
THE AGGIE BRICKYARD

assembling the blocks of ecology at UC Davis

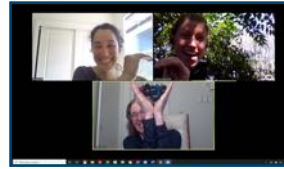




FACULTY/STAFF Q&A
JANET & JOANNA



FEATURES
RESEARCH
SPOTLIGHTS



COMMUNITY
EVENTS & UPDATES



LOOSE BRICKS
ART & POETRY

MILEPOSTS



Giant kelp; Palos Verdes, CA. - Kristen Ellsmore

- ◆ *COVER: Wildfire smoke sunsets in Davis 2020... with a juvenile white-tailed kite consuming a vole just before dark on a favorite feeding perch.*
- Ryan Bourbour



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LETTER FROM THE EDITORS

“The theme of this issue is Mileposts ... the small and unprepossessing stakes arrayed along a highway to remind you that you’re moving forward in an otherwise featureless landscape.”

We interrupt your daily doomscrolling to bring you another issue of *The Aggie Brickyard*. The summer and fall of 2020 was inarguably a season of calamity, and as we write this, immediately on the heels of January’s quasi-coup in Washington, D.C., it once again feels like our nation is at the point of collapse.

With all that’s happened, it’s impossible to push aside the worries we feel. Academia doesn’t like to allow these feelings, lest they crowd out our productivity. So we stick to deadlines and attempt to create some semblance of a routine. (We know of one student who walks laps around her house to make the daily “commute” from the bedroom to the living room feel like something.) But there are some schedules we are more than happy to stick to. We are excited to be printing our eleventh issue, truly. We just wish that, with it, we could make some more hopeful predictions about the future. Last week’s chaos and insurrection, unconstrained by law officials, encouraged by those politicians highest in the national hierarchy, make it hard to see much of anything good on the horizon.

So maybe, for a moment, we’ll look back instead. The theme of this issue is **Mileposts**—what is a milepost, anyways? We picture the small and unprepossessing stakes arrayed along a highway to remind you that you’re moving forward in an otherwise featureless landscape. Toward something, away from something else. Somehow, members of the GGE have managed to take steps forward through the (sometimes literal) haze that characterized the past nine months of pandemic, protest, and fire. We see the evidence in this issue. Our stalwart committees emphasize the collaboration that makes their work possible (**EGSA, p. 12; Diversity Committee, p. 16;** and the new **DEI Task Force, p. 13**). We adapt in our efforts to keep reaching out and working together (**Charity Committee, p. 14; Symposium, p. 17**). We welcome new members to our community, both in admissions review and in getting to know Janet Foley, our new chair, and JoAnna Lewis, our new student affairs officer (**Faculty Q&A, p. 9**).

The trouble with doomscrolling is that you never know when to stop. Infinite scroll, much like Covid, robs us of our sense of time passing. We invite you to set aside the news feed for a spell, and catch up on the news from our GGE community. We think that you will feel how we do—proud to be a part of a group that can make some good happen in the midst of a truly terrible year.

Sincerely,

Your Aggie Brickyard Editors



PLANET JANET

Letter from the Chair, Janet Foley

◆ November 25, 2020



Janet Foley - UC Davis

“[My kitten] brings me peace. It’s that simple. I hope each of you can find some special charm that works for you. We will get through this year together.”

- J. Foley, GGE Chair

I dragged my heels writing this, and I wasn’t sure why, although clearly it’s lacking the words to express what I want to say. I want to show you my world, inspire, soothe. Mostly I want us all to feel peace. It’s been a pretty crappy year.

If you want to peek inside my head, you’ll see that the election and the events in summer were conflated. My moral code, religious or not, boils down to “You shall love your neighbor as yourself.” But what we saw around us was: You shall lie to your neighbor, fail to protect them from a deadly virus, fail to support the planet, allow out-of-control police or customs enforcers or robber barons to attack, murder, pillage, and degrade. And besides feeling utterly sick about it, what can *I* do? Cope, distract, and very carefully manage. I’ve titrated the amount of news I can expose myself to. I try to be gentle with myself, giving myself permission to pause on hard, un-motivating work. Often, engaging with colleagues and students is a welcome distraction too—if I can be of help, I find that passes the time and I feel recharged.

My typical day: I’m up whenever the dogs start tap-dancing and Olivia the kitten bites my nose, and I instantly head for coffee to microwave, emails to check, news to catch up on. When I’m ready for cup #2, I make it fresh, tidy the kitchen, hit some big writing task (thesis edits, grants, papers), take the dogs for a loooooonnnng walk, keep working. I intersperse work with home stuff (sweeping patio, feeding chickens, laundry, repairing a bedroom door) because home is work and work is home. When I eat I force myself to read an interesting article on whatever (next on my list is an article entitled “What can we learn from cats? Don’t live in an imagined future”. Hmmm). I try to find time for Yoga or Zumba, then it’s dinner time followed by snuggling with Olivia and Netflix or a read. And do it again tomorrow.

But as I write this, tomorrow is Thanksgiving. So I’ll be cooking, not writing. And truly feeling thankful that UC Davis, the GGE, and my family have pulled through each of these crises together. I am so grateful for Olivia (and my kids too, I guess!). Olivia brings me peace. It’s that simple. I hope each of you can find some special charm that works for you. We will get through this year together.



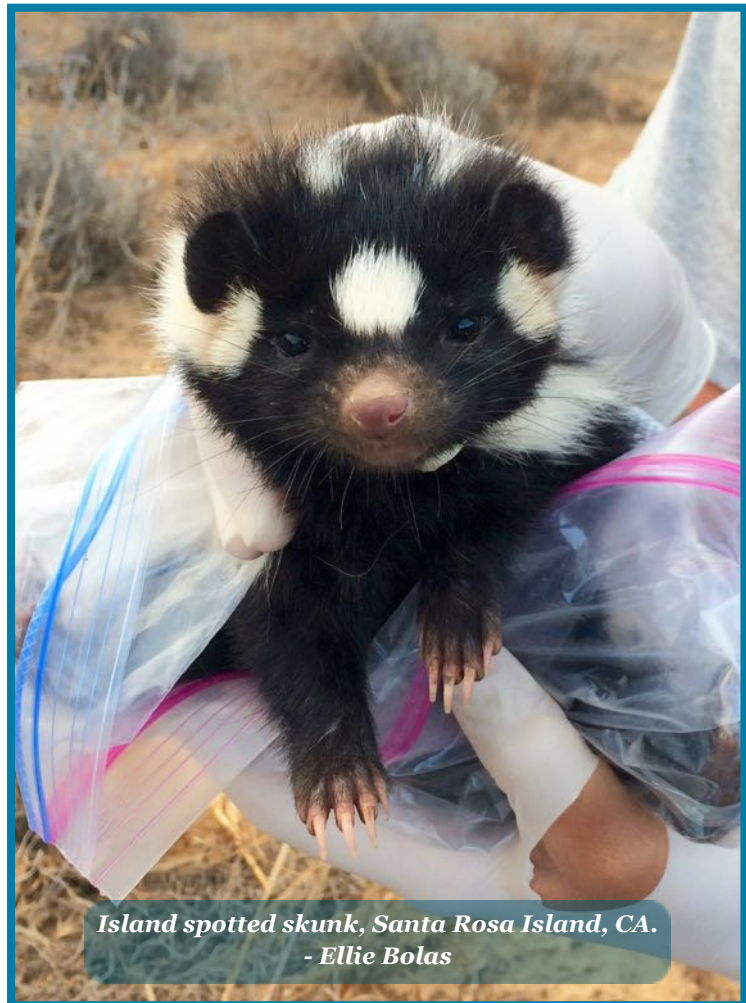
RECENT STUDENT PUBLICATIONS

Bolas, E. C., R. Sollmann, K. R. Crooks, L. Shaskey, C. L. Boser, V. Bakker, A. Dillon, D. H. Van Vuren. 2020. Assessing Methods for Detecting Island Spotted Skunks. *Wildlife Society Bulletin* **44**: 309-313. <https://doi.org/10.1002/wsb.1085>.

