

BIOL 4200W: Science and Health Writing

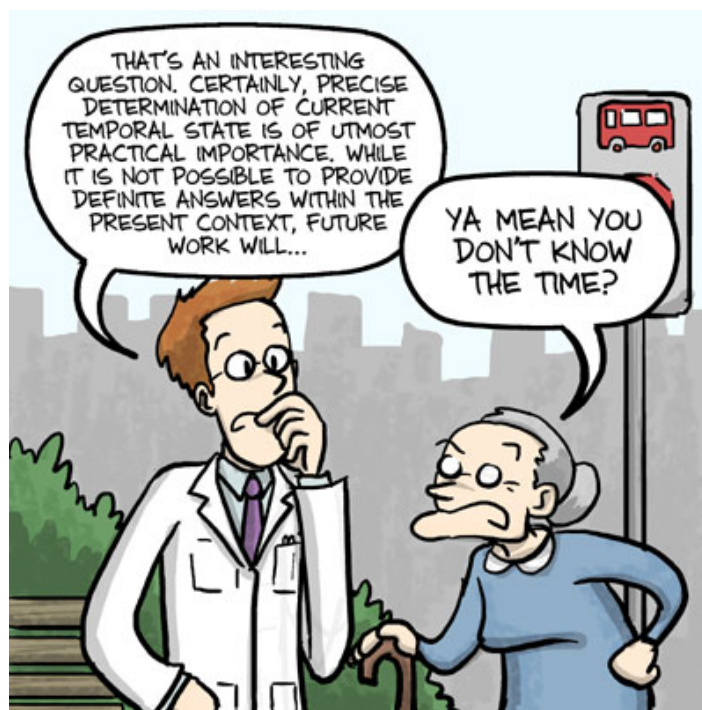
Dr. Holly Gallagher

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402 Biological Sciences Building

Office hours: By appointment*

** I am available by appointment. I encourage you to make appointments with me to discuss your work.*



<https://www.nature.com/scitable/ebooks/english-communication-for-scientists-14053993/communicating-as-a-scientist-14238273/>

PREREQUISITES: none

3 credits, graded A-F

This course counts as an upper-level general elective (towards the 39-hour rule)

COURSE DESCRIPTION:

As complex scientific and medical issues have ethical and social implications, it is important to communicate these areas of research effectively. In this course, students will analyze the ways that scientists' messages must change with the audience they address, whether scientific, lay or government. We will learn different types of scientific writing formats and strategies, such as science and health writing for a broader audience.

COURSE GOALS:

BIOL 4200W is designed to teach you to teach you conventions of different forms of science communication. In class you will receive substantial feedback from me and from your peers, which, in turn, will help you discuss your ideas with thesis advisors.

This class is designed to teach undergraduate students in the sciences to:

- understand different genres of science writing and produce writing in several genres,
- gather published sources of information and bring them to bear on scientific questions,
- critically read scientific writing,
- access electronic sources of information, including but not limited to internet searches, library databases, and public information and data,
- learn the structure and functions of different science and health writing genres,
- write papers using processes that include discovering ideas and evidence through research, organizing material, revising, editing, and polishing their finished paper,
- learn techniques for effective communication of scientific information to different audiences,
- follow the conventions of standard edited English,
- achieve brevity, clarity, and conciseness in writing,
- analyze ethical issues associated with science and health topics.

SELECTED TEXTS:

(ALL REQUIRED TEXTS WILL BE AVAILABLE ON ELC)

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GRADING POLICY:

Assignments (Daily Work, Drafts, etc.)	10%
Participation (Attendance, Discussion)	5%
Research Proposal	5%
Annotated Bibliography	5%
Interview (Email, Questions, Reflection)	5%
Literature Review	10%
Short article	15%
Long article	20%
Presentation	5%
Portfolio	20%

ASSIGNMENTS GRADE:

Your Assignments grade is determined by the daily work you turn in. This work will not be graded on an A-F scale, but it will be checked for completeness, thoroughness, and promptness. Your Assignments grade will also include a holistic assessment of the thoroughness of and attention given to your peer reviews.

PARTICIPATION GRADE:

As writing improves with regular reading and practice over time, it is crucial that students participate actively. For some classes, I will meet with students individually or in small groups to discuss writing. I will take attendance for class meetings and for student meetings. If you miss class for a legitimate reason (interview for graduate school, sickness, etc.), those absences will not affect your Participation grade (within reason), if you keep up with the rest of the class.

Your participation grade will be determined by your absences and your participation in class, including your engagement in discussions and the thoroughness of your peer reviews. If you miss class, it is your responsibility to find out what you missed and to make up your work. Workshop participation requires that you bring work in progress to most sessions.

