

Forward



Dr. Matthew Miller
Director, IIDR
Associate Professor

It is with great pleasure that I welcome you to the 2023 IIDR Trainee Day! It has been another exciting year in science for the IIDR and so it is fitting that we celebrate these successes by focusing on those most responsible for them, our talented trainees!

After several years of virtual meetings necessitated by the COVID-19 pandemic, we were able to cautiously return to an in-person meeting last year, and it was a welcome reminder of how important these connections are to the quality of our science and the health of our Institute. However, we've also learned that infectious diseases continue to pose insidious challenges – not just for science and medicine, but also for society. This past winter, while still reeling from the impacts of COVID-19, our healthcare system was again stressed by an unprecedented surge in pediatric respiratory illnesses. Antimicrobial resistance (AMR) continues to rise, outpacing our ability to develop effective new treatments. Likewise, fungal infections and vector-borne diseases pose ever increasing threats as a result of climate change.

Despite these challenges, there is also immense hope. That hope is embodied in our trainees – the next generation of scientists poised to face the infectious disease threats of the future. The theme of this year's Trainee Day, *Discovery is Infectious!* embodies the passion with which IIDR trainees

approach their research and the excitement that this event inspires every year.

Perhaps the most important attribute of our Institute is our strong sense of community. The Hart Family have been ardent supporters of our Institute and especially our trainees. The scholarships that have been endowed in memory of their son, Michael, have become the pinnacle of achievement within our Institute. Through the immense generosity of the Hart's and those who continue to donate to the Hart endowment, we have been able to considerably increase the value of several of the Hart scholarships this year in a way that reflects their prestige. This generosity will undoubtedly have a profound impact on your awardees as they progress in their careers.

Finally, we are incredibly privileged to welcome Dr. Andrew Goodman from Yale University as this year's keynote speaker. As most of you know, our keynote speaker is selected by our trainee-run organizing committee, and therefore embodies the most exciting new research themes in infectious diseases as identified by the future leaders of the field! Dr. Goodman's seminal work studying the composition and impacts of the human gut microbiota on health and disease has shaped the field and exemplifies the sustained impact that we, as an Institute, aspire to in our own areas of research.

Finally, I would like to extend my sincere thanks, on behalf of the entire Institute, to the members of the Trainee Day Committee and IIDR staff who have spent months planning and executing this wonderful event. We are also incredibly grateful for the support of our sponsors who help make this event possible.

I wish you all a wonderful 2023 IIDR Trainee Day! I hope that you leave today's event excited, inspired, and having made lasting new friends and collaborators.

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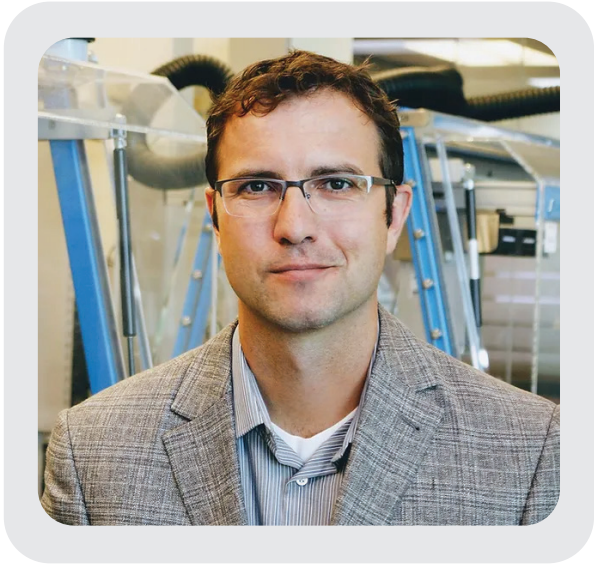
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Welcome



Dr. Jakob Magolan

Trainee Day Chair

Professor, Department of Biochemistry and Biomedical Sciences

Our IIDR Trainee Day slogan this year, “Discovery is Infectious”, embodies a sentiment I know is shared by the whole of this wonderful research community and exemplified by the enthusiasm and dedication of our brilliant trainees. This thirteenth edition of our annual research showcase will include twelve talks and eighty research posters presented by our trainees, and a keynote seminar by Prof. Andrew Goodman of Yale University who is a global leader in gut microbiome research.