Graves, E.E. and J.M. Eadie. 2020. White eye-patches of female wood ducks, *Aix sponsa*, vary markedly in size and may reflect individual status or condition. *Animal Behaviour* **167**:41-53. <https://doi.org/10.1016/j.anbehav.2020.06.023>

Holyoak, M., **T. Caspi,** and **L. W. Redosh.** 2020. Integrating disturbance, seasonality, multi-year temporal dynamics, and dormancy into the dynamics and conservation of metacommunities. *Frontiers in Ecology and Evolution* **8**:571130. <https://doi.org/10.3389/fevo.2020.571130>

John, C., D. Miller, and E. Post. 2020. Regional variation in green-up timing along a caribou migratory corridor: Spatial associations with snowmelt and temperature. *Arctic, Antarctic, and Alpine Research* **52**:416–423. <https://doi.org/10.1080/15230430.2020.1796009>



Island spotted skunk, Santa Rosa Island, CA.
- Ellie Bolas



Urban fieldwork. - Victoria Dearborn

Karasov-Olson, A., A. K. Bird, A. C. Collins, E. E. Graves, J. A. Shaw, E. F. Tymstra, T. R. Kelsey, and M. W. Schwartz. 2020. Bridging the knowledge-implementation gap between agency and academia: A case study of graduate research experience. *Conservation Science and Practice* **2**:e286. <https://doi.org/10.1111/csp2.286>

Muñoz, D., P. Coates, and M. Ricca. 2021. Free-roaming horses disrupt greater sage-grouse lekking activity in the Great Basin. *Journal of Arid Environments* **184**:104304. <https://doi.org/10.1016/j.jaridenv.2020.104304>

Stories from the field

Text and photos by Tali Caspi

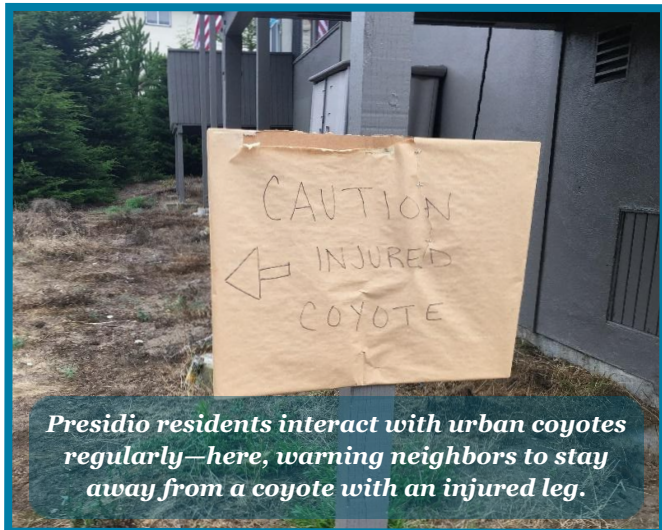
Animals of the city mostly go about their business unnoticed. That is, unless you know where to look for them. This past summer, I walked 356 kilometers in San Francisco, passing through trails, dog parks, soccer fields, botanical gardens, urban farms, hilltops, dried up lakes, and golf courses in search of coyote poop. Scat can hold the answers to many ecological questions—how many coyotes are in

the city, what are they eating, where are they going, who is related to whom? As I walked through the city of many childhood memories, I realized how unfamiliar it really was.

Following the coyote trail brought me to parts of the city I never knew existed and focused my attention on its thriving ecosystem. Nature in San Francisco prospers in the places we let it: in the lands designated as parks, in the fields we use for recreation, and in the arbitrary spaces we abandoned and later forgot. At its core, urban ecology is the study of how people and nature interact. These photos from the field capture exactly that.



Many wild parrots live in San Francisco.



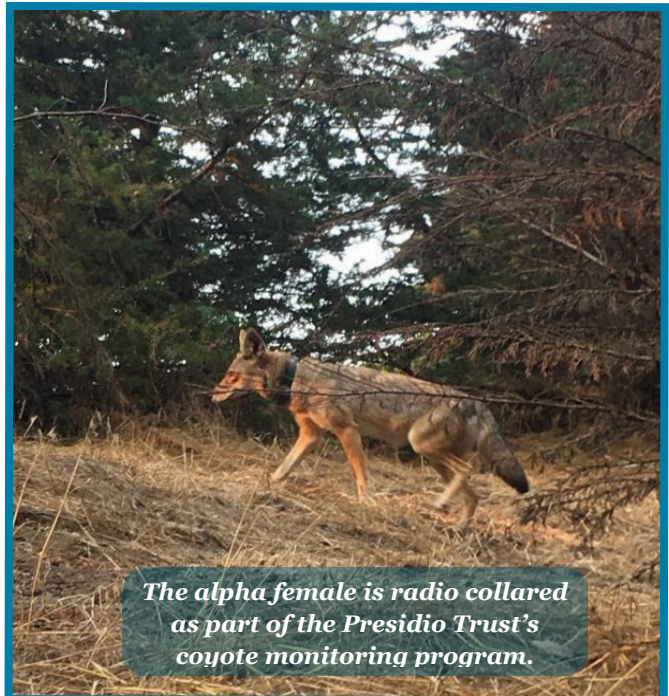
Presidio residents interact with urban coyotes regularly—here, warning neighbors to stay away from a coyote with an injured leg.



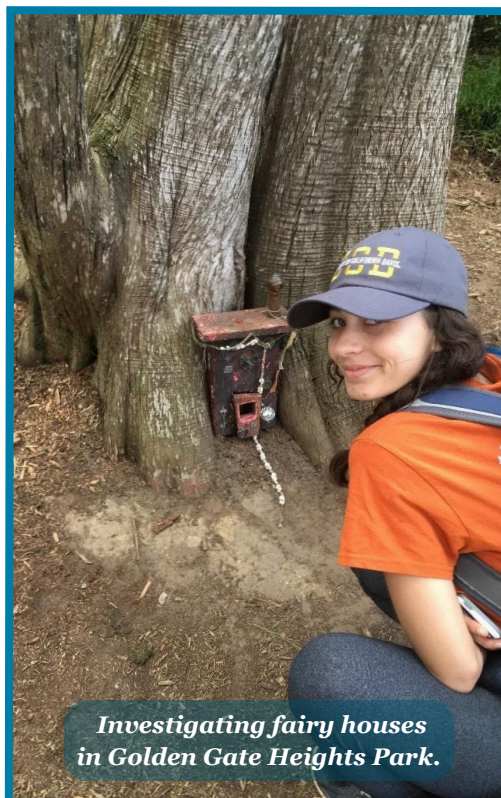
Banana slugs are abundant on the city's golf courses in the early mornings.



Fresh coyote scat, full of cherries, left by the alpha female in the Presidio.



The alpha female is radio collared as part of the Presidio Trust's coyote monitoring program.



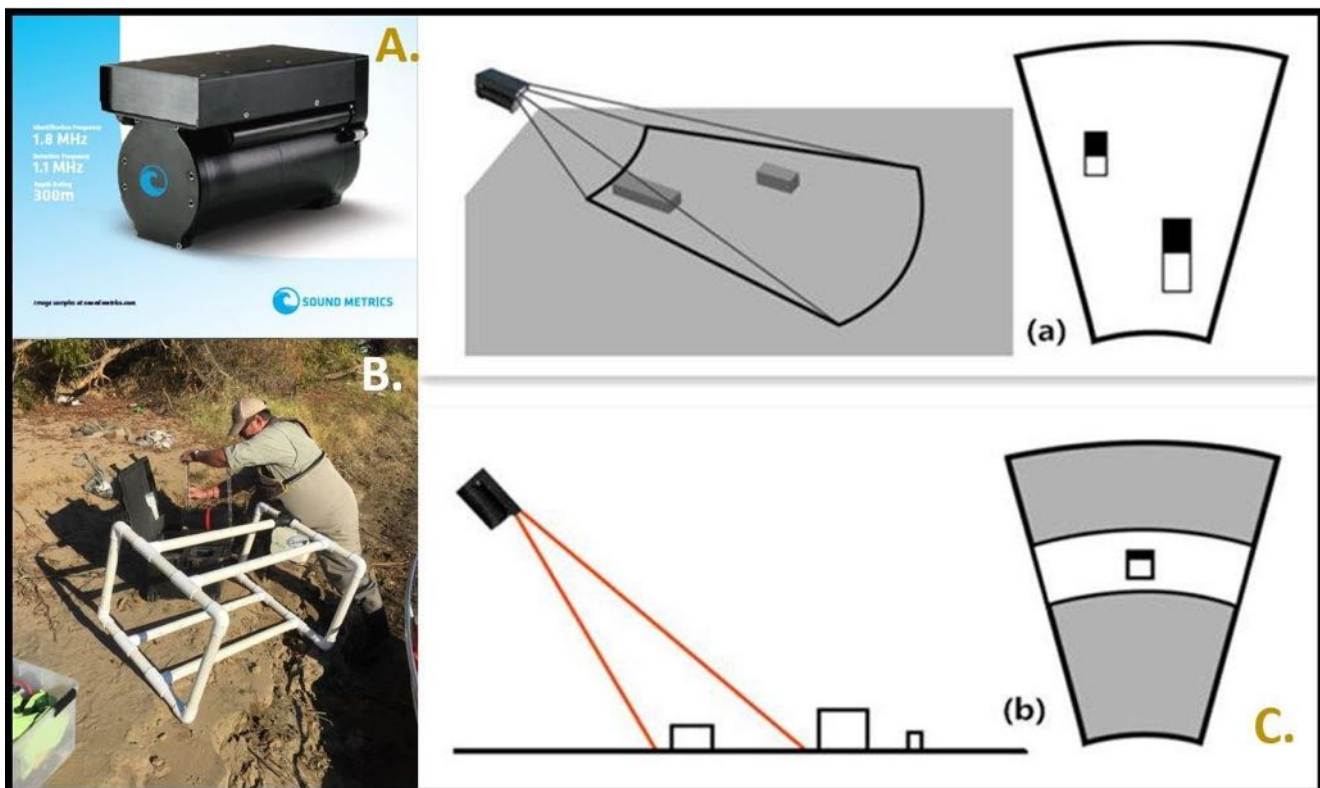
When once cutting-edge military tech is adopted by ecologists for detecting animal movement

