

MICB 413
Topics in microbiome research
January – April 2024

Wednesday, 1:30 – 4:30 pm
Life Sciences Centre, Room 1410
If needed, we will meet over [Zoom](#) (link also on Canvas page)

Contact info: (All emails must have MICB413 in the title)

Dr. Lisa Osborne (course coordinator) lisa.osborne@ubc.ca
Dr. Brett Finlay bfinlay@mail.ubc.ca
Dr. Carolina Tropini carolina.tropini@ubc.ca

The **MICB 413 website** on [Canvas](#) will be used for the posting of papers and other information on this course. Log into Canvas using your campus wide log in (CWL).

Note: E-mails from the instructors with important course information will be sent to the e-mail address that is associated with your UBC Canvas account.

Learning Objectives for MICB 413:

There are two goals in this course:

1. Develop your ability to read, critically analyze, present, explain and discuss contemporary research papers from a range of publications related to the microbiome.
2. Develop your appreciation for and ability to peer review and critique relevant microbiome papers.

Each term includes three distinct segments. During each segment, small groups of students are expected to read published research articles and work together to explain and critique that paper to the rest of the class and the faculty facilitator. In that seminar, students will introduce the topic, discuss the research findings, explain the global context of the work, and provide comments about the quality of the science in the paper.

Three different faculty facilitators will participate in this class to expose you to a broad range of subject areas. Learning objectives for each faculty facilitator:

Dr Brett Finlay: Introduction and discussion of seminal literature indicating that the microbiome plays a central role in both health and disease in humans throughout life.
Dr Lisa Osborne: Critical evaluation of methods and study design in microbiome-focused research using small animal models of human health and disease
Dr Carolina Tropini: Discussion and analysis of novel technologies used to study the microbiome.

LAND ACKNOWLEDGMENT

We acknowledge that the land on which we gather at UBC Vancouver Point Grey campus is the territory of the traditional, ancestral, and un-ceded territory of the xwməθkwəy̓'əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

Dates	Instructor	Class format	Topic
Jan 10	Finlay, Tropini, Osborne	Introduction & class logistics	
Jan 17 Jan 24 Jan 31 Feb 7	Brett Finlay Brett Finlay Brett Finlay Brett Finlay	Instructor led class Student presentations Student presentations Student presentations	The microbiota in health and disease
Feb 14	Lisa Osborne/ Carolina Tropini	Instructor led class	Evaluating studies & New technologies
<i>Feb 21</i>	<i>No class (Reading Week)</i>		
Feb 28 Mar 6 Mar 13	Lisa Osborne Lisa Osborne Lisa Osborne	Student presentations Student presentations Student presentations	Evaluating microbiota/microbiome studies
Mar 20 Mar 27	Carolina Tropini Carolina Tropini	Student presentations Student presentations	New technologies & techniques to study the microbiota
April 3	Carolina Tropini	Student presentations	
April 10	Finlay, Tropini & Osborne	Final in-class assignment	

Withdrawal dates

- without a 'W' on transcript: January 19, 2024
- with a 'W' on transcript: January 20 – March 1, 2023

Mark distribution

Presentations: 60%

Participation: 20%

Final assignment: 20%

Presentations and participation combined represent 80% of your final mark

Students will work in small groups to give one presentation for each of Dr. Finlay, Dr. Osborne and Dr. Tropini's segments (i.e. 3 presentations total). 60% of your overall mark will be awarded for the quality of these presentations (20% per instructor). Before noon on the day of your presentation, send a pdf of your slide deck to the instructor leading the segment using the email addresses listed on page 1 of the syllabus.

20% of your overall mark will be awarded for your class participation (Finlay, 6%; Osborne, 6%; Tropini, 8%).

- All students are expected to look over the papers being presented before coming to class so that you contribute to the discussion after each presentation. Asking curiosity-driven questions, discussing the significance and implications of the results, and suggesting future research directions will make for engaging and informative discussions.
- In Dr Tropini's section, you will have the opportunity to provide written feedback on your peer's presentations and this will count toward your participation grade.
- No marks will be awarded for those who make minimal or no contribution.

