

GEOG-256

MEDICAL GEOGRAPHY

Fall 2022

MWF 2:20-3:20 pm, Carnegie 06A

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Course Description and Objectives:

This course examines the geographical dimensions of health and disease, emphasizing global and domestic public health issues. Key approaches and themes include the human ecology approach to health; epidemiological mapping and spatial analysis; environmental health; the relationship among demographic change, economic development, and population health; the spatial diffusion of infectious diseases; the disease ecology approach to infectious and vector-borne diseases; and the challenges of "global health" in the 21st century, with special emphasis on "emerging infectious diseases."

This course counts for the Geography major, Community and Global Health Concentration, Social Science distribution requirement, and Internationalism Gen Ed requirement.

Required Readings:

All readings for this course will be available electronically on Moodle.

Course Policies:

1. Attendance and Participation. In this class, 10 percent of your grade derives from attendance and participation. Attendance plays an essential role in learning, so you are warmly invited and expected to attend all class meetings. Attendance will be important not only for your learning, but also for our ability to build a community together and maintain a sense of connection and commitment to one another. Your presence in class matters. If you will not be in class for any reason, it is your responsibility to inform me in advance, or as early as possible, via email. It is also your responsibility to make up work you missed in your absence. Participation is distinct from attendance and is also an essential part of this course. In-class discussions, on-line discussion forums, responses to brief ungraded writing assignments, quizzes, etc. will be factored into your participation grade. In general, "participation" means speaking up, sharing your thoughts, and making yourself noticed in positive, productive, and supportive ways. It also means listening carefully and respectfully to your fellow students. It is important to remember that we all have different styles of expression. If you have not been able to participate in a class discussion for any reason but want to demonstrate your active engagement, please send me an email after class with a comment or an idea you had that you would have liked to share, but were not able to during class. Students with any concerns, questions, or need for consideration for flexibility should connect with me as soon as possible to determine an appropriate plan.

2. Reaction papers on campus events. You can improve your attendance and participation grade, and exercise your writing skills frequently, by writing reaction (reflection) papers about

campus events relevant to this class. The reaction papers should be 1-2 pages long. I am interested in a clear summary and a thoughtful critique, ideally one that connects the event to course themes. Please turn in these papers in a Moodle dropbox I will create specifically for this purpose, within a week after the event takes place. I will try to give you feedback within a week. As a general rule of thumb, satisfactorily completing three of these reaction papers during the semester would raise your course participation grade by one letter grade (e.g. from a B to an A).

3. Late work. You must turn in your work on time. I will indicate due dates for every assignment, and you must respect them. Every student has one "free token" to use for turning in an assignment up to 48 hours late, for the whole semester. Assignments where you may use the "token" include the two homework exercises and the three take-home exams. Otherwise, I will penalize you 10 percent of your grade (or a full letter grade) for a given assignment for every day that it is late. Tokens cannot be used for the group project components. For other, extenuating circumstances (e.g. illness, accident, bereavement, religious observance, etc.) and you contact me before the due date, I will consider granting extensions on a case-by-case basis.

4. Turning in written work. I will be using electronic submission for some assignments. For a given assignment, I will create a "dropbox" on Moodle that has a specific time that work is due (and the dropbox then "closes"). Please do **not** submit assignments via email or as "shared" documents in Google Docs.

5. Academic integrity. As in every course, you will be expected to follow the college's policies on academic honesty: specifically, "Students are expected to maintain the highest standards of honesty in their college work. Forgery, cheating and plagiarism are serious offenses and students found guilty of any form of academic dishonesty are subject to disciplinary action." For more details, see the college's guidelines on Academic Integrity at <http://www.macalester.edu/academicprograms/academicpolicies/academicintegrity/>.

6. Special accommodations. If you have a physical or learning disability that will require special accommodations, please contact me to discuss arrangements. All conversations will be confidential. You will also need to meet with a representative from Disability Services, which determines accommodations. They can be contacted here: disabilityservices@macalester.edu.

7. Communication. You are welcome to come see me during my scheduled office hours. If you can't meet during those times, please send me an email or call my office and we'll schedule an appointment. In general, I answer emails within 24 hours. But I always prefer to discuss important matters in person, not electronically or by phone. Also, make sure that you check your email frequently, because I do send email messages – either from my own email address or via Moodle – frequently to the class.

