Evidence-based Environmental Policymaking | EVPP 530

Instructor: Assoc. Prof. Karen Akerlof
Email: kakerlof@gmu.edu

Class Schedule: Mondays, 4:30 - 7:10 pm
Location: Zoom (see below)
Office Hours: Fridays, 10 am-noon, or by appointment (phone or Zoom)

ONLINE COURSE DELIVERY

1) The course will be delivered in an online lecture and discussion format using Zoom. If you have any problems using Zoom, please let me know. You may wish to download and import the following iCalendar (.ics) files to your calendar system: *https://gmu.zoom.us/meeting/tJIpce-prz4iGd3JyhiNhQd5J6iCkylz_J_5/ics?icsToken=98tyKuCuqj0sG9WQuBqORowABo_oM-vzmCVHjacOtgbtCg5bUwejHLRLEblmHMLv*

   Join Zoom Meeting
   https://gmu.zoom.us/j/96466115839?pwd=fzr8hiNrXmnR0a3q0S88W3hhr51m7S.1
   Meeting ID: 964 6611 5839
   Passcode: EVPP530

2) Optimally, we will all learn from each other in this course. In order for that to occur, we need to be able to see and hear from everyone. Please plan on using your web camera and speaking during the class sessions. Activities and assignments in this course will regularly use web-conferencing software (Zoom). Students are required to have a device with a functional camera and microphone. In an emergency, students can connect through a telephone call, but video connection is the expected norm.

3) Activities and assignments in this course will regularly use the Blackboard learning system, available at https://mymason.gmu.edu. Students are required to have regular, reliable access to a computer with an updated operating system (recommended: Windows 10 or Mac OSX 10.13 or higher) and a stable broadband Internet connection (cable modem, DSL, satellite broadband, etc., with a consistent 1.5 megabits per second download speed or higher).

Course description and rationale

During the last decade, enthusiasm for evidence-based policy has grown in the United States across numerous domains, from health and education to the environment. Calls for a "new social contract for science" demand that environmental scientists help meet societal needs to address wicked global problems such as biodiversity conservation and climate change. This contract necessitates superseding disciplinary boundaries to advance knowledge, attending to problems of societal importance, and bridging across academia, government, the private sector, civil society, and the public to integrate insights. Calls for evidence-based policymaking have been even more visible on the other side of the Atlantic, where the United Kingdom has led a series of initiatives, starting in 2010, to figure out "what works." But this enthusiasm belies challenges not only in using science for policy but even in defining the meaning of "evidence," "policy," and "use."

Since World War II, the social contract between the federal government and universities has supported an independent scientific and technological research enterprise in exchange for knowledge and workforce education. Much of the focus on science policy after the war was on the physical and biological sciences; indeed, the use of the phrase "science-based policy" often refers to these disciplines. However, the emphasis of "evidence-based policy" in recent decades has been on the use of social science for improving policy decisions in areas such as health, education, criminal justice, and welfare. Whereas in 1945 Vannevar Bush's *Science, the Endless Frontier* spoke to the use of science to help government fight disease, protect our national security, and create jobs, evidence-based policy speaks to making data-based decisions that bring higher returns to investments in government programs, better alignment between program outcomes and policy goals, and transparency in decision-making. In this course we will address evidence-based policymaking from both of these perspectives: the use of the social *and* natural sciences in environmental governance.

Evidence-based policymaking is not without its critics, however, some of whom point instead to the need for "evidence-*informed*" policymaking in recognition that the potential quantity and range of evidence for any decision might be quite large, and that other factors—such as politics and stakeholder interests—also play a legitimate role. This course explores the meaning of "evidence-based policymaking," the value of science in decision-making and its limitations, and ways that individuals and organizations can build capacity in creating usable science and using science in policy.

Learning objectives

- Students will have a greater appreciation and understanding of the ways in which scientific information is used for policy decisions.

- Students will be able to describe what "evidence-based policymaking" means to different audiences and provide examples of the ways in which evidence-based policymaking presents across different issue domains and institutional contexts.
- Students will be able to assess the challenges of creating usable research knowledge across different contexts and make recommendations for actions that would bolster decision-making capacity.
- Students will be able to communicate their knowledge about this subject orally and in writing, to a variety of audiences.
- Students will be able to apply the course information and skills to real world situations.

