

Undergraduate Research

Undergraduate research is a program of study on original research problems generally identified by the faculty and carried out under their direction. Work on such individual projects complements a program of study comprised of coursework by integrating the components of the core curriculum into a unified picture. Further, it can help in developing a spirit of inquiry, fostering a sense of independence, exercising sound judgement and acquiring an attitude of persistence. By doing research, students develop the ability to use the chemical literature and report effectively in spoken and written presentations. The ideal research project is well defined, stands a reasonable chance of completion in the time available, avoids excessive repetitive work, requires the use of advanced concepts as well as a variety of experimental instruments, and develops chemical information that might be presentable. It brings a student into active contact with the research literature. Though reality often falls short of the ideal set of goals, the experience can nevertheless be very valuable.

The department encourages its majors elect to do undergraduate research, whether the course is a requirement for the program (Major II and IV) or not. Volunteer research activity may begin as early as the freshman year. (The longer the duration of engagement, the greater the likelihood that publishable results may arise from the work.) The more typical case is to begin in the spring of the junior year learning about what research projects each faculty member is engaged in. Conversations with individual faculty are important introductions to each research program. Often the faculty will provide a paper on the topic of interest. Discussions with other undergraduates or graduate students provide data on what the day to day experience is like. These conversations will help determine if there is a good fit of topic and personality with the research advisor you elect. Other sections of this website highlight the research activity of each faculty member.

The Chemistry department prefers that the course, Chem 195, be elected for at least three credits over two semesters. The first semester is usually for 1 credit and provides a transition into the research group and introduction to the methodology of the project. The second semester for 2 credits allows greater depth of effort on the project. Naturally, more time (and credits) spent on the project will yield more useful data. The culmination of the project is a paper describing the methods and results of the project. It is expected that this research report will be a well written, comprehensive, and properly documented paper, regardless of the degree of success of the project. A presentation to the research group will help in developing self-confidence in presenting material to others.