



**PART II (of III for Cell 499)**

**CELL 398/498/499 Form**

*Please complete and submit project worksheet to the Course Coordinator or the Cell Biology Undergraduate Coordinator by the end of the third week of term. Revised version (optional) due by the end of the sixth week of term.*

Student's Signature: \_\_\_\_\_ SID#: \_\_\_\_\_

Supervisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Initial grade: \_\_\_\_\_

Feedback: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Revised grade: \_\_\_\_\_ (5% of final grade)

**PART III (of III)**

**CELL 499 Form only**

*Part II must be completed by the Course Coordinator during the individual progress interview (held by the end of the second week of Winter Term)*

Students will prong an interim report to the meeting for review and discussion. Topics to be covered include background information, project goals, hypothesis, methodology, technical issues, and plans for future work.

I have read and understood the specific feedback provided by the course coordinator.

Student's Signature: \_\_\_\_\_ SID#: \_\_\_\_\_

Supervisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Feedback: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# CELL BIOLOGY 398/498/499

## General Guidelines

Students wishing to register in CELL 398/498/499 must make arrangements with a faculty member in the Department of Cell Biology who is willing to supervise the program. A co-supervisor is required for projects carried out in labs outside of Cell Biology. This is typically the course coordinator. To proceed with your registration, a complete project registration form must be handed into the Student Services Office (MSB 5-16). This form must include the project title, a brief description of the project, and supervisor/co-supervisor signature(s). To finalize your registration, complete an Add/Drop form available from the Student Program Advisor (MSB 5-16). CELL 398/498/499 projects vary in the same way that research varies across a department as diverse as ours. Therefore, these guidelines allow for flexibility and we must rely on experts in the various research areas to maintain standards appropriate to those areas.

## Cell 499 (additional information)

Cell 499 research project students prepare a public oral presentation of their work, done in logical peer groups. Peer groups will have a coordinator who should let the project supervisor know the composition of his/her group some weeks in advance of the event. Once all students have arranged an oral presentation group, the Course Coordinator will provide a list of groups, coordinators, students, topics, times and locations. Oral presentations normally occur during the final exam period, the actual dates being set by the project Supervisor and the Course Coordinator.

With respect to work achieved and skills gained during summer employment, our current model emphasizes the quality of the research done more than the time period in which it is done. Basic guidelines are as follows: (1) work done and skills gained during the summer may be used in the project, (2) significant work, beyond writing up, must be carried out during the two terms in which the student is officially enrolled in CELL 499. Be sure to acknowledge work completed outside the two terms in which CELL 499 is taken in both your final oral and written presentations.

## Procedures

### **By end of second week of September (or January for Winter 398/498):**

Students must have their Supervisor and Co-supervisor selected. These names and the project title should be communicated to the Student Services Office (MSB 5-16) using a copy of Part I of the CELL 398/498/499 form. [Note: the original form should remain with the student so that subsequent deadlines can be noted as they are met]. The form will be kept on file with the Student Program Advisor.

### **By end of third week of September (or January for Winter 398/498):**

Students must submit the Cell 398/498/499 Project Worksheet to the Course Coordinator. This will be graded and an opportunity for revision provided (Part II of Cell 398/498/499 form). Revised worksheet is due at the end of the sixth week of term.

### **By end of term exam period (December or April):**

Students must submit the final written report to their Supervisor and Co-supervisor. A copy of the final report is also required by the Student Services Office (submit to MSB 5-16). Students must have Part III of the CELL 398/498/499 form signed and dated by their Supervisor

### **By mid-January (Cell 499 only):**

CELL 499 students must submit a written progress report to their Supervisor. Part III of the CELL 499 form should be signed/dated and a copy given to the Student Services Office (MSB 5-16). A copy of the progress report itself is NOT required by the Student Program Advisor.

### **By the end of the April term exam period (Cell 499 only):**

Oral presentations must be completed, which (co-)Supervisors must attend.

NOTE: Oral presentations should not be longer than 25 minutes.

