

## **MGM 582 Microbial Pathogenesis: (MWF 1:30-2:30) Jones 415**

MGM 582 covers a range of topics in microbial pathogenesis with an emphasis on the molecular basis for virulence. The course is designed to teach the basic principles underlying bacterial and fungal pathogenesis as well as contemporary hypothesis-based and discovery-based scientific approaches. Grades will be based on three equally weighted take-home exams (30% each) that require direct engagement with the concepts and principles covered in class, including experimental design, as well as class participation (10%). There will be four primary literature discussion sections spaced throughout the semester and led by Hannah McMillan, a senior graduate student in the MGM program who is participating in the Duke Certificate in College Teaching program.

**Four discussion sections led by Hannah McMillan, selected Thursdays at 4 pm**

### **Course director:**

David Tobin ([david.tobin@duke.edu](mailto:david.tobin@duke.edu))

### **Teaching Assistant (discussion sections):**

Hannah McMillan ([hannah.mcmillan@duke.edu](mailto:hannah.mcmillan@duke.edu))

DATE		Lecturer	Topic
1/9	W	Abraham	Mechanisms of Attachment and Invasion I
1/11	F	Abraham	Mechanisms of Attachment and Invasion II
1/14	M	Valdivia	Virulence Gene Regulation I
1/16	W	Valdivia	Virulence Gene Regulation II
1/18	F	Kuehn	Bacterial Secretion Mechanisms I
1/21	M	No Class	MLK Day
1/23	W	Kuehn	Bacterial Secretion Mechanisms II
1/24	Th	4 pm McMillan	Bacterial Virulence Discussion Section(McMillan)
1/25	F	Kuehn	Bacterial Secretion Mechanisms III
1/28	M	Tobin	Strategies for Virulence Gene Discovery
1/30	W	Tobin	Mycobacteria-Host Interactions I
2/1	F	Tobin	Mycobacteria-Host Interactions II
2/4	M	Exam I	Take-home I, due in class Wednesday
2/6	W	David	Introduction to Microbiome Science
2/8	F	David	Microbial Pathogenesis: an Ecological Perspective
2/11	M	Rawls	Microbiome and Metabolic Diseases
2/13	W	Rawls	Translation of Microbiome Science
2/14	Th	4 pm McMillan	Microbiome Discussion (McMillan)

2/15	F	Coers	Cell autonomous control of bacterial infection I
2/18	M	Coers	Cell autonomous control of bacterial infection II
2/20	W	Coers	Cell autonomous control of bacterial infection III
2/22	F	Steinbach	Aspergillus I
2/25	M	Steinbach	Aspergillus II
2/27	W	Fowler	Staphylococcus aureus
2/28	Th	McMillan	Discussion Section
3/1	F	Dong	Plant Pathogens and Immunity
3/4	M	Derbyshire	Parasites and Malaria
3/6	W	Exam II	Take-home exam II – due in class Friday 3/8
3/8	F	Taylor	Clinical Aspects of Parasitic Diseases
3/11	M	SPRING BREAK	
3/13	W	SPRING BREAK	
3/15	F	SPRING BREAK	
3/18	M	Ko	Host immune response to microbes I
3/20	W	Ko	Host immune response to microbes II
3/22	F	Ko	Host immune response to microbes III
3/25	M	Alspaugh	Cryptococcus I
3/27	W	Heitman	Sexual reproduction of pathogenic fungi I
3/29	F	Heitman	Sexual reproduction of pathogenic fungi II
4/1	M	Alspaugh	Cryptococcus II
4/3	W	Alspaugh	Clinical Manifestations of Fungal Disease
4/5	F	McMillan	Fungi Discussion Section (McMillan)
4/8	M	McCusker	Candida I
4/10	W	McCusker	Candida II
4/12	F	McCusker	Candida III
4/15	M	Exam III	Take-home exam III, due Wed. 4/17