-3 lies with your Principal Investigator (PI) or supervisor. The fourth item is the responsibility of the employee/student.

As a student in the Graduate Group in Ecology (GGE), you might sometimes feel field safety is solely your responsibility. While it is important to take personal responsibility, it's crucial to remember that safety is a shared responsibility, supported by UC policies.

UC Davis provides guidelines, policies, and resources to help you navigate safe fieldwork. However, the current structure of the GGE may not always effectively guide students to these resources. The program often assumes incoming students have the necessary skills and training for safe fieldwork or can independently find these resources.

In some cases, students are part of labs where field safety is a priority. These labs have PIs who actively engage in field safety, ensuring comprehensive safety protocols, including float plans, check-in procedures, and funding for necessary training and gear. Such PIs are knowledgeable about insurance, workers' compensation, and university policies, and they encourage the reporting of injuries and near-misses.

In other cases, students may feel unsupported in field safety. Busy PIs might not prioritize field safety management, leaving students to navigate fieldwork independently. This situation can lead to feelings of uncertainty and lack of guidance on safety protocols.

Many students in the GGE may experience these challenges, which can contribute to preventable injuries and accidents. The EGSA Field Safety Committee aims to bridge the gap between students and university resources, emphasizing the collective responsibility for field safety.

Tips for Navigating Field Safety:

Know the Policies

- UC Davis Policy 290-15, Safety Management Program
- UCOP Chapter 3-200: University Policy on Health, Safety, and the Environment

Prioritize Safety Over Data

- The quality of your fieldwork improves when you and your team are in good physical and mental condition, making safety integration crucial.

Report Injuries and Incidents

- Reporting injuries and incidents is essential for claiming workers' compensation and helps the university address safety concerns. For questions, contact risk management at rms@ucdavis.edu.

Communicate Concerns Effectively

- Approach discussions with your PI or group thoughtfully. Consider the emotional weight of the conversation, establish community agreements, and use a mediator if necessary. Taking breaks during heated discussions can also help.

If you wish to learn more about field safety or need support, consider reaching out to the EGSA Field Safety Committee at egsafieldsafety@gmail.com or visit https://sites.google.com/view/ucd-egsa-fsc/home

EGSA Committee Chairs, including the Field Safety Committee, meet regularly for EGSA meetings.

Where in the World is GGE?

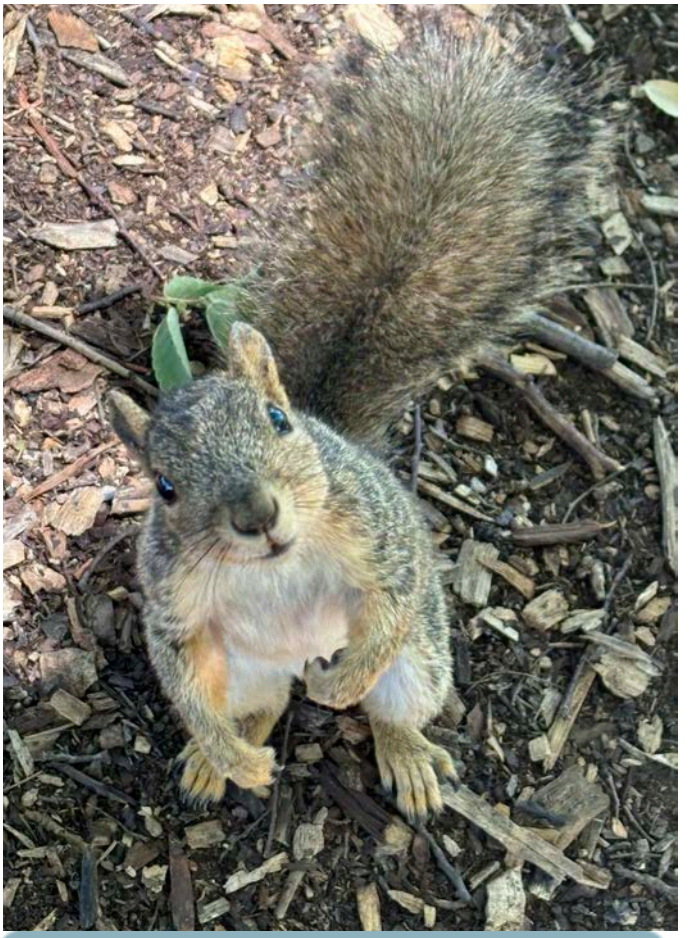
We asked students and faculty of the GGE to tell us where they conduct research and you all responded with over 100 locations. See the global reach of our program below!

Many of us work in a diversity of landscapes globally (below) and within California (inset)- truly representing the ecological mosaic!

Approximate locations of research or fieldwork as provided by respondents shown globally (top) and in California (left)

THE AGGIE BRICKYARD

New GGE merch featuring the updated logo by GGE student Ava-Rose Beech, launched this year (modeled here by GGE student Reed Kenny)



One of the campus squirrels was ready for its closeup with GGE student Kyra Gmoser-Daskalakis

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