

**21:510:227 TOPICS IN HISTORY  
PLAGUES AND SOCIETIES IN WORLD HISTORY  
SPRING 2022**

Monday 2:30 PM - 3:50 pm  
Wednesday 1:00 PM - 2:20 pm  
WRN - 313

Dr. Nükhet Varlık  
varlik@rutgers.edu  
Office Hours: TBA

**COURSE OVERVIEW**

A survey of biopolitical, social, economic, and cultural aspects of epidemic diseases throughout world history.

In this course, we will study various epidemic diseases in world history, ranging from the pre-Neolithic to COVID-19 with a broad geographic focus. We will discuss different aspects of epidemic diseases, with a particular emphasis on social and cultural constructions of health and illness. We will examine the origins of epidemic diseases in world history, with a view to understanding the links between societies, environment, and diseases. We will review various conceptions of health and illness in history and explore the social and historical contexts in which societies construct their ideas about disease and develop responses to it.

The majority of the semester will be devoted to an examination of specific infectious diseases (i.e., plague, smallpox, cholera, influenza, and AIDS, as well as newly emerging diseases such as COVID-19) from the ancient to the modern era; a guiding theme will be entanglements between globalization and the expansion of pandemics. In this context, we will explore the relationship between epidemics and warfare, empires, trans-regional trade networks, and biological exchange across continents and between hemispheres. The sessions devoted to the study of individual diseases will outline the biological and environmental character of specific pathogens to understand how they interact with their surroundings (i.e., human and non-human hosts, vectors, and the larger environment). In particular, we will examine the social, political, economic, and cultural responses to epidemics globally, ranging from mass migration, flight, and quarantine to medicine and public health. The course will include a discussion of newly emerging diseases in the contemporary world, especially in the context of the current day COVID-19 pandemic.

We will draw from primary and secondary sources that will expose students to a wide array of historical and scientific literature, as well as audiovisual materials. The course will be of particular interest to students of history of science, medicine, technology, and the environment, as well as global studies.

## **LEARNING OUTCOMES**

Upon successful completion of this course, students will be able to:

- name and identify individuals, events, themes, and issues of major importance related to epidemic diseases in world history, and be able to communicate this knowledge;
- demonstrate a basic level of competence in differentiating the major periods of the history of epidemic diseases and their significance in a global context;
- recognize the importance of cause and effect in history, and discuss the significance of change and continuity over time;
- demonstrate understanding of how historians use historical evidence and familiarity with different types of evidence;
- evaluate primary sources for both implicit and explicit content and context, and recognize how scholarly interpretations may have preserved source biases;
- critique historians' analyses of key issues in global history of health and disease on the basis of primary sources;
- critically analyze historical evidence and articulate a synthesis with a thesis.

## **ASSIGNMENTS**

During the semester, students will write four short papers and prepare a final project. Detailed information on assignments will be posted on Canvas and discussed in class. Please note that assignments can only be submitted via Canvas, and all are subject to plagiarism check through Turn-it-in. No other methods of submission (i.e., hardcopies, email attachments, etc.) will be allowed.

## **GRADING**

10 %	Participation in class discussions and presentations
15%	Short paper 1
15 %	Short paper 2
15 %	Short paper 3
15 %	Short paper 4
30 %	Final project

## **GRADING STANDARDS**

A	90-100
B+	87-89
B	80-86
C+	77-79
C	70-76
D+	67-69
D	60-66
F	59 or less

## **COURSE POLICIES**

Attendance at all regularly scheduled meetings of this class is expected.

You are expected to come to class having done the assigned readings and participate in class discussions.

Punctuality and courtesy at all times are expected.

In order to protect the health and well-being of all members of the Rutgers-Newark community, masks must be worn by all persons inside campus buildings when in the presence of others, and in buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). Masks should securely cover the nose and mouth. Masks must be worn during class meetings. Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the My Campus Pass symptom checker self-screening app found at: [myRutgers Portal](#).

Academic dishonesty of *any sort* will not be tolerated. It is your responsibility to comply with the university's policy on academic integrity. To review the policies, go to [http://history.newark.rutgers.edu/index.php?content=rn\\_integrity](http://history.newark.rutgers.edu/index.php?content=rn_integrity). All students are required to sign the Rutgers honor pledge. You must include this pledge on all major course assignments submitted for grading: "On my honor, I have neither received nor given any unauthorized assistance on this examination (assignment)."

