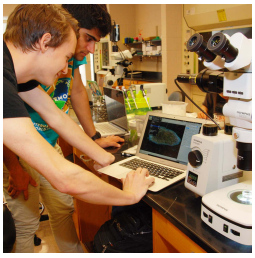
Course Syllabus



Biology 499R

Biology Undergraduate Research for Credit Program

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Overview

Laboratory research can be a pivotal experience in your undergraduate career. Whether joining a lab for the first time or continuing projects that you have already started, this semester you will learn something new. You may gain insight about the scientific process, about the natural world or about yourself. **This course is like no other course. You will be expected to commit to independent research. Integrity, honesty, self-motivation and diligence are key.** Ask questions. Enjoy!

While your main commitment in this course is based on your work on your research project and preparation of a final presentation, there are several mandatory assignments along the way. Details are below.

Course Director

Dr. Nicole Gerardo

- Professor, Department of Biology
- Email: nicole.gerardo@emory.edu, (mailto:nicole.gerardo@emory.edu,) PLEASE put 499R in the subject line, as I am much more likely to find your email that way.
- Office Hours: by zoom appointment, or in person on Tuesday or Thursday evenings (outside, weather permitting)

Mentoring students in research is one of the most rewarding, important aspects of my career. My goal is to facilitate your independent research experience. Some reasons to reach out to me would be:

- If expectations for the course are unclear
- If you are having trouble interacting with your mentor(s).
- If you are having trouble meeting obligations of the program, which include 10-12 hours per week working on your project, reading and writing.
- If you need to withdraw from the course.
- If you are interested in other research opportunities and would like some advice.
- If you need help with assignments, or additional feedback on your written work and figures
- If you have questions about graduate school or other career paths

Assignments

See Course Schedule, below, for due dates.

Most assignments are due on a Thursday. If you cannot make a deadline, please reach out to me in advance. **Except in exceptional circumstances, assignments will not be given credit if they are more than two weeks late.**

Two assignments are optional if you have taken Biol 499R in a previous spring semester. If so, please fill out this form to indicate what spring semester you took Biol 499R: https://forms.gle/EB38rmVbqsean2kHA (https://forms.gle/EB38rmVbqsean2kHA)

You will then be exempted in Canvas.

Reading Assignments. 2pts each.

- To keep you in the habit of reading research related to your own, you will have two reading assignments at the beginning of the semester. For those students who have been working on their projects for a while, you should select papers that are new to you.

Short Overview of Research Plan. 3pts

- To make sure you discuss your project with your mentor(s) early in the semester, you will complete this short assignment to identify what question(s) you will be addressing with your research and what approach you will take.

*Elements of a Compelling Poste*r. 3pts

- This will require watching a short video and assessing the quality of a few posters
- **This is optional if you took Biol 499R in a previous SPRING semester. See above.**

How to Give a Great Scientific Talk. 4pts

- This assignment will involve watching several videos, overviewing a couple of resources and attending at least one research seminar.
- **This is optional if you took Biol 499R in a previous SPRING semester. See above.**

Final Presentation Sign Up. 2pts

- You will need to decide whether you will give a short (5-7 minute) research talk or do a poster presentation. You will need to sign up in advance to allow for sufficient time to organization the online research sessions.

Final Research Presentation. 7 pts

- These points are based on:
  - the completeness of all sections of your presentation according to the guidelines.
  - whether the presentation is sufficiently clear
  - whether all text and figures are appropriately referenced and attributed.
- If you receive an unsatisfactory (less than 5 pts), you will receive an incomplete in the class, and we will meet in the summer or in the first week of the Fall semester to discuss necessary revisions.
- Your research mentor will consider the quality of your presentation in determining the grade they assign you.

Research Mentor Grade. 150 pts

- The majority of your grade will be determined by your faculty research mentor. I will email your research mentor towards the end of the semester asking for them to email me your grade. If I do not receive the grade, you will receive an incomplete for the course.
- Your grade is not based on your findings. Science experiments don't always work the first time, and science is not about getting the answer that you wanted. **Your grade will be based on your faculty mentor considering the following questions**:
  - Did the research student in your lab make progress? Did they develop a project and attempt experiments?
  - Was the research student reliable?
  - Did the research student work on their project at least 12 hours per week. Please consider time spent reading and working on their final presentation?
  - Did the research student ask for assistance when needed and respond to feedback appropriately?
  - Did the research student communicate effectively?
  - How was the quality of your students' final research presentation? Please remember for a first semester student that they may not yet have data.
- You will receive an incomplete in the course if you do not present a poster or give a talk.
- I will not change a grade if it contradicts the grade provided by your mentor.