Once again, the centerpieces of our day are a set of competitive awards with which we will recognize the outstanding accomplishments of several of our trainees. I would like to thank everyone who contributed to the difficult task of evaluating our great candidates and selecting winners. I would like to thank the Hart family for their generous support of the Michael Kamin Hart Memorial Scholarships; the Kiley family their support of our Michael Kiley Scholarship in Antibiotic Resistance; the estate of Mildred Gulliver for their Mildred Gulliver Post-Doctoral Award; and the Wright family for their Gerry Wright and Teresa Gubala Post-Doctoral Award in Infection Research.

On behalf of the IIDR, I would like to thank Agilent Scientific Instruments, BrandTech Scientific, Cedarlane Labs, Fisher Scientific, FroggaBio, INFORS HT, MJSBioLynx, PacBio, Qiagen, Systems for Research, and the Royal Bank of Canada for their generous sponsorship of this event. I would also like to thank the McMaster Students Union, McMaster Campus Store, Global Nexus, the Departments of Biochemistry & Biomedical Sciences, Medicine, and Chemistry & Chemical Biology, and McMaster’s Offices the Dean of Health Sciences, Vice-Dean of Graduate Studies and Vice-Dean of Research, and the Office of the President for their generous support.

I’m thrilled to say that The Null Hypothesis will share their musical talents with us this year as the headline act of our Trainee Day afterparty at The Phoenix Bar and Grill. Smashing the drums will be our own Prof. Gerry Wright whose vision and years of selfless leadership made the IIDR what it is today. We are also very fortunate to have been led by Profs. Dawn Bowdish, Lori Burrows, and now Matt Miller who continues the IIDR’s spotless record of great team captains!

IIDR Trainee Day 2023 was planned and organized by a committee of fourteen graduate students who were capably led by Veronica Tran and Rabia Fatima. My sincere thanks goes out to all of these students. It was a pleasure to watch you work. I would also like to thank Dr. Lindsey Kalan, our faculty co-chair, and Laurel Person Mecca, our IIDR Project Coordinator, for their time and many contributions to this event.

And to all attendees of Trainee Day 2023 - welcome, and enjoy the day!

Event Program

9:00 - 9:05 a.m.	Welcome & Land Acknowledgment - Dr. Jakob Magolan
9:05 - 9:15 a.m.	Opening Remarks - Dr. Matthew Miller
9:15 - 9:20 a.m.	Keynote Introduction - Veronica Tran
9:20 - 10:20 a.m.	Keynote Speaker - Dr. Andrew Goodman <i>Microbial transformation of dietary xenobiotics shapes gut microbiome composition</i>
10:20 - 10:40 a.m.	Coffee Break sponsored by the Department of Medicine
Session 1 Sponsored by the Office of Dean, Health Sciences Chair: Veronica Tran	
10:40 - 10:50 a.m.	Dr. Justin Nodwell introduces the <i>Michael Kamin Hart Memorial Scholarships</i>
10:50 - 10:55 a.m.	Dr. Jakob Magolan introduces the <i>Hart Staff Award</i> recipient Jarrod Johnson
10:55 - 11:00 a.m.	Dr. Jonathan Stokes introduces the <i>Hart Undergraduate Award</i> recipient
11:00 - 11:15 a.m.	Autumn Arnold <i>The ESKAPE Model - Predicting Antibacterial Spectrum of Activity using Deep Learning</i>
11:15 - 11:20 a.m.	Dr. Amy Gillgrass introduces the <i>Hart MSc Award</i> recipient
11:20 - 11:35 a.m.	Victoria Lee <i>Investigating the Role of Interleukin 17 (IL-17) in Host Defense Against HIV, M.tb and HIV/M.tb Co-infection</i>
11:35 - 11:40 a.m.	Dr. Matthew Miller introduces the <i>Hart PhD Award</i> recipient
11:40 - 11:55 a.m.	Michael D'Agostino <i>Respiratory Mucosal Delivery of DNA Aptamers as an Effective Anti-Infective Countermeasure Against SARS-CoV-2</i>
11:55 - 12:00 p.m.	Dr. Lori Burrows introduces the <i>Michael Kiley Award</i> recipient
12:00 - 12:15 p.m.	Luke Yaeger <i>Metabolic Connections Between Folate and Peptidoglycan Pathways in Pseudomonas aeruginosa Inform the Rational Design of a Dual Action Inhibitor</i>
12:15 p.m. - 2:30 p.m.	Lunch & Posters sponsored by the Royal Bank of Canada
12:30 p.m. - 1:30 p.m.	Poster Session 1 (Odd #)
1:30 p.m. - 2:30 p.m.	Poster Session 2 (Even #)