## **ACCOMMODATION AND SUPPORT STATEMENT**

Rutgers University Newark (RU-N) is committed to the creation of an inclusive and safe learning environment for all students and the University as a whole. RU-N has identified the following resources to further the mission of access and support:

**For Individuals with Disabilities:** The Office of Disability Services (ODS) is responsible for the determination of appropriate accommodations for students who encounter barriers due to disability. Once a student has completed the ODS process (registration, initial appointment, and submitted documentation) and reasonable accommodations are determined to be necessary and appropriate, a Letter of Accommodation (LOA) will be provided. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [ods.rutgers.edu](http://ods.rutgers.edu). Contact ODS at (973)353-5375 or via email at [ods@newark.rutgers.edu](mailto:ods@newark.rutgers.edu).

**For Individuals who are Pregnant:** The Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy. Students may contact the Office of Title IX and ADA Compliance at (973) 353-1906 or via email at [TitleIX@newark.rutgers.edu](mailto:TitleIX@newark.rutgers.edu).

**For Absence Verification:** The Office of the Dean of Students can provide assistance for absences related to religious observance, emergency or unavoidable conflict (e.g., illness, personal or family emergency, etc.). Students should refer to [University Policy 10.2.7](#) for

information about expectations and responsibilities. The Office of the Dean of Students can be contacted by calling (973) 353-5063 or emailing [deanofstudents@newark.rutgers.edu](mailto:deanofstudents@newark.rutgers.edu).

**For Individuals with temporary conditions/injuries:** The Office of the Dean of Students can assist students who are experiencing a temporary condition or injury (e.g., broken or sprained limbs, concussions, or recovery from surgery). Students experiencing a temporary condition or injury should submit a request using the following link: <https://temporaryconditions.rutgers.edu>.

**For English as a Second Language (ESL):** The Program in American Language Studies (PALS) can support students experiencing difficulty in courses due to English as a Second Language (ESL) and can be reached by emailing [PALS@newark.rutgers.edu](mailto:PALS@newark.rutgers.edu) to discuss potential supports.

**For Gender or Sex-Based Discrimination or Harassment:** The Office of Title IX and ADA Compliance can assist students who are experiencing any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking. Students can report an incident to the Office of Title IX and ADA Compliance by calling (973) 353-1906 or emailing [TitleIX@newark.rutgers.edu](mailto:TitleIX@newark.rutgers.edu). Incidents may also be reported by using the following link: [tinyurl.com/RUNReportingForm](http://tinyurl.com/RUNReportingForm). For more information, students should refer to the University's Student Policy Prohibiting Sexual Harassment, Sexual Violence, Relationship Violence, Stalking and Related Misconduct located at <http://compliance.rutgers.edu/title-ix/about-title-ix/title-ix-policies/>.

**For support related to interpersonal violence:** The Office for Violence Prevention and Victim Assistance can provide any student with confidential support. The office is a **confidential resource** and does *not* have an obligation to report information to the University's Title IX Coordinator. Students can contact the office by calling (973) 353-1918 or emailing [run.vpva@rutgers.edu](mailto:run.vpva@rutgers.edu). There is also a confidential text-based line available to students; students can text (973) 339-0734 for support.

**For Crisis and Concerns:** The Campus Awareness Response and Education (CARE) Team works with students in crisis to develop a support plan to address personal situations that might impact their academic performance. Students, faculty and staff may contact the CARE Team by using the following link: [tinyurl.com/RUNCARE](http://tinyurl.com/RUNCARE) or emailing [careteam@rutgers.edu](mailto:careteam@rutgers.edu).

**For Stress, Worry, or Concerns about Well-being:** The Counseling Center has confidential therapists available to support students. Students should reach out to the Counseling Center to schedule an appointment: [counseling@newark.rutgers.edu](mailto:counseling@newark.rutgers.edu) or (973) 353-5805. If you are not quite ready to make an appointment with a therapist but are interested in self-help, check out *TAO at Rutgers-Newark* for an easy, web-based approach to self-care and support: <https://tinyurl.com/RUN-TAO>.

