Message from Keith Fowke.

Welcome to MMID’s newsletter. It was with deepest sadness that we learned of the passing of Frank Plummer in February of this year. Frank was a proud member of our department and a giant in the field of infectious disease research and public health. This newsletter directs you to wonderful pieces done by the Rady Faculty of Health Science and Research Manitoba where many MMID members remember Frank, reflect on our collective loss and give appreciation for Frank’s many and varied contributions. MMID is in the process of naming a professorship in honour of Frank and working towards building it into a research chair in his name. Frank will be greatly missed.

Let me take a moment to thank Dr. Grant McClarty for stepping in as Acting Head of MMID over the past year while I was on administrative leave. Grant led the department during some very “interesting” times, including the COVID-19 shutdowns. Grant, on behalf of the whole department, thank you for your leadership and dedication to MMID.

The COVID-19 situation has led to a great deal of hardship for many of our members. However, MMID members have demonstrated leadership during this very critical time. Members of the department are making valuable contributions such as:
  * leading clinical and public health responses in the province
  * conducting COVID-19 clinical trials
  * obtaining highly competitive national funding and conducting innovative COVID-19 research
  * publishing impactful COVID-19 articles
  * our students are engaged in public health messaging and assisting with screening

Together, MMID members are making important contributions to control the COVID-19 pandemic. We can be proud of their efforts, I know I am.

As we look to the fall, there will be a new normal. All of our courses, meetings, journal clubs and seminars will be presented on-line. Our members are already working hard to ensure the content of these events will be top notch and worth your time. I’m sure there will be some technical challenges along the way, so your understanding is appreciated. Research activities continue, but with restricted access to UM buildings, each UM-based laboratory is responsible for ensuring 50% or less occupancy. We are working hard with our partners to ensure all our members and students are able to access the research space they need to continue their important work. When it comes to global pandemics, MMID has always hit above its weight, and now is no exception. Enjoy the learning of some of these contributions in the latest issue of our newsletter.
The Three Minute Thesis

By: Toby Le and Shanelle Gingras

The Three Minute Thesis (3MT) is a competition designed to communicate research to a general audience in less than three minutes. The first 3MT competition was held at The University of Queensland, but it has since expanded internationally to universities across Australia, Hong Kong, United Kingdom, and here in Canada.

At the University of Manitoba, the competition is broken into 3 stages. For the first stage, each student submits a 30 second video describing their research which is then used to select 3 heats of 12 participants to move forward in the competition. Those selected to move forward then prepare a 3-minute presentation that is presented to an audience and a panel of three judges. The top 3 competitors rated by the judging panel move forward to the final competition of 12 competitors and one wildcard from each heat is chosen to go forward by a separate judge. In past years all 12 competitors in the final competition presented their 3 Minute Thesis to an audience with a new judging panel present, however due to COVID-19 the 12 participants this year were filmed live either in studio or remotely and streamed to judges and the general audience through YouTube. The judging panel then selected the participants that placed first, second and third, and a People’s Choice Award was selected by the general audience watching from home.

Shanelle’s 3MT: South African women are at an increased risk of HIV infection due to multiple external and internal factors, which Shanelle highlighted using a surfing analogy. If you surf in an area with a high proportion of sharks (HIV infection) your risk of being bitten (infected) dramatically increase due to the external environment present. If the sharks are specifically drawn to your particular colour of surfboard (inflammation) your risk then further increases. During her presentation, Shanelle jokingly asked the audience whether they would be willing to “stop surfing” simply because they were at higher risk, to which she assumed the answer was a resounding no. Instead of asking women at a higher risk to abstain, Shanelle’s research focuses on understanding the genetics of inflammation so that pharmaceuticals can be developed to block these interactions and help prevent future HIV infections.

