



As we start the fall semester and get ready to return to campus, there is certainly a sense of excitement, tempered with a healthy dose of caution, as we gradually return to in person life. We are looking forward to seeing you all and would like to extend a special welcome, not only to our newest cohort of MIMM students, but also to last year's cohort, who had the unique experience of having lived their first year online.

While we are excited to be able to be back in person, we are also bringing with us new knowledge and experience with online learning tools, which we will continue to apply where they can enrich the learning experience for our students. Also

Publications

[Amato KR](#), [Arrieta MC](#), [Azad MB](#), [Bailey MT](#), [Broussard JL](#), [Bruggeling CE](#), [Claud EC](#), [Costello EK](#), [Davenport ER](#), [Dutilh BE](#), [Swain Ewald HA](#), [Ewald P](#), [Hanlon EC](#), [Julion W](#), [Keshavarzian A](#), [Maurice CF](#), [Miller GE](#), [Preidis GA](#), [Segurel L](#), [Singer B](#), [Subramanian S](#), [Zhao L](#), [Kuzawa CW](#). The human gut microbiome and health inequities. *Proc Natl Acad Sci U S A*. 2021 Jun 22;118(25):e2017947118. doi: [10.1073/pnas.2017947118](#). PMID: [34161260](#); PMCID: [PMC8237592](#).

[Bassenden AV](#), [Dumalo L](#), [Park J](#), [Blanchet J](#), [Maiti K](#), [Arya DP](#), [Berghuis AM](#). Structural and phylogenetic analyses of resistance to next-generation aminoglycosides conferred by AAC(2') enzymes. *Sci Rep*. 2021 Jun 2;11(1):11614. doi: [10.1038/s41598-021-89446-3](#). PMID: [34078922](#); PMCID: [PMC8172861](#).

[Béziat V](#), [Rapaport F](#), [Hu J](#), [Titeux M](#), [Bonnet des Claustres M](#), [Bourgey M](#), [Griffin H](#), [Bandet É](#), [Ma CS](#), [Sherkat R](#), [Rokni-Zadeh H](#), [Louis DM](#), [Changi-Ashtiani M](#), [Delmonte OM](#), [Fukushima T](#), [Habib T](#), [Guennoun A](#), [Khan T](#), [Bender N](#), [Rahman M](#), [About F](#), [Yang R](#), [Rao G](#), [Rouzaud C](#), [Li J](#), [Shearer D](#), [Balogh K](#), [Al Ali F](#), [Ata M](#), [Dabiri S](#), [Momenilandi M](#), [Nammour J](#), [Alyanakian MA](#), [Leruez-Ville M](#), [Guenat D](#), [Materna M](#),

new this year: following a successful pilot in Winter 2021, we are proud to introduce two new limited enrolment “SEA-PHAGES” courses: MIMM 390 (F): Phage Discovery, taught by Dr. Corinne Maurice and MIMM 391 (W): Genome Annotation, taught by Dr. Jessie Shapiro. Special thanks to Dr. Jasmin Chahal for her hard work in making the SEA-PHAGES pilot a tremendous success last year! We also want to thank the technical team led by Shan Hong Zhang for their hard work all summer to prepare the materials for our in-person lab courses.

The past year was a testament to the power of immunology as we have witnessed the unprecedented development of COVID vaccines that are saving countless lives around the world. As microbiologists and immunologists, we have a responsibility to lead by example, and it is therefore our expectation that all department members will be vaccinated. Please do not hesitate to reach out to us if you have questions or concerns about vaccination, and how best to protect yourself and those around you.

We wish you a safe and successful academic year,

Don and Sam

[Marcot L, Vladikine N, Soret C, Vahidnezhad H, Youssefian L, Saeidian AH, Uitto J, Catherinot É, Navabi SS, Zarhrate M, Woodley DT, Jeljeli M, Abraham T, Belkaya S, Lorenzo L, Rosain J, Bayat M, Lanternier F, Lortholary O, Zakavi F, Gros P, Orth G, Abel L, Prétet JL, Fraitag S, Jouanguy E, Davis MM, Tangye SG, Notarangelo LD, Marr N, Waterboer T, Langlais D, Doorbar J, Hovnanian A, Christensen N, Bossuyt X, Shahrooei M, Casanova JL. Humans with inherited T cell CD28 deficiency are susceptible to skin papillomaviruses but are otherwise healthy. Cell. 2021 Jul 8;184\(14\):3812-3828.e30. doi: 10.1016/j.cell.2021.06.004. Epub 2021 Jul 1. PMID: 34214472; PMCID: PMC8329841.](#)