8. Use of Electronic Devices in Class. Laptops are permitted in class but only for note-taking and for activities in class when specifically indicated. When we are having a lecture, discussion, student project presentation, or similar activity, I expect everyone's eyes and attention to be focused on that activity. You definitely should not be browsing the web, checking email, doing your homework, and so on during these class activities. The use of cell phones is strictly prohibited: no calling, texting or other uses of your cell phone during class time.

9. Recording Policy. The Macalester College Classroom Recording (MCCR) policy sets forth community expectations regarding the recording (whether audio, video, or streaming) of class lectures, discussions, office hours, and other course-related activity. As an academic community, we value the free exchange of ideas and the privacy of community members. We are also committed to providing appropriate accommodations to students who require recorded lectures as an academic adjustment for documented disabilities. The MCCR policy balances the legitimate uses of classroom recording, the intellectual property of the faculty, and the privacy of individual students and faculty. The entire policy can be found [here](#). In short, the policy requires students to submit a completed Student Recording Agreement to the appropriate office (Disability Services for students with approved accommodations; Academic Programs and Advising for all others)

prior to engaging in any type of recording. The faculty member who signed the Recording Agreement (or is notified by Disability Services that recording will occur as an accommodation) is responsible for notifying the class that recording will be occurring. The required Student Agreement Recording form is available [here](#).

10. Religious Observance. Students may wish to take part in religious observances that occur during this module. If you have a religious observance/practice that conflicts with your participation in the course, please contact me before the end of the first week of the module to discuss appropriate accommodations. In an effort to respect religious diversity, I request that students who desire to observe a religious holiday during a scheduled class meetings/ class requirements talk to me about reasonable consideration by the end of the second week of the course.

11. Health and Wellness. You are encouraged to make your health and well-being a priority throughout this semester and during your career at Macalester. Taking care of yourself will help you engage more fully in your academic experience. Remember that beyond being a student, you are a human being carrying your own experiences, thoughts, emotions, and identities with you. It is important to acknowledge any stressors you may be facing, which can be mental, emotional, physical, cultural, financial, etc., and how they can have an impact on your academic experience. I encourage you to remember that you have a body with needs. In the classroom, eat when you are hungry, drink water, use the restroom, and step out if you are upset and need some air. Please do what is necessary so long as it does not impede your or others' ability to be mentally and emotionally present in the course. Outside of the classroom, sleeping, moving your body, and connecting with others can be strategies to help you be resilient at Macalester. If you are having difficulties maintaining your well-being, please don't hesitate to contact me and/or find support from Health & Wellness Center. I have included contact information for health and wellness resources on the course Moodle page.

12. Inclusivity. I am committed to providing a safe and equitable learning environment that welcomes and supports everybody. As learners and teachers, we all bring various experiences and life contexts to this course. These differences will emerge in class and be part of what we negotiate and benefit from as a developing community. I acknowledge that academic institutions have evolved within a historical context that privileges certain students over others, and in this classroom, we will do our best to be aware of how these inequities may manifest. I hope you will feel comfortable coming to us to express any concerns or suggestions; this is an iterative process that requires the collaboration of all.

13. Pandemic Business. In this class, we will follow the [latest guidelines on the College's COVID-19 pandemic response](#). As of this writing (August 29), this means classes will be held in person, not remotely, and face coverings are required in indoor spaces, until Wed., Sept. 14. After that date, our class meetings will be mask-optional (it's up to you). If the guidelines change, we will adapt accordingly.

Class Format:

In this course there will be a mix of lecture- and discussion-based meetings. My lectures are meant to be interactive and not a one-way monologue, so feel free to ask questions, and expect that I will ask you questions, too. If we are having discussions or scholarly skills workshops in class, I will give you some guidelines ahead of time of what to expect.

Course Assignments:

- **Attendance and Participation:** see above
- **Exercises.** There will be two brief homework exercises on different topics that allow you to apply theory and concepts using interactive maps, databases, and data visualization tools.
- **Exams.** There will be three exams, all take-home format.