Assignments and grading

You will have five types of assignments: 1) participation in Blackboard course discussions about the week's reading; 2) a short essay on your reactions to watching a congressional hearing on a science-related issue; 3) a short opinion article to a journal within your discipline on how its scientists can improve the societal relevance and accessibility of their work; 4) a policy memo for a congressional office on the policy implications of an area of science in which you are interested and have expertise**;** and 5) a final paper describing a case study of how science was—or was not—used by decision-makers and diagnosing the reasons for these failures and successes with recommendations for future improvements. These assignments will constitute your grade for the term. You will be given a rubric prior to each assignment that details all required components and their associated point value; due dates will be provided along with the rubrics. All students will also be expected to complete a certificate on plagiarism.

Participation in course discussions

Each week you will be expected to contribute to a discussion of the week's readings on Blackboard by submitting a comment of 1-2 paragraphs prior to class that demonstrates understanding of the material and responds to the arguments submitted by one or more other classmates. In weeks when you have another assignment due, it is not a requirement.

Completion of certificate on detecting plagiarism

Plagiarism is a violation of the university's Honor Code and is increasingly easy to detect because of the ubiquity of online text searches and the incorporation of these features into course software, such as Turnitin. But sometimes students don't understand what plagiarism is and how to avoid it in their own writing. At the start of the course we will discuss what constitutes plagiarism using an online instructional module developed by Indiana University (https://plagiarism.iu.edu/index.html). Your first course assignment will be to complete the certification test found at https://plagiarism.iu.edu/certificationTests/index.html. You may retake the test as many

times as needed. Indiana University also provides an array of tutorials to assist you.

**Please note that the syllabus for this class defines use of AI tools such as ChatGPT for the purposes of completing assignments as violation of academic integrity.

Course project
Over the course of the term you will identify an event—or a context—in which science is relevant to the decisions before policymakers. You will describe how policymakers accessed scientific information, the barriers they experienced in doing so, and the outcome. You will make recommendations for increasing the usability of science based on your diagnoses. I encourage you to choose a case study in an area of environmental science in which you already have significant knowledge or in which you would like to build it long-term. For example, you might choose an issue related to previous papers you have written, your master's thesis or doctoral dissertation, or an area in which you might like to study or work after graduation, such as conservation biology, climate change, or energy.

You will have four assignments directly related to the course project: 1) a description of the topic you will be researching and initial resources you have identified; 2) a first draft of the research paper; 3) a final draft of the paper; and 4) a presentation to the class.

Grade distribution overview

1	Understanding plagiarism certificate	3%
2	Congressional hearing essay	7%
3	Policy memo	15%
4	Commentary article on increasing societal relevance of your scientific discipline	20%
5	Final paper: Case study	
	Assignment 1 (topic)	5%
	Assignment 2 (first draft) – *not graded, but will not receive full credit on final draft if not turned in on time*	0%
	Assignment 3 (final draft)	35%
	Assignment 4 (presentation)	5%
6	Participation in Blackboard course discussions	10%
*	*[Extra credit, Submit perspectives article for publication]*	*5%*

Grades
Your final letter grade will be assessed based on the total points you have accumulated through completing the assignments. Grades will not be curved.

A	93-100	A-	90-92	B+	87-89
B	83-86	B-	80-82	C+	77-79
C	70-76	D	60-69	F	59 or less

Course Schedule (subject to change)

All course assignments and readings are on Blackboard

Week	Date	Topics	Readings
Week 1	Aug. 26	• Introductions • Course overview • **What is evidence? Why do we think it is important for decision-making?**	*Background:* White House. (2022, Apr. 7). *FACT SHEET: Biden-Harris administration launches year of evidence for action to fortify and expand evidence-based policymaking.* https://www.whitehouse.gov/ostp/news-updates/2022/04/07/fact-sheet-biden-harris-administration-launches-year-of-evidence-for-action-to-fortify-and-expand-evidence-based-policymaking/ National Research Council. (2012). *Using science as evidence in public policy*. National Academies Press. --Summary, p. 1-6. --Chapter 4, p. 53-63
		***No class on Sept. 2*—Labor Day**	
Week 2	Sept. 9	• **Politics of evidence use** • **Disconnects between scientific research and policy**	****Due: Plagiarism certificate** Bogenschneider, K., & Corbett, T. J. (2010). *Evidence-based policymaking: Insights from policy-minded researchers and research-minded policymakers.* Taylor & Francis Group. Available through university libraries at http://ebookcentral.proquest.com/lib/gmu/detail.action?docID=668354 --Preface, Foreword, and Chapters 1 - 2, p. ix to xvi and 1 - 54. Parkhurst. (2017). *The politics of evidence.* Routledge.

