

Intro to Science as a Profession Syllabus

Bio 501, Fall 2023

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COURSE DESCRIPTION

Survey of educational trajectories and employment prospects for graduate students in the sciences, focusing on Biology and Marine Biology. Practical treatment of performance and communication in the scientific profession, with particular coverage of responsible conduct of research, laboratory and field safety, analyses of data, and the writing and reviewing of journal articles and grant proposals.

COURSE OBJECTIVES

1. Understand potential trajectories for employment in the sciences.
2. Recognize the resources available at UNCW to support the graduate student experience.
3. Access and summarize scientific literature dealing in fields related to biology and marine biology.
4. Utilize scientific communication techniques to disseminate information to a broad range of audiences.
5. Explain how teaching, research, and service expectations differ across employment in the sciences.
6. Prepare properly cited literature review related to their research topic.

MEETING TIMES AND LOCATION

Class Meetings: Wednesday 8:00 – 9:50 am in Friday Hall 2052

INSTRUCTOR INFORMATION

Instructor: Dr. Jessie Jarvis (she/her/hers)

Office: CMS 2329

Virtual Office Hours: T/TH 8:30-9:30 am or by appointment; Link in Canvas

Office Phone: 910.962.2839

E-mail: jarvisj@uncw.edu*

Instructor: Dr. Bradley Tolar (he/him/his)

Office: CMS 2331

Student Hours: MW 10:00-10:45 am at Port City Java (Randall Library) or by appointment

Office Phone: 910.962.7302

E-mail: tolarb@uncw.edu*

*Please allow 24 hours for a response. If you require a faster response, you may call my office phone. Also, please include BIO 501 and an informative subject title in the subject line of the email. Failure to do so may result in substantially longer response times.

Course-specific Student Learning Outcomes (SLOs) are:

1. Students should be able to utilize biological literature to examine scientific questions and present biological information orally as demonstrated through in class and out of class assignments. (Critical Thinking, Inquiry, Thoughtful Expression, Information Literacy)
2. Students should have the ability to understand basic biological experimental design and quantitative methods. (Critical Thinking, Foundational Knowledge)
3. Students will effectively express meaningful scientific ideas in speech and writing (Thoughtful Expression).
4. Students should be able to describe and examine the importance and implications of human diversity (Diversity).

MATERIALS AND READINGS

Textbook and Course Learning Materials: All course materials will be made available via Canvas.

ABOUT THE COURSE

Course Approach:

As a graduate-level course, class sessions will be more discussion-based than lecture-based. During class meetings there will be lectures, readings, student presentations, discussions, problem-solving, and more. We expect you to work cooperatively in our meetings and to participate as we cover a wide variety of topics. We also expect you to read and/or complete assignments ahead of the class meeting scheduled to address the topic. If you don't read prior to class, you should not be surprised if you become lost during the discussions and activities. This is your course, and we expect you to accept responsibility for your own learning.

EVALUATION

Your final grade will be based on class participation/attendance, two activities related to science communication and presentation skills, a grant panel and review of mock proposals, and a final literature review to be formatted and submitted to the instructors alongside your advisor. The points for your grades are broken down as follows:

Course Grade

Attendance and Participation	100 pts
Science Communication & Storytelling	20 pts
Mock GSS Presentation	20 pts
Grant Panel and Review	60 pts
<u>Literature Review</u>	<u>40 pts</u>
Total	240 pts

Graded Assignments:

Over the course of the semester, you will complete four major assignments in BIO 501. Brief details are below, with complete details available on Canvas (including rubrics):

1. **Science Communication & Storytelling** – Over the first few weeks of the course, you will be tasked with learning to tell a story about yourself during the “Science Communication” session. You will get feedback through a few iterations of this story and hone it into a short elevator pitch that will be shared in-class.
2. **Mock GSS Presentation** – To help prepare students for scientific presentations (including the BMB Graduate Student Symposium, conference presentations, and thesis defense), you will be asked to prepare a few slides on your research, guided by the information presented during the “Research: Presentation” session. You will receive feedback on this from both your instructors and classmates.
3. **Grant Panel and Review** – As grants are the main currency in science, we will introduce you to the process of grant writing and review during “Research: Grantsmanship” and ask you to draft a mock grant proposal (modeled after the CMS/Graduate School Summer Salary Application). Once submitted, the class will participate in a mock

“Grant Review Panel” at the end of the semester that includes evaluation and discussion of proposals, and the preparation of reviews to return feedback.

