

Bringing Careers into the Classroom: with a focus on Diversity, Equity & Inclusion

Why? Our students often do not pursue Plant Sciences careers due to barriers such as financial considerations (e.g. low-income students), knowledge about options (first generation students, under-represented minorities), or lack of role models. The following suggested activities address these barriers, enhance DEI whilst benefiting all undergraduates.

How? In addition to the activities suggested below, an important step in focusing on DEI is to reflect on how you present Careers in the Classroom. Ask yourself if your choices of presenters or topics represent unconscious biases; these may lead to diverse students not assimilating the career knowledge. Is your panel of industry reps exclusively white, male? Are the jobs exclusive? Not all undergraduates will/need to get a graduate degree. Redesign content based upon your reflections.

When? No time? The activities are designed to integrate into undergraduate teaching using relatively little class time; some longer-term efforts are also introduced. These activities are intended to integrate with planned Departmental-level activities. See Appendix for resources.

6 things you can do right now

1 Start or End Lectures with a Career Advertising Board

Advertise:

- job ads, grad school application dates.
- workshops on CV writing or career related skills.
- industry-related events: Seed Central, Extension events, Non-profit events or talks, policy group meetings, or free campus workshops. [Industry related events](#).
- explain why these activities are useful and how skills and networking translate to careers.

Short on time? Include a section on your Canvas page that lists these opportunities and resources.

2 Host Career-focused Speakers

Invite speakers from diverse backgrounds to provide short perspectives on grad school or progression from university to career. Consider diverse role models to invite (credit and acknowledge their time). Ask students about what careers/who they'd like to hear from. Suggestions: industry reps, ex-students, farm advisors, CE Specialists, ag. consultants, NGO's, policy makers, land managers.

Short on time? Use Zoom to record for future use, post on Canvas. Invite your past grad students/post docs.

3 Career-focused Office Hours

Offer alternative format office hours, where you advertise a willingness to talk about careers or grad school and discuss barriers that diverse students may encounter. Individually invite diverse or URM students to chat with you about careers.

Short on time? Use your current office hour time for students to ask questions about careers, or offer a once off office hour.

4 Advertise or Create Internships

- Advertise internships allowing students to work with faculty or industry. Working with faculty is an important step in preparation for grad. school or the job market, and key to obtaining letters of recommendation.

Short on time? Many internships are advertised at these sites: [Internship programs](#)

5 Target Barriers to Graduate School

Help lower barriers by:

- providing information about applying to grad school that improves accessibility for low-income and first-generation students, such as: GSR positions, financing and finding mentorship.
- explaining admissions procedures, the role of MP's, DEI statements etc.
- dispelling the myth that exceptionally high GPA's are required for grad school.
- highlighting data gaps that would be interesting dissertations and providing examples of what dissertation research can look like.
- advertise funding opportunities and due dates for undergraduate students to gain research experience. [Funding programs](#)
- encourage undergraduate student application to in the NSF GRFP <https://www.nsfgrfp.org/> to fund graduate school (applications by undergraduate students have high success rate).

Short on time? Refer to other's explanations like the Population Biology Graduate Group [Barriers to grad school](#).

6 Educate About Jobs Covered in Class

Provide brief bios or position descriptions for jobs related to course content. What training is needed? What courses are essential? What financial trajectory can be expected (length of training, student loans versus salary)? For example, a lecture on plant nutrition could highlight fertilizer reps, analysis lab technicians, crop consultants, or environmental NGO's.

Short on time? Copy and post a position description from a related job: [Agriculture and seed industry related careers](#) or [Natural resource management related careers](#). Focus just on degree needed, not the other details.

2 things to work on over time

1 Become a Career Mentor or Take on Research Interns

- Consider taking interns from DEI linked programs or become a mentor e.g. McNair Scholars. Note that many students need extra financial support to make it worth doing an internship versus taking a part-time job.
- Consider working as a career mentor with student clubs or professional societies (many have mentorship programs; ASPB, ASHS, CSSA etc): [Mentorship Programs](#).

2 Educate Yourself About Where Students Go After Undergrad

- Take note of the career trajectories of a few engaged students in your class. Ask for their involvement and keep email contact. Stay in touch with students who could be willing to be future guest speakers.

- What jobs do your students end up with? What path/training/courses/internships were instrumental for them?
- Use this information to provide your class with realistic information about careers. What are typical career trajectories? What transitions and potential options do students have?
- Highlight these stories on a website e.g. <https://hortaggradstudents.ucdavis.edu/articles/seeds-of-inspiration>

* This text was put together by the Diversity, Equity and Inclusion Committee, Teaching and Mentoring Working Group, Department of Plant Sciences at the University of California, Davis with contributions from Matthew Gilbert, Ellie Andrews, Catelyn Bridges, Steve Haring, Troy Magney, Mallika Nocco, Georgia Drakakaki, Mary Cadenasso, and Valerie Eviner.

These are iterative documents, and we welcome ideas for improvement. Please send suggestions/comments to Matthew Gilbert at megilbert@ucdavis.edu.

Appendix

The following are a few resources related to the suggested activities in the main text.

