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ENST 491.01: Special Topics - Toxics in Everyday Life

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ENST 491.01 – Special Topics: Toxics in Everyday Life

Spring Semester 2013

Monday and Wednesday, 3:10 – 4:30

Education Building 214

“From the right to know and the duty to inquire flows the obligation to act.”

- Sandra Steingraber, *Living Downstream*

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Office hours: If I can be of assistance, please come see me during my office hours by signing up for a meeting time on the sheet posted across from my office door in Rankin. My office hours are: **Mondays 1:00-2:40 and Wednesdays 10:20-11:40**. If these are impossible for you, please contact me to make an appointment.

Overview and course objectives: Human societies have lived with pollution since we began burning, mining, tanning, and so on. What is relatively recent, however, is the presence of so many synthetic chemicals and our frequent exposure to them. Manufactured chemicals have become increasingly common in their use in the United States. Some of these substances bring great value and convenience to our lives; yet, we also know that they make their way into our bodies through our food, water, air, homes, workplaces, and other routes. Many of these substances are toxic, which means they are known to or suspected to cause acute or chronic injury to the human body.

In this interactive seminar, you will learn by carefully reading and discussing works by and about some of the leading environmental scientists and activists in this field. We will explore scientific evidence and uncertainty surrounding many commonly used chemicals, as well as the regulatory processes that have been established in an attempt to manage them. What are the health effects of these chemicals that we are often exposed to since before birth, during critical stages of bodily development, and then throughout adulthood? How are they impacting the non-human, natural world? How are they regulated before and after they reach the market? What alternatives, such as green chemistry, might be adopted in their stead?

Specific course objectives are to:

- (1) Introduce you to some of the contemporary environmental health issues surrounding toxic chemicals, their regulation, and possibilities for reform.
- (2) Develop your analytical skills through careful reading, discussion, and short reaction papers.
- (3) Develop your research and problem-solving skills through a term project, described below.

Readings: Some readings will be posted on Moodle or available through the web, but we will concentrate on four required books that are available in the UC bookstore. (Another is optional, but you may find it useful.) Be sure you get the second (updated) edition of *Living Downstream*. Also, please bring all readings to each class with you on the day they are assigned.

Required:

Grossman, Elizabeth. 2009. *Chasing Molecules: Poisonous Products, Human Health, and the Promise of Green Chemistry*. Washington: Island Press.

Malkan, Stacy. 2007. *Not Just a Pretty Face: The Ugly Side of the Beauty Industry*. Gabriola Island, BC: New Society Publishers.

Steingraber, Sandra. 2010. *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment*. Second Edition. Philadelphia: Da Capo Press.

Williams, Florence. 2012. *Breasts: A Natural and Unnatural History*. New York: Norton

Optional, but very useful:

Wargo, John. 2009. *Green Intelligence: Creating Environments that Protect Human Health*. New Haven: Yale University Press.

Class Participation: The course is a seminar, which means it will be discussion focused. Its quality greatly depends upon the active participation and contributions of all members. Use this opportunity to learn from the experiences, insights, and values of others in the course. There is no one way to create an effective learning community, but a few things will help us along:

- Recognizing that we are all learners. We are just in different “places,” we bring different backgrounds, and we will learn different things along the way.
- Learning requires an investment of time and effort. It is essential that we each put in the intellectual labor, if you will, before each of our class sessions. This means carefully reading all materials prior to each class session.
- Learning also requires a willingness to question assumptions – including our own – and an interest in exploring different and multiple perspectives on a given topic.
- Attending class consistently is essential to your learning and your contribution to others’ learning.

Reaction Papers: To encourage you to read carefully and come to class prepared to discuss the material, you will write a reading response for at least 10 of the class periods when readings are assigned. These papers should be about one, typed page. Use them during class and then turn them in at the end. Please do not email them to me.

Reaction papers involve generating a list of questions, reactions, ideas, or challenges about the readings assigned for the particular days you choose. I suggest that you jot

down notes as you read. This practice will help you engage with the material rather than read it at a superficial level. Have a conversation with what you read. Making specific references to passages or major themes in the reading, perhaps you will want to:

- Identify portions that were difficult for you to understand and why.
- Pose questions that help us clarify the key concepts or main argument(s) made in the readings.
- Explain why you disagree or agree with something in the readings.
- Make connections or comparisons among the ideas of different authors.

Writing often helps clarify your thinking, and in turn will make you a more constructive contributor to class discussions. You are strongly encouraged to raise one or more of the ideas in your reading response during our discussion. These responses also let me know what you are thinking about or struggling with, and allow me engage with your ideas.

Research Project: Students will also carry out a research project on one known or suspected toxic chemical (or physical agent) throughout the semester. At different points during the term, you will produce draft portions of your final paper on the following topics, and I will give you feedback at each juncture. The idea here is to build your base of knowledge, revise your work along the way as you learn more, and develop your central argument. The steps include:

- (1) Provide a brief introduction to the chemical or physical agent you have chosen and its **common uses** (or how it gets into the waste stream); and give a basic discussion of **how the substance is regulated** (i.e., under which law, by which agency, and important steps in the regulatory process). Approximately 5-7 pages, plus references.
- (2) Choose to **focus on either a major human health concern or a major environmental issue** at hand (you may even choose to focus narrowly, such as on a particular type of pollution or a particularly vulnerable human population). In this part of the assignment, review literature that discusses either (a) the major routes of human exposure to the substance and what is known or suspected about the human health impacts, **or** (b) the major environmental concern associated with the chemical (e.g., what is known about atrazine's contamination of water?). The literature you use should be primarily from scientific or governmental documents, although you may want to use some materials from reliable non-profit organizations. Approximately 5-7 pages, plus references.
- (3) Propose **alternatives** to the substance you have studied **or** propose specific **regulatory solutions** to the problems you have identified. Then, take some kind of action based on your new knowledge in order to learn how to translate your research into practice and/or policy discourse. This might involve things like the following: (a) submitting specific recommendations to the appropriate entity (e.g., a governmental agency; Congressperson); (b) getting involved in an existing campaign to address the issues (e.g., one organized by a relevant organization); or

(c) taking some other action that seems appropriate. Length will depend on your project.