- **Research project.** This assignment will allow you to expand on a topic in medical/health geography that interests you. This will be a group project, with both written and oral components. More details TBA.

Grading:

Attendance and Participation	10%
Exercise 1	5%
Exercise 2	5%
Exam 1 (take-home)	15%
Exam 2 (take-home)	15%
Exam 3 (take-home)	15%
Exam flex	5%
Research Project (all components combined)	30%
TOTAL	100%

Note: "Exam flex" means your highest-scoring exam will be worth 20% instead of 15% of grade

COURSE SCHEDULE (Detailed):

Notes: The schedule is subject to change, with fair warning. Check on Moodle for updates about which readings are "required" (REQ), which should be skimmed (SKIM), and which are merely "recommended" (RCM). Generally, try to do the readings for the day they are assigned, even if a more in-depth discussion is not scheduled until a few days later. Rest assured that every week I will give you details about the reading assignment and plan for discussion.

Week 1. Introduction

- Wed. (Aug. 31): Introductions and Course Business
- Fri. (Sept. 2): What is Medical Geography?
 - REQ: Mukherjee, S. (2021, Feb. 22). Why Does the Pandemic Seem to Be Hitting Some Countries Harder Than Others? *The New Yorker*.
 - RCM: Gatrell, A. C., & Elliott, S. J. (2015). Introducing Geographies of Health. In *Geographies of health: an introduction* (3rd ed.). Malden, MA: Wiley Blackwell.

Week 2. Global Health

- Mon. (Sept. 5): NO CLASS—LABOR DAY
- Wed. (Sept. 7): International Health by the Numbers
 - REQ: "Demographic Transition Model" (ArcGIS StoryMap)
 - REQ: Forero, J. (2012). Birth rate plummets in Brazil. *Washington Post*, Dec. 29.
 - REQ: Kearney and Levine (2020). Half a million fewer children? The coming COVID baby bust. *Brookings Institution blog*.
 - SKIM: IHME (2015). Rethinking Development and Health Findings from the Global Burden of Disease Study
 - RCM: "How the Human Lifespan Doubled in 100 Years." *New York Times*, 2020.
- Fri. (Sept. 9): Global Health Governance
 - REQ: Gostin, L. O., Moon, S., & Meier, B. M. (2020). Reimagining global health governance in the age of COVID-19. *American Journal of Public Health*, 110(11), 1615-1619.
 - REQ: Tom Pegram and Julia Kreienkamp, COVID-19 and the Future of Global Health Governance: Building Back Better?
 - RCM: Birn, A. E. (2009). The stages of international (global) health: histories of success or successes of history?. *Global Public Health*, 4(1), 50-68.

Week 3. Global Health / Disease Ecology

- Mon. (Sept. 12): National Health Systems: Lessons from Latin America
 - REQ: Gawande, A. (2021, Aug. 20). Costa Ricans Live Longer Than Us. What's the Secret? *The New Yorker*.
 - RCM: Carter, E. D. (2022). Health Systems in Argentina and Chile: A Comparative History. In *Healthcare In Latin America*. UPF.
 - RCM: Frenk, J. (2010). The global health system: strengthening national health systems as the next step for global progress. *PLoS Med*, 7(1), e1000089.
- Wed. (Sept. 14): Discussion on International Health
 - Be prepared to discuss readings and lectures for this unit
- Thurs. (Sept. 15):
 - **Exercise 1: Demographic and Health Indicators DUE**
- Fri. (Sept. 16): Disease Ecology: Introduction
 - REQ: Anthamatten and Hazen (2011). Ecological Approaches. In *An Introduction to the Geography of Health*.
 - REQ: Lesser, J., & Kitron, U. (2016). The Social Geography of Zika in Brazil. *NACLA Report on the Americas*, 48(2), 123-129.
 - REQ: Carter, E. D. (2016). JLAG Perspectives: Zika Anxieties and a Role for Geography. *Journal of Latin American Geography*, 15(1), 157-161.
 - RCM: Harris, M. L., & Carter, E. D. (2019). Muddying the waters: A political ecology of mosquito-borne disease in coastal Ecuador. *Health & Place*, 57, 330-338. (recommended)