Toby’s 3MT: Contraceptives are arguably one of the most important innovations to empower women. By having access to contraceptives, women can control their sexual and reproductive health. Among the different hormonal contraceptives, Depot medroxyprogesterone acetate (DMPA) is an affordable injectable progestin that is administered every three months and is the most utilized form of contraceptive in Sub-Saharan Africa. Unfortunately, the use of DMPA has been associated with an increase risk for HIV-1 acquisition. Toby's research, however, focuses on a specific immune cell called Natural Killer cells - a type of lymphocyte that protects against tumour cells and viral infections. Depending on their activation and function, Natural Killer cells have been shown to help prevent HIV infections. By using blood samples collected from the Nairobi, Kenya sex worker cohort, Toby will compare and assess how DMPA affects the activation and function of blood Natural killer cells. In his 3MT talk, Toby concludes with explaining the importance of his research, “There is a lot of women who use DMPA to protect themselves from unplanned pregnancies and it’s not fair to them, that we [researchers] still don’t know how DMPA affects their HIV risk. No woman should have to use contraceptives and worry it might increase her risk for an infectious disease.”
COVID-19: Lessons learned from viral outbreaks

 Originally published in UM Today on June 12th, 2020

What did health professionals learn about dealing with viral outbreaks from the Ebola epidemic of 2018?

Brayden Schindell (BSc/18) is a doctoral student in Dr. Jason Kindrachuk’s Laboratory of Emerging and Re-emerging Viruses, in medical microbiology and infectious diseases at the Rady Faculty of Health Sciences. He was the first author on a major paper published in the scientific News Journal Contagion Live, with co-authors Dr. Kindrachuk and Dr. Krutika Kuppalli. The paper was about what the ongoing Ebola epidemic in Africa taught medical researchers and health professionals about their responses to viral outbreaks and how they were able to deal with them.

Schindell didn’t go to Congo to study Ebola himself, but Dr. Kindrachuk and his collaborator Dr. Krutika Kuppalli were both in West Africa helping support the prior epidemic.

Kindrachuk was helping to coordinate and run testing while working with the US National Institute of Allergy and Infectious Diseases, while Kuppalli was overseeing an Ebola treatment centre.

Schindell’s doctoral research involves looking at the persistence of the Ebola virus within the reproductive tracts of survivors, and how it enters these regions of the body. He is also studying long term reproductive health effects, through administration of a questionnaire and sampling of a cohort of survivors.

He explains: “Both aspects of this project are important, as sexual transmission is partially responsible for extending the epidemic of Ebola virus in West Africa into 2016. This can occur because male survivors can carry the virus undetected in their testes for more than 1,100 days after recovery from the disease and spread it through semen. It is also believed the virus can persist in females, but research on this is unfortunately greatly lacking.”

Schindell graduated from UM in microbiology in 2018, then began his graduate studies with Kindrachuk and his ambition led him to pursue his doctoral program in medical microbiology and infectious diseases (MMID). He received a CIHR Canada graduate scholarship for his master’s program, and is the current vice president for the MMID Student council.

Even though Schindell is not in the lab at the moment because of the pandemic, he recently finished helping with a weekly newsletter for the Cadham Provincial Laboratory, for frontline workers and health officials to inform them on the latest information available for SARS-CoV2. He was working with medical residents, med students, librarians and other grad students who are trying to assist the effort against COVID-19, however they can.

UM Today posed some questions to Schindell about his research and what it is like working with leading researchers of the calibre of Drs. Kindrachuk and Kuppalli.

Your article says there were about 2264 deaths attributed to the virus, with a 65 per cent fatality rate. In a country of 80 million people, had interventions not taken place, the number of deaths would have been much higher. And now, almost 300,000 people have been vaccinated, with 95 per cent protection. Your paper says that Ebola was contained because of cooperation and working together. Can you elaborate on
effort of research as well as treatment and containment outbreaks in DRC recently have shown how well a unified I do think that the recent epidemic in West Africa and the regard to COVID-19 now. Since it worked against a very virulent disease, is it possible it can work against COVID-19?

Remdesivir was one of four therapeutics tested in what has been known as the PALM trial, also including mAb114, ZMapp (which was developed in Winnipeg at the National Microbiology Laboratory) and REGN-EB3. Unfortunately both Remdesivir and ZMapp were significantly less effective at reducing mortality than mAb114 and REGN-EB3 and were discontinued in the trial. Remdesivir is now being tested in clinical trials for treating SARS-CoV2 infections and has been granted emergency use status by the FDA for some preliminary results from a clinical trial in the USA. Gilead Sciences which produces it has found in research conducted in cell culture that it potentially has broad activity against several different families of viruses, including coronaviruses. It is currently being investigated in clinical trials and while preliminary data seems to show some effect on duration of infection we will have to wait to see what the final data of these studies are.

