



NORTH AMERICAN COMPARATIVE IMMUNOLOGY MEETING

June 23-26, 2024
UC Santa Cruz California

Meeting Venue: All lectures will be held in Oakes, 105

Sunday, June 23, 2024

18:30 - 19:30 Dinner Rachel Carson Dining Hall

19:30 - 22:00 Welcome reception at Oak Cafe

Monday, June 24, 2024

8:30 - 9:30 Breakfast

9:30 - 9:40 Welcome and opening remarks, Ayelet Voskoboynik

Session 1: Evolution of Immune Gene Loci

Chair, Tony DeTomaso

9:40 - 10:00 Katharine Magor, University of Alberta

Evolutionary Origins and Expression of Antiviral TRIM Proteins in the Duck

10:00 - 10:20 Jeffrey Yoder, North Carolina State University

Investigating the molecular and functional evolution of the CD300 family of innate immune receptors

10:20 - 10:40 Yuko Ota, University of Maryland

Characterization of an Ancient MHC-linked Nonrearranging Antibody and NK Receptor in Shark

10:40 - 11:00 Henry Rodriguez-Valbuena, University of California, Santa Barbara

Evolution of a histocompatibility locus in basal chordates.

11:00 - 11:30 Coffee break

Session 2: Keynote Presentation**Chair, Ayelet Voskosoboynik**

- 11:30 - 12:15 Julia Salzman, Stanford University.
SPLASH: a statistical, reference-free genomic algorithm unifies biological discovery
- 12:15 - 12:35 Jonathan Rast, Emory University
Experimental and genomic strategies to characterize lymphocytes in the jawless vertebrates
- 12:35 - 12:55 Sebastian D. Fugmann Chang Gung University
Conservation of cytokines in echinoderms and other invertebrates
- 13:00 - 14:00 Lunch, Rachel Carson Dining Hall

Session 3: Cell Type Evolution**Chair, Sebastian Fugmann**

- 14:00 - 14:20 Chew Chai, Stanford University
Ruptoblasts act as surveillance for hormonal dysregulation in planarian
- 14:20 - 14:40 Sebastian Joyce, Vanderbilt University Medical Center
A limbic immune system of vertebrates
- 14:40 - 15:00 Oriol Sunyer, University of Pennsylvania and Nihon University
The fishy origins of germinal centers
- 14:40 - 15:00 Martin Flajnik, University of Maryland.
Are canonical dendritic cells the original “follicular dendritic cells?”
- 15:00 - 15:20 Coffee Break

Session 4: Modulating the Immune System**Chair, Leon Grayfer**

- 15:20 - 15:40 Xiwei Peng University of Maryland.
Xenopus myeloid cells: Identification with monoclonal antibodies and the binding of Ig isotypes
- 15:40 - 16:00 Emily Churchman Auburn University
Evaluation of Recombinant *Flavobacterium covae* Protein Vaccines in Channel Catfish (*Ictalurus punctatus*)
- 16:00 - 16:20 Stephanie DeWitte-Orr, Wilfrid Laurier University
Using a phytoglycogen nanoparticle to carry innate immune modulators to gut tissue in rainbow trout.
- 16.20 - 16.40 Nguyen Vo, Wilfred Laurier University
Towards the Development of an In Vitro Research-scale Bioreactor System to Mass-cultivate Massive Numbers of Autologous Fish Antigen-Presenting Cells

- 16:45 - 18:30 Poster Session
 18:30 - 19:30 Dinner Rachel Carson Dining Hall
 20:00 Drink for Brad Magor at [Santa Cruz Mountain Brewing](#)

Tuesday, June 25, 2024

8:30 - 9:00 Breakfast

Session 5: The genetics of *Botryllus schlosseri* allorecognition Chair: Martin Flajnik

- 9:00 - 9:20 [Anthony De Tomaso](#), University of California, Santa Barbara
 Allorecognition in *Botryllus schlosseri*
 9:20 - 9:40 [Ayelet Voskoboynik](#) Stanford University
BHF, the *Botryllus schlosseri* gene that predicts fusion rejection outcome via allelic polymorphism, aligning with mendelian inheritance of this trait.
 9:040 - 10:00 Group discussion led by Martin Flajnik

10:00 - 10:20 Coffee Break and Group Photo

Session 6: Promoting EDI in Comparative Immunology Chair, Louise Rollins-Smith

10:20 - 11:20 Group discussion

Session 7: Single-Cell Transcriptomics

Chair, Kate Buckley

- 11:20 - 11:40 [Amelia Williams](#), Auburn University
 The purple sea urchin response to bacterial challenge examined via single-cell nuclei RNA-Sequencing
 11:40 - 12:00 [Younes Bouallegui](#), University of California, Santa Barbara
 Molecular characterization of *Botryllus schlosseri* circulating blood cells based on single-cell RNA-seq analysis.
 12:00 - 12:20 [Tom Levy](#), Stanford University
 Functional And Molecular Characterization of Germline Stem Cells in a Marine Tunicate and Their Role in Gonadal Regeneration.
 12:20 - 12:40 [Johanna Aldersey](#) ORISE and USDA Oak Ridge TN
 Single-nuclei transcriptome analysis of channel catfish IgM-positive splenic fractions provides insight into the fish immunome from an aquaculture-relevant species.

