

SST 295-02
SPECIAL TOPICS: HEALTH GEOGRAPHY
Spring 2009

Tues/Thurs 2:15-4:05, Goodnow 105

Instructor: Eric D. Carter
Office Hours: MTWTh 1-2 (drop-in)
or by appointment

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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."

Required Readings:

All of the readings for this course will be available electronically via Pioneer Web. See course outline for bibliographic information.

Online Resources:

For this course, many important items will be posted on Pioneer Web. This includes all course handouts, assignments, readings, and links to important websites. Bear in mind that some materials will be available exclusively via Pioneer Web, so familiarize yourself with this system. If you find links to web-based content that you think might be interesting for the whole class, please email the instructor! This will help improve the course for this and future semesters, and your contributions will be reflected in your attendance and participation grade.

Class Attendance and Participation Policy:

In this class, 10 percent of your grade derives from attendance and participation. Consistent attendance is necessary to fully comprehend the course material, and there will be plenty of opportunities to participate in this class. In general, "participation" means speaking up and making yourself noticed in positive and intelligent ways. Recognize that "participation" can include many kinds of contributions: asking questions in class, contributing to class discussions, coming to see the professor during office hours with questions or comments, sending the professor emails about interesting news stories or articles, and so forth. If you attend class consistently (zero or very few absences) and participate frequently, while making significant contributions to everyone's learning experience, you can expect to get a 10 out of 10 for attendance and participation. If you show up to every class but never say anything, you will get fewer points. If you miss many classes, and then make little or no effort to participate, you should expect to get a very low attendance/participation score.

Academic Dishonesty Policy:

Academic dishonesty will not be tolerated in this course. Acts of academic dishonesty include, but are not limited to, plagiarism, fabrication, cheating, stealing or buying copies of exams or papers, unauthorized collaboration, and taking exams for someone else. Be aware that at Grinnell penalties for academic dishonesty include verbal reprimand, written reprimand, lowering of grade on a specific exam or assignment, a failing grade on specific exam or assignment, lowering of course grade, a failing course grade, and suspension and expulsion from the university. Depending on the circumstances of the infraction, you may be subject to any of these penalties. For more details, see the college's brochure on Academic Honesty at <http://www.grinnell.edu/academic/writinglab/writers/academichonesty.pdf>. This brochure not only contains information about the college's policy on this matter, but great tips on how to avoid plagiarism.

Course Requirements/Assignments:

- 1) **Attendance and Participation (see above)**
- 2) **Exercises.** There will be three homework exercises, each worth 5 percent of your grade. The purpose of these exercises is to apply the concepts and analytical tools of health geography, such as demography, spatial epidemiology, and disease diffusion, to specific health problems. The instructions for these exercises will be posted on Pioneer Web, and much of the material you need for the exercises will be available via the Internet.
- 3) **Research Project.** You will be expected to complete a 12-15 page research paper that explores the geographical dimensions of a specific health issue, applying the general concepts you are learning in this course. You will be provided with a list of possible topics but you are free to pursue a topic of your own, with the approval of the instructor. Overall, the research paper assignment is worth 30 percent of your grade, although only 20 percent of your grade derives from the final version of the paper.
- 4) **Exams.** There will be two exams. The final exam will be worth more than the midterm exam because it will be comprehensive (i.e. it will cover topics from throughout the semester).

Grading:

Attendance and Participation	10%
Exercises (3 x 5%)	15%
Research Project	30%
Midterm Exam	15%
Final Exam	30%
TOTAL	100%

If necessary, I will use a curve to decide **final** course grades.

Course Outline

(I reserve the right to change assigned readings, with fair warning.)

