

ANTH 410/510: Emerging Infectious Diseases & Pandemics

Fall Quarter 2022 (CRN 11049 / 11072), 4 credit hours

Mondays & Wednesdays 10-11:50 am in 105 Fenton

Satisfies ANTH major/minor requirements & Global Health minor NS requirement

Professor: Dr. Josh Snodgrass

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office hours: TBA & by appointment in Pacific 12 (Global Health Biomarker Laboratory office)



Course Description: Application of evolutionary and medical anthropology frameworks for studying emerging infectious diseases and pandemics.

Course Content: This course focuses on emerging infectious diseases and pandemics using evolutionary and medical anthropology approaches. It is interdisciplinary and integrative, sitting at the intersection of the social and behavioral sciences (Anthropology, Sociology, Psychology, Economics), natural sciences (Human Physiology, Evolutionary Biology, Molecular Biology), & health sciences (Medicine, Epidemiology & Public Health, Nutritional Sciences). The course begins by building a foundation through the examination of the effects of social and ecological change on human health, as well as the legacy of colonialism and the ongoing effects of racism and social inequality. The course uses case studies of HIV/AIDS and SARS-CoV-2/Covid-19 to discuss current and future global health issues related to emerging infectious diseases and pandemics.

Prerequisites: None; ANTH 175, ANTH 270, or equivalent highly recommended

Quotes to Guide Us:

“Sickness is not just biological—it’s social. That’s why social science should be central to controlling and preventing diseases.”

-Dr. Robert Hahn (Anthropologist & Epidemiologist, US CDC)

“This book sounds an alarm. The world needs—now—a global early-warning system capable of detecting and responding to new emerging infectious disease threats to health. There is no clearer warning than AIDS. Laurie Garrett has spelled it out clearly for us. Now we ignore it at our peril.”

-Dr. Jonathan M. Mann (Harvard AIDS Institute) in the Preface of Garrett’s 1994 book The Coming Plague: Newly Emerging Diseases in a World Out of Balance

“As for the second question—Why did some die while others were spared?—it’s one always front and center in social medicine, which looks around (at social context) and back in time (social history) in order to answer it. But the default explanation for significant differences in rates of mortality has long been a simple idea: different variants of Ebola kill differentially, with Zaire being the worst. Research by Pardis Sabeti and Humarr Khan may ultimately help reveal if specific mutations confer increased transmissibility and virulence. But the idea is simplistic as well as simple: many exclusively biological hypotheses about the variable virulence of pathogens are pretty quickly swamped by the variable virulence of the world we inhabit. Giving all the credit to the virus is dubious when we humans have been the architects of the stunning inequalities that characterize our shared world.”

-Dr. Paul Farmer (Professor of Global Health and Social Medicine, Harvard Medical School)

“There’s a saying in my field: ‘if you’ve seen one pandemic, you’ve seen...one pandemic’”

-Dr. Adam Kucharski (Professor of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine)

“The COVID-19 pandemic is one of many US health failures. The fact that COVID-19 affects Black, Indigenous, and Latinx people disproportionately has reinforced longstanding health inequities driven by racially patterned disparities in housing, wealth, employment, and social and political rights. Declining US longevity between 2014 and 2017, and the minimal uptick in longevity in 2018, attracted substantial media attention. However, a focus on these recent trends risks obscuring how far the USA lags behind other high-income nations, and how long these cross-national gaps have been in the making. Life expectancy in the USA was average among high-income nations in 1980, by 1995, it was 2.2 years shorter than the average of other G7 countries, and by 2018, the gap had widened to 3.4 years. The extent of difference can also be quantified as the number of missing Americans—i.e., the number of US residents who would still be alive if age-specific mortality rates in the USA had remained equal to the average of the other six G7 nations. By this measure, in 2018 alone, 461,000 Americans went missing, an annual figure that has been increasing since 1980. Most of the US mortality excess is among people younger than 65 years. If US death rates were equivalent to those of other G7 nations, two of five deaths before age 65 years would have been averted. To put this number in context, the number of missing Americans each year is more than the total number of COVID-19 deaths in the USA in all of 2020.”

