

## Invited Keynote Speakers, Chairs and Vice Chairs

Session 1 - Viruses: From Environments to Clinics

Tuesday, June 19th, 2018



**Keynote Speaker: Dr. Peter Palese**, Mount Sinai, New York, USA  
**Towards a Universal Influenza Virus Vaccine**

**Dr. Peter Palese** is a Professor of Microbiology and the Chair of the Department of Microbiology at the Icahn School of Medicine at Mount Sinai. His research is in the area of RNA-containing viruses with a special emphasis on influenza viruses. Specifically, he established the first genetic maps for influenza A, B, and C viruses, identified the function of several viral genes, and defined the mechanism of neuraminidase inhibitors (which are now FDA-approved antivirals). He was also a pioneer in the field of reverse genetics for negative strand RNA viruses, which allows the introduction of site-specific mutations into the genomes of these viruses.



**Chair: Dr. Keith Fowke**, University of Manitoba, Winnipeg, MB

**Dr. Keith Fowke** is Professor and Head in the Department of Medical Microbiology and Infectious Diseases, University of Manitoba. His laboratory focuses on defining cellular immune mechanisms of the control of, and resistance to, HIV infection. Current studies include understanding how to block the negative effects of HIV to restore the immune response to full capabilities and preventing HIV infections by reducing inflammation at the genital tract.



**Vice-Chair: Dr. Peter Pelka**, University of Manitoba, Winnipeg, MB

**Dr. Peter Pelka** is an Assistant Professor at University of Manitoba. My lab studies how a viral oncoprotein reprograms the cell in order to support virus replication. I use the human adenovirus as a model system to study how E1A reprograms the infected cell. The purpose of my research is to understand several key areas of infection, immunity, and disease:

- Understand how oncogenes work
- Study the mechanisms of viral reprogramming of a host cell
- Examine how viruses evade the innate immune systems of the infected cell

Ultimately, the goal of my research is to use viral oncogenes in order to identify pathways critical for cancer formation. The idea is that viruses have evolved sophisticated mechanisms that ensure they replicate, thus they target every single pathway that can block or drive their growth. As we use a DNA tumour virus, we can exploit these properties and identify these crucial cellular pathways in our quest to understand cancer development.

Session 2 - Genomics and Bioinformatics

Tuesday, June 19th, 2018



**Keynote Speaker: Dr. Robert Beiko**, Dalhousie University, Halifax, NS  
**Evolutionary and Temporal Views of Microbial Diversity**

**Dr. Robert Beiko** is professor of bioinformatics in the Faculty of Computer Science at Dalhousie University. His research is focused on the development and application of tools to assess microbial biodiversity and evolution, with a focus on microbial diversity and the microbiome. His research group has developed algorithms to infer major pathways of lateral gene transfer among microorganisms, implicating functions such as virulence factors and antimicrobial resistance genes. He has also developed several software tools for microbiome analysis, including STAMP for interactive statistical analysis, PICRUSt for metagenome function prediction, and Ananke, which can infer microbial associations from time-series data. He is currently co-leading a pilot study to assess variation in the microbiome in relation to age, frailty, diet and medication, in mouse models and most recently in an assisted-care facility. With Dr. Andrew McArthur from McMaster and Fiona Brinkman from Simon Fraser University, he also leads a recently funded Genome Canada project in antimicrobial gene detection from metagenomic samples. Dr. Beiko has also contributed to the bioinformatics community in Canada, serving on the Bioinformatics and Computational Biology National Strategy Committee, and organizing the first Canadian Bioinformatics Workshop in Metagenomic Data Analysis.



**Chair: Dr. Andrew McArthur**, McMaster University, Hamilton, ON

**Dr. Andrew McArthur** is McMaster's inaugural Cisco Research Chair in Bioinformatics and an Associate Professor in the Michael G. DeGroote Institute for Infectious Disease Research. He has had a 20+ year research career in the United States and Canada, including postdoctoral experience at the National Museum of Natural History and NIH-funded faculty positions at the Marine Biological Laboratory (Woods Hole, MA) and Brown University, plus 10 years experience in the private sector. Dr. McArthur's research program is focused on genomic surveillance of antimicrobial resistance and he leads the Comprehensive Antibiotic Resistance Database (<https://card.mcmaster.ca/>) project.



