

## ENVIRONMENTAL SCIENCE AND POLICY PROGRAM

### ESP 800: Introduction to Environmental Science and Policy

Spring 2016

Tuesdays, 1:00 – 3:50 pm

Room 273 Giltner Hall

#### Instructors

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#### *Course Description*

This team-taught course will provide a broad overview of core scholarship areas and key research questions in the intersection of environmental science and policy. It will explore the core concepts and research methods of multiple disciplines involved in policy-relevant environmental research with readings and presentations from scholars from MSU and visiting institutions. Students will learn basic concepts of interdisciplinary research, and develop a basic understanding of typical research methods and analytical techniques that will facilitate effective communication with members of different disciplines. Students will learn enough of the basics to know how to seek out expertise and communicate effectively with these experts to collaborate on policy-relevant environmental research questions that cross disciplinary boundaries. This course will introduce students to the reality of interdisciplinary scholarship via having a series of interdisciplinary MSU research teams visit the course over the semester to discuss their research and address topics related to facilitating interdisciplinary teamwork and translation of science into policy.

#### *Course Objectives*

There is no one ‘right’ way to do interdisciplinary research at the interface of science and policy, so we aren’t prescribing a set of steps or a blueprint for successful research. Rather, our objectives for this course are to equip students with the tools to embark on interdisciplinary research with the confidence to do sound science that is policy-relevant, and to create a positive ‘space’ for collaboration with scholars from other disciplines.

#### *Readings*

**All manuscripts, book chapters etc. will be provided in advance on MSU Desire2Learn.**

#### *Books*

*The Honest Broker (Selection)*

Roger Pielke, Cambridge University Press, ISBN-10: 0521694817 / ISBN-13: 978-0521694810

*Don't Be Such a Scientist: Talking substance in an age of style (All)*  
Randy Olson, Island Press, ISBN-10: 1597265632 / ISBN-13: 978-1597265638

Available at the MSU Main Library Reserve West-2. Other readings will be made available through the course D2L website (<https://d2l.msu.edu/>).

### ***Evaluation and Assessment***

1. Participation/Facilitation	20%
2. Journal Assignments	20%
3. Midterm White Paper Assignment	30%
4. Final Proposal Assignment	30%
	<hr/>
	<b>100%</b>

#### 1. Participation/Facilitation

Students will be expected to participate in each class and to facilitate at least one class discussion. This discussion will focus on the student's discipline/research interest and the related policy implications and potential for interdisciplinary team science. In order to facilitate discussion for this session the student will assign **one reading** from their discipline/research interest the week before they facilitate class discussion. Preferred papers include readings for lay audience and/or articles that examine the interdisciplinary aspects of the field and/or potential policy implications.

#### 2. Journal Assignments

Four journal prompts will be given through the course of the semester. Students are expected to respond to the prompt with a 500-800 word essay written in coordination with another student. It is important to not only respond to the prompt in a concise and interesting manner but to also develop the ability to write with others.

#### 3. Midterm White Paper Assignment

For the midterm students will be expected to write a white paper on their current research or research interest and to develop a short presentation to present this work to a non-science audience. This presentation will occur on **March 15<sup>th</sup>**, and the final paper will be due on **March 22<sup>th</sup>**.

#### 4. Final Proposal Assignment

Groups of ~three students will be expected to write a NSF research proposal and to develop a short presentation of their proposed research. Students will have most of the semester to work on this project with periodic updates.

### ***Class Attendance and Participation***

We will be learning together in this class. All ESP 800 students are expected to assume part of the responsibility for the learning process by taking turns in facilitating discussions, coordinating interaction with visiting speakers, and suggesting readings for the class. This constitutes a significant part of the grade for the course. We therefore expect you to behave as mature scholars and colleagues, by being prepared for the class meetings, turning in written work on time, and coming to class on time (unless there are legitimate extenuating circumstances about which you have informed us ahead of time).

Apart from weekly class participation, we will provide detailed **evaluation rubrics** for all grade items. Check *D2L – Content tab – Evaluation Rubrics (2016)*.