4. **Literature Review** – At the end of the course, you will be expected to complete a literature review related to your field of study. As part of this assignment, you are expected to demonstrate that you can find, synthesize, and properly cite the relevant scientific literature. As we are not subject matter experts, your literature review will be shared with your major advisor for their review. We will grade your literature review assignment for completion and formatting. For more information, please see Canvas.

Homework:

In addition to the required reading, homework assignments will be posted on Canvas under the assignments folder and under your weekly course pages. All assignments will have a posted due date. Pay close attention to the due date as *NO late assignments will be accepted*.

Class Participation:

As this will be a highly active class, participation is a significant part of your evaluation. It is also part of professional behavior. We will assess your participation through periodic in-class assignments, many of which will be accomplished with apps that require a phone or tablet. Make sure you bring your phone or tablet to each class, and that you can connect your device to the internet.

Course Expectations:

As your instructors, we are here to guide your learning and challenge you to fully engage in the course activities, assignments, and more. We will do our best to give you everything you need to succeed in this course, and we welcome feedback should you need more assistance. We view our classroom as an inclusive space, where all students are welcome and equally able to succeed and will gladly take any suggestions for improvement. Please view our office hours (“student hours”) as an opportunity to interact with us outside of class, and feel free to stop by to chat even if you do not have specific questions. We would love to get to know all of you and support you in whatever ways we are able. If you cannot make our office hours or would like to set up an individual meeting, please email us!

As our students, we expect you to take an active role in learning by coming to class prepared and ready to share ideas and participate in class activities. Each of you comes with their own perspectives and ideas that will enrich our shared experience in class, so we ask that you be respectful and courteous to each other. In addition to studying and completing assignments, your best chance of success comes from active engagement by participating in discussions, asking questions, collaborating with your classmates to solve problems, and taking moments to investigate course material on your own outside of class. Although at times this course may challenge you, we believe everyone has the ability to succeed through some effort.

Grading Scale:

The grading scale is based on the weighted percentage of your total earned points, and will be assigned a letter grade according to the following scale (note that as a graduate-level course, a passing grade must be a C or above):

93–100% = A	87–89% = B+	80–82% = B-	73–76% = C
90–92% = A-	83–86% = B	77–79% = C+	< 73% = F

POLICIES AND RESOURCES:

Canvas & email:

It is critical to ACTIVELY CHECK your UNCW e-mail account as part of this course. Announcements, review materials, supplementary readings, as well as grades are maintained on Canvas for your convenience. A large percentage of the reading assignments for this course are dispensed as PDF documents through Canvas. We understand that not every

student has access to a computer at home, however, if you come to UNCW for classes regularly – there are plenty of computers available to check e-mail or access an assignment from Canvas. It is your responsibility to let me know immediately if you are having trouble receiving class e-mails or accessing Canvas information.

University Learning Center: DePaolo Hall 1056/1003, 910.962.7857, <http://www.uncw.edu/ulc> The University Learning Center’s (ULC) mission is to help students become successful, independent learners. Tutoring at the ULC is NOT remediation: the ULC offers a different type of learning opportunity for those students who want to increase the quality of their education. ULC services are free to all UNCW students (face to face and online) and include the following (<https://uncw.edu/seahawk-life/support-success/university-learning-center/services/>):

- Academic Achievement and Writing Services
- STEM Services, including Math
- Supplemental Instruction, Study Sessions, and Tutoring