-Dr. Steffie Woolhandler and colleagues in Report of the *Lancet* Commission on Public Policy and Health in the Trump Era

“Outbreaks are inevitable, but pandemics are optional.”

-Dr. Larry Brilliant (Epidemiologist and Philanthropist)

“If you are neutral in situations of injustice, you have chosen the side of the oppressor.”

-Desmond Tutu (Archbishop of Cape Town, Chairman of South Africa’s Truth and Reconciliation Commission, and Winner of the 1984 Nobel Peace Prize)

Course Format: Seminar format (the entire course is discussion-based, with no lectures)

Accommodations: Appropriate accommodations will be provided for students with AEC-documented needs. The Accessible Education Center (AEC; <http://aec.uoregon.edu/>) works with students on access or disability-related questions and concerns; AEC can provide an instructor notification letter. Please reach out to me if you would like to discuss accommodations.

Learning Outcomes: After successful completion of this course, students will have an understanding of the following:

- The basic concepts and terminology used in epidemiology and public health
- The basic principles of infectious disease biology and immune function
- Major trends in infectious diseases and pandemics throughout human prehistory and history, and across populations
- The application of evolutionary thinking to studying human health and disease, including the distinction between proximate and ultimate explanations
- The concept of social determinants of health, including how where we live and work influence our health and well-being
- The legacy of colonialism and how contemporary inequalities and inequities influence global health, including the burden of infectious and parasitic diseases
- The ways that ecological factors and climate change affect human health, including how human-induced environmental change increases the spillover and spread of zoonotic diseases into human populations
- The psychology of pandemics, including the challenges of risk perception, vulnerability to conspiracy theories, and difficulty of changing human behavior
- The basics of HIV/AIDS, including the emergence, spread, and legacy of AIDS
- The key developments in the Covid pandemic, including the contributors to its initial evolution, its spread, and its unequal impact on populations in the US and globally

Required Readings: Assorted articles, book chapters, and videos (see below—all available on Canvas).

Canvas: A Canvas site will be used extensively, it being the main source for course materials, information, readings, and announcements. Make sure that you check your Canvas-linked e-mail account daily.

Expectations and Grading for Undergraduates: This is a seminar course that foregrounds participation in discussion and independent research. Your grade in the course will reflect your participation in class discussions, posting of discussion questions, leading one class discussion, and completing a research project that involves a short class summary presentation and a final research paper. **The research paper will be focused on identifying what you see as *THE* biggest pandemic threat from emerging or reemerging infectious diseases (e.g., Influenza, antimicrobial resistant infections, or STIs), or you can focus on a key issue related to emerging infectious diseases and pandemics (e.g., vaccine hesitancy or bioterrorism). Alternatively, you could choose a different path in terms of your topic and/or the format of the project. If you choose this pathway, you need to get my approval—that the work you are doing is appropriate and that the amount of work is equivalent to the research paper.** The paper will justify your focus, demonstrate your knowledge of the disease and its risk, and discuss potential points of intervention.

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| Class participation | 30% |
| Regular (at least weekly) contribution to class discussions, | 15% |
| Regular (at least weekly) posting of discussion questions prior to class sessions, | 15% |
| Leading class discussion | 20% |
| Leading class discussion (one time during the term), | 10% |
| Preparation of one-page summary document (one time during the term), | 10% |
| Research paper | 50% |
| Brief presentation (3 min) to the class during Week 10, | 10% |
| Final research paper (15-20 pages double-spaced) due in Finals Week, | 40% |

Expectations and Grading for Graduate Students: Graduate students will complete all the same work as undergraduates but will have one additional assignment. That assignment is to imagine that you are going to add one additional week (two classes) to the existing course—it will discuss the emphasis of the additional week and list the readings (3-4 readings) you would add. Graduate student grading breakdown is as follows:

