

Course Syllabus

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ENVH 417 (Spring 2017, 3 credits)

Course Title: Case Studies in Children's Environmental Health Disparities

Course Times: T/TH, 1:30-2:50 pm

Course Location: HSB T473

Instructor: Catherine Karr MD PHD

Associate Professor; Pediatrics, Environmental & Occupational Health Sciences

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Teaching Assistant (TA): Ryan Babadi

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TA Office Hours: by appointment

Catalog Course Description: This course introduces students to the ways in which children are disproportionately affected by environmental health hazards. Through a series of engaging case studies, students learn the core scientific concepts of children's environmental health while exploring the social, cultural, regulatory, political, and economic factors that lead to children's health disparities.

Syllabus Course Description: This course provides students with an in-depth introduction to the many ways in which children are disproportionately affected by environmental health hazards. The course is designed as a series of engaging case studies and knowledge to practice activities. Using this approach, students are introduced to the core concepts of children's environmental health in a multidisciplinary context that emphasizes the foundational scientific principles of exposure assessment and toxicology, as well as the social, cultural, regulatory, political, and economic factors that can lead to disparities in exposures and health impacts for children. All case studies are based on real life scenarios of children in both the developing and developed world. Carefully crafted activities and assignments provide opportunities for students to identify, evaluate, and synthesize scientific information related to children's environmental health, describe policy and regulatory approaches to reducing hazards, and recognize stakeholders' varied perspectives on the issue. Coursework is designed to develop proficiency in communicating with a variety of audiences about children's environmental health disparities and possible solutions.

Diversity requirement: This course is an approved DIV course to fulfill the undergraduate diversity requirement.

Prerequisites: none

Learning Objectives – Upon completing the course, students will be able to:

1. Describe the core concepts of environmental health (toxicity, exposure, susceptibility, risk, and prevention) and apply them in new contexts.
2. Identify the characteristics of children that make them uniquely vulnerable to environmental hazards and contribute to health disparities.
3. Describe the effects of certain key pollutants on children.
4. Locate, organize, and synthesize information about children's environmental health problems in the context of real world situations.
5. Characterize children's environmental health disparities nationally and globally in biological, cultural, political, socioeconomic, public health and health care contexts.
6. Describe regulatory, policy, and programmatic approaches to reducing children's exposures to environmental health hazards.
7. Effectively communicate about children's environmental health concepts to key audiences.

Course Overview and Format: This course is designed to facilitate student-centered, active and investigative learning. Case-based instructional strategies

are used to introduce and explore the core concepts of children's environmental health and apply these concepts to realistic situations, with an emphasis on the concept of health disparities as it applies to children. Through the lens of case studies, students develop a framework for identifying and applying environmental health concepts to child health issues and to identification of susceptible populations disproportionately affected. The course requires students to be actively engaged in their learning and class time is used with a mix of didactics, discussions, student led presentations, and group problem solving.

Course Requirements: Each student will be expected to:

- Prepare for each class session by completing the items noted on the homework assignment page for each session. This includes assigned readings, watching assigned videos, and completing related assignments/quizzes.
- Participate actively in class discussions and activities.
- Engage in class based report out and role plays for case studies.
- Work effectively in the group Final Project including preparation and delivery of a component of the group presentation and involvement in the group development of a policy brief and infographic.
- Reflect on the impact of the course experience and content on their lives going forward.

Preparing for Class: Reading and viewing assignments for each class session will be available through the course Canvas pages. These will include both **assigned and suggested readings and video materials**, such as scientific articles, reports and educational products from both governmental and non-governmental organizations, textbook chapters, online modules, and instructional videos.

Homework Assignments: Each class session has **homework assignments** that are organized on Canvas under "Modules". Homework assignments include short quizzes and reflections on the assigned readings/viewings described above.

Student Group Projects: A multi-component group project on a selected children's environmental health problem will include: **a policy brief, public facing infographic, and presentation**. These will be due/presented during the last week of the quarter (week before finals week). Groups of 3-5 students will be assigned by the instructor by session 4 with an effort to include student diversity of academic programs/previous experience. Topics must be an area/issue of children's environmental health that was not the core focus of the class lecturers (including guests). An example list of topics is provided on canvas. Student groups may choose an issue not on the list with permission of the instructor. All group topics/issues must be distinct (no repeats). Groups must submit topic ideas in week 5.

