Microbiome and Infectious Disease

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Description: The Microbiome and Infectious Disease concentration will train students to understand both the biology of microorganisms and their interactions with human hosts. Understanding the complex relationships between humans and commensal or pathogenic microbes requires a diverse set of skills and concepts. Training will include foundational subjects in Ecology, Immunology, Microbiology, and Genetics. Genomics and Computational Analysis is an essential aspect of the training because DNA sequencing has become the primary means of measuring microbial communities.

Guide for class selection: Any three Restricted Electives from the list below may be taken to satisfy this concentration.

Restricted Electives
20.207 Biotechnologies in Infectious Disease (G)
   Prereq: 7.06 permission of instructor

20.390 Foundations of Computational and Systems Biology (U)
   Prereq: Biology (GIR), 6.0002 or 6.01; or 7.05; or permission of instructor

20.446 Microbial Genetics and Evolution (G)
   Prereq: 7.03, 7.05 or permission of instructor

7.23 Immunology (U)
   Prereq: 7.06

7.26 Molecular basis of infectious disease (U)
   Prereq: 7.06

7.21 Microbial Physiology (U)
   Prereq: 7.03, 7.05

7.33 Evolutionary Biology: Concepts, Models and Computation (U)
   Prereq: 7.03; 6.0002 or 6.01; or permission of instructor

Electives
20.106 Systems Microbiology (U)
   Prereq: Chemistry (GIR), Biology (GIR)

7.30 Fundamentals of Ecology (U)
   Prereq: None