- Class participation 20%**
 - Regular contribution to class discussions, **10%**
 - Regular posting of discussion questions prior to class sessions, **10%**
- Leading class discussion 20%**
 - Leading class discussion, **10%**
 - Preparation of one-page summary document, **10%**
- Research paper 40%**
 - Brief presentation (3 min) to the class during Week 10, **10%**
 - Final research paper (15-20 pages double-spaced) due in Finals Week, **30%**
- Additional week plan 20%**
 - Brief justification plus readings for two classes you would add to the existing class, **20%**

Grading Policy: Grades will be assigned as follows: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F < 60% (with minus and plus grades assigned at appropriate cutoffs). The grading system used here is as follows:

- A** – Outstanding performance relative to that required to meet course requirements; demonstrates a mastery of course content at the highest level.
- B** – Performance that is significantly above that required to meet course requirements; demonstrates a mastery of course content at a high level.
- C** – Performance that meets the course requirements in every respect; demonstrates an adequate understanding of course content.
- D** – Performance that is at the minimal level necessary to pass the course but does not fully meet the course requirements; demonstrates a marginal understanding of course content.
- F** – Performance in the course, for whatever reason, is unacceptable and does not meet the course requirements; demonstrates an inadequate understanding of the course content.

Academic Misconduct: The UO Student Conduct Code (<https://dos.uoregon.edu/conduct>) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. Students should properly acknowledge and document all sources of information (e.g., quotations, paraphrases, ideas). If there is any question about whether an act constitutes academic misconduct, it is the students' obligation to clarify the question with the instructor before committing or attempting to commit the act.

Reporting Requirements: I am an Assisting Employee under UO's Prohibited Discrimination and Retaliation Policy. As an Assisting Employee, I will direct students who disclose prohibited discrimination and harassment, including sexual harassment or violence, to resources that can help and will only report the information shared to the university administration if the student requests that the information be reported (unless someone is in imminent risk of serious harm or a minor). I am a mandatory reporter of child abuse. Students experiencing sex or gender-based discrimination, harassment or violence should call the 24-7 hotline 541-346-SAFE [7244] or visit <https://safe.uoregon.edu/> for help.

Students experiencing all forms of prohibited discrimination or harassment may contact the Dean of Students Office at 541-346-3216 or the non-confidential Title IX Coordinator/OICRC at 541-346-3123. Additional resources are available at <https://investigations.uoregon.edu/how-get-support>.

CLASS SCHEDULE

| Week | Date | Topics | Readings |
|----------|------------|--|---|
| 1 | 9/26/2022 | No class: University holiday for the observance of Rosh Hashanah | |
| | 9/28/2022 | Introductions; Introduction to the class; Contextualizing emerging infectious diseases & pandemics; Anthropology, social science, & pandemics; The US public health system | 1) Gates 2015 2) Kolbert 2020 3) Hahn 2020 4) Yong 2021 5) Wen 2022 |
| 2 | 10/3/2022 | Getting up to speed on emerging infectious diseases, pandemics, and immunity | 1) Rosenwald 2020 2) Doherty 2013 Ch1 3) Doherty 2013 Ch2 |
| | 10/5/2022 | Evolutionary and biocultural perspectives; Medical anthropology; Evolution & antimicrobials | 1) Wiley & Allen 2020 Ch2 2) Osterholm & Olshaker 2017 Ch16 |
| 3 | 10/10/2022 | The legacy of colonialism; Africa & Ebola; Inequality & inequities | 1) Farmer 2020 2) Jha 2022 |
| | 10/12/2022 | Globalization, poverty, & failure; Unequal relationships; Decolonizing global health | 1) Wiley & Allen 2020 Ch9 2) Atim 2021 |
| 4 | 10/17/2022 | Social determinants of health; The causes of the causes; Commercial determinants of health; Indigenous health | 1) Marmot 2015 2) Vallengia & Snodgrass 2015 |
| | 10/19/2022 | Race & racism; How race becomes biology | 1) Jones 2014 2) Gravlee 2009 |
| 5 | 10/24/2022 | How our brains understand pandemics; Pandemic fatigue & Covid rage; How do we change human behavior? Social media & the pandemic landscape | 1) Segar 2020 2) Smarsh 2021 3) Haidt 2022 |
| | 10/26/2022 | One Health; Human-induced environmental change; Global climate change & zoonoses; Getting on the same page about the research project | 1) Heymann & Dixon 2014 2) The Lancet 2020 3) Yong 2022 |
| 6 | 10/31/2022 | HIV/AIDS: The beginning of a pandemic | 1) <i>And the Band Played On</i> 1993 |
| | 11/2/2022 | HIV/AIDS: Politics & activism | 1) <i>How to Survive a Plague</i> 2012 |