Sean Luis

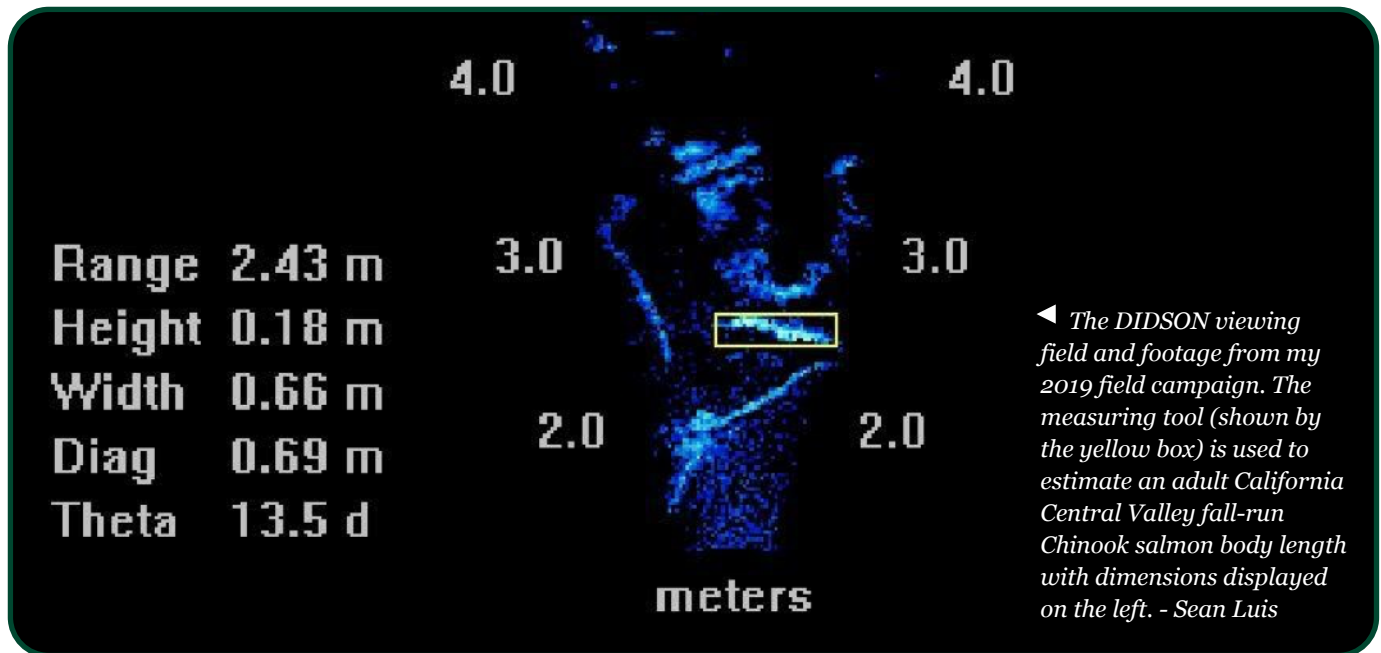
In the early decades of the 20th century, rapid advancements in understanding the electromagnetic spectrum were being made by independent groups of scientists and engineers¹. From Faraday and Maxwell's theoretical model of the wave spectrum to Hertz's demonstration that radio waves behaved like light waves, doors were opening to countless applications. What we now know as radar (Radio Detection And Ranging) was born out of a discovery in 1922 by U.S. naval radio technicians that radio waves were reflected by large ships and could be used to track their movements in low visibility conditions. By the time the U.S. entered WWII, radar technology was becoming ubiquitous among allied naval and air forces. In the mid-20th century, two of the primary limitations to radar application were steadily overcome: 1) power and 2) receiver sensitivity. Weather radar quickly came into use and in 1958, British meteorologist W.G. Harper published one of the first studies of migratory bird detection via radar². In an apparent flair for the dramatic, he coined the term "radar angels" to

describe his bird detections. Today, radar technology is used in a wide variety of animal tracking applications including birds, bats, and even insects.

The space race in the 1950's and 60's represented an unprecedented investment of U.S. government funding into science and technology. As the U.S. and Russia scrambled for dominance in low-Earth orbit, applications in satellite technology exploded (literally and figuratively). As the Cold War continued into the 1970's, investments in positioning satellites resulted in the first of 24 NAVSTAR (Navigation System with Timing and Ranging) satellites and the system was fully operational in 1994³. The system operates using radio frequencies transmitted back and forth between satellites, ground-based control stations, and user devices. Kept entirely under U.S. government control, limited use of the system is available for non-military applications⁴. In 1993 the TRACKTAG was announced, providing a GPS data logger that could be affixed to moving objects. It



A) The DIDSON sonar transducer (Sound Metrics Corp.), B) a PVC mounting cage designed by Sean Luis to deploy the DIDSON in the Feather and Yuba rivers, and C) a conceptual diagram showing how the DIDSON renders 3D objects to a 2D viewing field (Sound Metrics Corp.) - Sean Luis



became the direct predecessor to GPS tags marketed for animal tracking⁵. Since then, satellite telemetry tags have become an industry standard method for long-duration tracking of both terrestrial and marine animals of many shapes and sizes. The ARGOS satellite system (operated by an international group of space agencies) uses similar technology to the NAVSTAR system and has provided additional animal tracking infrastructure. In some cases, much of what we know about the life history of cryptic or highly migratory species comes from data provided via satellite tags!

In 1999, a group of engineers at the University of Washington Applied Physics Lab were working on a new project for the U.S. Navy: a portable imaging sonar. The goal was to build an “acoustic video camera” that could generate video-like imagery in low-visibility environments using sound. Presumably, this was to be used by Navy divers in salvage, hull inspection, and mine clearing operations. The product became known as the DIDSON (dual-frequency identification sonar) and was put on the commercial market by Seattle-based Sound Metrics Corp. in 2002⁶. Almost immediately, units were purchased by various state and federal natural resource agencies for use in fisheries monitoring and research. Two of those agencies were the CA dept. of Fish and Wildlife and the CA dept of Water Resources, and one of their users was yours truly. I have been fortunate to borrow units from each agency and they have been an invaluable tool in my PhD research investigating the influence of discharge-driven river hydraulics on the migratory habitat selection of adult Chinook salmon in the CA Central Valley.

In keeping with the theme of “mileposts” and the

passage of time in this Brickyard issue, I suppose that I see my research as a continuation in the legacy of ecologists adopting technology with military origins. Unlike the radar and GPS examples, the timeframe of the classified development and military use of the DIDSON to its commercial availability was fairly quick. This is encouraging! Could you imagine someday having an ecology liaison working at a DARPA think tank (the U.S. Defense Advanced Research Projects Agency), coming up with ecological applications as secretive military technology is being developed in real time? Ok, maybe that is a little far-fetched, but all signs point to continued ingenuity on the part of ecological sciences when it comes to adopting cool new tech in the future.

References:

- [1] Page, R. M. 1962. The early history of radar. *Proceedings of the IRE* 50(5): 1232-1236.
- [2] Harper, W. G. 1958. Detection of bird migration by centimetric radar—a cause of radar ‘angels’. *Proceedings of the Royal Society of London. Series B-Biological Sciences* 149(937): 484-502.
- [3] Betz, J. 2015. *Navstar Global Positioning System*. In *Engineering Satellite-Based Navigation and Timing* (pp. 163-200). Hoboken, NJ, USA: John Wiley & Sons.
- [4] U.S. Department of Defense. 2020. *Global positioning system standard positioning service performance standard*, 5th edition.
- [5] Brown, P. K., C. M. Bishop, and U. K. Bangor. 2001. *TrackTag TM - A low-weight, long-duration GPS recording device*. *Proceedings of Royal Institute of Navigation RIN01 Conference on Animal Navigation*, Oxford, UK, April 2001.
- [6] Belcher, E., W. Hanot, and J. Burch. 2002. Dual-frequency identification sonar (DIDSON). In *Proceedings of the 2002 International Symposium on Underwater Technology* (Cat. No. 02EX556) (pp. 187-192). IEEE.

FACULTY/STAFF Q&A

One of the 2020 mileposts for us in the GGE was getting to welcome two new members: one, a long-time GGE member stepping into a new leadership role; the other brand new to UC Davis and the GGE. We're excited to introduce you to Janet Foley and JoAnna Lewis, who we look forward to working with in the years to come. **Interviews by Brickyard staffer Connor Rosenblatt.**

Janet Foley, Graduate Program Chair

Tell us a bit about your background. What were you up to before joining the GGE?

