DEPARTMENT: Environmental Health
COURSE NUMBER: EH 500     SEMESTER: Fall 2014
CREDIT HOURS: 2
COURSE TITLE: Perspectives in Environmental Health

INSTRUCTOR NAME: Dana Boyd Barr, Ph.D.
INSTRUCTOR CONTACT INFORMATION
EMAIL: dbbarr@emory.edu
PHONE: 404-727-9605
SCHOOL ADDRESS OR MAILBOX LOCATION: Rm 2007 CNR
OFFICE HOURS: M-F 8:30-4:00 (best 9-11am and 2-4pm), drop-in or by appointment
TEACHING ASSISTANTS: Grant Walter (gwalt2@emory.edu), Leslie Waller (leslie.waller@emory.edu), Kelly Genskow (kelly.genskow@emory.edu), Jamie Schenk (Jamie.schenk@emory.edu)

BRIEF COURSE DESCRIPTION
EH 500 is a survey course designed to introduce public health students to basic concepts of environmental sciences, to the methods used to study the interface of health and the environment, to the health impacts of various environmental processes and exposures, and to the public health approach to controlling or eliminating environmental health risks.

LIST SCHOOL LEVEL, DEPARTMENT, AND/OR PROGRAM COMPETENCIES

1. Describe environmental conditions, including biological, physical and chemical factors, which affect the health of individuals, communities and populations (From Core Competencies for all MPH/MSPH students)

ACADEMIC HONOR CODE
The RSPH requires that all material submitted by a student in fulfilling his or her academic course of study must be the original work of the student.
LIST LEARNING OBJECTIVES ASSOCIATED WITH THE COMPETENCIES

EH 500 is a survey course designed to introduce public health students to basic concepts of environmental sciences, to the methods used to study the interface of health and the environment, to the health impacts of various environmental processes and exposures, and to the public health approach to controlling or eliminating environmental health risks. Upon completion of the course, students will be able to:

1. Name the principal environmental exposures that threaten human health
2. Describe the sources of these exposures and their pathway to humans
3. Discuss how upstream processes (urbanization, housing, transportation, energy use, industrial and work organization, migration, globalization) create environmental risks for health
4. Explain what kinds of evidence are used to assess the health consequences of these exposures, including toxicology, epidemiology, and risk assessment
5. Summarize the known and suspected health consequences of these exposures
6. Cite the major preventive approaches used by environmental public health practitioners
7. List the major legal and policy approaches used in the United States to control environmental health hazards
8. Recognize how to assess the seriousness of an environmental health problem through information gathered from appropriate sources
9. Define the major features of environmental health hazards in developing countries

EVALUATION

Mid-term Exam: 30 points
Final Exam: 46 points
Article Discussion Groups: 4 points each (6 questions total), Selected questions will receive 1 extra credit point

Grading:  
- ≥ 95 points A 85 – 94 points A-
- 78 – 84 points B+ 75 – 77 points B
- 70 – 74 points B- 50 – 69 points C < 50 points F
EH 500: PERSPECTIVES IN ENVIRONMENTAL HEALTH
Syllabus - Fall Semester 2014

WHERE AND WHEN: CNR Auditorium; Mondays, 10:00 – 11:50AM

COURSE DIRECTOR:
Dana Boyd Barr, Ph.D.; email: dbbarr@emory.edu; telephone: 404-727-9605
Office hours: MWFTh 8:30-4:00 (best 9-11am and 2-4pm), drop-in or by appointment

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Jamie Schenk (Jamie.schenk@emory.edu)
Office hours: contact by email to set up appointment

COURSE BLACKBOARD SITE: http://classes.emory.edu/; course title is EH500: Perspectives in Environmental Health – Fall 2014; course announcements will be posted on the Announcements tab.

