

HIST 007: THE LITTLE ICE AGE

VOLCANOES AND CRISES IN THE PRE-MODERN WORLD



Essential Information:

Classes: Tuesdays and Thursdays, 2:00-3:15 PM EST, REI 502

Office Hours: Tuesdays, 11:00 AM-1:00 PM EST, on Zoom or in ICC 610.

Professor: Dr. Dagomar Degroot. Email: dd865@georgetown.edu. Web: DagomarDegroot.com.

Course Description:

Human greenhouse gas emissions are rapidly warming the Earth, and thereby undermining the foundation of modern societies. Yet although today's climate crisis has no precedent, Earth's climate has never been stable. Natural forces long spurred preindustrial climate changes that may not have approached the magnitude of present-day warming, but still had profound consequences for human populations the world over.

In this seven-week module in the Core Curriculum Pathway, we will explore the best-studied of these climate changes: the erratic cooling that lingered across much of the world from the thirteenth through the nineteenth centuries and is today called the "Little Ice Age." We will

discuss how volcanic eruptions and fluctuations in solar activity lowered Earth's average temperature, and how scholars have tracked these changes through time. We will investigate the human consequences of the Little Ice Age, and find lessons for our warmer future. In the process, we will learn about the discipline of environmental history, which draws from both the sciences and the humanities to explore how humanity has altered, and been altered by, the nonhuman world.



Course Goals:

Like other courses offered by the Department of History, this course will help you:

1. Gain a deeper appreciation of the nature and practice of history as a discipline, and as the study, based on evidence, of human experiences, interactions, and relationships as they change over time.
2. Learn that history does not consist of a simple succession of self-evident facts, and that evidence-based interpretation and analysis are central to all historical work.
3. Hone reading, writing, and oral communication skills.

4. Develop your capacity to think historically: to situate events and developments in their historical context for the purpose of critical analysis.
5. Expand your ability to engage with complex causal analysis, and to articulate arguments that integrate supporting evidence and analytical commentary.
6. View the world from perspectives other than your own.

This course in particular will also help you:

1. Appreciate the significance of, and deep context for, today's manmade climate change.
2. Understand complex relationships between climate change and humanity.
3. Broaden your appreciation for diverse scholarly disciplines, their distinct ways of deciphering the past, and how they interact.
4. Learn why scholars disagree, how they debate, and how scholarship comes to change.

Core Pathways:

This module is part of the Core Pathways Initiative. As a part of the initiative, the course follows a 7.5-week A/B schedule that pairs with another course in the latter half of the semester. By enrolling in the module, you are also part of a larger learning community of faculty members, students, and other campus/community partners to engage with the complex factors and challenges presented by climate change.

The Core Pathway Initiative seeks to integrate differing perspectives and disciplines in a conversation around the many issues related to climate change. To foster that integration, and as part your participation in the initiative, over the course of each semester there will be three "integrative days" that bring together the entire Pathway (students and faculty) to bring to bear collective experiences on facets of the broader thematic topic of climate change.

The integrate days for this semester will on October 13th, October 18th, and December 14th. *You will not come to your regular classroom on those days.* More instructions will follow.

Breakdown:

Participation:	20%
Ship Logbook Essay:	20%
"Tipping Points" Article:	30%
Test:	30%

Evaluation:

You will submit all assignments on Canvas. You will be able to access additional assignment resources on our course homepage.

Participation:

You will earn half of your participation grade *just for attending class*. The other half will reflect the quantity and especially the quality of your comments. If we break into groups for debates and primary source exercises, I will evaluate your group participation. If you want top grades, I strongly encourage you to keep notes from your readings. You should aim for at around two pages of single-spaced notes per week.

Ship Logbook Essay:

Write a five-page essay that uses peer-reviewed *secondary* sources – including those you’ll read in this course – to analyze several pages of a *primary* source. The source: **one** ship logbook written by English adventurer John Davis during a sixteenth-century expedition in search of a “Northwest Passage” through the Canadian Arctic to Asia. You can find the source on our class website.

