Message from the Director: Kevin Arrigo

Happy 25th Anniversary to the Earth Systems Program!

We may be mature, but we are not old!

Throughout the program’s history we have recognized the critical importance of training our students to address the major challenges facing humans and their fragile environment. Recently, one of us heard a comment that resonated with our discussions about future directions for the program. In a nutshell, that comment was “all systems are perfectly designed for the product they produce. If you want to change the product, change the system.” In a world increasingly focused on triple bottom line outcomes – improvements that benefit people, the planet, and profits – it is important to train students who can both measure the performance of existing systems and redesign those systems for better outcomes.

That is our goal and we strive to achieve it in everything we do.

So feel free to come by the office to chat or find out more about the program. We always look forward to hearing from all of our past, present, and future Earth Systems students and our doors are always open!

Kevin R Arrigo
Happy 25th Earth Systems!

The Earth Systems Program celebrated its 25th anniversary this quarter during an event that welcomed current students, staff and Earth Systems alumni back to the O’Donohue Educational Family Farm.

In addition to enjoying snacks and drinks by the Educational Farm’s new barn teaching facility, Earth Systems folks listened to an alumni panel discussion moderated by Dean Pamela Matson. Four Earth Systems alumni - Danny Cullenward BS ’06, MS ’07 MS&E, JD ’13 Stanford Law, PhD ’13 E-IPER, Bill Faries BS ’95, MS ’97, Jenny McColloch BS ’04, MS ’05, Jenny Rempel BS ’12 - reflected on how they now apply their degrees to approach “Grand Challenges in a Challenging Time,” the theme of the event.

The panelists described their non-linear paths to careers ranging from water right advocacy at the Community Water Center to foreign policy journalism at Bloomberg News. Their reflections put many panicked Earth Systems seniors at ease. Senior Jake Gold ’18 particularly connected with Cullenward’s career path, as Gold is “someone who never wants to leave school.” Cullenward said his numerous degrees reflect his desire to understand all facets of issues such as climate change.

To conclude the celebration, Dean Matson introduced the incoming Dean of the SE3, Geology Professor Stephan Graham. Dean Graham concluded the event by acknowledging Associate Director Deana Fabbro-Johnston’s invaluable contributions to the program, calling her “the heart” of Earth Systems.

By Alex Nguyen-Phuc and Carolyn Rice, Earth Systems Student Advisors

ES10 Hopkins Marine Station Fieldtrip

On Saturday, November 4th, 35 students from ES 10: Introduction to Earth Systems, went on a field trip to Stanford's Hopkins Marine Station in Pacific Grove. The trip started with a tour of the marine station. Rachel Mason and Julia Crane, two PhD candidates at Hopkins, showed students the dive lockers, the experimental sea tables, the inside of the Denny Lab (a biomechanics lab), and the stunningly beautiful Harold A. Miller Library. Over a pizza lunch, Mark Denny, the current faculty director, gave the students an engaging lecture on some of the physics that generate high and low tides. After lunch, everyone headed out to the tideline, which was alive with brown pelicans, cormorants, otters, sea lions, intertidal anemones, and more. It was with reluctance that everyone said bye to the ocean, boarded the bus, and headed back to main campus.

By Jack Lane, Earth Systems 10 Head TA
Internship Spotlight: Ali Hoffer

This past summer I arranged an internship as a research assistant with Rachel Engstrand, a third year PhD student in the Emmett Interdisciplinary Program in Environment and Resources (E-IPER). We visited different gold mining sites in the Madre de Dios region, analyzing how human activities influence ecosystem functioning in the Peruvian Amazon. I also conducted extensive interviews with various stakeholders from NGO workers to farmers to miners themselves in order to more fully understand the complex drivers influencing the mining culture.

One of the most profound elements of this work experience was my shift in perspective. I started summer with the knowledge I had gained reading research papers and the popular press. These sources portray gold mining in an incredibly negative light, highlighting the extensive environmental consequences, from deforestation to mercury contamination of waterways, as well as the social costs including corruption and the rise of drugs, alcoholism, prostitution, and human trafficking.

During my time in Peru, my perspective quickly changed. I repeatedly witnessed miners subject themselves to toxic exposure, physical danger, threats of job security, and constant instability, in their pursuit of wages to support their family. I witnessed the poverty of the region and heard about the struggles of miners trying to build a home, put food on the table, and send their children to school.

The dichotomy between my initial perception and the reality I discovered has impacted the way I approach not only my Earth Systems education, but also the direction of my future work. It taught me to think more critically about the complexity of social and environmental problems. This is especially pertinent when we tend to generalize about a challenge we face, with incomplete information, often neglecting to “hear” the voices of those most directly impacted. Moving forward I seek to continue working internationally, learning from the people and places around me, in order to ensure future challenges are addressed more holistically by validating the realities of the affected people.

