

Chem 488 Undergraduate Research
2008-2009

Instructor: John Keller
Office: 161 Reichardt
Contact: 474-6042, ffjwk@uaf.edu

Meeting: None

General. Involvement in research can be an important ingredient in a successful and satisfying undergraduate program in chemistry or biochemistry. This course was established to give undergraduates a chance to participate in ongoing research projects in departmental laboratories, to discuss possible projects with department faculty, carry out the research, write a research report, and present an end-of-the-semester poster.

Number of credits. Credits are assigned at the beginning of the semester when students enroll, but may be subject to change as the result of consultation between the student and professor. In general, actual lab work will require about 3 credits per semester; 2 credits provides an absolute minimum amount of time to accomplish a project; 4 credits may be appropriate if the student has a large ongoing project with plenty of time available. One credit of 488 is reserved generally for library or computational chemistry-type projects. More than 4 credits per semester will generally not be approved. Each credit of 488 corresponds to an average weekly minimum of 3 hours working productively in the lab, plus one to two hours planning, interpretation, notebook writing, and reading outside of lab.

Finding a project. Students not continuing a project from a previous semester must meet with at least three department faculty (see last page) to discuss possible projects, and select a research mentor. The signatures of the three faculty members must be obtained on the attached form, and a half-page written statement outlining the proposed research project should be submitted by 5 PM of the 2nd Friday of the semester as a hard copy in JK's mailbox, or by email to ffjwk@uaf.edu. Please also send a copy to your mentor. For more information about faculty and their research areas, visit the faculty web pages at <http://www.uaf.edu/chem/faculty.htm>

Continuing students. Each semester, continuing students must hand in a half-page statement outlining that semester's proposed research. Please consult your research mentor first, and send a copy to your mentor.

Required semester report. A final written report in journal format is required *each semester*. The report should follow the format of a manuscript to be submitted to a research journal. Early in the semester discuss the appropriate journal format with your mentor. Midway through the semester is not too early to begin writing the report using data obtained to date, describing the research background, and methods. Copies of the report are to be handed in to both your mentor and JK no later than 5 PM on the last day of final exams for that semester.

Poster. All research students must present a poster each semester at the end-of-the-semester departmental potluck/poster session. If you are a continuing student, a poster describing your most recent results is required. The usual size is 36" x 36", which

will be printed with departmental funds. A larger size may be appropriate if the student will be presenting a poster at a regional or national conference.

Grades. Your grade in the course is assigned by the instructor (JK) in consultation with your research mentor. The grade is based on the amount and quality of the research done, and the quality of the report and poster. Discuss grading with your research mentor early in the semester to find out how he or she defines satisfactory progress on, or completion of, a research project.

Attendance. Establish a regular schedule of attendance in the lab in consultation with your mentor. You may also be asked to attend a regular research discussion with your mentor, and/or group meetings, which are informal research or literature discussion sessions held every so often during the semester. Regular attendance in the research lab, and at research meetings or group meetings, is *required*.

Safety. All research students must obtain a Lab Safety Card from Emily Reiter, the department's Laboratory Safety Coordinator. Contact Emily in 194A Reichardt or fnear@uaf.edu or 474-6748. See Emily to arrange for training *before* beginning your project. Emily may require that you give her a brief written statement describing your project, especially emphasizing the safety and environmental aspects of the project.

Safety tips. While Emily will provide a thorough review of safety issues, and you will hopefully have gained safety knowledge in previous lab courses, here we emphasize several important points. Lab work must be carried out with all due caution. Do not work alone. Wear safety glasses at all times in the lab, even if you are not actually performing an experiment (someone else may be doing so!). Do not eat or drink in the lab. Do not rush. Do not attempt a procedure without the necessary training. Familiarize yourself with the potential hazards of materials you are using. Use common sense. This is a learning experience, so do not be bashful about asking for assistance.

End of semester Lab Inspection Checklist. At the end of each semester, all students must complete Lab Inspection Checklist with the research mentor or Emily Reiter. The checklist will emphasize checking that all chemicals are properly stored, glassware has been washed and put away, and the lab space is generally neat.

Notebook. Research-style notebooks must be obtained from the Department of Chemistry and Biochemistry. Do not purchase your own. Keep complete notes of data, procedures, and results using neat handwriting. Collections of other forms of data such as NMR spectra should contain cross-references to pages in the notebook. The lab notebook may be taken home for report writing, but must ultimately remain in the lab or be turned in to the research mentor.

Student Name _____

UAF email address _____ (All students must have a working UAF email address. All email communications from the UAF Chemistry and Biochemistry dept will be sent to the UAF address.)

Return this page with three or more signatures to Reichardt 194 no later than 5 PM on the 2nd Friday of the semester. Include a half-page description of the proposed research project.

Cathy Cahill	_____	Date: _____
Marina Castillo	_____	Date: _____
Thomas Clausen ..	_____	Date: _____
Kelly Drew	_____	Date: _____
Lawrence Duffy ..	_____	Date: _____
Todd Gouin	_____	Date: _____
Thomas Green	_____	Date: _____
William Howard...	_____	Date: _____
John Keller	_____	Date: _____
Thomas Kuhn	_____	Date: _____
Brian Rasley	_____	Date: _____
Marvin Schulte.....	_____	Date: _____
William Simpson	_____	Date: _____
Thomas Trainor ...	_____	Date: _____

I have agreed to serve as research mentor for the above student. A brief description of the proposed research is attached.

_____ Date: _____
Signature

_____ Number of Credit hours _____
Print name