Resources for Integrating CBL into Physics Courses

Guerra, D.V. (2005). Service-Learning in Physics: The Consultant Model, *Journal of Higher Education Outreach & Engagement, 10* (3), 143-151.

This article describes a consultant-based approach to integrating service learning into physics courses at St. Anselm College. Examples include the GLOBE (Global Learning and Observation Program) Program (http://www.globe.gov/), an international network of 14,000 middle and secondary schools gathering atmospheric data. St. Anselm students helped middle schools students participating in GLOBE build and work with haze detectors. Schools/Organizations participating in GLOBE near Holy Cross include: the Roosevelt School, The EcoTarium, the University Park Campus School, and Heard Street Discovery Academy. Another example that is discussed extensively is the support of St. Anselm students to middle school girls participating in a National Lego League Robotics Competition through GIRLS Inc. This article can be found at: http://openjournals.libs.uga.edu/index.php/jheoe/article/view/137

Denison University has developed a handout describing different methods of integrating community-based learning into physics and engineering courses. It can be retrieved at: http://www.denison.edu/campuslife/servicelearning/physics%20resource%20sheet%202009.pdf

Rockhurst University has a webpage describing service learning projects developed through an interdisciplinary summer institute in math and physics: http://www.rockhurst.edu/academics/undergraduate/majors/mathematics-physics/service-learning/

Course Descriptions

***QuarkNet - Service Learning Outreach for Physics and Engineering Majors*, Professor Jones, Purdue University**

Physics majors assist high school physics teachers in learning how to effectively integrate Quark Net cosmic ray detector hardware into their classrooms. Undergraduates are trained to set up the equipment, develop demonstrations and activities that fit with high school physics curricula, and interpret data generated by the cosmic ray detector. Further information can be found at: http://www.physics.purdue.edu/academic_programs/courses/phys290Mmajors/

***Cosmology—Service Learning Outreach for both Physics and Non-Physics Majors,* Professor Cyon, Purdue University**

"This course is designed for students with an interest in helping develop curriculum related to the national science standard: The Physical World—The Universe. The project is being developed in response to a grant… the goal is to include science and science education majors interested in applying the Understanding by Design and 5E Learning Models to develop curriculum that can be used in high school classrooms." Further information can be found at: http://www.physics.purdue.edu/academic_programs/courses/phys290M/phys290m.shtml

***Environmental Studies/Geophysics: River Hydrology and Hydraulics*, Professor Thompson, Connecticut College**

"The River Hydrology and Hydraulics course focuses on the application of fluvial geomorphology to an environmental river restoration effort on the College campus." A detailed description of the course can be found at: http://www.compact.org/syllabi/environmental-studies/environmental-studiesgeophysics-river-hydrology-and-hydraulics/3788/

***Physics Outreach*, CSU Fresno, Professor Ho**

Students in this course demonstrate science concepts to students in K-12 schools. Further information can be found at: http://zimmer.csufresno.edu/~peiho/PCHo_syllabi/175TS_36734_Syllabus_2011Spring_SubmittedVersion.pdf