- **Policy Brief.** The policy brief should be **2 pages max**. Guidance on writing an effective policy brief is provided in Canvas and can be found here - http://www.jhsph.edu/research/centers-and-institutes/womens-and-childrens-health-policy-center/de/policy_brief/index.html (http://www.jhsph.edu/research/centers-and-institutes/womens-and-childrens-health-policy-center/de/policy_brief/index.html). The Brief should include the following components: Aim, "Hook", Background Information, Supportive Data, Options/Recommendations.
- **Presentation** of the topic and your policy brief. This will be a 15 minute ppt style presentation (12-15 slides) with each of the 3-5 group members covering a specific part of the content (the problem you are addressing/relevant background, information and data supporting the problem and need for action, a suggested action/recommended policy or program). The audience will then have an opportunity to ask questions about your issue and action/policy/program (5 min) and rate the effectiveness of your presentation.
- **Public-facing infographic** relevant to your topic.








Student Class Based Activities: Students will work in pairs or small groups to discuss cases, scenarios of children's environmental health problems in communities and consider relevant responses as research, a project proposal, public information product, or other intervention strategies, or policy change related to the case study.







Student End of Course Reflection: Reflect on how you think the course content and experience will impact your life and your understanding of the world around you (1 page), as well as how you feel your group functioned and what you learned from the experience of working with this particular group of students (1 page).

Student Evaluation: Course grades will be based on:


- 40% Homework assignments & class participation
- 15% Group oral presentation
- 10% Group infographic
- 20% Group policy brief
- 15% Reflection

Course Outline: The first 3 sessions of the course will include introductory material and background in preparation for case-based discussions, critical reading assignments, and activities in the remaining weeks. All sessions will be led by the course instructor/TA with a few exceptions to accommodate special guest presentations.

Course Outline		
Session	In-class Activities	Assignments (Due by class time on this date, unless otherwise noted)
Week 1: March 28, 30		
Session 1 Tuesday March 28	<ul style="list-style-type: none"> Review of class policies, procedures, expectations, and norms Introductions and review of students' backgrounds and interests Environmental health basics Watch video: Little Things Matter: The Impact of Toxins on the Developing Brain (https://www.youtube.com/watch?v=E6KoMAbz1Bw) <div style="text-align: center;">  </div> <p style="text-align: center;"> (https://www.youtube.com/watch?v=E6KoMAbz1Bw) </p>	
Session 2 Thursday March 30	<ul style="list-style-type: none"> Children's Environmental Health Core Concepts - Part 1 In-class exercise - "elevator speech" Explore and share "Environmental Indicators" 	<ul style="list-style-type: none"> Read: ATSDR Principles of Pediatric EH.pdf  , pages 11-43 Take Quiz: Assignment 1: ATSDR Principles of Pediatric Environmental Health Quiz (Part 1), embedded in reading (progress check questions 1-5) Read: Read one indicator from the "Environments and Contaminants" section in EPA ACE Report III 2013.pdf   (beginning on page 25) Take Quiz: Assignment 2: "Environments & Contaminants" Topic Selection from "Americas Children and the Environment" Report Prepare to share info on one "Environments and Contaminants" indicator in class.
Week 2: April 4, 6		
	<ul style="list-style-type: none"> Children's Environmental Health 	<ul style="list-style-type: none"> Read: ATSDR Principles of Pediatric EH.pdf  , pages 44-66





