

**PORTLAND STATE UNIVERSITY**  
**Department of Biology**  
**Biology Inquiry Proposal - AY 2016/2017**  
Date of Proposal: March 25, 2016

- BI 3#1 Biology Inquiry: Professional Development**
- BI 3#2 Biology Inquiry: Creating Your Brand**
- BI 3#3 Biology Inquiry: Building A Sustainable Career**

**Catalog Description**

**Biology Inquiry: How to successfully compete for and obtain a career in biology** **2 credit hours**

Co-Instructors: Adrienne Godschalx and Lindsay Holden

Faculty Advisors: Erin Shortlidge (Fall), Suzanne Estes (Winter), Deborah Lutterschmidt (Spring)

Day/Time/Location: Mondays, 2PM-3:50PM in TBA

Prerequisites: Completion of BI 211, BI 212, BI 213

An introduction to various career paths available with a degree in Biology and skill development for critical reading/interpreting/writing, career development, and application of biological knowledge towards real-world problems. Students will interact with Biology faculty, learn about current research on campus, and apply learned communication skills.

**Course Overview**

Target audience: Upper-level Biology majors

Target enrollment: 30 students (scalable, dependent upon interest)

Topics: Professional Development (Fall), Creating Your Brand (Winter), Building a Sustainable Career (Spring)

Objectives: This course will expose students to various career paths available with a degree in Biology via interaction with graduate students, faculty, industry professionals, and each other. Specifically, this will occur by weekly primary literature reading and writing assignments, short talks by faculty or graduate students, and development of skills useful during the completion of an undergraduate degree and for future postgraduate opportunities or careers. Skill development will focus on critical reading/interpreting/writing, tools to build and explore careers, and application of their biology knowledge towards real-world problems. Deliberative democracy will be utilized to guide reading, writing, and interpreting of journal articles on topics related to public policy.

**Student Learning Outcomes**

1. Confident and clear science communication.
2. Navigate careers and networking in biology.
3. Know your mentors in the Biology Department.
4. Confidently understand biology concepts and ask meaningful research questions.
5. Build a community of fellow undergraduate students in your cohort.
6. Apply writing and professional skills that prepare you for success now and in the future.
7. Approach global challenges and policy issues from a sound scientific perspective.

**Term Organization and Thematic Topics**

Each term will follow the same weekly class structure, as described in the following section. What will differ between the terms are the specific faculty and/or graduate students that participate in the weekly “Featured Lab” and the “Skill Building” themes and associated assignments each term. These courses are designed to be taken either sequentially or as stand-alone courses. Skill Building thematic topics are as follows.

### Fall: Professional Development

Activities/deliverables: Reading a primary article, CV/resume building, searching for and applying to jobs/grad school, cover letters, interview skills, intro to lab/workplace dynamics, finding and utilizing mentors

### Winter: Creating Your Brand

Activities/deliverables: online presence (social media: twitter, blogs, instagram, personal website), presenting your research at conferences, networking, professional organizations

### Spring: Building a Sustainable Career

Activities/deliverables: explore various biology career options: grad vs med school, jobs with a BA/BS degree, academic vs industry/biotech vs government vs entrepreneurial routes, finding direction

## **Weekly Class Structure**

### Part 1: Featured Lab (1 hr 15 min)

Prior to class students will have read the primary article assigned for that week. They will bring to class an annotated bibliography entry for the article, and two discussion questions. The featured faculty or a representative graduate student will give a short description of their work, regale the class with a short rendition of their career path thus far, and end with a Q&A session. Following this, the course instructors (Ms. Godschalx and Holden) will briefly lecture on a specific biology topic that was featured in the article (e.g. phylogenetic trees, DNA repair, plant vascular physiology) and students will work in small groups to discuss their prepared questions and develop an experiment to answer one question surrounding the weekly reading. Following group work we will debrief as a class.

### Part 2: Skill building (35 min)

Course instructors (Ms. Godschalx and Holden) will deliver a short presentation on the topic of the week covering basic skill concepts, expectations of future employers, and strategies or resources for developing the skill. Students will have time at the end of class to explore content in small groups and work together to begin their skill-building based assignment that will be due the following week.

## **Oversight**

Faculty mentors will be consulted prior to, during, and after each term by graduate student instructors about course content, classroom management, and future course refinement. Class observations by faculty mentors may be conducted upon the recommendation of the faculty mentor, graduate student instructor, or Biology department Academic Advisory Committee. All curriculum changes will be vetted by the faculty mentor prior to finalization.

## **Continuity**

Graduate students who have a minimum of 1 year TA experience may be nominated by the Academic Advisory Committee and current/former graduate student instructors to serve as instructors for this course. Graduate students may teach this course multiple times. This teaching responsibility should be in-lieu of a traditional teaching assistantship. To keep the workload surrounding instruction of this course reasonable and in-line with expectations of other graduate student obligations, this course should be taught by a team of two or three graduate students per academic year.

## **Course Benefits**

For undergraduates:

- cohort building within the Biology major
- information about careers and graduate school options available to Biology majors
- examples of career paths and research by faculty within the department
- increased one-on-one interaction with Biology department graduate students and faculty

- formal instruction in reading, interpreting, and communicating primary literature that is otherwise assumed by upper-level science curriculum

For graduate students: (justification for grad students as teachers)

- mentored development towards their next career step (i.e., formal instruction and curriculum development experience)
- relief of a burden on graduate students who TA other classes to teach undergraduate students how to read, interpret, and communicate primary literature

For faculty:

- faculty can serve as curriculum mentors for the graduate student-to-faculty transition
- potential study system for science education researchers (effects on graduate student careers and/or undergraduate successfulness)
- delivers instruction on basic read-interpret-write skills that is otherwise assumed to be “absorbed” via learn-by-doing

For the Biology department:

- fosters a team environment and buy-in for Biology majors (cohort building)
- provides a forum for learning about the career opportunities with a Biology degree
- novel concept that would put PSU CLAS Biology at the forefront of graduate student training and development