Week 4. Disease Ecology

- Mon. (Sept. 19): Disease Ecology: Malaria, environment, and development
 - REQ: Sachs, J., and P. Malaney (2002). The economic and social burden of malaria. *Nature* 415: 680-685.
 - REQ: Shah, S. (2010). *The Fever: How Malaria Has Ruled Humankind for 500,000 Years* (excerpt)
- Wed. (Sept. 21): Disease Ecology: Malaria control
 - REQ: Shah, S. (2010). *The Fever* (excerpt)
 - REQ: Watch "The Winged Scourge" (video)
 - RCM: Nájera, J. A., González-Silva, M., & Alonso, P. L. (2011). Some lessons for the future from the Global Malaria Eradication Programme (1955–1969). *PLoS Med*, 8(1), e1000412.
 - RCM: Cueto, M. (2005). Appropriation and resistance: Local responses to malaria eradication in Mexico, 1955-1970. *Journal of Latin American Studies*, 533-559.
- Fri. (Sept. 23): Discussion on Disease Ecology
 - Be prepared to discuss readings and lectures for this unit

Week 5. Emerging Infectious Diseases

- Mon. (Sept. 26): NO CLASS
 - Work on take-home exam
- Tues. (Sept. 27)
 - **EXAM 1 DUE**
- Wed. (Sept. 28): Discuss Final Project
- Fri. (Sept. 30): Emerging Infectious Diseases 1: Emergence
 - REQ: Wolfe, N. D., Dunavan, C. P., & Diamond, J. (2007). Origins of major human infectious diseases. *Nature*, 447(7142), 279-283.
 - REQ: Farmer, P. (2001). Rethinking 'Emerging Infectious Diseases.' Chapter 2 in *Infections and Inequalities: The Modern Plagues*. Berkeley: UC Press.
 - REQ: Quammen, D. (2020, Sept. 19). The Pandemic, From the Virus's Point of View. *NY Times*.

Week 6. Covid-19 Pandemic

- Mon. (Oct. 3): Emerging Infectious Diseases 2: Diffusion
 - REQ: Haggett, P. (2000). *The geographical structure of epidemics*. Oxford: Clarendon Press (excerpt).
 - REQ: Ali, S. H. & R. Keil (2006). Global Cities and the Spread of Infectious Disease: The Case of Severe Acute Respiratory Syndrome (SARS) in Toronto, Canada. *Urban Studies* 43(3): 491-509.
- Wed. (Oct. 5): Emerging Infectious Diseases 3: Covid-19 Pandemic
 - REQ: Carter, E. D., & Cordero, M. L. (2022). Salir Adelante: Social capital and resilience during the Covid-19 pandemic in Argentina. *Health & Place*, 77, 102870.
 - SKIM: Ritchie, L., & Gill, D. (2021). Considering COVID-19 through the Lens of Hazard and Disaster Research. *Social Sciences*, 10(7), 248.
 - SKIM: Gelfand, M. J., et al. (2021). The relationship between cultural tightness–looseness and COVID-19 cases and deaths: a global analysis. *The Lancet Planetary Health*, 5(3), e135-e144.
 - RCM: Andrews, G. J., Crooks, V. A., Pearce, J. R., & Messina, J. P. (2021). *COVID-19 and Similar Futures: Pandemic Geographies*. Springer Nature. (excerpts)
 - RCM: Kuebart, A., & Stabler, M. (2020). Infectious diseases as socio-spatial processes: The Covid-19 outbreak in Germany. *Tijdschrift voor economische en sociale geografie*, 111(3), 482-496.
- Fri. (Oct. 7): Emerging Infectious Diseases: Discussion
 - Be prepared to discuss readings and lectures for this unit