Tell me:

1. What does that primary source tell us about weather?
2. Can we link that weather to climate change?
3. What does the source reveal about human responses to weather?
4. Ultimately, what does it suggest about relationships between climate change and human history?

Be sure to include a thesis. In other words, try to come up with an argument that can be debated, and explain how you will prove that argument. We will discuss all of this in class.

“Tipping Points” Article:

Visit ClimateTippingPoints.com. Use the tools listed on the site to write a short (roughly 1,000-word) article that explains the consequences of *past* climate change (cooling or warming) in a local community, such as an American county. **Tell me which community you have in mind before writing your article!**

Your essay will inform your reader: 1) How climate change has affected a local environment; 2) How we know; and 3) How the local environmental consequences of climate change have influenced peoples’ lives.

You can bring in additional information from newspapers or scholarly articles. You should include maps or graphs that visualize the impact of climate change on a particular place, so long as you are able to explain how they were made. With your consent, I will edit the finest articles and publish them on our website. You may remain anonymous if you choose.

There are already many articles on the website that should give you an idea of what I’m looking forward. I encourage you to study a new location, one that isn’t yet on the website.

For further instructions, have a look at the “Tipping Points” page on your course website. We’ll also discuss how to write this article in class.

Formatting your Essays:

Make a title page! Your title page should have your assignment title in large, centered font. Your name, your class name, my name, and the date should be in a smaller font at the bottom right of your title page. **Note that your title page is not included in your page count.**

Your papers should be written in size 12, Times New Roman font. They should be double-spaced. You should use standard margins (one inch on all sides of the document). Number your pages (at the top right).

Use formal academic writing (no contractions or colloquialisms).

Cite all sources using Chicago Style formatting, which means that you need footnotes **and** a bibliography (**note that the bibliography does not add to your page count**). Click [here](#) to find out how you do this. You should always cite at the end of a quotation. Otherwise, include all citations in a footnote at the end of a paragraph. You do not need to cite every sentence. Your footnotes should be numbered sequentially and they should be single-spaced.

Grading Criteria:

Each of these criteria will be worth approximately a third of your grade:

Clarity:

Are you using words that appropriately and formally express your meaning? Are your points sourced correctly? Do your sentences precisely express your meaning, and are they grammatically correct? Is there a clear thesis that presents an argument and outlines how that argument will be defended? Is there a coherent organization that culminates in a conclusion that references the thesis?

Research:

Are your secondary sources serious works of scholarship, and are they relevant to your argument? Do your primary sources illuminate the issue you are investigating, and to what extent? Are those primary sources relevant to your argument, and do you present them in the context of your secondary sources?

Ideas:

How creative and nuanced are your arguments? Are you merely repeating the claims of other scholars, or are you evaluating them in the context of other arguments and concepts? To what extent can you develop fresh ideas?

Value of Letter Grades:

A = 95-100
 A- = 90-94
 B+ = 87-89
 B = 83-86
 B- = 80-82
 C+ = 77-79
 C = 73-76
 C- = 70-72

ETC.

Meaning of Letter Grades:

Courtesy of Professors Amy Leonard, Howard Spindelov, and Alan Karras:

A Outstanding. We've looked and looked for errors and found perhaps a few lapses in grammar, but they are insignificant because you raised an interesting and important argument. You followed all the directions of the assignment and wrote in a clear and fluid manner. You cited your sources and garnered good evidence for your argument. Usually no more than 10% of students receive an A as a final grade.

A- Excellent. You show a superb mastery of the materials. Your paper has a clear argument but something is just a little bit off, and consistently so. You need some tightening of argumentation, for example, or you should have pushed your data that extra step. Or, there are some writing flaws in your paper or, your organization might not be perfect and obscures your otherwise fine argument. Nevertheless, an A- is a very good grade.

