

PS367: Climate Change: Science and Politics of a Global Crisis

Prof. Ronald Mitchell

Department of Political Science and Program in Environmental Studies

Time: Tues/Thurs 12-1:20	Office Hours: PLC-921, Tues/Thurs 1:30-3:00, by signup and appt.
Course Website on Canvas	rmitchel@uoregon.edu; Phone: 346-4880

<https://www.npr.org/2019/12/12/787552712/why-climate-change-threats-dont-trigger-an-immediate-response-from-human-brains> ADD for 2020

COURSE DESCRIPTION

Climate change is the largest environmental threat facing humans and the other species that inhabit planet Earth. We are aware of climate change's causes, impacts, and likelihood. Yet, recent international meetings on climate change suggest that the nations (and people) of the world are unwilling to take actions of the magnitude and on the timeline that most scientists say will be needed to avoid the most severe impacts of climate change. The demand for action on climate change implied by most scientific evidence has not been matched by the supply of action from political leaders, policy-makers, and the public.

This course will help you understand both the science of climate change, the factors that influence whether we make progress on this global crisis, and the international, national, and local policies that can help. We will look at:

- **Understanding the science:** What do we know and what don't we know about climate change? To what extent is it human-caused and how do we know? How does one assess the arguments of those who contend that human-caused climate change is occurring compared to those who contend the opposite?
- **Setting the agenda:** What has gotten climate change on the international policy agenda? What role has scientific evidence played? What role have nongovernmental organizations and activists played? What role have celebrities like Al Gore played? What factors have kept climate change off the policy agenda?
- **International responses to climate change -- negotiating an agreement:** Why have countries taken action on climate change at some times and not others? Why are some states "leaders" on climate change and others "laggards"? What "factors and actors" help negotiations succeed or fail?
- **Non-international responses to climate change:** What actions are countries taking without international cooperation? What are corporations, communities, and individuals doing to address the problem?

REQUIRED COURSE MATERIALS

There are no required **books** for the course but there are many readings for each session, though most are brief. Readings will be on Canvas. Class depends on active student participation so, please, *do the readings before class*.

EXPECTED LEARNING OUTCOMES

- Understand key insights from various natural science and social science disciplines regarding a) the human activities that are believed to be changing the global climate, b) the impacts that climate change is predicted to have for humans and the natural system, and c) the social forces that are fostering or inhibiting action to address climate change.
- Recognize the range of strategies to address climate change being used by individuals, nongovernmental actors, and governmental actors at the local, state, national, and international levels as well as the factors that contribute to or prevent their success.
- Demonstrate critical thinking and communication skills, including the use of counterfactuals, by writing a major research paper that requires using empirical evidence to assess theoretical claims about some aspect of the social science of climate change.

ESTIMATED STUDENT WORKLOAD

Student workload involves 120 hours for this 4-credit course. Class attendance requires 3 hours per week for 10 weeks (30 hours). This course also requires approximately 3 hours per week of reading (30 hours). The plagiarism assignment will require 1 hour. Assignment 1 on Graphing local climate trends will require 1 hour. Assignment 2 on "What drives CO2 emissions?" will require 2 hours. Assignment 3 on "Different things we believe" will require 4 hours. The response papers will require 8 hours each (16 hours). The 2 drafts of the research paper, writing the research paper, and preparing for the Symposium presentation will require approximately 36 hours during the course of the term, much of which may fall during the last half of the term.

Class element	Percentage	Hours
Participation (including class attendance)	10%	30
Reading	0%	30
Assignment: Plagiarism assignment (required but ungraded)	0%	1
Assignment 1: Graph: “Local Climate Trends”	5%	.25
Assignment 2: What drives CO2 emissions?	15%	2.75
Assignment 3: Different things we believe	15%	6
Response paper: due on student-specific dates assigned via Canvas	15%	10
Final research paper (draft 1: 5%; draft 2: 10%; final paper: 25%)	40%	40

Class participation (10%)

Attendance and active class participation is required. This is a seminar-type class and I expect all of you to come in having done ALL the readings and taken time to think about them. That takes more work up front but everyone in the class learns more this way. Let's all learn from each other, rather than all learning from the professor.