**For emergencies,** call 911 or contact Rutgers University Police Department (RUPD) by calling (973) 353- 5111.

**Technology Resources for Students:** <https://mytech.newark.rutgers.edu/tlp>

## Contact information for OIT-Newark Help Desk:

<https://mytech.newark.rutgers.edu/techsupport>

## REQUIRED READINGS

- Mitchell L. Hammond, *Epidemics and the Modern World* (Toronto: University of Toronto Press, 2020). ISBN 9781487593735
- Paul Slack, *Plague: A Very Short Introduction* (Oxford: Oxford University Press, 2012). ISBN: 9780199589548
- William H. McNeill, *Plagues and Peoples* (New York: Penguin Books, 1976). ISBN: 9780385121224
- Rosemary Horrox, trans., *The Black Death* (Manchester: University of Manchester Press, 1994). ISBN: 9780719034985
- David Quammen, *Spillover* (New York: W.W. Norton and Company, 2012). ISBN: 9780393346619
- Additional readings will be posted electronically.

## REFERENCE WORKS

- *Encyclopedia of Pestilence, Pandemics, and Plagues*, ed. Joseph P. Byrne (Westport, CT: Greenwood Press, 2008).
- *The Cambridge Historical Dictionary of Disease*, ed. Kenneth F. Kiple (Cambridge: Cambridge University Press, 2003).

## WEB RESOURCES

<https://www.cdc.gov>  
<https://www.nlm.nih.gov>  
<https://www.nlm.nih.gov/hmd/collections/photos.html>  
<https://www.who.int>  
<https://wellcomelibrary.org>  
<http://www.historyguide.org/ancient/death.html>  
<http://classics.mit.edu/Browse/browse-Hippocrates.html>  
<https://www.biusante.parisdescartes.fr/histoire/medica/resultats/index.php?intro=galien&statut=charge>  
<http://medhum.med.nyu.edu>  
<https://harvardlibrarybulletin.org/contagion-project>

## ON COVID-19

[JHU COVID-19 Dashboard by the Center for Systems Science and Engineering \(CSSE\)](#)

[COVID-19 Vaccinations in the United States](#)

[IHME COVID-19 Projections](#)

[Nextstrain: Real-time tracking of pathogen evolution](#)

[COVID-19 Data Hub](#)

[Listings of WHO's response to COVID-19](#)

[The COVID Tracking Project](#)

NOTE: This syllabus is subject to amendment or change at the discretion of the instructor.

## SCHEDULE OF CLASSES

### **Jan. 19 Introduction to the study of epidemics; the COVID-19 pandemic**

Discussion of course policies, assignments, and the syllabus; a general overview of why the study of past pandemics matters

### **Jan. 24 Historical epidemiology: methodologies & terminology**

What is the origin of human diseases? What are the links between disease and human history? Why do we study the history of diseases on a global scale? Ecology of disease; paleopathology, molecular biology, ancient DNA studies; terminology

Read: Hammond, *Epidemics and the Modern World*, Introduction (pp. 1-15)

Watch: [From mammoths to Neandertals, ancient DNA unlocks the mysteries of the past](#)

[Bring back the woolly mammoth!](#)

[Crossrail Archaeology: Great Plague DNA identified](#)

[Hendrik Poinar: Decoding the Black Death](#)

### **Jan. 26-31 COVID-19 in historical perspective**

How does COVID-19 compare to previous pandemics? What is similar? What is different? How does historical knowledge of past pandemics help us understand COVID-19 better?

Read: [WHO Timeline - COVID-19](#)

[Visualizing the History of Pandemics](#)

David S. Jones, “[COVID-19, history, and humility](#),” *Centaurus* 62:2 (2020): 370-80

Nükhet Varlık, [How do pandemics end? History suggests diseases fade but are almost never truly gone](#)

**Feb. 2            Newly emerging diseases; climate and disease ecology**

Why pay attention; discussion of newly emerging pandemics; widespread fear; CDC & WHO, and pandemic preparedness; climate and disease ecology

Read:            Frank M. Snowden, “Emerging and Reemerging Diseases: A Historical Perspective,” *Immunological Reviews* 225 (2008), 9–26 (see Canvas: reading #5)  
[The Ecology of Disease](#)  
Sonia Shah, “[Breeding Ground](#)”  
Quammen, *Spillover*, Ch. 2, pp. 53-124

**Feb. 7            Disease in social and historical context**

How do definitions of disease change over time? What social and historical factors affect the perception of disease? What are the major disease theories in history?