			--Chapters 1 and 2, p. 1-37.
Week 3	Sept. 16	• **Foundations for Evidence-based Policymaking Act of 2018**	Newcomer, K., & Hart, N. (2021). Evidence-building and evaluation in government. SAGE Publications. --Chapter 1, p. 1-24 Abraham, K. G., Haskins, R., Glied, S., Groves, R. M., Hahn, R., Hoynes, H., & Wallin, K. R. (2017). *The promise of evidence-based policymaking: Report of the commission on evidence-based policymaking.* Washington, DC: Commission on Evidence-Based Policymaking. https://www2.census.gov/adrm/fesac/2017-12-15/Abraham-CEP-final-report.pdf --Executive summary & recommendations, p. 1-5. --Chapter 1, p. 7-17
Week 4	Sept. 23	• **Evaluation and evidence-based policymaking**	****Due: Congressional hearing essay** Epstein, D., Zielewski, E., & Liliedahl, E. (2022). Evaluation policy and the federal workforce. *New Directions for Evaluation, 2022*(173), 85-100. EPA. (2022). *U.S. Environmental Protection Agency policy for evaluations and other evidence-building activities* (Order 1000.33). U.S. Environmental Protection Agency. https://www.epa.gov/system/files/documents/2022-05/epa-evaluation-evidence-building-policy.pdf
Week 5	Sept. 30	• **Use of natural science in policy**	Cairney, P. (2016). The science of policymaking (Chapter 1); Evidence in environmental policy: Learning lessons from health? (Chapter 4). In *The politics of evidence-based policy making.* Springer.

		• **Methodologies for assessing evidence**	Sutherland, W. J., Taylor, N. G., MacFarlane, D., Amano, T., Christie, A. P., Dicks, L. V., ... & Wordley, C. F. (2019). Building a tool to overcome barriers in research-implementation spaces: The Conservation Evidence database. *Biological Conservation, 238*, 108199.
Week 6	Oct. 7	• **Use of social and behavioral science in policy**	****Due: Policy memo** Haskins, R., & Margolis, G. (2015). Introduction: The Obama strategy for attacking social problems. In *Show me the evidence: Obama's fight for rigor and results in social policy*. Brookings Institution Press. John, P. (2014). Policy entrepreneurship in UK central government: The Behavioural Insights team and the use of randomized controlled trials. *Public Policy and Administration, 29*(3), 257–267.
		***No class on Oct. 14*—Fall Break**	
Week 7	Oct. 21	• **Research use in legislatures**	Kenny, C., Washbourne, C.-L., Tyler, C., & Blackstock, J. J. (2017). Legislative science advice in Europe: The case for international comparative research. *Palgrave Communications*, *3*(1), 1–9. Sabatier, P., & Whiteman, D. (1985). Legislative decision making and substantive policy information: Models of information flow. *Legislative Studies Quarterly*, *10*(3), 395–421.

Week 8	Oct. 28	• **Research use in executives**	****Due: Assignment #1 (Topic)** Desmarais, B. A., & Hird, J. A. (2014). Public policy's bibliography: The use of research in US regulatory impact analyses. *Regulation & Governance*, *8*(4), 497–510. Jasanoff, S. (1990). *The fifth branch: Science advisers as policymakers*. Harvard University Press. --Chapter 1
Week 9	Nov. 4	• **Boundary spanning**	Bednarek, A. T., Wyborn, C., Cvitanovic, C., Meyer, R., Colvin, R. M., Addison, P. F. E., Close, S. L., Curran, K., Farooque, M., Goldman, E., Hart, D., Mannix, H., McGreavy, B., Parris, A., Posner, S., Robinson, C., Ryan, M., & Leith, P. (2018). Boundary spanning at the science–policy interface: The practitioners' perspectives. *Sustainability Science*, *13*(4), 1175–1183. Chambers, J. M., Wyborn, C., Ryan, M. E., Reid, R. S., Riechers, M., Serban, A., ... & Pickering, T. (2021). Six modes of co-production for sustainability. *Nature Sustainability*, *4*(11), 983-996.
Week 10	Nov. 11	• **Scientific assessments**	Buizer, J. L., Dow, K., Black, M. E., Jacobs, K. L., Waple, A., Moss, R. H., Moser, S., Luers, A., Gustafson, D. I., Richmond, T. C., Hays, S. L., & Field, C. B. (2016). Building a sustained climate assessment process. In K. Jacobs, S. Moser, & J. Buizer (Eds.),