Plagiarism assignment – absolutely required but no points (0%)

Read links in Canvas assignment, my plagiarism policy (below), and come in with any questions.

Assignment 1: Graphing “Local Climate Trends – Evidence of climate change yet?” (5%)

Instructions on Canvas will guide you through generating a graph of climate change at a local level. *Assignment described on Canvas.*

Assignment 2: Short analysis of “What drives CO2 emissions?” (15%)

I will provide you with graphs depicting the relationship of countries’ CO2 emissions to their population, affluence, and technology. *Assignment described on Canvas.*

Assignment 3: Essay: “Different things we believe” (15%)

Write a 1,000 word essay explaining the differences in how we use the word “believe” in religious, political, and scientific setting. *Assignment described on Canvas.*

Response paper (15% of grade) – 1200 word limit

Each student will write 1 response paper covering ALL readings for one class session. Each student will be required to help lead discussion for that session. Response papers can be no more than 1200 words and should:

- Section 1: Identify **at least 3 points of agreement or disagreement** across at least 3 readings (use readings from previous classes if there are less than 3 readings for your assigned class session). Show how all 3 articles comment on the overarching point. For example, show how 3 articles take on whether “mitigation is an inadequate solution to climate change,” even if one argues for adaptation, another argues for geo-engineering, and another argues for a carbon tax (those still relate to how to respond to failed mitigation).
- Section 2: Re-read the articles you summarize and identify TWO strategies the articles use that convinced you of their argument. Identify strategies of argumentation that authors use well or poorly. So, for example, you might say that “providing good graphics is convincing” and then point out how the two articles you found convincing used good graphics and the one that did not convince you had no graphics.

Grading criteria: quality of structure of paper, clarity of argument, demonstrated understanding of readings, depth of thought regarding the claims and how to use them to develop your own.

Final research paper (40% total: 25% for Final Paper plus 5% and 10% for drafts 1 and 2 – see below)

15-20 page research paper that follows one of the two options outlined in the “Final Paper Requirements” page (provided separately).

Two drafts to help you build toward the final paper

Draft 1 (due in Week 6) involves a 1st draft that includes a clear statement of the research question and identifies a bibliography of at least 10 relevant scholarly sources. Draft 2 (due in Week 8) requires, as a minimum, providing evidence of the variation or changes that your paper will explain. You must also include some initial set of variables that you will evaluate to see if they explain the changes you have identified. You are encouraged, but not required, to make this a full draft of the paper that includes all the elements that will be in the final paper.

Grading criteria: quality of structure of paper, clarity of argument, good use of theoretical literature, good research uncovering literature not provided by professor, and good analysis of empirical material.

Symposium presentation (required but no credit)

The second to last day of the term, each student will present the findings of their final paper to an in-class “Symposium on the Science and Politics of Climate Change.” Presentations will last no more than 5 minutes, with the goal of making the insights from your paper accessible to other students and the public.

HOW GRADES WILL BE DETERMINED

Assignment of final grades: Students will receive grades based on their grades for each assignment, the percentage weights given in the table above, and the following criteria:

- A+: if given at all, given to 1 or 2 students whose performance stands out as significantly stronger than all other students in the course
- A: all assignments completed in ways that demonstrate a strong and nuanced understanding of almost all course concepts and the ability to clearly connect theories from the course to empirical evidence
- B: all assignments completed in ways that demonstrate a solid understanding of most course concepts and the ability to adequately connect theories from the course to empirical evidence
- C: completed assignments demonstrate only a basic understanding of course concepts and/or one or more assignments missing
- D: missing many assignments and completed assignments demonstrate little understanding of material covered
- F: assignments completed account for less than 80% of total grade.