Read:            Monica H. Green, “[Emerging diseases, re-emerging histories](#),” *Centaurus* 62:2 (2020): 234-47  
Rosenberg and Golden (eds.), *Framing Disease*, pp. xiii-xxvi. (See Canvas: reading #6)  
Quammen, *Spillover*, Ch. 5, pp. 211-59 (optional)

➤ **Short paper #1            Due: Feb. 8, 2022 -- 11:59 pm**

**Feb. 9            Periodization of past pandemics**

Why periodization matters; how did scientific knowledge of past pandemics change over time; how did this shape historical periodization, and why does this matter; reviewing and critiquing historical plague maps

Watch:            [Contagion](#) (2010; Steven Soderbergh, 106 minutes)  
Read:            Lester K. Little, “Plague Historians in Lab Coats,” *Past & Present* 213: 1 (2011): 267–90 (see Canvas: reading #7)  
[The microbiology of early globalization](#)  
Quammen, *Spillover*, Ch. 6, pp. 263-310 (optional)

**Feb. 14            What is plague: past, present, future; interactions between science and history; globalization of disease**

Read:            Paul Slack, *Plague*  
Hammond, *Epidemics and the Modern World*, Ch. 1 (pp. 17-55)

Watch: [The Mother of All Pandemics: The State of Black Death Research in the Era of COVID-19](#)

### **Feb. 16-21 Plague's deep history**

Just how old is plague? Late Neolithic Bronze Age plagues; why does it matter to understand plague's deep history? How does it help us understand modern plagues?

Read: Nils C. Stenseth, *et al.*, "[Plague: Past, Present, and Future](#)," *PLoS Medicine* 5, no. 1 (2008): e3.  
Mark Achtman *et al.*, "[Yersinia pestis, the Cause of Plague, Is a Recently Emerged Clone of Yersinia pseudotuberculosis](#)," *PNAS* 96, no. 24 (1999): 14043–48  
Simon Rasmussen *et al.*, "[Early Divergent Strains of Yersinia Pestis in Eurasia 5,000 Years Ago](#)," *Cell* 163, no. 3 (2015): 571–82  
Aida Andrades Valtuena *et al.*, "[The Stone Age Plague: 1000 Years of Persistence in Eurasia](#)," *bioRxiv* (preprint)  
Deborah A. McLennan, "[How to Read a Phylogenetic Tree](#)," *Evolution: Education and Outreach* 3:4 (2010): 506-19 (recommended)  
Kenneth L. Gage and Michael Y. Kosoy, "Natural History of Plague: Perspectives from More Than a Century of Research," *Annual Review of Entomology* 50:1 (2005): 505–28 (see Canvas; reading #8; recommended)

Watch: [Johannes Krause on Ancient Pathogen Genomes](#)

### **Feb. 23-28 First Plague Pandemic: Justinianic Plague and recurrent waves**

What do we know; how do we know what we know; consensus and debates; why does it matter

Read: Lester K. Little, "Life and Afterlife of the First Plague Pandemic," *Plague and the End of Antiquity*, 3-32 (See Canvas: reading #9)  
Monica Green, "[When Numbers Don't Count](#)," *Eidolon*  
Lee Mordechai, Merle Eisenberg, "Rejecting Catastrophe: The Case of the Justinianic Plague," *Past & Present* 244:1 (2019): 3–50 (see Canvas: reading #10) or  
Mordechai *et al.*, "[The Justinianic Plague: An inconsequential pandemic?](#)" *PNAS* 116:51 (2019): 25546-54  
Marcel Keller *et al.*, "[Ancient Yersinia pestis genomes from across Western Europe reveal early diversification during the First Pandemic \(541–750\)](#)," *PNAS* 116 :25 (2019), 12363-72 (recommended)

Primary sources:

Thucydides, "[The Plague of Athens](#)," from *The History of the Peloponnesian War* (431 BCE), Book II, Ch.7

[Procopius on the plague in 542](#)

Watch: [Palaeogenetic Insights into the First Plague Pandemic](#) (recommended)

Explore: [Justinianic Plague App](#)

