

MICROBIOLOGY & Immunology

2018 Newsletter

JOIN US FOR GRADUATION TEA

Monday, May 28, 2018

12:30-2:30

UBC, Life Sciences Centre
(West Atrium)
2350 Health Sciences Mall

(Light snacks and beverages will be served)

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ALUMNI

We love to hear from you!

Get in touch with our Alumni Engagement Coordinator, Parvin Bolourani at parvin@mail.ubc.ca to update your contact information, let us know where you are & what you are doing.

We look forward to hearing from you!

A MESSAGE FROM THE HEAD

BY MIKE GOLD



This year I am particularly excited about congratulating another graduating class on making the transition from students to "illustrious alumni". I will have the pleasure of seeing one of my PhD students, as well as several undergraduates from my lab, receive their degrees.

And I will know that all of the incredible students in this year's class are highly motivated, very talented, and going on to exciting new adventures. In fact, every time I wander through the halls of the Westbrook Building, I look at a different graduating class composite photos and I always find something interesting that I hadn't noticed before. Besides the outdated hairstyles that I too once sported when I had more hair, I'm pleasantly surprised that I know a lot of the people in the photos and that they have contributed to society in so many ways. I can always find someone who is a professor, or maybe even a Dean. Someone who started a biotech company or who is in government, or advocating for science and conveying science to the public. And now that I am getting older and seeing more doctors, I get to meet a lot of our former graduates. That's sometimes embarrassing but they are clearly outstanding at what they do and they always ensure me that they did well in my course. So what I am most proud of is that our department is having a very positive impact locally, nationally, and internationally via our outstanding graduates. Every graduating class is about 100 people who will strive to make the world a better place. Parents, relatives, friends, teachers, mentors, and us UBC faculty have contributed to their development, and that is something we should all be very proud of.

MISA STUDENT ASSOCIATION

BY NICOLE MAR

The back-to-school September buzz doesn't seem that long ago, yet here we are in May at the end of another academic year. Echoing so many of the presidents before me, the amount of dedication, passion, and love that I've felt from every one of the MISA executive team and community members is unlike anything I've had the chance to experience before.

This past year we continued many of our long-running and successful events, from our Welcome Back BBQ to our Careers Night to our year-end boat cruise. We had the chance to welcome old and new MISA members, from exposing 2nd years to the wonderful opportunities awaiting them to reminiscing with 4th years about the amazing experiences throughout their degree. We were even able to bring in some newer events, such as pumpkin carving and a board game night!

MISA has always strived to bring students together and to create a community in which everyone feels welcome, whether they're in their 1st year and simply interested in MBIM or they're in their 3rd year and wanting to get involved. Reflecting back on this year, I'm proud of where every person has come and their role in making this one of the best communities at UBC.



There is no way to express in words even half of the gratitude and love that I have for this department and the hard-working, inspiring people in it. I've had the chance to learn from some of UBC's best instructors and I've made so many incredible friends over the past few years. Thank you for allowing me to be your 2017/2018 MISA President, it's been an experience I'll never forget.

2018 MBIM UNDERGRAD RESEARCH SYMPOSIUM

BY DAVID OLIVER

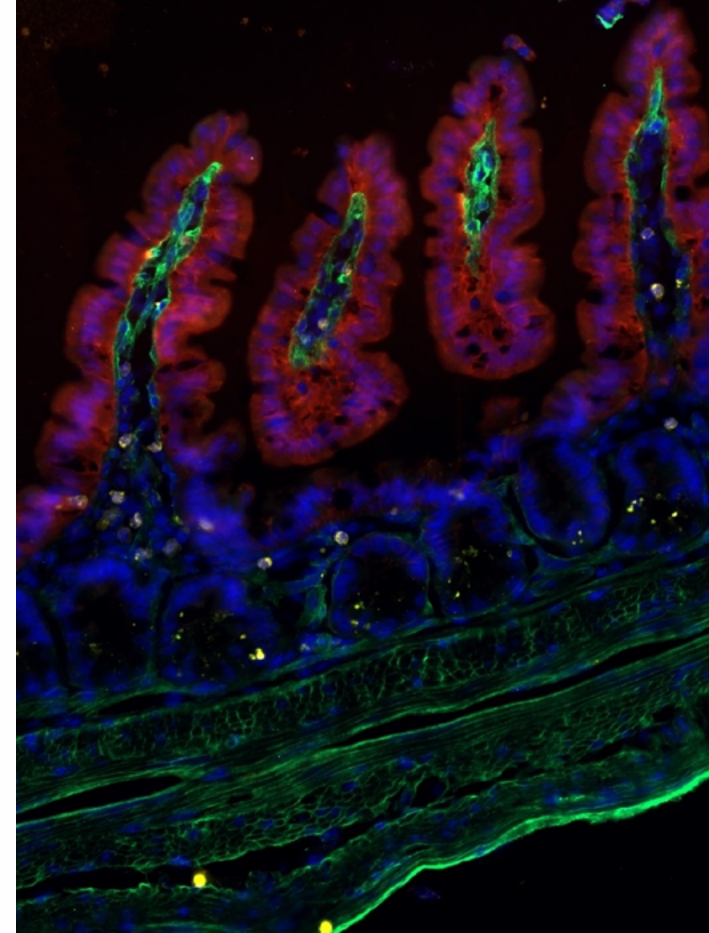
On April 26th, the department held its first undergraduate research symposium titled 2018 MBIM URS. The symposium showcased the research and ideas of our undergraduate students studying in our enhanced experiential education courses. It also provided opportunities for our students to practice communicating and networking in a disciplinary setting. Following an inspiring keynote scientific lecture delivered by department Head Dr. Michael Gold, the symposium unfolded swimmingly with 24 oral presentations and 18 posters. A panel of judges assembled by post-doctoral teaching fellow Dr. Kin Dill-McFarland and graduate student Andrew Sharon selected the top presentations on the day. Top oral presentations were awarded to: Priya Suresh (MICB 406), Thomas Hoang (Vallance lab, Directed Studies project), and a team of Reiko Okamoto, Andrea Sze, Amanda Krystal, and Zachary Weiss (MICB 421). Top poster presentations were awarded to: Wallace Yuen (Osborne lab), Yi Tian Liu (Gold lab), and a team of Almas Khan, Desirée Papulayan, Michelle Gu, and Karan Tam (MICB 421). Support for 2018 MBIM URS was provided by [KORCORP](#) and the Department of Microbiology and Immunology.