**Vice-Chair: Dr. Gary Van Domselaar**, University of Manitoba, Winnipeg, MB

**Dr. Gary Van Domselaar**, PhD (University of Alberta, 2003) is the Chief of the Bioinformatics Laboratory at the National Microbiology Laboratory in Winnipeg Canada, and Adjunct Professor in the Department of Medical Microbiology at the University of Manitoba. Dr. Van Domselaar's lab combines novel analytical systems and advanced visualization systems to research and control disease. His work incorporates metagenomics, infectious disease genomic epidemiology, genome annotation, bacterial population structure analysis, and genome wide association studies to understand and respond to infectious disease threats. His lab leads or co-leads several large scale national and international genomics and bioinformatics collaborations, including the Bioinformatics Workgroup of the Canadian Genomics Research and Development Initiative Interdepartmental Project on Antimicrobial Resistance, and the Genome Canada Integrated Rapid Infectious Disease Analysis (IRIDA) project to develop an integrated computational platform for infectious disease outbreak investigations.

Session 3 - Bacterial Stress Response

Tuesday, June 19th, 2018



**Keynote Speaker: Dr. Philip Rather**, Emory University, Atlanta, USA

**A high-frequency phenotypic switch regulating virulence in *Acinetobacter baumannii***

**Dr. Philip Rather** is currently a Professor in the Department of Microbiology and Immunology at the Emory University School of Medicine. He received his PhD from Emory University in 1989 and then moved to the Schering-Plough Research Institute for a postdoctoral fellowship, where he studied regulation of aminoglycoside resistance genes. Dr. Rather's current research program addresses the mechanisms of antibiotic resistance and virulence in the nosocomial pathogen *Acinetobacter baumannii*. One research focuses on understanding the mechanisms of intrinsic beta-lactam resistance. A second area is focused on understanding a high-frequency phenotypic switch that controls virulence.



**Chair: Dr. Elitza Tocheva**, University of Montreal, Montreal, QC

**Dr. Elitza Tocheva** graduated with her PhD in Microbiology and Immunology from the University of British Columbia in 2007, where she worked on characterizing the mechanism of bacterial enzymes involved in denitrification. She continued her studies as a postdoctoral scholar in the laboratory of Dr. Grant Jensen at Caltech where she applied cryo electron tomography to study the ultrastructure of bacteria. She joined Université de Montréal as an Assistant Professor in June of 2015 where she combines microbiological, biochemical and structural biology approaches to study sporulation and the evolution of the outer membrane of bacteria. Dr. Tocheva holds a CRC Tier 2 in Microbial Ultrastructure and her lab is funded by CIHR, NSERC, CFI and Merck Sharp & Dohme Corp.



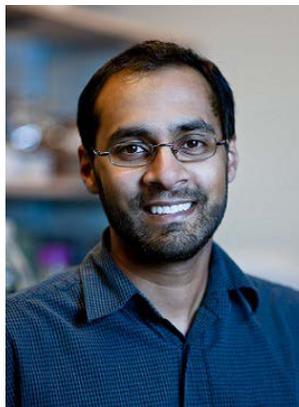
**Vice-Chair: Dr. Cezar Khursigara**, University of Guelph, Guelph, ON

**Dr. Cezar Khursigara** is an Associate Professor in the Department of Molecular and Cellular Biology and Director of the Imaging and Mass Spectrometry Facilities at the University of Guelph. He obtained his PhD in Microbiology and Immunology from McGill University under the direction of Dr. James Coulton in 2005 where he worked on the structure and function of bacterial iron transporters. In 2009, he completed his post-doctoral studies at the National Institutes of Health working with Dr. Sriram Subramaniam where they developed novel cryo-electron microscopy techniques to study bacterial chemosensing. His current research focus on microbial cell biology and bacterial biofilm formation, with an emphasis on understanding mechanisms of antimicrobial action and resistance.