| Week | Date | Topics | Readings |
|--------------------|------------------|---|--|
| 7 | 11/7/2022 | HIV/AIDS: An update on where we are now | 1) Loomis 2018 2) Schattelman 2020 |
| | 11/9/2022 | HIV/AIDS: The global response to & the legacy of HIV/AIDS | 1) Messac & Prabhu 2013 2) The Economist 2020 3) Lewis-Thornton 2022 |
| 8 | 11/14/2022 | COVID: Coronavirus context (SARS & MERS); Spillovers—Human resource use & markets, not lab leaks | 1) Osterholm & Olshaker 2017 2) Quammen 2020 3) Holmes 2022 |
| | 11/16/2022 | COVID: Its spread & impact; The initial wave & impact on health care workers; Why the US failed, particularly with its most vulnerable; The context of US failure | 1) Ouyang 2020 2) Yong 2020 3) Woolhandler et al. 2021 |
| 9 | 11/21/2022 | COVID: Life in Covidworld—Mental health, drinking, and drug use | 1) Parker-Pope et al. 2021 2) Wen 2022 3) Rabin 2021 |
| | 11/23/2022 | COVID: The big picture of Covid; Long Covid; The evolution of the SARS-CoV-2 virus | 1) Brinkworth & Rusen 2022 2) Klein 2022 3) Callaway 2022 |
| 10 | 11/28/2022 | Final project presentations | No new readings |
| | 11/30/2022 | Final project presentations | No new readings |
| Finals week | 12/8/2022 | Final research papers due 12/8 by 11:59 pm | |

READINGS & VIDEOS

Week 1, Wednesday (9/28/2022)

1) Gates B. 2015. The next outbreak? We're not ready. TED Talk.

https://www.ted.com/talks/bill_gates_the_next_outbreak_we_re_not_ready?language=en

2) Kolbert E. 2020. Pandemics and the shape of human history. *The New Yorker*; 3/30/2020.

<https://www.newyorker.com/magazine/2020/04/06/pandemics-and-the-shape-of-human-history>

3) Hahn RA. 2020. The CDC needs social science. *Sapiens*; 12/11/2020.

<https://www.sapiens.org/biology/cdc-social-science/>

4) Yong E. 2021. How public health took part in its own downfall. *The Atlantic*; 10/23/2021.

<https://www.theatlantic.com/health/archive/2021/10/how-public-health-took-part-its-own-downfall/620457/>

5) Wen LS. 2022. Is it time for a national public health system? Washington Post; 7/5/2022.

<https://www.washingtonpost.com/opinions/2022/07/05/is-it-time-national-public-health-system/>

Week 2, Monday (10/3/2022)

1) Rosenwald MS. 2020. History's deadliest pandemics, from ancient Rome to modern America. *Washington Post*; 10/3/2021.

<https://www.washingtonpost.com/graphics/2020/local/retropolis/coronavirus-deadliest-pandemics/>

2) Doherty PC. 2013. Infection and immunity (Ch1). In: Pandemics: What Everyone Needs to Know. Oxford.

3) Doherty PC. 2013. Pandemics, epidemics, and outbreaks (Ch2). In: Pandemics: What Everyone Needs to Know. Oxford.

