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The Student Sustainability Initiative
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Sustainable and Fossil Energy: Options and Consequences

Teaching Strategy

For the April 2010 issue of *Elements* magazine, Joel Blum writes, *"For many years we have taught courses in geology and ecosystem science at the University of Michigan Rocky Mountain Field Station (UM-RMFS) in Jackson Hole, Wyoming, USA. As we drove past energy-related sites, they piqued student interest, but we never had time to visit them or discuss the science of energy production in detail. In response to student interest, we developed the course Sustainable and Fossil Energy: Options and Consequences, which is devoted entirely to the study of energy systems. The premise is that students cannot fully understand and form opinions about the pros and cons of various energy options until they have seen the fuel cycles for themselves. We base the course curriculum around visits to energy facilities in Wyoming and Idaho, discussions with individuals working at these facilities, and experiments with energy usage and renewable energy systems at our field station."*

The Camp Davis course takes advantage of its Wyoming location; the abundance of various energy production plants and the small class size, make possible multiple field trips to explore firsthand various methods of producing energy for human consumption. Instead of simply "teaching sustainability" from an academic, political, or economic perspective, the course allows students formulate their own positions by weighing the costs and benefits of different energy options that they have experienced and investigated in person.

Faculty Perspectives

"This course is unique because it enables students to carefully evaluate different energy options with not only traditional course materials (i.e., lectures and readings), but also through hands-on experiences and in-depth conversations with local experts."

"As hard as we try as college instructors to make the classroom environment more interactive, there is no substitute for the impressions formed by students when they see the complexities of natural processes unfold in front of them."

"I urge educators to consider using field courses to maximize student-faculty interaction, allow students to interact with experts, and enhance student understanding."

Student Perspectives

"GS341 allowed us to personally question professionals in the field of alternative energy and derive our own ideas."

"The course provided real-world examples of the information we were taught in the classroom. We were able to explore the inner workings of alternative energies in ways that would normally be unobtainable to us as students."

"The low student-to-professor ratio gave us unlimited access to debate our opinions. I believe that learning through actual experiences is a much more profound method that creates lasting memories."

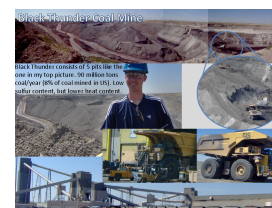
Examples of Teaching and/or Student Artifacts



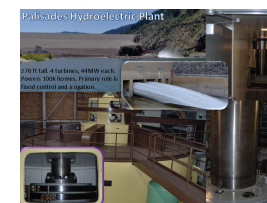
The Class at Camp Davis



Strawberry Creek Hydroelectric Plant



Black Thunder Coal Mine



Palisades Hydroelectric Plant