SMEA 550D
WINTER 2024
Wednesdays 12:30-2:20, PST
Physical Location on UW Campus: OCN 203 (Google Maps link)
Zoom Link: https://washington.zoom.us/j/99656691179

The theory and practice of linking knowledge with action to address modern environmental challenges

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Instructors: Scott Kalafatis, scottkal@uw.edu
Office hours: Just let me know if you want to meet sometime!

Course Description
Meeting modern environmental challenges requires new perspectives, approaches, collaborations, and knowledge – and new ways of linking scholarship with society. This two-credit, reading and discussion-based seminar will explore the theory and practice of linking knowledge with action in support of progress on critical environmental challenges. Concepts will be illustrated using examples from efforts to inform societal responses to climate change. We will review both foundational and emerging literature on topics including:

- Defining and developing actionable science
- Integrating across multiple disciplines and sectors to incorporate extra-scientific knowledge to address societal problems (transdisciplinary research)
- Collaborating with non-academic communities to generate societally relevant information (knowledge co-production)
- Facilitating the transfer of knowledge from science producers to users (knowledge brokering)
- Groups that facilitate the exchange of information between science and society (boundary organizations)
- Ethical considerations in actionable science
- Defining and evaluating success in linking knowledge to action

Students will be expected to come to weekly meetings prepared to actively discuss reading assignments, and to participate in the course's online discussion board. Credit/no-credit only.

Course Structure
This seminar is a 2-credit course, meeting once-weekly for one hour and fifty minutes. Students will review each paper and address each other's questions through a mix of small and large group discussion and by posting to the course discussion board. Students will be assigned to groups to lead one discussion during the course. Please note that to accommodate non-UW students, **the course will be conducted via Microsoft Teams, not Canvas**. It will be conducted in a hybrid-format with UW students and the instructor in-person and non-UW students attending via Zoom.

Course Readings
All required readings will be posted to Teams at least one week in advance for each class. Readings on the syllabus are subject to change but will be confirmed one week prior. They will all be made available for free, and no materials will need to be purchased for the class.

Weekly Reflection Posting to Microsoft Teams
Students are required to contribute to the weekly reflection posts on Microsoft Teams in Weeks 3-10 (use the "Posts" tab for each of these weeks) **by 11:59 PM PT end of the day MONDAY**, before class.

In the Posts tab for each of these weeks, I have posted relevant information and resources at the top.

For each of these weekly reflection posts, you must do the following 3 things:

1. Using the "New conversation" button, post a short paragraph (minimum 5 sentences). For each week, I've posted one or more discussion prompt questions that you can use as inspiration for your response, but you can also just describe something you find interesting about the reading(s).
2. In your same post (as #1 above), provide at least one question for that week's guest. It can be a general question, one that relates directly to that week's topic or is one specific to their work. I'll be posting some information about the guest and I encourage you to feel free to ask them questions about navigating their career as well if it interests you (they're all aware that discussing that is a part of the class).
3. Comment on at least one other student's posting by replying to it – you can do this part on the Tuesday before class, that way you should have everyone's post to respond to.

Co-Lead Class Discussion
Students will be responsible for coordinating with the instructor and leading seminar discussions. Each student will be assigned to a Discussion Leads group that will work as a team to design and lead a discussion for a specific week. This is meant to be an experience to practice facilitating engagement around actionable science. To that end, in the Files tab on Teams for each of these weeks, I have posted a draft "run-of-show" document that outlines what will be done when and who will do it. That week's Discussion Leads will need to update and finalize this document by **11:59 PM PT on the Tuesday before class**. Again, this is practice for running a professional event as a part of a team. The specifics will vary from week to week (see the posted run-of-show doc), but here's a quick breakdown of what a facilitating a session of class looks like:

- Non-guest speaker time (about 45 minutes)
    - Quick introduction to major themes/concepts from the reading (5-10 minutes) – I'd suggest having slides for this, but be brief about it since, theoretically, everyone already read this stuff.
    - Breakout groups of about 4-5 people (15 minutes) – I provide some suggested prompts for these groups, but you're welcome to provide your own instead.
    - Full-class discussion (20 minutes) – feel free to have the breakout groups do a share-out with the rest of class. After that, you can have questions ready for full class discussion, or highlight specific points/issues raised from the prompts. Some guest speakers can only be available from 1-2pm. In weeks where that is the case, the class discussion part of the class will take place after the guest speaker time is done at 2pm.
- Guest-speaker time (roughly 60 minutes)
    - Scott will do 5 minutes of transition and introduction for the guest.
    - The guest will speak on the topic of the day. Frankly, timing on this is kind of unpredictable, but I want to give invited guests freedom over what they do. Some have spoken for less than ten minutes, others have gone for a half-hour.

