

**MB499 Host-Microbiome interactions**

**3 credits Class Meetings: Tuesday 1pm-2pm**

**Instructor: Maude David**

**Office: Nash 534, phone: 7-0629, email: [maude.david@oregonstate.edu](mailto:maude.david@oregonstate.edu)**

Please start the subject of all class-related emails with: “MB499\_f2020: [Insert your subject here]”

Office hours: zoom by appointment

**Course Description:**

This course aims to provide an overview of host-microbe interactions across a wide variety of biological systems (plant or animal) and deepen the student’s knowledge by diving into several examples with experts in the fields.

This course is a hybrid course: one lecture week with mandatory participation, the rest will be done online.

Prerequisites: BB450/BB451  
or BI221 AND BI222 AND BI223  
or BB314 (Cell mol)  
or BI311 (genetic)  
or MB230  
or BI 311  
or BB 314  
or BB 331  
or MB 302  
or MB 230  
or MB/BHS255

Learning Objectives:

Anticipated learning outcomes

- Acquire knowledge in the importance of the microbiota in biological host physiology across the tree of life
- Understand the differential impacts of the microbiome on hosts by illustrating ecological principles on specific microbiota/host interactions
- Integrate the triangle environmental parameters, microbial ecology and host functions in each system studied
- Gain expertise toward the molecular tools available or under development to quantify the microbiota

**Grading:** Course grades will be computed from a weighted sum of points received for.

- Participation (presence in class, top hat responses, discussion during class and discussion board online) and completion of online activities on time (30%)
- 4 mid-terms (essay of online quiz): 17.5% per midtem

**Course grading:** (A-F)

A 93 – 100%    C 73 – 76.9%  
A-90 – 92.9%    cC- 70 – 72.9%  
B+87 – 89.9%    D+ 67 – 69.9%  
B 83 – 86.9%    D 63 – 66.9%  
B- 80 – 82.9%    D- 60 – 62.8%  
C+77 – 79.9%    F 59.9% or lowe

Current schedule:

**Week 1 & Week 2:** Introduction to microbiome, microbial ecology, reminder on sequencing, and molecular tools. Emphasis on the systems that will be studied in the following weeks. Sequencing/Microbiome/R introduction

**Week 3 & 4:** Instructor Maude David: gut-brain axis: impact of the gut microbiota on brain functions and behavior. Evaluation during the last session of week 4.

**Week 5 & 6:** Instructor: Ryan Mueller. Plant-microbiome interactions. Evaluation during the last session of week 6.

**Week 7 & 8:** Instructor:TBD Evaluation during the last session of week 8.

**Week 9 & 10:** Instructor: TBD Evaluation during the last session of week 10.

Learning Resources:

None. Course material will be made available by the instructor.

Statement Regarding Students with Disabilities:

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Statement of Expectations for Student Conduct: <http://oregonstate.edu/studentconduct/Links to an external site.>

Diversity Statement:

Oregon State University strives to create an affirming climate for all students including underrepresented and marginalized individuals and groups. Diversity encompasses differences in age, color, ethnicity, national origin, gender, physical or mental ability, religion, socioeconomic background, veteran status, sexual orientation, parental status, and marginalized groups. We believe diversity is the synergy, connection, acceptance, and mutual learning fostered by the interaction of different human characteristics.

Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please contact the instructor immediately so that we can make alternative arrangements.

### **Disclaimer**

*The ongoing COVID-19 (Coronavirus) pandemic has already impacted Oregon State Operations, causing all Spring 2020 classes to be delivered remotely. This pandemic may require additional changes - The University or I may decide to recommend or require a variety of potential responses aimed at keeping members of the University and Community safe. Most of your instructors have had to radically alter the structure and content of their courses. Adjusting to the changing situation may require substantial changes to the policies, assignments, deadlines, and grading policies outlined in this syllabus. I will always communicate any changes on Canvas, and I am always happy to answer questions about them. I appreciate that changes to the course can add stress and complication, and will endeavor to make any necessary changes in a clear, understandable, and minimally-stressful way. I ask that you appreciate that this situation will require me to quickly adapt coursework and policies while managing a large class in a changing and unpredictable environment, and that I will likely make mistakes along the way – please know that I will work in good faith to handle situations as fairly and equitably as possible, and be patient as we work through this together.*

### **Academic Integrity**

In any situation of academic dishonesty, I will document the incident, permit you to provide an explanation, advise you of possible penalties, and take action. I may impose any academic penalty up to and including an “F” grade in the course after consulting with the department chair and informing you of the action taken.

The following is a condensed version of the Student Conduct Code on Academic Dishonesty. Academic or Scholarly Dishonesty is defined as an act of deception in which a student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the student's own efforts or the efforts of another. It includes:

(A) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information.

(B) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(C) ASSISTING - helping another commit an act of academic dishonesty.

(D) TAMPERING - altering or interfering with evaluation instruments or documents.

(E) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own. Please note that copying, or even closely paraphrasing from online sources such as websites providing flashcards or study aids *is plagiarism*. You may of course use these sites to study, but if you take material from them and include it in your class work, this is academic dishonesty