DEPARTMENT: Environmental Health
COURSE NUMBER: EH 500  SEMESTER: Fall 2016
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, Th 8:30-4:00 (best 9-11am and 2-4pm), drop-in or by appointment
TEACHING ASSISTANTS:
Catherine Evans (cgevans@emory.edu)
Cindy Chu (hchu4@emory.edu)
Sam Peters (sam.peters@emory.edu)
Andrea Gonzalez (algonz3@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: 35 points
Final Exam: 35 points
In-class pop quizzes: 2 quizzes (5 points each for total of 10 pts)
In class activity: Risk assessment activity; 1 point
EH media project: 19 pts

Grading:  
≥ 90 points A  
88– 89 points B+  
83 – 87 points B  
80 – 82 points B-  
70 – 79 points C  
< 70 points F
WHERE AND WHEN: CNR Auditorium; Mondays, 10:00 – 11:50AM

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

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Office hours for TAs: contact by email to set up appointment

COURSE BLACKBOARD SITE: http://classes.emory.edu/; course title is EH500: Perspectives in Environmental Health – Fall 2016; 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). * This is an expensive book which is why I do not require it. It will certainly help you understand the material better but I will not use anything in the book for any assessment unless I specifically tell you, in which case I will provide you with a copy to read.

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, media assignment, pop quizzes 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. Pop quizzes are multiple choice.

**Exams:** The **mid-term**, worth 35 points, will be given **in class** on October 26 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 35 points, will be given once on December 5 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.

**Pop Quizzes:** There will be 2 pop quizzes (each worth 5 points) given during the semester. These quizzes are given to assess the mastery of material covered thus far and to provide practice examples for the exams. You **must** be present in class to get credit for a pop quiz. If you know you will be absent from a given class **with a valid excuse (verification required)**, you must let me know **prior** to that class. If I do not know prior to a class, you **will not** be given an opportunity to reschedule the quiz. I cannot emphasize this enough. Quizzes will be drawn from articles assigned for reading and from lecture materials or comments made in class.

**In-class activity (1 point):** This activity will take place during the risk assessment lecture. This will include a group assignment (we’ll designate groups in class). The same rules apply as with pop quizzes except you know ahead of time when this activity will take place.

**EH Media Assignment (19 points):** In this group activity, your group will decide on an EH issue/problem that is collectively important to the group. You'll make a short (<2 min) video/trailer depicting the problem/solution for submission. We will compile the videos and post them online for class voting. The winner will be selected by the instructor and TAs with input from student votes. Those who produced the winning video will get 3 additional points added to their grade. The issue/problem should fit into one of the four categories listed below (please list the category chosen in video credits):

- 1) Environmental (in)justice
- 2) Chemical contamination/exposure
- 3) WASH or biological contamination/exposure
- 4) Policy

<table>
<thead>
<tr>
<th>Grading rubric for media assignment</th>
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<tbody>
<tr>
<td><strong>Element</strong></td>
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<tr>
<td>Accurate assessment of problem and assignment of category (e.g., traffic air pollution is disrupting our cardiovascular)</td>
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</table>
Examples shown in class and available on Blackboard.

**Public opinion/media/blogs**

To enhance our discussions of risk communication, I also want to discuss how pronouncements in the media, in particular social media or blogs, affect our opinions about risk. I have selected two blogs and one Facebook page that have differing (sometimes dramatically!) viewpoints. I’d like you to select one of the media pages listed below and read an article relevant to environmental health. Be prepared to discuss this during the risk assessment class.

**Media Pages**

1) [www.scibabe.com](http://www.scibabe.com)
2) [www.foodbabe.com](http://www.foodbabe.com)
3) Facebook page Mommyphd

**Environmental Health Blog**

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. This will be one of our primary ways of interacting as a class. You’ll notice that many environmental health issues arise daily; you may more readily recognize them. This forum will enable us to discuss current events outside of class.

