
Sunday, June 1

Opening Reception and Keynote Lecture

Please join us at Garrison Brewery (1149 Marginal Rd, Halifax, NS B3H 4P7)

18:30 **Louis DuPasquier**, University of Basel

Twenty-two years studying Pasteuria ramosa and Daphnia: Insights from comparative immunology and evolutionary biology on host-parasite dynamics

Monday, June 2

All talks will be held in the Student Union Building, McInnes Room 6136 University Ave

Session 1: NACI New Investigator Keynote

Chair: Brian Dixon

9:00 **Sarah Poynter**, Wilfrid Laurier University

Comparative Immunological Responses of Macrophages from Diverse Species to Nanoparticle-Delivered Double-Stranded RNA

10:00 - 10:20 Coffee Break

Session 2: Cellular Immune Responses: Creatures of the sea & cockroaches

Chair: Kate Buckley

10:20 **Tony Wilson**, Brooklyn College

Exploring a unique comparative model of immune deficiency: adaptive immunity in the seahorse

10:40 **Renald James Legaspi**, University of Alberta

Cellular composition of zebrafish spleen melanomacrophage centers

11:00 **Sebastian Fugmann**, Chang Gung University

Immune cell diversity and cytokines in echinoderm immunity

11:20 **Amelia Williams**, Auburn University

A novel population of phagocytes in sea stars

11:40 **Elizabeth Schwartz**, Auburn University

Decoding hemocyte subsets and functions in the American cockroach

12:00 - 13:00 Lunch

Session 3: Cellular Immune Responses: Flies, Fishes, and Frogs

Chair: Leon Grayfer

13:00 **Keynote Speaker: Francesca Di Cara**, Dalhousie University

Peroxisome is the rheostat of DAG-PA balance in immune signaling: a lesson from the fly.

14:00 **Samuel Amoah**, University of Alberta

Identification and qualitative assessments of putative stimulatory goldfish (Carassius auratus) leukocyte immune-type receptor CaLITR positive leukocytes in goldfish tissues.

- 14:20 **Riley Crow**, The George Washington University
Uncovering the hallmarks of amphibian mast cell activation
- 14:40 **Andrea Vu**, University of Rochester
In vitro Xenopus tropicalis cell culture infection model for amphibian chytridiomycosis
- 15:00 **Christina Garvey Griffith**, The George Washington University
Amphibian (Xenopus laevis) macrophage subsets play disparate roles in skin regeneration

15:20 - 15:40 Coffee Break

Session 4: Pathogens of the Sea

Chair: Fraser Clark

- 15:40 **Jesús Luis Betancourt**, University of Waterloo
Immunomodulatory and antibacterial effects of the pituitary adenylate cyclase-activating polypeptide in white shrimp Litopenaeus vannamei
- 16:00 **Zohreh Fazelan**, Dalhousie University
RNA-seq analysis of hepatopancreas extracted from American lobster (Homarus americanus) provides some clues regarding their resistance to Vibrio sp. (splendidus clade)
- 16:20 **Mariam S. Abdulsayed**, University of Waterloo
Spores of Spraguea americanus elicit oxidative burst reactions in Oncorhynchus mykiss (rainbow trout) immune cells ex vivo
- 16:40 **Zahra Ghiasvand**, Dalhousie University
Immune responses in Carcinus maenas following Vibrio sp. challenge
- 17:00 **Jake Tatum**, Auburn University
Genetic manipulation of Vibrio diazotrophicus reveals motility and secretion systems as pathogenicity factors and identifies phagocytic cell populations in purple sea urchin larvae

18:30 - 20:30 Poster Session: Standard and Wacky!