			The US National Climate Assessment: Innovations in Science and Engagement (pp. 23–37). Springer International Publishing. Farrell, A. E., Jäger, J., & VanDeveer, S. D. (2006). Overview: Understanding design choices. In A. E. Farrell & J. Jäger (Eds.), *Assessments of regional and global environmental risks: Designing processes for the effective use of science in decisionmaking*. Resources for the Future.
Week 11	Nov. 18	• **Public participation in environmental decision-making**	****Due: Commentary article** Thomas C. Beierle, T. C., & Cayford, J. (2002). *Democracy in practice: Public participation in environmental decisions.* Taylor & Francis Group. Hurlbert, M., & Gupta, J. (2015). The split ladder of participation: A diagnostic, strategic, and evaluation tool to assess when participation is necessary. *Environmental Science & Policy*, *50*, 100–113.
Week 12	Nov. 25	• **Evidence use in low-and-middle-income countries**	* Hernández-Mondragón, A. C. (2022). From lab to science policy advisor. *Nature Human Behaviour*, *6*(4), 477-477. Biermann, F. (2002). Institutions for scientific advice: Global environmental assessments and their influence in developing countries. *Global Governance*, *8*(2), 195–219. Sanni, M., Oluwatope, O., Adeyeye, A., & Egbetokun, A. (2016). Evaluation of the quality of science, technology and innovation

			advice available to lawmakers in Nigeria. *Palgrave Communications*, *2*(1), 1–7.
Week 13	Dec. 2	• **Reforming government capacity for evidence use**	Graves, Z., & Schuman, D. (2020). Science, technology, & democracy: Building a modern congressional technology assessment office. Ash Center for Democratic Governance and Innovation, Harvard Kennedy School. Milford, J. B., & Knight, D. (2017). Increasing the use of Earth science data and models in air quality management. *Journal of the Air & Waste Management Association*, *67*(4), 431–444.
Week 14	Dec. 9	• **Reforming scientific institution capacity for addressing questions of societal concern**	****Due: Assignment #2 (Paper draft)** ****Due: Assignment #4 (Presentations)** Cairney, P., & Oliver, K. (2020). How should academics engage in policymaking to achieve impact? *Political Studies Review*, *18*(2), 228–244. Kirchherr, J. (2018, August 9). A PhD should be about improving society, not chasing academic kudos. *The Guardian*. Terämä, E., Smallman, M., Lock, S. J., Johnson, C., & Austwick, M. Z. (2016). Beyond academia–Interrogating research impact in the research excellence framework. *PloS One*, *11*(12).
Exam date	Dec. 16 4:30 – 7:10 pm	• **Upload final paper**	****Due @ midnight: Assignment #3 (Final paper)** ****Due: Assignment #4 (Presentations)**

	• **Student presentations of case studies**	

Possible syllabus changes
As the instructor, I reserve the right to make changes to the syllabus. Students will be given ample notice regarding any major changes to the course plan.

Late assignments
Assignments turned in late will be penalized by deducting 5% from the total points for each day it is late.

Gender identity and pronoun use
If you wish, please share your name and gender pronouns with me and how best to address you in class and via email. I use "she/her/hers" for myself. You may address me as "K. L." (*pronounced "kale")* or "Dr./Prof. Akerlof" in email and verbally. Mason provides tools to change your name and pronouns on Mason records, see https://registrar.gmu.edu/updating-chosen-name-pronouns/.

Course materials and student privacy
I will not be video recording the classes except in the case of guest speakers who have given their approval to do so. However, the PPTs from each meeting will be available on Blackboard. All course materials posted to Blackboard or other course site are private to this class; by federal law, any materials that identify specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class.

- Video recordings of class meetings that include audio, visual, or textual information from other students are private and must not be shared outside the class
- Live video conference meetings (e.g. Collaborate or Zoom) that include audio, textual, or visual information from other students must be viewed privately and not shared with others in your household or recorded and shared outside the class.

Academic integrity: Use of AI text-generation tools
Any text generated by an artificial intelligence (AI) text-generation tool (such as ChatGPT) is not accepted in this class as "the student's own work," and so will be considered similarly to text published on paper or online or text composed or significantly edited/altered by another person. The use of such text without proper attribution is a violation of academic integrity.