Can you put the Ebola experience into perspective with regard to COVID-19? What are we doing right, and what are we doing wrong?

I do think that the recent epidemic in West Africa and the outbreaks in DRC recently have shown how well a unified effort of research as well as treatment and containment can work at successfully ending an epidemic/outbreak. I think the most important lesson learned from these recent outbreaks has to be that none of this can be done successfully without both community engagement and community trust. Without this, nothing you wish to implement will be completely successful. We have seen the effects of what can happen without community trust in some parts of the world as an example some US states where defiance of public health orders has resulted in resurgence of SARS-CoV2. Taking the time to engage with individuals and community leaders just like with Ebola will play a vital role in gaining cooperation and trust of people. This can then allow health officials concentrate their efforts on containing the virus.

Here in Canada people really seem to be doing a great job of buying in and trust appears to be strong in the efforts being taken. However, as communities begin to open up again that trust and cooperation becomes more important and will be tested as this is when social practices to this point become most important. Canada also with its recent announcement of a national medical research strategy will go a long way in bringing unity to research efforts. One important difference between Ebola and SARS-CoV2 to note is that due to research efforts there are now a couple effective treatments that are being tested as well as an approved vaccine for Ebola and there are still no treatments or vaccines available for SARS-CoV2.

Dr. Jason Kindrachuk is probably one of the best and most visible spokespersons for the fight against COVID-19. What’s it like working with him?

Dr. Kindrachuk has been a great voice to bring some clarity to all noise that has been out there, and I and all the others in his lab believe it’s an important thing to be doing.

It is a wonderful experience to have the opportunity to work with Dr. Kindrachuk; he is a very inspiring person who has a passion for the subject of emerging viruses and for teaching people about those viruses. His passion is contagious – no pun intended. There have also been a lot of great collaborators I am now lucky to be working with and learning from through the contacts he has made such as Dr. Kuppalli. He is a great mentor professionally and personally, I feel very fortunate to have the opportunity to learn from him.

Since Dr. Kindrachuk is working on possible antivirals and vaccines, you must be in the thick of it too. Do you feel that progress is being made?

Currently his lab is shut down along with the majority of other labs on campus following the current University decision for the safety of staff and students. But we hope
to be getting back to work on our projects soon as everything begins opening up with the province’s announcement of the phase 2 plan for reopening. I know we have all been itching to get back at it and contribute best we can to the COVID-19 research effort and for science as a whole to ramp up again as there is a lot of important work that has been on hold in all fields. [NB: as this post was in process, Kindrachuk’s lab as in fact opened.]

We know that testing of vaccines takes time, and there might not be anything ready for wide distribution for many months. What about antivirals? Are we close to those?

In general progress towards developing vaccines and drugs takes time, unfortunately. However, with what has been learned through past experiences such as with Ebola virus, the process to making antivirals and vaccines is much more efficient than it used to be. As mentioned remdesivir has been granted emergency use approval and over 100 labs globally that are working day and night to find successful treatments and vaccines. An example of this is the recent announcement of the vaccine developed by CanSino Biologics Inc. with the Beijing Institute of Biotechnology that will be starting a clinical trial at the Canadian Institute of Vaccinology in Halifax following promising results in China.

What do you think about many regions in North America that are now “opening up” and trying to “get back to normal”?

As health officials and the Prime Minister have said, the “normal” we knew won’t return until a vaccine is available. I know the decision makers are ensuring as things open up again that each is done only when determined it is safe and feasible to do so. We all just need to be patient and mindful of the social practices we have learned through this pandemic so our progress doesn’t regress as I said in an earlier question this is when trust becomes very important.

In your opinion, what will “normal” look like in three months? six months? a year?