Event Program

Session 2 Sponsored by the Office of Vice Dean, Graduate Studies, Health Sciences Chair: Rabia Fatima

- 2:30 - 2:45 p.m. **Amna Abbas (Wright Lab)**
A Novel Glycosyltransferase Confers Resistance to Novobiocin in the Environment
- 2:45 - 3:00 p.m. **Catherine Andary (Bowdish Lab)**
Determining Causative Roles of the Gut Microbiome in Unhealthy Aging and Frailty
- 3:00 - 3:15 p.m. **Nathan Bullen (Whitney Lab)**
Evolution of an Phage Protein Supports Antiphage Escape
- 3:15 - 3:30 p.m. **Thy Nguyen (Kalan Lab)**
Mining Antimicrobials in the Human Skin Microbiome
- 3:30 - 3:45 p.m. **Dominique Tertigas (Surette Lab)**
Leveraging Culture-dependent Metagenomics to Identify Enterobacteriaceae Genes Enriched in Active Ulcerative Colitis
- 3:45 - 4:00 p.m. **Megan Tu (Brown Lab)**
Exploiting the Fitness Cost of Carbapenem Resistance

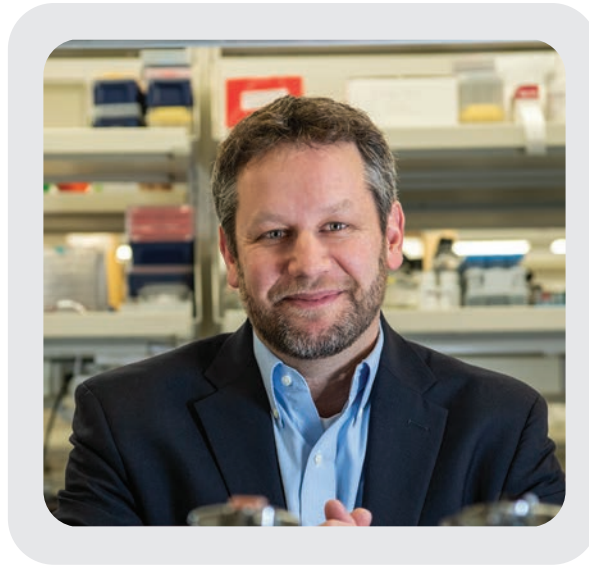
4:00 - 4:10 p.m. **Coffee Break**

Session 3 Sponsored by the Office of Vice Dean, Research, Health Sciences Chair: Rabia Fatima

- 4:10 - 4:15 p.m. **Dr. Gerry Wright** introduces the *Mildred Gulliver Postdoctoral Award in Infectious Diseases* recipient
- 4:15 - 4:30 p.m. **Dr. Manoj Jangra**
A Novel Lasso Peptide Antibiotic with Broad-spectrum Activity
- 4:30 - 4:35 p.m. **Dr. Dawn Bowdish** introduces the *Gerard Wright and Teresa Gubala Postdoctoral Award in Infection Research Award* recipient
- 4:35 - 4:50 p.m. **Dr. Jessica Breznik**
Early Omicron Infection is Associated with Increased Reinfection Risk in Older Adults in Long-term Care and Retirement Facilities
- 4:50 - 5:00 p.m. Closing Remarks - **Dr. Lindsay Kalan**

5:30 p.m. **Social & Award Ceremony @ The Phoenix**
*Presenting the Mildred Gulliver Best Graduate Oral Talk Award, Fisher Scientific Undergraduate Poster Award, Global Nexus MSc Poster Award, IIDR Award of Excellence PhD Poster Award, & raffle prizes!

