The UCLA Henry Samueli School of Engineering and Applied Science is inviting undergraduate engineering students to apply for a paid Undergraduate Mentor position with the 2019 Transfer Bridge to UCLA Samueli summer program. As an Undergraduate Mentor you will work on a team with a Graduate Student Facilitator to support classroom instruction in our 3 week program and lead a technical design project at our culminating Hack-a-thon.

**Paid summer mentorships:** The Undergraduate Mentor position is a paid position, requiring full participation at Transfer Bridge in September 2019 as well as enrollment in the spring Engineering 192 in Spring 2019 (Fridays 8 – 10 AM) to develop and prototype their technical project and design curriculum, homework, and lesson plans for the summer program. Undergraduate Mentors will not only have the unique opportunity to develop and deliver workshops and lead instruction; they will also hone their engineering skills, lead teams on technical projects, and develop the “soft skills” that companies look for in hiring professional engineers.

**About our Program:**
Transfer Bridge to UCLA Samueli Engineering program is for incoming engineering transfer students who are interested in gaining a competitive-edge in transitioning to UCLA Samueli, building a community with other incoming transfers, and accelerating their access to key professional development and enhanced learning opportunities that play a vital role in securing their first internship, job after graduation, or being competitive when applying to graduate school.

The program will provide an accelerated ‘boot-camp-like’ classroom instruction for the first few weeks of the M20 and CS32 course. Participants will experience the rigor of the UCLA Engineering classroom and pre-learn course content. There will be time during the day for group work and study to help them develop a network of peers before walking into the classroom in the fall. We will integrate professional development workshops to help Bridgers get to know their campus, understand what to expect in year one and to help them prepare for the fall Engineering & Technical Career Fair. Finally, we will conclude by hosting a hack-a-thon-like experience to allow Bridgers the opportunity to apply their engineering skills and to engage in their first technical design project as a UCLA Engineering student.

**Details of Program Components:**

1. **C++ and Matlab classroom experience**
   a. Led by Graduate Student Facilitators w/ support from Undergraduate Mentors.
   b. Cover content that transfer students are traditionally missing & important concepts that will help their performance in CS 32, MAE M20, or CEE M20.

2. **2 day Hack-a-thon technical design project**
   a. Led by Undergraduate Mentors, w/support from Graduate Student Facilitators.
   b. Utilize engineering concepts learned in class (C++ and Matlab).
   c. Utilize design tools taught through Transfer Bridge (Ex include CAD, 3D printing, circuits, Arduinos, etc.)
   d. Must include iterative design loop & prototype.
   e. Transfer Bridgers (50 total) will need to be split into competition teams.
   f. Approximately 30 hours of work time (includes training workshops).
   g. Prototype to show/demonstrate at culminating exhibition or competition.

3. **Professional development** focused on 1st year success & networking opportunities
   a. Led by Program Director w/ support from Undergraduate Mentors & Graduate Student Facilitators
   b. Large focus on Career Fair prep
   c. Workshops with industry representatives (tentative)

**Program Dates & Logistics:**
3 weeks - September 3 – 21, 2019
Prep – August 28 – 30, 2019
Clean-up & Evaluation – September 22, 2019
9:45 AM – 6:30 PM (tentative)
50 incoming transfer students (all majors)
Day 1 | Orientation & Team-building exercise
Day 2 – 12 | Course Boot-camp
Day 12 – 14 | Hack-a-thon

**Course Boot-camp Sample Day (tentative)**
10:00 – 12:00 PM | Lecture
12:00 – 1:00 PM | Review of instruction/ practice problems
1:00 – 2:00 PM | Lunch/ lunch-time workshop
2:00 – 4:00 | Lecture/ instruction
4:00 – 5:00 | Review of instruction/ practice problems
5:00 – 6:00 | Technical Project – planning and skills workshops

**Hack-a-thon (tentative)**
Day 1 - 10:00 AM – 6:00 PM | Report to Transfer Bridge
Day 2 - 10:00 AM – 6:00 PM | Report to Transfer Bridge
Day 3 – 10:00 AM  - 6:00 PM | Report to Transfer Bridge - 12:00 PM | Project presentations - 4:00 PM | Awards Ceremony

