CEE 179S/279S—Seminar: Issues in Environmental Engineering, Science and Sustainability

Seminars from leading faculty and researchers covering a broad range of important issues of the day.

**Meets:** Thursdays, 430 to 530PM, Shriram 104 & a discussion hour time and place to be determined (probably in Shriram 104 following the seminar)

**Instructor:** Sandy Robertson, Y2E2 Room B-23, Office hours: Monday 3:30-5PM & by appointment sandrob@stanford.edu

**TA:** Benjamin Kranner; bkranner@stanford.edu Office Hours by appointment

**Seminar Schedule**

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Speaker &amp; Department</th>
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<tr>
<td>June 29</td>
<td>Poisoned Water; NOVA documentary, 2017</td>
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<tr>
<td>July 6</td>
<td>Assessing Risks and Opportunities in a Changing Climate; Katharine Mach; Director, Stanford Environment Assessment Facility</td>
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<td>July 13</td>
<td>Tales from the Interface: Fun with Fluid Mechanics and Biology; Jeff Koseff; Professor, Stanford Department of Civil &amp; Environmental Engineering</td>
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<td>July 20</td>
<td>How Cutting Greenhouse Gas Emissions Improves Our Water, Air, and Health; Rob Jackson; Chair Stanford Department of Earth System Science</td>
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<td>July 27</td>
<td>Agricultural Expansion and Tropical Deforestation: Exploring the Causes and Impacts; Elsa Ordway; Ph.D. student Environmental Earth System Science, Stanford</td>
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<td>August 3</td>
<td>Dam Infrastructure &amp; Safety in the U.S. - Post-Oroville; A Stanford Perspective; Martin McCann; Adjunct Professor Stanford Department of Civil &amp; Environmental Engineering</td>
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<td>August 10</td>
<td>The Ideal and the Real with Regard to Environmental Collaboration: A Political Science Perspective; Bruce Cain; Professor, Stanford Department of Political Science</td>
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<td>August 17</td>
<td>The California Water System and its Transition into the 21st Century; Newsha Ajami; Director of Urban Water Policy, Water in the West, Stanford</td>
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Course Requirements

For 1 unit—Attend 7 seminars. Write a 1 page critique for each of 2 of the seminars and, for 2 other seminars participate in the discussion session for the seminar.

For 2 units—complete 1 unit requirements; give a 15 minute presentation on an environmental or sustainability topic of the student’s choosing.

Seminar attendance: To get attendance credit for any given seminar students need to sign in and must refrain from using any and all electronic devices (phones, tablets, laptops, etc.) during the presentation. If an electronic device is on the desk in front of you or in your hands you will be assumed to be using the device and will not receive attendance credit.

Critiques: Single spaced, 12 point font, one inch margins; roughly 1 page (~500 words). Critiques may include a brief (2 or 3 sentences) review of what was covered in the talk (and associated readings), but the primary focus should be on your thoughts on, and reactions to, what was presented and/or what you read. Topics you might cover include:
   a. Were your beliefs/understandings confirmed/contradicted?
   b. Were the arguments, figures, tables, etc. well constructed, convincing?
   c. Did the talk and paper complement each other; were the viewpoints contradictory?

Critiques are due on the Thursday following the talk covered in the critique. Students may give Dr. Robertson a hard copy or email him an electronic version.

Discussion sessions—There will be a (roughly) one hour discussion section each week on the week’s seminar. The time and place for the discussions will be determined at the first meeting of the class. It is likely that the session will occur immediately following the lecture.

Presentation: Student identifies a sustainability/environmental topic of interest; builds an understanding of the topic, and, during the last week of classes (at a time and place to be determined, gives a 15 minute oral presentation on what (s)he has learned. The student will discuss the proposed topic with Dr Robertson on or before July 21st. On or before August 4th the student will discuss what (s)he has learned to date, planned approach, and references to be used.
Readings

There will typically be one or more readings listed for each seminar. You should read at least one of each week’s readings prior to the seminar.

For many of the readings you will be given a URL where you can access the reading (for some of the readings you must be on Stanford’s internet system). For others go to Canvas and download them from the appropriate folder inside of “Readings”.

**Week 1-- Poisoned Water**
Scientific American Corrosion video
https://www.scientificamerican.com/video/corrosive-chemistry-how-lead-ended-up-in-flint-s-drinking-water/

Chemical & Engineering News--How Lead Ended Up In Flint’s Tap Water
http://cen.acs.org/articles/94/i7/Lead-Ended-Flints-Tap-Water.html

New York Times—Events & Timeline Flint Water Crisis

New York Times—Criminal charges
June 2017

December 2016

**Week 2-- Assessing Risks and Opportunities in a Changing Climate**

http://science.sciencemag.org/content/356/6339/706

https://www.nature.com/nclimate/journal/v7/n5/full/nclimate3252.html

Nature, 534, p. 613
https://www.nature.com/news/make-climate-change-assessments-more-relevant-1.20155

**Week 3—Tales from the Interface: Fun with Fluid Mechanics and Biology**


**Week 4—How Cutting Greenhouse Gas Emissions Improves Our Water, Air, and Health**


**Week 5—Agricultural Expansion and Tropical Deforestation: Exploring the Causes and Impacts**


**Week 6 — TBA**

**Week 7 — The Ideal and the Real with Regard to Environmental Collaboration: A Political Science Perspective**

Will provide handouts

**Week 8 — The California Water System and its Transition into the 21st Century**

California Water 101:  
http://www.watereducation.org/photo-gallery/california-water-101

California's Water:  
http://www.ppic.org/content/pubs/report/R_1016WPCBKR.pdf

The Path to Water Innovation:  