“Normal” will be different than it was as I am sure you have noticed a lot more people are wearing PPE such as masks that are not medical professionals. People are a lot more conscious to maintain that two metres’ distance from others. Large gatherings will probably be something that we don’t see for a while either. These and other basic measures will most likely not change until large scale vaccinations can take place which could be over six months or even a year.

UM student recognized with Athena Leadership Scholarship

Originally published in UM Today on May 6, 2020

Gillian McIvor is a Métis student completing her bachelor of science in biological sciences. She is currently a fourth-year mentor with the Neechiwaken Indigenous Peer Mentor Program, and is finishing her third year in the Indigenous Circle of Empowerment (ICE) program. She is also wrapping up her second term as the Indigenous students’ representative for the Science Students’ Association in the Faculty of Science and has plans to work in Dr. Keith Fowke’s lab in the department of medical microbiology and infectious diseases in the Max Rady College of Medicine, as part of the Prairie Indigenous Knowledge Exchange Network (PIKE-Net) program.

McIvor caught up with UM Today to share the news of her success as the 2019/2020 recipient of the Leader of Tomorrow Scholarship. Presented by Athena Leadership, the scholarship recognizes young women of Manitoba who demonstrate leadership ability in conjunction with academic standing.

UM Today: How did you hear about the Leader of Tomorrow Scholarship? What made you want to apply?

I heard about the Leader of Tomorrow Scholarship from Justin Rasmussen [student advisor at the Indigenous Student Centre], who nominated me. He has played a huge role in my leadership development in the Indigenous community on campus, so having him nominate me was also something I was thankful for. I have heard about Athena Leadership before and wanted to apply as it is an empowering community that provides women in Manitoba the opportunity for leadership development and networking opportunities with their mentors. I found the opportunity to become a part of their community exciting and a step in furthering my own leadership development.

Gillian McIvor with UM President David Barnard

UM Today: Tell us about your reaction upon finding out you had been the successful recipient of this scholarship.

When I found out I was the 2019/2020 recipient, I was shocked! I hadn’t expected to receive it, but I was also extremely grateful for being chosen. It is a huge honour to
be chosen to receive this award, as so many female leaders that do amazing work in their communities have received it in the past. I am grateful that I have made an impact on my Indigenous community in some way that was recognized by the leaders at Athena Leadership.

UM Today: Tell us about what leadership means to you, and how you’ve made space and time for leadership in your already packed schedule.

Leadership to me means putting those around you before yourself for the betterment of your community, and empowering others to become leaders in their own way. I also think that leaders are humble in their work and do it simply to be able to make an impact on their communities. I think I have made space in my schedule for leadership because I love the community that I am in. I love being able to be involved in the Indigenous community on campus and learn from the other leaders around me. Before I became involved on campus, I didn’t really feel like my university life had a purpose. I would come and go to lectures, but never stuck around. Once I found the Indigenous Student Centre, it was like I had finally found a place that felt like home on campus that I wanted to be a part of. It has made my university experience so amazing, and because I have so much fun being a part of the programs I am in and the councils I am on, it is easy to be able to make time for the things that mean so much to me.

UM Today: How will this scholarship and recognition help you moving forward?

Receiving this award is very humbling and validating to me. It shows me that the work I do in my community is important and that it is important for Indigenous students to become leaders in their communities. The University has so many strong Indigenous leaders that deserve so much recognition for the work they do. I hope that with the recognition of this award, I can encourage other Indigenous students to learn more about their own identities and to get involved with the Indigenous community on campus. It is extremely rewarding being able to be a part of a community that is so encouraging of me, and to be recognized for the role I play in my community. This scholarship is a way for me to take a step back and celebrate my achievements from my university career.

The Athena Leader of Tomorrow Scholarship has been providing support for young women in Manitoba since 2012 and is managed through The Winnipeg Foundation. The annual award allows these leaders to advance their studies while honouring “amazing young leaders who embody our values of empowerment, integrity, and philanthropy every day.” You can see Gillian McIvor’s full biography on the Athena Leadership website.

Nickita Longman

Remembering Dr. Frank Plummer

(Originally published in University of Manitoba Rady Faculty of Health Sciences Magazine June 24th, 2020, article can be found here: http://news.radyfhs.umanitoba.ca/forty-years-of-high-impact-collaboration/)

The day before his passing in Nairobi, Dr. Frank Plummer was reunited with Hawa, a research participant who was found to have natural immunity to HIV nearly 30 years ago.