Expected distribution of grades: ~20% As, ~35% Bs, ~35% Cs, ~7% Ds, ~3% Fs.

COURSE SCHEDULE AND ASSIGNMENTS

(Week 1 - Tuesday) Introduction

No readings. Come to class prepared to answer the following questions:

- What DON'T you know about climate change?
- What DO you know about climate change?
- What do you want to learn in this course?

(Week 1 - Thursday) Climate change: basic science

Assignment "Plagiarism" due by end of week 1: Complete online readings regarding plagiarism!

- (Kolbert 2015b)
- (Kolbert 2015a)
- (AAAS Climate Science Panel 2013)
- Watch videos from (U.S. National Science Foundation 2011): The US NSF is "an independent federal agency created by Congress in 1950 'to promote the progress of science.'"

(Week 2 - Tuesday) Climate change: impacts

*Assignment 1 – due by midnight of Tuesday so I can organize for Thursday's class
Graphing local climate change. Assignment described on Canvas.*

- (Intergovernmental Panel on Climate Change 2018)
- **Impacts in Oregon:** (State of Oregon 2010)
- **Impacts in the US:** (U.S. Global Change Research Program 2018)
- (Kristof 2018)
- (Rytz 2018)

(Week 2 - Thursday) Climate change: drivers -- population

*Assignment RESPONSE PAPER: due on DIFFERENT DATES FOR EACH STUDENT.
Your exact due date is available on Canvas, under assignments.*

- (Ehrlich and Holdren 1971)
- (Waggoner and Ausubel 2002)
- (Mitchell 2011)
- (Feng et al. 2015)

(Week 3 - Tuesday) Climate change: drivers -- affluence and technology

- (Conca et al. 2001)
- (Kysar and Vandenberg 2008)
- (Galiana and Green 2009)

(Week 3 - Thursday) Climate change impacts -- guest lecture

Guest lecturer: Prof. Mark Carey, University of Oregon, Director of Environmental Studies

*Assignment 2 – due by start of class
Short analysis paper: "What drives CO2 emissions?" Assignment described on Canvas.*

- (Carey and Moulton 2018)
- (Carey et al. 2016)

(Week 4 - Tuesday) Ethics and climate change

- (Pope Francis 2015)
- (Welby 2017)
- (Gardiner 2006)

(Week 4 - Thursday) What of the science should we (and do we) believe? Part 1

- **How do we learn about the science?** (Getler 2012)
- (Boykoff and Boykoff 2004)
- **Who believes the science?** (Dunlap and McCright 2008)

(Week 5 - Tuesday) What of the science should we (and do we) believe? Part 2

*Assignment 3 – due by start of class
Essay: "Different things we believe." Assignment described on Canvas.*

- **Why should we believe the science and which scientists should we believe?** (Anderegg 2010)
- **What do you believe and why?** (Leiserowitz 2009) THINK ABOUT: Which "6 Americas" group do you fit into (even if you aren't an American)?

- (Hoffman 2012)

(Week 5 - Thursday) Economics and climate change

- (Helm 2012)
- (McGrath and Bernauer 2019)
- (White House Council of Economic Advisers 2014)
- (Reuters 2014)
- (Economist 2019)

(Week 6 - Tuesday) Psychology and climate change

- (Winerman 2014)
- (Weber 2010)
- (Gifford 2011)
- (Stoknes 2017)

(Week 6 - Thursday) Sociology and climate change

First Draft of Paper – due by start of class. Assignment described on Canvas.

