

**Bacterial Pathogenesis**  
University of California, Berkeley

Tuesday and Thursday, 12:30 – 2:00 PM  
100 Genetics and Plant Biology Building

**SPRING 2014**

(MCB 103, PLANT BIO C103, PB HLTH C102)

Daniel A. Portnoy, Ph.D. (Office hours: Fri., 1-2 pm, 508 Barker Hall)

Matthew Welch, Ph.D. (Office hours: Fri., 3-4 pm, 305 LSA)

**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**

tbd

**Supplementary texts on reserve in MCB library:**

- Basic microbiology: *Brock Biology of Microorganisms, 14<sup>th</sup> edition*. Michael T. Madigan, John T. Martinko, and Jack Parker: Prentice-Hall.
- Basic immunology: *Janeway's Immunobiology, 8<sup>th</sup> edition*. Kenneth M. Murphy: Garland Science.

**<https://bspace.berkeley.edu>**

Create an account with [bspace.berkeley.edu](https://bspace.berkeley.edu) for class announcements and other resources, including Powerpoint files from lectures. The course site is entitled, "Bacterial Pathogenesis 2013".

**Special Needs**

Please contact the TA if you require additional assistance.

## LECTURES

1. Tu, Jan 21	Introduction to Bacterial Pathogenesis (DP)
2. Th, Jan 23	Bacterial Cell I (MW)
3. Tu, Jan 28	Bacterial Cell II (MW)
4. Th, Jan 30	The Eukaryotic Cell (MW)
5. Tu, Feb 4	Bacterial Genetics I (DP)
6. Th, Feb 6	Bacterial Genetics II (DP)
7. Tu, Feb 11	Immunity I (DP)
8. Th, Feb 13	Immunity II (DP)
9. Tu, Feb 18	Immunity III (DP)
10. Th, Feb 20	MIDTERM 1 – covers through Lecture 9
11. Tu, Feb 25	Tools of the Trade (DP)
12. Th, Feb 27	Toxins and DP (DP)
13. Tu, Mar 4	Gram-Positive cocci: <i>Streptococcus</i> & <i>Staphylococcus</i> (DP)
14. Th, Mar 6	Cholera (DP)
15. Tu, Mar 11	Bordetella (DP)
16. Th, Mar 13	Neisseria (MW)
17. Tu, Mar 18	Yersinia I (DP)
18. Th, Mar 20	Yersinia II (MW)
March 24-28	SPRING BREAK
19. Tu, Apr 1	Yersinia III (DP)
Wed, Apr 2	EVENING MIDTERM 2 – covers through Lecture 18 (7-9 PM, 155 Dwinelle Hall)
20. Th, Apr 3	Salmonella I (MW)

- |                |  |
|----------------|--|
| 21. Tu, Apr 8  | Salmonella II (MW)                                 |
| 22. Th, Apr 10 | Salmonella III (DP)                                |
| 23. Tu, Apr 15 | <i>Listeria monocytogenes</i> I (DP)               |
| 24. Th, Apr 17 | <i>Listeria monocytogenes</i> II (MW)              |
| 25. Tu, Apr 22 | <i>Listeria monocytogenes</i> III (DP)             |
| 26. Th, Apr 24 | Tuberculosis I (DP, Lee Riley, or Sarah Stanley)   |
| 27. Tu, Apr 29 | Tuberculosis II (MW)                               |
| 28. Th, May 1  | Tuberculosis III and Patterns of Pathogenesis (DP) |

Classes begin: Tuesday, January 21, 2014

Classes end: Friday, May 2, 2014

Review week: Monday, May 5 – Friday, May 9, 2014

FINAL EXAM: to be announced

(Exam period: Monday, May 12 – Friday, May 16, 2014)