### **Detailed grade scheme**

	Grade Item	Type	Association	Max. Points	Weight
<input type="checkbox"/>	Participation ▾				20
<input type="checkbox"/>	Class Participation Module 1 (2 weeks) ▾	Numeric	-	1	5
<input type="checkbox"/>	Class Participation Module 2 (4 weeks) ▾	Numeric	-	2	10
<input type="checkbox"/>	Class Participation Module 3 (2 weeks) ▾	Numeric	-	1	5
<input type="checkbox"/>	Class Participation Module 4 (2 weeks) ▾	Numeric	-	4	20
<input type="checkbox"/>	Class Participation Module 5 (4 weeks) ▾	Numeric	-	2	10
<input type="checkbox"/>	Discussion Facilitator ▾	Numeric	-	10	50
<input type="checkbox"/>	Journal Assignments ▾				20
<input type="checkbox"/>	Journal 1 ▾	Numeric	-	5	25
<input type="checkbox"/>	Journal 2 ▾	Numeric	-	5	25
<input type="checkbox"/>	Journal 3 ▾	Numeric	Dropbox ⓘ	5	25
<input type="checkbox"/>	Journal 4 ▾	Numeric	Dropbox ⓘ	5	25
<input type="checkbox"/>	Midterm White Paper Assignment ▾				30
<input type="checkbox"/>	Presentation ▾	Numeric	-	6	20
<input type="checkbox"/>	Paper ▾	Numeric	Dropbox ⓘ	24	80
<input type="checkbox"/>	Final Proposal Assignment ▾				30
<input type="checkbox"/>	Proposal Presentation ▾	Numeric	-	10	33.3
<input type="checkbox"/>	Mock NSF Proposal ▾	Numeric	Dropbox ⓘ	20	66.7

\* Grades for weekly class participation will be posted after the completed module.

### **Communication**

Students and Instructors will communicate via D2L (<https://d2l.msu.edu/>). Course website is called "*ESP800 Intro to Environ Sci & Policy Spring 2016*". Students are responsible to check the website periodically for news and updates. Unless otherwise stated, each assignment should be posted on D2L in their respective dropbox. Students will be notified in advance about the place to submit the assignments.

### **Grading Scale**

We will compute your final grade for the course as follows:

<u>MSU grade points</u>	<u>Composite class points</u>
4.0	90.0 - 100.0
3.5	85.0 - 89.9
3.0	80.0 - 84.9
2.5	75.0 - 79.9
2.0	65.0 - 74.9
1.0	60.0 – 64.9

### *Disability Accommodations*

Any student who feels that she or he may need accommodations based on a disability should make an appointment to see Prof. Zhang or Prof. Zwickle. Resources and information for students with disabilities are available at <http://www.rcpd.msu.edu/> or at the resource center in 120 Bessey Hall.

### *Academic Integrity*

Academic integrity is a fundamental value of higher education at any institution of higher education; therefore, we cannot tolerate acts of cheating, plagiarism, falsification or attempts to cheat, plagiarize or falsify. Should we determine that an academic integrity violation has taken place, we reserve the right either to assign a grade sanction or to refer the case to appropriate campus authority. **Ignorance (not knowing the rules) is NOT an excuse for an academic integrity violation.** Therefore, if you have any questions about what constitutes academic dishonesty, please do not hesitate to speak with us before you turn in a test or assignment.

### *Drops and Adds*

The last day to add this course is the end of the first week of classes (i.e., 1/15/2016). The last day to drop this course with a 100 percent refund and no grade reported is 2/05/2016. The last day to drop this course with no refund and no grade reported is 03/02/2016. You should immediately make a copy of your amended schedule to verify you have added or dropped this course.

## ESP 800 Class Modules for Spring 2016

### **1. Introduction: Social Science, Natural Science, Engineering, Interdisciplinary Research, and Policy – 2 weeks**

- Difference and similarity among natural and social sciences, and engineering  
Interdisciplinary research in environmental science and policy

### **2. Environmental Policy – 4 weeks**

*This section focuses on factual information related to environmental policy. Argumentation, values, opinions, and reflections will be introduced in subsequent section. Relevant reading will be assigned by the speakers.*

- Overview of environmental policy
  - Book: *Public Policies for Environmental Protection*
- Environmental policies in the US, and comparisons with European and other nations
- Public participation in environmental policy
- The role of science advisory boards
- Conflict resolution and negotiation

### **3. Communicating Science – 2 weeks**

*This module covers discussions on communicating science to the public.*

- Book: *Don't Be Such a Scientist: Talking substance in an age of style* by Randy Olson

### **4. Environmental Ethics – 2 weeks**

*This module focuses on ethics, arguments, opinions, values etc. among scientists from various disciplines. Students will participate in a Toolbox workshop that can be used a tool to facilitate the dialogue among scientists from diverse disciplines.*

### **5. Science-Policy Nexus – 4weeks**

*Sciences for policy presented from different scientific fields will be focused. Interactions between science and policy, and translation mechanisms of science to policy will be covered.*

Book: *The Honest Broker* by Roger Pielke – *select chapters*

- Examples from various disciplines
- EPA's science advisory boards
- IPCC and other climate advisory boards
- Funding interdisciplinary and policy-oriented research teams (NSF)

