

HIST 007: THE LITTLE ICE AGE

VOLCANOES AND CRISES IN THE PRE-MODERN WORLD



Essential Information:

Lectures: Tuesdays and Thursdays, 2:00-3:15.

Professor: Dr. [Dagomar Degroot](#). **TA:** Maddie Bowen.

Professor's email: dd865@georgetown.edu. **TA's email:** mlb339@georgetown.edu.

Professor's Office Hours: Wednesdays, 1:00-3:00 in ICC 627.

TA's Office Hours: Tuesdays, 3:30-4:30, MUG in ICC.

Course Website: LIAmodule.weebly.com.

Course Description:

Human greenhouse gas emissions are today causing Earth's average temperature to rise more quickly than it has in the 300,000-year history of our species. Yet even before widespread industrialization set in, Earth's climate was never stable. Natural forces triggered preindustrial climate changes that may not have approached the magnitude of present-day warming, but still had profound consequences for societies 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 four required integrative moments 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 calendar below identifies the Integrative Days for the semester. Please plan all of your travel and semester plans accordingly to keep these dates in mind. For more information on the Pathway or questions about the initiative, visit www.corepathways.georgetown.edu or contact corepathways@georgetown.edu.

Core Pathways

Climate Change Spring 2020

| | | |
|----------------|----------------------|-----------------------------|
| Kickoff Dinner | First Day of Classes | Integrative Day (MANDATORY) |
| | Last Day of Classes | No Classes |

| WEEK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 TRANSITION WEEK | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | |
|------------------|--|------|------|------|-----|------|------|-------------------------|------------------------------------|------|------|------|------|-----|------|------|------|---------------------|
| Tuesday Session | | 1/14 | 1/21 | 1/28 | 2/4 | 2/11 | 2/18 | 2/25 | 3/3 | 3/10 | 3/17 | 3/24 | 3/31 | 4/7 | 4/14 | 4/21 | 4/28 | |
| Thursday Session | 1/9 | 1/16 | 1/23 | 1/30 | 2/6 | 2/13 | 2/20 | 2/27 | 3/5 | 3/12 | 3/19 | 3/26 | 4/2 | 4/9 | 4/16 | 4/23 | 5/8 | |
| | Spring Kickoff Dinner (5-7PM Monday, Jan 13th) | | | | | | | | Integrative Day Module B Begins | | | | | | | | | Module B Last Class |
| | Module A Begins | | | | | | | | Module A Ends Integrative Day | | | | | | | | | Final Exercise |

Breakdown:

| | |
|---------------------------|-----|
| Participation: | 30% |
| Ship Logbook Essay: | 20% |
| “Tipping Points” Article: | 20% |
| Final Test: | 30% |

Evaluation:

Participation:

You will earn half of your participation grades for attending class. Another half will reflect both 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 500-750 word) article that explains the consequences of *past* climate change (cooling or warming) in an American county. **Tell me which county you have in mind before writing your article!**

Your essay will tell 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.

We will discuss how to write the article in class. You must email me a PDF **and** a Word or Open Office version of your article, as well as separate attachments for all the images you used. I do not need a physical copy.

Final Test:

This 75-minute test consists of six short essay questions, of which you must answer three. I will give you many more details in class.

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?

Required Course Text:

Sam White, *A Cold Welcome: The Little Ice Age and Europe's Encounter with North America*. Cambridge, MA: Harvard University Press, 2017.

Important Notes:

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. You may not access social media in class, which is 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:

Assignments are due **at the beginning of class**, including assignments you need to email to me. Any assignment submitted after the first 15 minutes of class is late. Late assignments will receive a 5%/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 am more likely to grant your request if you A) give me a convincing explanation for your tardiness; 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 truly exceptional circumstances (a death in the family, for example, or a very serious illness). In such cases, I may ask for written verification.

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. You will not fail the course, but your ability to pass the course will be in serious jeopardy. You will **not necessarily** receive a message from me that inquires about your missing assignment. I expect you to handle your obligations yourself.

Missing Class:

You have **one** excused absence from class. 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 module**.

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 one class.

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 in academia, so your professors 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, you will fail this class and suffer additional penalties.

Beyond the Course:

I am committed to supporting survivors of sexual misconduct, which includes relationship violence, sexual harassment and sexual assault. However, you should know that 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. You can find them by

clicking [here](#). You can learn more about who to call – and who will help – by searching [here](#). And for all campus resources and reporting on sexual misconduct, visit: <http://sexualassault.georgetown.edu>.

Schedule:

- *I may change this schedule, but you will have at least a week's notice.*
- *Complete all weekly readings by the first class we have that week (usually Tuesday) .*

Week 1: Introducing Climate History and Historical Climatology

January 9: How Earth's climate has changed.

