

| Photos                                                                             | Name and Affiliation                                                                                                                                                                                                                                                                                                 | Lecture Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|   | <p><b>Sabine Ivison, PhD</b><br/> Clinical R&amp;D Manager,<br/> Levings' Lab<br/> Faculty of Medicine  <br/> Department of Surgery<br/> The University of British<br/> Columbia   BC Children's<br/> Hospital Research<br/> Institute<br/> <a href="http://www.bcchr.ca/levingslab">www.bcchr.ca/levingslab</a></p> | <p><u>Lecture 1: Importance of standardization for human immunology research</u></p> <p>Currently, new effective treatments for chronic autoimmune diseases are urgently needed. However, the transition of knowledge and methods from research to the clinic is impeded by a lack of standardized approaches to protocols and methods. This lecture will give an overview of the importance of standardization in human immunology research, to ensure consistent, accurate, and reproducible results.</p> |
|  | <p><b>Nozomu Yachie, PhD</b><br/> Professor<br/> School of Biomedical<br/> Engineering<br/> The University of British<br/> Columbia<br/> <a href="https://yachie-lab.org">https://yachie-lab.org</a></p>                                                                                                             | <p><u>Lecture 2: Introduction to CRISPR/Cas9 gene editing</u></p> <p>Clustered regularly interspaced palindromic repeats (CRISPR)/Cas9 is a genome editing technology that is widely used in autoimmunity research. This lecture will introduce this tool and its applications in the field. This knowledge will be put into practice in a workshop where participants will learn how to design guides for CRISPR/Cas9-mediated genetic editing of T cells.</p>                                             |



**Torin Halvorson, B.Sc.**  
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Lecture 3: Activation-  
induced marker (AIM)  
assays and their use in  
clinical research

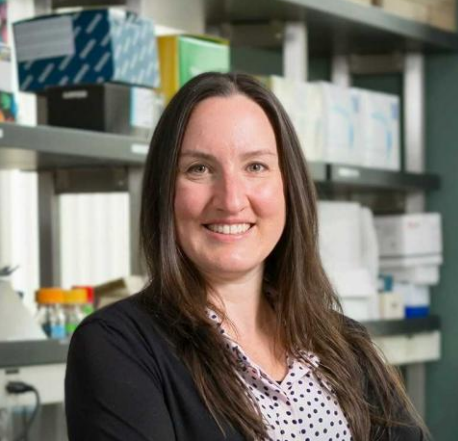
An AIM assay is a laboratory technique used to detect antigen-specific T cells via flow cytometry analysis. When studying the complexities behind autoimmune diseases, AIM assays can help understand the involvement of T cells and measure the effectiveness of therapies. This lecture will go over the uses of AIM assays in clinical research and will be accompanied by a hands-on lab.



**Phillip P. Domeier, PhD**  
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Lecture 4: Organoid-based  
Models for Immunologic  
Response Simulation

Immune organoids are an exciting avenue that could help bridge the gap between *in vitro* studies and clinical application. Organoids have been used to model a wide array of immune organs, including the thymus, bone marrow, spleen, tonsils, and lymph nodes. This lecture will explore recent progress in this field and its unique advantages.

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|    | <p><b>Bhavjinder Kaur Dhillon</b>, PhD (she/her)<br/> Research Associate<br/> Vaccine Evaluation<br/> Center<br/> The University of British<br/> Columbia   BC Children's<br/> Hospital Research<br/> Institute<br/> <a href="http://www.bcchr.ca/vec">http://www.bcchr.ca/vec</a></p> | <p><u>Lecture 5/Lab 4:<br/> Biostatistics and<br/> Bioinformatic Interpretation<br/> of Omics</u></p> <p>Biostatistics and bioinformatics are central to modern immunology research, yet they can feel daunting. This lecture will break down core statistical concepts, walk through standardized RNA-seq analysis workflows, and explore how machine learning can be used to generate new hypotheses. Following the presentations, a hands-on RNA-seq workshop will give attendees the chance to put these skills into practice.</p>                 |
|   | <p><b>Jeffrey Bone</b>, PhD<br/> Biostatistical Lead   BC<br/> Children's Hospital<br/> Research Institute<br/> Adjunct Professor,<br/> Department of Statistics<br/>   University of British<br/> Columbia</p>                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <p><b>Alice Wiedeman</b>, PhD<br/> (she/her)<br/> Manager, Human<br/> Immunophenotyping<br/> Core<br/> Benaroya Research<br/> Institute</p>                                                                                                                                            | <p><u>Lecture 6: Best practices for<br/> standardization of flow<br/> cytometry research</u></p> <p>Flow cytometry is a well-established technique in the field of immunology and autoimmunity research. Unfortunately, a lack of standardization at the experimental and analysis stage of the procedure can hinder the reproducibility of the results obtained. This lecture will explore the best approaches to ensure accurate and reproducible data is acquired. A flow cytometry workshop will allow participants to solidify these notions.</p> |

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|    | <p><b>Genelle Lunken, PhD</b><br/>(she/her)<br/>Assistant Professor and Dietitian<br/>Department of Pediatrics, Faculty of Medicine<br/>The University of British Columbia   BC Children's Hospital Research Institute<br/><a href="https://www.bcchr.ca/gluken">https://www.bcchr.ca/gluken</a><br/><a href="https://ibdcentrebc.ca/lunkenlab/">https://ibdcentrebc.ca/lunkenlab/</a></p> | <p><u>Lecture 7: Overview of Microbiome and Immune Response to Vaccines</u></p> <p>Microbiome research is a rapidly growing field, and its involvement in immune development and responses has emerged substantially. This lecture will explore research on the microbiome and how it relates to immune responses to vaccines. It will also cover ways in which standardization is applied in microbiome research.</p> |
|   | <p><b>Shrushti Shah, PhD</b><br/>Postdoctoral Researcher<br/>Genelle Lunken's Lab<br/>The University of British Columbia   BC Children's Hospital Research Institute<br/><a href="https://ibdcentrebc.ca/lunkenlab/">https://ibdcentrebc.ca/lunkenlab/</a><br/><a href="https://www.linkedin.com/in/shrushti-shah5">www.linkedin.com/in/shrushti-shah5</a></p>                             |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | <p><b>Annie Duchesne, Ph.D.</b><br/>(she/her)<br/>Associate Professor<br/>Department of Psychology<br/>University of Quebec in Trois-Rivières<br/>Adjunct Faculty<br/>University of Northern British Columbia</p>                                                                                                                                                                          | <p><u>Lecturer 8: Sex and Gender in Immunology Research</u></p> <p>Often, sex and gender are not properly addressed in clinical research. This lecture will highlight how we can improve study designs to appropriately account for differences in human-based research studies and interpretation of these differences in our research.</p>                                                                           |