B+ Very good. You've clearly learned the material and there are no major errors. But your answer is lacking in originality, clarity, or sparkle. In some cases, this grade can be for a brilliant essay with significant and frequent writing flaws.

B Good. You have a solid argument but it is not fully developed. Your argument is plausible but you need more supporting evidence to make a convincing case. Or, you've given the right evidence but haven't articulated the argument. Or in an exam, for example, the chronology is confused or in a paper, there are problems with annotation and the use of sources. These are not fatal.

B- Pretty good. Your answer is solid, but incomplete. You end the paper or essay where you should begin it. Your essay has the right elements but they are in the wrong order. Your argument is likely missing something and might also have some problems in expression. I might have to strain to figure out what you want to say but once I do, it makes sense. This strain suggests that you could have corrected the problem with more attention to your argument.

C+ Fair. It's not obvious that you've done the readings and listened to the lectures. What you say might be true, but it is unclear since your argument has many writing problems and a reader has to work overtime to figure out what you mean. Your argument, though plausible, is not

especially deep or insightful. The paper has errors and an imbalance between generalizations and evidence. There are problems with annotation that suggests attention has not been paid to the detail and mechanics of writing a paper.

C Acceptable, but...

- You might have grasped the basic idea, but have missed the main focal points of the questions and/or;
- There are omissions or disturbing errors in fact or your logic is flawed and/or;
- Although basically correct, your argument has no supporting evidence and/or;
- Your writing is obscuring your argument, your notes are inadequate, and your credibility is not so good either.

C- Still acceptable, but here are a greater number of problems and/or a fewer number of good points than needed to earn you a “C.” In other words, more of the C problems (mentioned above) are true in a C- paper.

D+ Barely acceptable. There are serious errors, omissions, or inconsistencies here, but the light of understanding somehow, occasionally, flickers through.

D Just barely acceptable. Your answer is so vague that it's hard to find something good to say. Your writing problems also are pretty significant.

D- Passing. Be grateful your instructors are nice people with a great deal of patience. Perhaps you need to spend more time on your answers/papers next time! Asking for help might also be a good idea.

F Don't think so. There's not even enough here about which to be patient. At least you will get some credit for your effort, which is better than the zero you would have gotten for leaving the answer blank.

Important Notes:

Course Resources:

There are three resources you should familiarize yourself with in this course. The first is this syllabus. Before asking me a question about the course, please consult the syllabus.

The second resource is our Canvas page. On the page, you'll be able to submit your assignments and download any readings you can't access through our library resources. You'll also be able to access our office hours.

The third resource in our course website (you can find a link on the first page of this syllabus). The website will host a regularly updated version of the syllabus, alongside resources for completing your major essay.

House Rules:

You may use your laptops or tablets to take notes or to look up information in class. However, you may **not** use your phones, and you may **not** record your professor's lectures. Please do not access social media in class; it's distracting both for you and for your classmates.

Do not show up late to class. This detracts from your learning and disturbs your classmates. If you are repeatedly late, I may lower your participation grade without informing you.

Submitting Assignments:

All assignments should be submitted on Canvas, and all are due **at midnight on the due date**. Late assignments will receive a 2%/day penalty. I will not grade assignments that are more than one week late, unless you have negotiated an extension with me (see below).

Extensions:

You may ask me for a short extension *before an assignment is due*. I will likely grant your request if you A) give me a convincing explanation for why you're late; B) give me a roadmap that outlines how you will complete your assignment; and C) propose a new due date.

I will only grant requests for an extension on or after the assignment due date in exceptional circumstances (a serious illness, for example). Be sure to contact your deans in case of absences, difficulties meeting due dates, and other problems.

Missing Assignments:

If you fail to hand in an assignment, you will receive a zero for that assignment. Note that you will not necessarily receive a message from me that asks about your missing assignment; it's up to you to keep track of the due dates in this course.

