

Project Year

2009

Project Title

Enhancing Biology Laboratory Preparation through Video and Multimedia

Project Team

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Audience

The materials will be used in Biology Labs: Developmental Biology, Cell Biology, General Biology, and in several graduate Biotechnology Lab classes

Pedagogical Issue

This project will focus on student preparation for experiential learning in the laboratory. Current pedagogical approaches do not allow for review of lab techniques prior to coming to class, standardization of preparation across class sections, and in-class demonstrations which are difficult for students to view. There are few examples of laboratory courses that incorporate video taped procedures for student preview.

Solution

This project will create videos for more complex laboratory procedures that are difficult to view when demonstrated in class and for procedures that present difficulty for student understanding and lab completion. Also, the fellows will produce a laboratory safety module that will prepare students for safe practices in the laboratory setting.

Technologies Used

Digital Video, Digital Audio

Project Abstract

Biology laboratory classes are designed to teach concepts and techniques through experiential learning. Visual demonstration of laboratory procedures is a key element in teaching pedagogy and there are few resources available that allow the student to study the procedure and techniques before coming to class. Our previous fellowship project addressed the issue through the production of short videos that were available to students in several courses allowing students to view and review the videos multiple times before class (<http://www.bio.jhu.edu/Undergrad/Default.html>). Our students reported these resources to be highly beneficial (JMBE 10:51-56). This fellowship will address laboratory techniques that are more complex and expand our resource library of videos. In addition, a multi-media biosafety module will be created that includes original videos, text and pre and post assessments, which will result in a certification, process for students new to our labs. The video technology will be

videotaping, narrating and editing laboratory techniques that will be available to faculty to use in their courses. Fellows will create a biosafety module using the course management system. The laboratory technology includes basic and advanced techniques that can supplement didactic learning in laboratory and classroom based courses. By the conclusion of the project we hope to have captured 12 techniques that can enhance the current classroom/laboratory curriculum and one biosafety module. Students will be able to prepare for the laboratory class and thus the desired outcome, a successful experiment, will be more likely.