➤ **Short paper #2**      **Due: March 1, 2022 -- 11:59 pm**

**Mar. 2-9      The Black Death (1346-53)**

The initial spread of the Black Death; consensus & debates

Read:            McNeill, *Plagues and Peoples*, 161-207  
                  Monica H. Green, “The Four Black Deaths,” *The American Historical Review*  
                  125:5 (2020): 1601–1631. (See Canvas: reading #11)

Primary sources:

John Aberth, *The Black Death: The Great Mortality of 1348-1350*, pp. 16-18, 84-87, 110-112. (See Canvas: reading #12)

Rosemary Horrox, *The Black Death*, docs. 1-6, 64, 68-75. (See Canvas: reading #3)

Jacme d’Agramont, *Regiment de preservacio a epidimia o pestilencia e mortaldats* [Regimen of Protections Against Epidemics or Pestilence and Mortality], trans. M.I. Duran-Reynals and C-E. A. Winslow, *Bulletin of the History of Medicine* 23 (1949), 57-89. (See Canvas: reading #13)

Guy de Chauliac, “On the Black Death,” from Faith Wallis, ed. *Medieval Medicine: A Reader* (Toronto: University of Toronto Press, 2010), pp. 419-21. (See Canvas: reading #14)

**Mar. 14-16      Spring Break**

➤ **Short paper #3**      **Due: March 22, 2022 -- 11:59 pm**

**Mar.21-23      Second Plague Pandemic: toward a global narrative**

History and historiography; methodology; biases; debates; Africa, Asia, Ottoman Empire

Read:            Monica H. Green, “[Taking ‘Pandemic’ Seriously](#)”  
                  Monica H. Green, “[Genetics as a Historicist Discipline: A New Player in Disease History](#)”

                  G rard Chouin, “[Reflections on plague in African history \(14th–19th c.\)](#)”  
                  [The Black Death may have transformed medieval societies in sub-Saharan Africa](#)

                  Philip Slavin, “Death by the Lake,” *Journal of Interdisciplinary History* 50:1 (2019): 59-90 (see Canvas: reading #15)

                  N kh t Varlık, “Conquest, Urbanization and Plague Networks in the Ottoman Empire, 1453-1600,” in *The Ottoman World*, edited by Christine Woodhead (New York: Routledge, 2011), 251-63 (see Canvas: reading #16)

Listen: Podcast ([Disease and Landscape in Medieval and Early Modern Europe](#))  
Watch: Monica H. Green, "[What Happens When We Expand the Chronology and Geography of Plague's History?](#)"

### **Mar. 28-30 Second Plague Pandemic: 'end of plague' narratives**

Plague of London; Plague of Marseille; Persistence vs. re-introductions; quarantine; cases of Russia, the Middle East, and Central Asia

Read: Ann G. Carmichael, "[Plague Persistence in Western Europe: A Hypothesis](#)"  
Bos et al., "[Eighteenth century \*Yersinia pestis\* genomes reveal the long-term persistence of an historical plague focus](#)," *Elife* 5 (2016): e12994.  
Schmid et al., "[Climate-driven introduction of the Black Death and successive plague reintroductions into Europe](#)," *PNAS* 112:10 (2015): 3020-25.  
Dean et al., "[Human ectoparasites and the spread of plague in Europe during the Second Pandemic](#)," *PNAS* 115:6 (2018): 1304-9.  
Namouchi et al., "[Integrative approach using \*Yersinia pestis\* genomes to revisit the historical landscape of plague during the Medieval Period](#)," *PNAS* 115:50 (2018): e11790-97.  
Nükhet Varlık, "[Rethinking the History of Plague in the Time of COVID-19](#)," *Centaurus* 62:2 (2020): 285-93  
Nükhet Varlık, "[The plague that never left: restoring the Second Pandemic to Ottoman and Turkish history in the time of COVID-19](#)," *New Perspectives on Turkey* 63 (2020): 176-89

### **Apr. 4-6 Third Plague Pandemic**

What do we know; how did knowledge drawn from the Third Pandemic inform twentieth-century historians' vision of past plagues; why does this matter?

Read: Samuel Cohn, "The Black Death: End of a Paradigm," *The American Historical Review* 107:3 (2002): 703-38. (See Canvas: reading #17)  
Katherine Royer, "The Blind Men and the Elephant: Imperial Medicine, Medieval Historians, and the Role of Rats in the Historiography of Plague," in *Medicine and Colonialism: Historical Perspectives in India and South Africa*, ed. Poonam Bala (London: Pickering and Chatto, 2014): 99-110. (See Canvas: reading #18)

Explore: [Visual Representations of the Third Plague Pandemic](#)

**Apr. 11      The Columbian Exchange**

What is the Columbian Exchange; how does it help us understand globalization of diseases?

