

**PHS 904 Topics in Epidemiology: Global Health, Syllabus – 11/19/2011**  
**FALL SEMESTER, Module 2, Nov 2-Dec 14, 2011**

Wed, 4:30-7:00 PM; 1309 Health Sciences Learning Center

Instructor: Maureen Durkin, PhD, DrPH    Teaching Assistant: Daniel Fisher ([dbfisher@wisc.edu](mailto:dbfisher@wisc.edu))

The purposes of this course are to explore the relationship between globalization and health and provide students with an understanding of: (a) major indicators and determinants of health and health disparities across populations, from less to more developed countries; (b) the role of epidemiology in evaluating population health, and developing interventions to improve global health and reduce health disparities; and (c) some of the methodological and ethical considerations in international health research. The course is also designed to expose students to health research and clinical work of current University of Wisconsin faculty members working in a range of disciplines relevant to global health, and to help students identify ways in which they might contribute in the future to improvements in global health.

<b>Week, DATE</b>	<b>TOPIC</b>	<b>SPEAKER</b>	<b>ASSIGNMENT</b>
1. Wed 11/02	4:30-5:20 Introduction: course goals, scope & requirements; brief overview of epidemiology 5:30-7:00 Global health effects of mercury	Durkin Kanarek	Readings assigned for wk 1, (to be read in advance of class)
2. Wed 11/09	4:30-5:30 Disaster management  5:45-7:00 Globalization & health; epidemiologic transitions, global health indicators	Birnbaum  Durkin	Readings assigned for wk 2; <b>Post on Learn@UW Forum, 500-word Essay #1</b> , integrating 1 of this week's lectures, associated readings and your own thoughts, <b>due Tuesday 11/15</b>
3. Wed 11/16	4:30-5:20 Global health indicators (cont.), using epidemiology to identify global health priorities, disparities and disease risk factors  5:30-7:00 Epidemiology of HIV/AIDS	Durkin  Sosman	Readings assigned for wk 3; <b>Post 500-word Essay #2</b> , On 1 of this week's lectures & readings, <b>due Mon 11/21</b>
4. Wed 11/23	<b>No Class</b>		Readings assigned for wk 4; <b>Post 500-word Essay #3</b> , <u>On wk 4 readings or 1st week's lecture &amp; readings</u> , <b>due Tues 11/29</b>
5. Wed 11/30	4:30-5:30 Global climate change and health  5:30-7:00 Biology and epidemiology of parasitic infections	Patz  Christensen	Readings assigned for wk 5 <b>Post 500-word Essay #4</b> , On 1 of this week's lectures & readings, <b>due Mon 12/5</b>
6. Wed 12/7	4:30-6:00 Global influenza crises  6:10-7:00 Epidemiology and prevention of neurodevelopmental disabilities	Ip  Durkin	Readings assigned for wk 6; <b>Global Health Indicator Assignment Due 12/7</b> (paper copy)
7. Wed 12/14	4:30-7:00 Using epidemiology to evaluate interventions to improve global health, course wrap-up	Durkin	Readings assigned for wk 7
			Online exam will be due before 12/21/2011, (Learn@UW quiz)

Format: lectures featuring U.W. faculty with expertise in topics related to international health; weekly readings; brief written assignments and discussions on assigned and student-selected topics.

Grading:

- Class attendance and participation, including completion of at least three of the four assigned *Learn@UW* 500-word commentaries (postings), 60% [Note: each of the six weekly attendances is worth seven points and each commentary is worth six points; students can miss either one class or one posting and still achieve 60% (note that the fourth essay is worth seven points if it is used in place of one attendance)]
- Global Health Indicator Assignment, 15%
- Final Exam (take-home, on-line, multiple choice), 25%.

Attendance: Students are expected to attend all seven weekly class sessions and sign the attendance sheet. In the event that a student has to miss a class, he or she should let the instructor and the teaching assistant know in advance, if possible. Students can make-up for one missed weekly session by completing all four of the assigned commentary postings (instead of the otherwise minimum requirement of posting three 500-word discussion pieces). Students are encouraged to read each other's postings on *the Learn@UW* Forum; it's possible ideas for exam questions will come from this postings.