- With the time that's left, facilitate Q&A with the speaker. Allow students to ask what questions they want, but come prepared to ask questions (including ones from the that week's Discussion posts on Teams) if those dry up or people are being too shy to ask.

Final Reflection
There is also a "final reflection" that asks you to reflect on the course as a whole. It is only a half page or so and is due at the end of the term on **Friday, March 10th, at 11:59PM PT**. You will email this reflection to the instructor (scottkal@uw.edu).

Guests from the Field
Most of the weeks we will have experts from the field join for the second half of class. These guests will have time set aside to introduce themselves and their work.

Course Grading
Full credit will be given for consistent preparation, leading a group discussion, and active participation in class and in the Microsoft Teams posts.

Zoom Info
Join Zoom Meeting: https://washington.zoom.us/j/99656691179
Meeting ID: 996 5669 1179
Find your local number if you need to call in: https://washington.zoom.us/u/ackDXjx8Qm

Course Schedule
Below is the expected schedule of topics/readings; however, these may be adjusted due to reordering of topics, special guest speakers, or late-breaking topics/readings.

Week/Date	Topic/Readings/Questions
1. 1/03	**Science and Society**: An introduction to the course and considerations surrounding science and society that underlie engagements between different perspectives. *Required Reading (before class)*: 1) Sarewitz, D. Saving Science. *The New Atlantis: A Journal of Technology and Society* *Topics Covered*: ▪ Why does public funding lead to emphasis on practical application? ▪ What are some basic dynamics that underlie differences between expectations of science and of society? ▪ What is the plan for this course?
2. 1/10	**Knowledge to Action** Background concepts and models of connections between science, decision-making and action. These are considered foundations for other topics in the course. *Required Reading*: 1. Van Kerkhoff, L and L Lebel. 2006. Linking Knowledge and Action for Sustainable Development. *Optional Additional Resources*: • Stokes, D. 1998. Completing the Bush Model: Pasteur's Quadrant. • Tijssen, RJW. 2018. Anatomy of use-inspired researchers: From Pasteur's Quadrant to Pasteur's Cube model.

	Topics Covered: • Why has a focus on actionable science emerged? • What is the role of actionable science in combating societal problems? • How should we think about what actionable science is?
3. 1/17	**Boundary Work** Exploring the perceived boundary between science and its use and practice and the role of scientists and society in maintaining that protective boundary. *Readings*: 1) Gieryn, TF. 1983. Boundary-work and the demarcation of science from non-science. 2) Weingart, P. 1999. Scientific expertise and political accountability: paradoxes of science in politics. *Topics Covered*: ▪ Why is an imagined boundary between science and society seen as necessary? ▪ How does all of this relate back to credibility and legitimacy? ▪ What are some of the strategies employed to maintain the boundary? *Guest*: Harriet Morgan, Climate Coordinator, Washington Department of Fish and Wildlife
4. 1/24	**Usability** Overview of factors shaping potential users of science's considerations about whether they will use it or not. *Readings*: 1) Cash, DW et al. 2003. Knowledge systems for sustainable development. 2) Lemos, MC et al. 2012. Narrowing the Climate Information Usability Gap. *Optional Additional Resource*: ▪ Sarkki, et al. 2013. Balancing credibility, relevance and legitimacy: a critical assessment of trade-offs in science–policy interfaces. *Topics Covered*: ▪ What makes information usable in decisions? ▪ What is the difference between useful and usable? ▪ How does the tension between useful/usable relate to tensions between science and society? *Guest*: Ronda Strauch, Climate Change Researcher and Adaptation Advisor, Seattle City Light
5. 1/31	**Spanning Boundaries** How do organizations and objects facilitate effective and appropriate engagements that span the boundary between science and society? *Readings*: 1) Star and Griesemer. 1989. Institutional Ecology, 'Translations' and Boundary Objects. 2) Parker and Crona. 2012. On being all things to all people: Boundary organizations and the contemporary research university. *Optional Additional Resource*:

	▪ Star, SL. 2010. This is Not a Boundary Object: Reflections. *Topics Covered*: ▪ What are boundary objects and boundary organizations? ▪ How do boundary objects and boundary organizations transcend these boundaries? ▪ What are considerations we should have about the role they play in connecting science and society? *Guest*: Zackery Thill, Climate Justice Research Program Integration Specialist, UW Climate Impacts Group
6. 2/07	**Transdisciplinarity** How do engagements between science and society produce new insights and what can we do to enhance this innovative potential? *Readings*: 1) Lang et al. 2012. Transdisciplinary research in sustainability science. 2) Balvanera et al. 2017. Key features for more successful place-based sustainability research. *Topics Covered*: ▪ What is transdisciplinarity (and why do we need another buzzword)? ▪ How can making science actionable ultimately enhance science? *Guest*: Leona Svancara, Assistant Regional Administrator, Northwest Climate Adaptation Science Center
7. 2/14	**Knowledge Brokering** How do scientists navigate communicating their knowledge with others across the boundary and how might they do it more effectively? *Readings*: 1) Gluckman et al. 2021. Brokerage at the science–policy interface: from conceptual framework to practical guidance. 2) Fiske and Dupree. 2014. Gaining trust as well as respect in communicating. *Optional Additional Resource*: ▪ Turnhout et al. 2013. New Roles of Science In Society: different repertoires of knowledge brokering. *Topics Covered*: ▪ What is knowledge brokerage? ▪ What are some strategies for successfully communicating science? ▪ What pressures and challenges do people run into when communicating science? *Guest*: Guillaume Mauger, Research Scientist, UW Climate Impacts Group
8. 2/21	**Values** Navigating values is one of the most active and evolving areas amongst those working in co-production. We'll cover some basic tensions and considerations around the role of values in engagements between science and policy. *Readings*: 1) Brown. 2020. "THE NEED FOR VALUES IN SCIENCE: The Contingency Argument." Ch. 2 from *Science and Moral Imagination: A New Ideal for Values in Science*.

	Key questions: ▪ What values have the greatest influence on your professional life? ▪ What role do you think that social values should have on scientific work? *Guest*: Caroline Walls, Interim Habitat Program Manager, Quileute Nation
9. 2/28	**Power and Representation** Considerations surrounding engaging different levels of public involvement in research and not reinforcing problematic power dynamics. *Readings*: 1) Arnstein, S. 1969. A ladder of citizen participation. 2) Turnhout et al. 2020. The politics of co-production. 3) Shirk et al. 2012. Public Participation in Scientific Research: a Framework for Deliberate Design. *Key questions:* ▪ To what extent would you ideally want the public to engage in your research? ▪ What power differentials might exist amongst those who can be impacted by your research? *Guest*: Cleo Wolfle Hazard, Assistant Professor, School of Marine & Environmental Affairs
10: 3/06	**Cross-cultural Engagement** What ethical considerations come with engagement across perspectives? We will focus specifically on partnerships between Indigenous- and settler-partners. *Readings*: ▪ Whyte, KP. 2018. Settler colonialism, ecology, and environmental injustice. ▪ Williams and Hardison. 2013. Contexts of traditional knowledge in climate change adaptation. *Optional Additional Resources*: ▪ Improving ethical practice in transdisciplinary research Projects https://nwcasc.uw.edu/resources/actionable-science-webinars/ ▪ Guidelines for Considering Traditional Knowledges in Climate Change Initiatives Fourth National Climate Assessment, Chapter 15: Tribes and Indigenous Peoples https://nca2018.globalchange.gov/chapter/15/ ▪ Best practices for collaborative climate adaptation research between tribal and non-tribal partners https://nwcasc.uw.edu/resources/actionable-science-webinars/ ▪ Meade's practical presentation: https://www.usgs.gov/programs/climate-adaptation-science-centers/science/webinar-tribal-resources-climate-change#overview *Key Questions*: ▪ What morals and values would you hope to have your professional career represent? ▪ How might your research present ethical dilemmas? *Guest*: Amelia Marchand, Climate Change Specialist, Affiliated Tribes of Northwest Indians

Religious Accommodations

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/)