To: Students and Research Mentors Involved in Bio 93 (Summer): Introduction to Research

From: Dr. Susan Koegel, Course Coordinator

Subject: Obligations and Responsibilities

Biology 93, Introduction to Research, is designed to provide the student with an introduction to biological research. This may be in the form of laboratory, field, or clinical research. It must, however, be devoted to research exclusively. The student is expected to be mature, responsible, and conscientious concerning the work and his/her obligation to the laboratory and spend at least the equivalent of 10 hours per week in the laboratory over the course of a 13 week semester (130 hours over the course of a summer). He or she should begin to become familiar with the scientific literature by reading scientific papers and should develop an understanding of the basic concepts involved in his/her research.

The research mentor, who should have a background comparable to those of Tufts Biology faculty, is expected to teach and guide the student in the laboratory and encourage the student to become familiar with the pertinent literature. The student should be given a project that asks a significant question and has the possibility of yielding initial results during the semester. The Biology Department hopes that the interaction between the student and mentor will be positive, and would like to see, but does not require, that the work continue in a subsequent semester, when possible, through Biology 193/194, Independent Research.

At the end of the summer, the student is required to write a 5-10 page paper concerning his/her work. The research mentor is expected to act as a reviewer and editor of the paper, but not as a co-author. Students cannot write a satisfactory paper unless they have read a significant number of papers from the primary literature. Students are urged to begin reading in a relevant textbook, then to read papers recommended by their research advisor, and finally to seek out papers themselves by making literature searches and consulting the bibliographies of papers that they have read. Such reading will help students put their research results into the proper context. The advisor must sign the paper to indicate that he or she has read it. In addition, the research mentor will be asked to complete an evaluation of the student. Both the paper and the evaluation are due the first day of the Fall semester. The course is worth 1.0 credits and is graded Pass/Fail. A mark of “I” (incomplete) will be given if the paper is late or unsatisfactory or if the evaluation is not received.

Since universities are devoted to the open inquiry of intellectually interesting topics, we require that all student research for course credit be entirely unclassified. That is, any and all faculty members in the Tufts biology department must be able to freely read the student’s paper on his or her research. In the past, some commercial biotechnology/pharmaceutical companies have requested that faculty reviewers sign legal nondisclosure documents. Such agreements conflict with the open intellectual environment in the Biology department at Tufts, and we cannot sign such documents.

Questions about Bio 93 should be directed to me at 617-627-3196 or susan.koegel@tufts.edu
**Biology 93 Credit for Summer Work**

Students can receive Biology 93 credit for work done in the summer if they meet the academic and time requirements of the course. The following rules apply:

1. The prerequisites are the completion of at least one biology course beyond the level of Biology 13 and 14 and the prior consent of the course coordinator (Dr. Susan Koegel).

2. The information form with the required signatures must be returned to the Biology 93 coordinator by June 15 for approval. This constitutes prior consent.

3. The student must put in at least 130 hours of work on a biological research project.

4. Registration through the registrar is made for the fall term following the summer work. If Bio. 93 will be your SIXTH course in the fall you may have difficulty when you register because of an overload. Do not justify the sixth course by saying that all work was done in the summer; this could result in a charge for summer tuition. You should only register for 5.5 **total** credits for the fall.

5. The required research paper and letter of evaluation from the research advisor are due by the **first day of classes in the following fall semester**. If the report is unsatisfactory, it must be re-written by October 28th.

6. Only one course credit will be given for summer work.

**Bio 93 students can be paid for their work.**

Students involved in Biology 93 or 193 summer work are not enrolled in the Tufts Summer School. Their safety and welfare are the responsibility of the laboratory and institution at which they are participating in research.