Dropping the course
You are responsible for understanding the university's policies and procedures regarding withdrawing from courses found in the current catalog. You should be aware of the current deadlines according to the Academic Calendar.

Common Policies Affecting All Courses at George Mason University
(Updated August 2024)

These four policies affect students in all courses at George Mason University.

Academic Standards
Academic Standards exist to promote authentic scholarship, support the institution's goal of maintaining high standards of academic excellence, and encourage continued ethical behavior of faculty and students to cultivate an educational community which values integrity and produces graduates who carry this commitment forward into professional practice.

As members of the George Mason University community, we are committed to fostering an environment of trust, respect, and scholarly excellence. Our academic standards are the foundation of this commitment, guiding our behavior and interactions within this academic community. The practices for implementing these standards adapt to modern practices, disciplinary contexts, and technological advancements. Our standards are embodied in our courses, policies, and scholarship, and are upheld in the following principles:

- **Honesty**: Providing accurate information in all academic endeavors, including communications, assignments, and examinations.
- **Acknowledgement**: Giving proper credit for all contributions to one's work. This involves the use of accurate citations and references for any ideas, words, or materials created by others in the style appropriate to the discipline. It also includes acknowledging shared authorship in group projects, co-authored pieces, and project reports.
- **Uniqueness of Work**: Ensuring that all submitted work is the result of one's own effort and is original, including free from self-plagiarism. This principle extends to written assignments, code, presentations, exams, and all other forms of academic work.

Violations of these standards—including but not limited to plagiarism, fabrication, and cheating—are taken seriously and will be addressed in accordance with university policies. The process for reporting, investigating, and adjudicating violations is outlined in the university's procedures. Consequences of violations may include academic sanctions, disciplinary actions, and other measures necessary to uphold the integrity of our academic community.

The principles outlined in these academic standards reflect our collective commitment to upholding the highest standards of honesty, acknowledgement, and uniqueness of work.

By adhering to these principles, we ensure the continued excellence and integrity of George Mason University's academic community.

Student responsibility: Students are responsible for understanding how these general expectations regarding academic standards apply to each course, assignment, or exam they participate in; students should ask their instructor for clarification on any aspect that is not clear to them.

Accommodations for Students with Disabilities

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit https://ds.gmu.edu/ for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu. Phone: (703) 993-2474.

Student responsibility: Students are responsible for registering with Disability Services and communicating about their approved accommodations with their instructor in advance of any relevant class meeting, assignment, or exam.

FERPA and Use of GMU Email Addresses for Course Communication

The Family Educational Rights and Privacy Act (FERPA) governs the disclosure of education records for eligible students and is an essential aspect of any course. Students must use their GMU email account to receive important University information, including communications related to this class. Instructors will not respond to messages sent from or send messages regarding course content to a non-GMU email address.

Student responsibility: Students are responsible for checking their GMU email regularly for course-related information, and/or ensuring that GMU email messages are forwarded to an account they do check.

Title IX Resources and Required Reporting

As a part of George Mason University’s commitment to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community, the University does not discriminate on the basis of sex or gender in any of its education or employment programs and activities. Accordingly, all

non-confidential employees, including your faculty member, have a legal requirement to report to the Title IX Coordinator, all relevant details obtained directly or indirectly about any incident of Prohibited Conduct (such as sexual harassment, sexual assault, gender-based stalking, dating/domestic violence). Upon notifying the Title IX Coordinator of possible Prohibited Conduct, the Title IX Coordinator will assess the report and determine if outreach is required. If outreach is required, the individual the report is about (the "Complainant") will receive a communication, likely in the form of an email, offering that person the option to meet with a representative of the Title IX office.

For more information about non-confidential employees, resources, and Prohibited Conduct, please see University Policy 1202: Sexual and Gender-Based Misconduct and Other Forms of Interpersonal Violence. Questions regarding Title IX can be directed to the Title IX Coordinator via email to TitleIX@gmu.edu, by phone at 703-993-8730, or in person on the Fairfax campus in Aquia 373.

Student opportunity: If you prefer to speak to someone confidentially, please contact one of Mason's confidential employees in Student Support and Advocacy (SSAC), Counseling and Psychological Services (CAPS), Student Health Services (SHS), and/or the Office of the University Ombudsperson.