“HOW TO GET STARTED WITH UNDERGRADUATE RESEARCH”
By Dahlia Case, EECS Undergraduate Services Coordinator

Investigate
Decide what research area(s) interest you. Do you prefer EE or CS? Read through our EECS Research page to see the full listing of areas, labs, centers, and projects in the Department. Visit EECS/ERL Research Summaries to see past and current research projects. Knowing the research areas you would like to focus on ahead of time will help you identify a potential faculty research mentor. Browse research postings on the Undergraduate Research Clearinghouse, Research Match, and URAP to see what research positions are available. Familiarize yourself with the types of positions and eligibility criteria to find a match between your qualifications and the project.

You can also investigate related research in other engineering departments, such as Mechanical Engineering or Materials Science, Bioengineering, Physics, and Math, by navigating through their departmental websites. Many students find interesting research with faculty in other departments or at Lawrence Berkeley Laboratory.

The EECS Center for Student Affairs continuously updates a webpage for undergraduate research that describes opportunities both on campus, national programs, and workshops. The research openings vary from those offered during the academic year to those that take place over the summer. This is a good place to obtain an overview of the possibilities: http://www.eecs.berkeley.edu/Programs/ugrad/UgradResearch/

Attend
Weekly EECS colloquia showcase research presentations during the academic year on Wednesdays at 4:00 p.m. in the Hewlett-Packard Auditorium, 306 Soda Hall. These informal seminars may highlight faculty projects, and often, the faculty who are presenting are those looking for new students to assist with research. For the current schedule of speakers and topics, check out the EECS Joint Colloquium website: http://www.eecs.berkeley.edu/Colloquium

When you have identified a project that looks interesting, further investigate the research environment by talking with current graduate or undergraduate students in that group. Not only can you discover more about research projects you might like to pursue, but you can also get advice on how to get involved with and contribute to a research project. Often times the meeting is posted on the faculty member’s research website. At these meetings, students take turns presenting their research in progress, give practice talks for upcoming research conferences, and much more. It is a good idea to check with the faculty member over the research group before showing up. Below are examples of some questions you might ask:

- What kinds of work are undergraduates doing? Is it challenging?

- Are there senior graduate students who will supervise and mentor me?

- How much independence would I have on the project? Will I work as a team or work alone?

- What type of project will I be working on? Some projects are very straightforward and closely defined (e.g., “Write an interface to this tool”), while others are more open-ended (e.g., “Doing this seems like a good idea, but we don’t know how to do it, so let’s figure it out”).

- Could I obtain a co-authored publication from my research experience?

Be sure to attend EECS undergraduate research poster sessions to see firsthand the research projects your peers are working on or to share your own research with the engineering community. Not only can you discover more about research projects you might like to pursue, but you can really learn the value of presenting the results of your research.
Approach
After thoroughly reading the faulty member’s website, and scanning some recent papers, you can make appointments with faculty whose work you are interested in, or stop by during their posted office hours. Asking for research is like applying for a job. Bring your updated resume, summarizing your academic career to date. You can also bring a Bear Facts transcript. Explain your familiarity with the research and show enthusiasm. If at first the answer is no, try again. Many faculty are unable to accept new undergraduates in their group during a certain semester, but they may be able to the following semester. You might anticipate needing to ask twice before you receive a positive response.

When you are a junior or senior, you may undertake independent study and research through EE or CS 199 course units. Individual initiative is important in seeking out independent study as students are responsible for seeking out a faculty sponsor for their independent study projects. The Center for Student Affairs coordinates periodic workshops on how to participate in undergraduate research, so watch for flyers each semester announcing topics, locations, and times.

Apply
In addition to approaching faculty directly, there are other ways to get involved in undergraduate research. Below is a list of web applications with research opportunities at UC Berkeley and beyond.

Department
Undergraduate Research Clearinghouse: log in with your CalNet ID to review faculty postings for undergraduate research in the EECS Department.

Research Match: web-based system developed by faculty to help match EECS undergrads to research opportunities with position listings.

Campus
Undergraduate Research Apprenticeship Program (URAP): designed to involve Berkeley undergraduates more deeply in the research life of the University. Faculty and undergraduates from all of the schools and colleges at the University of California at Berkeley are welcome to participate.

Office of Undergraduate Research: listing of research opportunities and programs across campus.

College of Engineering
College of Engineering Research Website: listing of research opportunities at UC Berkeley, other institutions, and nationally.

National
There are many research opportunities outside of the University. Below are some websites to find national undergraduate research opportunities. You should also consider summer research at other campuses. Visit different University webpages to see their research programs.

National Science Foundation (NSF) Computer Science Research Experience for Undergraduates (REU)
NSF Engineering REU
NSF Cyberinfrastructure

For further information or help, please see the Undergraduate Services Coordinator in 205 Cory Hall.