**Keynote Speaker: Dr. Alexei Savchenko**, University of Calgary, Calgary, AB  
**Bacterial pathogens rewriting ubiquitination pathways in the host**

**Dr. Alexei Savchenko** is a structural biologist whose research is focusing on molecular structure/function characterization of proteins involved in bacterial pathogenesis. For over a decade Dr. Savchenko is also a key player in international structural genomics initiative. In frame of this initiative Dr. Savchenko and his team has developed and is currently operating a complete methodological platform geared for large scale protein structural characterization including parallel gene cloning, recombinant expression and purification, crystallization screens, protein crystallization optimization and protein structure determination by X-ray crystallography. Dr. Savchenko's group's work lead to determination of over 500 *de novo* protein structures by X-ray crystallography and to the functional annotation of a large number of bacterial virulence factors, essential gene products and antibiotic resistance proteins. Currently, Dr. Savchenko's research focuses on structural and functional characterization of bacterial proteins collectively called "effectors", which are delivered inside the host cell via specific secretion systems to facilitate bacterial colonization. The long-term objective of Dr. Savchenko research is to gain the fundamental knowledge of the function of uncharacterized bacterial pathogenic factors and their interactions with host systems using structural, biochemical and cell biology studies. Dr. Savchenko holds an Associate Faculty position at the Department of Microbiology, Immunology and Infectious Diseases, Cumming School of Medicine, University of Calgary. Dr. Savchenko's research is funded by CIHR, NSERC, and National Institutes of Health (NIH, US).



**Chair: Dr. Trevor Moraes**, University of Toronto, Toronto, ON

**Dr. Trevor Moraes** is an Associate Professor in the Department of Biochemistry at the University of Toronto and a Tier II Canada Research Chair in the Structural Biology of Membrane Proteins. He obtained his PhD in Biochemistry at the University of Alberta in 2004 under the mentorship of Drs. Michael Ellison and J.N.Mark Glover and completed his post-doctoral studies in membrane protein structural biology with Dr. Natalie Strynadka at the University of British Columbia. Dr. Moraes' research program centers around the molecular basis of bacterial pathogenesis with a particular focus on outer membrane proteins from Gram-negative bacterial pathogens. Many of these outer membrane proteins are required for either nutrient acquisition or host immune evasion and therefore play important roles during host colonization or invasive disease thus providing a valuable target for the generation of new antimicrobial therapeutics and vaccines.



**Vice-Chair: Dr. Brian Mark**, University of Manitoba, Winnipeg, MB

**Dr. Brian Mark** received his PhD in Biochemistry from the University of Alberta in 2003 under the mentorship of Dr. Michael James. He then worked with Drs. Tom Terwilliger and Geoffrey Waldo at Los Alamos National Laboratory as a postdoctoral fellow studying the structural genomics of *Mycobacterium tuberculosis*. He subsequently joined the Department of Microbiology at the University of Manitoba in 2005 and was awarded a Manitoba Research Chair in structural biology (2011 – 2016). His research explores the molecular mechanisms that bacteria use to defend themselves from antibiotics, and how viruses evade host immune responses by corrupting the ubiquitin system. His findings are revealing weaknesses in bacteria and viruses that his group is exploited as new therapeutic targets to treat infectious disease.

Session 5 – Microbiome

Tuesday, June 19th, 2018



**Keynote Speaker: Dr. Cara Haney**, University of British Columbia, Vancouver, BC  
**Using comparative genomics to identify the genetic basis of commensal effects on plant health**

**Dr. Cara Haney** is an Assistant Professor in the Departments of Microbiology and Immunology and Michael Smith Labs at the University of British Columbia. Dr. Haney's research focuses on the molecular and genetic mechanisms that regulate interactions between beneficial plant-associated microbes (the "microbiome") and plant growth and disease resistance. She received her B.Sc in Plant Science from Cornell University and her Ph.D. in Cell and Molecular Biology from Stanford. She worked at Harvard as a postdoc developing a model system to study plant-microbiome interactions prior to joining the UBC faculty in 2016. Dr. Haney is a Canada Research Chair in plant-microbiome interactions.