I've been a GGE member for quite a long while and actually did my PhD in the GGE. My graduate students are in several different grad groups, often Epidemiology or Preventive Veterinary Medicine (MPVM) and sometimes Ecology, so I try to stay involved. I was on the executive committee until recently. I am chair of the MPVM group which I really enjoy. I've been doing a fair amount of teaching, my research on endangered small mammals and another large project on tick ecology.



Janet Foley - courtesy photo

What about the GGE excites you the most? Why did you decide to serve as Chair?

I love the energy in the group. Students are often so passionate about causes and work hard to support and promote them. Students are whip-smart and have amazing ideas. The whole group is very supportive and feels like a big family. But it needs leadership and it was just my turn.

In this strange year, it sometimes seems like time has all blurred together, without any mileposts. Through all this, what have you accomplished that you feel proud of?

I heard an interesting quote that it isn't so much that we're working from home as that we're sleeping at work. That hits the mark for me. I'm trying to do more loving things, like I'm successfully dieting and pushing the extreme-healthy food, I've been playing ukulele, lots of prayer and reflection, trying to be more diligent about exercise. I've also upped my service and volunteer work. We are successfully launching our clinic (Davis-Pet Advocacy and Wellness) for pets of the homeless and I've been getting much more involved with Neighborhood Court, a program out of the District Attorney's office to do restorative justice and divert offenders from jail or other punishment.

When you were 25 years old, where did you see your career path going? What led you down the path you're on today?

I was married to a musician in the Washington D.C. area and I was considering vet school which would have been in Blacksburg but husband was like *no way* was he moving out of the city. So I figured I'd get a MS in evolution in D.C. instead and then moved to Davis to get my PhD. And ironically, the Davis vet school was right next door so I decided to hop over there. At the time I was 25, I was breeding copepods for selection experiments for my Master's degree-- I had no plan to become a vet!

Share a fun fact or two you want the GGE community to know about you:

I *really* love Mexican food. When I was in Mexico City, I had the most amazing vegan mole, vegetarian food, and fish with incredibly fresh vegetables and delicious sauces. I love variety in everything, and especially local and delicious and healthy food.



JoAnna Lewis, Graduate Program Coordinator

Tell us a bit about your background. What were you up to before joining the GGE?

Before I joined the GGE I was living in Blacksburg, VA with my husband and two young sons. I worked at Virginia Tech as an Academic Advisor in the Electrical and Computer Engineering Department. ECE was the largest graduate program on campus and I advised approximately 400 PhD and MS students. Blacksburg is located in the New River Valley in southwestern Virginia, nestled in the mountains at about 2100 feet. I absolutely loved the mountain lifestyle and four seasons. My favorite part of living there was experiencing the brilliant fall colors and snow in the winter.

What about the GGE excites you the most? Why did you decide to join as Graduate Program Coordinator?

The students! Everyone is so friendly and welcoming. I like being part of a community. My previously advising load was very large, and it was often difficult to find time to really get to know my students. I'm so happy to be working in an environment where I can have those personal relationships again.

In this strange year, it sometimes seems like time has all blurred together, without any mileposts. Through all this, what have you accomplished that you feel proud of?

The fact that I was able to successfully move across country and change jobs during a pandemic feels like a major accomplishment to me! Change is hard enough, much less relocating across the country, and dealing with all the craziness that COVID has brought to our lives. There has been so much change and transition in a short amount of time. It's been challenging at times but I'm proud of how I've navigated it all and super excited to be back in California close to family!



When you were 25 years old, where did you see your career path going? What led you down the path you're on today?

I've worked my entire career in higher education and I love it! I didn't know at age 25 that I wanted to be an academic advisor but I knew my career path would be in higher education and involve helping others.

Share a fun fact or two you want the GGE community to know about you:

I am an identical twin. I love to travel. The most-distant country I've been to is New Zealand, and I lived in Switzerland in my 20s.

◀ I <3 my lab mates: Virtual lab happy hours maintain sanity amidst the chaos! - Ashley Grupenhoff

Executive Committee

Aviv Karasov-Olsen & Andrea Broad

As we welcome a new cohort of students and continue our virtual graduate school pursuits, the Executive Committee is updating administrative processes, codifying past decisions, and welcoming new members. To give every topic ample attention and time, the EC has decided to meet once a month, up from once per quarter in past years. Here are some of the issues covered so far:

GGE Policies

- ◆ Following the student petition sent out this summer, the EC drafted and approved new listserv policies that address approved listserv uses, moderation for non-subscribers, and the treatment of inappropriate content.
- ◆ Many GGE committees including the Admissions Committee and Award Committee are drafting standard operating procedures (SOPs) to codify committee structure and decision making processes and improve consistency and transparency. Once drafted, these SOPs will be opened to student comment and consultation.
- ◆ Updating the GGE bylaws is a large, year long undertaking for the Executive Committee. The bylaws dictate faculty membership to the GGE (including criteria for the initial application and membership reviews), the structure and duties of all committees, and student representation, among other topics. It is our goal to ensure that all updates to the bylaws will work for the betterment of the graduate student experience in the GGE.

Curriculum

- ◆ A graduate 290 seminar will be offered this winter to fulfill the evolution degree requirement as an alternative to taking the undergraduate EVE 100 course. This seminar provides an opportunity for students to learn about foundational evolution topics and recent research, while alleviating the time-intensive commitment of an undergraduate course.
- ◆ Ongoing discussions about R-Davis have centered on ensuring sustainability and support for the future of the course.

Membership

- ◆ A standing duty of the Executive Committee is voting on new faculty membership. This quarter, we formally welcome Fernanda Valdovinos, Tom Buckley, and Emily Meineke to the GGE.

Leadership

- ◆ EC student representatives serve two year terms beginning in alternate years. Andrea Broad's term began this summer, and Aviv Karasov-Olson's term will conclude next spring. If you are interested in getting more involved in GGE leadership and administration, look out for the student representative nominations at the end of the academic year!

We welcome any questions or comments about this year's efforts by the Executive Committee! You can reach us at karasovolson@ucdavis.edu (Aviv Karasov-Olson) and ambroad@ucdavis.edu (Andrea Broad).



Beautiful male snow bunting just vibing near Kangerlussuag, Greenland. - Eric Post

Ecology Graduate Student Association: Fall Update

Ashley Grupenhoff, Victoria Dearborn, and Katie Lauck

The start of the quarter was a wild one, but we were all able to virtually meet the new and old Ecology Graduate Student Association (EGSA) members at our first meeting of the 2020-2021 school year in October.

After a long summer intermission, we kicked off the meeting with a few goals for the year. One of the primary goals is increasing communication and transparency across the GGE Executive Committee and the broader UC Davis Graduate Student Association. As this year's co-chairs, we hope to continue to be a conduit for institutional knowledge as well as a communication pathway for the various ways to get involved, find help, and create change across the program. With the help of the GGE student community, we compiled an [Incoming Student Guide](#) to act as a resource for folks new to the GGE. This resource helps prepare incoming students with information regarding classes, committees, and funding.

Another main goal of the EGSA is to contribute to building a more inclusive GGE community. The GGE Diversity Committee, chaired by Sidney Woodruff, continues to lead the way in many areas including

recruitment and retention, and we are excited for the EGSA to play a stronger role in supporting their goals. Students and faculty have been working together on the GGE Diversity, Equity, and Inclusion Task Force, chaired by Maria Ospina, Anne Todgham, and Andrew Latimer, to address the demands for change raised by students in a petition over the summer. In addition, we are excited about the enthusiasm of the new GGE chair, Janet Foley, and Graduate Advisor, JoAnna Lewis.

This year, we elected many new Committee Chairs as well as Reed Kenny, who was elected to serve in the essential role of EGSA Treasurer. The other leadership positions are below:

Academic Committee:

The Brickyard: Paige Kouba, Ellie Oldach

Open Lab Meeting: Conor Higgins, Christian John

GGE Symposium: Lauren Redosh, David Mitchell

Charity Committee: Summer Schlageter

Public Engagement Committee: Jessica Greer

Social Committee: Tali Caspi and Hannah Fertel

Tech and Media Committee: MJ Farruggia

Already, the social committee organized a Fall Welcome Film which featured many wonderful GGE faces and pets (both of the furry and sourdough kind). With another virtual year around the corner, we are super excited about the creativity and hard work all these students continue to cultivate to make the GGE a better and more inclusive environment. We are so excited to serve as your Co-Chairs for the year, and hope to see you all for the Winter Quarter EGSA meeting!



