ESCI 321
Environmental Geology: Earth Science and Environmental Justice

Fall 2011
Class Meetings: Thursdays 4-6 p.m. Observatory Building 211

Instructor: Jill Schneiderman
Office: Ely Hall 118B
Office Hours: Mondays and Tuesdays 1-2 p.m. (You are welcome to drop by at other times and with patience you are likely to find me!)
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Course Description
This course examines environmental geology from a perspective that foregrounds questions of social justice. This approaches differs from traditional methods of pursuing environmental geology in that it seeks to combine an understanding of the Earth System with a consciousness of race, class, and gender discrimination. The course is based on two fundamental premises: all living beings have the right to a clean and safe environment; and there is a connection between human arrogance, environmental exploitation, and social justice. Consideration will be given to the viewpoint that there exists within the United States, as well as globally, a pattern of environmental inequity. Furthermore, we will evaluate the contention that underlying this pattern is not only an historical failure to address corporate greed and governmental corruption, but a basic lack of understanding about the intricacies of the dynamic Earth System that constitutes the planet.

Key topics to be considered include definitions of environmental justice, concepts of violence, geologic time, scientific uncertainty, radioactivity, energy resources, food and soil, flooding, megadams, and climate change.

Course Pedagogy
This course is designed as seminar. I organized it around a series of materials that represent some important issues currently being pursued by scholars and activists. The seminar format requires active participation by its members. This course is intensive in three ways—writing, reading, and participation. I expect you to be an actively engaged participant in the seminar. This means you will facilitate class discussions, collaborate in group work, plan seminar presentations, and demonstrate initiative in bringing issues to the larger group discussions.

This is the sixth version of a course on earth science and environmental justice that I initially developed under a National Science Foundation curriculum development grant (NSF 9653266). I have modified it under a Center for Contemplative Mind in Society Contemplative Practice Fellowship, more than one hundred fifty of which have been awarded to American college and university teachers over a 12-year period. The course combines the traditional “third-person” learning of a weekly two-hour seminar with the novel “first-person” learning of a brief “meditation exercise.”
The modern Western academy is dominated by what Harold Roth, Professor of Religious Studies at Brown University, has called “third-person” learning. We observe, analyze, record, discuss a variety of subjects at a distance as if they were solely objects and that our own subjectivity that is viewing them doesn’t exist. Of course there are exceptions to this, particularly in the Arts and Humanities, where students may combine academic investigations with direct firsthand experience of what they are studying (e.g. theatre, art, music). But in general, the Natural Sciences prize objectivity.

Through use of a weekly meditation exercise, this course includes an experiment in what Roth calls “critical first-person learning.” Throughout the semester we will read and analyze a variety of work concerning earth science and environmental injustice (“third-person learning”); and we will observe our minds and bodies work while trying out a variety of simple meditation techniques (“first-person learning”) at the end of each meeting. In class, our discussions will be informed by both of our types of learning.

Meditation is a contemplative practice undertaken with the intention of quieting the mind and cultivating deep concentration, calm, and awareness of the present moment. Ideally, the insights that arise from the mind, body, and heart in the contemplative state enhance meaning in our lives. Without a doubt, this kind of novel pedagogy is not for everyone. If, for any reason, there is a student who does not want to participate in the meditation exercise, I will be happy to make arrangements for doing alternate work of equivalent value.

**Books**

Adamson, Joni; Evans, Mei Mei, and Stein, Rachel, *The Environmental Justice Reader*, 2002.
Wallace, David Foster, *This is Water*, 2009. (Optional. It’s just a beautiful little book to have so that you can read it periodically).

There are also a number of readings that are available on the course Moodle site and films on reserve that can be viewed in the library.

**Requirements**

1. **Attendance and Participation.** Remember that this class is a seminar; it is not a lecture. Please come prepared to contribute every week. To facilitate each week’s discussion, every student (except those leading the discussion) will post two discussion questions on the Moodle site by Wednesday evening at 7 p.m.
2. **Critical Commentaries.** These are 250-500 words, due at the beginning of class (for weeks 3-7, and 8-11). You can take a “pass” three times during the semester and not submit a commentary during three of those weeks. When you do take a “pass,” you
are to email me one paragraph before class in which you state what you found valuable (scientifically, theoretically, politically) about the reading.

