

**WWS 594N – Topics in Policy Analysis – Globalization and Infectious Disease**  
**Spring Term, 2006**  
**Instructor: Burton Singer**  
**Monday: 1-4PM**

**OBJECTIVES & SYLLABUS**

The purpose of this course is to investigate the interrelationships between macro-economic and political factors and human health with particular emphasis on infectious disease. Throughout human history, migrations have played a central role in the evolution and transmission of infectious agents. This process, more recently summarized as globalization, will be discussed in both historical and contemporary terms. We begin with a historical review of man's knowledge of infectious agents and briefly review the evolutionary origins of bacteria, viruses, and parasites. We discuss modes of transmission and ecological conditions that either promote or inhibit different levels of endemicity of infectious disease in human and animal populations. Particular attention will be given to malaria, sexually transmitted diseases (including HIV/AIDS), tuberculosis, influenza, and African and American Trypanosomiasis (Chagas Disease). Economic expansion and international political conditions have, in the past, and continue to play a central role in exposing different populations to infectious diseases and to either promoting or inhibiting mitigation strategies. Through a series of case studies, historical and contemporary, we investigate the subtle policy issues that surround prevention and treatment programs and link this to ethical issues of equity in heterogeneous populations. Particular attention will be given to urbanization and its implications for health risks. We will also devote a segment of the course to a discussion of biological weapons, international agreements about their deployment, the potential for such weapons in the future, and the policy issues that are in urgent need of attention regarding this form of threat.

Course Requirements –

- (i) Weekly brief (2-3 pages) responses to specific questions that will be posed in advance about the topic for the week
  
- (ii) One policy paper (approximately 20 pages) on a topic concerning the broad area of globalization and infectious disease. Specific topics for the papers are based on discussion between the instructor and each student individually. The papers are designed to mesh well with the specific interests of each student.

**Week 1 –**

Definitions of 'health' and 'environment'. Communities of organisms from cellular to human and their evolutionary histories. Infectious diseases, the origin of epidemics and their consequences. Historical case studies involving plague, measles, influenza, tuberculosis, malaria, and smallpox. Questions of scale, in space and time, that facilitate integration of macro-economic and political influences with micro-level and local physical and social environments and their implications for disease transmission and mitigation.

**Week 2 –**

Political economy, colonialism, and the management of infectious diseases. Drugs, vaccines, and prevention strategies: the historical tensions between medicine and public health. Long-term

trends in mortality and disease morbidity: what are the driving forces? Case studies on: (i) malaria control and British colonialism; (ii) introduction of the rinderpest virus and linkages to ecosystem transformations and outbreaks of African Trypanosomiasis; (iii) tuberculosis in South Africa from the 1880s to the 1960s and the modern period of HIV/AIDS in that country.

### **Week 3 –**

Major outbreaks and associated control and eradication programs. Case studies of: (i) the 1918 influenza pandemic; (ii) the smallpox eradication campaign; (ii) measles and pertussis vaccination programs and their impact on transmission dynamics; (iii) tuberculosis control via antibiotics and DOTS and its linkage with HIV/AIDS control..

### **Week 4 –**

Health system solutions; illustrations of effective programs and their broader implications. Case studies of: (i) Tanzania Essential Health Intervention Program (TEHIP); (ii) the Dar es Salaam Urban Health Project; (iii) Community health in Pondicherry, India and in Kerala state; (iv) Health systems on the Amazon frontier (Brazil). What are the lessons from these initiatives that carry over to other settings? What are the idiosyncratic features of these programs?

### **Week 5 –**

Migration, urbanization, and health. Health problems induced by major migrations and their mitigation: Case studies of colonization projects on the Amazon frontier (Brazil), transmigration in Indonesia, rural-urban migration and the growth of Dar es Salaam, Tanzania, and the Japanese occupation of Micronesia (1920-1945). Health consequences of large scale development projects: The Three Gorges Dam (China) and the Namh Theun 2 hydroelectric project (Laos). Commonalities and idiosyncrasies of these examples and their implications for the health of contemporary migrant populations.

### **Week 6 –**

Chemical and biological weapons: infectious agents and health consequences. Case studies of anthrax in Sverdlovsk and Agent Orange in Vietnam. Detection of outbreaks and prediction of consequences. Discriminating between ‘natural’ disease transmission and attacks. The complex evidential basis for supporting or refuting claims of chemical and biological weapons attacks.

### **Readings**

Reading material for each week will be posted on the course blackboard. With the exception of week 1, it is expected that we will devote at least 50% of each meeting to a discussion of the readings and responses to the question assignment for that week.