

Proposal for Paul Stock Undergraduate Research Work-Study Program

Objective:

In General Microbiology Lab, students perform 26 lab procedures throughout the semester and are required to be familiar with all procedures and results in a midterm and final lab practical exam. In large laboratory sections, especially when students work in groups with as many as three other students, it is difficult for students to follow every step and to recall exactly how certain test results appeared. We believe that by making every lab accessible to students in a virtual format, which allows them to preview and review procedures and test results, it will help to enhance student learning and retention and result in increased scores on the practical exams. Through the process of producing these virtual labs, the work study student will not only gain a better understanding of the microbiology lab procedures, she will also learn one method of integrating technology into a lab course.

Procedure:

Using a microscope equipped with a digital camera and a digital video camera, lab procedures will be electronically documented. All materials will then be compiled with the text from the lab manual to create the virtual labs. During the fall semester of 2003, the digital labs will be evaluated to determine their effectiveness.

Publication:

An abstract and proposal will be submitted to a Society for Information Technology and Teacher Education conference.

Faculty in Charge: Rachel M. Watson

Student: Jessica Hopper

Major: Secondary Science and Math Education

Class: Senior

GPA: 3.587

Social Security Number: 574-70-1406

Amount of Stipend: 3 credits = \$400

Faculty Supply Need: \$1000

Several software programs will be needed. Macromedia Director MX will be used to create the virtual labs for use either stand-alone or on a webpage. Macromedia Fireworks will be used to develop all additional graphics. There are also a few components that will be necessary to properly equip the photographic microscope.