

# EEB603: Ecology & Evolution of Emerging Infectious Diseases

**Instructor:** Dr. Michael Gilchrist

**Office Hours:** By Appointment

**Office Location:** 439 Hesler Biology Building

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## **Time & Location:**

**Weekly Meetings:** R 3:40PM - 4:55PM, HBB 427

**Additional Meetings:** F 3:30-4:30 in SERF 307 on Jan 19, Feb 23, Mar 19, Mar 23, & Mar 30

## **Course Overview**

The past 30 years have witnessed the emergence of numerous infectious diseases (e.g. AIDS, Ebola, SARS, Avian flu, West Nile, hantaviruses) that are major threats to human health. Man's alteration of environments and changes in the relationships between the diseases and the animals they infect are implicated in the emergence of all of these diseases. This seminar will explore a number of different emergent and emerging infectious diseases in plants and animals, including humans. Some of the infectious agents expected to be covered include: arboviruses, rabies, microbotryum, mycoplasma, batrachochytrium, and parvoviruses.

## **Course Structure**

The goal of this course is to provide an interactive forum for learning about the important ecological and evolutionary factors in various emerging infectious diseases. The course is centered around local and visiting speakers presenting and discussing their work<sup>1</sup>. In addition there will be opportunities for students to meet with visiting speakers on a one-on-one basis.

Local speakers will generally give an informal seminar which will be followed by 20 min question session. Visiting speakers will generally lead an informal discussion on Thursday and give a formal seminar on Friday as part of EEB's Departmental Seminar Series.

Discussions outside of class and readings will be posted at the course blackboard website. Participants not formally enrolled can gain access by providing their name and netID to the instructor.

## **Student Expectations and Assessment**

All students are expected to

- Carefully read each week's readings
- Submit three discussion questions based on the readings the Wednesday before class by 9 am.
- Actively participate in all discussion and question sessions.

Grading will be based the consistency and quality of submitted questions and class participation.

Students enrolled for 2 credit hours are expected to produce a 10-15 page research paper on a relevant topic based on their interests and after consultation with the course instructor. For these students the term paper will count for half of their letter grade.

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<sup>1</sup>Funding for visiting speakers is provided by the Haines-Morris Foundation Endowment.

## Course Schedule

Date	Speaker	Institution	Title
Jan 18 Jan 19	Scott Weaver	U. Texas Medical Branch	Dengue Evolution and Emergence Host Range Changes and Arboviral Emergence *
Jan 25 Feb 1	Michael Gilchrist	Dept. of Ecology & Evol. Biology, UTK	Basic Concepts in Epidemiology & Evolution
Feb 8 Feb 9	Paul Ewald <sup>†</sup>	University of Louisville	Gauging the Threat Posed by Emerging Diseases The Evolutionary Control of Virulence & Antibiotic Resistance among Diarrheal Diseases
Feb 15	Lou Gross Suzanne Lenhart	Dept. of Ecology & Evol. Biology Dept. of Mathematics, UTK	Disease Models and Optimal Control
Feb 22 Feb 23	Janis Antonovics*	University of Virginia	Anther Smut as a Model System for Host-Shifts Disease and Distributional Limits: Cuckoo Bees & Wild Carnations*
Mar 1	Pam Small	Dept. of Microbiology, UTK	<i>Mycobacterial ulcerans</i> : Deciphering the mysteries of an environmental pathogen
Mar 8	Graham Hickling	Dept. of Forestry, Wildlife, & Fisheries, UTK	Resurgence of Tick-Borne Diseases in the Eastern U.S.
Mar 15	SPRING BREAK		
Mar 22 Mar 23	Parvize Hosseini	Princeton University	The Spread of Conjunctivitis in House Finches Seasonality and Ecological Disease Dynamics
Mar 29 Mar 30	Colin Parrish	Cornell University	TBA Host jumping by viruses
Apr 5	Tomas Martin-Jimenez	Dept. of Comparative Medicine	Drug and Antimicrobial Resistance
Apr 12	Kurt Lamour	Dept. of Entomology & Plant Pathology, UTK	Emerging Oomycete Plant Pathogens in the genus <i>Phytophthora</i>
Apr 19	Kevin Smith	Washington University	Chytrids and Amphibian Declines
Apr 26	Scott Schlarbaum	Dept. of Entomology & Plant Pathology, UTK	TBA

\* Part of EEB Departmental Seminar Series

<sup>†</sup> Part of TN Darwin Days Events

March 7, 2007