FROM THE DEPARTMENT HEAD

Welcome to the spring 2021 MMID newsletter. Well, what a busy time it has been since our last newsletter. As with seemingly everything else these days, this issue is dominated by COVID-19. During this time of pandemic, MMID staff, faculty and students have stepped up and done their part. MMID members received COVID-19 grants to fund novel research, they have been involved in clinical trials assessing COVID-19 treatments and they have published their findings. I want to draw your attention to the article highlighting MMID trainees COVID-19 efforts. The breadth of their engagement is amazing.

Take time to note the faculty and student awards – congratulations to all.

I want to take this opportunity to welcome our newest part-time faculty members Catherine Card, Derek Stein, Md Niaz Rahim and Hafid Soulahine. We look forward to supporting your research programs and teaching efforts.

I also am very pleased to welcome MMID’s newest full time member, Dr Zulma Rueda. Zulma is an associate professor and CRC Tier 2 chair in Sexually Transmitted Infection–Resistance and Control and her research is on the epidemiological spread of TB and HIV (see link inside to UM Today article about her research program). On Dec 27, 2020, she arrived in Winnipeg from a very warm Medellin, Colombia. She then self-isolated for 14 days while watching the thermometer drop the whole time. However, she survived isolation and is now out and about, and can be found in her lab in 512 BMSB. On behalf of all of MMID, welcome Zulma, we are excited having you in the MMID family.

Stay safe everyone!!!

Keith

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MMID CoVID-19 related Research and Publications

Highlights of the very valuable role MMID members have been playing in the COVID-19 effort:

- **Jason Kindrachuk’s** COVID research and public communication role
- **Marissa Becker** and her team’s support of COVID preparedness in the Indian state of Uttar Pradesh.
- **Darwyn Kobasa’s** contributions as co-investigator on numerous grants
- **Brad Pickering’s** research on field-deployable and point-of-need diagnostics, as well as; immunization strategies to enhance protective immunity with reduced risk of antibody-dependent enhancement (ADE)
- **Yoav Keynan’s** Research MB supported trial on Remdesivir and IFNB1 treatment of COVID and contributions via NCCID
- **Jared Bullard’s** study on SARS-CoV-2 particle infectiousness
- **Kevin Coomb’s** CIHR funded study on the pathogenic mechanisms of SARS-CoV-2
- **Anand Kumar’s** study on reusing N95 masks
- **Xiao-Jian Yoa’s** CIHR grant on a COVID-19 vaccine
- Keith Fowke’s research CIHR and Wellcome Trust collaborations
- Publications by **Alexander, Bullard and Yao**
- **Jared Bullard’s** peer reviewer for numerous journals
- Numerous research collaborations between Provincial and Federal laboratories and jurisdictions.
- Student contributions to the various CoVID-19 projects.

**MMID CoVID-19 Research**

David Alexander is collaborating in two projects. The first, Targeted metagenomic detection and characterization of SARS-CoV-2 and co-infecting viruses was awarded through the Genome Prairie COVID-19 Rapid Regional Response (covR3) Fund Competition is being lead by the University of Regina. The provincial labs from MB, SK and BC are named collaborators on this project. The second is the Canadian COVID-19 Genomics Consortium (CanCOGeN) Cadham Provincial Lab (CPL) is Manitoba’s representative for the national project, NML is leading much of this effort. See: https://www.genomecanada.ca/en/news/genome-canada-leads-40-million-genomics-initiative-address-covid-19-pandemic

**Jared Bullard**

Has been very actively involved in the CoVID-19 efforts with the following research projects:


Collaborator in the CIHR Grant Rapid research in the CHILD Cohort to inform Canada’s response to the COVID-19 pandemic: investigating the prevalence and predictors of SARS-CoV-2 infection, and the health and psychosocial impact of the COVID-19 crisis on Canadian families.