<p>Session 3 Tuesday April 4</p>	<p>Core Concepts - Part 2</p> <ul style="list-style-type: none"> In-class exercise - Concepts in practice, Case: Benzene leak Explore and Share "Environmental Indicators" (con't) and "Health Indicators" 	<ul style="list-style-type: none"> Take Quiz: Assignment 3: ATSDR Principles of Pediatric Environmental Health Quiz (Part 2), embedded in reading (progress check questions 6-10) Read: Read one indicator from the "Health" section in EPA ACE Report III 2013.pdf   (beginning on page 199). Take Quiz: Assignment 4: "Health" Topic Selection from "Americas Children and the Environment" Report Prepare to share info on one "Health" indicator in class.
<p>Session 4 Thursday April 6</p>	<ul style="list-style-type: none"> Lead and Children: Facts & Foundations PPT In-class exercise - Case: Daycare and lead 	<ul style="list-style-type: none"> Read: WHO Childhood Lead Poisoning Booklet   Take Quiz: Assignment 5: WHO Childhood Lead Poisoning Booklet Quiz Read: "Lead" section of EPA ACE Report III 2013.pdf  , pages 118-126 Submit response to reflection question: Assignment 6: U.S. EPA America's Children and the Environment (ACE) Reflection Quiz Group assignments announced (see "People" tab in canvas and go to "Groups")

Week 3: April 11, 13









<p>Session 5 Tuesday April 11</p>	<ul style="list-style-type: none"> Science to Policy in Children's Environmental Health: Sheela Sathyanarayana MD MPH, UW Pediatrics/DEOHS 	<ul style="list-style-type: none"> Read Braun 2013.pdf  
<p>Session 6 Thursday April 13</p>	<ul style="list-style-type: none"> Communication in Public Health Practice: Kristin Pace PhD, Seattle King County Public Health 	<ul style="list-style-type: none"> View: https://www.youtube.com/watch?v=WU_jJzr_Hw (https://www.youtube.com/watch?v=WU_jJzr_Hw) <div data-bbox="803 1270 868 1354" style="text-align: center;">  </div> <ul style="list-style-type: none"> (https://www.youtube.com/watch?v=WU_jJzr_Hw) And take a look at the following CDC webpages <ul style="list-style-type: none"> https://www.atsdr.cdc.gov/risk/riskprimer/vision.html (https://www.atsdr.cdc.gov/risk/riskprimer/vision.html) https://www.cdc.gov/healthcommunication/healthbasics/howtodo.html (https://www.cdc.gov/healthcommunication/healthbasics/howtodo.html) Topic selection for group project due April 14; submit first 3 choices on Canvas

Week 4: April 18, 20

<p>Session 7</p>		<ul style="list-style-type: none"> Please bring a laptop to class if possible View: Video lecture on "The Art and Craft of Policy Briefs" (20 min)
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<p>Tuesday April 18</p>	<ul style="list-style-type: none"> • Infographics & policy brief construction • In-class exercises 	<p>http://www.jhsph.edu/research/centers-and-institutes/womens-and-childrens-health-policy-center/de/policy_brief/video (http://www.jhsph.edu/research/centers-and-institutes/womens-and-childrens-health-policy-center/de/policy_brief/video)</p>
<p>Session 8 Thursday April 20</p>	<ul style="list-style-type: none"> • Critical review of two academic papers on lead (Braun 2006, Hanna-Attisha 2016) 	<ul style="list-style-type: none"> • Read: Braun 2006.pdf   • Take quiz: Assignment 7: Braun 2006 Quiz • Read: Hanna-Attisha 2016.pdf   • Take quiz: Assignment 8: Hanna-Attisha 2016 Quiz

Week 5: April 25, 27

<p>Session 9 Tuesday April 25</p>	<ul style="list-style-type: none"> • Case study on lead (Vietnam) - in-class stakeholder exercise • Case study on lead - introduction and video <ul style="list-style-type: none"> ◦ Pure Earth (formerly Blacksmith Institute) - Lead Poisoning in Vietnam's Toxic "Craft" Villages (https://www.youtube.com/watch?v=PBGDERL3t4o) <p style="text-align: center;"></p> <p style="text-align: center;">https://www.youtube.com/watch?v=PBGDERL3t4o</p> <ul style="list-style-type: none"> • Group Project Activity: ENVH 417 Group project outline 2017.docx   	
<p>Session 10 Thursday April 27</p>	<ul style="list-style-type: none"> • Child Labor: Mary Miller MN • Work on group project outline (Due May 5th) 	<ul style="list-style-type: none"> • Read: Miller 2007.pdf   • Read: Miller 2010.pdf   • Take quiz: Assignment 9: Miller 2007 & 2010 Quiz • Watch video: "The ABCs of Child Labor" (https://www.youtube.com/watch?v=FQhNv1MAETw%20) <p style="text-align: center;"></p> <p style="text-align: center;">https://www.youtube.com/watch?v=FQhNv1MAETw%20</p> <ul style="list-style-type: none"> • Watch video: "Made in the USA: Child Labor and Tobacco" (https://www.youtube.com/watch?v=0-8TBceaO5Q)



