

UNIVERSITY OF TORONTO

Microbiology & Infectious Diseases Research Days

Monday, June 3rd, 2019 – Trainee Day (Selected from Abstracts)

Tuesday, June 4th, 2019 – Invited Lectures & Poster Session

Talks in Medical Sciences Building, Room 2170

**Posters & Lunch in Medical Sciences Building,
Room 2171 (C. David Naylor Student Commons)**

Website: <http://microbeto.ca/mid-2019/>

Monday, June 3rd, 2019

9:30 - 9:40 WELCOME ADDRESS

9:45 – 10:00: Avid Mohammadi

Characterizing the impact of penile-vaginal sex on HIV-susceptible CD4⁺ T cell subsets in the female genital tract

10:05 - 10:20: Erin O. Y. Wong

Developing defined microbiota to model inflammation in the mouse gut

10:25 - 10:40: Nora Mellouk

An ATG16L1-dependent pathway promotes plasma membrane repair and limits *Listeria monocytogenes* cell-to-cell spread

10:45 - 11:15: COFFEE BREAK

11:20 - 11:35: Jean-Paul R. Soucy

Joint modelling of resistance to six antimicrobials in urinary *Escherichia coli* isolates in Quebec, Canada

11:40 – 11:55: Sarah Birstonas

EHEC utilizes two-component systems to modulate expression of major flagellar subunit protein, FliC, in response to host intestinal cues

12:00 - 12:15: Nathaniel Winsor

NLRP6 regulates the colonic mucus layer during *Tritrichomonas* infection

12:35 – 1:30: LUNCH

1:35 - 12:50: Samuel Salamun

Epstein-Barr Virus Protein BMRF1 Modulates Cellular SUMO and DNA Damage Response Pathways by Binding the Cellular NuRD Complex

1:55 - 2:10: Nicola Case

Elucidating the mechanism of *Candida albicans* morphogenesis in response to phagocytosis by macrophages

2:15 - 2:30: Sarah Kronheim

A small molecule anti-phage defense mechanism in *Streptomyces*

2.30 - 3:00: COFFEE BREAK

3:05 - 3:20: Alexandra Willis

Understanding inherited immunity using a *C. elegans* model of microsporidia infection

3:25 - 3:40: Genevieve Mailhot

Differentiating between protective and pathogenic neutrophil responses during *Neisseria gonorrhoeae* infection

3:45 – 4:00: Tiffany Fitzpatrick

Successes of anti-RSV prophylaxis among infants in Ontario: results from a multi-decade, population-based controlled interrupted time series analysis using health administrative data

Poster Presentations

50) Spider Envenomations Therapeutics and Antivenom Accessibility: A Systematic Review

Christian Lecce, Avinash N. Mukkala, Aisha Khatib, Michael A. Klowak, Pryanka Challa, Eric Shao, Jason Kwan, Tianna Chong-Kit, Jamie Sookhoo, Emma Hagopian, Dylan Kain, Mofe Adeosun, Andrea K. Boggild

Tropical Disease Unit, Toronto General Hospital and University of Toronto, Toronto, ON, Canada

Spiders are a group of arthropods in the order Araneae and class Arachnida which have eight legs and fangs. Modern advancements in transportation allow increased human travel to areas which are endemic to spiders, increasing the possibility of envenomation. Physicians could select the optimal envenomation treatment using a clinical resource that compares efficacy statistics of antivenom versus other therapeutics. Our goal is to compile existing prevention and treatment data in the literature in order to synthesize this clinical resource. PubMed (NCBI), MEDLINE (OVID), EMBASE (OVID), Cochrane Database of Systematic Reviews (CIDR) and TOXLIN (TOXNET) were searched from inception to June 2018 using combinations of the search terms "spider," and "envenomation*." Iterative inclusion and exclusion of search terms was employed to maximize extraction. The GRADE approach will be used to assess quality of studies reporting therapeutic interventions. Evidence will be summarized using descriptive measures for each intervention type, as well as a qualitative synthesis. Meta-analysis will be planned if sufficient efficacy measures exist. 961 MEDLINE articles, 1053 PubMed, 1486 EMBASE, 0 CIDR and 149 TOXLIN records were retrieved for title and abstract screening; after a multi-step de-duplication pipeline, 1928 remained. Following abstract screening, 282 full-text records were eligible for inclusion. Upon initial review of these records, *Latrodectus hasseltii*, *Latrodectus mactans*, *Loxosceles reclusa*, and *Phoneutria* spp. were the most medically relevant. Data will be grouped and summarized by prevention, therapeutic strategies, geographic location and species. The recommended mode of treatment and management will be provided on an evidence-based, per-species basis. Increased transcontinental movement of people and tropical produce has facilitated importation of arachnids to non-endemic regions where clinicians lack familiarity with envenomation syndromes and appropriate therapeutics. Synthesizing the current evidence around therapeutic strategies can inform the development of treatment and prevention protocols.