

HONORS PROGRAM IN BIOLOGICAL SCIENCES

Any student pursuing a supervised biological research project expected to last two or more quarters may register for BIOL SCI 399-0 research credit. Only one unit of such credit per quarter is allowed. The potential to graduate from Weinberg College of Arts and Sciences with Program Honors in Biological Sciences involves writing a Thesis based on 399-0 research, but doing 399-0 work does not mandate pursuit of Honors.

Requirements for Program Honors in Biological Sciences

1. A minimum GPA of 3.30 in courses pertaining to the Major, including required life science courses, and also including all major-required physics, math, and chemistry courses. This GPA is calculated as of the end of Winter Quarter of the Senior year.
2. Completion of at least six months (two quarters) of registered BIOL SCI 399-0 research, in one laboratory, working on the Thesis project. The topic must be biological in nature. Social science topics, even those with medical relevance, are not appropriate. The research supervisor need not be in the Program in Biological Sciences.
3. Submission of a Thesis that is judged to be well written and to represent a significant independent research accomplishment.

Due dates for Honors materials for academic year 2009-10:

Initial Information: to Honors Coordinator by email
(gjg853@northwestern.edu) by October 22.

Provisional Thesis: to Research Supervisor by March 1.

Thesis: to Supervisor by April 30; to PBS office (Hogan Hall 2-144) by May 6.

Steps toward Honors in Biological Sciences

I. Identification of a Research Supervisor Directories of faculty and their

research interests are available via the [PBS webpage](#). Faculty from various schools of Northwestern University participate in the program and cover a wide range of research areas. A student identifies a Supervisor by visiting with faculty whose research areas are of interest and by exploring the possibility of doing research. By mutual agreement, a plan of research is then prepared with a chosen Supervisor. The Supervisor's responsibilities are to provide guidance in choosing the research project, a supportive research environment, reasonable advice concerning execution and interpretation of experimental results, and reasonable editorial advice concerning the writing of the Thesis. The student must, however, have a unique project, and bears primary responsibility for conducting the research and writing the Thesis.

II. Formal Beginning of the Process In October of the Senior year, a student signals her/his intention to submit a Thesis by providing via email certain information to the Honors Coordinator for the Program in Biological Sciences. This information includes the title of the Thesis, the student's full name and University ID number, the student's 6-digit "Net-ID", the name of the student's Research Supervisor, the student's email address, and the Supervisor's email address.

III. Structure of the Thesis

The Thesis must consist of stipulated sections, as follows.

- *1. Title Page:* Apart from the title of the Thesis, the student's name, and the laboratory where research was conducted, must be indicated here.
- *2. Abstract:* The Abstract summarizes the problem, the experiments, and the conclusion; one page maximum.
- *3. Table of Contents.*
- *4. Introduction and Literature Survey.* This section places the research in context. Previous published or unpublished work (in the Supervisor's lab or elsewhere) is discussed, and its relationship to

the Thesis experiments described.

- *5. Materials and Methods:* This section provides details of the experiments and of the analytical (including statistical) techniques utilized.
- *6. Results:* This section includes the objective results of the experiments. Figures and Tables are included as needed, placed at appropriate points within the text. The presented experiments and their results are expected to reflect the work of the student, not the work of others in the lab. In any instance of limited collaboration, specific credit must be given to those involved.
- *7. Discussion:* This section examines the scientific significance of the experimental results, and suggests possible future directions for related research. The relationship of the results to the work of other researchers is discussed. Included is analysis of why particular experiments succeeded or failed.
- *8. References Cited:* References cited in the body of the Thesis should be listed using a format typical of scientific journals in the field. (A consistent style of citation should be used throughout the body of the Thesis; all data or ideas of others must be credited.)
- *9. Curriculum Vitae:* The student's CV concludes the Thesis.

IV. Evaluation of Theses

1. Provisional Thesis. The student must turn in a Provisional Thesis to the Supervisor by early March (see specified due dates above). Obviously, some data will usually not yet be available, but the student should make the Provisional Thesis as complete as possible, containing minimally all sections except *Results* and *Discussion*. The Supervisor reads and edits the Provisional Thesis, and then provides the Honors Coordinator with a signed form, expressing confidence in the ongoing research of the student and assuring PBS that the Provisional Thesis has been edited.

2. Thesis. A final Thesis must be provided to the Supervisor by a specified

date in late April. A paper copy is due in the Biological Sciences Office (Hogan Hall, Room 2-144) by a slightly later specified date. A signed letter from the Supervisor, in a sealed envelope, must be physically attached to the Thesis when it is received by the PBS office, recommending the student for Honors and/or a Research Prize. PBS will not accept a Thesis without this letter, and neither Honors nor a Prize can be considered without nomination for such by the Supervisor. An electronic copy must be sent to the Honors Coordinator by the same deadline. The PBS office will not print theses; the student is expected to print the paper copy elsewhere.

3. *Analysis by PBS:* A Faculty Reader is assigned to each Thesis. When the PBS Honors Board meets, letters from the Supervisor and the Reader are considered, along with the Thesis itself. For Program Honors, there must also be a 3.30 or greater average in all courses required by the Major. After discussion, the Board votes with regard to whether Program Honors should be recommended to Weinberg College of Arts and Sciences. It also votes with regard to winners of our four Research Prizes; the latter decision is based solely on the quality of the Theses (GPA is not relevant for Prizes).

Updated 6.25.09