- (Nagel et al. 2010)
- (Cialdini 2003)
- (Cialdini and Schultz 2004)

(Week 7 - Tuesday) Responses to climate change: the local level – Guest lecture Prof. Jennifer Hadden, U-Maryland

- **Individual actions:** (Javeline et al. 2019)
- **NGO and Civil Society:** (Hadden 2014)
- **Multinational Corporations actions:** (Mills 2009)

(Week 7 - Thursday) Law and climate change – Guest lecture Coreal Riday-White, Our Children’s Trust

- (Democker 2014)
- (Wood 2013)

(Week 8 - Tuesday) Responses to climate change: the international level

- (Plumer and Popovich 2017)
- (Dimitrov 2010)
- (Dimitrov 2016)
- (Victor 2015)

(Week 8 - Thursday) Did the Kyoto Protocol influence carbon dioxide emissions? Will Paris do any better?

Second Draft of Paper – due by start of class. Assignment described on Canvas.

- (Clark 2012)
- (Kumazawa and Callaghan 2012)
- (Andresen 2014)
- (Keohane and Oppenheimer 2016)

(Week 9 - Tuesday) Getting Cap and Trade in Oregon – Guest lecture by Taylor Smiley Wolfe, former Policy Director for Oregon House Speaker Tina Kotek

- **Cap and Trade:** (Durning 2009)
- **Carbon Taxes:** (Plumer 2013)
- **Adaptation:** (Parry et al. 2009)
- (Pielke et al. 2007)
- **Geoengineering:** (Readfearn 2014 (August 3))
- (Victor et al. 2009)
- (Jamieson 2013)

(Week 9 - Thursday) THANKSGIVING

No lecture Thanksgiving

(Week 10 - Tuesday) “Present Your Research Symposium”

We will hold an in-class “Symposium on the Science and Politics of Climate Change.” You will each have 5 minutes to present the findings of your final paper. I will try to arrange for faculty members and others to be present for the presentations.

(Week 10 - Thursday) Wrap-up discussion

Final Paper due on last day of class at 11:59 pm!!! Assignment described on Canvas.

COURSE POLICIES

Late assignments

Help me help you pass the course by turning in all assignments on time. Late assignments lose 2 points/day: assignments received before midnight of the 1st day after being due lose 2 of 100 points, before midnight of the 2nd day 4 points, etc. Turn in all assignments, even if late. Missing ANY assignment makes passing this course difficult.

Grade complaints

Contested grades will first be read by a second GTF. If the second GTF assigns the same grade, no grade change will occur. If the second GTF assigns either a higher or lower grade, the professor will read the assignment and independently assign the final grade, which can be either higher or lower.

Academic Integrity, Plagiarism, Fabrication, Cheating, and Misconduct:

By enrolling in this course, you agree to abide by the University's Student Conduct Code. You are REQUIRED to read and understand the webpages linked on Canvas for the Plagiarism Assignment by Thursday of week 1.

Everything in your assignments must be your own work. The fact that you are ignorant of these policies or did not intend to cheat or plagiarize will NOT be considered a legitimate defense. Raise questions you have with the professor before problems arise. I will flunk all students who plagiarize and will report them to University authorities. Unfortunately, I have done so two or three times in the past few years.

Creating an environment conducive to learning

Civility and tolerance: My primary goal as a faculty member is to create an inclusive learning environment in which *everyone* feels safe to express their views, whatever they may be, so long as they do so in ways that are respectful of others. In light of the divisions that became visible in the 2016 election, I seek to create a learning environment in which BOTH supporters and opponents of our current President can express their political opinions freely. One cannot identify a person's political views by race, religion, attire, gender, favorite music, or skateboard type: in 2016, at least 10% (and often 30%) of *every demographic group* voted the opposite of others in that group <http://www.nytimes.com/interactive/2016/11/08/us/politics/election-exit-polls.html> Relatedly, if you have a preferred gender pronoun, please let me know what it is.