Missing Class:

You have only **one** excused absence per term. If you think that you will need to miss several classes for significant and predictable reasons (such as religious observances, or University-sponsored athletic events), you must inform me of the specific circumstances and dates **at the start of the term**.

I will try to accommodate requests for a reasonable number of such absences. You must make sure that the details of the situation are clear to me early on, so that you may have a chance to enroll in a different class if I cannot accommodate your circumstances. Note that the short length of this module will make it hard for you to do well if you must miss more than two classes.

You receive a grade for every class you attend. If you do not attend a class and you have already had your one excused absence, you will receive a grade of **zero** for the class you missed. This will significantly lower your overall grade.

Academic Honesty:

Plagiarism is not just about copying someone else's writing. *Any time* you present ideas without correctly citing them, you are committing plagiarism. This is the most serious intellectual offense you can commit at a university, so your professors – me included – take it very seriously.

It is **your** responsibility to familiarize yourself with the [Georgetown University Undergraduate Honor System](#). It is your professor's duty to refer academic misconduct – including plagiarism – to the Georgetown Honor Council. If the Council decides that you have plagiarized on an assignment, you will fail that assignment – and you may fail the course.

Beyond the Course:

I am committed to supporting survivors of sexual misconduct, which includes relationship violence, sexual harassment and sexual assault. However, university policy requires faculty to report any disclosures about sexual misconduct to the Georgetown Title IX Coordinator, who directs the University's response to sexual misconduct.

Georgetown has a number of fully confidential professionals who provide support and assistance to survivors of sexual assault and other forms of sexual misconduct. To connect with those professionals – including to report an incident – and to review our university policies, you can visit: <https://sexualassault.georgetown.edu>.

Schedule:

- *This schedule may be changed by your professor. You will usually have at least one week's notice.*
- *Please complete all weekly readings by Tuesday.*
- *I will upload readings on Canvas that have not been published yet or are too difficult to find. You can find all other readings by visiting library.georgetown.edu. Usually, HoyaSearch will do the trick. However, you may have to visit Google Scholar (just enter it in Databases), and search for a publication there. Alternatively, you may have to enter the title of the journal in which an article appears (by selecting Journals), visit the journal website, and then find the article title in the journal website.*

Week 1: Introducing the History of Climate and Society

October 20

Readings:

1. Degroot, Dagomar et al. “The History of Climate and Society: A Review of the Influence of Climate Change on the Human Past.” *Environmental Research Letters*. Available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ac8faa>

Week 2: From Medieval Warmth to Little Ice Age

October 25

October 27

Readings:

1. Büntgen, Ulf, and Nicola Di Cosmo, “Climatic and environmental aspects of the Mongol withdrawal from Hungary in 1242 CE.” *Scientific Reports* 6 (2016): 25606.
2. Pinke, Zsolt et al., “Climate of doubt: A re-evaluation of Büntgen and Di Cosmo’s environmental hypothesis for the Mongol withdrawal from Hungary, 1242 CE.” *Scientific Reports* 7:1 (2017): 12695.
3. Guillet, Sébastien et al., “Climate response to the Samalas volcanic eruption in 1257 revealed by proxy records.” *Nature Geoscience* 10:2 (2017): 123–128.

Week 3: Depopulation and Destruction: The 14th and 15th Centuries

November 1

November 3

Readings:

1. Campbell, Bruce. “Panzootics, Pandemics, and Climate Anomalies in the Fourteenth Century.” *Beiträge zum Göttinger Umwelthistorischen Kolloquium* 2011 (2010): 177-215. Available at: <https://univerlag.uni-goettingen.de/handle/3/isbn-978-3-86395-016-3> (click on “view document” and scroll to page 177).
2. Ogilvie, Astrid, Lisa K. Barlow, and A. E. Jennings, “North Atlantic climate c. AD 1000: Millennial reflections on the Viking discoveries of Iceland, Greenland and North America.” *Weather* 55:2 (2000): 34-45.
3. Dugmore, Andrew J. et al. “Cultural Adaptation, Compounding Vulnerabilities and Conjunctures in Norse Greenland,” *Proceedings of the National Academy of Sciences* 109 (2012): 3658–63.