12:40 - 13:00 Miles Lange ORISE and USDA Auburn AL
The single-cell transcriptome analysis of channel catfish B and T cell lines.

13:00 Lunch, Rachel Carson Dining Hall

Free afternoon to visit Monterey Bay Aquarium & Hopkins Marine Station

Wednesday, June 25, 2024

8:30 - 9:30 Breakfast

Session 8: Innate Immune Cell Function

Chair, Barb Katzenback

9:30 - 9:50 Louise Rollins-Smith Vanderbilt University.
Macrophages at the center of amphibian antifungal defenses and targets of fungal counter defenses.

9:50 - 10:10 Ryley Crow, The George Washington University
Exploring the functionalities of amphibian mast cells

10:10 - 10:30 Faith Boyer-Millander, Auburn University.
Classical techniques in an unconventional system: Evaluation of the American Cockroach immune system from a flow cytometric perspective

10:30 - 10:50 Aaron Martin, Auburn University
Darkest before dawn: cellular and kinetic characteristics of melanization in the American Cockroach.

10:50 - 11:30 Coffee Break

Session 9: Antigen Presentation & Antiviral Immunity

Chair, Kathy Magor

11:30 - 11:50 Brian Dixon University of Waterloo
Functional study of the endogenous antigen presentation pathway in Rainbow trout.

11:50 - 12:10 Ximena Fleming-Canepa, University of Alberta
Allelic diversity of TAP and tapasin in wild mallards in Alberta, Canada

- 12:10 - 12:30 Kristof Jenik, University of Waterloo
Examining rainbow trout vig-3 expression patterns, induced expression and antiviral roles following dsRNA treatment
- 12:30 - 12:50 Mirzabek Kazbekov, University of Alberta
Duck RIPLET activation of RIG-I and Influenza NS1 antagonism
- 13:00 - 14:00 Lunch, Rachel Carson Dining Hall

Session 10: Receptors with Immunoglobulin Domains**Chair, Jeff Yoder**

- 14:00 - 14:20 Caitlin Castro, University of Chicago
CD1-like, lipid-presenting, nonclassical MHC molecules in shark
- 14:20 - 14:40 Samuel Amoah, University of Alberta
Examining the presence, distribution, and intracellular signal output of Goldfish leukocyte immune type receptor proteins using a newly developed polyclonal antibody
- 14:40 - 15:00 Yang Ding, University of Pennsylvania.
Secretory IgM (sIgM) is an ancient master regulator of microbiota homeostasis and metabolism
- 15:00 - 15:20 Eric Cruz, University of Maryland
Is IgW the shark mucosal Ig?
- 15:20 - 15:40 Coffee break

Session 11: Host:Microbe Interactions**Chair, Daniel Barreda**

- 15:40 - 16:00 Daphne Siciliani, University of New Mexico,
The role of a newly discovered toxin in African lungfish aestivation
- 16:00 - 16:20 Alexander Douglas, University of Waterloo.
Antimicrobial Peptide Genes of the North American Wood Frog (*Rana sylvatica*) and Confirmation of Peptide Expression in Skin.
- 16:20 - 16:40 Jake Tatum Auburn University
Type VI secretion systems and motility are instrumental for the pathogenicity of *Vibrio diazotrophicus* in purple sea urchin larvae.
- 16:40 - 17.30 Business Meeting
- 18:00 - 22:00 [Banquet Merrill Cultural Center](#)

.Posters:

Chad Hamm, Auburn University.

Characterization of phagocytic cells in the American cockroach and the kinetics of acidification

Dustin Howard, The George Washington University

Deciphering the roles of CXCL8 chemokines in amphibian antifungal defenses

Najia Huda, University of Alberta

Examination of zebrafish (*Danio rerio*) leukocyte immune-type receptor-mediated crosstalk regulation of phagocytosis.

Drew Thompson, University of Waterloo.

Analysis of developmental gene expression in the dorsal skin of North American wood frog (*Rana sylvatica*) larvae and metamorphs (Presented by B. Katzenback)

Yubing Chen University of Waterloo.

Characterization of frog virus 3 infection in adult wood frogs (*Rana sylvatica*) following water bath exposure