Academic Integrity: All members of UNCW’s community are expected to follow the academic Honor Code. Please read the UNCW Honor Code carefully, as covered in the UNCW Student Handbook: <https://uncw.edu/about/university-administration/student-affairs/departments/dean-students/honor-code/>. Academic dishonesty in any form will not be tolerated in this class. Academic integrity violations could include:

- Use of unauthorized materials or consulting or receiving help from anyone during exams
- Plagiarism or failure to appropriately cite references or images
- Sharing exam questions or answers with other students or the public (class material is copyrighted)

Disability Resource Center: UNCW supports the right of enrolled students to a full and equal educational opportunity and is committed to reasonable accommodations for individuals with documented disabilities or who are impacted by Title IX concerns. Students with disabilities for whom accommodations may be necessary must be registered with, and provide official notification through, UNCW’s [Disability Resource Center](#). Once established, responsibility for disability-related accommodations and access is shared by DRC, faculty, and the student. Please reach out to us if you have questions, or when you receive approval from the DRC.

UNCW Community Safety & Resources:

UNCW is against violence and harassment of any kind. If you are concerned about a harassment situation, resources are available from [CARE](#) (Collaboration for Assault Response & Education; 910-962-2273) or through the [Campus Police](#) (910-962-3184). To officially (but anonymously) report any incident of gender-based discrimination or sexual misconduct/harassment, [fill out this report](#). Any other concerns or suggestions can be reported anonymously via our [Departmental Comment Card](#).

For free counseling, please visit the [UNCW Counseling Center](#) on the second floor of DePaolo Hall (Room 2079; 910.962.3746). Hours are 8 am–5 pm, M-F. Crises/Emergency hours 1-4 pm, M–F.

Non-Discrimination Policy: Individuals who wish to report any form of gender-based discrimination or sexual misconduct/harassment should contact UNCW’s [Title IX Office](#). Students may also report incidents of misconduct to faculty; however, be aware that faculty are required by law to notify the Title IX office. If students seek confidential resources without reporting an incident, UNCW departments exempt from mandatory reporting are [CARE](#) Interpersonal Violence Prevention & Response, University Counseling, and Abrons Student Health Center.

UNCW Code of Conduct:

We will uphold the values endorsed in the [Seahawk Respect Compact](#) regardless of the mode of instruction. Any student behavior deviating from this code will be reported to the Dean of Students and may result in academic penalties up to and including academic suspension and dismissal.

COVID-19:

Please do not come to class when you are not feeling well or are experiencing any COVID-19 symptoms. *Email Dr. Jarvis and Dr. Tolar immediately to discuss next steps.* If you have been exposed to COVID-19 or are concerned about exposure, please contact the Student Health Center at (910) 962-3280 for specific information about testing, contact tracing and quarantine/isolation requirements, which differ for vaccinated and non-vaccinated individuals, according to CDC guidance. Remember, keeping healthy is essential to keeping campus open! Thank you for your help and compliance.

Diversity, Equity, and Inclusion Statement: What to expect of your instructor

We embrace diversity, equity, and inclusivity in the classroom and in academia. We strive to make this classroom an inclusive space for all students, free of discrimination based on race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, or physical and learning ability. We value your presence and contributions to this course and our department. If you think we can improve the accessibility and inclusivity of our learning environment, please reach out to me with suggestions.

Diversity, Equity, and Inclusion: What to expect of your department

The Department of Biology and Marine Biology at UNCW seeks to promote equity and diversity. We respect and welcome all people, with zero tolerance for discrimination of any kind. Discrimination includes all derogatory, inappropriate, and negative incidents including, but not limited to, words and actions based on personal biases related to race, color, gender, gender identity, national origin/ancestry, citizenship, religion, age, maternity, marital status, indigenous status, social origin, disability, sexual orientation, or veteran status. It is your right to learn in a safe environment and to be treated with dignity and respect, no matter your visible or nonvisible differences.