**Final Grade**

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
<th>Grade</th>
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</thead>
<tbody>
<tr>
<td>Mid-term (10/26)</td>
<td>35</td>
<td>≥90 – 94 points A</td>
</tr>
<tr>
<td>Final exam (12/7)</td>
<td>35</td>
<td>88 – 89 points B+</td>
</tr>
<tr>
<td>Pop quizzes</td>
<td>10</td>
<td>83 – 87 points B</td>
</tr>
<tr>
<td>In-class activity</td>
<td>1</td>
<td>80 – 83 points B-</td>
</tr>
<tr>
<td>EH Media project</td>
<td>19</td>
<td>70 – 79 points C</td>
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<td></td>
<td></td>
<td>&lt; 70 points F</td>
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# EH 500 - COURSE SCHEDULE

**Fall 2015, Monday, 10:00 – 11:50 am, CNR Auditorium**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Speaker(s)</th>
<th>Topic(s)</th>
<th>Reading</th>
<th>Assignment</th>
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<tbody>
<tr>
<td><strong>Course Introduction</strong></td>
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</tr>
<tr>
<td>1</td>
<td>8/29</td>
<td>Dana Boyd Barr, Ph.D. Environmental Health</td>
<td>Course Overview and general course housekeeping</td>
<td>None</td>
<td>None</td>
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<td></td>
<td>9/5</td>
<td>Labor Day – NO CLASS</td>
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<tr>
<td><strong>Core Disciplines in Environmental Health</strong></td>
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<tr>
<td>2</td>
<td>9/12</td>
<td>Dana Boyd Barr, Ph.D. Environmental Health</td>
<td>Ecological Integrity and Human Health</td>
<td>1. Frumkin et al., Chapter 1 (p. 3 – 23)</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>9/19</td>
<td>Dana Boyd Barr, Ph.D. Environmental Health</td>
<td>Environmental Exposure Assessment</td>
<td>1. <a href="#">Ginsberg et al. (2016) Approaches to Children’s Exposure Assessment: Case Study with Diethylhexylphthalate (DEHP)</a></td>
<td>None</td>
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<td>2. Frumkin et al., Chapter 1 (p. 3-48), Chapter 4 (p. 109 - 136)</td>
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<td>4</td>
<td>9/26</td>
<td>Michael Caudle, Ph.D. Environmental Health</td>
<td>Environmental Toxicology</td>
<td>1. Frumkin et al., Chapter 2 (p. 49 – 78)</td>
<td>None</td>
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<tr>
<td></td>
<td>10/10</td>
<td>Fall Break – NO CLASS</td>
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<td>2. Frumkin et al., Chapter 3 (p. 79 – 108)</td>
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*Environmental Risk Assessment, Communication, and Policy*
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<thead>
<tr>
<th>Week</th>
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<th>Reading</th>
<th>Assignment</th>
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</table>
2. Chapter 29 (p. 1037-1062) and Chapter 31 (p. 1099 -1139) | In-class activity (1 pts)          |
| 7    | 10/24  | **MIDTERM EXAM – Week 1-6 content** | | | |
| 8    | 10/31  | Daniel Rochberg, M.S. Environmental Health US Department of State | Global Climate Change | 1. Frumkin et al., Chapter 11 (p. 238 – 268) | None |
| 9    | 11/7   | Tom Clasen, Ph.D. Matt Freeman, Ph.D. Environmental Health | Water, Sanitation and Hygiene | 1. Frumkin et al., Chapter 15 (p. 487 – 558), Chapter 11 (p. 367 – 374) | EH MEDIA ASSIGNMENT DUE 11/7 at midnight |
| 10   | 11/14  | Juan Leon, Ph.D. Global Health Dana Boyd Barr, Ph.D. Environmental Health | Waterborne Disease Indoor/Outdoor Air Pollution Environmental Justice | 1. Frumkin et al., Chapter 18 (p. 454 – 515), Chapter 13 (p. 316 – 321)  
2. Fewtrell et al., (2005) “Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis”  
3. Frumkin et al., Chapter 12 (p. 387 – 416)  
| 11   | 11/21  | Dana Boyd Barr, Ph.D. Environmental Health | Pesticides, Heavy Metals & Persistent Organic Pollutants | 1. Frumkin et al., Chapter 17 (p. 591 – 634)  
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<tr>
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<th>Topic(s)</th>
<th>Reading</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>12</td>
<td>11/28</td>
<td>Dana Boyd Barr, Ph.D. Environmental Health</td>
<td>Translating research data into policy: challenges and successes Review</td>
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<tr>
<td>13</td>
<td>12/5</td>
<td>FINAL EXAM – Week 1-12 content, 10-11:50AM, CNR Auditorium</td>
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