**Chair: Dr. Lisa Osborne**, University of British Columbia, Vancouver, BC

**Dr. Lisa Osborne** is an Assistant Professor in the Department of Microbiology and Immunology at UBC and a Tier 2 Canada Research Chair in Host-Microbiome Interactions. Research in her lab is focused on understanding how interactions between the microbiome (bacteria, viruses and helminthic worms) and the mammalian host impact immunity and inflammation. To do this, she has established a gnotobiotic mouse facility, of which she is the Scientific Director.

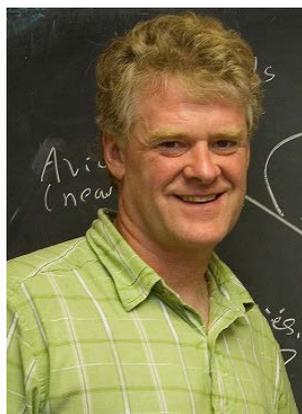


**Vice-Chair: Dr. Adam Burgener**, University of Manitoba, Winnipeg, MB

**Dr. Adam Burgener** is Head of Proteomics at the National HIV and Retrovirology lab at the Public Health Agency of Canada, and an Associate Professor at the University of Manitoba. Dr. Burgener's research program is focused on developing proteomics based systems biology tools to study host immunity and the microbiome; understand the role of mucosal systems in HIV infection and disease by working with human cohorts; and to identify host and microbiome factors important for HIV infection. His research involves several human populations in Africa, and currently leads several CIHR and NIH-funded studies to understand mucosal determinants of HIV infection and disease.

Session 6 – Biotechnology for Biofuels and Bioproducts

Tuesday, June 19th, 2018



**Keynote Speaker: Dr. Lee Lynd**, Thayer School of Engineering at Dartmouth, USA  
**Microbial Cellulose Utilization: From Applications to Fundamentals and Back Again**

Speaker Introduction **Lee Rybeck Lynd** is the Paul and Joan Queneau Distinguished Professor of Engineering and an Adjunct Professor of Biology at Dartmouth College, Director and Chief Scientific Officer of Enchi Corporation, a biomass energy start-up he co-founded, Consolidated Bioprocessing Group Lead at the DOE Center for Bioenergy Innovation, and Executive Committee Chairman of the Global Sustainable Bioenergy Project. Dr. Lynd holds a B.S. degree in biology from Bates College, an M.S. degree in bacteriology from the University of Wisconsin, and masters and doctoral degrees in engineering from Dartmouth College. He has been a member of the Dartmouth Faculty since 1987. Professor Lynd is an expert on utilization of plant biomass for production of energy. His contributions span the science, technology, and policy domains, and include leading research on fundamental and biotechnological aspects of microbial cellulose utilization. Professor Lynd has three times testified before the United States Senate, and has been featured in prominent fora such as Wired, Forbes, Nova, and the Nobel Conference. He is a Fellow of the American Association for the Advancement of Science and has received numerous awards and honors, including: Inaugural winner of the Lemelson MIT Sustainability Prize for inventions and innovations that enhance economic opportunity and community well-being while protecting and restoring the natural environment, and the Charles D. Scott Award for distinguished contributions to the field of biotechnology for fuels and chemicals.



**Chair: Dr. Elizabeth Edwards**, University of Toronto, Toronto, ON

**Dr. Elizabeth A. Edwards** is a Professor in the Departments of Chemical Engineering and Applied Chemistry and Cell and Systems Biology (Status only) at the University of Toronto. Her research interests include bioremediation, the application of molecular biology and metagenomics to uncover novel anaerobic microbial processes, and the transition of laboratory research into application. Over the two decades, Dr. Edwards' research team has discovered and characterized novel microbial cultures such as the now commercial KB-1® consortium that metabolize pollutants previously thought to be recalcitrant. This discovery led to the founding of SIREM Laboratories (<http://www.siremlab.com/>) in Guelph in 2002 that recently celebrated 15 years in business. She holds a Tier 1 Canada Research Chair in Anaerobic Biotechnology.



