## **Project Summary**

## Intellectual Merit of Proposed Activity

This project will integrate the undergraduate laboratory experience by introducing a common experimental organism, *Caenorhabditis elegans*, into a series of biology courses that span the curriculum. The use of a common organism will allow laboratories to be structured such that students will use knowledge and techniques learned in lower level courses to address experimental questions in more advanced courses. Instrumentation will be introduced in the labs so that students can take full advantage of this model organism. The objectives of the project are: 1. Students will understand the integrated nature of biological science and be able to apply knowledge from one subdiscipline to questions in a second subdiscipline, 2. Students will understand why *C. elegans* is an appropriate model for the study of behavior, genetics, molecular and cell biology; 3. Students will effectively use technology to study behavior, genetics, molecular and cellular biology of *C. elegans*.

## Broader Impacts Resulting from Proposed Activity

This integrated laboratory experience will foster in students the development of intellectual curiosity and problem solving skills essential for the pursuit of a scientific career. It will provide classroom research experiences using cutting edge approaches with an experimental organism of proven merit. It is anticipated that many of the students in the program will choose the *C*. *elegans* system for their independent undergraduate research projects. Additionally, since more than half of the students in the project will become biology teachers, we expect these teachers will be able to use *C. elegans* as an experimental organism in their secondary school laboratories. A web page describing laboratory exercises and project evaluation will be posted as a resource for both college faculty and secondary school educators implementing *C. elegans* based laboratories in their curriculum.