# Environmental Science Communication, EVPP 429/529

**Instructor:** Karen Akerlof, PhD
**Email:** kakerlof@gmu.edu

**Class Schedule:** Mondays, 7:20-10:00 pm
**Location:** Mason Global Center 1306B
**Office Hours:** Fridays, 10 am-noon, David King 3032 or upon appointment

**Course description and objectives**

Environmental science communication can take many forms, from blockbuster movies to contentious stakeholder meetings. It is both studied and practiced by people from a wide array of disciplines, ranging from conservation biologists, climate modelers, and social scientists to reporters, public affairs staff, and issue advocates. Their communication goals and approaches can be quite diverse. This course will explore the ways in which communication facilitates individual- and societal-level environmental decision-making and behavior change. Communication is increasingly being viewed by governments as a "soft" policy tool for achieving their environmental goals, such as energy efficiency and wildlife conservation, through behavioral nudges. We will work with two national parks in the region to understand their communication challenges and make recommendations for ways to address them.

In addition, over the duration of the course, students will develop expertise in an area of environmental science communication of their choice, focusing on either its practical or social science dimensions. All students will become familiar with reading social science literature and thinking critically about how—and when—research findings can be applied to the practice of communication. Moreover, they will learn strategies for answering the question "did it have the desired effect?" These skills are useful not just to environmental scientists in making choices about their own outreach, but to students interested in studying this area of social science and those seeking jobs with stakeholder and public engagement components.

The reading list will primarily consist of book chapters and journal articles to be made available in Adobe PDF format. The class is open to both undergraduate and graduate students, cross-listed as EVPP 429 and EVPP 529. Graded assignments will be differentiated accordingly.

**Assignments and grading**

You will have four types of assignments: 1) a course project on an environmental science communication topic of interest to you; 2) participation in an online discussion board about

the weekly reading assignments; 3) a series of assignments contributing to a team memo for the National Park Service; and 4) completion of a short online module on detecting plagiarism. 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.

*Course project*

Over the course of the term you will develop expertise on a topic of environmental science communication that is of interest to you, focusing either on its practice or relevant social science research. I encourage you to choose a field 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.

> *Project option A.* Describe one or more of the current challenges in an area of environmental science communication, such as barriers to promoting conservation behaviors for endangered species or failures in transparently addressing environmental justice community exposure to pollutants. Identify and summarize findings from the social science research literature that address these communication challenges. Are there any lessons for practitioners from this research? What questions remain? Briefly describe how *you* might try to answer one or more of these unanswered questions using social science research.
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> *Project option B.* Plan an environmental science communication project using a social science research review to inform the design. The project can take any form of communication, from social media posts to a long-term community partnership. Describe the project plan in detail, what social science research findings inform its design, and how its effects might be evaluated. Include at least one example of potential communication content, e.g., images, a short video, graphic(s), or text.

*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.

*Projects with the National Park Service (NPS)*
We will work with two national parks on communication problems they have identified. While you will have individual components of the project that you will submit for grade points, the projects will be conducted in teams. Much of the teamwork will be completed in course time that has been set aside for that purpose. Each park is requesting slightly different final products, so you will receive a rubric for the project depending on which group you are in. Graduate students will expected to lead the project teams and contribute more heavily to the final products. While I cannot require that you attend the project kick-off meetings scheduled at each park, they are heavily recommended. You will receive extra credit points for doing so.

*Extra readings (Graduate students only)*
Graduate students are required to select two additional readings from the course background reference list, commenting on them on the course discussion board, and presenting on them briefly in class.