**Vice-Chair: Dr. David Levin**, University of Manitoba, Winnipeg, MB

**Dr. David B. Levin** is a Professor in the Department of Biosystems Engineering, at the University of Manitoba. Dr. Levin's research is focused on "bioengineering for biofuels and bioproducts", and integrates microbiology, biotechnology, and genome sciences with bioprocess and biosystems engineering. Dr. Levin was the co-Lead on the Genome Canada funded project on "Microbial genomics for biofuels and co-products from biorefining processes" with Dr. Richard Sparling (Department of Microbiology). Dr. Levin also led the Hydrogen Production and Purification theme of the NSERC funded Hydrogen Canada (H2CAN) network, and was the Prairie Platform leader within BioFuelNet, a pan-Canadian research network funded by the Network Centres of Excellence (NCE) program. He currently serves as the Academic lead on an Genome Canada funded Genome Applications Partnership Program (GAPP) called "Fibre composite and biometric genomics" (FiGoGen), focused on developing biocomposite materials with flax fibres and biodegradable resins derived from biodegradable biopolymers.

Session 7 – Antimicrobial Resistance

Wednesday, June 19th, 2018



**Keynote Speaker: Dr. Amy Mathers**, University of Virginia, Virginia, USA  
**Chasing carbapenemase carrying plasmids through patients and plumbing**

**Dr. Amy Mathers** MD, ABMM is an Associate Professor of Medicine and Pathology at the University of Virginia in the School of Medicine. She is Clinical Director of the Adult Antimicrobial Stewardship Program and is Associate Director of Clinical Microbiology for the University of Virginia Health System. Her research focuses on applications of whole genome sequencing to understand mobilization of genes of resistance in gram negative bacteria in patients and the hospital environment. Focusing on the urgent clinical problem of increasing carbapenem resistance in *Enterobacteriaceae* she has been evaluating detection methods in clinical microbiology and molecular transmission of carbapenemase genes for the last ten years. Molecular characterization has included analysis of mobile resistance mechanisms with evaluation of plasmid evolution and mobility across species with next generation sequencing paired with more traditional techniques. With current support for the Centers for Disease Control and Prevention she has been investigating the role that the hospital environment can play in evolution and dissemination of carbapenemase genes.



**Chair: Dr. Michael Mulvey**, National Microbiology Laboratory, Winnipeg, MB

**Dr. Michael Mulvey** obtained his Ph.D. from the University of Manitoba in 1990 where he discovered *rpoS*, the gene responsible for the stationary phase regulon in *E. coli*. After a post-doc studying picornavirus infection at University of Alberta, he moved to Health Canada in 1996 where he established the Antimicrobial Resistance and Nosocomial Infections (ARNI) Laboratory. ARNI provides diagnostic and outbreak investigation services and support for numerous surveillance programs focused on antimicrobial resistance. Dr. Mulvey's research interests include the molecular mechanisms and epidemiology of antimicrobial resistance and the translation of resistance data into interventions to limit the spread of resistant organisms. He has authored over 230 peer-reviewed publications. Dr. Mulvey is the Co-Chair of the Canadian Public Health Laboratory Network Working Group on AMR, sits on the Executive Board of the Canadian Committee on Antimicrobial Susceptibility Testing (CANCAST), is a member of the European Committee on Antimicrobial Susceptibility Testing (EUCAST) subcommittee on the role of whole genome sequencing in antimicrobial susceptibility testing. Dr. Mulvey has received numerous awards with the most recent including the 2015 Honorary Membership in the Association of Medical Microbiology and Infectious Diseases (AMMI Canada) and the 2016 University of Manitoba Faculty of Science Honoured Alumni of the Year Award.



**Vice-Chair: Dr. Cheryl Waldner**, University of Saskatchewan, Regina, SK

**Dr. Cheryl Waldner** is a professor of epidemiology from the University of Saskatchewan. She is particularly interested in antimicrobial use and resistance as well as the prevention and control of infectious diseases. She is actively involved in projects related to water quality and farm-to-fork management of food safety and enteric illnesses. Her current research is focused on the use of system science tools, including system dynamics and agent-based models, to understand the impact of rapid diagnostics and infection prevention measures on the transmission of AMR in the food chain. Dr. Waldner has more than 200 peer-reviewed publications and is co-chair of the research and innovation task force group contributing to the Pan-Canadian Action Plan for Antimicrobial Resistance.