Keynote



Dr. Andrew Goodman

Professor of Microbial Pathogenesis
Microbial Sciences Institute
Yale University

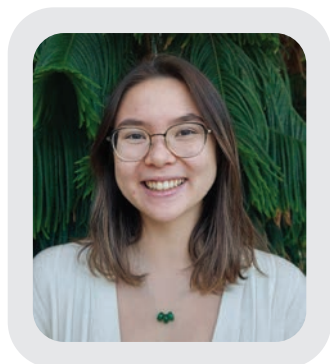
Andrew L. Goodman, PhD, is the C.N.H Long Professor of Microbial Pathogenesis, and Director of the Yale Microbial Sciences Institute. Dr. Goodman received his undergraduate degree in Ecology and Evolutionary Biology from Princeton University, his PhD in Microbiology and Molecular Genetics from Harvard University, and completed postdoctoral training at Washington University. His lab uses microbial genetics, gnotobiotics, and mass spectrometry to understand the mechanisms of host-microbiome interaction and the role of the gut microbiome in drug metabolism. The lab's contributions have been recognized by the NIH Director New Innovator Award, the Pew Foundation, the Dupont Young Professors Award, the Burroughs Wellcome Foundation, the Howard Hughes Medical Institute Faculty Scholars Program, the ASPET John J. Abel Award, and the Presidential Early Career Award in Science and Engineering from the White House. Dr. Goodman was elected a Fellow of the American Academy of Microbiology in 2022.

Awards



Jarrod Johnson | Hart Staff Award

Jarrod is a research associate in the Magolan lab and is involved with a number of collaborative medicinal chemistry projects. Prior to joining the Magolan lab, Jarrod graduated from the University of Waterloo (BSc, PhD), did postdoctoral work at Notre Dame and McMaster (Wright lab), and has developed broad interests in organic synthesis, antibiotics, natural products, and medicinal chemistry.



Autumn Arnold | Hart Undergraduate Award

Autumn Arnold is an undergraduate Biochemistry Co-op student in the Stokes Lab. She completed her undergraduate thesis primarily in the wet lab, then spent the summer branching into machine learning. Her current research project focuses on leveraging deep learning models for the discovery of novel antibiotics. Autumn will present The ESKAPE Model: a resource for predicting the antibacterial activity of compounds against the ESKAPE pathogens.



Victoria Lee | Hart MSc Award

Victoria completed her BSc at the University of Waterloo in biomedical science and is currently a master's student in the Gillgrass lab. Her research focuses on investigating Interleukin-17 and its involvement in HIV, TB and HIV/TB co-infections in humanized mouse models. Outside of the lab, she enjoys reading, painting and spending time with family and friends.



Michael D'Agostino | Hart PhD Award

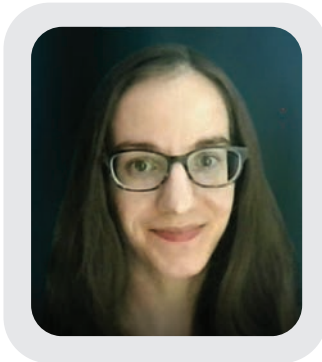
Michael completed his BSc at the University of Western Ontario and his M.Sc. in the lab of Dr. Zhou Xing investigating the role of adenovirus-vector induced memory alveolar macrophages in tuberculosis infection. Michael has continued his research in the development of respiratory mucosal adenovirus vaccines against respiratory viruses, including a phase I clinical trial evaluating an inhaled aerosol chimpanzee-adenovirus vectored COVID-19 vaccine. In his free time Michael enjoys going to concerts, watching/playing sports, and going to the gym.

Awards



Luke Yaeger | Michael Kiley Scholarship in Antibiotic Research

Luke is a PhD candidate in the laboratory of Dr. Lori Burrows and an incoming Postdoctoral Researcher in the laboratory of Dr. Kim Lewis. His research focuses on the effects of sublethal antibiotics on bacterial pathogens, with a particular focus on changes in biofilm formation and peptidoglycan recycling. After his retirement as both a varsity track and field athlete and line cook, Luke turned his attention to running around the lab and cooking up mischief.



Dr. Jessica Breznik | Gerard Wright and Teresa Gubala Postdoctoral Award in Infectious Disease Research

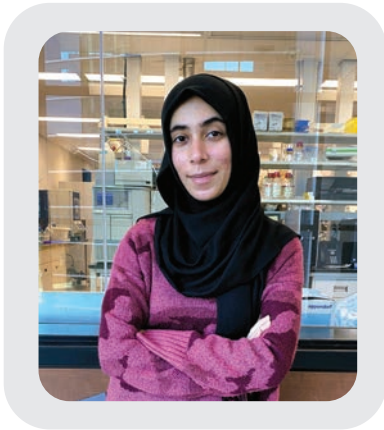
Jessica Breznik is a postdoctoral fellow in the lab of Dr. Dawn Bowdish. She received a fellowship with the McMaster Institute for Research on Aging. She completed her PhD in Medical Sciences in the labs of Dr. Dawn Bowdish and Dr. Deborah Sloboda examining sex differences in obesity-associated chronic inflammation. She has worked for the Population Health Research Institute and the Public Health Agency of Canada. Her current research examines SARS-CoV-2 vaccination and infection in older adults in the COVID in Long-Term Care Study.