A Multi-centre, Adaptive, Randomized, Open-label, Controlled Clinical Trial of the Safety and Efficacy of Investigational Therapeutics for the Treatment of COVID-19 in Hospitalized Patients (CATCO) Local co-investigator in CATCO-ADULT and Local principal investigator in CATCO-KIDS

SARS-CoV-2 and COVID-19 in children admitted to Canadian Hospitals: Understanding clinical spectrum and severity. A Paediatric Investigators Collaborative Network on Infections in Canada (PICNIC) study. Local co-investigator with Dr. Rachel Dwillow. Supported by the Children’s Hospital Research Institute of Manitoba (CHRIM)

Correlation of positive COVID-19 respiratory samples with time from symptom onset to sample, RT-PCR cycle threshold (Ct) values and viral viability through cell culture Primary investigator with co-investigators Drs. Kerry Dust, Duane Funk, Jim Strong and Guillaume Poliquin. Investigation to
predict infectious SARS-CoV-2 from diagnostic samples. Supported by the National Microbiology Laboratory. Manuscript published in Clinical Infectious Diseases (CID)

Serology-based tests for Healthcare Workers exposed to COVID-19 Co-investigator with Drs. Ken Kasper, Yoav Keynan, Allen Kraut, Mike Drebot, Robbin Lindsay and Tim Booth. Study to determine seroconversion in exposed healthcare workers from a hospital outbreak in Winnipeg. Supported by the National Microbiology Laboratory

**Laboratory Kevin Coombs**

Members of the Coombs lab are currently involved in 2 funded projects. Dr. Kevin Coombs leads a multi-institutional CIHR-funded project Integrated multi-omic delineation of SARS-CoV-2-dysregulated cellular processes that aims to delineate proteomic and transcriptomic responses of a variety of human cells to multiple coronaviruses with different levels of pathogenicity. The study includes national expert co-applicants from the National Microbiology Laboratories in Winnipeg, the National Research Council in Ottawa, and the University of Toronto and SickKids Hospital to perform the necessary BSL-3 work. These comparative studies will identify cellular markers that help explain the differences in disease severity in males versus females, in children versus adults, and in asthmatics/smokers versus normal healthy adults. Collectively, these studies will provide critical information about human parameters of COVID-19 disease severity that can be used to mitigate the pandemic course.

Coombs received a Sponsored Research Contract from Theralase Biotechnologies, Inc., a Toronto-based company that specializes in photodynamic compounds and their use against pathogenic organisms and cancer. Theralase had previously determined one of their compounds was effective against bacteria and cancers at doses that are not toxic to normal human cells, and we were contracted to determine if the compound also is effective against viruses, including coronaviruses. This research, assisted by two of Coombs' graduate students, Kathleen Glover and Mahamud Rashid, has determined that low-nanomolar concentrations of the Theralase compound can kill influenza virus, Zika virus and human coronaviruses within seconds. Thus, the compound may represent a very rapid and very safe alternative to standard methods that are used to prepare inactivated virus vaccines, and may also be useful as a therapeutic for individuals who cannot receive normal vaccines.

**Keith Fowke**

Dr. Fowke is involved as a coinvestigator on the following projects:

- CIHR CoVID-19 Rapid Response funding opportunity
- Second is the Burroughs Wellcome Trust project Dynamics of mucosal and serologic immune responses to SARS-CoV-2 and implications for estimating population-level wide susceptibility. Dr. Fowke is also involved as a coinvestigator on the Development of a novel DC-targeting vaccine approach that targets COVID-19 spike protein to control nCoV infection that is being lead by Dr. Xiao-Jian Yao and co-investigators Darwyn Kobasa and Sam Kung. Funding for this project is funding by Canadian Institutes for Health Research. Canadian 2019 Novel Coronavirus (2019-nCoV) Rapid Research Program and Research Manitoba COVID-19 Matching funding.

**Yoav Keynan**

Dr. Keynan has been actively involved in a number of projects. COVID rapid testing modalities- early on in the spring tested point of care assays for CoVID diagnosis at HSC.

Clinical trials - Involved in CATCO , adaptive clinical trials platform, testing treatments for COVID 19, an arm of the WHO solidarity trial. Manitoba PI for the study. Other investigators from the section of ID - Ken Kasper, Terry Wuertz, Amila Heendeniya and Sylvain Lother

Mathematical modelling – through the National Collaborating Centre for Infectious Diseases (NCCID) network of modelling in Canada, Colombia and Spain - enriching models with up to date accumulating knowledge of disease and with information about mobility
As the Scientific Lead of NCCID has provided up to date information in the form of disease debriefs, podcast series and dedicated website for COVID. We are now hosting the modelling for PHAC modelling consortium with explanations about the models for public health audiences- aimed to share models and build capacity in how models can support public health.