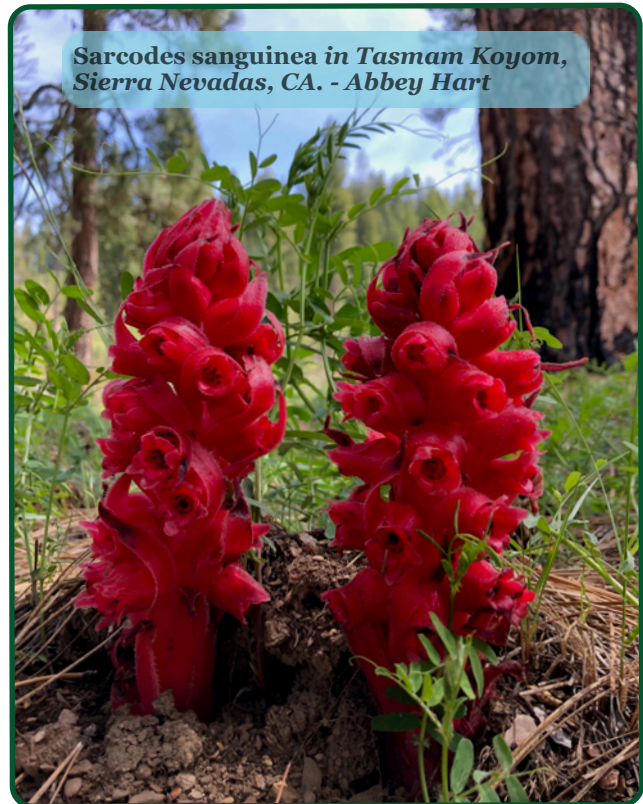
Diversity, Equity, & Inclusion Task Force

Abbey Hart and Emily Marie Purvis

The Diversity, Equity, and Inclusion Task Force (TF) is made up of GGE students and faculty. This group was formed in early summer 2020 in response to a student petition that demanded concrete action to address racism and other injustices that persist in our community. The petition was written collaboratively by GGE students and signed by 120 current students and 56 alumni before being submitted to the Executive Committee. While the creation of the petition was catalyzed by a single event, it spoke to the overall fact that the experiences of GGE students are not equitable and that proactive, structural change is desperately needed in our graduate group. There exists a fundamental chasm between the just community we want and deserve and the community that exists now.

When the TF was first created, we made the mistake of treating the petition like a checklist of action items. Our first meetings were chaotic—How were we going to achieve each item on the list? Who was going to do what? How quickly could we get it done?—and it was a mess. Many folks didn't feel heard. Most worried that hurried solutions would not adequately address the underlying culture that led to the petition. Diversity, equity, and inclusion work is inherently emotional, rooted in structures that govern interpersonal relationships and community dynamics: A rigorous, unfeeling framework is inadequate here. By charging forward without recognizing that our ultimate goal required a different type of work, we were setting ourselves up for failure.

So, after dozens of hours of cumulative labor, we stopped. We backed up. And we completely started over. Our subsequent meetings were dedicated to taking enough time to fully identify the underlying issues of the GGE community and the overall goals of the TF. While action is necessary and will produce the ultimate lasting outcomes of the TF, the group together recognized the need to slow down and account for how we got here. We gave each other time and space to each share what we wanted to see emerge from the TF and to identify what each person required to take part in the co-creation of our micro-community. Considerable attention was paid to how to equitably create a culture of accountability and trust within the group. The community agreements, mission and charter were all co-created in order to



Sarcodes sanguinea in Tasmam Koyom, Sierra Nevada, CA. - Abbey Hart

facilitate conversations where sharing and receiving feedback were possible and productive. Our discussions wrestled with larger questions of what the GGE community really is, how it is experienced differently by each person, and what it could potentially be. Conversations have continued to address the fundamental structure of the graduate group and how to ensure that the institution reflects and upholds the values of an antiracist community.

Together, we have discussed the intention and hope to create in the TF a microcosm of the community we want to see in the GGE. Through communication and accountability, we can perhaps rebuild the trust that's been lost and change the structural inequities that harm. We aim to be transparent, providing regular updates and access* to our working documents. Ultimately, the most important part of the accountability we strive for is the fulfillment of the petition goals. But how we get there matters. The work is being achieved by the labor and dedication of the people in this group. It requires many hands and benefits from myriad perspectives. All members of the GGE—including you!—are welcomed and encouraged to join at any point to add theirs.

*https://docs.google.com/document/d/1drujIbA_BUtsDIRckVroPh8XdmI573xyODqksdHotp0/edit

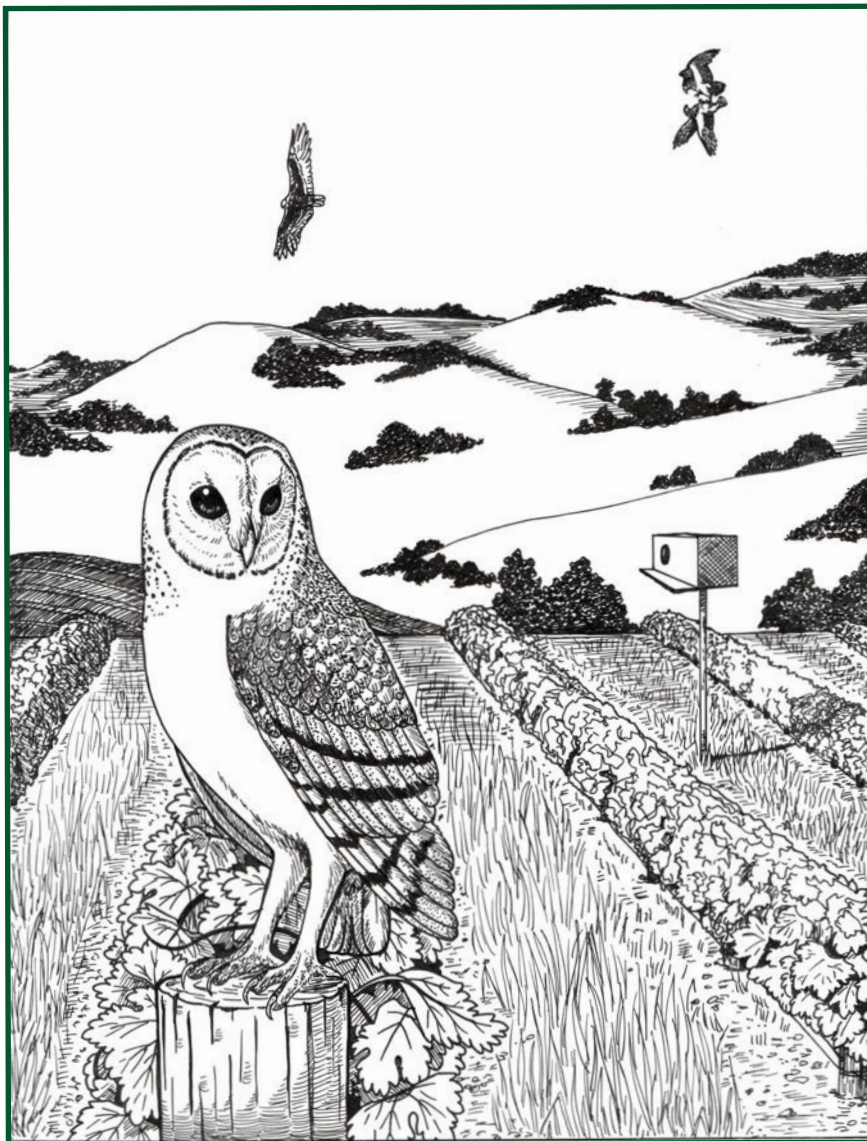
Charity Committee Update

Summer Schlageter



The primary role of the Charity Committee is to plan the Mardi Gras silent auction charity event that takes place in February or March each year. Unsurprisingly, that event is going to look a little different this year. In lieu of the in-person costume-filled night of giving, the Charity Committee will be hosting an online auction (you are welcome/encouraged to still dress up in costume at home!). The online auction will take place the same day as the Symposium, so between talks you can browse and bid on your favorite items. We will also be having our yearly cup sale this year and you'll be hearing from the Charity Committee soon regarding logo submissions as well as voting for what type of vessel you would prefer (goblet, stemless wine glass, pint glass, etc.).

While it is unfortunate that another GGE tradition is being moved to an online format, the Charity Committee is thankful that we are still able to raise and donate money to a well-deserving charity (charity choice TBD by GGE students). The silver lining is that the online format should allow more GGE students to be involved in the silent auction and as a result we have high hopes that the event will be as successful, if not more so, than the in-person Mardi Gras party. Although, hopefully the 2022 Mardi Gras event will be an in-person event so we can dust off those costumes and interact with one another without an impeding computer screen.



◀ *California is known for its many wineries, but did you know Barn Owls are essential to produce the wines that vie for a sommelier's approval? Indeed, these winged predators help keep rodents at bay! (Drawing by Diana Muñoz)*

▼ *Owliday Greetings (Drawing by Diana Muñoz)*



Society for Conservation Biology

Ann Holmes

The Davis Chapter of the Society for Conservation Biology (SCB-D) hosted a talk by tiger expert Dr. Indranil Mondal on "Conserving tigers in a human-dominated landscape" for our remote Fall Quarter meeting. Dr. Mondal is a Project Scientist at the Wildlife Institute of India and spent some time doing research at UC Davis in 2019. His excellent talk discussed methodology and findings from studies tracking tigers who move between protected areas and private lands. He spoke of the dangers that roads, irrigation canals, and electrified fences pose to tiger survival.