3. **Two “Dialogue” Papers.** By the Friday before October Break and by the Friday after classes end, you will hand in a 1250 word paper in which you put environmental justice theory in dialogue with a the reality of a resource extraction issue. The first paper will be based on the readings from Week 2 (Defining Environmental Justice) in conjunction with solid earth energy resources. The second one will be based on a contentious issue of the hydrosphere and/or atmosphere in conjunction with Rob Nixon’s book.

4. **Presentation/Lead a Class Discussion.** In pairs, students will serve as discussion leaders for one particular week, steering us through the assigned readings. Each of you will serve in this role once during the semester.

5. **Final Project.** This will involve, in part, a book review of Safina’s book (or another one that you choose in consultation with me). I will give you more details later in the semester.

6. **Note-card journal.** At the end of every class meditation exercise you will record brief comments or observations.

These will count equally when I determine your grade for the seminar:
- Class preparation and participation (Includes leading of class discussion one week)
- Critical Commentaries
- Two “dialogue” papers
- Final Project
- Note-card journal

Note that students much complete all assignments to receive a passing grade. If, due to extraordinary circumstances, you need a significant extension on some of the course work, please see your Class Advisor to receive permission.

**ACADEMIC ACCOMMODATIONS**

I am happy to provide academic accommodations for students with learning differences who are registered with the Office of Disability and Support Services (ODSS). I hope that students who need such accommodations, whether registered with the ODSS or not, will schedule an appointment with me early in the semester. Doing so will allow us to discuss any accommodations for this course that have been approved by ODSS, as indicated in your accommodation letter, and consider what we can do together to make your learning experience in this course most rich.

**IMPORTANT POLICIES OF THE DEPARTMENT OF EARTH SCIENCE AND GEOGRAPHY**

Class attendance is required; please arrive on time! Be sure to turn off cell phones and other personal communication devices before entering the classroom. Let us respect our time together and make the most of it by eliminating unnecessary distractions.

In-class computer policy: Computers are allowed in class only for purposes of taking notes and viewing course readings. No other documents are to be opened. Web browsers are never to be activated unless the instructor specifically asks you to do so.
Weekly Materials

**Week 1 (September 1)  Introduction to the course**

David Foster Wallace, *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life* (A speech given by David Foster Wallace at the 2005 Kenyon College commencement ceremony).

Excerpt from The Activist’s Ally: Contemplative Tools for Social Change.

Watch the opening chapter (first 10 minutes) of *Earthlings* (A documentary about society's treatment of animals, narrated by Joaquin Phoenix with soundtrack by Moby).

Meditation exercise: *Breathing Meditation* (5 mins) Diana Winston, Director of the Mindfulness Center, UCLA Mindful Awareness Research Center

**Week 2 (September 8)  Defining Environmental Justice**


**Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations** (11 February 1994)


Meditation exercise: Loving-Kindness Meditation (10 mins) Diana Winston, Director of the Mindfulness Center, UCLA Mindful Awareness Research Center.

**Week 3 (September 15)  Violence, Peace, and Geologic Time**


Twain, Mark “Was the World Made for Man” (PDF on Moodle)

Albin, Edward. *Earth Science Made Simple*. 2004 (Chapter 3 on Plate Tectonics)

Meditation exercise: Breath, Sound & Body Meditation (12 mins) Diana Winston, Director of the Mindfulness Center, UCLA Mindful Awareness Research Center.