Week 7. Climate Change and Health

- Mon. (Oct. 10): Climate Change and Health: an Introduction
 - REQ: McMichael, A. J. (2013). Globalization, climate change, and human health. *New England Journal of Medicine*, 368(14), 1335-1343.
 - REQ: Coffel, E., et al. (2018). Heat and Humidity Are a Killer Combination. *New York Times*, Oct. 11.
 - REQ: Morrison, J. (2019). "Can We Turn Down the Temperature on Urban Heat Islands?" *Yale Environment* 360.
- Tues. (Oct. 11): **Final Project: Topic Statement due**
- Wed. (Oct. 12): Climate Change and Vector-Borne Disease
 - REQ: McNeil, D. G. (2018). Tick and Mosquito Infections Spreading Rapidly, C.D.C. Finds. *New York Times*, May 1.
 - REQ: Parham, P. E., et al. (2015). Climate, environmental and socio-economic change: weighing up the balance in vector-borne disease transmission. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 370 (1665). (recommended)
 - RCM: Lafferty, K.D. (2009). The ecology of climate change and infectious diseases. *Ecology* 90(4):888-900.
- Fri. (Oct. 14): Discussion on Climate Change and Health
 - Be prepared to discuss readings and lectures for this unit

Week 8. Spatial Approaches (begin)

- Mon. (Oct. 17): NO CLASS
 - Work on take-home exam
- Tues. (Oct. 18)
 - **EXAM 2 DUE**
- Wed. (Oct. 19): Spatial Approaches: Mapping Patterns
 - REQ: Anthamatten and Hazen (2011). Cartography and visualization of health data. In *An Introduction to the Geography of Health*.
- Fri. (Oct. 21): NO CLASS – FALL BREAK

Week 9. Spatial Approaches (cont'd)

- Mon. (Oct. 24): Spatial Approaches: Thinking Spatially About Health
 - REQ: Anthamatten and Hazen (2011). Health and GIS. In *An Introduction to the Geography of Health*.
 - REQ: HealthGIS Projects from Spring 2022
- Tues. (Oct. 25): **Final Project: groups to be organized by this date**
- Wed. (Oct. 26): Spatial Approaches: GIS Lab Activity
 - Meet in GIS Lab – hands-on GIS lab activity
- Fri. (Oct. 28): Discussion on Spatial Approaches
 - Be prepared to discuss readings, lectures, other activities for this unit

Week 10. Social Determinants of Health

- Mon. (Oct. 31): Social Determinants 1: Health Inequalities
 - REQ: Marmot, M. (2015). The organization of misery. In: *The Health Gap*. New York: Bloomsbury.
 - REQ: Castle, S. (2019). Shortchanged: Why British Life Expectancy Has Stalled. *NY Times*, Aug. 30.
 - REQ: Kristof, N. and S. WuDunn (2020). Who killed the Knapp family? *NY Times*, Jan. 9.
 - RCM: National Research Council and Institute of Medicine. (2013) *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. (excerpt)
- Tues. (Nov. 1): **EXERCISE 2 (Mapping and Spatial Analysis) DUE**
- Wed. (Nov. 2): Social Determinants 2: Place Effects
 - REQ: Smyth, F. (2008). Medical geography: Understanding health inequalities. *Progress in Human Geography* 32 (1): 119-127.
 - REQ: Klinenberg, E. (2002). *Heat wave: a social autopsy of disaster in Chicago*. Chicago: University of Chicago Press (excerpt)
 - REQ: Irwin, N. and Q. Bi. (2016). The Rich Live Longer Everywhere. For the Poor, *Geography Matters*. *New York Times*, April 11.
 - RCM: *Unnatural Causes: Place Matters* (video)
- Fri. (Nov. 4): Discussion on Social Determinants
 - Be prepared to discuss readings, lectures, other activities for this unit

Week 11. Environmental Health

- Mon. (Nov. 7): Environmental Health 1
 - REQ: Anthamatten, P. and H. Hazen (2011). Environmental Exposures. In *An Introduction to the Geography of Health*.
 - REQ: NY Times interactive feature on the world's most polluted cities: <https://www.nytimes.com/interactive/2019/12/02/climate/air-pollution-compare-ar-ul.html>
- Wed. (Nov. 9): Epidemiology of Cancer Clusters
 - REQ: Gawande, A. (1999). The cancer cluster myth. *The New Yorker*.
 - REQ: Readings on Twin Cities East Metro cancer cluster research
 - RCM: *Cape Cod Breast Cancer Study* (skim)
- Fri. (Nov. 11): Discussion on Environmental Health
 - Be prepared to discuss readings, lectures, other activities for this unit