Read:            Alfred Crosby, *The Columbian Exchange*, pp. 35-63. (See Canvas: reading #19)  
                     McNeill, *Plagues and Peoples*, 208-241.  
                     Hammond, *Epidemics and the Modern World*, Ch. 2 (57-102)  
                     [What Wiped Out the Aztecs? Scientists Find New Clues](#)

➤ **Short paper #4      Due: April 12, 2022 -- 11:59 pm**

**Apr. 13      Smallpox**

History of smallpox; controversy, debates; global smallpox eradication campaign

Read:            Hammond, *Epidemics and the Modern World*, Ch. 3 (105-45)  
                     Ann Carmichael and Arthur Silverstein, "Smallpox in Europe before the  
                     Seventeenth Century: Virulent Killer or Benign Disease?" *Journal of the History  
                     of Medicine and Allied Sciences* 42:2 (1987), pp. 147-68. (See Canvas: reading #20)  
                     Ana Duggan et al., "[17th Century Variola Virus Reveals the Recent History of  
                     Smallpox](#)," *Current Biology* 26:24 (2016), pp. 3407-12.

**Apr. 18      Cholera**

Overview of cholera pandemics; historical context; debates

Read:            Hammond, *Epidemics and the Modern World*, Ch. 5 (pp. 191-231)  
                     Richard J. Evans, "Epidemics and Revolutions: Cholera in Nineteenth-  
                     Century Europe," in Ranger and Slack (eds.), *Epidemics and Ideas*, 149-73. (See  
                     Canvas: reading #21)  
                     David Arnold, "The Indian Ocean as a Disease Zone, 1500-1950," *South Asia:  
                     Journal of South Asian Studies* 14, No. 2 (1991), 1-21. (See Canvas: reading #22)

**Apr. 20      Influenza: past, present, future**

Overview of influenza pandemics, the pandemic of 1918-1920; future of influenza

Read:            Hammond, *Epidemics and the Modern World*, Ch. 8 (pp. 315-45)  
                     Alfred Crosby, *America's Forgotten Pandemic: The Influenza of 1918*, xi-xiv, 3-69,  
                     264-328. (See Canvas: reading #23)  
                     "[The 'Spanish' Influenza in Egypt](#)" by Christopher Rose  
Listen:            [Pandemic: The Story of the 1918 Flu](#)

**Apr. 25        AIDS/HIV**

Overview of HIV/AIDS pandemic; its effects

Read:            Hammond, *Epidemics and the Modern World*, Ch. 11 (pp.427-62)  
John Iliffe, *The African AIDS Epidemic: A History* (Athens, OH: Ohio University Press, 2006), ch. 2. (See Canvas: reading #24)  
Susan Sontag, *Illness as metaphor; and, AIDS and its metaphors*. (See Canvas: reading #25)

**Apr. 27        Emerging and reemerging diseases: SARS, MERS, Ebola**

Read:            Paul Farmer, *Infections and Inequalities: The Modern Plagues*, p. 18-58. (See Canvas: reading #26)  
Thomas Abraham, *Twenty-first Century Plague: The Story of SARS*, pp. 81-131. (See Canvas: reading #27)  
Laurie Garrett, *The Coming Plague: Newly Emerging Diseases*, pp. 30-52, 100-152. (See Canvas: reading #28)

**May 2         Future of global health**

Read:            T. V. Inglesby, D. T. Dennis, D. A. Henderson, et al., “Plague as a Biological Weapon: Medical and Public Health Management. Working Group on Civilian Biodefense,” *JAMA* 283, no. 17 (May 2000), 2281-90. (See Canvas: reading #29)  
T. Ben-Ari T, S. Neerinckx, K. L. Gage, K. Kreppel, A. Laudisoit, H. Leirs, N. C. Stenseth, “[Plague and Climate: Scales Matter](#),” *PLoS Pathogens* 2011 Sep 7 (9):e1002160.  
Ed Yong, “[How the Pandemic Defeated America](#)”

➤ **Final project due:    May 9, 2022 – 11:59 pm**