

Science Education Seminar



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Optimizing Introductory Physics for the Life Sciences

An important goal for physics courses for life science and pre-medical students is for these students to be prepared to apply the physical science skills and content in their future work, including course work, research, and clinical medicine. To do so, it is important for them to both learn the content and skills well, and recognize their applicability. In addition, understanding the connections between physics and their chosen fields of biology or medicine is likely to increase students' interest in learning physics, and interest is known to support motivation and persistence in learning. At Swarthmore, as at several other institutions engaged in reforming this course, we have reorganized the introductory course for life science students around touchstone biological examples, in which fundamental physics contributes significantly to understanding biological phenomena or research techniques, in order to make explicit the value of physics to the life sciences. We have also selected the physics topics and approaches most relevant to biology, and use established pedagogical best practices to develop rigorous qualitative reasoning and quantitative problem solving skills. When possible, we have adapted existing research-based curricular materials, such as the Tutorials in Introductory Physics or individual conceptual questions based on research into student difficulties, to support these examples. This talk will summarize the design of this course, give examples of materials, and present initial assessment data evaluating both content learning and student attitudes.

***Wednesday, May 14 at 4:00pm
SPL 59 (Sloane Physics Laboratory)
217Prospect Street
Refreshments provided***



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