[Camargo C, Lupien A, McIntosh F, Menzies D, Behr MA, Sagan SM. Effectiveness of germicidal ultraviolet light to inactivate coronaviruses on personal protective equipment to reduce nosocomial transmission. Infect Control Hosp Epidemiol. 2021 Jun 21:1-6. doi: 10.1017/ice.2021.249. Epub ahead of print. PMID: 34154679.](#)

[Carstens-Kass J, Paulini K, Lypaczewski P, Matlashewski G. A review of the leishmanin skin test: A neglected test for a neglected disease. PLoS Negl Trop Dis. 2021 Jul 22;15\(7\):e0009531. doi: 10.1371/journal.pntd.0009531. PMID: 34292942.](#)

[Chahal J, Gebert LFR, Camargo C, MacRae IJ, Sagan SM. miR-122-based therapies select for three distinct resistance mechanisms based on alterations in RNA structure. Proc Natl Acad Sci U S A. 2021 Aug 17;118\(33\):e2103671118. doi: 10.1073/pnas.2103671118. PMID: 34385308; PMCID: PMC8379925.](#)

[Golkar T, Bassenden AV, Maiti K, Arya DP, Schmeing TM, Berghuis AM. Structural basis for plazomicin antibiotic action and resistance. Commun Biol. 2021 Jun 11;4\(1\):729. doi: 10.1038/s42003-021-02261-4. PMID: 34117352; PMCID: PMC8195987.](#)



Maisonneuve-Rosemont Hospital Research Institute

Dr. Sylvie Lesage has been appointed as Scientific Director at the Maisonneuve-Rosemont Hospital Research Institute where she will be responsible for establishing the directions and research priorities of the Centre de recherche de l'Hôpital Maisonneuve-Rosemont (CR-HMR). She will also have the mandate to ensure the development of the scientific program of this center in collaboration with researchers and partners of the scientific ecosystem of the CR-HMR. [Read more.](#)

CIHR Project Grant Results

Congratulations to our professors for being funded in the Spring 2021 Project Grant Competition:

- Dr. **Dao Nguyen** and her co-applicant Christopher Thibodeaux received funding for "A novel mechanism of antibiotic tolerance in *Pseudomonas aeruginosa*."

[Hassan AS, Perera DJ, Ward BJ, Ndao M. Therapeutic activity of a *Salmonella*-vectored *Schistosoma mansoni* vaccine in a mouse model of chronic infection, Vaccine, <https://doi.org/10.1016/j.vaccine.2021.08.031>](#)

[Heirwegh E, MacLean E, He J, Kamhawi S, Sagan SM, Olivier M. Sandfly Fever Sicilian Virus-*Leishmania major* co-infection modulates innate inflammatory response favoring myeloid cell infections and skin hyperinflammation. PLoS Negl Trop Dis. 2021 Jul 26;15\(7\):e0009638. doi: 10.1371/journal.pntd.0009638. PMID: 34310619; PMCID: PMC8341699.](#)

[Hennemann L.C, Nguyen D. LasR-regulated proteases in acute vs. chronic lung infections: a double edged sword. Microbial Cell. 2021 May 31;8\(7\):161-163. PMID 34250084](#)

[Karmakar S, Ismail N, Oliveira F, Oristian J, Zhang WW, Kaviraj S, Singh KP, Mondal A, Das S, Pandey K, Bhattacharya P, Volpedo G, Gannavaram S, Satoskar M, Satoskar S, Sastry RM, Oljuskin T, Sepahpour T, Meneses C, Hamano S, Das P, Matlashewski G, Singh S, Kamhawi S, Dey R, Valenzuela JG, Satoskar A, Nakhasi HL. Preclinical validation of a live attenuated dermatropic *Leishmania* vaccine against vector transmitted fatal visceral leishmaniasis. Commun Biol. 2021 Jul 30;4\(1\):929. doi: 10.1038/s42003-021-02446-x. PMID: 34330999; PMCID: PMC8324786.](#)

[Karo-Atar D, Khan N, Divangahi M, King IL. Helminth-mediated disease tolerance in TB: A role for microbiota? PLoS Pathog. 2021 Jul 15;17\(7\):e1009690. doi: 10.1371/journal.ppat.1009690. PMID: 34265025.](#)

[Kwong K, Benedetti A, Yau Y, Waters V, Nguyen D*. Failed eradication therapy of new onset *Pseudomonas aeruginosa* infections in cystic fibrosis children is associated with bacterial resistance to neutrophil](#)

- Dr. **Irah King** and his co-applicant Alex Gregorieff received funding for “Type 2 immune-mediated control of intestinal epithelium stem cell fate and function.”

