

Thoughts on Global Warming Education

I established the only chemistry course aimed at nonscience students at Tufts in 1980's. It was on the subject of "Environmental Chemistry" because I felt the general interest in and concern for the environment might be a good enough hook to attract students to our department. I felt that chemistry was a rich subject and that it could enrich the lives of nonscience students. Furthermore, I felt that nonscientists from schools like Tufts were highly likely to become leaders in diverse fields where their decisions might impact the quality of the environment. I wanted them to have at least an appreciation of the issues.

The course ran every year for a few years, then, because of limited personnel in the department faculty was put on an every other year schedule, which it is still on. A couple years after I began teaching the course, the Environmental Studies major was revised to allow students whose first major was anything to take ES as a second major. Three tracks were devised, which also still exist today: Track I, Environmental Science; Track II, Environment and Technology; and Track III, Environment and Society. This last track was designed for humanities and social science students, and my course became primarily a service course for majors in Track III. Enrollments were around 40, but these steadily declined to about 18 the last time I offered the course in 2006. These enrollments reflected the declining passion about environmental protection starting with the Reagan years and continuing on till just recently. In my opinion, the work of Al Gore, James Lovelock, Elizabeth Colbert, and others, which collectively achieved a popular consensus that global warming was real, was a watershed event, and with the awarding of last year's Nobel prize to Gore and the IPCC, would result in a new age of activism for the environment, and, incidentally, an upsurge in enrollments in Chem 8 (Think globally, act locally).

Preregistration for Chem 8 for the upcoming semester stands at 48, an all-time high.

Now everyone is talking about climate change and mitigation. There are books, talks, and programs about reducing one's carbon footprint, going on a low-carbon diet, etc. Our course, as always, will look at the science of the atmosphere, the changes over the last 50, 100, 10000 years, the predicted effects on weather, sea level, etc. As always.

While little or nothing has been done about climate change in the past quarter-century, it seems that perhaps we are ready to contemplate changes. No longer must environmentally concerned citizens feel that they were alone in making sacrifices, literally taking their lives in their hands on roadways when they opted for a prius instead of an suv. We can now hope for a sense of shared sacrifice as we try to protect ourselves from the effects of runaway fossil fuel consumption.

But as a colleague from the Stockholm Environmental Institute recently put it, the climate change scenario is on a collision course with development in the third world. Whatever we do to cut back on carbon emissions will have little impact if China and India continue to follow the high-carbon road to growth. From the SEI website:

The transition to modern energy forms was the engine for the industrial revolution. The threat of global climate disruption and the lack of basic energy

services for billions of people now call for a new energy transition. Clean and affordable energy technologies must be brought to the market, and energy policies and institutions must foster equitable development.

Technological breakthroughs will not be enough. To cope with the challenges of the 21st Century will require more interdisciplinary education, research and cooperation than ever before, as both East and West must develop new mindsets. Every discipline must get involved, and disciplinarians must stretch to learn lessons traditionally outside their narrow boundaries. As Steven R. Covey says in *Seven Habits of Highly Effective People*, interdependence is a higher form of existence than independence, and the narrow definitions of what's right for my country must change if we are to move beyond the Kyoto stalemate. Intellectual pursuits like "Peace and Justice" must move out of the boundaries and into center stage if the world is to respond to the issues we now face.

Many of us remember the late 80s when Tufts took a bold step towards leadership in environmental education. Now everyone is going to do climate change. I hope we again forge a leadership initiative by including climate justice as central to our approach to climate change education.

Jonathan Kenny, Chemistry
Director for the Center for Interdisciplinary Learning
January 15, 2008