Dr. Manoj Jangra | Mildred Gulliver Postdoctora Scholarship in Infectious Disease Research

Dr. Manoj Jangra obtained his PhD from CSIR-Institute of Microbial technology, India and is currently working as a postdoctoral fellow in The Wright Lab. His research interest is focused on discovery and characterization of natural products as antibiotics from microbes. He is working on RiPPs (Ribosomally-synthesised Posttranslationally modified Peptides). He discovered a novel broad-spectrum antimicrobial lasso peptide that kills bacteria by inhibiting translation. He is exploring synthetic biology approaches to engineer the biosynthetic gene cluster of this lasso peptide and to generate a library of peptides with improved pharmacological properties.

Talks



Amna Abbas | MSc student

Amna is a first-year master's student in the Wright Lab. She is interested in studying resistance mechanisms displayed by soil microbes against different antibiotics. Her project entails discovering and characterizing a novel glycosyltransferase enzyme responsible for the inactivation of the antibiotic novobiocin.



Catherine Andary | MD student

Catherine completed her BSc in Medical Sciences at Western University and is currently a second-year medical student at the Michael G. DeGroot School of Medicine Hamilton campus. Under the supervision of Dr. Dawn Bowdish, she is investigating the role of the gut microbiome in the development of inflammaging and frailty.



Nathan Bullen | PhD candidate

Nathan earned his BSc at the University of Waterloo. During his undergraduate studies, he completed an 8-month co-op with John Whitney, a new assistant professor from the University of Washington. On his first day, he and John were unpacking glassware and installing new incubators. Upon completing his BSc in 2018, Nathan officially joined the Whitney lab as a PhD student. Throughout his PhD, his research has focused on unraveling the molecular mechanisms by which bacteria compete with one another.

Talks



Thy Nguyen | PhD candidate

Thy is a PhD candidate in the Kalan lab. She started her PhD at the University of Wisconsin-Madison before transitioning to McMaster University. Her research is focused on unravelling bacterial-fungal interactions within the skin microbiome and the crucial role metabolites play in these interactions.



Dominique Tertigas | PhD student

Dominique is a PhD student in the Surette laboratory. She completed her HBSoc in the Integrated Science program at McMaster. Dominique started in the MSc program in 2021 and transferred to the PhD program in January 2023. Her research focuses on identifying pathogens in inflammatory bowel disease using biochemical and bioinformatics approaches. Outside of the lab, Dominique enjoys yoga, hiking, and travelling.



Megan Tu | PhD student

Megan is a PhD student under the mentorship of Dr. Eric Brown. Her research focuses on understanding how bacterial physiology changes when antibiotic resistance is acquired, with a particular emphasis on leveraging this knowledge to treat resistant pathogens.

Posters

1. ALEX CHEONG
Postdoctoral Fellow

Debridement alters the microbial metatranscriptome of diabetic foot ulcers

2. ALEXA MANSOUR
MSc

Investigating the metabolic drivers of hyperinflammation during viral infection

3. ALICE CALDWELL
MSc

Characterizing gut physiology by age, frailty, and sex-related changes

4. ALISHA KANG
PhD

Respiratory mucosal delivery of adenoviral vectored vaccine provides enhanced innate protection against SARS-CoV-2 infection

5. AMAL MATHAI
PhD

Towards the development of Genomic RNA detection method using SARS-CoV-2 RNA as a model

6. AMANDA DENSIL
Undergraduate

Characterizing effects of age on resolution of neuroinflammation post-pneumonia

7. AMELIA MONTEMARANO
Undergraduate

Microglia drive bystander T cell-mediated neuropathology during ZIKV infection

8. ANDREA ALEXEI
PhD

The antibacterial activity of a prophage-encoded fitness factor is neutralized by cognate immunity protein

9. ART MARZOK
PhD

10. ASHA SUBRAMANIAM
Undergraduate

Investigating bacterial DNA DSB repair by non-homologous end joining

11. ASHRAVI VORA
Undergraduate

Development of a high-throughput quantitative DNA damage detection assay for bacteria