**Week 4 (September 22)  Slow Violence, “Scientific Uncertainty,” and Geologic Time**

Albin, Edward. *Earth Science Made Simple*. 2004 (Chapter 4 on Geologic Processes; Chapter 5 on Geologic Time)


Meditation exercise: Introduction to the 4-Part Bell Sound Practice (5 min) and The 4-Part Bell Sound Practice (10 mins). Arthur Zajonc, Professor of Physics, Amherst College and Director, The Center for Contemplative Mind in Society.
Environmental Justice and the Geosphere

Week 5 (September 29)  No Class (Rosh Hashanah)

Week 6 (October 6) Minerals, Rocks and Radioactivity


Stonestrom, Dave. “Cleanup on Aisle 9: The Long Lasting Legacy of Nuclear Waste.” 2008. (Listen/Watch online; approx. 1 hour lecture)


Meditation exercise: [Bare Attention Meditation](http://www.energyjustice.net/ej/) (5 mins) Mirabai Bush , Founding Director, The Center for Contemplative Mind in Society

Week 7 (October 13)  Coal: Some Costs of Cheap Energy


*McQuaid, John. 2009.* [Mining the Mountains](http://www.energyjustice.net/ej/) *Smithsonian Magazine.*

Reece, Erik. [Moving Mountains: The Battle for Justice Comes to the Coalfields of Appalachia](http://www.energyjustice.net/ej/) Orion, Jan/Feb 2006.

Browse [website of Energy Justice Network](http://www.energyjustice.net/ej/)

Meditation exercise: [Loving-Kindness Meditation](http://www.energyjustice.net/ej/) (10 mins) Mirabai Bush , Founding Director, The Center for Contemplative Mind in Society.
October Break

Week 8 (October 27)  Field Trip to the Jewish Farm School in Putnam Valley

Prior to our field trip in Week 8, please attend the screening of “Dirt: The Movie” on Tuesday October 25 in Ely Hall 200 and the lecture by Dr. Salvatore A. Engel-Di Mauro on Wednesday evening October 26. Also, prior to Dr. Engel-Di-Mauro's talk, read his paper “From organism to commodity: gender, class, and the development of soil science in Hungary 1900-1989.” Environment and Planning D: Society and Space 2006, volume 24, pages 215-229.

Week 9 (November 3)  Oil


Delta Force. 1995. Directed by Glenn Ellis (52 minutes). (Watch). On reserve at library

Nixon, Rob. Slow Violence and the Environmentalism of the Poor. Chapters 2 and 3.


Week 10 (November 10)  Soil, Trees, and Gender


Soil Science Society of America. “Soils Overview” (PDF on Moodle).


Meditation exercise: Breathing Meditation (5 mins) Diana Winston , Director of the Mindfulness Center, UCLA Mindful Awareness Research Center
Environmental Justice and the Hydrosphere

**Week 11 (November 17)** Hurricane Katrina and Environmental Justice

Watch: *When the Levees Broke: a requiem in four acts.* 2006. Directed by Spike Lee (on reserve in the library) (3 discs; total running time 255 minutes).


Meditation exercise: [Loving-Kindness Meditation](http://understandingkatrina.ssrc.org/Sze/) (10 mins) Diana Winston , Director of the Mindfulness Center, UCLA Mindful Awareness Research Center

**Week 12 (November 25)** Give Thanks!

No class

**Week 13 (December 1)**

Gather to sit during class time (JSS away this week)


Meditation exercise: [Introduction to the 4-Part Bell Sound Practice](http://understandingkatrina.ssrc.org/Oliver-Smith/) (5 min) and [The 4-Part Bell Sound Practice](http://understandingkatrina.ssrc.org/Oliver-Smith/) (10 mins). Arthur Zajonc, Professor of Physics, Amherst College and Director, The Center for Contemplative Mind in Society.

**Week 14 (December 8) Megadams**


Meditation exercise: Breath, Sound & Body Meditation (12 mins) Diana Winston, Director of the Mindfulness Center, UCLA Mindful Awareness Research Center

Environmental Justice and the Atmosphere

Week 15 (December 15) Climate Justice

Thich Nhat Hanh The World We Have.


Listen/Watch “Supreme Court Global Warming Hearings” [http://www.kqed.org/epArchive/R612040900](http://www.kqed.org/epArchive/R612040900) (Forum with Michael Krasny, KQED Radio, 4 December 2006).

Precautionary Principle

Browse website of [Environmental Justice and Climate Change Initiative](#).