2.00AJ / 16.00AJ Exploring Sea, Space, & Earth: Fundamentals of Engineering Design
Spring 2009

An Ethical Dilemma for Scientists and Engineers

2.00A/16.00A Communication Assignment #1

Due Tuesday March 3, 2009 2:30pm

Note: The Ven. Tenzin Priyadarshi, the director of the new The Dalai Lama Center for Ethics & Transformative Values at MIT (http://thecenter.mit.edu/), will join us in class for a discussion on this topic. ***Please be on time to class!***

"How improbable does a catastrophe have to be to justify proceeding with an experiment?"

If an experiment has the slightest potential to destroy the planet completely, should it ever be allowed? At what point is such a risk tolerable, if ever?

Assignment:

You are expected to write a 2-3 page paper (double spaced, 12pt Times, 1" margins) in response to the question above and the readings listed below. Your article should briefly summarize the dilemma and take a *position* on the topic: *"How improbable does a catastrophe have to be to justify proceeding with an experiment?"*

In your discussion of your position, you need to convince your audience that your viewpoint is valid and should be taken seriously. You should reference the articles you use to make your point (many useful articles are already posted under Optional Readings). Be sure to summarize your argument at the end. Don't forget to put a title for your paper and your name at the top of page one and number your pages!

A reference for how to cite papers/articles is given in the Mayfield Handbook:

http://www.mhhe.com/mayfieldpub/tsw/toc.htm

A good reference for writing papers is "Writing Center Slides."

Grading:

Neither position is going to be deemed right or wrong *per se*, but we will grade based on the overall writing (grammar, spelling, organization) as well as the solidity and coherence of your argument – did you convince us that your position should be taken seriously? Consider how your paper "flows", being sure that you don't run in circles and repeat yourself too many times, and make sure to proofread your final draft.

Required Reading:

1. Kent, Adrian (2004) "A Critical Look at Risk Assessments for Global Catastrophes," *Risk Analysis*, Vol. 24, No. 1, pp. 157-168.

2. Calogero, Francesco (2004) "Might a laboratory experiment destroy planet earth?" *Interdisciplinary Science Reviews*, 2000, Vol. 25, No. 3, pp 191-202.

3. NY Times article "Gauging a Collider's Odds of Creating a Black Hole" http://www.nytimes.com/2008/04/15/science/15risk.html

Optional Readings are also listed on the Assignments page. Several are brief NY Times articles and there is also an AP press video on You Tube about the particle accelerator at CERN that might be interesting background. You are strongly urged to read one or more "optional" readings (and maybe even search out additional readings) before writing your paper.

You are welcome to extend your discussion beyond the topic of "Black Holes" as well, but you must consider this idea in your discussion as well.