12. AUNIKA VENABLES
Undergraduate

The Impact of Biological Sex and Age on Expression of Negative Regulators of Inflammation and Macrophage Killing Capacity

13. BRANDON MCMURRAY
MSc

Exploring the role of regulatory RNAs during a unique mode of *Streptomyces venezuelae* growth and development

14. CAITLIN DOUBLEDAY
PhD

Determining the mechanism of Ku-LigD mediated DNA double-strand break repair

15. COLIN BRUCE
PhD

Investigating Fibre Degradation in the Infant Gut Microbiota

16. DANA SOWA
PhD

Investigating the impact of the Ku C-terminal region on LigD polymerization

17. DANIELLE ZAK
Undergraduate

Nonsense-mediated decay pathway components are required to protect against neurodegeneration in *C. elegans*

18. DEEPIKAA JEEVANANTHAN
Undergraduate

Examining the role of extracellular DNA present in bacterial biofilms on vaginal health

19. DIMA KUKJE ZADA
MSc

Exploring the bioactivity of isoindolinones produced by the fruiting bodies of *Herichium erinaceus*

20. DIRK HACKENBERGER
PhD

Was World War 2 Foundational to the Antimicrobial Resistance Crisis?

21. ELIZABETH TOWNSEND
PhD

What is Slough? A pilot study to define the proteomic and microbial composition of wound slough and its implications for wound healing

22. EMILY FENG
PhD

Type III IFNs regulate hyperinflammation and prevent neuroinvasion during genital HSV-2 infection

23. FIRAS WERAH
Undergraduate

CRISPRi-Mediated Targeting of Essential Genes to Overcome Antibiotic Resistance in Bacterial Pathogens

24. GARY LIU
MSc

Generative AI for designing and validating easily synthesizable and structurally novel antibiotics

Posters

25. GAYATRI NAIR
PhD

Identifying Novel Compounds
Biasing Bacteriophage Behaviour

26. GRACE KIM
MSc

Human Milk Oligosaccharides
Utilization by Bifidobacterium:
Linking Microbiota and Asthma
Risk in CHILD

27. QUANSHEN GUO
Undergraduate

Characterization of a dual domain
methyltransferase in synthesizing
the tert-butyl group on butyrolac-
tol A

28. HALEY ZUBYK
PhD

EdeM is a remarkable enzyme
that catalyzes the formation of
D- β -serine

29. HARMAN DEV
MSc

Developing a fluorescence reso-
nance energy transfer-based high
throughput screening assay to
disrupt the Ku-LigD protein-pro-
tein interaction

30. IKRAM QADERI
PhD

Accessorize for Success: Investi-
gating the Role of TfpY in Type IV
Pilus Assembly

31. IMRAN AHMED
Undergraduate

Determining the role of viral
infection on the extracellular
vesicle-mediated transmission of
SOD1 in amyotrophic lateral
sclerosis

32. ISABELLE CHAN
Undergraduate

Phage 'tales': Investigating host
range in pilus-specific bacterio-
phages

33. JAKE COLAUTTI
PhD

Type VI secretion system adaptors
recruit divergent effectors to
closely related spike proteins

34. JENNA BENOIT
PhD

Unusual Kinetics of Humoral
Immune Responses to
SARS-CoV-2 Vaccination in
Patients with Systemic Sclerosis

35. JEREMIE ALEXANDER
MSc

Multi-property optimization of
antimicrobial compounds with
chemical language models

36. JORDAN MAYOL
MSc

Conditioning new behaviours in
Salmonella

37. JOSEPH ATTO
Undergraduate

Modulation of immune responses
by L-/D- Lactic acid in vaginal
epithelial cells against HSV-2
infection

38. KARYN MUKIRI
PhD

Increasing the Predictive Accuracy
of the Resistance Gene Identifier
to Allow First-Time Complete
Bacterial Resistome Annotation

39. KEATON SMITH
Undergraduate

A Standardized Nomenclature for
Resistance Modifying Agents in
the Comprehensive Antibiotic
Resistance Database

40. KEVIN ZHAO
PhD

Negative Regulators of Inflamma-
tion Underly Age- and Sex-Differ-
ences in the Host Immune
Response during Pneumococcal
Pneumonia

41. KIM CORNEIL
Undergraduate

Genome editing for novel antibiot-
ic target discovery in Acineto-
bacter baumannii