Session 8 – Unusual Microbes and Extreme Environments

Wednesday, June 20th, 2018



**Keynote Speaker: Dr. Jennifer Biddle**, University of Delaware, Delaware, USA  
**Unusual microbes in relatively normal environments: Bringing the extremophiles home**

**Dr. Jennifer Biddle** is an associate professor at the University of Delaware. Her research focuses on microbial ecology in sedimentary environments, with excursions to interesting places such as Pavilion Lake in British Columbia. Her lab approaches questions with whatever tools are needed, from genomics to isotope geochemistry. She is a fan of non-model microbial systems, including anaerobic archaea and large sulfur oxidizing bacteria.



**Chair: Dr. Jake McKinlay**, Indiana University, Indiana, USA

**Dr. Jake McKinlay** is an Assistant Professor in the Department of Biology at Indiana University, Bloomington. His lab studies the physiology and metabolism of phototrophic purple nonsulfur bacteria, fermentative bacteria, and cooperative metabolic interactions between them. His lab also explores the ecology and evolution of these bacteria in synthetic communities and their potential application for biofuel production.



**Vice-Chair: Dr. Nadia Mykytczuk**, Laurentian University, Sudbury, ON

**Dr. Nadia Mykytczuk** is an Assistant Professor and NOHFC Industrial Research Chair in Biomining, Bioremediation, and Science Communication at Laurentian University, in Sudbury, Ontario. She has worked in various extreme environments including high arctic permafrost and more recently on acid mine drainage microbial communities. Her current research focuses on developing microbial biotechnologies to help extract metals and remediate the legacy of mine waste that we find in Canada and elsewhere. She also is VP of R&D Applications at Metagenom Bio Inc.

Session 9 – Host-Microbe Interactions

Wednesday, June 20th, 2018



**Keynote Speaker: Dr. Heidi Goodrich-Blair**, University of Tennessee, Tennessee, USA  
**To Give or to Take: Bacterial Regulation of Conflicting Symbiotic Behaviors with Invertebrates**

**Dr. Heidi Goodrich-Blair** is the David and Sandra White Professor and Head of Microbiology at the University of Tennessee at Knoxville, where she moved after 19 years as a faculty member at the University of Wisconsin-Madison. Dr. Goodrich-Blair's research is to understand the molecular basis of bacterial symbiosis, both mutualistic and pathogenic, with animal hosts. She aims to understand general principles of how bacteria sense and adapt to host environments, what molecules determine specificity for particular hosts and tissues, and the mechanisms by which mutualistic relationships are maintained over evolutionary time. To investigate these questions she studies a bacterium that has a beneficial partnership with nematodes and a pathogenic influence on insects. Her work has led to the first demonstration of genes necessary and sufficient to confer host-range expansion in an animal-bacterium association and has laid the groundwork for new theories on how bacterial performance as a symbiont is tied to its transmission to new generations.



**Chair: Dr. Tao Dong**, University of Calgary, Calgary, AB

**Dr. Tao Dong** is an Assistant Professor and Canada Research Chair Tier 2 in Microbial Ecology of Waterborne Microbes in the department of Ecosystem and Public Health at the University of Calgary. He is also the director of the Microbiology laboratory of the Advancing Canadian Wastewater Assets (ACWA) program. He received his PhD from McMaster University in 2010 and then moved to Harvard Medical School for postdoctoral training supported by a CIHR Banting fellowship. Dr. Dong's current research is focused on understanding the molecular mechanisms that dictate microbe-microbe and microbe-host interactions and communications, as well as developing antibiotic alternatives for treating infectious diseases.



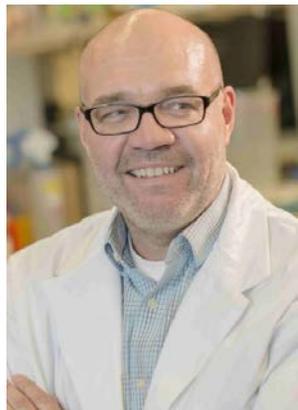
**Vice-Chair: Dr. Mauricio Terebiznik**, University of Toronto Scarborough, Toronto, ON

**Dr. Mauricio R. Terebiznik** is an Associate Professor in the Departments of Biological Sciences and Cell and System Biology at the University of Toronto, Scarborough. He received his PhD from the University of Buenos Aires, Argentina. During his postdoctoral training at the Hospital for Sick Children in Toronto, he studied the invasion of host cells by *Salmonella typhimurium* and *Helicobacter pylori*. His laboratory at the University of Toronto, Scarborough focuses on understanding of the interplay of mammalian cells with intracellular pathogens and non-canonical models of phagocytosis.