PLUS/MINUS GRADING:

Plus and minus grades are assigned only to a student's final average for the course. For the course grade, the grade-point average and the numerical range for each plus/minus grade is as follows:

A 4.0 (92-100)

A- 3.7 (90-91)

B+ 3.3 (88-89)

B 3.0 (82-87)

B- 2.7 (80-81)

C+ 2.3 (78-79)

C 2.0 (70-77)

C- 1.7 (68-69)

D 1.0 (60-67)

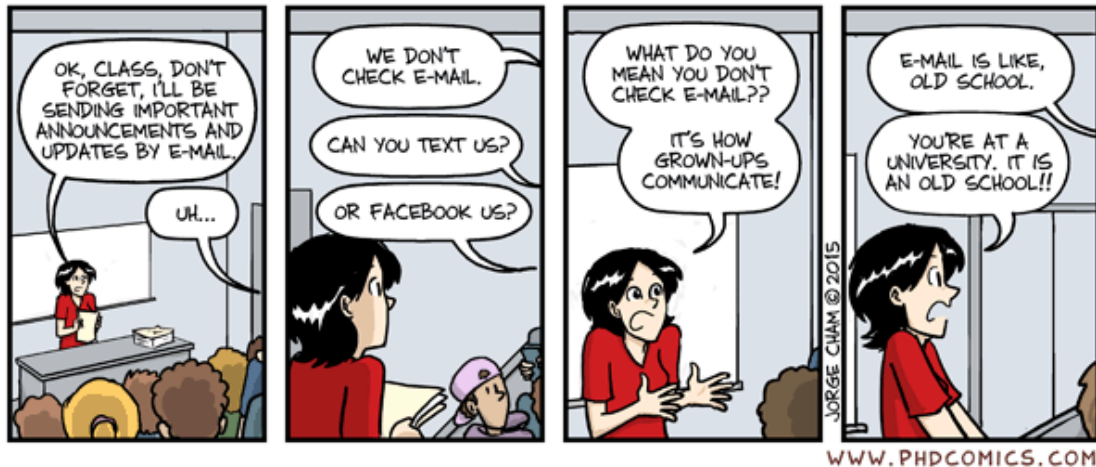
F 0.0 (<60)

ABSENCE POLICY:

BIOL 4200W is a series of discussions and writing workshops that require the active involvement of everyone; therefore, attendance is essential for success. Workshop participation requires that you bring work in progress to most sessions. Failure to do so will adversely affect your Participation grade.

COMMUNICATION POLICY:

You are always welcome to email me with any questions or concerns. *Most of the time*, you can expect a response within 24 hours. On the weekend, my response may take longer. Make sure you are using email etiquette and that any questions or requests are stated explicitly.



ACADEMIC HONESTY:

Plagiarism means presenting someone else's work as your own. Types of cheating range from not citing sources properly to submitting an entire paper written by someone else. Penalties may include an F in the course and suspension from the university. According to the University Honor Code & Academic Policy, "*As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, 'A Culture of Honesty,' and the Student Honor Code. All academic work must meet the standards described in 'A Culture of Honesty' found at www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.*"

MENTAL HEALTH AND WELLNESS RESOURCES:

- If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <http://sco.uga.edu>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.
- UGA has several resources for a student seeking mental health services (<http://www.ubs.uga.edu/bevelluga/bevelluga>) or crisis support (<http://www.ubs.uga.edu/info/emergencies>).
- If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<http://www.ubs.uga.edu/bevelluga/bevelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center.
- Additional resources can be accessed through the UGA App.

THE CLASSIC:

Each semester, students are invited to submit their papers for publication in the *The Classic Journal* (<http://theclassicjournal.uga.edu/>).

CALENDAR OVERVIEW:

I. Introduction to Writing and Research

Library
Literature Review
Research Proposal

II.

Elevator pitch
Short Article

III.

Interviews
Long Article
Poster presentation

Course Calendar

*****This course syllabus is a general plan for the course; deviations announced to the class in advance by the instructor may be necessary.*****

Week 1: Introduction to Course

Thu., Aug. 19, 2021 - Introduction to course

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Week 2: Communicating Science: Research Publications to News

Tue., Aug. 24, 2021 – Writing for Lay Audiences lecture

- Examine EurekAlert comparison

Reading due:

- Read: Nick Stockton, “Inside EurekAlert, the News Hub That Shapes the Science You Read,”

<https://www.wired.com/2016/05/internet-hub-science-news-shaping-world-20-years/>

Assignment due:

- Browse EurekAlert. Choose one (press release) article that looks interesting to you (and that has an attached article) and examine the language closely. Create a Word document that lists the article you read and the webpage. Answer the following questions about the article. Turn in your responses on eLC under Assignments.