Dr. Mondal also emphasized that collaborating with and providing incentives to local people (especially farmers who experience loss of livestock) is crucial to the success of any conservation program. The need to include local people in conservation plans was also discussed by SCB-D's Spring Quarter speaker Dr. Rodrigo Medellín, a former SCB president. Earlier this Fall, SCB-D members met for a socially-distanced view of thousands of Mexican free-tailed bats leaving their roosts in the Yolo Bypass to feed. Also in attendance was a peregrine falcon swooping in for an evening snack.

Upcoming events and projects include a virtual screening of the new film *Gather*, a portrait of the Native American movement for food sovereignty, and resources for local birding on the SCB-D website: davisscb.wixsite.com/scbdavis. SCB-D also



Dr. Indranil Mondal - courtesy photo

welcomes new additions to the leadership team: Sam Walkes as Treasurer and Summer Schlageter as Sustainability Committee Chair.

Please visit the website for information on SCB-D's various projects in conservation education, stewardship, and policy and contact an officer or committee chair if you would like to participate. SCB-D is a local chapter of the Society for Conservation Biology, an organization of conservation professionals. Students, staff, faculty, and non-UC Davis affiliates are welcome at SCB-D events. SCB-D membership is free and SCB membership starts at \$30/year for students. SCB's next international meeting is currently planned for December 12-16, 2021 in Kigali, Rwanda.



A tiger chases its prey. - Amrut Naik

Diversity Committee

Sidney Woodruff

This past year, the Diversity Committee (DC) has been working extensively on collaborations and initiatives with the GGE Executive Committee, DEI Task Force, GGE Admissions Committee, and the broader UC Davis community. These updates from the 2020-2021 academic year will be formally presented during the GGE Annual Meeting in Spring 2021. In the meantime, here is a quick summary of what the DC has been working on this past year:

The Admissions and Awards Subcommittee (DCAA) conducted the annual admissions reviewer training this November, transitioning to a synchronous and asynchronous online format. The DCAA has been working with the GGE Admissions Committee to formalize the structure of the Admissions Committee, as well as how it carries out decisions about the admissions process and its implementation. Christian John took lead in setting up a Github repository for holistic review data and is finalizing an R package to be shared. In the upcoming quarters, the DCAA will continue participating in fine-tuning the GGE admissions process, as well as creating, distributing, and analyzing the admissions reviewer surveys.

The Outreach Subcommittee (DCOC) transitioned to an online format exceedingly well since the beginning of the Covid pandemic with the start of CommuniTea events on Zoom for the GGE community. Frederick Nelson (DCOC Chair) hosted

and moderated community discussions regarding topics on mental health, student retention, and quarantine self-care. The DCOC also hosted a collaborative CommuniTea event with the Horticulture and Agronomy graduate group that was well attended. The DCOC plans for CommuniTea events to continue, as well as presenting about the DC to interested graduate groups that are forming their own diversity committees.

Broadly, the DC has worked with the newly formed DEI Task Force to address the student petition sent to the GGE Executive Committee in June 2020. With a seat on the Executive Committee, Sidney Woodruff (DC Chair) has been representing the DC and its mission through proposed initiatives brought to the Executive Committee. Future plans for the DC include (but are not limited to) presenting at the GGE Symposium, addressing proposed bylaws changes, and adding DC and holistic review-related web pages to the GGE website.

None of this work could have been possible without the immeasurable contributions from the DC leadership (as well as countless others who have informally provided input, expertise, time, and labor):

Sidney Woodruff - Chair

Maria Ospina - Vice-Chair

Kristin Dobbins - DCAA Chair

Emily Purvis - DCAA Co-Chair

Frederick Nelson - DCOC Chair

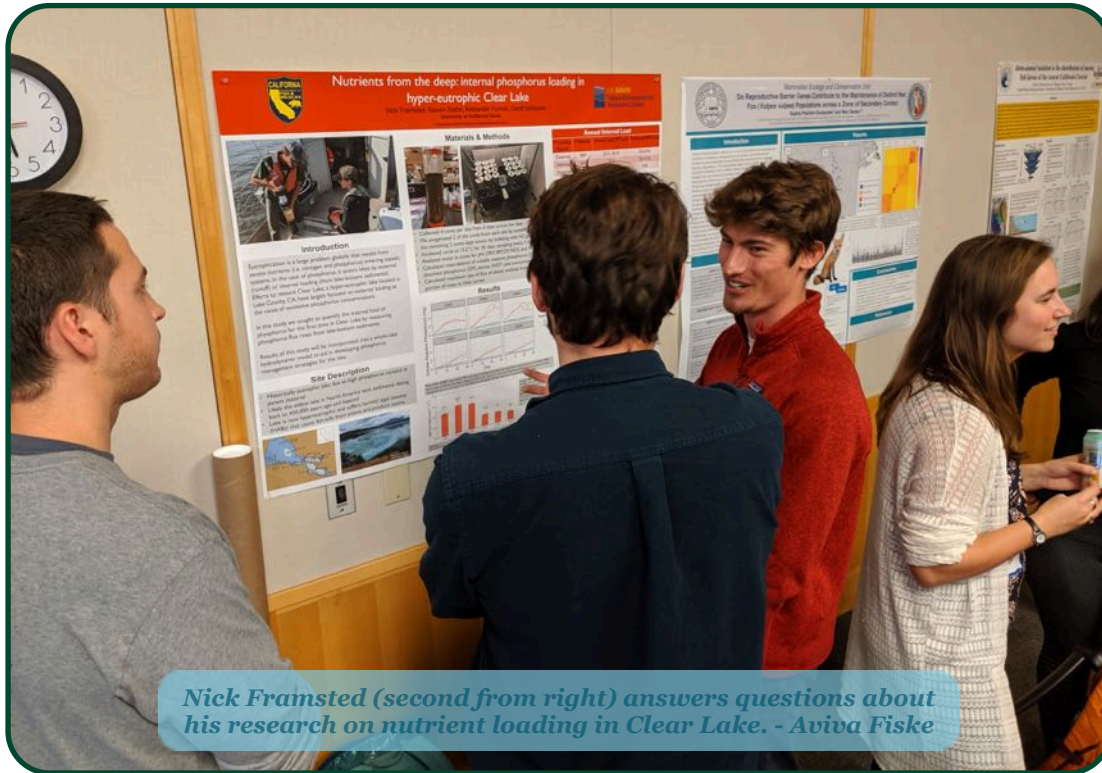
Dr. Anne Todgham - Faculty Co-Chair

Dr. Justine Smith - Faculty Co-Chair



Tule elk at Point Reyes. - Becca Nelson

GGE SYMPOSIUM HIGHLIGHTS



Nick Framsted (second from right) answers questions about his research on nutrient loading in Clear Lake. - Aviva Fiske



Ellie Oldach in the midst of her prizewinning presentation on globalization and the lobster industry in Maine. - Aviva Fiske



A double-crested Cormorant preening in the Everglades. GGE student Rob Blenk took first prize in the ecological art competition at the 2020 GGE Symposium for this entry, well done Rob.

13th Annual GGE Symposium

Aviva Fiske

Just before the pandemic turned our lives upside down, we had a very successful 13th Annual Graduate Student Symposium in Ecology with over 200 attendees! With fifteen oral presentations ranging from the effects of thinning and prescribed fire on Sierra Nevada forests, to using genomics to understand local adaptation in South Asian wolves, we had an excellent showcase of the amazing range of research conducted by students in the GGE.

Our keynote address, given by Dr. Mehana Vaughan from the University of Hawai'i at Manoa entitled "*Kaiāulu: Gathering Tides*" addressed her research on the interactions between humans and the environment, particularly how communities in her native Hawai'i make decisions about resource use at the

local level. We also had ten student posters set up during our poster session following the oral presentations, along with an ecological art competition.

Thank you to all of our presenters and the amazing volunteers who helped make this event possible, and we look forward to the 2021 Graduate Student Symposium in Ecology!

Our winners this year were as follows:

Best Oral Presentation: Ellie Oldach "*Globalization as an adaptive response to climate change impacts in Maine's lobster industry*"

Best Poster: Mollie Ogaz "*Understanding fish outmigration on a restored floodplain in California's Central Valley*"

Best Art Submission: Rob Blenk, "*Double-crested Cormorant*" (above)

Social Committee

Tali Caspi and Hannah Fertel

In a time when keeping physical distance between us and others is required, cultivating community and connection is all the more essential. Gathering during difficult times is one of our most basic instincts, and these times are made even more challenging by our inability to come together in our usual manner. Graduate school and research are stressful under any conditions, but the conditions over the past year have certainly reached a whole new level.