Session 10 – Novel Therapeutics and Bacterial Chemotaxis

Wednesday, June 20th, 2018

**Keynote Speaker: Dr. Gerry Wright**, McMaster University, Hamilton, ON  
**The natural history of antibiotics and resistance**



**Dr. Gerry Wright** is the Director of the Michael G. DeGroot Institute for Infectious Disease Research and Professor in the Department of Biochemistry and Biomedical Sciences. He holds the Michael G. DeGroot Chair in Infection and Anti-Infective Research and a Tier 1 Canada Research Chair in Antibiotic Biochemistry. Gerry was elected as a Fellow of the Royal Society of Canada (2012) and a fellow of the American Academy of Microbiology (2013). He is the recipient of the Canadian Institutes of Health Research Scientist (2000-2005), Medical Research Council of Canada Scholar (1995-2000), Killam Research Fellowship (2011-1012), R.G.E. Murray Award for Career Achievement of the Canadian Society of Microbiologists (2013), NRC Research Press Senior Investigator Award from the Canadian Society for Molecular Biosciences (2016), Premier's Research Excellence (1999) and the Polanyi Prize (1993). In 2016 he was named a McMaster Distinguished University Professor, the highest academic honor at the university. He is the author of over 250 manuscripts and is a member of the editorial boards of several peer-reviewed journals including *mBio*, *Antimicrobial Agents Chemotherapy*, *Cell Chemical Biology* and the *Journal of Antibiotics*. He is an Associated Editor of *ACS Infectious Diseases* and Editor of *Annals of the New York Academy of Sciences*, *Antimicrobial Therapeutics Reviews*. He has filed a number of patents and is the co-founder of Symbal Therapeutics.

**Chair: Dr. Jon Dennis**, University of Alberta, Edmonton, AB



**Dr. Jon Dennis** is a Professor in the Department of Biological Sciences, University of Alberta. His laboratory focuses on the molecular mechanisms of highly antibiotic resistant and pathogenic opportunistic Gram-negative bacteria (such as those of the *Burkholderia cepacia* complex, *Pseudomonas*, and *Stenotrophomonas*), and the viruses that can kill them. Current studies include investigating and understanding bacteriophage biology and activity, genome content, receptor affinity, interactions with antibiotics, and their use in "Phage Therapy" applications.

**Vice-Chair: Dr. Kangmin Duan**, University of Manitoba, Winnipeg, MB



**Dr. Kangmin Duan** is an Associate Professor in the Department of Oral Biology and the Department of Medical Microbiology and Infectious Diseases at the University of Manitoba. He obtained his BSc degree from Northwest University, China, and MSc and PhD degrees from the University of New South Wales. He did his postdoc at the University of Calgary with Dr. Pam Sokol and Dr. Mike Surette. Dr. Duan's current research focuses on bacterial pathogenesis and signal transduction, particularly in the context of polymicrobial communities. Using *Pseudomonas aeruginosa* as a model organism, his research also investigates the mechanisms of antibiotic resistance and explores new antimicrobial targets and novel antibacterial drugs.

Session 11 – Fungal Genomics and Diseases

Wednesday, June 20th, 2018



**Keynote Speaker: Dr. Katherine Borkovich**, University of California, California, USA  
**Lessons from high-throughput functional genomics analyses in *Neurospora crassa***

