

Working in a Lab and Undergraduate Research

So you're interested in Undergraduate Research...What is it? What do I do? How do I get involved?

First understand that working in a lab requires a commitment and it usually starts as a volunteer. Students volunteering in a lab can be expected to make solutions, prepare starting materials or analysis tools (such as gels), learn basic techniques that are specific for that lab, and commit to learning about the project goals of the lab. This may mean attending the lab group meetings that many labs have and reading assigned literature. This period is an investment by you and the professor. For the student it is a chance to get to know the approach the lab takes, the other people working in the lab, and to be formally trained in general lab practices. For the professor it is the chance to observe the student's lab skills, how they interact with other members of the lab, and to determine if the level of interest and commitment are present to warrant further collaboration.

You can think of the volunteer period as a necessary step to "get in the door" of a specific research lab, or view it as a chance to sample several different research labs so you can get a broad view of research. In either case you will be expected to be committed.

After a semester of volunteering you may or may not be ready to start an actual research project. This really depends on the specific lab, lab goals, and techniques used in the lab. Undergraduate research generally takes three forms: continued volunteer work, working as a paid assistant if funds are available, or the formal CHEM 4800 course offered by the Department. The formal CHEM 4800 course shows up on your transcript as a graded course, and is a clear indication that you have done more than "wash dishes". Because it is a formal course that was created based on suggestions by the American Chemical Society, it also requires that a formal lab report be written on the project in a style commensurate with a peer-reviewed journal article. Each credit of CHEM4800 generally requires at least 3 hours per week to be spent in the lab. You are also expected to present your findings at either a poster session or verbal presentation.

It should be fairly obvious now that performing undergraduate research is not something you attempt to get that "last credit" during your last semester at Utah State. Taking part in a research project gives you experience that no other class can, it can take principles that once were "fuzzy" and put them into perspective, it requires you to apply the knowledge that you learned in the classroom, and it shows you how the material in your textbooks was actually generated. A 4.0 grade average is great, but if you can't apply the information you have learned you will not be a great benefit to your employer. A successful undergraduate research project shows professional schools and businesses that you can apply textbook knowledge and *think*.

Utah State University has many programs in place at all levels (Department, College and Central) to support undergraduate research. These include mini grants and scholarships that can help support the student and/or the research. Undergraduate students have been very successful in our department as evidenced by the many undergraduate authors on peer-reviewed journal articles.

Bottom line→ if you are interested DON'T WAIT until your senior year. Check out the research programs of our faculty and fill out the application below.

Date: _____

Name: _____

Major: _____

Planned graduation date: _____

Plans after graduation: _____

Sciences classes taken including grades

Indicate the professor you had for the *Gen Chem* series:

Do you have any previous lab experience other than class lab? _____

If so, briefly explain your experience _____

How many hours a week could you work in a lab? _____

Can you commit to 2 semesters of work in a lab? _____

Is your ultimate goal to take CHEM 4800? _____

Your e-mail address _____

Briefly state in the space below what you expect from working in a lab? Why do you want to work in a lab? If you have a preference for a research lab, please indicate it here.