Diversity, Equity, and Inclusion: What we expect of you

It is expected that students and instructors collaborate to foster an equitable and inclusive learning environment and hold themselves accountable for being respectful. Members of the UNCW community coexist with those who are different from themselves, and it is our responsibility to nurture, respect, and appreciate those differences. We engage in civil discourse as a part of the learning enterprise, but do not tolerate harassment or discriminatory behavior that seeks to marginalize or demean members of our community.

Land Acknowledgement:

The Department of Biology and Marine Biology pursues education and research on organisms and ecosystems locally, regionally, and globally. We recognize that the campus and associated properties and intellectual capital of UNC Wilmington are a product of the land and history that brings us here today. UNCW and associated properties are located within the home of the Catawba, Lumbee, and Waccamaw Siouan People, and North Carolina is home to the Coharie, Lumbee, Meherrin, Occaneechi Saponi, Haliwa Saponi, Waccamaw Siouan, Sappony, and the Eastern Band of Cherokee ([Oxendine](#), n.d.; [Native Land](#), 2021). We recognize the historical injustices and violence brought through purposeful erasure of indigenous people, communities, and culture of our region. We acknowledge the contributions of indigenous people and we honor their history, cultural wisdom, and environmental stewardship that are vital for us to enact restorative change. ([U.S. Department of Arts and Culture Honor Native Land Guide](#)). See Land Acknowledgement at [UNCW Office of Diversity and Inclusion](#) for more information.

Wilmington History

The Department would like to recognize that Wilmington and UNCW have benefitted from the impacts of racism and slavery, specifically the abuses and human rights violations perpetuated against Black people. Research shows that up to 45 percent of white households in 1860 benefited directly from slavery, which includes white families who owned the land on which UNCW and its properties now exist ([Davidson](#), n.d.). In 1898, white supremacists murdered countless black citizens, displaced thousands, and overthrew the government in the Wilmington Massacre of 1898 (see [Zucchini, 2020](#)). The Wilmington Massacre led to a state-wide disfranchisement campaign that stripped political power from African

American community members for decades. It resulted in land and property loss, and supported laws and practices that gave white residents social, political, and economic power. The gains received by white residents would later benefit UNCW via land, donations, and funding to the university.

In light of historical and modern events, the department commits to acknowledging and to overcoming these inequities via educating department community members on our history and diversity and inclusion topics, developing stronger ties to underrepresented Wilmington community groups, uplifting BIPOC voices, and more actions that can be found on the [SAND webpages](#).

Syllabus Disclaimer: This syllabus serves as general plan for the course; deviations announced to the class by the instructor may be necessary. To account for unforeseen circumstances (*including those resulting from COVID-19*), this syllabus & schedule may be altered at the instructors' discretion.

Course Schedule:

<i>Wk</i>	<i>Date</i>	<i>Session Topic</i>	<i>Assignment</i>
1	8/23	Introduction: Welcome to BIO 501 and UNCW!	Syllabus
2	8/30	Research: Laboratory and Field Safety	Safety Training
3	9/6	Research: Library	Literature Search Questions
4	9/13	Science Communication	Storytelling
5	9/20	Careers: Academic Research	
6	9/27	Scientific Community	SciComm Elevator Pitch*
7	10/4	Research: Presentation	Presentation Slides – GSS*
8	10/11	Research: Grantsmanship	Mock Grant Outline
9	10/18	Scientific Service	
10	10/25	Careers: Teaching	
11	11/1	Research: Experimental Design	CITI Ethics Training
12	11/8	Careers: Networking	Professional Society Info
13	11/15	Careers: Non-Academic	Mock Grant*
14	11/22	<i>Thanksgiving Break (No Class)</i>	--
15	11/29	Grant Review Panel	Grant Reviews*
16	12/6	<i>No Class – “Friday” Classes Meet</i>	Lit Reviews*

*Major assignment deadlines indicated with an asterisk; other assignments listed include in-class activities and are relevant to the day’s topic, so please come to class prepared!