42. KRISTI LICHIMO
MSc

*Determining the mechanism of
the ImuABC translesion DNA
synthesis complex*

43. KRITI GOEL
Undergraduate

Advancing the Comprehensive
Antibiotic Resistance Database
through the Addition of Anti-Fun-
gal Resistance Mechanisms

44. LACHLAN MACLEAN
MSc

Altering macrophage phenotype
from pro-fibrotic to anti-fibrotic
through exposure to modified
 β -glucan

45. LAUREN TILLER
PhD

Defining the Regulatory Network
of Natural Product Biosynthesis in
Streptomyces

46. MADELINE MCCARTHY
PhD

BacOps: Bacterial O-pool Design
Software for Targeted Capture of
Pathogen Genomes for High
Resolution, Culture-Free Outbreak
Detection and Surveillance

47. MANPREET KAUR
Postdoctoral Fellow

Discovery of a new translation
inhibitor targeting Gram-negative
bacteria

48. MARIE BALEA
Undergraduate

Novel type III secretion system
inhibition identified using multi-
omic approaches

Posters

**49. MARIE-ANGE MASSICOTTE
PhD**

A transcriptomic approach to uncover the influence of host innate immune system on *Salmonella* genetic and virulence programs

**50. MARY HANNAH SWANEY
PhD**

Vitamin B12 sharing by skin-associated *Corynebacterium amycolatum*

**51. MARY-THERESA USUAN-LELE
PhD**

Antibiotic Resistance and Serotype Distribution of *Streptococcus Pneumoniae* in Toronto and Peel Regions of Ontario, Canada.

**52. MATT ZAMBRI
PhD**

Polar-growing *Streptomyces* require lateral wall assembly protein MreB for exploratory growth

**53. MAYA GEORGE
PhD**

Unraveling the Mechanism of Quinocycline Antibiotics: Implications for Targeting *Mycobacteria*

**54. MAYA TIFFANY
Undergraduate**

Isolation of an antimetabolite natural product from a soil bacteria species

**55. RAUF SALAMZADE
PhD**

High-throughput exploration of evolutionary trends within gene-clusters

**56. MELISSA SPEAGLE
MSc**

A call-back for colistin: Screening for adjuvants of a last-resort antibiotic against invasive non-typhoidal *Salmonella* (iNTS)

**57. MICHELLE LI
Undergraduate**

Evaluating Pre-existing Serological Immunity against H5N1 Influenza A Virus in the Canadian Population

**58. MOLLY HEATH
Undergraduate**

Exploring post-pneumonia cognitive decline using an aging mouse model

**59. MONICA WARNER
PhD**

Unravelling the role of UvrD1 in bacterial DNA double-strand break repair

**60. NATALIE CHU
Undergraduate**

Regulation of Vaginal Epithelial and Dendritic Cell Crosstalk by Vaginal Microbiota

**61. NATHAN ROBERGE
PhD**

FimX marks the spot: Mapping twitching motility suppressors to reveal the function of an essential type 4 pilus assembly regulator

**62. NATHAN YUEN
Undergraduate**

The Characterization of Twitching Gain of Function Mutations

**63. NUZHAT RAHMAN
PhD**

In vivo *Gardnerella vaginalis* colonization of the vaginal tract leads to increased inflammation and HSV-2 infection outcomes

**64. NYLA MITCHELL
Undergraduate**

Investigating the impact of IgA polymerization on binding kinetics and Fc effector functions

**65. PAIGE HOPKINSON
Undergraduate**

Sporobiota as reservoirs for nosocomial and zoonotic horizontal gene transfer of antimicrobial resistance and virulence determinants across animal hosts

**66. POLINA GKRAKPOULOU
MSc**

Understanding the molecular mechanisms of antibacterial toxin secretion in Gram-positive bacteria

**67. PRAKHAR SHAH
MSc**

LXG toxin and dual accessory proteins form the necessary and sufficient signal for Gram-positive type VII secretion system

**68. RAVNEET SIDHU
PhD**

Deletion of the plasminogen activator (*pla*) virulence gene across two pandemics of plague as a possible explanation for their disappearance

**69. SAHIL KARNANI
MSc**

Investigating the role of the Tad pilus in *Pseudomonas aeruginosa* biofilm formation

**70. SAKSHI KARWASRA
MSc**

Analyzing Broiler Chicken's Commensal Gut Microbiome: Replacing Antibiotics with Probiotics