Serological studies - started in the spring among health care workers, funded with grant from research Manitoba to expand to individuals with unstable housing and planned for resurvey later this winter. With Dr co PI with Dr Lauren MacKenzie, Co investigators- Dr Lother, Shaw

Darwyn Kobasa
Dr. Kobasa along with Brad Pickering are co-investigators on a CIHR COVID-19 Rapid Research Funding Opportunity - Vaccines funding for the project SARS-CoV-2 immunization strategies to enhance protective immunity with reduced risk of antibody-dependent enhancement (ADE). In this project, after identifying and engineering the immunogens, we will translate towards SARS-CoV-2 a versatile, potent and immunostimulating nanotechnology platform recently developed in our laboratory, which not only will adequately present the vaccine material to the host immune system but also enhance its immunogenicity, while eliminating the risk associated with the so-called antibody-dependent enhancement (ADE).

Darwyn Kobasa is one of several co-investigators on University of Regina lead Development of SARS-CoV-2 Peptide Therapeutics and Point-of-Care Salivary Diagnostics for Rapid Viral Detection. This funding is provided under the CIHR COVID-19 Rapid Research Funding Opportunity – Diagnostics. This proposal brings together leading Canadian scientists and clinicians to fulfill our objectives by generating high-quality data to diagnostically and therapeutically accelerate the detection and prevention of COVID-19 and foster nationwide collaborations, with a clear scaling-up path that will refine decision-making across Canadian jurisdictions for effective and timely containment of the COVID-19 outbreak.

In addition to this Dr. Kobasa is a coinvestigator on Kevin Coombs’ CIHR grant Integrated multi-omic delineation of SARS-CoV-2-dysregulated cellular processes and the University of Ottawa lead CIHR Operating Grant: COVID-19 – Therapeutics funding opportunity Drug repurposing for the rapid development and evaluation of SARS-CoV-2 antivirals. In this rapid response grant, they propose to identify drugs with activity against SARS-CoV2 in vitro and in vivo and contribute to the global COVID-19 response and provide a therapeutic option for patients developing life-threatening disease.

Dr. Kobasa is one of several investigators involved in the University of Saskatchewan lead CIHR Operating Grant: COVID-19 – Vaccines funded project along with other MMID faculty members Jason Kindrachuck and Brad Pickering. The project is proposed to identify what common lab and agricultural animals may be infected with SARS-CoV-2. This addresses two important questions. What animals can be infected and may pose a risk (or are at risk) and can these animals be used to models. Animal model allow us to understand how the virus causes disease, whether vaccines can be developed that protect from disease and how might the virus be transmitted. We plan to investigate whether these animal models can be used to test for this, to ensure that vaccines are safe prior to testing in human clinical trials.

Darwyn Kobasa and Brad Pickering are part of a team of researchers from four countries with expertise in virology, diagnostics technologies and delivering impactful research outcomes. The assembled team is being lead by the University of Toronto CIHR Operating Grant: CoVid-19 – Diagnostics grant titled Rapid, Low-cost Diagnostics and Deployable Surge Capacity for COVID-19. The goal is a diagnostic platform capable of providing the capacity to respond to COVID-19 here in Canada or aboard, and the companion technologies, protocols and training to ensure effective deployment.

Brad Pickering
Dr. Bradley Pickering has been granted a Canadian Institutes of Health Research CoVid-19 Rapid Response funding award titled, Development of field-deployable and point-of-need diagnostics for SARS-CoV-2 using CRISPR-based technology. Dr. Pickering and Darwyn Kobasa are co-investigators on a University of Montreal lead CIHR CoVid-19 Rapid Response grant SARS-CoV-2
immunization strategies to enhance protective immunity with reduced risk of antibody-dependent enhancement (ADE)

**Gary VanDomeselaar**
Drs. Gary VanDomeselaar and Morag Graham are co-investigators on a University of Alberta lead CIHR CoVID-19 Rapid Response grant titled Development of a novel DC-targeting vaccine approach targeting 2019-nCoV spike protein for controlling nCoV infection.

