

Biol 520 – Essentials of Biology Graduate Studies

Fall 2021, Biology Rm. 415

Instructors

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Classroom: Meet in-person in Biology 415. If required by changes in the campus COVID-19 situation, we will switch to meeting via Zoom, in synchronous format. Per WWU mandate, all students and faculty must be vaccinated and wear masks when indoors in shared spaces.

Course Organization

The course meets in a discussion/seminar format. We will have a pair of **half-day introductory sessions scheduled before classes start:**

Mon, Sept. 21; noon - 4 pm;

Tues, Sept 22; noon – 5 pm

Following these, our **normal meeting time will be Wed., 5:10 – 6:30 pm.** (We meet a bit after 5, because the weekly Biology Seminar series, which you are strongly encouraged to attend, goes from 4-5 pm).

Course Website: On **Canvas**. Please check regularly for posted documents and announcements. Make sure that you check your WWU email frequently or have it forward to a personal email (e.g., gmail, etc.) if you want to consolidate.

Course Objectives

BIOL 520 is a workshop for Biology Graduate Students, focused on introducing best practices in TAing and thesis research. Students are encouraged to ask questions or raise issues related to teaching and learning that are of interest to them and to share insights from their teaching experiences.

Objectives:

1. To help graduate students develop into effective teachers by providing strategies and a forum for discussing different aspects of the teaching experience in Biology.
2. To provide support for students as they learn how to implement strategies for student-centered instruction/active learning.
3. To introduce students to aspects of being a graduate student and scientist and the resources that are available to help them succeed.
4. To introduce students to writing grant proposals and a thesis proposal (to segue into Biol 522, which they will take in winter quarter).

Notes:

1. This course is in addition to the CSE Graduate TA Professional Development workshop held the week before classes start, and the Graduate School's training workshop conducted on-line;

Biology Department Program Objectives

Biol 520 supports some of the program objectives that the Biology Department has developed for the Biology and MESP Master's programs. Specifically, the faculty expects students that graduate to have acquired the knowledge and skills to:

1. complete independent biological research
 - a. understand the scientific process
 - b. troubleshoot and persist when issues arise during research

- c. ethically complete biological research
2. effectively communicate scientific information in written and oral form
3. use technical equipment and methods for collecting and analyzing biological data

Course grading

The course is graded S/U. We grade individual assignments on a 0-4 scale reflecting achievement of standards, with 3 = meeting standards (~B) and 4 = exceeding standards (~A). 2 = approaching standards (~C), 1 = needs substantial additional effort, 0 = insufficient effort to assess. In addition, students should come prepared to participate in discussion/problem solving related to the topics and readings of the week. Full participation (including complete attendance) and a median score of 3 across all assignments are necessary for a course grade of S. If you need to miss a class because of extenuating circumstances, you must give us prior notice and still complete any related coursework.

Classroom Climate:

We are firmly committed to equity and inclusion in all areas of life. In this class, we will work to promote an inclusive environment where everyone feels safe and welcome. We recognize that discrimination can be direct or indirect and take place at both institutional and personal levels. We believe that such discrimination is unacceptable and we are committed to providing equal opportunities for all by eliminating any and all discrimination, harassment, bullying, or victimization. The success of this policy relies on the support and understanding of everyone in this class. We all have a responsibility be respectful to each other, and avoid participating in or condoning harassment or discrimination of any kind. We also have the responsibility to speak up when we become aware of any such behaviors, while remaining mindful that such actions are often the result of a lack of awareness rather than malicious intent. If you have encountered issues relating to inclusivity, we hope you feel free to bring these to our attention, but if you would prefer to submit the information anonymously, please use the submission form on the Biology Department's [Equity and Inclusion page](#).

Western is committed to providing an environment free of discrimination and harassment. Federal and State laws, as well as University policies, protect students, faculty, and staff against discrimination based on the following legally protected characteristics: Race, Color, Creed, Religion, National Origin, Sex (including pregnancy and parenting status), Age, Disability, Marital Status, Sexual Orientation, Gender Identity and Expression, Genetic Information, and Veteran Status. See Equal Opportunity (www.wvu.edu/eoo/) and Western's Policies on Providing Equal Opportunity and Nondiscrimination and Preventing Sexual Harassment).

Western provides reasonable accommodation for students to take holidays for reasons of faith or conscience or for organized activities conducted under the auspices of a religious denomination, church, or religious organization. Information about this accommodation can be found in [SB 5166: Providing religious accommodations for postsecondary students](#). Please let us know well in advance if you will be needing such accommodation.

Student Resources:

Western encourages students to seek assistance and support as needed. If you are finding you need support, please consider the following resources:

1. For medical concerns or questions, contact the [Student Health Center](#): <https://studenthealth.wvu.edu/>; 650-3400.
2. For emotional or psychological concerns or questions, contact the [Counseling Center](#): <https://counseling.wvu.edu/>; 650-3400.