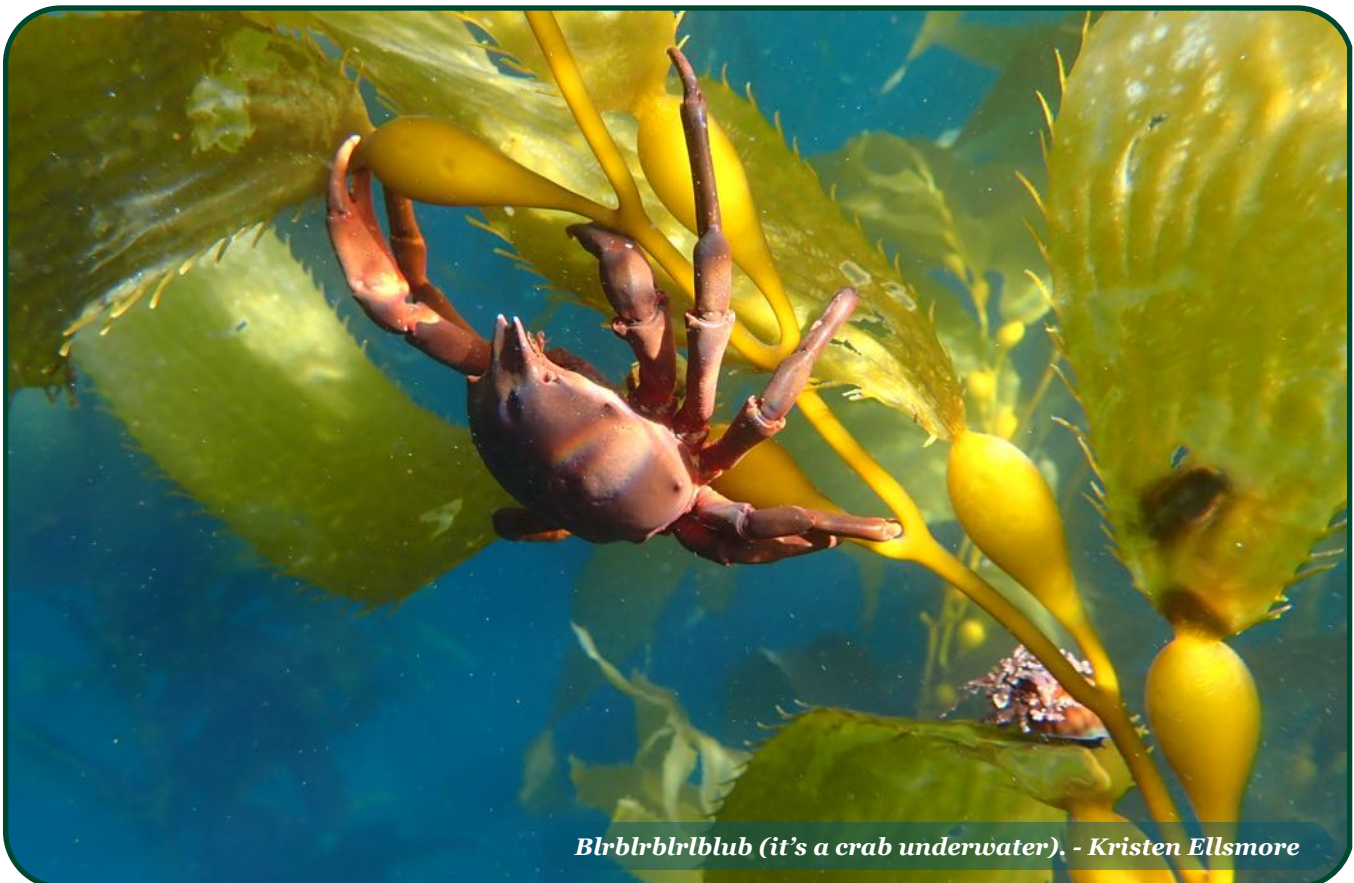
Under normal circumstances, social events would provide a much needed outlet for students and faculty alike to enjoy each other's company and take a break from the rigors of academia. Our usual events and gatherings came to a halt in March, but that did not stop us from connecting in other ways. Innovation, creativity, and technology have certainly helped make socializing in these unprecedented times a possibility.

The GGE put on its first-ever digital Odyssey (dubbed the "Oddity") which featured, among other delightful shenanigans, an "untalent show" and virtual trivia.

Social Committee substituted the traditional Fall Welcome dinner with a "Day in the Life" collaborative film (<https://www.tribute.co/gge-students/>) featuring GGE students new and old who submitted short clips showing what they've been up to. Many other unconventional events are in the works for the upcoming year, including a virtual "Great GGE Bake-off" competition (with prizes!), virtual games including trivia and PowerPoint parties, and we are working on developing a whole slate of original events for the first ever digital recruitment weekend.

We are also hoping to collaborate with other graduate groups and programs on social events to expand our community even more. A special thank you to Social Committee members and friends Mollie Ogaz, Fred Nelson, Hollis Jones, and Angie Korabik, without whose creativity, support, and initiative these events would not have been possible.

We in Social Committee are also so grateful for, and continually in awe of, the enthusiasm and dedication of the members of the GGE, and are looking forward to connecting with you all over the coming months, in whatever ways we can. If you would like to participate in planning social events or have ideas for cultivating community in these virtual times, we would love to be in touch.



Blrblrlblub (it's a crab underwater). - Kristen Ellsmore

Hats for Fish

Jessica Greer

Tom stood by the edge of the river, his fishing rod in hand. He had been coming to this spot since he was a young kid, brought by his grandpa, whose own father had brought him. It was a secret fishing hole – kept within the family for those that inherited the inclination to fish. Tom gazed out from under his cap, squinting into the sun that reflected off the water and waiting for the fish to bite. This fishing hole had always been good for Chinook salmon.

The urge to fish had skipped a generation, but his oldest granddaughter had come out fishing with him one day when she was five years old and had returned every summer since. She was in college now but came to visit during the break. One afternoon when they were out fishing, she told him about a job she had done in a research lab, where scientists put caps on fish to keep them cool in warming streams.

“The habitat around the streams got cut down, so the water heats up and the caps cool their heads and keep their brain functioning during heat stress,” she explained.

“Huh,” said Tom, as he considered it. As a kid, he remembered coming back home with a fish on most trips. He glanced now at the cooler that had remained empty over the whole week he and his granddaughter had been out.

The next summer was the first one his granddaughter missed visiting – she was busy with a

summer job. He fished alone and remembered the conversation they had about the capped fish. That summer, he caught fewer fish than any other summer. He came home one evening and sat in his chair and looked at the faded photos on the wall of him and his grandfather with their catch, and new ones stuck up with thumb tacks of him and his granddaughter, smiling with the first fish that she had caught after a week of patient waiting. He settled back in his chair. “Hats for fish,” he remarked. “Huh.”

The next day, he went into his workshop. He had spent a good deal of time creating things that were needed around the house or at work. After a couple weeks of tinkering, reconsidering, and more tinkering, he had a pilot cooling hat. So he went fishing. Like many first attempts, it did not work at all – it fell off the fish’s head the moment he released it into the river. He signed, fished the hat out, and got back to work. After several months of testing out hats, he made one that fit, stayed on, and remained cool.

He made more. He made as many as he could and crowned the heads of all the fish in his river. He did this year after year, with each year his granddaughter remaining caught up in her own life and unable to visit. It might have been his imagination, but it seemed like there were more fish over time. Finally, one summer his granddaughter called. She wanted to come fishing. And she had a baby girl she wanted to bring.

“Well,” Tom said. “The fish will be here.”



Kristen Elsmore servicing oceanographic instrument (ADCP) in Palos Verdes, CA, feat. fish



Gone, but not forgotten. - Nick Rosenberger

ART AND SCIENCE



Golden-crowned sparrow. - Becca Nelson

Daybreak

Gillian Bergmann

There is a rare, quiet moment
When the sky shifts from oblivion
To haze, blood orange and finally marigold.
A moment when we turn our cheeks
To the sun, rushing to the warmth.
A moment when the trees glow amber
With renewed photosynthesis.
As slants of gold bloom across my wall,
I step out into this moment.
Still air frosting my skin,
The birds and I hold our breath,
Waiting to be captured in sunbeams.
New light brushes over my face
and the amber trees rustle, luminous and revived.
I bask in this first touch of god-light,
Peering into the stillness,
The ripples of night abated
And waves of day still on the horizon.
For a moment, I am one with the world,
Inhaling in harmony with all its creatures.
What a precious, private moment to hold,
Suspended in a sunbeam.



Wonderstruck

Becca Nelson

How to define loveliness—
some bluebirds glint up from the scrub.
Clear, cold air shimmers. Light mosaics through leaves.
The hills give to soft blue. The hawk circles
over we who listen to the creek, laugh,
eat PBJs, plunk stones, dream in manzanita,
and follow fence lizard tracks.

This gift of watershine
dapples on. Bugs glide across the pools.
A blue feather floats. The trees sparkle.

Hold on tight,
wild, mossy, fierce, and pulsing
as a hummingbird's
pink, whirring spark.