<b>Lecturers:</b>	<b>Lecture Topics:</b>
<b>Marvin Birnbaum, MD, PhD</b> , Emeritus Professor of Medicine & Physiology, Director of Emergency Medical Services, UW; President of the World Association for Disaster & Emergency Medicine	Disaster Management
<b>Bruce Christensen, PhD</b> , Professor, Dept of Animal Health & Biological Sciences, School of Veterinary Medicine UW-Madison	Biology and epidemiology of parasitic infections, lymphatic filariasis, geohelminths, effects of preventive interventions on child health
<b>Maureen Durkin, PhD, DrPH</b> , Professor, Dept of Population Health Sciences & Pediatrics, & Waisman Center, UW-Madison	Global health indicators & determinants; globalization & health; design & conduct of global epidemiologic studies; neurodevelopmental disabilities; research ethics
<b>Hon Ip, PhD</b> , Director, Diagnostic Virology Laboratory, United States Geological Survey, National Wildlife Health Center, Madison, WI	Virology, avian influenza, diagnosis, surveillance, global influenza epidemiology
<b>Marty Kanarek, PhD</b> , Professor, Dept of Population Health Sciences & Gaylord Nelson Institute for Environmental Studies UW-Madison	Global health effects of mercury
<b>Jonathan Patz, MD</b> , Professor, Dept of Population Health Sciences & Gaylord Nelson Institute for Environmental Sciences, UW-Madison	Global climate change and health
<b>James Sosman, MD</b> , Associate Professor Dept of Medicine, UW-Madison	HIV/AIDS

## Required READINGS (to be read in advance of each session)

### **Week 1, Wed 11/2/2011: Course Overview & Background; Global Health Effects of Mercury**

1. Diamond J, Evolution, consequences and future of plant and animal domestication. *Nature*. 2002; 418(6898):700-7.
  2. Diamond J, The double puzzle of diabetes. *Nature*. 2003; 423(6940):599-602.
  3. Diamond J, Diabetes in India. *Nature*, 2011; 469:478-9.
  4. Pike BL, Saylor KE, Fair JN, LeBreton M, Tamoufe U, Djoko CF, Rimoin AW, Wolfe ND, The origin and prevention of pandemics, *Clin Infect Dis*, 2010; 50(12):1636-40.
  5. Clarkson TW, The three modern faces of mercury. *Environ Health Perspect*, 2002; 110(suppl 1):11-23.
  6. Deer B, How the case against the MMR vaccine was fixed. *BMJ*, 2011; 342:77-84.
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### **Week 2, Wed 11/9/2011: Disaster management; Globalization & health; Epidemiologic transitions.**

1. Birnbaum ML, Clusters: Who, What, Where, How?, *Prehospital and Disaster Medicine*, 2010; 25(5):385-6.
2. Savitz DA, Oxman RT, Metzger KB, Wallenstein S, Stein D, Moline JM, Herbert R, Epidemiologic Research on Man-made Disasters: Strategies and Implications of Cohort Definition for World Trade Center Worker and Volunteer Surveillance Program, *Mount Sinai Journal of Medicine*, 2008; 75:77-87.
3. Richman N, After the flood. *American Journal of Public Health*, 1993; 83(11):1522-3.
4. Durkin MS, Khan N, Davidson LL, Zaman SS, Stein ZA, Effects of a natural disaster on child behavior: evidence for posttraumatic stress. *American Journal of Public Health*, 1993; 83(11):1549-53.
5. Tol WA, Barbui C, Galappatti A, Silove D, Betancourt TS, Souza R, Golaz A, van Ommeren M, Mental health and psychosocial support in humanitarian settings: linking practice and research, *The Lancet*, 2011; Published online October 17, 2011 DOI:10.1016/S0140-6736(11)61094-5.
6. Peleg K, Kellermann AL, Medical Relief After Earthquakes: It's Time for a New Paradigm, *Ann Emerg Med*. 2011, published online in October, 2011.
7. Omran AR. The epidemiologic transition: a theory of the epidemiology of population change. 1971. [Classical Article reprinted] *Bulletin of the World Health Organization*. 2001; 79(2):161-70.
8. Population Reference Bureau, 2011 World Population Data Sheet, [http://www.prb.org/pdf11/2011population-data-sheet\\_eng.pdf](http://www.prb.org/pdf11/2011population-data-sheet_eng.pdf).

