

# SPRING 2019

## **Bacterial Pathogenesis**

(MCB 103, PLANT BIO C103, PB HLTH C102, and PBHLTH 262)

Tuesday and Thursday, 12:30 – 2:00 PM

Location: 100 Genetics & Plant Biology Building (GPBB)

## **Professors**

Daniel A. Portnoy, Ph.D. (Office hours: Friday, 1-2 pm, 301 Barker Hall; if many students show up, we will meet in 430 Barker Hall)

Russell Vance, Ph.D. (Office hours: Thursday, 3-4 pm, 447 Life Sciences Addition)

## **Course focus**

This course for upper division and graduate students will explore the molecular and cellular basis of microbial pathogenesis. The course will focus on model microbial systems that illustrate mechanisms of pathogenesis. Most of the emphasis will be on bacterial pathogens of mammals and plants, but there may be some discussion of viral and protozoan pathogens. There will be an emphasis on experimental approaches. The course will also include some aspects of bacterial genetics and physiology, immune response to infection, and the cell biology of host-parasite interactions.

## **Enrollment**

MCB undergraduates and graduate students; Microbial Biology undergraduates and graduate students; School of Public Health, MPH and PhD students, any other upper-division science students, or consent of instructor. PhD students may wish to enroll in SPH 262, a weekly literature review discussion class.

## **Grading**

33%: Midterm 1

33%: Midterm 2

33%: Final

## **Teaching Assistant (GSI)**

Freddy Chavez-Arroyo

alchavez@berkeley.edu

Office hours: Tuesday, 4-5 pm, 231 Barker Hall

## **Supplementary texts on reserve in Biosciences Library**

- Basic microbiology: *Brock Biology of Microorganisms, 14<sup>th</sup>* Michael T. Madigan, John T. Martinko, and Jack Parker: Prentice-Hall.
- Basic immunology: *Janeway's Immunobiology, 9<sup>th</sup> edition*. Kenneth M. Murphy: Garland Science.

<https://bcourses.berkeley.edu>

Create an account with bcourses.berkeley.edu for class announcements and other resources, including Powerpoint files from lectures.

## **DSP Students**

Please inform the instructors of any accommodations needed during the first week of the course. It is most helpful if you can introduce yourself to us early in the semester.

## **Academic Integrity**

Academic Integrity and UC Berkeley Honor Code. Cheating and Plagiarism are unacceptable behavior and if you are caught will result in a failing grade for the class. See the following website for more information: <http://guide.berkeley.edu/academic-policies/#studentconductappealstext>.

The student community at UC Berkeley has adopted the following Honor Code.<http://asuc.org/honorcode/> (Links to an external site.)"As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The hope and expectation is that you will adhere to this code. If you are uncertain what constitutes cheating or plagiarism, go to <http://campuslife.berkeley.edu/conduct/integrity>.

## **Safe, Supportive, and Inclusive Environment**

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process.

Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling (510) 642-1988.

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call (510) 643-7985, email [ask\\_ophd@berkeley.edu](mailto:ask_ophd@berkeley.edu), or go to <http://survivorsupport.berkeley.edu/>.

Please note: No laptop computers, tablets, or phones are allowed to be used during class time unless the student gets permission from the instructor.

## **LECTURES**

1. Tue, Jan 22 Introduction to Bacterial Pathogenesis (DP)
2. Thu, Jan 24 Bacterial Cell I (DP)
3. Tue, Jan 29 Bacterial Cell II (DP)

4. Thu, Jan 31 Immunity I (RV)
5. Tue, Feb 5 Immunity II (RV)
6. Thu, Feb 7 Immunity III (RV)
7. Tue, Feb 12 Antibiotics and Antibiotic Resistance (DP)
8. Thu, Feb 14 Horizontal Gene Transfer (DP)
9. Tue, Feb 19 The Eukaryotic Cell (MW)

Thu, Feb 21: MIDTERM I – covers through Lecture 9 (given during regular class time)

10. Tue, Feb 26 Tools of the Trade (DP)
11. Thu, Feb 28 Toxins: Diphtheria and Anthrax (DP)
12. Tue, Mar 5 Gram-Positive Cocci: *Streptococcus* & *Staphylococcus* (DP)
13. Thu, Mar 7 Bordetella (DP)
14. Tue, Mar 12 Cholera (RV)
15. Thu, Mar 14 Yersinia I (DP)
16. Tue, Mar 19 Yersinia II (RV)

Thu, Mar 21: Midterm II – covers Lectures 10-16 only (given during regular class time)

**March 25-29**

**SPRING BREAK**

17. Tue, Apr 2 Salmonella I (DP)
18. Thu, Apr 4 Salmonella II (RV)
19. Tue, Apr 9 *Listeria monocytogenes* I (DP)
20. Thu, Apr 11 *Listeria monocytogenes* II (MW)
21. Tue, Apr 16 *Listeria monocytogenes* III (DP)
22. Thu, Apr 18 Legionella (RV)