The celebration of the 40-year University of Manitoba-University of Nairobi partnership gave way to sorrow on Feb. 4, 2020 with the sudden passing in Nairobi of esteemed scientist Frank Plummer [MD/76], a leading figure in the collaboration.
The world-renowned infectious disease expert was 67 years old. Just days before suffering a fatal heart attack, he had spoken at the 40th-anniversary conference and enjoyed reuniting with many of the Kenyan women whose natural immunity to HIV his team had discovered in the late 1980s.

“Frank Plummer’s contributions to public health on a global scale were immense. Today we lost a giant,” said Brian Postl [MD/76], dean of the Rady Faculty of Health Sciences and a medical school classmate of Plummer. “Frank distinguished himself as a true leader and visionary.”

Plummer’s many prestigious honours included the Order of Canada, the McLaughlin Medal of the Royal Society of Canada, the Prix Galien Research Award, the Canada Gairdner Wightman Award and the Flavelle Medal of the Royal Society of Canada.

“He was an outstanding, world-class researcher who was a dear colleague, mentor and friend to many of us lucky enough to work with him, and beside him,” said Keith Fowke [B.Sc.(Hons.)/88, PhD/95], head of medical microbiology and infectious diseases. “He will be dearly missed by all of us in the academic and scientific community.”

The Majengo Clinic

The Majengo clinic lies in the heart of the Pumwani slum in Nairobi Kenya. The clinic was established in 1984 by Frank Plummer (U of Manitoba) and Elizabeth Ngugi (U of Nairobi) to provide services to female sex workers who were experiencing a high burden of sexually transmitted infections. The Majengo clinic has been the site of many important research findings over the past 35 years, and today the clinic provides HIV prevention and treatment services to more than 5000 sex workers (3,200 of whom are enrolled in research studies). As Canadian research funds cannot be spent on physical infrastructure improvements, the Majengo clinic has deteriorated over the years. Jude Zieske, an administrator in U of M’s Dept of Medical Microbiology and Infectious Diseases, visited the clinic in November 2019 and has initiated a fundraising campaign to begin repairs to the clinic. In January 2020, Frank Plummer returned to Nairobi and felt tremendous joy reconnecting with women from the Majengo clinic 35 years later. With the tragic and devastating passing of Frank Plummer in Feb 2020, his family members have suggested that donations in Frank’s memory to the Majengo Clinic fundraiser would be appreciated. If interested in supporting the Majengo clinic, please go to this website https://give.umanitoba.ca/majengo-clinic
Dr. Mike Mulvey - 2020 John G. FitzGerald award by the Canadian Association for Clinical Microbiology and Infectious Diseases (CACMID) members. The CACMID website describes the award as follows: "This award is given annually to a Canadian Microbiologist who has significantly advanced the field of medical microbiology in his/her area of specialty within this field. The award is focused on those individuals who have been outstanding in any aspects of medical microbiology."


Dr. George Zhanel - National teaching award (CAME Certificate of Merit Award for the University of Manitoba for 2020).

Med Micro/ID staff who were nominated for the 2020 MMSA UGME teaching awards:
Best Course:
Infectious Diseases and Therapeutics - Dr. George Zhanel

Med I Best teaching in small group setting:
Dr. Pierre Plourde
Dr. Allan Ronald
Dr. George Zhanel

Med I Innovation in teaching:
Dr. Pierre Plourde
Dr. Allan Ronald
Dr. George Zhanel

Med I Mentorship:
Dr. Pierre Plourde
Dr. Allan Ronald
Dr. George Zhanel

Med II Best teaching in small group setting:
Dr. Fred Aoki
Dr. Marissa Becker
Dr. John Embil
Dr. Sergio Fanella
Dr. Yoav Keynan
Dr. Pierre Plourde
Dr. George Zhanel

Med II Innovation in teaching:
Dr. Fred Aoki
Dr. John Embil
Dr. Pierre Plourde
Dr. George Zhanel