### **Week 3, Wed 11/16/2011: Global Health Indicators; Epidemiology of HIV/AIDS**

1. Alkire S, Human development: definitions, critiques, and related concepts, *Human Development Research Paper 2010/01*, New York: UNDP, [http://hdr.undp.org/en/reports/global/hdr2010/papers/HDRP\\_2010\\_01.pdf](http://hdr.undp.org/en/reports/global/hdr2010/papers/HDRP_2010_01.pdf) (PERUSE ONLY)
2. Maurice J, Quest for an effective AIDS vaccine takes a new tack, *The Lancet*; 2011; 378:213-4.

#### **Week 4, (Thanksgiving Break) NO CLASS**

1. Gallagher M, Malhotra I, Mungaia PL, Wamachic AN, Kiokob JM, Oumad JH, Muchirib E, Kinga CL, The effects of maternal helminth and malaria infections on mother-to-child HIV transmission, *AIDS*, 2005; 19:1849–55.
2. Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, et al. 2005 Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial. *PLoS Med* 2(11): e298. doi:10.1371/journal.pmed.0020298 (if interested, see also comments: <http://www.plosmedicine.org/article/comments/info%3Adoi%2F10.1371%2Fjournal.pmed.0020298> , and authors' reply: <http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.0030067> )
3. Wawer MJ, Makumbi F, Kigozi G, Serwadda D, Watya S, Nalugoda F, Buwembo D, Ssempijja V, Kiwanuka N, Moulton LH, Sewankambo NK, Reynolds SJ, Quinn TC, Opendi P, Iga B, Ridzon R, Laeyendecker O, Gray RH, Circumcision in HIV-infected men and its effect on HIV transmission to female partners in Rakai, Uganda: a randomised controlled trial, *Lancet*, 2009; 374:229-37. (if interested, see also letters to the editor and authors' reply: <http://www.ncbi.nlm.nih.gov/pubmed/19616720> ).

#### **Week 5, Wed 11/30/2011: Global Climate Change and Health; Biology and Epidemiology of Parasitic Infections**

1. Woodcock J, Banister D, Edwards P, Prentice AM, Roberts I, Energy and Health 3: Energy and transport. *The Lancet*, 2007; published online Sep 13, 2007 DOI:10.1016/S0140-6736(07)61254-9.
2. Patz JA, Daszak P, Tabor GM, Aguirre AA, Pearl M, Epstein J, Wolfe ND, Kilpatrick AM, Fofopoulos J, Molyneux D, Bradley DJ; Working Group on Land Use Change and Disease Emergence, Unhealthy landscapes: Policy recommendations on land use change and infectious disease emergence. *Environ Health Perspect*. 2004; 112(10):1092-8.
3. Hotez PJ, Fenwick A, Savioli L, Molyneux DH, Rescuing the bottom billion through control of neglected tropical diseases, *Lancet* 2009; 373: 1570–75.

#### **Week 6, Wed 12/7/2011: Global Influenza Crises; Epidemiology and Prevention of Neurodevelopmental Disabilities**

1. Kandeel A, Manoncourt S, Kareem EA, Ahmed ANM, Refaie SE, Essmat H, Tjaden J, de Mattos CC, Earhart KC, Marfi AA, El-Sayed N, Zoonotic Transmission of Avian Influenza Virus (H5N1), Egypt, 2006–2009, *Emerging Infectious Diseases*, 2010; 16(7):1101-7.
2. Writing Committee of the WHO Consultation on Clinical Aspects of Pandemic (H1N1) 2009 Influenza, Clinical Aspects of Pandemic 2009 Influenza A (H1N1) Virus Infection, *N Engl J Med* 2010;362:1708-19. (see also supplementary appendix and errata files on Learn@UW).
3. Durkin MS, Khan NZ, Davidson LL, Huq S, Munir S, Rasul I, Zaman SS, Prenatal and postnatal risk factors for mental retardation among children in Bangladesh. *American Journal of Epidemiology*, 2000; 152:1024-32.

**Week 7, Wed 12/14/2011: Using Epidemiology to Evaluate Interventions to Improve Global Health; Ethics of Global Health Research**

1. Blencowe H, Cousens S, Modell B, Lawn J, Folic acid to reduce neonatal mortality from neural tube disorders, *International Journal of Epidemiology* 2010; 39:i110–i121.
2. Riverby SM, “Normal exposure” and inoculation syphilis: a PHS “Tuskegee” doctor in Guatemala, 1946-1948. *The Journal of Policy History*. 2011; 23(1):6-28.