3. For health and safety concerns, contact the University Police: <http://www.wvu.edu/ps/police/index.shtml>; 650-3555.
4. For disability accommodations, contact the Disability Access Center: <https://disability.wvu.edu/>; 650-3083.
5. In the case of a family/personal crisis or emergency, please contact the Dean of Students: <https://wp.wvu.edu/students/>; 650-3450.
6. This course will not tolerate any form of sexual assault or harassment. Within the WWU Student Conduct Code, sexual misconduct is explained as: “Nonconsensual sexual contact, sexual exploitation and sexual violence (sexual assault, dating violence, domestic violence, and stalking or any other type of sexual misconduct or gender-based discrimination).” (WWU Student Conduct Code, 516-21-180: <https://bit.ly/2TfOfLv>). Regardless of your mental or physical state (i.e. intoxication, consciousness, etc.) at the time of the misconduct, you have a right to safety and resources.
7. If you or someone you know has been harassed or assaulted, you can find resources here:
 - a. Domestic Violence & Sexual Assault Services of Whatcom County (DVSAS)
Contact Information: 24-hour helpline (360) 715 -1653
/ <https://www.dvsas.org/>
 - b. WWU Sexual Assault Resources: <https://wp.wvu.edu/sexualviolence/>
 - c. Student Created Resource Website: <https://www.againstsa.wixsite.com/wwuagainsta>

For confidential support related to sexual violence, please contact CASAS (360-650-3700), the Student Health Center, and/or the Counseling Center. To report sexual violence, please contact University Police, Bellingham Police, and/or the Title IX Coordinator in Western’s Equal Opportunity Office (360-650-3307). Faculty members are responsible employees who are required to report sex discrimination and/or sexual violence that they learn about to the Title IX Coordinator.

Academic Integrity:

Western Washington University is committed to integrity in all aspects of campus and academic life. A useful reference resource is the Faculty Senate’s Integrity website. This site has links to information on common problems related to academic integrity, including plagiarism and cheating on exams, neither of which will be tolerated in this class.

Student Clubs:

WWU has several clubs and organizations that may be of interest to you:

1. Biology Club
2. SACNAS Chapter
3. Out in Science
4. LGBTQ+ Western
5. WWU Pre-Med Club

Technical Resources

Scientific Technical Service (STS) – Multi-user instrument center, electron microscope, mass spectrometer; machine, wood & electronics shops; Remote and in-person tours available: <https://scitech.wvu.edu/instrument-center>

Advanced Materials Science & Engineering Center (AMSEC) - Open-access Materials Characterization Laboratory with shared instruments. <https://amsec.wvu.edu/>

Advanced microscopy in Biology – Contact Nick Galati galatid@wwu.edu

Class Sessions (note: order of topics may change)

Pre-class homework (for days 1 & 2):

1. Request your practice Canvas course by Thurs. 5 pm the week before classes start. Use this online form: <https://canvas-courserequest.azurewebsites.net/>
2. For Monday, read
 1. Norms_NSDC.pdf (pp. 1-2, 6-8) and Norms from F19.pdf
 2. Biol_TA-Instructor-Staff_Responsibilities
 3. Grad TA Evaluation
 4. FERPA_rules.pdf
 5. All are found on-line on the BIOL 520 Canvas site in the Introductory sessions module.
3. For Tuesday, read
 1. GradStudent-Advisor-CommitteeRoles&Resp2020
 2. Biology Graduate Checklists and Timelines
 3. MicroscopesForTAs.vs.pdf
 4. Biology 204 2017-18 Manual_AppA-Microscopes.pdf
 5. All are found on-line on the BIOL 520 Canvas site in the Introductory sessions module.

Unit 1: Introduction and teaching tools

1. Mon. Sept. 20 (noon – 4 pm)

Noon – 12:50 pm: Lunch, introductions, and group norms.

1 - 4 pm: Course overview, Teaching resources, and Canvas introduction. PLEASE BRING A LAPTOP

1-2: Course overview & teaching resources

2-4: Canvas introduction and tutorials

2. Tues. Sept. 21 (noon – 5 pm)

Noon – 1:20 pm: Lunch with experienced TAs: Liz Cameron, LiAn Noonan, and Danielle Ringo

Perspectives on grad student working relations with course instructors and thesis advisors: words of wisdom and Q&A.

15 min: general introductions (whole group): do this quickly, all together, so you don't need to redo intros in each breakout group.

3 x 20 min breakout rooms. New students will split into three groups and alternate among groups, each with a different experienced student.

1:30 – 2:20 pm: Overview of coursework, thesis research expectations, funding heads-up

2:30 – 3:50 pm: Biology Building Tour & Safety, with Peter Thut

3:50 – 4:00 pm: break

4:00 – 5:00 pm: Microscope training, BI 249

For Wednesday:

- Read "Teaching - How to be prepared" and "David Attenborough talk technique" (handouts on Canvas).
- Start your teaching journal. Reflect on your teaching goals and write these down, along with ideas for how you are going to reach your goals. Add a list of issues you think might be most challenging for you and how you are going to address them. You will turn in both lists.