**Positions:**
2 Graduate student facilitators
6 Undergraduate mentors

**Supervisors:**
Greg Pottie, Ph.D., Professor & ECE Department Chair, Transfer Bridge to UCLA Samueli Faculty Director
Wes Uehara, Community College Outreach Coordinator, Transfer Bridge to UCLA Samueli Program Director

**About the Position:**

**Compensation:**
$1620 (Housing & Parking not included)

**Job Duties & Responsibilities:**

**Planning & Prep:**
2) Attend planning meetings through summer to prepare for the program.
3) Develop a technical project proposal that is accomplishable for incoming transfer students with a broad range of experiences and skill-set. Proposal should include: a) a summary of the technical design project for the Hack-a-thon, b) an explanation of the iterative design process and how it will be tested, c) timeline, d) list of skills-workshops needed, e) budget that includes a parts list, and f) possible culminating competition/exhibition along with the metrics for evaluation.
4) Order parts and build a prototype as proof of concept.
5) Author the lessons, learning tools (powerpoint, video-tutorial, hands-on work), assignments (weekend homework) and skill-acquisition tools necessary for participants to accomplish their project.
6) Prep workspace and materials including preparation of Standard Operating Procedures, safety instructions, etc.
7) Attend any training (as needed).

**Delivery:**
1) Attend and assist with all Transfer Bridge to UCLA Samueli functions and activities; including:
   a. Planning meetings & undergraduate mentor trainings (if applicable), program prep, welcome & orientation, delivery of bridge program, lunch workshops, culminating Hack-a-thon, final culminating event & awards ceremony, and clean-up and evaluation.
2) Co-lead instructional workshops based on project needs.
3) Communicate daily objectives with program participants.
4) Communicate and implement assignments, challenges (daily, weekly, culminating, etc.) and provide feedback to participants.
5) Manage classroom space & maintain safety protocol.
6) Track project expenses and order materials/parts for projects.
7) Provide general guidance and mentorship to participants.
8) Participate in workshops covering the UCLA experience.
9) Provide feedback and assessment of students’ experiences to program supervisors.
Pre-requisites/requirements:

1) Must have taken CS 32, 33 or MAE M20 or CEE M20 (taken at UCLA preferred).
2) Experience working on a technical project that required use of engineering design tools and software.
3) Experience with the Engineering Design Process (design-build-test loop).
4) Must be able to fulfill all job duties and responsibilities; including attending all program events and have no other commitments during scheduled activities. Please check your schedule for availability.
5) Ability to identify and manage project deliverables, set a timeline, meet benchmarks, and evaluate outcome.
6) Incumbent should have excellent oral and written communication skills and ability to work well with students, faculty, and staff.
7) Must be a continuing undergraduate – enrolled in Fall 2019.
8) Minimum cumulative 3.0 GPA required.

Preferred:

1) Previous transfer student from a local community college and/or understanding of the transfer student experience and challenges.
2) Previous experience in teaching, working, mentoring, and motivating students.
3) Previous experience participating in or leading a Hack-a-thon.
4) Junior-level or above.
5) Experience working with traditionally under-represented communities in STEM (female, ethnic minority, 1st gen, non-traditional returning students, low-income).
6) Familiarity with UCLA resources and services.

Application Process & Deadline

1) Submit to Wes Uehara, wuehara@seas.ucla.edu
   a. Resume & cover letter – please include:
      i. Experience that evidences your ability to accomplish the aforementioned job duties/requirements.
      ii. Any experiences working on project-based activities.
      iii. What you hope to gain out of this experience and why you are interested in this position.
      iv. Any experiences you have working with educational outreach activities such as this one and/or activities working with transfer students.
      v. Students that will attend Transfer Bridge will come from varying backgrounds, communities and experiences. Discuss any experience you have working with diverse populations.
   b. Letter of recommendation (preferred) and/or list of references (required).

If you have any questions or concerns regarding the application, position, or program, please email Wes Uehara, Transfer Bridge Program Director, at wuehara@seas.ucla.edu.