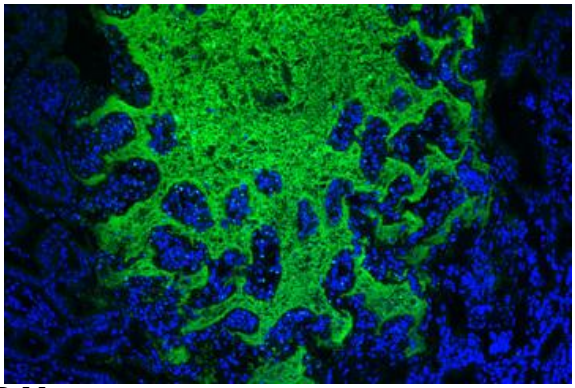
Cellular Microbiology & Infectious Disease

Course number: MCB 429



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Semester: Spring 2019
Meeting Time: Monday, Wednesday, Friday: 11:00 – 11:50 P.M.
Room: 182 Armory
Exams will be held on Friday February 8th, Friday March 15th, and Friday April 12th in Room TBD
Required Textbook: No required textbook.
Evaluations will be based on assigned readings, handouts, and posted lecture materials.

Recommended Text: *Cellular Microbiology*, 2nd Edition (2005; Cossart, Boquet, Normark, & Rappuoli)

Website: https://learn.illinois.edu/ (sign in using your login and AD password)

Instructor: Dr. Thomas E. Kehl-Fie
Office hours: Monday 9-10 A.M or by appointment.
Office: CLSL B401
Telephone: 217-244-5471
Email: kehlfie@illinois.edu: Please include MCB429 in the subject line of emails.

Goals of Course:

TO EXPLORE THE DYNAMIC CHANGES THAT OCCUR AT THE EUKARYOTIC-PROKARYOTIC INTERFACE DURING INFECTION THAT CAUSE DISEASE

Broad Objectives

1. To explore the molecular cross-talk that drives host-pathogen interactions.
2. To introduce state-of-the art approaches for investigating the cell biology of infectious disease.
3. To introduce the latest paradigms in host cell biology, as related to infection
4. To explore the evolutionary basis by which pathogens can manipulate eukaryotic cells
5. To understand the basis of how manipulation of host cell biology contributes to disease.
6. For students to investigate the latest research on cellular microbiology.
7. To learn how to read and present the latest scientific literature.

Class Topics:

Module 1: Fundamentals of Host-Pathogen Interactions 101.

Week 1 Introduction to Cellular Microbiology

Week 2 Fundamental Principles of Infectious Diseases and Host-Pathogen Interactions
Journal Discussion

Module 2: Life on the Surface: Pathogen Manipulation of Host Cells & Tissues via Adhesion.

Week 3 Bacterial Adherence to Cell Surfaces and Extracellular Matrix
Journal Discussion

Week 4 Bacterial Signaling to Host Cells through Adhesion Molecules and Lipid Rafts
Exam #1 (Through Weeks 1-4)

Module 3: Life on the Inside: Pathogen Establishment of Intracellular Lifestyles.

Week 5 Life on the Inside – I
Journal Discussion

Week 6 Life on the Inside - II
Journal Discussion

Module 4: Mechanisms for manipulating the host.

Week 7 Pathogen Modulation of Host Cells and Tissues: Toxins
Journal Discussion

Week 8 Pathogen Modulation of Host Cells and Tissues: Secreted Effectors
Journal Discussion

Module 5: Mixed Signals? Pathogen Modulation of Host Cell Signaling and Regulation.

Week 9 Host Cells and Tissues as a Template for Pathogen Modulation - I
Exam #2 (Weeks 1-8)

Week 10 Host Cells and Tissues as a Template for Pathogen Modulation - II
Journal Discussion

Module 6: To Live and Die in the Host: Pathogen Manipulation of Life & Death Pathways.

Week 11 Pathogen Manipulation of Host Cell Death – I
Journal Discussion

Week 12 Pathogen Manipulation of Host Cell Death – II
Exam #3 (Weeks 1-12)

Module 7: Pathogen Manipulation of the Host Cell Cytoskeleton.

Week 13 Manipulation of the Host Cell Cytoskeleton – I
Journal Discussion

Week 14 Manipulation of the Host Cell Cytoskeleton - II
Journal Discussion

Week 15 Journal Discussion

Final Exam

Test #4 (Classes Weeks 1-15) Date and time to be announced

Course Evaluation

3 highest grades of 4 "tests" count for 250 points each.	750
- 100% for each exam will be set by averaging the score of the top three exams.	
- Tests will be cumulative.	
Journal Introduction Presentation	50
Journal Discussion Pre-Assignment	50
In Class Discussion of Papers	150
Total	1000

Challenging an Exam Grade

You will have one week after an exam is handed back to the class to challenge the grading of the exam. To challenge a grade, you must return to me the exam plus (on a separate sheet of paper) a clearly written explanation of your reason for challenging the grade (specifically state which questions you want me to regrade), and I will seriously consider it. Except for simple score calculation errors, I will NOT re-grade questions that do not have a written explanation/request with justification attached to them. All requests must be made in writing within one week of being returned no exceptions. It is strongly advisable to use a different color pen (not blue or black) for marking on your returned exams, particularly if you think that you might be requesting a regrade. Any exams submitted for a regrade may be regraded in their entirety.

Extra credit (50 Point Maximum):

Test scores above the average of the top three exams.

In class participation (1 point per class maximum) course participation (Discussion of Topics, Asking thoughtful questions, etc).

Attending microbiology seminars (3 points per seminar). To receive credit a 1 page summary (1 inch margins 11 point font) of the seminar including the presenter, title, location and time, sponsoring unit/department, and the material discussed (and how it relates to Cellular Microbiology) must be submitted within 1 week of the seminar. To receive credit the seminar must be presented by a visiting professor.

GRADING SCALE

A	934-1000
A-	900-933
B+	867-899
B	834-866
B-	800-833
C+	767-799
C	734-766
C-	700-733
D+	667-699
D	634-666

D-	600-633
F+	567-599
F	<567

Academic Integrity

You are expected to be familiar with the UIUC Student Code, Article 1. Part 4. Academic Integrity (sections 401-406). Cheating will NOT be tolerated in this course. Any student found cheating could face receiving a failing "F" grade for the course and recommendation for suspension or dismissal from the University.