TEXT: Environmental Health: From Global to Local. 2nd Edition. Howard Frumkin, Editor. Jossey-Bass. San Francisco. Cost: ~$50 (used); $95 (new); $50 (Kindle edition) (recommended but not required)

COURSE LEARNING OBJECTIVES: EH 500 is a survey course designed to introduce public health students to basic concepts of environmental sciences, methods used to study the interface of health and the environment, health impacts of various environmental processes and exposures, and public health approaches to controlling or eliminating environmental health risks.

Upon completion, students will be able to:
1. Name the principal environmental exposures that threaten human health
2. Describe sources of these exposures and their pathway to humans
3. Discuss how upstream processes (urbanization, housing, transportation, energy use, industry/work organization, migration, globalization) create environmental risks for health
4. Explain the types of evidence used to assess the health consequences of these exposures, including toxicology, epidemiology, and risk assessment
5. Summarize known and suspected health consequences of these exposures
6. Cite major preventive approaches used in environmental public health
7. List major legal and policy approaches used in the United States to control environmental health hazards
8. Recognize how to assess the seriousness of an environmental health problem through information gathered from appropriate sources
9. Define major features of environmental health hazards in developing countries
This course is designed to supply students with a broad knowledge of environmental health related topics. Basic environmental health principles (exposure assessment, environmental toxicology, environmental epidemiology, risk assessment), as well as specific environmental health issues including water and air pollution, hazardous chemical/waste exposures, climate change, and environmental drivers of disease ecology, will be covered.

**EVALUATION:** Evaluation will be based on your scores on an in-class mid-term exam, group discussions of the readings (see below) and the final exam. These exercises are designed to assess your understanding of lecture materials and readings. The mid-term and final exam are in the form of multiple choice questions, short answers, and essay questions.

**Exams:** The mid-term, worth 32 points, will be given in class on October 27 and will occupy the entire class time, 1 hour and 50 minutes long. If for some reason you cannot take the exam that day, a make-up exam must be arranged with Dr. Barr prior to the scheduled exam dates. The final exam, worth 48 points, will be given once on December 8 and will occupy the entire class time, 1 hour and 50 minutes; there will be no make-up exam. Please note that the final exam is given before exam week to ensure you adequate time for travel after the semester.

**Article Discussion Groups (ADGs):** A problem for large classes like EH 500 is the lack of interaction between students and speakers, and among students. “Article Discussion Groups” (ADGs) are one way we try to stimulate in-class and out-of-class discussion, deepen your understanding of the readings, and give you a chance to get to know and learn from your fellow students in other RSPH departments.

There will be 5 ADG assignments throughout the semester, as specified in the course schedule below. Each student will be placed in a five-person ADG at the beginning of the semester (ADG rosters will be posted on Blackboard). Your responsibility as part of this group will be to read and discuss assigned articles on the weekly topic. You will be given a short amount of class time for discussion prior to the submission date. At minimum, each group participant should submit two questions to the group for discussion and participate in the question selection process. One person shall be selected each time to submit the question. The submitter should indicate the names of all group members and their contribution level. Submit your questions related to the paper via the Blackboard Assignments Tool by 5:00PM on the Thursday prior to Monday’s class. Instructions for submission will be posted on Blackboard under Course Information. Each week an ADG question is due, the instructor, TAs, and speakers will select several questions to be read aloud by students and discussed by the speaker during that week’s lecture.

**Points:**

- 0 = not submitted or did not participate
- 2 = question demonstrates your group read/understood article
- 4 = question demonstrates a deeper understanding of article and raises interesting points for discussion
- 1 extra credit point if your question picked for in-class discussion

At a minimum, your group’s question should demonstrate that you have read and understood the paper. For this, your group will receive 2 points. Questions that raise particularly insightful points will receive 4 points and those that are selected to be read aloud in class will earn 5 points. If your group is called on in class and no one is there to respond, or if your group does not turn in a question, your group will receive 0 points. We will ask that you confirm participation of all ADG members in drafting the question. Failure to participate, even if your ADG group submits a question, will result in a grade of 0 for that assignment.
Environmental Health Blog – Extra Credit

We have created a blog tool to enable you to post comments, newsworthy items and other current events that are relevant to the course content. You may receive up to 5 extra credit points on your final grade by participating in this blog with meaningful content. **The number of points earned will be determined at the discretion of the instructor or TAs and does not correspond to the number of posts but rather the content.** The EH blog is located in the Tools tab.