**Xiao-jian Yao**
Dr. Xiao-jian Yao is the principal investigator, along with co-investigators Keith Fowke and Darwyn Kobasa on the Canadian Institutes of Health Research CoVID-19 Rapid Response-Vaccines funding for his project titled Development of a novel DC-targeting vaccine approach targeting 2019-nCoV spike protein for controlling nCoV infection. In the study, they have developed a lentivirus-like particle (VLP)-based DC-targeting vaccination technology to targeting COVID-19 spike protein (D814G mutant) and its receptor-binding domain (RBD). These COVID-19 spike protein/RBD expressed VLPs are constitutively produced from a FDA-approved cell line. They have been using this vaccine in mice and demonstrated that this vaccine induced immune responses against COVID-19 spike protein. Now they are in the process to optimize the vaccine production system and looking for collaborations and for GMP productions for further studies.

Dr. Yao’s lab is also working on Development of anti-COVID-19 nasopharynx agents: Prunella vulgaris extract and Suramin blocks SARS-coronavirus 2 virus Spike protein D614 and G614 variants mediated receptor binding and virus entry.” In this study, they established a sensitive SCoV-2 Spike glycoprotein (SP), including an SP mutant D614G, pseudotyped HIV-1-based vector system. This study revealed that a C-terminal 17 amino acid deletion in SCoV-2 SP significantly increases the incorporation of SP into the pseudotyped viruses and enhanced its infectivity, which is valuable information for the design of SCoV2-SP-based vaccine strategies. Also, based on this system, they have demonstrated that an aqueous extract from the Chinese herb Prunella vulgaris (CHPV) displayed potent inhibitory effects on both SCoV-2 SP (including SPG614 mutant) pseudotyped virus (SCoV-2-SP-PVs) and SARS CoV SP-pseudotyped virus-mediated infections. Overall, this study provides pieces of strong evidence that CHPV and Suramin has anti-SARS-CoV-2 activity and may be developed as a novel antiviral approach, especially as nasopharynx agents, against SARS-CoV-2 infection.

This story was published in BioRxiv preprint August 28, 2020. [https://doi.org/10.1101/2020.08.28.270306doi](https://doi.org/10.1101/2020.08.28.270306doi).

**MMID CoVID-19 Publications**

**David Alexander**


**Jared Bullard**


**Jason Kindrachuk Lab**


**Xiao-jian Yao**


**Lyle McKinnon, Keith Fowke and Joshua Kimani**


**Awards**

**Jared Bullard**

2020 Pediatric Chairs of Canada 2020 COVID Leadership (Award Awarded to the Pediatric Incident Command Team)

**Educational materials for SARS-CoV-2/COVID-19**

**Jared Bullard**


2. Spring 2020 The Manitoba COVID-19 Report Conceptualized, and Faculty Lead and Editor for, a collaborative report generated by idle medical and graduate students, residents and infectious diseases/medical microbiology/clinical microbiology fellows with assistance by the Neil John MacLean Health Sciences Library librarian team to review COVID-19 literature and research in the domains of Clinical Description and Epidemiology, Diagnostics & Surveillance, Therapeutics, Infection Prevention & Control, Public Health Interventions and Pediatric Corner. Eight weekly reports were distributed to practitioners in Manitoba, Canada and internationally. https://www.mbcovid19report.com/
MMID CoVID-19 Student Contributions

The department of Medical Microbiology and Infectious Diseases has been assisting with the COVID-19 pandemic in a number of ways. We have found ways to take our training in infectious diseases and transfer those skills to this pandemic. Our students have assisted in critical research, knowledge translation and outreach. We have formed collaborations both locally (Cadham Provincial Laboratory), and internationally. The unified response of this department has shown the dedication we have to science, combating infectious diseases and ensuring everyone has access to valuable information.

U of M Today - Grad students use infectious disease know-how during pandemic (Jan. 25th, 2021)

Winnipeg HSC Screening

- Screened individuals at entry points of Winnipeg’s Health Science Centre (HSC)
- Asked incoming visitors and patients for their purpose of entry, travel history, and presence of symptoms

Manitoba COVID-19 weekly Report

A collaboration between medical students and graduate students to produce weekly newsletters that address clinical questions based on current evidence available. The initiative generated 8 reports which were disseminated to approx 9000 health professionals across Manitoba, Canada, the US, South America, the Carribean/West Indies, Europe:

- Jenny Myskiw
- Jasmine Frost
- Brayden Schindell
- Hossaena Ayele,
- Toby Le
- Meagan Allardice
- Ali Doucet

International Infectious Disease & Global Health Training Program - Paper Collaboration from India

A collaboration with a research institute in India, students in the International Infectious Disease and Global health training program were invited to assist in writing articles for a COVID-19 special issue journal.