For Sunday, by midnight:

- Assignment: Use Zoom, PowerPoint, or [Panopto](#) to record a 2 slide, 5 min. introduction to yourself, with the theme: "My Biology Past: What brought me here for my MS degree". Turn in the link to your

recording in Canvas, and also post the link to the BIOL 520 Canvas Discussion Board to share with the whole class. (You can use these with your own students too!)

Unit 2: Teaching

3. Wed. Sept. 22, 5:10 – 6:30pm: Discussion of “Teaching – How to be prepared” and your reflections on teaching goals and challenges; characteristics of good presentations and how to develop them; how to use visuals and media effectively (“David Attenborough talk technique”); explaining ideas clearly and concisely; the value of shadowing experienced TAs and having them observe your lab lectures. Mid-quarter TA evaluations.

Readings. Handouts: “Teaching – How to be prepared”, “David Attenborough talk technique”

Due: First teaching journal reflection (TJ1): Goals & Challenges

Please complete Day 3 Exit Slip survey by Th at midnight

4. Wed. Sept. 29, 5:10 – 6:30pm: Designing and grading quizzes; avoiding problems related to grading; avoiding and responding to incidents of academic dishonesty; grading writing assignments.

Readings: Five handouts in Canvas.

Due: Second teaching journal reflection (TJ2): Designing & Grading Assignments

5. Wed, Oct. 6, 5:10 – 6:30pm: TA and instructor responsibilities, revisited; taking advantage of midterm evaluations; challenges and successes you’ve encountered this quarter (including implementing new teaching strategies).

Readings: Revisit “TA, Instructor & Staff Responsibilities”, from Week 1.

Due: Third teaching journal reflection (TJ3): TA, Instructor, & Staff Responsibilities

6. Wed. Oct. 13, 5:10 – 6:30pm: Introduction to Vision and Change in Undergraduate Biology Education, as a focus of teaching in the Biology Department; Overview of Biology curriculum: Biol 101, Biol 200-series, required courses for all majors, Learning Progressions (Core competencies emphasized in labs)

Readings: Handouts from “Vision & Change in Undergraduate Biology Education” on Canvas.

Due: Fourth teaching journal reflection (TJ4): Vision & Change

Please complete the Vision & Change class survey by Tues, Oct. 19 at midnight.

Unit 3: Thesis Research

7. Wed. Oct. 20, 5:10 – 6:30pm:

Writing a proposal: The importance of a good working outline. This will serve as preparation for Biol 522 in Winter.

Readings: 520 Proposal Reading Assignment – example proposal, assignment criteria and rubrics.

Due: Filled out proposal rubric and comments

8. Wed. Oct. 27, 5:10 – 6:30pm: Sources of funding: inside and outside WWU. (Ben leads, Dave out of town)

Reading: Thesis-relevant paper of your choice

Readings: Handout on “Grad Student Internal Funding” (from Biology Funding Handbook)

Due: Annotated bibliography, first entry, for a literature review or key paper for your thesis.

9. Wed. Nov. 3, 5:10 – 6:30pm: Exploring the literature in your area; pointers regarding project design.

Due: Summer funding plan + 3 potential sources of outside funding

10. Wed. Nov. 10, 5:10 – 6:30pm: Ethics 101: on the responsibilities of scientists.

Reading: Ethics background from [Resnick 2015](#)

Thesis-relevant paper of your choice

Due: Annotated bibliography, second entry, for a literature review or key paper for your thesis.

11. Wed. Nov. 17, 5:10 – 6:30pm: Ethics: on the responsibilities of scientists.

Readings: Ethics background from [Resnick 2015](#), handout on case studies

Due: Reflections from ethics readings and discussion

No class Wed. Nov. 24: Thanksgiving

12. Wed. Dec. 1, 5:10 – 6:30pm: Strategies for success at WWU – student and faculty discussion.

Reading: Two thesis-relevant papers of your choice

Due: Annotated bibliography for 2 recent papers related to your thesis.

Items due at the end of the quarter

Full annotated Bibliography for thesis research: due by Dec. 9, 2020 to us (and to instructor of BIOL 522, Alejandro Acevedo-Gutierrez).

To do for next quarter

1. Submit a detailed outline of your thesis proposal to the instructor of BIOL 522. Due on the first day of class in Winter quarter. See criteria handed out in class.
2. Have a follow-up meeting with instructor of the course for which you were a TA, after your student evaluations come back. *Evaluation reflections in teaching journal: 2-3 consistent points on strengths, and 2-3 points on challenges to improve on. How do these relate to the strengths and challenges you anticipated at the beginning of the quarter?*