By Ali Hoffer, Earth Systems M.S. Candidate

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Julie Kennedy Public Service Scholars

Sierra Garcia  
BS ’18

Lauren Gibson  
BS ’17, MS ’18 Candidate

Ada Statler-Throckmorton  
BS ’18
The Earth Systems Writers Collective

The Earth Systems Writers Collective is a community of students who meet weekly under the oak tree across from Y2E2 to write together and listen to and support each other’s writing. For more information please contact Emily Polk at empolk@stanford.edu. The following are Earth Systems reflections written by members of the collective.

Nod your head. Listen. Smiling, look up at the oak boughs weighed down with leaf litter above you, little stars lit up by the sun. Embrace the cacophony of clucking chickens who accompany the speaker’s gentle ode as she tells how she found her mother in the soil. Watch a waft of dust linger in the air above us all, suspended as spirited earth flowing out of the scratching chicken’s heels. In a circle of black and brown people committed to loving and knowing and healing with the land, find home. In the dust and the crackling fall leaves and the frazzled chickens and the divine humans sitting with you, find kin. The group perched under the oak tree is made up of students in my class “Liberation Through Land: Organic Gardening and Racial Justice,” which takes place on the farm every Thursday afternoon. Throughout the quarter students have been learning how to sow seeds, prepare garden beds, amend soils, build compost, and take care of plants, all the while discussing the role of land in racial justice movements and collective healing. A peaceful process of discovery unfolds each time we gather, amidst the farm’s rows of rainbow-like swiss chard the size of tropical ferns, tomatoes purpled by the sun, flowering lavender and native sage.

By Natasha Mmonatau, Earth Systems M.A. Candidate

There are few times in a person’s life when they look as awestruck and childlike as the first time they stand beneath a redwood tree. On a recent trip to Jasper Ridge Biological Preserve with students from Earth Systems 10, I had the privilege of witnessing students, hailing from various parts of the world, drop their jaws at the imposing mass of the coast redwoods overhead. The trip reminded me of the importance of place-based learning, but also the need to recreate these transformative experiences by more accessible means. I am very grateful that my coterm year is pushing me to think about how and where education happens, both inside and outside the classroom.

By Emily Dial, Earth Systems M.A. Candidate
Harvest Festival

On the afternoon of Friday, August 27, students gathered at the O'Donohue Family Stanford Educational Farm for the annual Halloween Harvest Festival, which featured live music and farm-fresh food. Blaire Hunter '18 noted that she really enjoyed “the amazing salsa made entirely with ingredients from the farm.” The Stanford Farmers also used eggs from the farm's many chickens to bake cupcakes and other desserts. Their aim was to source as many ingredients as possible from the Farm to showcase the diversity of this small but mighty six-acre piece of land.

During the event, students took turns making pizzas using the farm's brick oven, decorating cupcakes, and exploring the rows of vegetables and flowers. Mike Burnett '18 noted, “It’s great to see a real community growing around the Farm.” Vance Farrant '21, co-president of the Stanford Farmers, echoed this sentiment when he said: “I can’t overstate how amazing it is to bring people together to celebrate in such a wonderful space and community, eating food grown right on the Farm and enjoying quality music and conversations.”

By Riya Mehta, Earth Systems Student Advisor

Once every quarter on the Stanford Educational Farm, a group of scientists, writers, farmers, friends, beer-drinkers, and everything in between gathers to share stories and ears. Rooted Words is “a reading series for people who like to get their hands dirty.” It's a casual scene, usually with a healthy mix of students, faculty, and community members, all who enjoy giving snaps and learning from one another. Professor Thomas Hayden, Director of the Master of Arts in Earth Systems and the primary organizer of the event, likens it to “literary karaoke.” All are welcomed to attend, to share any original work or simply to listen.

By Claire Thompson, Earth Systems M.A. Candidate

Mark your Calendars!

Upcoming DEADLINES
• Jan. 1, Feb. 8 - UAR Small Grant
• Feb. 6 - Bill Lane Center Internships
• Feb. 15 - Beagle II Award
• Feb. 20 - Coterm Applications
• Feb. 23, 5pm - SESUR Program
• Feb-Mar. - Haas Center Fellowships
• Mar. 12 - UAR Major Grant
• April 30 - Honors Program (Seniors)
• (TBA) - Volpert Scholars Award

Upcoming EVENTS
• Julie Kennedy Public Service Scholar Ceremony (Quarterly)
• Coterm Info Session
• Winter Quarter Happy Hours
• Volpert Scholars Symposium
• Prospective Majors Dinner
• Rooted Woods (Quarterly)
• Earth Systems Capstone Symposium