

The Geology of War—A Service Learning Project in an Environmental Geology Course

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The Benefits of Experiential Learning

- Active learning
- Inquiry and discovery
- Meaningful and relevant
- Mastery of skills
 - Communication
 - Information technology
- Application of content knowledge
- Confirmation of the value and relevance of the products and processes of Science



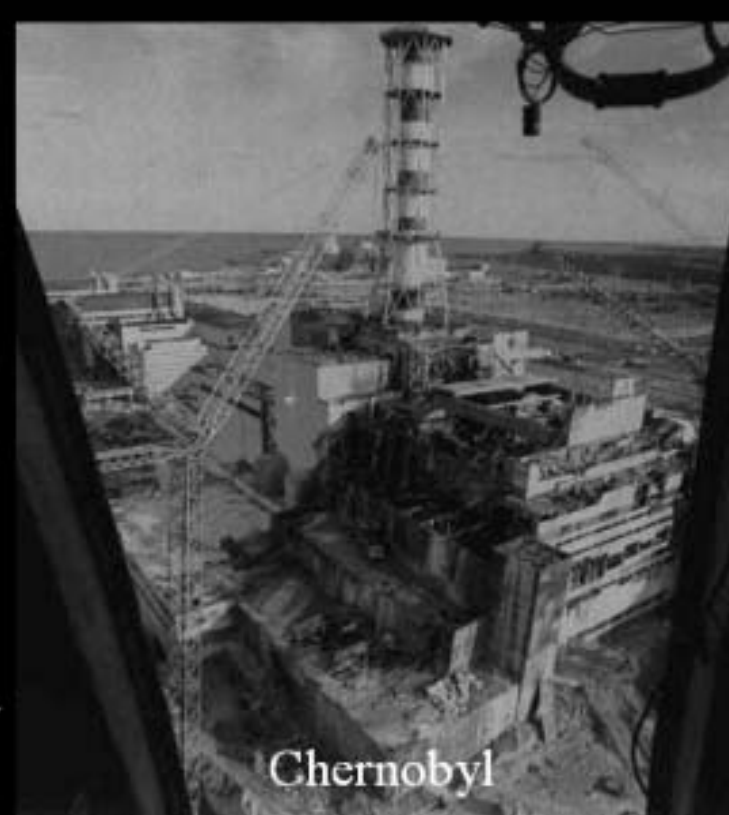
Course Profile—Environmental Geology

- Introductory, non-majors
 - 60/semester
- Lecture
 - Interactive, topical issues
 - Hazards, resources
- Lab
 - Materials, maps
 - Models (physical, computer)
 - Simulations, visualizations
 - Debates
- Semester-long, Service-Learning Project
- Course (and project) used to demonstrate connections between
 - Geology (science) and
 - Society (policy, economics, health)



Principles of Service Learning

- Community Voice—
 - Real community needs are being met
- Orientation and Training—
 - Students learn about the issues from mentors, agencies, self-directed study
- Meaningful Action
 - Valuable to the community
- Reflection
 - Students should process, discuss and think about the service experience
- Evaluation
 - Impacts on community, student learning, student growth



The Project

- In January 2003 it was pretty clear that war in Iraq was inevitable...this lead to...
- A poster session teach-in for the community
- Geologic *causes of war*
 - Distribution and control of resources
- Geologic *influences on war*
 - Physiography, climate,...
- The *environmental legacy of war*
 - Nuclear waste disposal, Agent orange defoliation...



Topics

1. The Coldest War, conflict in Kashmir
2. Geology and the Gulf War
3. Viet Nam—Agent Orange
4. Fires of Kuwait
5. Persian Gulf War
6. Pollution of War, Operation Iraqi Freedom
7. The Second Punic Wars--Hannibal and his Elephants
8. Recovery of Hiroshima
9. Chernobyl--A Consequence of the Cold War
10. Battle of Verdun



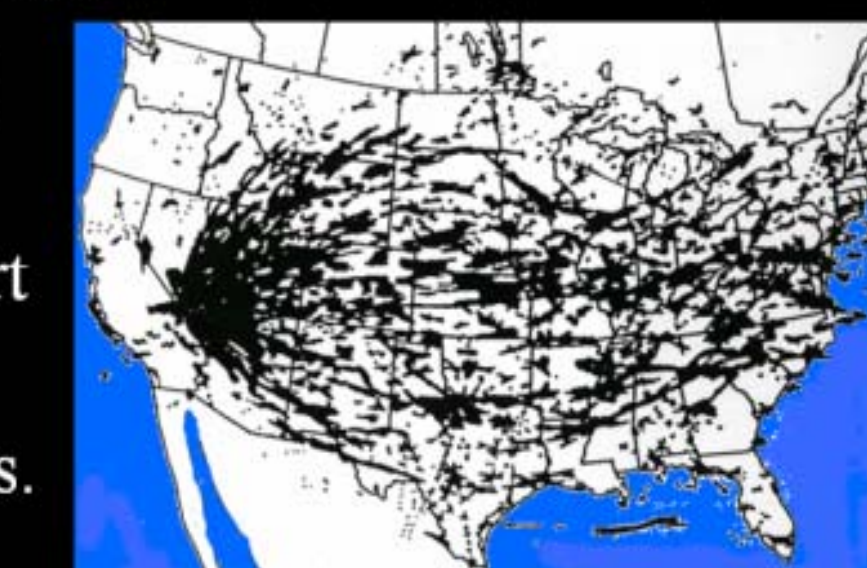
Implementation

- Students worked in small groups
- Self-selected topics
 - Approved after consultation
- Road Checks
 - Discovery, collection of evidence
 - Prioritizing, distilling evidence
 - Writing text
 - Design principles
- Public presentation/defense
- Public, personal, and peer evaluation



Evaluation: surveys, interviews, observations

- Public—overwhelmingly positive
- Faculty—
 - Impressed by quality, breadth and presentation
 - Liberal Arts faculty were impressed with a) content, b) connections to humanities, c) use of technology and are looking for future collaborations.
- Students (personal evaluations)
 - Very proud of their products
 - A lot of work, but worth the effort
 - Transferable skills to other areas
 - Increased interest in public affairs.
- Projects
 - Overall, tremendous growth by the students
 - Products, highly professional



Recommendations

- Experiential learning is
 - Effective, meaningful and fun for students
- Consider engaging a service-learning project
 - Good press for your institution
 - Projects with important products for the community
 - A welcome alternative for faculty
 - Personal growth by students.
- Now, identify a topical issue, and
- JUST DO IT!