(<https://www.youtube.com/watch?v=0-8TBceaO5Q>)

Week 6: May 2, 4

Session 11
Tuesday
May 2

- Environmental Justice - Guest Lecturer (Dr. Vanessa Galaviz)

- TBA

Session 12
Thursday
May 4

- Facts & foundations: air pollutants and asthma - Guest Lecturer (TA, Ryan Babadi)
- In-class exercise - media on air pollution and asthma

- **Read:** [HUD 2012.pdf](#)  
- **Take quiz:** [Assignment 10: HUD 2012 Quiz](#)

Group Project Outline Submission Due (link: [on Canvas](#)) by Friday, May 5th 2017 at 9:00 PM

Week 7: May 9, 11





Session 13
Tuesday
May 9

- Chemical Regulation - Law and Policy Perspectives: Sanne Knudsen MS JD

- TBA

Session 14
Thursday
May 11

- Critical review of an academic paper on air pollutants/asthma
- In-class exercise - case study on air pollution and asthma
- Review of final project grading rubrics and comments on draft outline





- **Read:** [Morgan 2004](#)  
- **Read:** [Russo 2015](#)  
- **Take quiz** on Morgan 2004 or Russo 2015 (or complete both quizzes for extra credit)

Week 8: May 16, 18

Session 15
Tuesday
May 16

- Facts & foundations - pesticides
- Class exercise - Communicating pesticide risk (assignment on Canvas)

- **Read:** [Roberts JR. 2012](#)  
- **Take quiz** on Roberts 2012 Reading

<p>Session 16 Thursday May 18</p>	<ul style="list-style-type: none"> • Critical review of 2 academic papers on pesticides - Bouchard 2011 	<ul style="list-style-type: none"> • Read: Bouchard 2011   • Read: Bradman 2015   • Take quiz for either Bouchard 2011 or Bradman 2015 - complete both quizzes for extra credit
<p>Week 9: May 23, 25</p>		
<p>Session 17 Tuesday May 23</p>	<ul style="list-style-type: none"> • Pesticide case study class • Stakeholder activity and discussion • Discuss grading for end of class reflection assignment 	
<p>Session 18 Thursday May 25</p>	<ul style="list-style-type: none"> • Group project presentations • In-class feedback and evaluation 	<ul style="list-style-type: none"> • Groups presenting on this day will receive 5 extra credit points
<p>Week 10: May 30, June 1</p>		
<p>Session 19 Tuesday May 30</p>	<ul style="list-style-type: none"> • Group project presentations • In-class feedback and evaluation 	
<p>Session 20 Thursday June 1</p>	<ul style="list-style-type: none"> • Group project presentations • In-class feedback and evaluation 	
<p>FINAL EXAM WEEK</p>		
<p>No class meeting. Final Reflection due by 5 pm Friday June 9</p>		

UW Disability Statement:

Access and Accommodations: Your experience in this class is important to me. If you have already established accommodations with Disability Resources















for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.
























