

**University of California, Berkeley
Civil and Environmental Engineering
Academy of Distinguished Alumni
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CEE Undergraduate Discovery Experiences

Berkeley is consistently ranked among the top public research universities in the world, and Civil & Environmental Engineering's undergraduate programs have for decades had a similar ranking and reputation for producing outstanding graduates whose contributions improve our country and the world. This academic leadership stems from a culture that places the student experience first, and continually innovates to improve that experience.

In furtherance of this culture, a campus-wide effort is currently underway to ensure that every Berkeley undergraduate engages with a "Discovery Experience" as part of their academic experience:

The Berkeley Undergraduate Discovery Experience is a campus-wide initiative to engage and support more undergraduate students in scholarly and experiential learning. The broad term "Discovery Experience" intentionally references a wide range of immersive learning projects - from substantial research experiences and artistic production to entrepreneurial initiatives and community-engaged projects. All such efforts should challenge students to question, design, implement, and iterate toward a thoughtful and creative culminating product.

In Civil & Environmental Engineering, we are equally committed to attaining the goal that every CEE major should have a "Discovery Experience" as part of their undergraduate education. A successful example of such an experience is the Undergraduate Research Opportunity Program (UROP), which was launched and has grown with tremendous and greatly appreciated support from the Academy of Distinguished Alumni over the past six years. This program has established itself as a deeply enriching experience for dozens of CEE undergraduate students. It is being used as a model for other similar efforts in other Departments across campus.

This past year, the Department modified the structure of the UROP to include an application process and community-building activities that start in the sophomore year. This allows all CEE students to consider whether the UROP provides them with the type of Discovery Experience that they seek.

For many Berkeley CEE students, however, research is not the top priority for an undergraduate experience. Many are seeking opportunities to work on teams to apply their engineering knowledge to applied problems, to develop their leadership skills, and/or to connect with under-served communities. Berkeley CEE is committed to developing opportunities so that every CEE major can successfully pursue a Discovery Experience as part of their undergraduate education.

CEE is extremely grateful to the ADA for its support of the UROP during its formative years; the program would never have succeeded without it. CEE has been in discussions with the ADA Board about broadening the focus of ADA support to not just UROP, but to the development other Discovery Experiences. The board has given its enthusiastic support to this broader focus.

Target for 2019-20 Academic Year

An existing CEE Discovery Experience is participation on one or more competition teams, including Construction, Seismic Design, Concrete Canoe, GeoWall, Environmental Design, Steel Bridge, Transportation Systems, and Sustainable Solutions. These teams spend the year researching and preparing for competition, and then compete in regional, national and international events. For many students, participating on a team is one of the highlights of their undergraduate experience, and collaborating to address the technical challenges in the competitions serves as a foundational Discovery Experience. In typical years, support for the teams has come

from the Carl W. Johnson Student Leadership Fund (which was started with seed funding from members of the Academy and CEE Advisory Council) and corporate sponsorships to the student groups.

The upcoming year is far from typical, however, and we have a particularly exciting opportunity for students to develop both teamwork and leadership skills. The 2020 ASCE Mid-Pacific Regional Conference (MidPac 2020) will be hosted by Berkeley CEE students. In April 2020, nearly 800 students from around the Pacific Rim, representing 16-20 schools, and forming more than 150 teams, will arrive in Berkeley for three days of competition, collaboration and celebration. Events will include Steel Bridge, Concrete Canoe, Water Treatment, GeoWall, Transportation Systems, and Sustainable Solutions. MidPac 2020 will be the culmination of a year's worth of students planning, designing, fabricating, trial and error, agony and ecstasy. It's a year of putting a whole lot of classroom knowledge into practice and developing leadership and collaborative skills along the way.

This year, the generosity of the ADA will supplement other competition team funding to support Berkeley student leaders as they host this premier event and showcase Berkeley CEE!

The past two years that I have been at MidPac were the most invaluable and memorable experiences in my college career. MidPac helped me improve my public speaking skills and learn how to write appeals. I met students on other teams and from other schools and bonded with my own teammates as we cheered on our paddlers.

- Hagen Tam, Concrete Canoe Project Manager.