- Questions for the EurekAlert article: What is the main point of the article? What information is included? / How is it structured? What makes this news? / Why should readers care? What kind of language is used? What else do you notice about the article?
- Skim the attached full article. Compare the two articles. What do you notice about the differences in language? Provide an example from the full article and EurekAlert article as evidence for your point. What information in the full article is not present in the EurekAlert article? Upload your Word Document on eLC under Assignments.

Thu., Aug. 26, 2021 – Analyzing research articles: *Science* and *Nature*; IMRAD; Case Studies Introduction

Reading due:

- Philip Ball, “It’s Not Just You, Science Papers are Getting Harder to Read,” Nature News & Comment, 30 March 2017 (<https://www.nature.com/news/it-s-not-just-you-science-papers-are-getting-harder-to-read-1.21751>)
- Jennifer Raff, “How to Read and Understand a Scientific Paper: A Step-by-Step Guide for Non-Scientists” https://www.huffpost.com/entry/how-to-read-and-understand-a-scientific-paper_b_5501628?guccounter=1

Assignment due:

- Skim an issue or two of the *Science* to get familiar with the journal: (<https://science.sciencemag.org/content/by/year>).
- Skim an issue or two of the *Nature* to get familiar with the journal: (<https://www.nature.com/nature/volumes/584>)
- Find a research article related to your research in *Science* or *Nature*. Analyze the article following Raff’s essay “How to Read and Understand a Scientific Paper: A Step-by-Step Guide for Non-Scientists.” Record notes from your article analysis throughout the process. Post the article name (and bibliographic information) and your reflections in eLC Assignments.

Week 3: Using the Library and Analyzing Articles

Tue., Aug. 31, 2021 – Library Information Session

Reading due:

Assignment due:

Thu., Sep. 2, 2021

Reading due:

- “Immunology is Where Intuition Goes to Dies (The Pandemic’s Biggest Mystery Is Our Own Immune System),” Ed Yong (*The Atlantic*, August 5, 2020)

Assignment due:

- “Immunology is Where Intuition Goes to Dies (The Pandemic’s Biggest Mystery Is Our Own Immune System)” Questions
- Set up EndNote. If you plan to use it on your computer, download. Practice using EndNote by finding an article you might use.
- Start looking into a topic for your case study. Look at some recent (last 5-10 years) publication topics.

Week 4: Translating Science

Tue., Sep. 7, 2021 – Difficulties in Translating Science and Health Concepts
“The Art of Translating Science” and Gawande, “What Should Medicine Do When It Can’t Save You?”

- Research proposal writing assignment

Reading due:

- “The Art of Translating Science”
- Gawande, “What Should Medicine Do When It Can’t Save You?”

Assignment due:

- Write a paragraph or two (~200 words) about a topic you think you’ll write about throughout the semester. You’ll write about different subtopics for different assignments. What are different subtopics you might consider throughout the semester? What makes this topic interesting for an audience of intelligent non-experts? Are there controversial or ethical issues related to your subtopics?

Thu., Sep. 9, 2021 – The Rhetorical Situation lecture; Levels of Explanation

- “5 levels of Explanation” video, *Wired* Magazine (<https://www.wired.com/video/series/5-levels>). Take some notes on take some notes on strategies that the speaker uses to modify their explanation for different audiences.
- Set up conferences

Reading due:

Assignment due:

- Annotated Bibliography: Use EndNote to create two bibliographic entries of peer-reviewed article. At least one of the articles should be a review article. Add an annotation in Word.

Week 5: Writing for the Public and Revision

Tue., Sep. 14, 2021

- Assign Literature Review of Sources for Case Study (Tue., Feb. 23, 2021)
- Share writing at three levels
- Writing lesson 1

Reading due:

Assignment due:

- Write an explanation about something related to your case study at three levels. This could be a scientific concept, a description of a disease or disorder or treatment, a health policy, etc. One audience should be the intelligent non-expert who is interested in the subject. You can choose your other two audiences (be sure to identify them). The audience could be a different age/level of education, an interviewer for a job, a grant reviewer, etc. Write at least one paragraph for each audience. Consider the rhetorical questions we discussed when constructing your explanations: *Why might this be interesting for this audience? What do I expect my audience to already understand? What is important for my audience to understand? Why is it beneficial to the science/health field for this audience to learn about this topic? Why should this audience learn about this topic?* Post your explanations on eLC. (You'll have the "opportunity" share your explanations in class.)