Being the instructor for a class gives one considerable power (directly over grades and in more subtle ways). Therefore, I seek to be cautious in expressing my views and in responding to students expressing theirs. I will try to keep my political biases in check so EVERYONE in the class feels safe expressing their views. My biases will come through at points – I apologize for that and *encourage you to call me out* (in a respectful way) when they do. I invite each of you to express your views, whatever they may be, in a way that is respectful of all people, whether they are in our classroom or not. I encourage you to disagree with me and to challenge me to distinguish relatively-objective theories and facts from more-subjective values. For me, democracy consists of opinions being expressed with enough clarity and respect that I change my mind and, perhaps, I also change the minds of others. *Please help me create a classroom in which mutual and inclusive respect extends to all people regardless of who they are or what their political views are, and in which all express their own views respectfully.*

Students with disabilities:

Both I as a professor and the University of Oregon are committed to creating inclusive learning environments. Please notify me if any aspects of my instruction methods or course design create barriers to your participation. If you have a disability, I encourage you to contact Accessible Education Center in 164 Oregon Hall at 346-1155 or uoaec@uoregon.edu If you have already been in contact with Accessible Education Center and have a notification letter, provide me with a statement from Accessible Education Center in week 1 so we can make appropriate arrangements. Note that University policy requires I receive an AEC notification letter before providing testing accommodations (see <http://aec.uoregon.edu/students/current.html>).

Prohibited Discrimination and Harassment Reporting

I personally strongly support the University's policy on discrimination and harassment, as reflected in the following statement from the University of Oregon at <https://titleix.uoregon.edu/syllabus> -- ***all referenced materials can be accessed from that website.***

I am a Student Directed Employee. For information about my reporting obligations as an employee, please see <https://titleix.uoregon.edu/employee-reporting-obligations> Students experiencing any form of prohibited discrimination or harassment, including sex or gender based violence, may seek information on <https://safe.uoregon.edu> <https://respect.uoregon.edu> <https://titleix.uoregon.edu>, or <https://aaeo.uoregon.edu> or contact the non-confidential Title IX office (541-346-8136), Office of Civil Rights Compliance office (541-346-3123), or Dean of Students offices (541-346-3216), or call the 24-7 hotline 541-346-SAFE for help.

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at <https://safe.uoregon.edu>. To get help by phone, a student

can also call either the UO's 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at <https://respect.uoregon.edu> or <https://aaeo.uoregon.edu> or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help. As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at Discrimination & Harassment. Specific details about confidentiality of information and reporting obligations of employees can be found at <https://titleix.uoregon.edu>. *Mandatory Reporting of Child Abuse*: UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. This statement is to advise you that your disclosure of information about child abuse to a UO employee may trigger the UO employee's duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting at <https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect>