Kathleen Glover
Monika Kowatsch
Elinor Shvartsman

Community Engagement COVID-19 Activities

Several students in the department have taken personal initiative to educate their peers, high school students, and communities about COVID-19 via social media platforms, public talks, news outlets, and more.

- Jasmine Frost
- Brayden Schindell
- Toby Le
- Meagan Allardice
- Zachary Schiffman
- Lauren Garnett

Students on COVID-19 Research Project

Brayden Schindel - Studying if reproductive tissue persistence poses a risk to spread and complications. Additionally, he is also looking to survey Ebola survivors from Sierra Leone to determine if they have been disproportionately affected by COVID-19.

Katherine Li - Studying SARS-CoV-2 genetic diversity at a global scale and characterizing variations in putative immune epitopes to explore how these contribute to SARS-CoV-2 evolution as a mechanism of viral fitness.

Grace Seo - Her research focuses on developing a sequencing infrastructure that would enable a national genomic surveillance system for SARS-CoV-2 as it is critical to monitor the effectiveness of diagnostic tests as the virus evolves.

Lauren Garnett - Contributed to a number of COVID-19 projects. She led a study on testing suitable swabs for COVID-19.C, to determine if alternatives are available in the situation that we experience a shortage. She also contributed to the development of suitable COVID-19 animal models and is currently assisting on determining the patient infectivity focused on the pediatric population in collaboration with Cadham Provincial Laboratory.
**Zachary Schifman** - Contributed to several COVID-19 related projects within the Special Pathogens Program including the establishment of a sandwich ELISA for the detection and quantification of the SARS-CoV-2 spike protein. Additionally, Zach’s current research focuses on seasonal human coronaviruses seeing whether antibodies against these seasonal coronaviruses are cross protective to SARS-CoV-2. Furthermore, Zach is also exploring whether cells infected with seasonal coronaviruses are refractory to infection with SARS-CoV-2, a phenomenon known as superinfection exclusion.

**Megan Allardice** - Currently, in an internship at Emergent Biosolutions working on an rhACE2-Fc immunoadhesin project there and I've shifted the focus of my masters project slightly to look at the interaction between SARS-CoV-2 and the blood-brain barrier.


**Grad students use infectious disease know-how during pandemic**

By: Matthew Kruchak (originally in UM Today News January 25, 2021 - [https://news.umanitoba.ca/grad-students-use-infectious-disease-know-how-during-pandemic/]())

Graduate students in the Max Rady College of Medicine’s department of medical microbiology and infectious diseases have been busy during the pandemic putting their expertise to excellent use.

The students have formed local and international collaborations and worked on COVID-related research, outreach and knowledge translation.

“It’s been exceptional,” said Dr. Keith Fowke, professor and head of medical microbiology and infectious diseases. “The students have really stepped up. They’ve said ‘OK, here’s a global pandemic and I’m a microbiology-infectious disease student – how can I help?’”

Many of the students have been in the lab working on COVID-related projects.

Research projects include one study that tested suitable swabs for COVID-19 to determine if alternatives are available if there’s a shortage. Another study focused on developing a sequencing infrastructure that would enable a national genomic surveillance system for SARS-CoV-2.

“The graduate students saw the need and filled the need for COVID-related projects,” Fowke said.

“Graduate students drive research at the University of Manitoba, there’s no question about that. They’re the main mechanism, the main energy and the main sets of hands behind most of the research that occurs at the university.”

Graduate students are also working on COVID-related projects outside of the lab.

Students in the International Infectious Disease and Global Health Training Program, which Fowke directs, were invited to help write articles for a COVID-19 special issue journal. They collaborated on the project with Ramaiah University in Bangalore, India.

Medical students and graduate students collaborated to create the Manitoba COVID-19 Weekly Report. They produced eight newsletters, which addressed clinical questions based on current evidence, and reached about 9,000 health professionals around the world.

Several students have used social media, news outlets and public talks to educate their peers, high school students and communities about COVID-19.

“I really think it brings into focus how important being a researcher in this field is,” said Jasmine Frost, a PhD student. “You have a responsibility to help people understand what’s happening and to help promote accurate information and debunk some of the myths that were circulating, especially at the beginning of the pandemic.”

