



Delta Internship Opportunity: University of Wisconsin-Richland Center – Develop a bacterial evolution laboratory to teach evolutionary theory

For more information, email us at internship@delta.wisc.edu.

Contact: *Darby Brown Oldenburg*
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Available When? *Development spring/summer 2009 and Implement fall 2009*
Number of Interns sought: 1

Benefits to the Delta intern:

- Work with a faculty mentor in a department known for its attention to issues in teaching and learning
- Develop skills using inquiry-based learning
- Gain meaningful teaching experience in a course that engages students in active learning.
- Gaining an understanding, through experience, of how to communicate effectively with different audiences and move between the different cultures of the academic arena.
- Through the development, implementation and assessment of instructional materials, participate in curricular re-design aimed at making a laboratory course more interactive and engaging for students.
- Explore alternative pedagogical approaches and implement instructional reform that address active learning and integrate real-life and relevant examples into the laboratories
- Develop a SoTL project and potentially publish on your efforts in science education.
- Be well prepared for future job interviews because of your real-world experiences in teaching

Responsibilities of the Delta intern:

- Participate in updating the course laboratory curriculum and work to integrate this material into the standard laboratory sequence
- Design assessments of learning, collect data, look at student learning outcomes, and use this information to revise instruction.

The project will focus on *Pseudomonas fluorescens* as a model organism used to study population dynamics and evolution at the molecular level. This organism will undergo a genetic change in a defined environment that is heritable, and also biphasic. The goal of the project is to determine how best to develop a constructivist lab for freshman level biology students (major and/or non major) to assist them with understanding how evolution works at the population and molecular level.

The goal of the project is to develop a “stand-alone” product that can be implemented in any classroom setting where evolution is covered as a topic, with the primary focus on introductory biology courses. Therefore, there may be different modules developed for the product depending on whether it is used in an introductory or more advanced course. It would also be desirable to develop additional supplementary material to assist students in transferring the learned content to other evolutionary processes.

UW-Richland is one of 13 two-year transfer campuses where students can earn their associate’s degrees. About ½ of the students in introductory biology courses are not pursuing a science degree, while the other half are likely to pursue a degree in allied health or environmental studies. Our classes at UW-R are small (no more than 24 students) and the lecture and lab take place in the same room. Moreover, students must enroll in the lab and lecture simultaneously so that the material covered in lecture can be complemented easily by the material covered in the laboratory.

Starting point for Teaching-As-Research question(s):

- Is inquiry-based learning with real world problems an effective way to get students to learn in the classroom and laboratory?
- Can a constructivist lab on bacterial evolution help students learn about the major tenets of evolutionary theory?

Delta Internship Program information: <http://www.delta.wisc.edu>

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