

BIOS 4460C
Communicating Biological Research

Prof. Lin Jiang
Office: Cherry Emerson building room A112
lin.jiang@biology.gatech.edu

An important note on COVID: This is an unprecedented time. We all agree that the best way for you to learn is face-to-face. If we are required to move to an online format because of a covid outbreak, we are able to help you learn the course content remotely. Whether we meet in-person versus remotely could change depending upon health status of individuals in classroom. You have a definite stake in your personal health and the community's health.

Expectations: Our expectation is that everyone who is eligible will be vaccinated and boosted; vaccination significantly reduces likelihood of severe disease, including from the omicron variant of SARS-CoV-2. Because the omicron variant has very high transmission rate and can be spread by vaccinated individuals, we expect that everyone who is able to should wear a mask, correctly covering mouth and nose, when indoors. Both of these expectations are based on current CDC guidance. As that guidance is updated, we will communicate any new expectations.

Weekly asymptomatic surveillance testing should be part of everyone's regular routine, regardless of vaccination status. Details are here: <https://health.gatech.edu/coronavirus/testing>.

Course summary: Biology students present seminars on recent research topics based on their own research experience and literature research. This course will be structured similarly to an academic lab meeting, where effective participation and the ability to provide constructive criticism to your colleagues are fundamental. The objectives for the course are for students to:

- develop oral and poster presentation skills on your own research
- learn to engage an audience in a scientific topic through presentation
- critically present and discuss your research results
- put your biological findings in a broader scientific context

These skills can be applied in a variety of possible future careers including: business (convincing supervisors of a new project idea, delivering results from a pilot project or clinical trial), medicine (informing colleagues about a medical case, teaching colleagues about a new treatment), government (testifying before elected officials about the importance of a research area, negotiating with bureaucrats about funding for science or education), and academia (presenting your own research in a faculty seminar or job interview, delivering a presentation at an international conference). We will also discuss strategies and techniques for scientific writing and interacting with other scientists in formal and informal meetings and conferences.

Pre- and Co-requisites: BIOL 4460 is a co-requisite for BIOL 4590 (Research Project Lab) because students will present their research from BIOL 4590 in the Communicating Biological Research course. Students who have chosen to take BIOL 4690 (Independent Research Project) or BIOL 4910 (Honors Research Thesis) as their Senior Research Experience will present their research from BIOL 4690/4910 in Communicating Biological Science, and may enroll in BIOL 4460 concurrently or after completion of BIOL 4690/4910.

Format: BIOL 4460C meets on Mondays from 5:00-5:50 pm in Clough 125.

Because this is a presentation and discussion-based course, attendance and active participation are required. Thus you must have a legitimately excusable absence if you miss class. Examples of excusable absences include documented illness, death in the family, accident, and sanctioned Institute events. If you know that you are going to be absent from a class, you must let the instructor know ahead of time. Each unexcused absence will lower the final grade by 5%.

Optional text: Writing Papers in the Biological Sciences by Victoria E. McMillan (5th or 6th edition), Bedford/St.Martin's, Boston/NY.

Office hours: By appointment. Please email or consult with instructor during class to set up a meeting. Students are also welcome to visit the instructor to talk about issues other than course material (e.g., career plans, research interests).

Assessment:

One mini oral presentation	10%
Two major oral presentations	40%
Self-assessment of presentation	10%
Poster presentation	25%
Class participation	15%

Oral presentations should include use of PowerPoint (or similar), should be practiced ahead of time, and will be graded by the instructor according to the rubric included with this syllabus. Mini oral presentations (6 min: 5 min talk + 1 min Q&A) may be on a scientific topic of your choosing or framed around a recent primary literature journal article. Major oral presentations (12 min: 10 min talk + 2 min Q&A) will be based on your research from BIOL 4590, 4690, or 4910.

Self assessment: Students complete an evaluation of their own major oral presentations, due one week after the presentation. This provides an opportunity for students to reflect on how they could have prepared for, practiced, and structured their talks differently, and what they would change for their next presentation.

Poster presentation: Each student will create a poster to present their research (from BIOL 4590, 4690, or 4910) in a poster session held at the end of the semester. The poster format is described at the end of this syllabus and will be further discussed in class during Week 10. The grading rubric is available at Canvas.

Class participation: Students will be judged by the extent to which they participate in class discussions (by asking questions, answering questions, offering ideas, opinions, and critiques of student presentations). **Students are expected to ask a question or offer a comment at least once every class.**

Academic Integrity: Academic dishonesty will not be tolerated. This includes cheating, lying about course matters, plagiarism, stealing classroom materials, or helping others commit a violation of the Honor Code. Students are reminded of the obligations and expectations associated with the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at <http://osi.gatech.edu/content/honor-code>. Plagiarism includes reprinting the words of others without both the use of quotation marks and citation. As direct quotes are seldom used in scientific writing, you are expected to rephrase the words of others and provide the citation. If this is unclear, please ask your instructor for help.

