Course Syllabus for PA 5790, Spring 2019
Environmental Management of Food, Energy, Water Systems

Humphrey School of Public Affairs
University of Minnesota
Class Time: Mon 6pm - 8:45pm
Room: HHH 30

Instructors:
Dr. Bonnie Keeler
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Office Hours: Room 158 HHH Time: TBD

Course website: in progress

Course objectives and learning goals:
● Develop skills in systems thinking, science communication, and research that allow students to understand, diagnose, and effectively address environmental challenges.
● Cultivate an awareness of the diverse viewpoints and perspectives of key stakeholders and how different audiences perceive food-water-energy issues.
● Identify social, ecological, and technological dimensions of environmental systems and how they are interlinked.
● Analyze policy and governance aspects of food, energy, and water challenges, including the roles and capabilities of the market, the state, and civil society in solving these complex challenges.

Required Texts:
This Blessed Earth: A Year in the Life of an American Family Farm, by Ted Genoways
The Organic Machine: The Remaking of the Columbia River, by Richard White
Additional readings and resources will be provided on Canvas.
## Class Schedule:

*All readings and topics are subject to change.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Discussion</th>
<th>Lecture</th>
<th>Skills</th>
<th>Readings</th>
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</table>
| 1/28  | Introductions, course overview and expectations. | Overview of the food-energy-water (FEW) nexus and contemporary policy contexts | Systems thinking     | - The food-energy-water nexus: Transforming science for society. Scanlon et al. WRR 2017  
- Food energy water: Know the nexus, Hanlon et al. 2013  
- Video: Water Pavilion panel on water governance  
  - [The Under 2 MOU](#)  
  - [The 2030 Agenda in Action](#) |
| 2/4   | Readings: Under 2 MOU, Water governance, SDGs | Governance of food, water, and energy: Key actors, and frameworks at the national and international scale. | Contract design for water and climate governance | - This Blessed Earth  
- [Water strategies for the next administration](#), Science, Nov 2016, by Gleick  
- [Why did the Obamas fail to take on corporate agriculture](#), NYT Oct 2016, Pollen  
- Decade of Delay, Mississippi River Collaborative (Read MN section and introduction only) |
Farm bill 101. | Science communication. Values, norms, beliefs. | This Blessed Earth  
MPR Flyover: Down the Mississippi River: Voices from the Bayou, and Balancing agriculture and water health  
| 2/18  | Readings: Genoways, MPR podcasts, West          | Certification, trade, globalization, regulation. | Science communication cont. The ABT method. | This Blessed Earth  
[The environmental cost of animal source foods](#) Hilborn et al. 2018  
FEE  
Reducing food’s environmental impacts through producers and consumers, Poore, 2018, Science |
<table>
<thead>
<tr>
<th>Date</th>
<th>Readings:</th>
<th>Discussions/Exercises:</th>
<th>Media/Related Work</th>
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</thead>
<tbody>
<tr>
<td>2/25</td>
<td>Genoways, Hilborn, Poore, Smith</td>
<td>Role of the consumer in solving FEW challenges: GMO’s, organics, food waste, diets</td>
<td>Environmental accounting of corn in energy and protein supply chains. Smith et al. 2017. PNAS</td>
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<td>Life cycle assessment</td>
<td>This Blessed Earth Media coverage: Buffer rule in Minnesota Groundwater Protection Rule EDF report on Farm Finance.</td>
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<td>3/18</td>
<td>Spring Break</td>
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<td>Value of information</td>
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<td>Diagnosing audience and decision context</td>
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**Reading Notes:**
- **2/25**: Genoways, Hilborn, Poore, Smith
- **3/4**: Genoways, Buffer rule, Groundwater rule, EDF report
- **3/11**: Rivers of Oil, Klass, Holland, McMahon and Price
- **3/25**: White, Keeler et al.
<table>
<thead>
<tr>
<th>Date</th>
<th>Readings</th>
<th>Focus Area</th>
<th>Discussion</th>
<th>Notes</th>
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<tbody>
<tr>
<td>4/15</td>
<td>White, Welford, Lambooy, Graversgaard</td>
<td>Can corporations save the world? Corporate social responsibility and the FEW nexus</td>
<td>Incentives, payments and policy mechanisms</td>
<td>Opportunities and Barriers for water Co-Governance - A critical analysis of seven cases of diffuse water pollution from agriculture in Europe, Australia, and North America, Graversgaard et al. 2018.</td>
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<td>4/22</td>
<td>LaDuke, Malin, and other environmental justice readings</td>
<td>Environment justice at the nexus</td>
<td>Historical analysis for FEW class presentations</td>
<td>Blood and Earth: Modern slavery, ecocide and the secret to saving the world, Bales.</td>
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4/29 | Readings: Bales | International environmental justice and globalization | Models of environmental leadership |
| Class presentations | Science for the post-normal age Funtowicz and Ravetz 1993 |

5/6 | Readings: Funtowicz, Lubchenco, Keeler | Resilience, sustainability, and transformation | Scholarship and advocacy in a changing world |
| Class presentations | |

Evaluation and Assignments:

I. Research paper and associated products, 60%
   A. Draft research paper proposal (500 words), due 2/4
   B. First draft research paper (10 pages), due 2/25
   C. Revised research paper (10 pages), due 3/11
   D. Research brief (2 pages), due 4/1
   E. Press release (1 page), due 4/8
   F. News headlines/tweets, due 4/15
   G. Final research paper, due 5/6
   H. Class presentation, 4/22 - 5/6

II. Homework, canvas, and in-class assignments, 30%

III. Learning journal, 10%