Students also volunteered to screen people for COVID-19 symptoms at the entrances to the Health Sciences Centre.
“From the students to the professors, we’re all trying to use our knowledge of infectious disease and our research to empower communities around the world,” said Toby Le, a PhD student. “I think the reason why we’re doing COVID projects, and why we’re so driven, is there’s a natural affinity in our department to take what we know about infectious disease and try to use it to empower people that are facing it.”

Visit the department of medical microbiology and infectious diseases’ website for more details about the students' COVID-related research and for a list of the

ANNOUNCEMENTS/AWARDS

The Canadian Antimicrobial Resistance Alliance - CARA

The Canadian Antimicrobial Resistance Alliance-CARA is pleased to announce that they have started a new study called the Canadian LEadership on Antimicrobial Real life usage registry-CLEAR.

CLEAR captures Canadian data of real life usage of new intravenous antimicrobials in Canada. Currently CLEAR is capturing data on IV ceftobiprole, IV ceftolozane/tazobactam and IV fosfomycin.

CLEAR currently has > 300 participants who are AMMI/CACMID and/or CSHP members. The links to enter treatment date are...

Ceftobiprole: https://is.gd/CLEAR_ceftobiprole
Ceftolozane/Tazobactam: https://is.gd/CLEAR_ceftolozanetazobactam
Fosfomycin: https://is.gd/CLEAR_IVfosfomycin

Faculty Awards

Dr. George G. Zhanel received the 2020 Department of Medical Microbiology and Infectious Diseases Jim Parker educational award.

Dr. Frank Plummer Post-Doctoral Fellow-research Associate Researcher of the Year 2020: Zhujun Ao
Dr. Rubinstein Clinical Fellow Research Award 2020: Carl Boorman

PGME Clinical Educator of the Year 2020: Dr. Philippe Lagace-Wiens
Medical Microbiology Faculty Educator of the Year 2020: Dr. James Strong
Fred Aoki Career Achievement Award 2020: Dr. Grant McClarty
Theresa Birkhotz Support Staff Award 2020: Angela Nelson
Best Pinch-Hitting Administrator of the Year Award 2020: Jennifer Shaw

Student Awards

MEDICAL MICROBIOLOGY GRADUATE STUDENT AWARDS

Journal Club Winners 2020
Virology
Top Rookie - Nathan Glowach
Top Veteran - Riley Tough
Bacteriology
Top Rookie - Michelle Wuzinski
Top Veteran - Jillian Rumore
Host Pathogen
Top Rookie - Morgan Taverner
Top Veteran - Shanelle Gingras
Research Manitoba Studentship (Advisor) - Shifa Mohideen (K Fowke)
CIHRN Scholarship - Jasmine Frost (A Severini)
University of Manitoba Graduate Fellowship - Rubendren Jamilchelvan (P McLaren), Titus Olukitibi (L McKinnon), Tosin Omole (L McKinnon)
CGS (M) - Toby Lee (K Fowke), Vanessa Schulz (P McLaren)
CAD Liver Foundation Scholarship - Alicia Vachon (C Osiowy)
MITACS Internship - Mahamud Rashid (K Coombs)
VADA Internship - Nelson Mok (N Knox), Ruth Mwatelah (L McKinnon), Jeremiah Yarmie (N Knox)
Graduate Student Knowledge into Action 2020: Jasmine Frost, Marnie Hustins, Toby Le
Graduate Student Publication of the Year 2020: Kathleen Glover
33rd Annual Canadian Student Health Research
Forum Awards (September 2020)
Dean of Graduate Studies
Jennifer Myskiw supervised by Stephanie Booth
Jessy Slota supervised by Stephanie Booth

HSGSA awards
Jillian Rumore supervised by Natalie Knox and Cecile Nadon
Kathleen Glover supervised by Kevin Coombs
Kaye Quizon supervised by Darwyn Kobasa

Manitoba Medical Service Services
Carmine Slipski supervised by Denice Bay
Florence Mutua supervised by Blake Ball and Sandra Kiazyk
Jayelle Friesen supervised by Mike Mulvey
Monika Kowatsch supervised by Keith Fowke
Toby Le supervised by Keith Fowke

Best overall masters student in the whole competition
Jayelle Friesen supervised by Mike Mulvey

Emergent Biosolutions award in Infectious Disease
Major Award
Kathleen Glover supervised by Kevin Coombs