**Dr. Katherine Borkovich** received her B.S. in Biochemistry with Highest Honors from the University of California, Davis. She obtained her Ph.D. in Biochemistry at UCLA in the laboratory of Richard Weiss, studying arginine metabolism in the filamentous fungus *Neurospora crassa*. Dr. Borkovich then performed postdoctoral research, first in the laboratory of Susan Lindquist at the University of Chicago studying the functions of large heat shock proteins in *Saccharomyces cerevisiae*, and later in the group of Melvin Simon at the California Institute of Technology investigating involvement of transmembrane receptors in regulating protein phosphorylation during chemotaxis in *Escherichia coli*. She was appointed to her first faculty position at the University of Texas-Houston Medical School in 1991 and received tenure in 1999. Dr. Borkovich moved her laboratory to the University of California, Riverside in 2001, where she is now Full Professor and Chair of the Department of Microbiology and Plant Pathology. Her current research interests include functional genomics of filamentous fungi, heterotrimeric G protein signaling in *N. crassa*, and the role of microRNAs during infection of crop plants by the filamentous fungus *Fusarium oxysporum*. Dr. Borkovich is a Fellow of the American Association for the Advancement of Science and the American Academy of Microbiology.



**Chair: Dr. Steve Harris**, University of Manitoba, Winnipeg, MB

**Dr. Steven Harris** is currently Professor and Head of the Department of Biological Sciences at the University of Manitoba. His research program has sought to understand the molecular mechanisms underlying cellular morphogenesis during growth and development in filamentous fungi. In particular, his lab has identified several key regulators of polarized growth and septation using the model fungus *Aspergillus nidulans*. More recently, he has also begun to investigate the adaptations that enable extremotolerant fungi to colonize niches such as rock surfaces and semi-arid soil crusts. This includes understanding the role of conserved signaling pathways in mediating pigment production, as well as characterizing interactions with algae and cyanobacteria.



**Vice-Chair: Dr. Deborah Court**, University of Manitoba, Winnipeg, MB

**Dr. Deborah Court** is a Professor in the Department of Microbiology at the University of Manitoba. Her lab's long-term research activities are concentrated on mitochondria in the model fungi *Neurospora crassa* and *Saccharomyces cerevisiae*. The research areas have ranged from structure-function studies of isolated mitochondrial porins (VDAC) and investigating the biological impacts of the absence of VDAC, to mitochondrial plasmids, protein import into the mitochondrial outer membrane, and mitochondrial DNA replication.

Session 12 – Indigenous Health and Water Security

Wednesday, June 20th, 2018



**Keynote Speaker: Lalita Bharadwaj**, School of Public Health, University of Saskatchewan, Saskatoon, SK

**Water Insecurity in Indigenous Communities: Impacts Beyond Physical Health**

**Dr. Lalita Bharadwaj** is committed to working with Indigenous people to find solutions to the inequity in access and provision of safe, sustainable drinking water supplies. Through her scholarly work in the area of Collaborative, Interdisciplinary Community-Engaged Scholarship, she has provided learning opportunities for university and local students, facilitated interdisciplinary research collaborations and helped build research capacity at the local and university level. Dr. Bharadwaj leads the Safe Water for Health Research Team whose goals are to generate the critical knowledge necessary to inform evidence-based decisions about water policy to promote the health of Indigenous, rural and remote populations regionally and globally. Her community engaged research approach has extended to global contributions. She has worked in two areas of Peru, Chachapoyas and Huaraz, in projects related to water access and provision.



**Chair: Dr. Annemieke Farenhorst**, University of Manitoba, Winnipeg, MB

**Dr. Annemieke Farenhorst** is a professor in the Department of Soil Science, University of Manitoba and the Prairie NSERC Chair for Women in Science and Engineering. Her research program focuses on pesticides, natural steroid estrogens and antibiotics in soil and water, and on drinking water quality in First Nations communities. Dr. Farenhorst is the principal investigator of the NSERC CREATE H2O program for First Nations water and sanitation security which is among the first science-engineering research training program in Canada that combines technical water and wastewater management training with Indigenous theory, law and methodological skills training.



**Vice-Chair: Wendy Ross**, NSERC CREATE H2O Program, Winnipeg, MB

**Wendy Ross** is the program coordinator for CREATE H2O which is a science and engineering research training program for water and sanitation security in First Nation communities. She is a member of Pimicikamak Cree Nation (Treaty 5), has a master's degree in Native Studies from the University of Manitoba and previously worked as a researcher for Fox Lake Cree Nation on traditional knowledge studies. Her reports there informed environmental assessments related to hydro projects. Wendy Ross won the U of Manitoba's 2017 Accessibility & Inclusion Award.