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Engaging Upper-Level Biology Students (Or Everything I need to know about physics I learned in first year).

MARK PAETKAU, Thompson Rivers University

Thompson Rivers University (TRU) is an open university of about 7000 students located in BC's interior. The university grew out of a community college but retains its strong roots of learning-by-doing and TRU continues to train trades and technology students as well as offer academic degrees. The physics department is small and contributes service courses to many different departments, including biology. Needless to say, many biology majors have an innate fear of physics and often will leave their first year physics requirement until 3^{rd} or 4^{th} year. Some of these students embark on honors thesis work or directed studies. As physics/chemistry/ and biology are housed in the same building, I have been able to form collaborations with these biology students whose research is often an application of physics concepts. In this talk I will walk through some of my mentorships of biology students, including measuring the speed of dwarf mistletoe seed discharge (kinematics), dispersal of Artemia franciscana (fluid mechanics), and IR measurements on cattle (heat transport). The projects span the topics of first year physics and make for delightful inclusions into my first year courses as practical applications physics in biology research.