CIHR Gold Award
Monika Kowatsch supervised by Keith Fowke

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**GRADUATE STUDENT UPDATE**

MMID students have been keeping busy with department seminars, student engagement nights, and of course research related activities. Meagan Allardice has been working at Emergent creating a SARS-CoV-2 pseudotyped virus using lentivirus to test an immunoadhesion molecule for inhibition of virus entry. In the coming weeks she will be using the same system in her research at U of M, but rather using a VSV system in place of lentivirus. Titus Olukitibi has also been contributing to the COVID-19 effort, but he has not lost his passion for developing a universal influenza vaccine. Titus has still managed to make progress in identifying if his vaccine can protect against influenza challenge, all while characterizing herbal drugs impact on SARS-CoV-2.

Journal Club was completed in December and the students were selected for the best rookie and veteran presentations for the three Journal Club sections, Virology, Bacteriology, and Host Pathogen. The Best Rookie Awards were given to Nathan Glowach, Michelle Wuzinski, and Morgan Taverner, and the Best Veteran Awards were given to Riley Tough, Jillian Rumore, and Shanelle Gingras. Morgan Taverner finds the energy you bring to a presentation infectious, and he was definitely able to bring this energy by engaging the audience with his use of the PIG, Participation Incentivization Game. His sense of humour was not lost in the Zoom environment, and Michelle Perner was able to earn enough points through participation to bring home the PIG, a delicious box of Ferrero Rocher. Nathan Glowach finds Journal Club to be an excellent way for graduate students to develop their scientific communication skills in a supportive, encouraging, and constructive environment.
When selecting his paper, Nathan considered, “Should I pick something sexy and novel? Established and simple? Visually appealing?” Ultimately Nathan decided to select a paper that he found exciting and that he could explain well to the audience, which we can see really paid off.

Student Council is continuing to work towards providing a Biostatistics Workshop, sharing volunteer opportunities, and offering fun engagement nights for the students to decompress and have a little fun! We are excited and hopeful for a better year in 2021.

It has been another successful year for the International Infectious Disease & Global Health Training Program (IID&GHTP). In 2020, we held nine Infectious Minds meetings and welcomed 14 new trainees to the program in September. Currently, there are twenty-seven fantastic trainees from four research sites (Medellin, Colombia; Bangalore, India; Nairobi, Kenya; and Winnipeg, Canada) participating in the program, and we hope to add more in September 2021.

This year, the IID&GHTP is offering its tenth major course The Ecology of Infectious Diseases (EcoID) from May 10 – June 4. This course will be held virtually and is mainly open to PhD students in the departments of MMID and CHS, but students who are transitioning to PhD may also participate. If you would like to learn more about the EcoID course, please contact the Program Coordinator.

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 for a two week major course.

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).

Scholarship (QES) program. The QES supports Canadian/Permanent Resident graduate students up to $6000 to complete an international internship in a QES eligible country. As well, 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.

**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 with your international mentor
- 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

**Please Note:** COVID-19 travel restrictions will not last forever – start planning ahead. Those interested in applying for a Summer Session Scholarship (June 1, 2021) must submit an application by March 1, 2021, Fall Session (Sept 2021) applications are due June 1, 2021. We are aware that the global pandemic has restricted travel at this time and a start date of June 1, 2021 may not be possible, however, if interested in the QES program please submit an application. Once restrictions have lifted, we will have your application on file and can contact you immediately about proceeding further.

If interested in the QES program please contact natasha.hollett@umanitoba.ca for more information.
## GRADUATE PROGRAM

### MMID Graduates May 2020 – February 2021

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<tr>
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<th>Program</th>
<th>Thesis Title</th>
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<tbody>
<tr>
<td>Robyn Thorington</td>
<td>MSc</td>
<td>An in vitro RNA Synthesis Assay to Measure the Fidelity of the Measles Virus Polymerase</td>
<td>May 2020</td>
<td>Alberto Severini</td>
</tr>
<tr>
<td>Matthew Martin</td>
<td>MSc</td>
<td>Characterization of AAVrh.10 as a Vector to Deliver Long-Lasting Genetic Constructs Into Neurons of Neonatal Mice</td>
<td>May 2020</td>
<td>Stephanie Booth</td>
</tr>
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91. **Detection of Antimicrobial Resistance Using**


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