Tuesday, June 3

Session 5: Keynote Session

Chair: Katharine Magor

- 9:00 **Jim Kaufman**, Yale University
A class II system strongly expressed in intestinal epithelial cells

10:00 - 10:20 Coffee Break

Session 6: Immune Responses in the Real World

Chair: Jacques Robert

- 10:20 **Eric H. Ignatz**, Dalhousie University
Genetics vs. the environment: evaluating MSX-induced mortality with a reciprocal transplant of oysters (Crassostrea virginica) in Cape Breton
- 10:40 **Louise A. Rollins-Smith**, Vanderbilt University School of Medicine
Season and life stage differences in skin defenses of Coqui frogs (Eleutherodactylus coqui)
- 11:00 **Noah Rogozynski**, University of Waterloo

Salmonids as paratenic hosts for Spraguea americanus: a microsporidian parasite of the American anglerfish (Lophius americanus)

11:20 **Matthew Rise**, Memorial University of Newfoundland
Impact of diet on Atlantic salmon immune system function

11:40 **Shayne Oberhoffner, Wilfrid Laurier University**
Enhancing innate antiviral immunity in aquaculture: ex vivo and in vitro evaluation of a novel cationic phytoglycogen nanoparticle– poly I:C complex

12:00 - 13:00 Lunch

Session 7: Tools & Techniques in Aquaculture

Chair: Dan Barreda

13:00 **Valentina Wong-Benito**, University of Waterloo
Development of an antigen presentation assay using rainbow trout (Oncorhynchus mykiss) dorsal fin cells stimulated with heat-inactivated viral hemorrhagic septicemia virus (vhsv) IVb

13:20 **Laura Rivera-Méndez**, University of Waterloo
Oreochromicin-2 as an alternative to antibiotics: temperature-dependent effects against Flavobacterium columnare

13:40 **Shawna L. Semple**, University of Prince Edward Island
Using Coho salmon CRISPR knockouts to identify immune gene targets for resistance to sea lice infestation.

14:00 **Massiel de F. Copara Chino**, University of Alberta
Behavioral fever as a segregation tool to improve Tenacibaculum maritimum outbreak management in aquaculture

14:20 **Jayoon Lee**, University of Alberta
Optimizing animal behaviour analysis: machine learning approach for behavioural fever in fish research

14:40 - 15:00 Coffee Break

Session 8: Aquaculture: Viruses & Vaccines

Chair: Stephanie DeWitte-Orr

15:00 **Janet Velazquez Perez**, Wilfrid Laurier University
Developing new dsRNA therapy for viral diseases in aquaculture

15:20 **Dean Porter**, INRAE
Divergent B cell repertoire remodelling by mRNA, DNA and live attenuated vaccines in fish

15:40 **Donnie Sonier**, University of Waterloo
Evaluating the Immune Response of Atlantic Salmon, Salmo salar Coinfected with Viral (Piscine orthoreovirus and Piscine myocarditis virus) and Parasitic Pathogens (Sea Louse - Lepeoptheirus salmonis)

16:00 **Marianna Rampaul**, Dalhousie University
Prophylactic-simulated antiviral defence of northern shrimp (Pandalus borealis) using a novel nanoparticle conjugate.

16:20 - 16:40 Coffee Break

Session 9: Immune System Evolution

Chair: Jonathan Rast

- 16:40 **Brooklyn Osborne**, University of Alberta
Cellular interactions of Riptet and influenza NS1 in human and duck cells
- 17:00 **Ian Birchler De Allende**, North Carolina State University
Immunogenetic Consequences of Habitat Transitions in Marine Mammals: CD300 Evolution in Cetaceans
- 17:20 **Yuko Ohta**, University of Maryland School of Medicine
Characterization of Ancient Nonrearranging Antibodies in Shark
- 17:40 **Ellen Hsu**, SUNY Downstate
Evolution of localized regulation of V(D)J recombination

18:30 Banquet

Please join us at The Lower Deck (1887 Upper Water St., Halifax NS, B3J 1S9)

Wednesday, June 4

Session 10: Immunology Grab Bag!

Chair: Rob Miller

- 9:00 **Jacques Robert**, University of Rochester
Leveraging Xenopus to assess the risks of microplastic exposure on immunity
- 9:20 **Stephanie J DeWitte-Orr**, Wilfrid Laurier University
Engineering ldsRNA with nanocarriers: unraveling cross-species antiviral mechanisms
- 9:40 **Julie M. Old**
The fight against wombat sarcoptic mange

10:00 - 10:20 Coffee Break

- 10:20 **Jonathan Rast**, Emory University
Single cell RNA sequencing analysis of the sea lamprey adaptive immune system
- 10:40 **J. Oriol Sunyer**, School of Veterinary Medicine, University of Pennsylvania
Protective role of secretory IgM against the deleterious effects of colitis-induced damage

11:00 Business Meeting & Wrap-up