Readings:

1. White, Sam. "Climate Change in Global Environmental History." In *A Companion to Global Environmental History*, edited by John McNeill and Erin Maulden, 394-410. London: Blackwell, 2012.
2. Brönnimann, Stefan et al., "Archives of Nature and Archives of Societies." In *The Palgrave Handbook of Climate History*, edited by Sam White, Christian Pfister, and Franz Mauelshagen, 27-36. (London: Palgrave Macmillan, 2018). I will provide a copy.
3. Pfister, Christian. "Evidence from the Archives of Societies: Documentary Evidence - Overview." In *The Palgrave Handbook of Climate History*, 37-47. I will provide a copy

Week 2: From Medieval Warmth to Little Ice Age

January 14: Workshop: uncovering past climate change.

January 16: Linking climatic and human histories: the onset of the Little Ice Age.

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, László Ferenczi, Beatrix F. Romhányi, József Laszlovszky, and Stephen Pow. "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.
4. Campbell, Bruce, "Global climates, the 1257 Mega-eruption of Samalas Volcano, Indonesia, and the English food crisis of 1258." *Transactions of the Royal Historical Society* 27 (2017): 87-121.

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

January 21: The Dantean Anomaly, the Wolf Minimum, and Eurasian catastrophes.

January 23: The disappearance of the Greenlandic Vikings: a changing story.

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. McGovern, Thomas H. "Cows, harp seals, and churchbells: Adaptation and extinction in Norse Greenland." *Human Ecology* 8:3 (1980): 245-275.
4. Dugmore, Andrew J. et al. "Cultural Adaptation, Compounding Vulnerabilities and Conjunctions in Norse Greenland," *Proceedings of the National Academy of Sciences* 109 (2012): 3658–63.

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

January 28: Vulnerability and climate crisis in the sixteenth and seventeenth centuries.

January 30: NO CLASS

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.
4. White, Sam. *A Cold Welcome*, introduction and chapter 1.

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

February 4: Climate change and the origins of conflict

February 6: The conduct of conflict, and vulnerability in times of war

SHIP LOGBOOK ESSAY DUE: FEBRUARY 6

Readings:

1. Zhang, David D., Qing Pei, Christiane Fröhlich, and Tobias Ide. "4. Does climate change drive violence, conflict and human migration?", in *Contemporary Climate Change Debates: A Student Primer* (2019), 51-62.

2. Degroot, Dagomar. "War of the Whales: Climate Change, Weather and Arctic Conflict in the Early Seventeenth Century." *Environment and History* (2019).
3. Wickman, Thomas. "'Winters Embittered with Hardships': Severe Cold, Wabanaki Power, and English Adjustments, 1690–1710." *William & Mary Quarterly* 72:1 (2015): 57-98.
4. White, Sam. *A Cold Welcome*, chapters 2 and 3.

Week 6: Enduring and Exploiting the Little Ice Age

February 11: Coping with climate change

February 13: Adapting and thriving

Readings:

1. De Souza, Jonas Gregorio et al., "Climate change and cultural resilience in late pre-Columbian Amazonia." *Nature ecology & evolution* 3:7 (2019): 1007-1017.
2. Degroot, Dagomar. "Climate Change, Water, and the Golden Age of the Dutch Republic." *Europe Now*. Available at: <https://www.europenowjournal.org/2018/12/10/climate-change-water-and-the-golden-age-of-the-dutch-republic>.
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.
4. Sam White, *A Cold Welcome*, chapters 5, 6, and 10.

Week 7: Learning From the Little Ice Age

February 18: NO CLASS

February 20: Can we learn from past climate changes? Test review.

Readings:

1. McNeill, J. R. "Can History Help Us with Global Warming?" In *Climatic Cataclysm: The Foreign Policy and National Security Implications of Climate Change*, edited by Kurt M. Campbell, 26-48. Washington, DC: Brookings Institution Press, 2008. I will provide a copy.
2. Ghosh, Amitav. "The Coming Climate Crisis: The Little Ice Age could offer a glimpse of our tumultuous future." *Foreign Policy*. Available at: <https://foreignpolicy.com/gt-essay/the-coming-climate-crisis>.
3. Dagomar Degroot, "Little Ice Age Lessons." *Aeon Magazine*. Available at: <https://aeon.co/essays/the-little-ice-age-is-a-history-of-resilience-and-surprises>.

Week 8: Final Test

TIPPING POINTS ARTICLE DUE: FEBRUARY 27

February 25: IN-CLASS TEST

February 27: Integrative Day