Week 12. Environmental Justice

- Mon. (Nov. 14): Environmental Justice
 - Readings TBA
- Tues. (Nov. 15):
 - **Final Project: Proposal Due**
- Wed. (Nov. 16): Environmental Justice – California case study
 - REQ: Pulido, L. (2000). Rethinking Environmental Racism: White Privilege and Urban Development in Southern California. *Annals of the Association of American Geographers*, 90(1), 12-40.
 - REQ: Morello-Frosch, R., Pastor, M., Jr., Porras, C., & Sadd, J. (2002). Environmental justice and regional inequality in southern California: implications for future research. *Environ Health Perspect*, 110 Suppl 2, 149-154.
 - RCM: *EJ Atlas* website
- Fri. (Nov. 18): Discussion on Environmental Justice
 - Be prepared to discuss readings, lectures, other activities for this unit

Week 13. Exam 3 and Thanksgiving Break

- Mon. (Nov. 21): NO CLASS
 - Work on take-home exam
- Tues. (Nov. 22)
 - **EXAM 3 DUE**
- Wed. (Nov. 23) and Fri. (Nov. 25): NO CLASS (THANKSGIVING BREAK)

Week 14. Project Work

- Mon. (Nov. 28): Work on Final Projects (workshop in class)
- Wed. (Nov. 30): Work on Final Projects (workshop in class)
- Thurs. (Dec. 1): **Final Project: Working Bibliography due**
- Fri. (Dec. 2): Work on Final Projects (workshop in class)

Week 15. Oral Presentations

- Mon. (Dec. 5): Oral Presentations on Group Projects (schedule TBD)
- Wed. (Dec. 7): Oral Presentations on Group Projects
- Fri. (Dec. 9): Oral Presentations on Group Projects

Finals Week

- Tues. (Dec. 13): **Final Project: Group Paper Due**

COURSE SCHEDULE AT-A-GLANCE

	Monday	Tuesday	Wednesday	Thursday	Friday
1	29 (August)	30	31 Introduction and Course Business	1 (SEPT)	2 What the Heck is Medical Geography?
2	5 NO CLASS LABOR DAY	6	7 International Health by the Numbers	8	9 Global Health Governance
3	12 National Health Systems	13	14 Discussion: International Health	15 EXERCISE 1 DUE	16 Disease Ecology 1
4	19 Disease Ecology 2	20	21 Disease Ecology 3	22	23 Discussion: Disease Ecology
5	26 NO CLASS Work on take- home exam	27 EXAM 1 DUE	28 Discuss Final Project	29	30 Emerging Infectious Diseases 1
6	3 (OCT) Emerging Infectious Diseases 2	4	5 EIDS 3: Covid-19 Pandemic	6	7 EIDS: Discussion
7	10 Climate Change and Health 1	11 Final project: topic statement	12 Climate Change and Health 2	13	14 Discussion Climate Change and Health
8	17 NO CLASS Work on take- home exam	18 EXAM 2 DUE	19 Spatial Approaches 1	20 NO CLASS FALL BREAK	21 NO CLASS FALL BREAK
9	24 Spatial Approaches 2	25 Final project: organize groups	26 GIS Lab Activity	27	28 Discussion: Spatial Approaches

10	31 Social Determinants of Health 1	1 (NOV) EXERCISE 2 DUE	2 Social Determinants of Health 2	3	4 Discussion on SDOH
	7 Environmental Health 1	8	9 Environmental Health 2	10	11 Discussion: Environmental Health
12	14 Environmental Justice	15 Final project: proposal due	16 Environmental Justice	17	18 Discussion: Environmental Justice
13	21 NO CLASS Work on take- home exam	22 EXAM 3 DUE	23 THANKSGIVING BREAK	24 THANKSGIVING BREAK	25 THANKSGIVING BREAK
14	28 Work on final projects	29	30 Work on final projects	1 (DEC) Final project: working bibliography due	2 Work on final projects
15	5 Oral Presentations	6	7 Oral Presentations	8	9 Oral Presentations
	12 Study Day	13 Final project: final group paper due	14	15	16