REFERENCES

- AAAS Climate Science Panel. 2013. *What we know: the reality, risks, and response to climate change*. Washington, DC: American Association for the Advancement of Science.
- Anderegg, William R. L. 2010. "Diagnosis Earth: the climate change debate." *Thought & Action*:23-36.
- Andresen, Steinar. 2014. "The climate regime: a few achievements but many challenges." *Climate Law* 4:21-9.
- Boykoff, Maxwell T., and Jules M. Boykoff. 2004. "Balance as bias: global warming and the U.S. prestige press." *Global Environmental Change* 15 (2):125-36.
- Carey, Mark, M. Jackson, Alessandro Antonello, and Jaclyn Rushing. 2016. "Glaciers, gender, and science: A feminist glaciology framework for global environmental change research." *Progress in Human Geography* 40 (6):770-93.
- Carey, Mark, and Holly Moulton. 2018. "Adapting to Climate Hazards in the Peruvian Andes." *Current History* 117 (796):62-8.
- Cialdini, Robert B. 2003. "Crafting normative messages to protect the environment." *Current Directions in Psychological Science* 12 (4):105-9.
- Cialdini, Robert B., and Wesley Schultz. 2004. *Understanding and motivating conservation via social norms (Report prepared for the William and Flora Hewlett Foundation)*. Tempe: Arizona State University.
- Clark, Duncan. 2012. *Has the Kyoto protocol made any difference to carbon emissions?* Available at: <http://www.theguardian.com/environment/blog/2012/nov/26/kyoto-protocol-carbon-emissions>. Most recent update: 26 November. Accessed on.
- Conca, Ken, Thomas Princen, and Michael F. Maniates. 2001. "Confronting consumption." *Global Environmental Politics* 1 (3):1-10.
- Democker, Mary. 2014. "In the public trust: building case law for a climate in crisis." *Oregon Quarterly* Autumn:30-7.
- Dimitrov, Radoslav S. 2010. "Inside UN Climate Change Negotiations: The Copenhagen Conference." *Review of Policy Research* 27 (6):795-821.
- . 2016. "The Paris Agreement on Climate Change: Behind Closed Doors." *Global Environmental Politics* 16 (3):1-11.
- Dunlap, Riley E., and Aaron M. McCright. 2008. "A widening gap: Republican and Democratic views on climate change." *Environment* 50 (5):26-35.
- Durning, Alan. 2009. *Cap and trade 101: a federal climate policy primer*. Seattle, WA: Sightline Institute.
- Economist. 2019. "Climate change and trade agreements: Friends or foes."
- Ehrlich, Paul R., and John P. Holdren. 1971. "Impact of population growth." *Science* 171 (3977):1212-7.
- Feng, Kuishuang, Steven J. Davis, Laixiang Sun, and Klaus Hubacek. 2015. "Drivers of the US CO2 emissions 1997-2013." *Nature Communication* 6.
- Galiana, Isabel, and Christopher Green. 2009. "Let the global technology race begin." *Nature* 462 (3):570-1.
- Gardiner, Stephen M. 2006. "A perfect moral storm: intergenerational ethics and the problem of moral corruption." *Environmental Values* 15 (3):397-413.