*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://www.indiana.edu/~academy/firstPrinciples/ IUcriteria.html). Your first course assignment will be to complete the certification test found at https://www.indiana.edu/~academy/firstPrinciples/certificationTests/. There are both undergraduate and graduate versions of the test, and you may retake it as many times as needed. Indiana University also provides an array of tutorials to assist you. Graduate students are required to turn in the certificate and will lose points for not doing so (-3%). Undergraduate students receive points for taking the course (5%).

| **Grade distribution overview** | **EVPP 429** | **EVPP 529** |
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| Certificate on detecting plagiarism – *graduate students will lose points (-3% of grade) for not turning in the certificate* | 5% | 0% |
| Project assignment 1 (topic) | 10% | 10% |
| Project assignment 2 (first draft) – *not graded, but will not receive full credit on final draft if not turned in on time* | 0% | 0% |
| Project assignment 3 (final draft) | 35% | 35% |
| Project assignment 4 (presentation) | 10% | 10% |
| Class discussion board participation | 15% | 5% |
| Extra readings (graduate students only) | 0% | 5% |

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| NPS project participation: Undergraduate text contributions less than graduate student | 25% | 35% |
| *[Extra credit] NPS meeting attendance* | *5%* | *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.

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| 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)**

| Week | Date | **Topics** | **Readings & Assignments** |
|---|---|---|---|
| Week 1 | Jan. 27 | • Introductions<br>• Course overview<br>• **Environmental science communication's many goals and disciplinary approaches**<br>• **National Park Service project** | See the list of background references—and download any articles of interest—in Week 1 of the class Zotero folder. |
| **Jan. 31, 10 am-11 am, meeting with Andrew P. Landsman, Ph.D., Natural Resources Program Manager, C&O Canal National Historical Park** | | | |
| Week 2 | Feb. 3 | • **Science communication research and practice** | Bennett, D. J., & Jennings, R. C. (2011). Explaining the world: communicating science through the ages. In *Successful science communication: Telling it like it is*. Cambridge University Press.<br>Fischhoff, B. (2013). The sciences of science communication. *Proceedings of the National Academy of Sciences, 110*(Supplement 3), 14033–14039.<br>Trenholm, S. (2017). The communication tradition (Chapter 1); Definitions, models, and perspectives (Chapter 2). In *Thinking through communication: An introduction to the study of human communication*. Routledge. |

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| | | **[Awaiting confirmation] Feb. 7, 10 am-11 am, meeting with Bryan Gorsira, Certified Wildlife Biologist Natural Resource Program Manager, Manassas National Battlefield Park** | |
| Week 3 | Feb. 10 | • **Communicating in the National Parks**<br><br>  <br><br>**Guest speaker *(invited)*: Shaelyn Patzer, project director for NPS 2019 Climate Change Communication Internship Program** | **** Due: Plagiarism certificate**<br><br>Campbell, E., Patzer, S., Beall, L., Gallagher, A., & Maibach, E. (2020). Using social science in National Park Service climate communications: A case study in the National Capital Region. *Parks Stewardship Forum, 36*(1), 122-127. https://escholarship.org/uc/item/1840d923<br>Hockett, K. S., Marion, J. L., & Leung, Y.-F. (2017). The efficacy of combined educational and site management actions in reducing off-trail hiking in an urban-proximate protected area. *Journal of Environmental Management, 203*, 17–28. |
| Week 4 | Feb. 17 | • **Environmental science: Public understanding and attitudes**<br>• **Conducting the term research project**<br><br>  <br><br>**Guest speaker: Susan Howard, Faculty Instructor, School of Integrative Studies, George Mason University** | Allum, N., Sturgis, P., Tabourazi, D., & Brunton-Smith, I. (2008). Science knowledge and attitudes across cultures: a meta-analysis. Public Understanding of Science, 17(1), 35–54.<br>Kahan, D. M., Jenkins‐Smith, H., & Braman, D. (2011). Cultural cognition of scientific consensus. *Journal of Risk Research, 14*(2), 147‐174. |