Final Cumulative Grade for Course

Letter grade cut-offs:

A	93.3 or more
A-	90 < 93.3
B+	87.7 < 90
B	83.3 < 87.7
B-	80 < 83.3

Should you be concerned about the grade your mentor assigned you, the first thing to do is to try to arrange a conversation with them about the basis for the grade and your concerns. I recommend that you try to have a conversation on zoom or in person rather than to discuss this via email only. Should that not resolve your concerns, please contact me. We can set up a meeting with all three of us, and we can include your direct mentor (e.g., a postdoc or grad student) if appropriate.

COVID-Related Policies

For those of you working in person, you must follow all safety guidelines set forth by Emory and by your laboratory PI. PIs are aware that they can ask you to leave their lab at anytime should you not be following all safety protocols. These include:

- wearing a mask at all times in labs
- hand washing before starting lab work
- following all other rules set by your lab
- staying away from the lab if you are required to quarantine for any other reason.

If you are asked to leave the lab for violating these policies, I will report the infraction to Emory College. This may jeopardize your ability to complete this course satisfactorily.

Communication is key. If COVID-related disruptions limit your ability to do your research, please talk to your mentor about alternative approaches to continuing your progress. If you need any assistance, please contact me.

Honor Code

The honor code is in effect throughout the semester, and applies to your conduct in your research just as it applies to your conduct in a classroom. By taking this course, you affirm that it is a violation of the code to plagiarize, to give false information to a faculty member, and to undertake any other form of academic misconduct, which includes scientific misconduct. You also affirm that if you witness others violating the code you have a duty to report them to the honor council.

The following are examples of honor code violations associated with this course:

- falsifying data.
- providing false information to a course instructor or any research mentor.
- using any text from a published research article, a grant or paper draft written by someone other than yourself in any assignment
- intentionally inappropriately referencing the research of others in any assignment
- signing in or having someone else signing you in for at a workshop.
- signing in for a workshop and not attending the entire time without permission from the instructor.

For more Honor Code Info:

http://catalog.college.emory.edu/academic/policies-regulations/honor-code.html

Course Schedule

Here, I provide a detailed list of suggestions for what you should be doing each week. Please overview this schedule with your mentors. All assignments and their due dates are in bold.

Most assignments are due on a Thursday.

Spring 2021	
DATE	**SUGGESTED COURSE OF ACTION / EVENT/ ASSIGNMENT**
Tuesday, January 11th	• First Day of Classes. • **While other classes are online only, undergraduates are allowed in labs if doing research for credit. If you are not going to be on campus until February, however, then you need to arrange to do reading, data analysis or other work remotely. Communication with your mentors is key.** • If you have not done so, contact your mentor to set up a time to meet about your projects and expectations. • If doing in person research, make sure that you have the building and lab access that you need.
Week of January 10 to January 15	• Watch the **Introduction of 499R video**. • Try to have a first meeting of the semester with your mentor. At this meeting, discuss both your expectations and your mentor(s)' expectations. See the **Getting Started Page** for more details. • Ask your research mentor(s) for papers that you should read. • Ask your research mentor(s) if they are having an online weekly lab meeting. If so, try to attend each week. • Before the week of February 28th, you will need to watch one online biology-related seminar. Find out from your mentor(s) what seminar(s) they suggest and how to attend them (you will need a zoom link). Emory hosts many biology-related seminars each week.
	• Meet with your mentor at least once this week.

Week of January 17 to January 22	• Read at least two primary literature articles related to your research this week. • Begin your Research project if possible. • Before the week of February 28th, you will need to watch one online biology-related seminar. Find out from your mentor(s) what seminar(s) they suggest and how to attend them (you will need a zoom link). Emory hosts many biology-related seminars each week.
Week of January 25th to January 29th	• Meet with your mentor at least once this week. • Read at least two primary literature articles related to your research this week. • Before the week of February 28th, you will need to watch one online biology-related seminar. Find out from your mentor(s) what seminar(s) they suggest and how to attend them (you will need a zoom link). Emory hosts many biology-related seminars each week.

