Undergraduate Research Opportunities

Undergraduate CBE students are welcome to participate in the myriad research opportunities available on campus. Both paid and for-credit options are available.

The Department offers two courses specifically for undergraduate research in chemical engineering. Both courses may contribute towards the degree requirement for 6 credits of CBE electives.

CBE 599 (Special Problems) is the most common way for students to receive research credit. Students work closely with graduate students, postdoctoral researchers, and faculty mentors on laboratory, computational, or theoretical research projects. Students must receive authorization from a faculty mentor (CBE faculty or affiliate faculty) prior to enrolling in CBE 599. Besides the independent research work, students also attend several lectures covering safety, technical communication, and other topics related to research. Finally, students present their research in an end-of-semester poster session.

To identify a research project, we recommend that students first peruse the descriptions of faculty research on the department website . Teaching assistants in CBE classes are another good source of information, as they are also graduate student researchers. Students should then contact (by email) faculty conducting research in an area of interest, to set up an appointment for discussion of research opportunities. Typically, these contacts should be made one semester prior to start of research.

Specific requirements for CBE 599 projects will be determined by the faculty mentor, and vary from project to project. Typically, students will be expected to conduct research for 3-4 hours per week per credit, in addition to attendance at the aforementioned lectures and poster session, attendance at lab group meetings, and preparation of a written report. Most students take 3 or 4 credits, but other options are possible. CBE 599 can be taken in spring, summer, or fall.

CBE 489 (Honors in Research) is designed for outstanding students who wish to have a more in-depth research experience, and it is particularly recommended for students considering enrollment in a top Ph.D. program. To be accepted into the Honors in Research program, students must have completed at least two semesters on the Madison campus with a cumulative GPA of at least 3.5, and should find a faculty mentor. Students register for 1-3 credits of CBE 489, and are expected to complete at least 8 credits of CBE 489 over 2-3 semesters. Students must also write a senior thesis, and present the work to a committee of faculty. Students meeting all requirements, and maintaining a cumulative GPA or at least 3.3, will receive the Honors in Research designation upon graduation.