Hepatitis Can't Wait: Teachings From COVID-19 To Combat Hepatitis B and C Viruses

Marylin Rheault (MIMM MSc student in the Sagan lab) co-wrote an open letter with 22 other trainees in the [CanHepC fellowship program](#) to mark World Hepatitis Day (July 28). The letter discusses how teachings from the COVID-19 pandemic can be reapplied to improve viral hepatitis care.

Viral hepatitis represents an on-going pandemic that claims around 1.1 million lives yearly. There is currently a vaccine available for hepatitis B and a cure for hepatitis C, but the majority of infections remain undiagnosed. Thus, there is still much to do to achieve the goal set forth by the World Health Organization to eliminate viral hepatitis as a public health threat by 2030. This letter aims to raise awareness regarding how we can use the momentum gained during the COVID-19 pandemic and the new innovations put in place to improve the viral hepatitis cascade of care and work towards elimination targets.

[functions. J Infect Dis. 2021 Feb 19. Epub ahead of print.](#)

[LaRoche-Johnston F, Monat C, Verreault E, Cousineau B. Molecular characterization of both transesterification reactions of the group II intron circularization pathway. Nucleic Acids Res. 2021 Jul 9;49\(12\):6996-7010. doi: 10.1093/nar/gkab537. PMID: 34157113; PMCID: PMC8266578.](#)

[Lin YH, Wang H, Fiore A, Förster M, Tung LT, Belle JI, Robert F, Pelletier J, Langlais D, Nijnik A. Loss of MYSM1 inhibits the oncogenic activity of cMYC in B cell lymphoma. J Cell Mol Med. 2021 Jul;25\(14\):7089-7094. doi: 10.1111/jcmm.16554. Epub 2021 Jun 11. PMID: 34114734; PMCID: PMC8278115.](#)

[Nguyen AMT, Brettell S, Douanne N, Duquette C, Corbeil A, Fajardo EF, Olivier M, Fernandez-Prada C, Lubell WD. Influence of N-Methylation and Conformation on Almiramide Anti-Leishmanial Activity. Molecules. 2021 Jun 12;26\(12\):3606. doi: 10.3390/molecules26123606. PMID: 34204673; PMCID: PMC8231256.](#)

[Ogishi M, Yang R, Aytakin C, Langlais D, Bourgey M, Khan T, Ali FA, Rahman M, Delmonte OM, Chrabieh M, Zhang P, Gruber C, Pelham SJ, Spaan AN, Rosain J, Lei WT, Drutman S, Hellmann MD, Callahan MK, Adamow M, Wong P, Wolchok JD, Rao G, Ma CS, Nakajima Y, Yaguchi T, Chamoto K, Williams SC, Emile JF, Rozenberg F, Glickman MS, Rapaport F, Kerner G, Allington G, Tezcan I, Cagdas D, Hosnut FO, Dogu F, Ikinogullari A, Rao VK, Kainulainen L, Béziat V, Bustamante J, Vilarinho S, Lifton RP, Boisson B, Abel L, Bogunovic D, Marr N, Notarangelo LD, Tangye SG, Honjo T, Gros P, Boisson-Dupuis S, Casanova JL. Inherited PD-1 deficiency underlies tuberculosis and autoimmunity in a child. Nat Med. 2021 Jun 28. doi: 10.1038/s41591-021-01388-5. Epub ahead of print. PMID: 34183838.](#)

[Pardy RD, Valbon SF, Cordeiro B,](#)

[To read the letter, click here.](#)

**Call for Workshop Leaders &
Career Panelists:
2021 Discovery Day in Health
Sciences**

Interested in leading an engaging and stimulating workshop on health sciences for high school students? Open to sharing your professional journey and providing insight about health careers to the next generation?

You are invited to volunteer as a workshop leader and/or career panelist at the [annual Discovery Day in Health Sciences](#) on **December 1!** Participants from faculty, trainees, staff, and students are welcome!