Graduate Increment: Graduate students will be expected to produce work that is generally more developed analytically. In addition, each graduate student will make a 15-minute presentation during one class session. These presentations will bring in new material or ideas related to readings we are doing at that time. I encourage you to think about how our readings relate to your own discipline or particular area of focus. Please let me know which days you would like to do this on by February 6.

Grading: Final grades will be based on the following percentages:

- **Class Participation** 20
This includes consistent attendance, evidence of careful reading, and contributions to class discussion.
- **Response papers** (each of the 10 is worth up to 3 points) 30
3 points = excellent;
2 points = good;
1 point = satisfactory;
0 = unsatisfactory or not completed
- **Term Project** 50
Each of the three parts of the project will be considered drafts, but preliminary grades will be assigned to give you a sense of how you are doing along the way. The final complete project will be evaluated, in part, on the degree to which you integrate feedback along the way. Evaluation of the final project grade will primarily be based on the quality of the research, analysis, and the appropriateness of the actions taken and/or recommendations made.

COURSE SCHEDULE

Subject to revision as necessary

Guest speakers, videos and other activities may be added

1. Mon. 1/28 – Introduction to the course and to each other
2. Wed. 1/30 – Introduction to concepts
 - Read the Forward to the Second Edition in *Living Downstream* (pp. xi-xxvi)
 - Familiarize yourself with Toxipedia by visiting this site:
<http://www.toxipedia.org/display/toxipedia/Welcome+to+Toxipedia>
 - Read “Toxicology and You” in *A Small Dose of Toxicology* (pp. 8-20); e-book accessible via Toxipedia.
3. Mon. 2/4 – Attend the seminar by Anna Lappe, author of *Diet for a Hot Planet* and *More*; Co-founder of the Small Planet Institute www.smallplanet.org. "Eat the Sky: Connecting the Dots between Climate, Food, and the Future of Farming" Gallagher Business Building, Room 123, 3:10-4:30.

Continue reading *Living Downstream* for Wed. Be thinking about which toxic agent you may want to study.
4. Wed. 2/6 – *Living Downstream* pp. 1-87
5. Mon. 2/11 – *Living Downstream* pp. 89-143. You should have chosen your chemical or material substance by now. Meet at Mansfield Library in the Student Learning Center (ML 283), which is downstairs from the floor you enter the building on. We will have a session with librarian Barry Brown to discuss how to research the substance you have chosen.
6. Wed. 2/13 – *Living Downstream* pp. 143-187
7. Mon. 2/18 – Presidents Day Holiday – No class
8. Wed. 2/20 – *Living Downstream* pp. 187–239. In class video: Big River.
9. Mon. 2/25 – *Living Downstream* pp. 239-290
10. Wed. 2/27 – **PART ONE OF TERM ASSIGNMENT DUE**
11. Mon. 3/4 – *Breasts* pp. 1-55
12. Wed. 3/6 – *Breasts* pp. 57-103. Guest speaker, Laurie Yung, participant in three studies by the Environmental Working Group about fire retardants (one on breast milk, one on household dust, and another on the blood of the children of the moms in the breast milk study).

13. Mon. 3/11– *Breasts* pp. 105- 156
14. Wed. 3/13– *Breasts* pp. 157-218
15. Mon. 3/18 – *Breasts* pp. 219 - 256
16. Wed. 3/20 – *Breasts* pp. 257 - 283
17. Mon. 3/25 – Guest speaker(s) from Women’s Voices for the Earth. Learn about their campaigns and ways to get involved.

18. Wed. 3/27 – **PART TWO OF TERM ASSIGNMENT DUE**

Week of 4/1 – SPRING BREAK

19. Mon. 4/8 – Feedback on part two of the assignment. Work Session on part three.

20. Wed. 4/19 – *Not Just a Pretty Face* pp. xi – 50

21. Mon. 4/15 – *Not Just a Pretty Face* pp. 51 - 98

22. Wed. 4/17 – *Not Just a Pretty Face* pp. 99 - 153

23. Mon. 4/22 – *Chasing Molecules* pp. xiii – 54

24. Wed. 4/24 – *Chasing Molecules* pp. 55 – 98

25. Mon. 4/29 – **PART THREE OF TERM ASSIGNMENT DUE (can be in draft form if necessary)**

26. Wed. 5/1 – *Chasing Molecules* pp. 99 – 158

27. Mon. 5/6 – *Chasing Molecules* pp. 159 - 200

28. Wed. 5/8 – Questions on final papers. Course evaluations. Reflections.

Tues. May 14 – Exam period, 3:20 – 5:20. **FINAL PAPERS DUE. ATTENDANCE REQUIRED. Brief presentations on your research and discussion of the research experience.**