Thu., Sep. 16, 2021 – Peer Review; Conferences

Reading due:

Assignment due:

- Research proposal for Case Study
- Add two more sources to your annotated bibliography and update on eLC.

Week 6: Articles as Stories

Tue., Sep. 21, 2021 - Infostory

Reading due:

- *Assignment due:*
- Research proposal for Case Study, final
- Add one more source to your annotated bibliography.

Thu., Sep. 23, 2021 - Infostory

- Assign Article 1
- Looking up case studies

- Discuss David Pride, “The Viruses Inside You,” *Scientific American*
- Continue writing lecture 1 slide 40?

Reading due:

- David Pride, “The Viruses Inside You,” *Scientific American*

Assignment due:

- Add one more source to your annotated bibliography.

Week 7: Analyzing Articles; Short Paper

Tue., Sep. 28, 2021 – Science Narratives

- Discuss Article

Reading due:

- Mukherjee, “The Promise and Price of Cellular Therapies,” *The New Yorker*

Assignment due:

- Literature Review of Sources for Case Study

Thu., Sep. 30, 2021 –

- Set up conferences (Thurs, Mar 4)
- Discuss article - “DNA Cutters,” *Scientific American*
- Peer review activity (Preparation for March 2 Peer review)
- Twitter COVID-19 example
- Writing lecture

Reading due:

- McCarty, “DNA Cutters,” *Scientific American*

Assignment due:

- Exploratory draft of Article 1 uploaded to eLC. (At least 500 words)

Week 8: Article 1: Writing and Revising

Tue., Oct. 5, 2021 – Peer Review of Article 1

Reading due:

Assignment due:

- Full draft of article 1 (at least 1200 words). Focus on telling a story about your topic and integrating technical explanations.

Thu., Oct. 7, 2021 – Conferences

Reading due:

Assignment due:

Short article, draft 2 due

Week 9: Article 2 and Interviewing

Tue., Oct. 12, 2021 – Article 1 Final Prep

- Writing lecture (Flow)

Reading due:

Assignment due:

- Turn in Draft3 of your paper (working on the issues we discussed in your conference)

Thu., Oct. 14, 2021 – Assign Article 2

- Article 2 assigned
- Interviewing (professional email, list of questions, research)

Reading due:

- Elise Hancock, Ch. 3 “Finding Out: Research and the Interview”

Assignment due:

- Article 1, Final

Week 10: Elevator Pitches

Tue., Oct. 19, 2021 – Article discussion

Reading due:

- Yong, “When the Next Pandemic Hits,” *The New Yorker*

Assignment due:

- Add one more source to your annotated bibliography

Thu., Oct. 21, 2021 - Elevator pitches

Reading due:

Assignment due:

- Add one more source to your annotated bibliography

Week 11: Revision, Clarity, Brevity, Writing tips

Tue., Oct. 26, 2021 – Article discussion

Reading due:

- Hutson, Scientists Advance on One of Technology's Holy Grails, *The New Yorker*

Assignment due:

- Add one more source to your annotated bibliography

Thu., Oct. 28, 2021 – Article Prep lecture, Twitter, writing for lay audience lecture

Reading due:

Assignment due:

- Add one more source to your annotated bibliography

Week 12: Conferences

Tue., Nov. 2, 2021 – Article Discussion

Reading due:

- “Cancer’s Invasion Equation,” Siddhartha Mukherjee

Assignment due:

Thu., Nov. 4, 2021 - Exploratory draft peer review

Reading due:

Assignment due:

- Long Article, Exploratory Draft

Week 13: Peer Review

Tue., Nov. 9, 2021 - Conferences

Reading due:

Assignment due:

- Long Article, Draft 1
- Two interviews due

Thu., Nov. 11, 2021 – Happy Instructional Day!

Reading due:

Assignment due:

Week 14: Peer Review

Tue., Nov. 16, 2021 - Peer Review

Reading due:

Assignment due:

- Long Article, Draft 2

Thu., Nov. 18, 2021 – Portfolio; Portfolio Introduction

Reading due:

Assignment due:

- Final Draft of Longer Article due

Week 15: Revision

Tue., Nov. 23, 2021 – Athens Science Observer; Writing Lecture

Reading due:

Assignment due:

- Look through some writings in the Athens Science Observer (<https://athensscienceobserver.com/>)
- Choose one article to assign to the class
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Thu., Nov. 25, 2021 – Athens Science Observer

Reading due:

Assignment due:

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Week 16: Portfolio; Presentations

Tue., Nov. 30, 2021 –Portfolio Introduction Peer Review; Conferences

Reading due:

Assignment due:

- Portfolio Introduction

Thu., Dec. 2, 2021 – Presentations

Reading due:

Assignment due:

