

2007 Fall Meeting

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### **Teaching a New Generation of Students: Developing an Interdisciplinary Watershed Field Course**

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As the scientific world becomes more interconnected, careers in geosciences regularly require cooperation, communication, and comprehension across disciplines. In response, faculty at the University of Vermont (UVM) have developed and are modifying an interdisciplinary watershed field course to provide both a valuable learning experience in watershed science for students and a tested prototype for collaboration and cooperation between faculty, departments, and administrators. The field course introduces concepts of watershed science, an inherently

interdisciplinary field of study for which there is often no specific academic department ([www.uvm.edu/watercamp](http://www.uvm.edu/watercamp)). The field exercises begin in Lake Champlain, New England's largest inland water body. To maximize relevance, the focus is on threats and current problems associated with large water bodies. The students then move to the mountainous headwaters of a major drainage into Lake Champlain and follow it back down into Lake Champlain. The 3.5-week, 4-credit course consists of exercises created by faculty from different academic departments representing three different schools within the university including: civil and environmental engineering, geography, geology, and natural resources. A pair of faculty members from different departments lead each day's activities ensuring that students are exposed to a range of faculty interaction, connections, and cooperation between specialties. The general design of the course is modular; content and faculty can be changed as desired from year to year to take advantage of current field research projects, visiting or absent faculty, or unusual and unique field opportunities. Surveys collected from students taking the first offering show learning over a broad range of disciplines and positive attitudes about the teaching and learning styles associated with field courses. Knowledge surveys completed by the students before and after the class showed an overall increase in self assessed knowledge of the course concepts, with a positive mean survey increase of one on a three point scale (n=8). Before and after class attitude surveys showed significant increases in the students perceived benefit of writing lab reports, working in groups and using computer based materials (Wilcoxon Signed Rank Test n=7:  $p > t = 0.063$ ; Wilcoxon Signed Rank Test n=7:  $p > t = 0.063$ ; and Paired t-test n=7:  $p > t = 0.0391$ , respectively). There was also a significant decrease in the perceived usefulness of lectures (Wilcoxon Signed Rank Test n=8:  $p < t = 0.015$ ). These survey results demonstrate that this field course develops skills needed to participate effectively in interdisciplinary research and learning.

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