

Faculty Guidance for
Mentored Team Research
Taken as Biology (or departmental) 699
(Fall, Spring, Summer)

Learning Objectives:

1. Learn and practice the basic steps of conducting research, such as searching the literature, summarizing current knowledge, identifying problem or hypothesis to test, selecting and validating methods to use, gathering data, analyzing data, formulating conclusions, and presenting results.
2. Gain experience in a team research environment.

Curricular Objectives:

1. Provide additional opportunities for motivated Biology students to obtain research experience.
2. Provide exposure to the team-based research that is commonly practiced in a variety of industrial and academic settings.
3. Foster a greater interaction among Biology faculty and students who are currently dispersed in multiple colleges.

Eligibility: Course may be taken more than once, according to the length of the project. The course will fulfill the CALS capstone requirement when the student has senior standing and is involved in presentation of project results in either a written or oral format.

Pre-requisites: Junior or senior standing in the Biology major. Consent of faculty mentor must be obtained to register.

Milestones:

1. Publicize the availability of an opportunity for mentored team research prior to the registration period for the desired semester. The ICBE office can assist with publicity. Indicate the maximum and minimum numbers of members and skills/backgrounds needed for the team. Meet with students as they express interest. Determine if their skills/backgrounds are appropriate. If they are, provide authorization for the student to sign up for Biology (or your departmental) 699 with you as the instructor. Inform the student of how many credits to take and how much research time is equal to a credit. (Remember that CALS Capstone and Biology Major requirement 6 specify at least 2 credits). A fairly common guideline is 4 hrs per week on the project for each credit assigned. The ICBE office staff can assist with logistics of authorization and registration.
2. As soon as possible in the semester, hold initial team meetings on responsibilities and project direction.

3. As appropriate, assign a literature search and relevant readings on the research problem. This work should enable team members to summarize current knowledge of the problem and understand their project objectives. You may also want to do some training in basic laboratory/field/computer techniques needed to perform the research.
4. Mentor the team as they conduct original research using laboratory, field, and/or computer/modeling techniques.
5. Provide students with guidelines on how they are to prepare a summary of research findings and present these findings. Findings may be presented in an oral, poster, or paper format at a lab group meeting, departmental seminar, research symposium (current options are the campus-wide event or the CALS research symposium), professional meeting, or a submission to a peer-reviewed scientific journal.
6. Assign grades. You may wish to obtain team members' anonymous input on the contributions made by each member.