Week 2, Wednesday (10/5/2022)

1) Wiley AS, Allen JS. 2020. Anthropological perspectives on health and disease (Ch2). In: Medical Anthropology: A Biocultural Approach (Fourth Edition). Oxford University Press.

2) Osterholm MT, Olshaker M. 2017. Antimicrobials: The tragedy of the commons (Ch16). In: Deadliest Enemy: Our War Against Killer Germs. Little, Brown Spark.

Week 3, Monday (10/10/2022)

1) Farmer P. 2020. The twenty-fifth epidemic? In: Fevers, Feuds, and Diamonds: Ebola and the Ravages of History. FSG.

2) Jha AK. 2022. Paul Farmer invented a new way of caring for one another. *The Atlantic*; 2/22/2022.

<https://www.theatlantic.com/health/archive/2022/02/paul-farmer-global-health/622881/>

Week 3, Wednesday (10/12/2022)

1) Wiley AS, Allen JS. 2020. Globalization, poverty, and infectious disease (Ch9). In: Medical Anthropology: A Biocultural Approach (Fourth Edition). Oxford University Press.

2) Atim C. 2021. 5 ways to decolonize global health and build greater equity. *Devex*; 7/9/2021.

<https://www.devex.com/news/opinion-5-ways-to-decolonize-global-health-and-build-greater-equity-100240#.YO7cwQhuq9w.twitter>

Week 4, Monday (10/17/2022)

1) Marmot M. 2015. The organization of misery (Ch1). In: The Health Gap: The Challenge of an Unequal World. Bloomsbury.

2) Valeggia CR, Snodgrass JJ. 2015. Health of indigenous peoples. *Annual Review of Anthropology* 44: 117-135.

Week 4, Wednesday (10/19/2022)

- 1) Jones C. 2014. Allegories on race and racism. TEDxEmory. <https://www.youtube.com/watch?v=GNhcY6fTyBM>
- 2) Gravlee CC. 2009. How race becomes biology: Embodiment of social inequality. *American Journal of Physical Anthropology* 139: 47-57.

Week 5, Monday (10/24/2022)

- 1) Segar S. 2020. 'The more who die, the less we care': Why we're growing numb to COVID-19. *Daily Emerald*; 12/1/2020. https://www.dailymerald.com/news/the-more-who-die-the-less-we-care-why-we-re-growing-numb-to-covid/article_21ff5438-334b-11eb-ad30-f73344d147f9.html
- 2) Smarsh S. 2021. What to do with our Covid rage. *The New York Times*; 8/8/2021. <https://www.nytimes.com/2021/08/07/opinion/sunday/covid-unvaccinated-anger.html>
- 3) Haidt J. 2022. Why the past 10 years of American life have been uniquely stupid. *The Atlantic*; 4/11/2022. <https://www.theatlantic.com/magazine/archive/2022/05/social-media-democracy-trust-babel/629369/>

Week 5, Wednesday (10/26/2022)

- 1) Heymann DL, Dixon M. 2014. The value of the One Health approach: Shifting from emergency response to prevention of zoonotic disease threats at their source. In: *One Health: People, Animals, and the Environment* (eds. Atlas & Stanley). American Society for Microbiology.
- 2) The Lancet. 2020. Zoonoses: beyond the human–animal–environment interface. *The Lancet* 396; 7/4/2020.
- 3) Yong E. 2022. We created the 'Pandemicene'. *The Atlantic*; 4/28/2022. <https://www.theatlantic.com/science/archive/2022/04/how-climate-change-impacts-pandemics/629699/>

Week 6, Monday (10/31/2022)

- 1) *And the Band Played On* (Movie directed by Roger Spottiswoode). 1993.

Week 6, Wednesday (11/2/2022)

- 1) *How to Survive a Plague* (Movie directed by David France). 2012.

