**Title of Project:** (Phase Two) Redesign of college physics for biological science majors

John Evans, Dept. Physics and Astronomy

Email: jre@gsu.edu

Tel: 404-413-6076

**Executive Summary**

In the 21st century, the biological professions will be increasingly reliant on an understanding of physical and chemical mechanisms and on ever more sophisticated probes into those mechanisms. In the National Academies’ report, Bio 2010: Transforming Undergraduate Education for Future Research Biologists gives the following comments about the central concepts in physics:

“There is a set of basic physics concepts on which an understanding of biology can be built and that can be of aid in using increasingly sophisticated instrumentation. The typical physics course, which allocates a major block of time to electromagnetic theory and to many details of classical mechanics, is often the only option for biology students. The course emphasizes exactly solvable problems rather than the kinds of problems common in the life sciences. Illustrations involving modern biology are rarely given, and computer simulations are usually absent”

The redesigned physics course is based on the comments of Bio 2010. The approach of the redesigned algebra-based physics course is to use modern biophysical themes, as much as possible, to introduce the physics and to illustrate the wide variety of applications of physics in biological sciences.

We will, use several tools to analyze the redesign, such as common exam questions. In addition, we will create a website to disseminate newly developed material.