- Getler, Michael. 2012. "Climate change creates a storm: summary of PBS NewsHour controversy." *PBS Ombudsman Blog*.
- Gifford, Robert. 2011. "The dragons of inaction: psychological barriers that limit climate change mitigation and adaptation." *American Psychologist* 66 (4):290-302.
- Hadden, Jennifer. 2014. "Explaining Variation in Transnational Climate Change Activism: The Role of Inter-Movement Spillover." *Global Environmental Politics* 14 (2):7-25.
- Helm, Dieter. 2012. "The Kyoto approach has failed." *Nature* 491:663-5.
- Hoffman, Andrew J. 2012. "Climate science as culture war." *Stanford Social Innovation Review* 10 (4):30-7.
- Intergovernmental Panel on Climate Change. 2018. *Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C* Geneva: Intergovernmental Panel on Climate Change.
- Jamieson, Dale. 2013. "Some whats, whys and worries of geoengineering." *Climatic Change* 121:527-37.
- Javeline, Debra, Tracy Kijewski-Correa, and Angela Chesler. 2019. "Does it matter if you "believe" in climate change? Not for coastal home vulnerability." *Climatic Change* 155 (4):511-32.
- Keohane, Robert O., and Michael Oppenheimer. 2016. "Paris: beyond the climate dead end through pledge and review?" *Politics and Governance* 49 (3):142-51.
- Kolbert, Elizabeth. 2015a. "If we burned all the fossil fuel in the world." *New Yorker*.
- . 2015b. "The weight of the world: can Christiana Figueres persuade humanity to save itself?" *New Yorker*.
- Kristof, Nicholas. 2018. "Swallowed by the sea." *New York Times* 2018-01-19.
- Kumazawa, Risa, and Michael S Callaghan. 2012. "The effect of the Kyoto Protocol on carbon dioxide emissions." *Journal of Economics and Finance* 36 (1):201-10.
- Kysar, Douglas A., and Michael P. Vandenbergh. 2008. "Climate change and consumption." *Environmental Law Reporter* 38 (12):10825-33.
- Leiserowitz, Anthony A. 2009. "Global warming's six Americas: an audience segmentation analysis." Center for American Progress.
- McGrath, Liam F., and Thomas Bernauer. 2019. "Could revenue recycling make effective carbon taxation politically feasible?" *Science Advances* 5 (eaax3323):1-8.
- Mills, Evan. 2009. *From risk to opportunity: insurer responses to climate change*. Boston: Ceres.
- Mitchell, Ronald B. 2011. "Graphs of global trends in I, P, A, and T." Eugene, OR: University of Oregon.
- Nagel, Joane, Thomas Dietz, and Jeffrey Broadbent, eds. 2010. *Workshop on sociological perspectives on global climate change*. Washington, DC: National Science Foundation.
- Parry, Martin, Nigel Arnell, Pam Berry, David Dodman, Samuel Fankhauser, Chris Hope, Sari Kovats, Robert Nicholls, David Satterthwaite, Richard Tiffin, Tim Wheeler, Jason Lowe, and Clair Hanson. 2009. "Adaptation to climate change: assessing the costs." *Environment* 51 (6):29-36.
- Pielke, Roger, Gwyn Prins, Steve Rayner, and Daniel Sarewitz. 2007. "Climate change 2007: Lifting the taboo on adaptation." *Nature* 445 (7128):597.
- Plumer, Brad. 2013. "Seven thrilling facts about carbon taxes from the CBO." *Washington Post Wonkblog*.
- Plumer, Brad, and Nadja Popovich. 2017. *Here's how far the world is from meeting its climate goals*. Available at: <https://www.nytimes.com/interactive/2017/11/06/climate/world-emissions-goals-far-off-course.html> Most recent update. Accessed on.
- Pope Francis. 2015. "Encyclical letter of the Holy Father Francis on care for our common home." Rome: The Vatican.
- Readfearn, Graham. 2014 (August 3). "Geoengineering the Earth's climate sends policy debate down a curious rabbit hole." *Guardian (newspaper)*.
- Reuters. 2014. "Act now on climate change or see costs soar, White House says." *Reuters*.
- Rytz, Matthieu. 2018. *Sinking islands, floating nation*. Available at: <https://www.nytimes.com/2018/01/24/opinion/kiribati-climate-change.html>. Most recent update. Accessed on.
- State of Oregon. 2010. "Oregon climate assessment report: executive summary." Salem, OR: State of Oregon.
- Stoknes, Per Espen. 2017. "How to transform apocalypse fatigue into action on global warming." *TED*.
- U.S. Global Change Research Program. 2018. *Fourth National Climate Assessment (Volume II: Impacts, Risks, and Adaptation in the United States)*. Washington, DC: U.S. Global Change Research Program.
- U.S. National Science Foundation. 2011. *What science is telling us about climate change - videos*. Washington, DC: U.S. National Science Foundation.
- Victor, David G. 2015. "Embed the social sciences in climate policy." *Nature* 520:27-9.

- Victor, David G., M. Granger Morgan, Jay Apt, John Steinbruner, and Katherine Ricke. 2009. "The geoengineering option: A last resort against global warming?" *Foreign Affairs* 88 (2):64-76.
- Waggoner, Paul E., and Jesse H. Ausubel. 2002. "A framework for sustainability science: A renovated IPAT identity." *Proceedings of the National Academy of Sciences* 99 (12):7860-5.
- Weber, Elke U. 2010. "What shapes perceptions of climate change?" *WIREs Climate Change* 1:332-42.
- Welby, Justin. 2017. *Our moral opportunity on climate change*. Available at: <https://www.nytimes.com/2017/11/03/opinion/faith-climate-change-justin-welby.html>. Most recent update. Accessed on.
- White House Council of Economic Advisers. 2014. "The cost of delaying action to stem climate change." Washington, DC: US President.
- Winerman, Lea. 2014. "Climate change communication heats up." *Monitor on Psychology* 45 (6):30-5.
- Wood, Mary Christina. 2013. *Nature's trust: environmental law for a new ecological age (Chapter 6 "Atmospheric trust litigation across the world")*. Cambridge, UK: Cambridge University Press.