Med II Inspiration in teaching:
Dr. Fred Aoki
Dr. Marissa Becker
Dr. Lawrence Elliott
Dr. John Embil
Dr. Sergio Fanella
Dr. Pierre Plourde
Dr. George Zhanel

Med II Mentorship:
Dr. Fred Aoki
Dr. Marissa Becker
Dr. John Embil
Dr. Sergio Fanella
Dr. Pierre Plourde
Dr. George Zhanel

Med III Clinical teaching - Resident
Dr. Thomas Fear

Med III Mentorship - Attending
Dr. Kelly MacDonald

Med III Patient advocacy

Dr. John Embil
Med III Professionalisms - Attending
Dr. Pam Orr
Dr. Yoav Keynan - 2020 The Scholastic Award for scholarly activity in the health professions (examples of scholarly activity are research, teaching and writing).

Congratulations to George Zhanel for winning the Inspiration award from the class of 2021

STUDENT AWARDS

Tobe Le - 2020 University of Manitoba Three Minute Thesis 1st place

Shanelle Gingras - 2020 University of Manitoba Three Minute Thesis 2nd place

NEW RESEARCH GRANTS

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MMID Canada Graduate Scholarship recipients:
NSERC CGS-M - Ali Doucet (MSc); George Golding/Denise Bay, Co-Advisors
CIHR CGS-M – Toby Le (MSc); Keith Fowke, Advisor
CIHR CGS-D – Andrew Webb (PhD); Jason Kindrachuk/Kevin Coombs, Co-Advisors
CIHR CGS-M – Vanessa Schulz (pending MSc); Paul McLaren, Advisor
2020 Winnipeg Foundation's Martha Donovan Leadership Fund: MSc student, Kaye Amira Quizon (Darwyn Kobasa/ Shawn Babiuk, Co-advisors)
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The International Infectious Disease & Global Health Training Program (IID&GHTP) – 2020 Update

By Natasha Hollett, Program Coordinator, IID&GHTP

The IID&GHTP is a two year program that seeks to enhance existing PhD and PDF research training programs by linking trainees from four international research sites (Canada, Colombia, India, and Kenya). This linkage provides an opportunity for the trainees to explore international infectious disease and global health issues from a multidisciplinary approach. Trainees meet monthly via videoconference for scientific discussions and annually at one of the research sites for a two week major course.

Since 2009, the IID&GHTP has held 10 major courses, enrolled 119 trainees and has had 102 graduates. If you are interested in international multidisciplinary health research and becoming a member of the IID&GHTP, we are accepting applications for new trainees. The deadline for applications is August 1, 2020 for September enrollment.

For more information about the IID&GHTP please visit the website: www.iidandghtp.com or contact the Program Coordinator, Natasha Hollett (Natasha.hollett@umanitoba.ca).

Are you a graduate student who is interested in an internship abroad?

If so, then take advantage of the Canadian Queen Elizabeth II Diamond Jubilee Scholarship (QES) program. The QES supports Canadian/Permanent Resident graduate students up to $6000 to complete an international internship in a QES eligible country. Also, the QES supports graduate students from QES eligible countries to come to Canada to conduct graduate level studies or research. Students awarded a QES scholarship must participate in an international internship for a minimum of 90 days while participating in leadership and community engagement activities.

The University of Manitoba is a successful recipient of the QES-2017 award for the proposal entitled “Promoting Community-University Partnerships in Global and Indigenous Health” and is accepting applications for awards. At this time, we have 31 outgoing scholarships (Canadians travelling abroad) and 5 incoming scholarships (international students travelling to Canada) available.

How do I become a QES Scholar?

Choose an international mentor and design a project together.

The project must be in the area of “Promoting Community-University Partnerships in Global and Indigenous Health”

Complete an application – submit it 4 months prior to the expected travel date

Spend a minimum of 90 days abroad working on the project and engaging with community

Gain international experience

Develop knowledge/skills in leadership and community engagement

Develop new knowledge/skills specific to the designed project

If interested in the QES program please contact Natasha.hollett@umanitoba.ca for more information.

Please Note: Applications must be submitted a minimum of 4 months prior to the planned travel date.
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