Learning Accommodations: If needed, we will make classroom accommodations for students with disabilities. These accommodations must be arranged in advance and in accordance with the Office of Disability Services (<http://disabilityservices.gatech.edu>).

Class calendar:

Week	Date	Topic
1	Jan 10	Intro to the course – details regarding <i>Communicating Biological Research</i> as well as what you can expect from this course; Class discussion: How to give an effective oral presentation
2	Jan 17	No class (MLK day)
3	Jan 24	Student mini oral presentations & discussion for improvement
4	Jan 31	Student mini oral presentations & discussion for improvement
5	Feb 7	Class discussion: How to write an effective manuscript
6	Feb 14	Student oral presentations: research proposal
7	Feb 21	Student oral presentations: research proposal
8	Feb 28	Student oral presentations: research proposal
9	Mar 7	Student oral presentations: research proposal
10	Mar 14	Class discussion: How to construct an effective poster
11	Mar 21	No class (Spring break)
12	Mar 28	Student oral presentations: research results
13	Apr 4	Student oral presentations: research results
14	Apr 11	Student oral presentations: research results
15	Apr 18	Student oral presentations: research results
16	Apr 26 (Tuesday) 4:30-6pm	Poster presentations and end of semester celebration, jointly with other sections of BIOL 4460

ORAL PRESENTATION GRADING RUBRIC
BIOL 4460

The scoring system is as follows: 4 - excellent, 3 - good, 2 - fair, 1 - needs considerable improvement.

- 1. The talk was well presented because the speaker: (28 pts)
 - a. projected enthusiasm and interest in the topic _____
 - b. effectively controlled distracting behaviors _____
 - c. used adequate speaking volume _____
 - d. maintained eye contact with audience _____
 - e. used visual aids effectively, incl. appropriate balance of text, graphics, data _____
 - f. used notes sparingly _____
 - g. answered questions adequately _____
 - h. used appropriate pacing throughout talk & appropriate length _____

- 2. The content was well-organized and clearly explained because the speaker: (32 pts)
 - a. was aimed at an appropriate level for the audience _____
 - b. presented adequate background to understand the topic _____
 - c. conceptualized and explained hypotheses and research objectives _____
 - d. explained the methodology clearly _____
 - e. presented persuasive evidence _____
 - f. related own data to other studies, incl. to findings in the published literature _____
 - g. included within-talk citations and a literature cited slide _____

TOTAL: _____ / 60 points

COMMENTS:

Poster Guidelines

Content and layout will be discussed in class.

Formatting: The poster boards provided for the poster session are 42"x48". Font sizes can vary, but a rule of thumb is title at 60 pt, Headers at 46 pt, text at 30-36 pt. Images should be mid- to high-resolution so they don't pixelate when printed.

The School of Biological Sciences has partnered with the Media Scholarship Commons (<https://www.library.gatech.edu/multimedia-studio>) in the Georgia Tech library for poster printing. The Print Studio is a self-service printing center, located on the 3rd floor of the newly renovated Price Gilbert. The Studio is open every day the main library is open. The School will pay for poster printing for Biological Sciences faculty, affiliates, and students through Interdepartmental Sales.

Poster Submission: You must submit an electronic copy to the instructor by the time the poster session begins for grading purposes. If you're planning on printing a poster at the Multimedia Studio, please request a pre-approved Interdepartmental Sales from the instructor at least a week ahead of time. The School of Biological Sciences will not pay to have your poster printed elsewhere.

Poster Session: You are expected to arrive ~5-10 minutes early to set up your poster and to attend the entire session unless you have a scheduled class during part of the time (in which case, please consult with the instructor PRIOR to the day of the poster session). For most of that time you will need to stand near your poster to answer questions, but you should take the opportunity to circulate and support your classmates by asking about their work. The School of Biological Sciences will provide refreshments and the faculty will visit you to hear about your research!

Presentation: Be prepared to tell a poster viewer your research story including the salient points of your poster (focusing especially on your results and their implications) by practicing a 1-2 minute summary ahead of time. However, allow viewers who would prefer to read the content of your poster quietly to do so, and then ask them if they have any questions for you to answer.

Grading: Your poster will be graded for content, formatting, and presentation by your instructor.

Co-authorship: If you have student co-authors who are all registered in BIOL 4460 during the same semester, you may share a single poster, but each of you should be able to present independently. Each student will be graded using the rubric and standards of his or her instructor.