This is a unique lecture/lab course that combines hands-on experiments in the laboratory with ideas about the structure of our environment. It is a study of the ways our physical environment works and works with and against us. Though aimed particularly at non-scientists, the experiment/discussion format is such that science students can participate at their own pace, and experience classical science "taken outdoors."
The context of the class will be a survey of the history of 20th Century environmental change and the impacts of environmental events. Open-ended and non-cookbook laboratory experiments will, for example, explore energy flow and transformation, simulate the destructive force of hurricanes and earthquakes, initiate a search into particles and trace chemicals in the air we breathe, map fresh water flowing in underground "rivers", investigate the processes that drive volcanic eruptions, and study oxygen production and consumption in a "microcosm" of life in a test-tube. Tours of research facilities in Oceanography will demonstrate how close these class experiments are to cutting-edge science. The experimental focus will then grow to confront direct and long-term impacts of natural events and change, and particularly the way human activity combines with natural cycles. We will include human-health and economic issues (e.g., What is the energy profile of a particular country, and how would it be affected by developing solar energy devices? How much will a glass of clean water cost in 2035, how many of us can have one, and how shall we know that it is clean? What kind of particles and trace chemicals are there in the air we breathe, and should we worry about them? Can we predict earthquakes and how can poor countries mitigate their effects?). The course will also touch on the aesthetic: art and science meet conveniently in the lab, and our sense of ideal environments is subjective and changeable.

Instructors:
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Course Website: www.ocean.washington.edu/courses/envir215

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