Presentation logistics

Each instructor will contact the class prior to their section, to provide necessary instructions. Papers will be assigned to students at least one week in advance of their presentation. The facilitator will assign a specific paper(s) for each group of students. The facilitator is also responsible for evaluating the strengths and weaknesses of each presentation, but students are encouraged to provide constructive feedback to their peers and learn by analyzing peer presentations.

General guidelines for presentations (details may vary between instructors)

- Each presentation should be 30 minutes maximum. Aim for ~20 minutes dedicated to the introduction and research findings and 10 minutes putting the paper into a global context. We will have a 10-15 minute window for class discussion after each presentation.
- Provide a clear and concise review of the background information related to the topic that will enable everyone to understand the paper. *Hint: it may be helpful to review and describe relevant previous work by the senior author that led up to this paper.*
- Explain clearly why the topic of the paper is an important problem that is of general interest.
- Clearly state the hypothesis being tested.
- Describe the most important figures that address the central hypothesis (*you can summarize other data*). Points to include in your description: what question is being asked, summary of experimental design, conclusions of the experiment, and any limitations of the experiment.
- Summarize the major findings. Graphical abstracts are very effective and can often be used as a roadmap to provide an initial overview of the paper, highlight how each set of results adds to the story, and then summarize/integrate the findings.
- Explain clearly how the results support or refute the hypothesis tested.
- Discuss any significant concerns or limitations associated with the results and conclusions drawn from them.
- Explain how the results affect the ‘big picture’ or help to resolve an outstanding question in the field.
- Discuss the additional questions that have been raised by the paper and the future direction of this research.
- Lead a 10-15 min discussion. Be prepared to answer questions from your classmates about experimental design, interpretations, analytical techniques etc. You can pose questions for the audience, e.g. What questions do you think these authors’ next paper might address? If you were to go to this lab as the next step of your career, what aspect of this work would you be most interested in pursuing?
- ***If online presentations are needed:***
 - The section facilitator will allow a designated member(s) of the group leading the presentation to share their screen for Zoom-based presentations. It is up to the group to let the facilitator know if one or more group members need screen-sharing capabilities.
 - Facilitators will give each group a short window (5-10 min) prior to starting their presentation to ensure screen sharing is enabled and functional.

Evaluation criteria for in-class presentations

1. Introduction
 - a. Effective literature review and introduction of the research topic
 - b. Targeted to the audience
 - c. Conveys significance of the problem the paper addresses
2. Results
 - a. Clear explanation of the rationale and hypotheses
 - b. Clear explanation of research methodology
 - c. Clear explanation of results and conclusions
3. Discussion/Global context
 - a. Clear summary of the main conclusions
 - b. Significance/importance of the paper are clearly communicated
4. Comprehension, as determined by your ability to:
 - a. Provide an effective introduction with background in subject area
 - b. Critically evaluate the data, conclusions, and significance of the paper
 - c. Accurate understanding of experimental methods and design
 - d. Ability to answer questions (*each group member should field questions during the discussion*)
5. Presentation quality
 - a. Reasonable amount of material (*you'll have to be selective about which data to present in class*)
 - b. Well-organized presentation with logical flow of ideas
 - c. Effective slides: Uncluttered, effective graphics/images (e.g. summary diagrams, graphic abstracts, flowcharts, etc.), main conclusions clearly indicated, data clearly presented, key comparisons highlighted, text mainly short phrases
6. Timing
 - a. Do not go over allotted time (*30 min per presentation*)
 - b. Speaking time is evenly distributed among group members

Feedback for in-class presentations

The facilitator for each month will provide an oral critique after the talk or a written evaluation after all the presentations in your group. Some facilitators might involve the other class members specifically and have the students fill out evaluation forms that are later returned to you. You can always make an appointment with the facilitator for more detailed comments or questions.