JEMI

THE OSBORNE LAB

BY LISA OSBORNE, WITH HELP FROM KASHISH DOSHI

The mammalian intestine is home to a biodiverse collection of colonizing organisms, including viruses, bacteria, fungi, protists and in some parts of the world, helminths. This host-associated ecosystem - what we like to call the "multibiosome" - is thrillingly dynamic. Inter-kingdom interactions, host genetics, health and behavior (diet, sleep patterns, physical activity, medication use) are just some of the factors that can shape this ecosystem. Our interest is in modeling host-multibiosome interactions with the goal of understanding how they can impact host immunity and inflammation. We have assembled a motley crew of devoted graduate and undergraduate students who are each addressing questions related to how intestinal colonizing species and pathogens interact with each other and how the host senses disturbances in this delicate ecosystem.



MWV-specific CD8+ T cells in the small intestine. Courtesy of Blair Hardman. Imaged on Zeiss Axio 7 Observer (new CFI supported infrastructure).

A key feature of intestinal homeostasis is tolerance toward our colonizing species. Based on the work of many other labs, we have some understanding of how tolerance toward the bacterial microbiota is established and maintained, but the mechanisms that coordinate tolerance toward the intestinal virome (collection of colonizing viruses) remains an open question. Intestinal infection with murine Norovirus (MNV) causes little to no pathology in wild type mice and can be used to model 'commensal' virus exposure. Our first graduate student, Heather Flyk, queried the role of host genetics in maintaining this tolerant phenotype and found that STAT1, a transcription factor involved in antiviral immunity, acts as an antivirulence factor and is necessary to prevent this normally innocuous virus from causing disease. Blair Hardman and Andrew Sharon's research will address other aspects of the response to MNV - Blair is determining the role of intestinal epithelial cells in generating optimal antiviral T cell responses, with a particular focus on their biogeographical distribution throughout the intestine. This work could have implications for vaccine development or immunotherapeutics if we can learn how to either enhance or dampen antiviral intestinal immune responses. Using our germ-free mouse colony, Andrew is investigating how colonizing microbes impact viral colonization and immunity. And in a completely independent line of study, Hannah Robinson is investigating the role of dietary fibers on local intestinal immunity and whether it has the potential to influence inflammatory responses in the central nervous system via the gut-brain axis. Our resourceful, talented and indispensable lab manager, Dr. Jung Hee Seo, and a cast of undergraduate students support all of their efforts.



Osborne lab, summer 2017 (missing: Andrew Sharon)

I joined the department in 2015, and since then one of the most rewarding aspects of the job has been watching our own little ecosystem of lab members develop. People joining the lab have to carve out a niche, learn where to find necessary resources and how to work collaboratively within the team, while hopefully bring some new energy, insight or ideas to diversify our community. We've already seen one student (Heather Flyk, MSc graduate out of the lab, and I have no doubt that our group will continue to evolve. In particular, we're looking forward to incorporating helminth-microbe interactions into our research, and are actively developing collaborations with users inside and outside the department and UBC to take advantage of our recently established UBC Gnotobiotic Facility (which could not have been done without the stellar management and tech staff in the Centre for Disease Modeling!). We're lucky to be part of bigger communities at UBC, including at the departmental (13 research group) and institutional (Microbiome Research Network, Mucosal Immunology Workshops) level, and to have support from national funding organizations (NSERC, CIHR) and the Canadian Foundation for Innovation that has allowed us to get the Gnotobiotic Facility up and running.