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<th>Final Grade</th>
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<tr>
<td></td>
<td>≥ 95 points</td>
<td>85 – 94 points</td>
<td>75 – 77 points</td>
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<tr>
<td>Mid-term (10/27)</td>
<td>32 points</td>
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<td>Final exam (12/8)</td>
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<td>ADG questions</td>
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<td>70 – 74 points</td>
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<td>(plus up to 6 extra credit points)</td>
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<td>50 – 69 points</td>
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<td>EH Blog extra credit</td>
<td>0-5 points</td>
<td>&lt; 50 points</td>
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<tr>
<td>1</td>
<td>9/8</td>
<td>Dana Boyd Barr, Ph.D.</td>
<td>Course Overview and general course housekeeping</td>
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<td>Dana Boyd Barr, Ph.D.</td>
<td>Exposure Assessment</td>
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<td>Michael Caudle, Ph.D.</td>
<td>Environmental Toxicology</td>
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<td>Matthew Strickland, Ph.D.</td>
<td>Environmental Epidemiology</td>
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<td>10/6</td>
<td>Dana Boyd Barr, Ph.D.</td>
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<td>10/20</td>
<td>Jeremy Sarnat, Sc.D.</td>
<td>Environmental Risk Assessment and Risk Communication</td>
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<td>7</td>
<td>10/27</td>
<td>MIDTERM EXAM – Week 1-6 content</td>
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*Environmental Health Hazards*
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<tr>
<th>Week</th>
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<th>Speaker(s)</th>
<th>Topic(s)</th>
<th>Reading</th>
<th>Assignment</th>
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| 8    | 11/3  | Dana Boyd Barr, Ph.D. Environmental Health     | Global Climate Change                      | 1. Frumkin *et al*., Chapter 10 (p. 279 – 328)  
3. Frumkin *et al*., (2008) “Climate change: the public health response”                                                                 | ADG Question on Confalonieri *et al*. (Due Thursday, 10/30 at 5 pm)       |
|      | 11/3  | MID-SEMESTER EVALUATIONS (ANONYMOUS) OPEN ON BB UNTIL 11/10 |                                             |                                                                                                                                                                                                       |                                                                           |
2. Remais *et al*., (2009) “Model approaches for estimating the influence of time-varying socio-environmental factors on macroparasite transmission in two endemic regions”  
3. Frumkin *et al*., Chapter 12 (p. 387 – 416)  
4. Pope and Dockery (2006) “Health effects of fine particulate air pollution” | None                                                                       |
| 10   | 11/17 | Tom Clasen, Ph.D. Matt Freeman, Ph.D. Environmental Health | Indoor/Outdoor Air Pollution                | 1. Frumkin *et al*., Chapter 15 (p. 487 – 558), Chapter 11 (p. 367 – 374)                                                                                                                               |                                                                           |
| 11   | 11/24 | Dana Boyd Barr, Ph.D. Environmental Health     | Pesticides, Heavy Metals & Persistent Organic Pollutants | 1. Frumkin *et al*., Chapter 17 (p. 591 – 634)  

*Environmental Health in Practice: Integrating Science, Policy and Public Action*
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<th>Assignment</th>
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<td>Kyle Steenland, Ph.D. Environmental Health</td>
<td>Case Study: PFOA Contamination of a Water System in West Virginia</td>
<td>Steenland et al., (2009) “Predictors of PFOA levels in a community surrounding a chemical plant”</td>
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<td>Review</td>
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