**71. SOFYA ERMOLINA
PhD**

Assessing the Efficacy of a Hypomethylating Agent to Decrease Post-Pneumonia Cognitive Impairments

**72. LIZ BALINT
PhD**

Bystander activated CD8+ T cells mediate neuropathology during viral infection via antigen-independent cytotoxicity

Posters

73. TESS WILSON

PhD

Optimizing Human Immunodeficiency Virus Whole Genome Reverse Transcription

74. TIFFANY TA

Undergraduate

Using Natural Language Processing to Analyze the Transmission Pathways of Antimicrobial Resistance Genes Through a "Confusogram"

75. VIAN TRAN

Undergraduate

Discovering narrow spectrum antibiotics against adherent-invasive E. coli without dysbiosis

76. VITHUSHAN SURENDRAN

PhD

Exploring the Role of Viral Infection in TDP-43-Mediated ALS Pathogenesis

77. VRITTI VASHI

Undergraduate

Investigating mechanisms of UvrD1 Involved in DNA double-strand break repair at a molecular level

78. YASER AL MOAYAD

Undergraduate

Characterizing Type IV Pilus-Mediated Bacteriophage Resistance

79. YONA TUGG

PhD

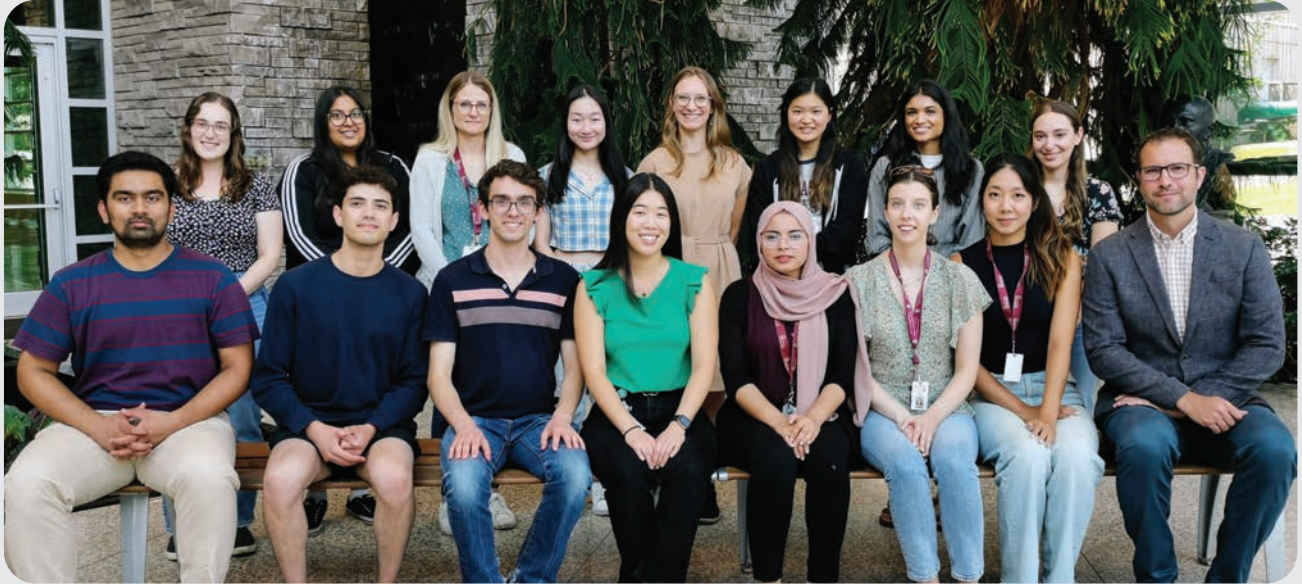
Investigating the role of broadly-neutralizing IgA antibodies in response to influenza A virus infection

80. NIKKI RITCHIE

PhD

Development of Therapeutics against Gram-negative Bacteria: Synthesis and Structure-Activity Relationship Studies

Thank you



IIDR Trainee Day 2023 Organizing Committee

Dr. Jakob Magolan
Chair

Dr. Lindsey Kalan
Vice Chair

Laurel Person Mecca
Project Coordinator

Veronica Tran

Rabia Fatima

Liz Balint

Sommer Chou

Victoria Coles

Jake Colautti

Ravneet Hansi

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