Week 7, Monday (11/7/2022)

- 1) Loomis JS. 2018. HIV/AIDS. In: *Epidemics: The Impact of Germs and Their Power over Humanity*. Praeger.
- 2) Schattelman R. 2020. South Africa's inability to honestly confront AIDS shows the dangers of America's COVID-19 denialism. *The Conversation*; 12/22/2020. <https://theconversation.com/south-africas-inability-to-honestly-confront-aids-shows-the-dangers-of-americas-covid-19-denialism-151905>

Week 7, Wednesday (11/9/2022)

- 1) Messac L, Prabhu K. 2013. Redefining the possible: AIDS as a global priority at the dawn of the 21st Century. In: *Rethinking Global Health: An Introduction* (Farmer et al., eds.). University of California Press.
- 2) The Economist. 2020. How HIV/AIDS changed the world. *The Economist*; 6/25/2020. <https://www.economist.com/books-and-arts/2020/06/25/how-hiv/aids-changed-the-world>
- 3) Lewis-Thornton R. 2022. We're making the same mistake with monkeypox that we made with HIV/AIDS. *Washington Post*; 8/8/2022. <https://www.washingtonpost.com/opinions/2022/08/08/monkeypox-hiv-aids-same-messaging-mistakes-gay-men-not-the-only-people-at-risk/>

Week 8, Monday (11/14/2022)

1) Osterholm MT, Olshaker M. 2017. SARS and MERS: Harbingers of things to come (Ch13). In: Deadliest Enemy: Our War Against Killer Germs. Little, Brown Spark.

2) Quammen D. 2020. The virus, the bats and us. *The New York Times*; 12/11/2020.

<https://www.nytimes.com/2020/12/11/opinion/covid-bats.html>

3) Holmes EC. 2022. The COVID lab leak theory is dead. Here's how we know the virus came from a Wuhan market. *The Conversation*; 8/14/2022.

<https://theconversation.com/the-covid-lab-leak-theory-is-dead-heres-how-we-know-the-virus-came-from-a-wuhan-market-188163>

Week 8, Wednesday (11/16/2022)

1) Ouyang H. 2020. I'm an E.R. doctor in New York. None of us will ever be the same. *The New York Times*; 4/14/2020.

<https://www.nytimes.com/2020/04/14/magazine/coronavirus-er-doctor-diary-new-york-city.html>

2) Yong E. 2020. How the pandemic defeated America. *The Atlantic*; September 2020.

<https://www.theatlantic.com/magazine/archive/2020/09/coronavirus-american-failure/614191/>

3) Woolhandler S, Himmelstein DU, Ahmed S ... Venkataramani A. 2021. Public policy and health in the Trump era. *Lancet* 397: 705-753.

Week 9, Monday (11/21/2022)

1) Parker-Pope T, Caron C, & Cordero Sancho M. 2021. Why 1,320 therapists are worried about mental health in America right now. *The New York Times*; 12/17/2022.

<https://www.nytimes.com/interactive/2021/12/16/well/mental-health-crisis-america-covid.html>

2) Wen LS. 2022. We need to talk about pandemic drinking. *Washington Post*; 4/19/2022.

<https://www.washingtonpost.com/opinions/2022/04/19/alcohol-related-deaths-surged-covid-pandemic/>

3) Rabin RC. 2021. Overdose deaths reached record high as the pandemic spread. *The New York Times*; 11/17/2021.

<https://www.nytimes.com/2021/11/17/health/drug-overdoses-fentanyl-deaths.html>

Week 9, Wednesday (11/23/2022)

1) Brinkworth JF & Rusen RM. 2022. SARS-CoV-2 isn't special: Embracing responsibility and new futures as a public. *Annual Review of Anthropology* 51.

2) Klein E. 2022. Two years later, we still don't understand Long Covid, Why? (podcast with guest Dr. Lekshmi Santhosh). *The New York Times*; 6/21/2022.

<https://www.nytimes.com/2022/06/21/opinion/ezra-klein-podcast-lekshmi-santhosh.html>

3) Callaway E. 2022. Chronic Covid: The evolving story. *Nature* 606; 6/16/2022.

Week 10, Monday & Wednesday (11/28/2022 & 11/30/2022)

No new readings—Final presentations and prepare final research papers