USE OF ARTIFICIAL INTELLIGENCE (AI) TOOLS

Students are permitted to use AI tools for formative work such as gathering information or brainstorming but may not use it to provide content on any assessed work (e.g., to write text on slides etc).

COPYRIGHT and INTELLECTUAL PROPERTY

When using material from other sources, those sources should be acknowledged, e.g., by citing the relevant journal article or website from which the material was taken. Student presentations other than your own may not be distributed without the consent of all parties involved in its creation.

IN CASE OF ILLNESS

Do not come to class if you are ill (e.g. have symptoms of COVID or other transmissible respiratory illnesses (cold, flu), or any other acute, transmissible infection), or if you have tested positive for COVID. You can check this website to find out if you should self-isolate or self-monitor: <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/self-isolation#Who>.

• Make-up assignments:

- If you are ill and unable to attend class when you are scheduled to present, reasonable accommodations may include postponing your presentation, or having your team present to the class without you and you submit a recorded version of the presentation on your own for individual grading.
- If you miss a class session with journal club presentations, you can receive participation credit by doing the following assignment and e-mailing it to the instructor within 1 week of the missed class session: For each paper that was presented, write a brief summary of the paper in your own words (no more than 0.5 page per paper) that includes (1) what you thought were the most interesting findings and (2) a question that you might have asked in class if you had been there.

If I (the instructor) am sick: I will do my best to stay well, but if I am ill, develop COVID symptoms, or test positive for COVID, then I will not come to class. If that happens, here's what you can expect:

- Someone will substitute
- If I am well enough to teach, but am taking precautions to avoid infecting others, we may have an online session or two. If this happens, you will receive an announcement in Canvas telling you how to join the class. You can anticipate that this would very likely be a last minute email. Our classroom will still be available for you to sit and attend an online session, in this (hopefully rare) instance.

EXTREME ENVIRONMENTAL CONDITIONS

In-person, on campus activities may need to be cancelled due to issues such as weather conditions (e.g., snow).

The most up-to-date information about cancellations will be posted on ubc.ca. Please check ubc.ca often during times when an extreme weather event could disrupt our course activities. If in-person classes are cancelled, the following contingency plans will take effect. The uncertainty that comes with extreme weather events can be stressful. Rest assured we will be flexible with assignment deadlines and communicate with you as early as possible. Communications about weather-related impacts on our class will be sent through Canvas announcements. Here is what you can expect in the event an in-person class session is affected:

In case in-person classes are cancelled due to weather: If in-person activities are cancelled due to weather or other environmental conditions, class will be held via Zoom. If the weather event impacts connectivity, presentations will either be re-scheduled or canceled. If canceled, the presenters marks will be redistributed and based on the remaining class assignments.

If you have any questions or concerns about this weather contingency plan, please come talk to us. Discussing any issues prior to the cancellation is helpful so we can work out a plan in advance.

UNIVERSITY POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources that can be accessed including those for survivors of sexual violence.

UBC values respect for all members of the academic community. Harassment and discrimination are not tolerated. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. Details of these policies and how to access support are available here:

(<https://senate.ubc.ca/policies-resources-support-student-success>)

UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of policies regarding academic integrity and issues such as plagiarism can be found here: <https://academicintegrity.ubc.ca/student-start/>

ACADEMIC CONCESSION

The University is committed to supporting students in their academic pursuits. Students may request academic concession in circumstances that may adversely affect their attendance or performance in a course or program. Students who intend to, or who as a result of circumstance must, request academic concession must notify their instructor, dean, or director as specified in the link below.

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,48,0,0>

ADDITIONAL UBC RESOURCES

Canvas help

<https://students.canvas.ubc.ca/help/>

Academic integrity, copyright

<https://learningcommons.ubc.ca/academic-integrity/>

Presentation design

<https://learningcommons.ubc.ca/student-toolkits/presentation-design/>

Presentation skills

<https://learningcommons.ubc.ca/student-toolkits/presentation-skills/>