This year's virtual event is organized in partnership with McGill University's Faculty of Medicine and Health Sciences, The Neuro, and the Canadian Medical Hall of Fame (CMHF).

This national program aims to educate and inspire senior high school students (grades 9-11) who are curious about careers in health sciences, medicine, nursing, regulated health professions, and more. Youth engagement and outreach are important to Canada's medicine and health sciences

[Krawczyk CM, Richer MJ. An epidemic Zika virus isolate suppresses antiviral immunity by disrupting antigen presentation pathways. Nat Commun. 2021 Jun 30;12\(1\):4051. doi: 10.1038/s41467-021-24340-0. PMID: 34193875; PMCID: PMC8245533.](#)

[Podstawka J, Sinha S, Hiroki CH, Sarden N, Granton E, Labit E, Kim JH, Andonegui G, Lou Y, Snarr BD, Sheppard DC, Rosin NL, Biernaskie J, Yipp BG. Marginating transitional B cells modulate neutrophils in the lung during inflammation and pneumonia. J Exp Med. 2021 Sep 6;218\(9\):e20210409. doi: 10.1084/jem.20210409. Epub 2021 Jul 27. PMID: 34313733; PMCID: PMC8318832.](#)

[Shamash, M., Maurice, C.F. Phages in the infant gut: a framework for virome development during early life. ISME J \(2021\).](#)

Join the MIMM department!

We are hiring an Assistant Professor (Teaching).

[To view the position description and to apply, click here.](#)

Retirement announcement

It saddens us to announce the retirement of Aghdas Zamani, course coordinator. After 25 years at MIMM, her last day in the department was on July 13th.

Aghdas was an integral part of the tech team. Her contributions will always be valued and remembered. Her hard work, commitment and dedication to students are worthy of

faculties and your willingness to participate is greatly appreciated.

REGISTER NOW:

<https://cmhf.wufoo.com/forms/z11qc9mh0cicufu/>

DEADLINE FOR

SUBMISSIONS: October 24, 2021

Let's Talk Science symposium

Looking to showcase your lab and research to future scientists?

Let's Talk Science (LTS) is holding a half-day virtual (zoom) symposium this Fall and are looking for professors who are interested in participating. It will comprise of an introduction talk about any research being done, a virtual lab tour, and close with a Q&A session. LTS is happy to mold this to whatever you are interested in!

For more information, please contact Maxana Weiss

at mcgill@outreach.letstalkscience.ca or Dr. Jasmin Chahal at jasmin.chahal@mcgill.ca.

New MISA & MIGSA council members

Meet the new student associations members for the 2021-2022 academic year:

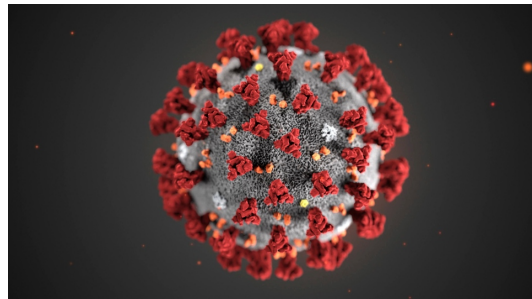
Microbiology & Immunology Student Association (MISA) members:

admiration.

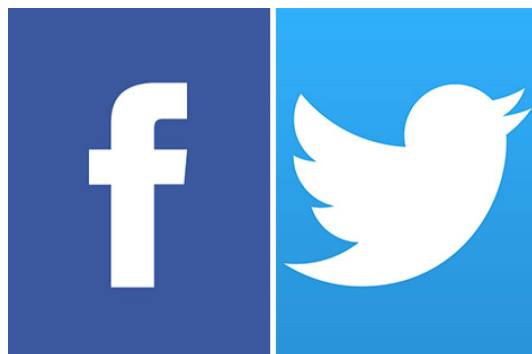
We wish her a great retirement!

Departure Announcement

A special thank you to Samantha Packer, Student Affairs Coordinator, for her hard work and dedication in the department. Her last day was on August 30th. It has been an honor to have her as part of the MIMM department, she has been an indispensable part of our team. We wish her all the best in her new endeavors!



Stay updated on the latest COVID-19 news by visiting the [McGill COVID-19 page](#).



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VP Social: [Brendan Flores](#)

VP Sustainability: [Alexandra Mircescu](#)

**Microbiology & Immunology
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(MIGSA) members:**

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VP Academic: [Kayla Paulini](#)

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