Week 4: Global Crisis? The 16th and 17th Centuries

November 8

November 10

Readings:

1. Koch, Alexander et al., “Earth system impacts of the European arrival and Great Dying in the Americas after 1492.” *Quaternary Science Reviews* 207 (2019): 13-36.

2. Parker, Geoffrey. "Crisis and catastrophe: the global crisis of the seventeenth century reconsidered." *The American Historical Review* 113:4 (2008): 1053-1079.
3. Huhtamaa, Heli, and Samuli Helama. "Distant impact: tropical volcanic eruptions and climate-driven agricultural crises in seventeenth-century Ostrobothnia, Finland." *Journal of Historical Geography* 57 (2017): 40-51.

Week 5: Climate Change and Conflict in the Little Ice Age

November 15: SHIP LOGBOOK ESSAY DUE

November 17

Readings:

1. Gao, C. et al., "Volcanic climate impacts can act as ultimate and proximate causes of Chinese dynastic collapse." *Communications Earth & Environment* 2 (2021): 1–11.
2. Degroot, Dagomar. "Blood and Bone, Tears and Oil: Climate Change, Whaling, and Conflict in the Seventeenth-Century Arctic." *American Historical Review* 127:1 (2022). DOI: <https://doi.org/10.1093/ahr/rhac009>.
3. Wickman, Thomas. "'Winters Embittered with Hardships': Severe Cold, Wabanaki Power, and English Adjustments, 1690–1710." *William & Mary Quarterly* 72:1 (2015): 57-98.

Week 6: Enduring and Exploiting the Little Ice Age

November 22

November 24: NO CLASS

Readings:

1. Degroot, Dagomar et al. "Towards a Rigorous Understanding of Societal Responses to Climate Change." *Nature* (March, 2021). DOI: doi.org/10.1038/s41586-021-03190-2.
2. De Souza, Jonas Gregorio et al., "Climate change and cultural resilience in late pre-Columbian Amazonia." *Nature ecology & evolution* 3:7 (2019): 1007-1017.
3. Xoplaki, Elena et al. "Modelling climate and societal resilience in the Eastern Mediterranean in the Last Millennium." *Human Ecology* 46:3 (2018): 363-379.

Week 7: Cultural Dimensions of Climate Change

November 29

December 1: TIPPING POINTS ARTICLE DUE

Readings:

1. Ray, Sugata. "Hydroaesthetics in the little ice age: Theology, artistic cultures and environmental transformation in early modern Braj, c. 1560–70." *Journal of South Asian Studies* 40:1 (2017): 1-23.

2. Williamson, Fiona. "The 'cultural turn' of climate history: An emerging field for studies of China and East Asia." *Wiley Interdisciplinary Reviews: Climate Change* 11:3 (2020): e635.

Week 8: Learning from the Little Ice Age

December 6: TAKE HOME TEST AFTER CLASS

Readings:

1. Chapter 7, "Achieving Durability," and Chapter 8, "Deploying Durability," in *If the Past Teaches, What Does the Future Learn?*, eds. John T. Murphy and Carole L. Crumley. Available at: <https://bookrxiv.com/index.php/b/catalog/view/32/71/278>.
2. Bauch, Martin. "Impacts of extreme events on medieval societies: Insights from climate history," in *Climate Extremes and Their Implications for Impact and Risk Assessment*, eds. J Sillmann, S. Sippel, and S. Russo. Available through Canvas.
3. Tubi, Amit et al., "Can we learn from the past? Towards better analogies and historical inference in society-environmental change research." *Global Environmental Change* 76 (2022): 102570.

December 14: INTEGRATIVE DAY