If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at [206-543-8924](tel:206-543-8924) or uwdrs@uw.edu (<mailto:uwdrs@uw.edu>) or disability.uw.edu (<http://disability.uw.edu/>). DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

UW Academic Integrity Statement:

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the [SPH Academic Integrity Policy](http://sph.washington.edu/students/academicintegrity/) (<http://sph.washington.edu/students/academicintegrity/>). Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

Course Summary:

Date	Details
Tue Mar 28, 2017	 Session 1 Material (https://canvas.uw.edu/courses/1139030/assignments/3676611) due by 1:30pm
	 Assignment 1: ATSDR Principles of Pediatric Environmental Health Quiz (Part 1) (https://canvas.uw.edu/courses/1139030/assignments/3676579) due by 1pm
Thu Mar 30, 2017	 Assignment 2: "Environments & Contaminants" Topic Selection from "Americas Children and the Environment" Report (https://canvas.uw.edu/courses/1139030/assignments/3676580) due by 1pm
	 Session 2 Material (https://canvas.uw.edu/courses/1139030/assignments/3676614) due by 1:30pm
	 Assignment 3: ATSDR Principles of Pediatric Environmental Health Quiz (Part 2) (https://canvas.uw.edu/courses/1139030/assignments/3679801) due by 1pm
Tue Apr 4, 2017	 Assignment 4: "Health" Topic Selection from "Americas Children and the Environment" Report (https://canvas.uw.edu/courses/1139030/assignments/3679875) due by 1pm
	 Session 3 Material (https://canvas.uw.edu/courses/1139030/assignments/3676616) due by 1:30pm
	 Assignment 5: WHO Childhood Lead Poisoning Booklet Quiz (https://canvas.uw.edu/courses/1139030/assignments/3676571) due by 1pm
Thu Apr 6, 2017	 Assignment 6: U.S. EPA America's Children and the Environment (ACE) Reflection Quiz (https://canvas.uw.edu/courses/1139030/assignments/3676576) due by 1pm
	 Session 4 Material (https://canvas.uw.edu/courses/1139030/assignments/3676618) due by 1:30pm
Tue Apr 11, 2017	 Session 5 Material (https://canvas.uw.edu/courses/1139030/assignments/3676620) due by 1:30pm
Thu Apr 13, 2017	 Session 6 Material (https://canvas.uw.edu/courses/1139030/assignments/3676622) due by 1:30pm
Tue Apr 18, 2017	 Session 7 Material (https://canvas.uw.edu/courses/1139030/assignments/3676623) due by 1:30pm
	 Assignment 7: Braun 2006 Quiz (https://canvas.uw.edu/courses/1139030/assignments/3676575) due by 1pm

Thu Apr 20, 2017	<ul style="list-style-type: none">  Assignment 8: Hanna-Attisha 2016 Quiz due by 1pm  Session 8 Material due by 1:30pm
Tue Apr 25, 2017	<ul style="list-style-type: none">  Assignment X: Roberts & Karr 2012 Quiz due by 1:30pm
Thu Apr 27, 2017	<ul style="list-style-type: none">  Assignment 9: Miller 2007 & 2010 Quiz due by 1pm  Assignment X: Module 2 (Pesticides) - Academic Paper #1 (Bouchard 2011) Quiz due by 1:30pm
Thu May 4, 2017	<ul style="list-style-type: none">  Assignment 10: HUD 2012 Quiz due by 1pm  Assignment X: Module 2 (Pesticides) - Academic Paper #2 (Bradman 2015) Quiz due by 1:30pm
Fri May 5, 2017	<ul style="list-style-type: none">  Draft of Group Project Outline due by 9pm
Thu May 11, 2017	<ul style="list-style-type: none">  Assignment X: Module 3 (air pollution) Academic Paper #1 - Morgan 2004 Quiz due by 1:30pm
Thu May 18, 2017	<ul style="list-style-type: none">  Assignment X: McConnell 2006 & Russo 2015 Quiz due by 1:30pm
Tue May 23, 2017	<ul style="list-style-type: none">  Assignment X: Davidson 2004 Quiz due by 1:30pm
Fri Jun 9, 2017	<ul style="list-style-type: none">  Final Reflection due by 5pm
	<ul style="list-style-type: none">  05/17/16 In-class Submission  Group Communication Product  Group Oral Presentation  Group Policy Brief  Participation grade  Session 10 Material  Session 11 Material  Session 12 Material  Session 13 Material  Session 14 Material  Session 15 Material  Session 16 Material  Session 17 Material  Session 9 Material