## Schedule Spring 2016

DATE, TOPIC AND SPEAKER (S)	READINGS AND ASSIGNMENTS
<p><b><u>January 12: Introduction</u></b></p> <p>Course Overview; Introductions; Discussion on link between science and policy, D2L  <b>Zwickle and Zhang</b></p>	<p><b>Syllabus</b></p>
<p><b><u>January 19: Introduction</u></b></p> <p>Topic: A unified epistemology across the sciences and humanities  <b>Brian Teppen, Plant, Soil and Microbial Sciences</b></p>	<p>- Readings The value of science by Feynman            Selections from Karl Popper</p>
<p><b><u>January 26: Environmental Policy Module</u></b></p> <p><u>Topic:</u>  <b>Paul Thompson, Philosophy</b></p>	<p>-Readings TBA  <b>Writing prompt for the journal 1</b></p>
<p><b><u>February 2: Environmental Policy Module</u></b></p> <p>Topic: Overview of environmental policy  <b>Joe Herriges, Ag Economics and ESPP</b>  <b>Jinhua Zhao, Economics and ESPP</b></p>	<p>-<i>The Honest Broker</i> by Roger Pielke Chapters 1 through 5 (Uncertainty)            -Other Readings TBA  <b>Journal 1 due/ Writing prompt for the journal 2</b></p>
<p><b><u>February 09: Environmental Policy Module</u></b></p> <p>Topic: TBA  <b>James Clift (Michigan Environmental Council)</b></p>	<p>-<i>The Honest Broker</i> by Roger Pielke Chapters 6 (<i>How science policy shapes ...</i>) through 9            - Other Readings TBA  <b>Midterm Assignment Assigned</b></p>
<p><b><u>February 16: Environmental Policy Module</u></b></p> <p>Topic: The use of advisory councils in Michigan's water policy: Benefits and Challenges  <b>Patricia Norris, Community Sustainability</b></p>	<p><b>Readings TBA</b></p>
<p><b><u>February 23: Communicating Science Module</u></b></p> <p>Topic: Science communication  <b>Bruno Takahashi, School of Journalism; Communication</b></p>	<p>Readings TBA  <b>Journal 2 due/ Writing prompt for the journal 3</b></p>
<p><b><u>March 1: Communicating Science Module</u></b></p> <p>Topic: Perspective of environmental journalists  <b>Layne Cameron, Communications and Brand Strategy</b></p>	<p><b>Readings TBA</b>  <i>-Don't Be Such a Scientist: Talking substance in an age of style</i> by <b>Randy Olson</b></p>
<p><b><u>March 8</u></b></p>	<p><b>SPRING BREAK March 7-11</b></p>

DATE, TOPIC AND SPEAKER (S)	READINGS AND ASSIGNMENTS
<p><u>March 15</u></p> <p><b>Midterm white paper presentation</b></p>	<p>-Other Readings TBA</p>
<p><u>March 22: Environmental Ethics Module</u></p> <p>Topic: Environmental Ethics Module  <b>Zhang and Zwickle</b></p>	<p>Midterm white paper due  <b>Proposal assigned (Group formed)</b></p> <p>-Other Readings TBA</p> <p><b>Journal 3 due/ Writing prompt for the journal 4</b></p>
<p><u>March 29: Environmental Ethics Module</u></p> <p>Topic: Environmental Ethics Module  <b>Zwickle and Zhang</b></p>	<p>Readings TBA</p>
<p><u>April 5: Science-Policy Nexus Module</u></p> <p>Topic TBA  <b>Julie Winkler, Geography</b></p>	<p>Readings TBA</p>
<p><u>April 12: Science-Policy Nexus Module</u></p> <p>Topic TBA  <b>Joan Rose, Fisheries &amp; Wildlife</b></p>	<p>Readings TBA</p> <p><b>Journal 4 due</b></p>
<p><u>April 19: Science-Policy Nexus Module</u></p> <p>Topic TBA  <b>Meredith Gore, Fisheries &amp; Wildlife</b></p>	<p>Readings TBA</p>
<p><u>April 26</u></p> <p>Topic: <u>Environmental policies in the US. Legislative process</u></p> <p><b>Steve Chester, Miller Canfield</b></p> <p><b>Course Wrap-Up and Final Discussion</b>  <b>Zwickle and Zhang</b></p>	<p>Readings TBA</p>
<p><u>Finals: May 3</u></p> <p><b>Proposal Presentation</b></p>	<p><b>FINAL PRESENTATIONS</b></p> <p><b>Proposal Due</b></p>