### **Final Grades must be submitted by Supervisors by May 2.**

**Early May:** A final grade for CELL 398/498/499 must be submitted to the Department of Cell Biology Student Services Office. This is necessary to allow entry of grades, signing of forms and transmission to the Registrar, all of which must be accomplished by no more than five days after the last regularly scheduled exam.

**Missing this deadline will jeopardize graduation for many students.**

## Expectations and Grading Scheme

### Cell 398

Project worksheet (5%)

Final paper (25%)

Laboratory performance (70%)

### Cell 498

Project worksheet (5%)

Final paper (35%)

Laboratory performance (60%)

### Cell 499

Project worksheet (5%)

Final paper (25%)

Seminar (10%)

Laboratory performance (60%)

### Expectations for students:

Students are expected to master the technical and theoretical aspects of the project and work. Your understanding of how assays and experiments work, and how these can be modified to solve technical problems (trouble shooting) will be assessed. Your understanding of the project, its place in the context of a knowledge gap in the field, and the hypothesis you are testing will be assessed. Work hard. Ask questions. Be resourceful in finding and reading relevant papers. Be active participants in lab discussions. Seek feedback from supervisors and colleagues in the lab. Take an active role in interpreting data and planning next steps. Think critically. The ultimate goal is to gain technical and intellectual independence.

### Expectations for supervisors:

Provide initial reading (3-5 papers) that will lead the student in their own exploration of the literature. Be available to answer questions. Provide theoretical background on assays and approaches. Provide monthly assessments of laboratory performance to guide improvements in student performance. Provide guidance for written and oral communication of scientific ideas (focused on final paper and/or seminar).

### Guidelines for assignment of grades (laboratory performance):

#### **A+**

This is a grade reserved for truly exceptional students. These students are exceptional for their course level relative to their peers. They have intellectual command of the project, take the lead in interpreting results, take the lead in trouble-shooting, and there is evidence that they understand both the technical/methodological details of the project as well as its place in the context of the field. These students ask insightful questions, are resourceful in finding information on their own, and contribute to the scientific discourse of the lab. These students are technically competent and achieve a high degree of independence in their work. They read and understand the papers provided to them by their supervisor and also identify, read, and understand relevant papers on their own.

#### **A**

This is a grade for excellent students. These students have intellectual command of the project, contribute to the interpretation of results, contribute to trouble-shooting, and there is evidence that they understand both the technical/methodological details of the project as well

as its place in the context of the field. These students ask insightful questions, are resourceful in finding information on their own, and contribute to the scientific discourse of the lab. These students are technically competent and achieve some independence in their work. They read and understand the papers provided to them by their supervisor and also identify, read, and understand relevant papers on their own.

### **A-**

These students have some intellectual command of the project, and understand how the supervisor interprets results and trouble-shoots experiments (even if they cannot easily do it on their own), and there is clear evidence that they understand the technical/methodological details of the project. These students ask questions, and are capable of finding information on their own. These students are technically competent and achieve some independence in their work. They read and understand the papers provided to them by their supervisor.

### **B+**

This a grade for good students who do not have a clear intellectual command of the project. These students are largely following instructions but do so without making a large number of mistakes. These students understand the technical details of the work and can produce results. When things don't work, they ask questions to find a reason for why the experiments aren't working. These students do not require a large amount of day to day supervision and can be trusted to follow protocols carefully.

### **B**

This is a grade for students who are largely following instructions. They may not have a clear understanding of the technical details of the protocols but can follow instructions well enough to produce results. They have read the papers provided by the supervisor but may not understand them.

### **B-**

This grade is for students who are largely following instructions and also beginning to fall short in their effort and time spent in the lab. They may not have a clear understanding of the technical details of the protocols but can follow instructions well enough to produce results. They have read some of the papers provided by the supervisor but there is evidence they don't understand them.

### **C+ (and below)**

This grade is for students who are largely going through the motions. They are showing up but putting in minimal effort. There is a lack of understanding of both the project and the details of the assays they are tasked with carrying out. There is little evidence of critical thinking and/or engagement with the project.