Creekside

Becca Nelson

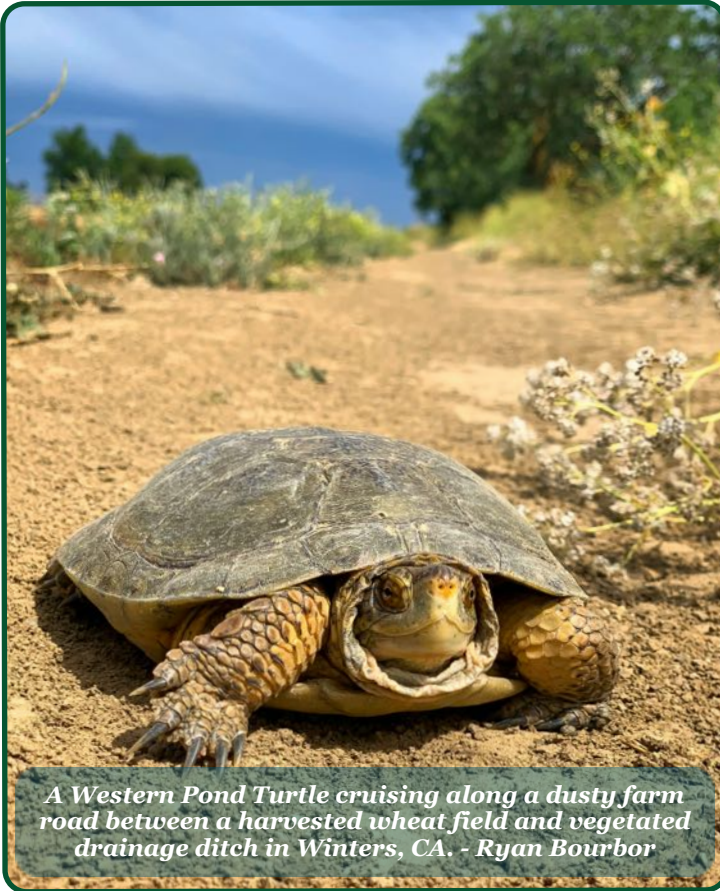
Hawk loft and creek run
through light-fringed rushes
leaf-slick and green
spray of ferny abundance
from rock

soft spread of oaks
against blue hills
bird buzz
in the laurel-scented air

deer tracks in the mud
the newt lumbers
fire-bellied



Watercolor painting of Jepson Prairie. - Becca Nelson



A Western Pond Turtle cruising along a dusty farm road between a harvested wheat field and vegetated drainage ditch in Winters, CA. - Ryan Bourbor

Drought

Becca Nelson

At roadside, even
the wind is hot, soured.
Green bottleflies
orbit a dead cow.

High noon, this land is
glint and scoured.
A ground squirrel clicks.
Sunlight stamps
dust from the passing
pickup truck.

Today brings dry pale
clouds wrung out
to plateaus. Dying grapes
make no promise.

Eucalypts rattle,
waiting to burn.
Dead leaves scroll by,
catch on barbed wire.

Love poem for the tides

Becca Nelson

The ocean spreads to sky:
bright, expansive.
The surf pounds.

Gulls crest the air.
Light breaks over the water.
The shadows of the mangroves spiral on
toward the horizon's green glass.

The trees bow to the salty wind.
The tide pulses, naming what cannot be
in its recede from the sand.
Far off music carries

through the sea and the wind
over the boardwalk.
Bird scatter over water,
their wings luminous with dawn.



The star of the dive (Alisha Saley diving in Mendocino, CA). - Kristen Ellsmore

STUDENT Q & A

Feature: Odyssey in the time of COVID-19

Ellie Oldach

Pandemic calls for shifted traditions

For me, Odyssey began when a van painted “Honk if you think Climate Change is fake news!” screeched to a halt outside the door of my new Davis home. A fifth-year GGE student, sporting a fur coat and a big smile, ushered me into the van. And we were off— a van-full of new, slightly uncertain first-years, joining the rest of our cohort for a week in the California mountains, getting to know the landscapes and the GGE program with the help of staff, student, and alumni guides.

But in 2020, our academic and social landscapes were totally upended by pandemic. As the new school year approached, one thing was evident: the usual Odyssey was not going to be possible.

Rather than abandon orientation all together, a group of GGE students worked hard to organize a different program. This fall, the incoming cohort was welcomed in through the *Odd-yssey*— an extravaganza that unfurled over 8 days to welcome and orient students through a series of activities from the silly to the profound.

An online Odyssey

Each day was split between professional development sessions in the morning, and social

activities at night. That reflects the joint goal of orientation, says Tali Caspi, a second-year who served as an Odyssey TA after her positive experience on the Odyssey in 2019.

“My Odyssey was really helpful for bonding and making friends,” she says, “but it also helped me learn who to talk to about basic grad school questions. We wanted to make sure both of those things happened this year.”

In professional development sessions, students took part in Diversity, Equity and Inclusion training, attended a panel with GGE alumni who have followed academic and non-academic career paths, and had a chance for an open Q-and-A with current students covering topics from course registration to imposter syndrome. In the evenings, students got to know each other through icebreakers, scavenger hunts, movie nights, Slide Roulette, and an Un-Talent show.

There was plenty of silliness throughout the day, too. The cohort was split into homerooms (the equivalent of typical-Odyssey home vans), and the TAs for each homeroom created a homeroom theme and shared themed materials and activities with their group. First-years in *The Bachelor* homeroom received fresh croissants at their door on Date in Paris day, while students in the *Kouba-Korabik Campaign* homeroom engaged in political debates and crafted policy platforms.

First-year impressions

It was a lot of Zoom. “By the end of the day, you’re tired of staring at the

“ I really liked the Un-Talent Show, it was great to see everybody really in their element. My untalent is that I can roll my eyebrows— so I performed an eyebrow-rolling routine.

- Kyra Gmoser-Daskalakis, GGE 1st Year, CEPB ”

“ My favorite moments were during our "homerooms". Having a smaller group of people who I got to see and connect with consistently throughout Oddyssey was the most fun for me. [On] the first day ... my "homeroom TA's" ... were dressed up in The Bachelor themed costumes and playing their roles perfectly (and hilariously). ”

- Andrea Odell, GGE 1st Year, Oken Lab



“ The Un-talent Show really let people show their sense of humor, and bravely make fools out of themselves on the internet. My co-TA Victoria and I did a duet— I played free jazz baselines and she improvised spoken word poetry from audience suggestions. ”
- Tali Caspi, GGE 2nd Year, Holyoak and Fleishman Labs



“ I have two! My favorite activity was Slide Roulette, that was a great Zoom activity, really engaging and just fun. Everybody had a good laugh at everybody’s crazy slides. The other was listening to alumni talk about grad school and their experience. It was especially nice to get perspectives from alumni who aren’t working in academia. As a grad student, mostly we’re talking to academics. ”
- Nima Farchadi, GGE 2nd Year, Oken Lab/SDSU Lewison Lab



screen,” reports Nima Farchadi, a student in the Joint Doctoral Program in Ecology with San Diego State University.

But in his mind, the Zoom time was worth it for the chance to connect, especially as a student in a new town.

“What I really miss about the Odyssey is that I didn’t feel alone. I felt like I was surrounded by people all day,” he reflects.

First-year GGE student Kyra Gmoser-Daskalakis agrees. “At first, I wasn’t sure I would actually get to know people through their little Zoom boxes,” she says. “But I really did.”

For first-year GGE student, Andrea Odell, getting to know her cohort was possible in particular because of the daily interaction with the smaller homeroom groups. “Having a smaller group of people who I got to see and connect with consistently throughout Odyssey was the most fun,” she says.

That social connection helped foster a sense of what the GGE is.

“At the core, it was really helpful in getting people to feel like they were part of something,” reflects Gmoser-Daskalakis. “I felt so welcomed, knowing that current students put so much effort into us.”

“It was a really welcoming and warming atmosphere,” Farchadi reflects. “You could tell people were really there to support each other.”

Future of the Odyssey

As successful as the first-years thought the Odyssey was, they still hope for a less-virtual experience in the future.

“As fun as this is, it’s nothing like face-to-face contact and interaction, plus getting a chance to visit new places,” says Farchadi.

“Hopefully it will be in person in the future,” says Gmoser-Daskalakis.

“I think we did the best we could,” says Caspi. But, like the first-years, she’s also hoping for future Odysseys that will allow the students to get to know each other— and the landscapes of California— in person.

What does Odyssey mean for the GGE?

In the GGE, community-building is more than just a warm fuzzy feeling.

“The Odyssey is about forming friendships and social relationships,” says Caspi. “That’s inextricably linked to our academics, our learning.”

The student body of the GGE organizes an impressive number of activities, from R-Davis to the annual Mardi Gras Charity Ball (to, ahem, *The Aggie Brickyard*). Student activism has been influential in shaping course offerings, advancing holistic admissions practices (#GRExit), and in driving the program to respond to deep-rooted issues of racism and discrimination in the university. Social relationships support student involvement in governance and planning across the GGE, even as students are spread out across a variety of career stages, disciplines, and departments. Those strong social ties are built on memorable shared experiences like the Odyssey.

“If you cut that out and lose those social relationships,” Caspi asks, “what’s the cascade of impacts across the whole GGE?” ♦

THE AGGIE BRICKYARD



Putting good fire back on the land with Audubon Canyon and tons of local volunteers at Bouverie Preserve. - Ashley Grupenhoff



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