Week 1. Introduction. (Jan. 19-23)

- Andrews, G. J., & Moon, G. (2005). Space, place, and the evidence base: Part I: an introduction to health geography. *Worldviews on Evidence-based Nursing* 2: 55-62.
- Earickson, R. (2007). Introduction to special issue: Eleventh International Medical Geography Symposium. *Social Science & Medicine* 65: 1-6
- Weiss, R. (2002). Challenges for humanity: War on disease. *National Geographic*, Feb.
- Smyth, F. (2005). Medical geography: Therapeutic places, spaces and networks. *Progress in Human Geography* 29 (4): 488-495. (recommended)
- Gesler, W.M. (1992). Therapeutic landscapes: Medical issues in light of the new cultural geography. *Social Science and Medicine* 34: 735-46. (recommended)

Week 2. Fundamentals of the Health Geography Approach (Jan. 26-30)

- Curtis, S. (2004), Introduction to geographical perspectives on health and inequality. Chapter 1 in *Health and Inequality*. Sage Publications.
- Meade, M. & Earickson, R. (2000). The Human Ecology of Disease. Chapter 2 in *Medical Geography*, 2nd. ed. Guilford Press.
- Meade, M. & Earickson, R. (2000). Data, Measures, and Methodologies. Chapter 12 in *Medical Geography*, 2nd. ed. Guilford Press.
- (Prof. Carter out of town Thursday, Jan. 29; watch *Rx for Survival* episodes)

Week 3. Socioeconomic Determinants of Population Health (Feb. 2-6)

- Macintyre, S., Ellaway, A., & Cummins, S. (2002). Place effects on health: How can we conceptualise, operationalise and measure them? *Social Science & Medicine*, 55(1), 125-139.
- Smyth, Fiona (2008). Medical geography: Understanding health inequalities. *Progress in Human Geography* 32 (1): 119-127.
- Ezzati, M. et al. (2008). The reversal of fortunes. *PLoS: Medicine* 5.4
- Strait, J. B. (2006). An epidemiology of neighborhood poverty: Causal factors of infant mortality among blacks and whites in the metropolitan United States. *The Professional Geographer* 58: 39-53.

EXERCISE 1, "Understanding Demographic and Health Indicators," due Fri., Feb. 6

Week 4. Global Health and Development (Feb. 9-13)

- Garrett, L. (2007). The challenge of global health. *Foreign Affairs*, Jan/Feb.
- Marshall, S. J. (2004). Developing countries face double burden of disease. *Bulletin of the WHO* 82: 556.
- Montgomery, K. (2009). The demographic transition. Online resource.
- Murphy, Kim (2006), "The Vanishing Russians" series. *Los Angeles Times*, Oct. 8-10.
- Sachs, J. (2008). Global population dynamics. Ch. 7 in *Common wealth: Economics for a crowded planet*. Penguin Press.
- Sen, A. (2001), Economic Progress and Health. In Leon & Walt (eds.), *Poverty, Inequality, and Health: An International Perspective*, Chapter 17.

RESEARCH PAPER TOPIC STATEMENT DUE (Thurs. Feb. 12)

Week 5. GIS and Spatial Analysis in Public Health Research (Feb. 16-20)

- Cromley, Ellen K. (2003). GIS and Disease. *Annual Review of Public Health* 24: 7-24.
- Mostashari, F., Kulldorff, M., Hartman, J. J., Miller, J. R., & Kulasekera, V. (2003). Dead bird clusters as an early warning system for West Nile virus activity. *Emerging Infectious Diseases*, 9: 641 - 646.
- Ruiz, M., Tedesco, C., McTighe, T., Austin, C., & Kitron, U. (2004). Environmental and social determinants of human risk during a West Nile virus outbreak in the greater Chicago area, 2002. *International Journal of Health Geographics*, 3: 8.
- Tanser, F., LeSueur, D., Solarsh, G., & Wilkinson, D. (2000). HIV heterogeneity and proximity of homestead to roads in rural South Africa: an exploration using a geographical information system. *Tropical Medicine & International Health*, 5: 40-46.

EXERCISE 2, "Spatial Analysis and Mapping in Health Studies," due Fri., Feb. 20

Week 6. Human Ecology of Chronic Disease (Feb. 23-27)

- Curtis, S. (2004). Landscapes of poverty and wealth. Chapter 4 in *Health and Inequality*.
- Kwate, N.O.A., et al. (2008). Inequality in obesigenic environments: Fast food density in New York City. *Health & Place* 15: 364-373.
- Morland, K. & Evenson, K. (2009). Obesity prevalence and the local food environment. *Health & Place* 15: 491-495.
- New York Times* series on diabetes
- Smoyer-Tomic, K. et al. (2008). The association between neighborhood socioeconomic status and exposure to supermarkets and fast food outlets. *Health & Place* 14: 740-754.

