Environmental Determinants of Infectious Disease

Public Health 290  
Fall 2016

Prof Justin Remais
2 Units | Fridays 10am-12pm

Environmental Change
How do global climate change, extreme weather events, and hydrological variability influence the dynamics of infectious disease transmission?

Research Methods
What tools are available to study the complex links between deforestation and disease vectors; between agricultural expansion and neglected tropical diseases; between climate and enteric infections?

Societal Change
How will development projects interact with demographic transitions and urbanization to shape future risks of infectious diseases?

This seminar will take a global perspective, exploring the diverse environmental phenomena that influence the transmission of infectious diseases. Complex dynamics, feedbacks and spatial flows inherent in the transmission of environmentally driven infectious diseases are examined, focusing on vector-borne diseases, tropical parasites and waterborne pathogens. The epidemiological significance of environmental and socio-environmental forcings are explored, including weather, climate extremes, rapid urbanization, hydrology, development projects, and land use change. Anthroponotic and zoonotic diseases of global significance are examined with respect to how environmental factors shape their distributions, intensity, environmental fate, transport, and persistence. The specific epidemiological consequences of climate change, dams, irrigation, agricultural intensification and de/ reforestation are emphasized, and analytical tools for their study presented and critiqued, including methods for modeling coupled environmental-epidemiological systems.

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