Week of January 31st to February 4th	• Meet with your mentor at least once this week.
	• Get started in the lab if you have not already done so!
	• Complete the **First Research Paper Reading Assignment**
	  ◦ **Due Date February 3rd.**
	  ◦ **This assignment is required for all students**

February 7th to February 11th	• Meet with your mentor at least once this week.
	• Read at least two primary literature articles related to your research this week.
	• Continue your Research Project
	• Before the week of February 28th, you will need to watch one online biology-related seminar. Find out from your mentor(s) what seminar(s) they suggest and how to attend them (you will need a zoom link). Emory hosts many biology-related seminars each week.
	• Complete the **Short Overview of Your Research Plan Assignment**, if you have not already done so.
	  ◦ **Due Date February 10th**
	  ◦ **This assignment is required for all students**

February 14th to February 18th	• Meet with your mentor at least once this week.
	• Read at least two primary literature articles related to your research this week.
	• Continue your Research Project
	• Complete the **Second Research Paper Reading Assignment**
	  ◦ **Due Date February 17th**
	  ◦ **This assignment is required for all students**

February 21st to February 25th	• Meet with your mentor at least once this week.
	• Read at least two primary literature articles related to your research this week.
	• Continue your Research Project
	• If you have not yet attended a research seminar, you will need to do so in order to complete the How to Give a Great Talk Assignment, for next week.
	• Complete the **Elements of a Compelling Poster Assignment**
	  ◦ **Due Date February 24th**
	  ◦ **This assignment is optional if you have taken Biol 499R in a previous spring semester. See the top of the assignments section for more information.**

February 28th to March 4th	• Meet with your mentor at least once this week. • If you plan to take a break from lab research during spring break, please discuss this with your mentor. • Read at least two primary literature articles related to your research this week. • Continue your Research Project • Read over the 2022 Biol 499R presentation and poster guidelines • With advice from your mentor(s), decide whether you will give a final research talk or complete a poster presentation. If you are ready, complete the presentation sign up.

	• Complete the **How to Give a Great Talk Assignment**
	  ◦ **Due Date March 3rd**
	  ◦ **This assignment is optional if you have taken Biol 499R in a previous spring semester. See the top of the assignments section for more information.**

Week of March 7th to 11th	• *Spring Break.* Make sure that you let your mentors know your plans for this week.

Week of March 14th to March 18th	• Meet with your mentor at least once this week.
	• Read at least two primary literature articles related to your research this week.
	• Continue your Research Project
	• Complete the **Presentation Sign Up**
	  ◦ **Due Date March 17th**
	  ◦ **This assignment is required for all students**

Week of March 21st to March 25th	• Meet with your mentor at least once this week. • Read at least two primary literature articles related to your research this week. • Continue your Research Project
Week of March 28th to April 1	• Meet with your mentor at least once this week. • Read at least two primary literature articles related to your research this week. • Continue your Research Project • Work on your poster or presentation
April 4th to April 8th	• Meet with your mentor at least once this week. • Read at least two primary literature articles related to your research this week. • Continue your Research Project • Work on your poster or presentation

April 11th to April 15th	• Meet with your mentor at least once this week.
	• Continue your Research Project
	• Finalize your poster or presentation
	• **Those giving poster presentations must submit their poster to the printer:**
	  ◦ **Posters should be submitted to this Box folder.**
	  ◦ **Your file should be named "lastname_firstname", e.g., Darwin_Charles.ppx**
	  ◦ **Posters are due to printer:**
	  ▪ **April 12th if presenting on Monday, April 18th**
	  ▪ **April 14th if presenting on Thursday, April 21st.**

April 18th to April 22nd	• Meet with your mentor at least once this week.
	• Make sure lab notes and all files that need to be available to others are clear and organized. Clean up any lab spaces or resources you have used.
	• **Undergraduate Research Week**
	  ◦ **Research Presentations sessions throughout the week**
	  ◦ **Poster Session 1: Monday, April 18, 2 to 2:50 (arrive early)**
	  ◦ **Poster Session 2: Monday, April 18, 3 to 3:50 (arrive early)**
	  ◦ **Poster Session 3: Thursday April 21st, 2 to 2:50 (arrive early)**
	  ◦ **Poster Session 4: Thursday April 22nd, 3 to 3:50 (arrive early)**
	  ◦ **Rhodes Lecture: Thursday April 21st. 4PM**

Week of April 24th to April 29th	• **Final Research Presentations Sessions (if needed)**
	• Make sure lab notes and all files that need to be available to others are clear and organized
	• Turn in your poster or presentation slides to canvas via **final presentation** assignment. Even if you had to submit a poster to print, you still need to upload your file to canvas.
	  ◦ **Due Date: April 24th.**
	  ◦ **This assignment is required for all students**

April 25th	• Last Day of Classes • Research Mentor Grade Due (I will contact them directly to ask for your grade)