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| Week 5 | Feb. 24 | • **Nudging conservation behavior** | **** Due: Project assignment--research topic**<br><br>Osbaldiston, R., & Schott, J. P. (2012). Environmental sustainability and behavioral science: Meta-analysis of proenvironmental behavior experiments. *Environment and Behavior*, *44*(2), 257–299.<br>Reddy, S. M. W., Montambault, J., Masuda, Y. J., Keenan, E., Butler, W., Fisher, J. R. B., … Gneezy, A. (2017). Advancing conservation by understanding and influencing human behavior. *Conservation Letters*, *10*(2), 248–256. |
| Week 6 | Mar. 2 | • **In-class work on NPS project** | **** Due: NPS project part A draft text** |
| Week 7 | Mar. 9 | **----------SPRING BREAK----------** | |
| Week 8 | Mar. 16 | • **Evaluating science communication effectiveness** | Jenks, B., Vaughan, P. W., & Butler, P. J. (2010). The evolution of Rare Pride: Using evaluation to drive adaptive management in a biodiversity conservation organization. *Evaluation and Program Planning*, *33*(2), 186–190.<br>McDavid, J. C., Huse, I., & Hawthorn, L. R. L. (2012). Key concepts and issues in program evaluation and performance measurement (Chapter 1). In *Program evaluation and performance measurement: An introduction to practice*. SAGE. |
| Week 9 | Mar. 23 | • **Social norms** | **** Due: NPS project part B draft text**<br><br>Bicchieri, C. (2002). Covenants without swords: Group identity, norms, |

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| | | | and communication in social dilemmas. *Rationality and Society, 14*(2), 192–228.<br>Chung, A., & Rimal, R. N. (2016). Social norms: A review. *Review of Communication Research, 4*, 1–28. |
| Week 10 | Mar. 30 | • **Environmental education** | Cho, Y., & Lee, D. (2018). 'Love honey, hate honey bees': reviving biophilia of elementary school students through environmental education program. *Environmental Education Research, 24*(3), 445–460.<br>Wals, A. E. J. (2012). Learning our way out of unsustainability: The role of environmental education. *The Oxford Handbook of Environmental and Conservation Psychology*. |
| Week 11 | Apr. 6 | • **In-class work on NPS project** | **** Due: NPS project part C draft text; finish project** |
| Week 12 | Apr. 13 | • **Public participation in environmental decision-making** | Dietz, T. (2013). Bringing values and deliberation to science communication. *Proceedings of the National Academy of Sciences, 110*(Supplement 3), 14081–14087.<br>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 13 | Apr. 20 | • **Communicating environmental science in** | Hansen, A. (2010). Making claims and managing news about the environment (Chapter 3); The environment as news: news values, |

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| | | | **traditional and new media** | news media and journalistic practices (Chapter 4). In *Environment, Media and Communication*. Routledge.<br>Papworth, S. K., Nghiem, T. P. L., Chimalakonda, D., Posa, M. R. C., Wijedasa, L. S., Bickford, D., & Carrasco, L. R. (2015). Quantifying the role of online news in linking conservation research to Facebook and Twitter. *Conservation Biology*, *29*(3), 825–833. |
| Week 14 | Apr. 27 | • | **Individual project presentations**<br>• **NPS visit & discussion** | **** Due: Project assignment--paper draft**<br>****Project assignment--paper presentations (group 1)** |
| Week 15 | May 4 | • | **Individual project presentations**<br>• **NPS visit & discussion** | **** Due: Project assignment--paper presentations (group 2)**<br>**** Due by midnight on Monday, May 11: Final project paper** |

**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. Assignments will no longer be accepted after 3 days past the due date.

**General**
This course adheres to all university policies described in the academic catalog. Please pay close attention to the following policies:

**Students with Disabilities**
If you are a student with a disability and you need academic accommodations, please contact the Disability Resource Center (DRC) at (703) 993-2474. All academic accommodations must be arranged through the DRC.

**Academic Integrity: Mason's Honor Code**
At George Mason University, Academic Integrity is demonstrated in our work, community, the classroom and research. We maintain this commitment to high academic standards through Mason's Honor Code. It is an agreement made by all members of our community to not "cheat, steal, plagiarize, or lie in matters related to your academic work." Students sign an agreement to adhere to the Honor Code on their application for admission to Mason and are responsible for being aware of the most current version of the code.

**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.

**Email**
All course information will be sent to your George Mason University email account, including changes to the class schedule due to weather conditions.