

## Emerging Diseases

- I. The Introduction
  - a. What Do You Think of When You Hear "Emerging Disease"?
  - b. What Influences Disease?
  - c. Along the Amazon
  - d. Infectious Disease and Parasites
  - e. Transmission and Populations
  
- II. Epidemics and Human Populations
  - a. Population Density: Why Does It Matter
  - b. Birth Rates
  - c. Death rates and Survivorship
  - d. Population Dynamics or Population Growth: The Result
  - e. Population Control: How Does It Happen?
    - i. Density-dependent controls and carrying capacity
      1. Parasitism
      2. Predation
      3. Competition
    - ii. Density-independent controls
  
- III. Epidemic: Susceptible Hosts AKA Hosts That Are Not Resistant
  - a. Immune Function: A Major Part of Resistance
  - b. Just a Little Bit about Immunity in Mammals
  - c. What Affects Immunity in an Individual?
  - d. Evolution of Immunity
  
- IV. Epidemic: Treatment of Infectious Disease and Evolution of Pathogens Resistant to Treatment
  - a. Mutations As Genetic Change
  - b. Antibiotic Treatment As Selective Agent: Multiple Drug Resistant TB
  
- V. Epidemic: When TB Flourishes
  
- VI. Epidemic: How Infectious Disease Came To Be So Important in People
  - a. Agriculture . Concentration of Population
  - b. Sedentary Populations in Fixed Areas: What Does This Lead to?
  - c. Global Mobility of People, Pathogens and Other Hosts
  - d. People and Other Animals Are Not the Only Ones Subject to Epidemics
  
- VII. Parasitism: Habitat and Niche
  - a. For *M. tuberculosis*
  - b. Habitat Changes in the Environment of a Parasite: Lyme Disease

- VIII. Evolution: Parasitism to Mutualism
  - a. The Tennessee Amoeba and Its Parasites
  - b. The Endosymbiont Theory of Origins of Mitochondria and Chloroplasts
  
- IX. Recall Coevolution