RESEARCH PAPER PROPOSAL AND WORKING BIBLIOGRAPHY DUE (Thurs. Feb. 26)

Week 7. Environmental Health (Mar. 2-6)

- Brown & Mikkelsen (1997). *No Safe Place: Toxic Waste, Leukemia, and Community Action* (excerpt)
- Hanchette, C. L. (2008). The political ecology of lead poisoning in eastern North Carolina. *Health & Place* 14: 209-216.
- Silent Spring Institute (2007). Cape Cod Breast Cancer and Environment Study. Online resource.
- Additional readings T.B.A.

Week 8. Open Week (Mar. 9-13)

Topics and activities T.B.A.

EXAM 1 (take-home) due Thurs. March 12

SPRING BREAK – NO CLASS (Mar. 16-27)

Week 9. The Geographical Structure of Epidemics (Mar. 30 – Apr. 3)

- 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.
- Haggett, P. (2000). *The geographical structure of epidemics*. Oxford: Clarendon Press (excerpt).
- McNeill, W. H. (1976). *Plagues and peoples* (1st ed.). Garden City, N.Y.: Anchor Press.

RESEARCH PAPER OUTLINE DUE (optional, Tues. Mar. 31)

EXERCISE 3, "Disease Diffusion: Maps and Simulations" due Fri. Apr. 3

Week 10. Disease Ecology and Emerging Infectious Diseases (Oct. 16-18)

McMichael, A. J. (2004). Environmental and social influences on emerging infectious diseases: past, present and future. *Philosophical Transactions of the Royal Society of London Series B-Biological Sciences* 359 (1447): 1049-1058.

Farmer, Paul (2001). Rethinking 'Emerging Infectious Diseases.' Chapter 2 in *Infections and Inequalities: The Modern Plagues*. Berkeley: UC Press.

Other readings T.B.A.

Week 11. Vector-Borne Diseases (Apr. 13-17)

Guerra, M., et al. (2002). Predicting the Risk of Lyme Disease: Habitat Suitability for *Ixodes scapularis* in the North Central United States. *Emerging Infectious Diseases* 8(3): 289-297.

Kitron, U. (2000). Risk Maps: Transmission and Burden of Vector-borne Diseases. *Parasitology Today* 16: 324-325.

Berrang-Ford, L., et al. (2005). Sleeping sickness in southeastern Uganda: A systems approach. *EcoHealth* 2: 1-12.

RESEARCH PAPER POLISHED DRAFT DUE (Thurs. Apr. 16)

Week 12. Malaria (Apr. 20-24)

Gladwell, M. (2001). The Mosquito Killer. *The New Yorker*, July 2.

Sachs, J., & Malaney, P. (2002). The economic and social burden of malaria. *Nature* 415: 680-685.

Singer, B. H., & Caldas de Castro, M. (2001). Agricultural Colonization and Malaria on the Amazon Frontier. *Annals, New York Academy of Science* 954: 184-222.

Packard, R. M. (2007). *The making of a tropical disease: A short history of malaria*. Baltimore, Md.: Johns Hopkins University Press (excerpt).

Week 13. HIV/AIDS in Global Perspective (Apr. 27 – May 1)

Kalipeni, E. et al. (2004). *HIV and AIDS in Africa: beyond epidemiology* (excerpts).

Farmer, P. (2005). *Pathologies of power: Health, human rights, and the new war on the poor*. Berkeley: University of California Press. (excerpt)

Other readings T.B.A.

Week 14. Research Presentations (May 4-8)

No readings this week – student research presentations.

RESEARCH PAPER FINAL DRAFT DUE (Tues. May 5)

Final Exam Period: Tues., May 12, 2:00 PM. Finish research presentations.

Take-home exam due Friday, May 15