General Resources

- Plant Sciences DEI resources: <https://www.plantsciences.ucdavis.edu/diversity-equity-and-inclusion>
- Incorporating DEI in teaching: <https://magneylab.ucdavis.edu/dei-resources>
- A rich resource for students and faculty: <https://ebeler.faculty.ucdavis.edu/resources/faq-student-resources/#ProfessionalAnswers>

Barriers to grad school

- A series of recorded seminars on what grad school is like, how to apply etc, created by grad students in evolution and ecology: <https://eegradpreview.weebly.com/>
- Unlearning Racism in Geosciences perspective on barriers: <https://urgeoscience.org/>
- Understanding Interventions that Broaden Participation in Science, conferences and organization: <https://understandinginterventions.org/>

Industry related events

- SeedCentral links the local seed and agbiotech industry and UC Davis: <https://www.seedcentral.org/>
- Grower meetings and conferences: <https://www.almonds.com/about-us/programs-and-events>, <https://www.worldagexpo.com/>

Agriculture and seed industry related careers

- Agriculture jobs in California: <https://calagjobs.com/jobs/>
- Global agriculture jobs: <https://www.agcareers.com/results.cfm>
- Produce industry jobs: <https://www.blueskysearch.com/>
- Farm production jobs: <https://www.farmandranchjobs.com/>

- Horticulture jobs: <https://www.hortjobs.com/>
- Crop Science jobs: <https://careers.careerplacement.org/jobseekers/index.cfm>
- UC Agriculture and Natural Resources jobs, incl. farm advisors etc: <https://ucanr.edu/About/Jobs/>
- Biotech related jobs: <https://www.biospace.com/>
- Pest Control Adviser career information: <http://ipm.ucanr.edu/PCA/>

Natural resource management related careers

- Conservation related jobs: <https://www.conservationjobboard.com/california>
- Ecology related jobs: <https://ecojobs.com/>

Mentorship Programs and Resources

Some centered on DEI, relevant for Plant Sciences Undergraduate Students:

- UC Davis Aggie Mentors largely focusing on high school students <https://stem.ucdavis.edu/resources/aggiementors/>
- American Women in Science (AWIS) Mentorship Program, Sacramento Chapter <http://sv-awis.weebly.com/mentorship-program.html>
- American Society for Horticultural Science <https://ashs.org/page/MenteeApplication>
- American Society of Plant Biologists <https://blog.aspb.org/career-building-opportunities-for-plant-scientists-apply-now/>
- Borlaug Scholars Program <https://www.plantbreeding.org/borlaug-scholars/>
- California Alliance for Minority Participation <https://urc.ucdavis.edu/camp>
- CITRIS and the Banatao EDGE in STEM Mentorship Program <https://citris.ucmerced.edu/mentor>
- First Gen Graduate Mentorship Initiative, UC Davis <https://grad.ucdavis.edu/first-generation-grads-initiative>
- Graduate Students of Color Mentorship Program, UC Davis <https://ccc.ucdavis.edu/programs-and-services/graduate-student>
- McNair Scholars Program <https://mcnair.ucdavis.edu/>
- Minorities in Agriculture Natural Resources and Related Science (MANRRS) Mentorship Program <https://caes.ucdavis.edu/students/clubs/manrrs>
- National Research Mentoring Network <https://nrmnet.net/>
- Scientist Mentoring & Diversity Program (SMDP) Mentorship Program <https://smdp.icpdprograms.org/>
- UC Davis Graduate Studies Resources for Mentors and Mentees <https://grad.ucdavis.edu/resources-mentors>

Funding and Fellowship programs

Funding for undergraduate research experiences:

- American Society of Plant Biologists Summer Undergraduate Research Fellowships: <https://surf.aspb.org/>
- UC Natural Reserve System Field Science Fellowships: <https://ucnrs.org/researchbackup/field-science-fellowship/>

Funding for graduate school:

- NSF GRFP program to fund graduate school: <https://www.nsfgrfp.org/>

Internship programs

- UC Davis Internship and Career Center, offers many activities related to careers: <https://icc.ucdavis.edu/>
- Ecological and Evolutionary Response to Rapid Environmental Change NSF Research Experience for Undergraduates <https://eerrec.ucdavis.edu/>
- ORISE website for internships at Federal agencies: <https://orise.orau.gov/>
- SeedQuest aggregates jobs and internships from many seed and agbiotech companies: <https://www.seedquest.com/jobs.php>

Conferences and workshops

Catering to diverse audiences or focused on ag. careers

- Latino Farmer Conference: <https://latinofarmerconference.ncat.org/ingles.php>
- Community Alliance for Family Farmers: <https://www.caff.org/2021conferenceschedule/>
- Sustainable Agriculture events (can be filtered for California): <https://attra.ncat.org/events/online/>
- California Alliance for Minority Participation runs an NSF LSAMP/CAMP Statewide Symposium <https://urc.ucdavis.edu/camp>
- SACNAS Advancing Chicanos/Hispanics and Native Americans in Science annual conference: <https://www.sacnas.org/what-we-do/conference/>
- MANRRS: Minorities in Agriculture Natural Resources and Related Sciences, annual National Conference: <https://www.manrrs.org/nationalconference>

Alumni and career trajectories

- A focus on some career trajectories of GGHA alumni: <https://hortaggradstudents.ucdavis.edu/articles/seeds-of-inspiration>