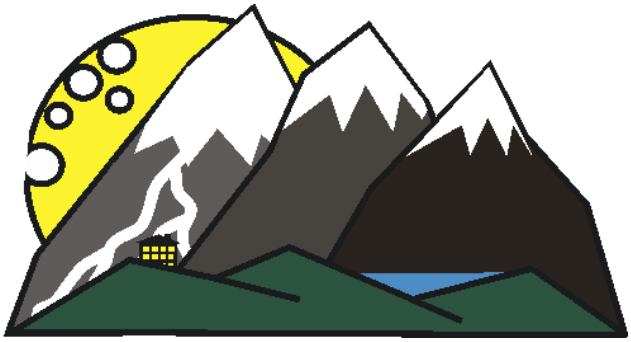

A-BC Islet Workshop 2024

February 27th to 29th

Invited keynote Speakers

Dr. Rebecca Hull-Meichle and

Dr. Hubert Tse

Silver Star Mountain Resort, British Columbia

UNIVERSITY OF ALBERTA

THE UNIVERSITY OF BRITISH COLUMBIA

A-BC Islet Workshop 2024 Program

Tuesday, February 27, 2024

The Red Antler (#22 on Map)

8:00 pm Welcome Reception

Wednesday, February 28, 2024

NATC (#41 on Map)

7:00 am Coffee and Pastries

8:00 am Group Photo

8:15 am Welcome from Andrew Pepper, Organizing Committee Chair

8:30 am Session 1: Beta-Cell Growth and Death — Chair: Carol Huang

8:30 am	Nayara Rampazzo Morelli	Role of secreted GDF15 in senescent human beta cells
8:45 am	Amanda Gomes	Heterogeneous glycine-evoked currents are associated with different gene transcripts in human β cells
9:00 am	Sing-Young Chen	Understanding sex differences in beta-cell resilience to endoplasmic reticulum stress
9:15 am	Darasimi Kola-Ilesanmi	Prolactin receptor target γ3 protects islets from exposure to glucolipotoxicity and streptozotocin-induced diabetes
9:30 am	Coralie Bergeron	Characterizing the role of riboflavin in glucose homeostasis during adolescence in a mouse model
9:45 am	Mahir Rahman	Investigating the role of prolactin receptor signaling in beta-cell function and insulin secretion in postpartum mice exposed to high-fat diet
10:00 am	Kyana Chan	Reduced insulin gene dosage has sex specific effects on diabetes incidence in NOD mice
10:15 am	Yi-Chun Chen	Deficiency of peptidylglycine alpha-amidating monooxygenase in pancreatic beta cells does not lead to development of hyperglycemia and diabetes in mice

10:30 am Coffee Break

Wednesday, February 28, 2024 — *continued*

11:00 am Session 2: Islet Transplantation and Encapsulation — Chair: Greg Korbutt

11:00 am	Rachel Spencer	Transcriptional coregulator Med15 is required for function and maturation of adult beta cells
11:15 am	Nerea Cuesta-Gomez	Necrostatin-1 mediated necroptosis inhibition improves human marginal mass islet graft survival and function
11:30 am	Saumadritaa Kar	Amyloid-resistant stem cell-derived beta cells for transplantation in type 1 diabetes
11:45 am	Ekaterina Filatov	CCL22-expressing stem cell-derived beta-cell transplants attract regulatory T cells to grafts in mice

12:00 pm Break for Lunch and Activities

4:00 pm Session 3: New Techniques and Methodologies — Chair: Bruce Verchere

4:00 pm	Gabriel Alfaro	Making protein biomarker measurements robust, reliable, and really easy
4:15 pm	Andy Edwards	Understanding the role of β-cell sodium currents through data-driven in silico modeling of phenotypic heterogeneity
4:30 pm	Alexander Garner	Investigating how pancreatic islet architecture impacts function
5:00 pm	Fabrice Roegiers	Spatial phenotyping solutions using Akoya's PhenoCycler-Fusion 2.0 platform
5:15 pm	Bruno F.A. Freitas	Improving stem cell derived beta cell differentiation, maturation and function with stem cell derived macrophages

5:15 pm Keynote Presentation — Dr. Rebecca Hull-Meichle

Team work makes the dream work — importance of the islet microenvironment in health and disease

The Den (#21 on Map)

7:30 pm Dinner and Drinks

Thursday, February 29, 2024

NATC (#41 on Map)

7:00 am	**Coffee and Pastries**	
8:00 am	**Session 4: Insulin Secretion and Islet Biology**	Chair: Erin Mulvihill
8:00 am	Daniel Marko	Hyperinsulinemia dictates fat loss versus muscle loss during intermittent fasting
8:15 am	Liam Hall	Metabolic consequences of physical inactivity
8:30 am	Xiong Liu	Functional regulation of TMEM55A on α cell glucagon exocytosis
8:45 am	Samantha Mar	Master gene regulator Med15 is required for maintaining glucagon expression in mouse alpha cells during adulthood
9:00 am	Zoe Lofft	High folic acid and 5-methyltetrahydrofolate impact glucose-stimulated insulin secretion in vitro and differentially impact peripheral blood mononuclear cell gene expression in women during pregnancy
9:15 am	Theodore dos Santos	Patch-seq reveals alpha-cell electrical dysfunction linked to alterations in identity, paracrine signaling, metabolism, and immune response in T1D
9:30 am	Bhavya Sabbineni	A comprehensive comparison of Ins2 gene expression states using proteomics and 3D live cell imaging
9:45 am	Carling Smith	Comparing islet biology and glucose homeostasis in young male and female NOD mice
10:00 am	Niki Shahraki	Role of hyperinsulinemia on the onset of breast cancer
10:15 am	**Coffee Break**	

Thursday, February 29, 2024 — *continued*

10:45 am Session 5: Stem Cells and Beta-Cell Development — Chair: Jim Johnson

10:45 am	Jasmine Maghera	Combining single-cell electrophysiology and scRNAseq to assess hESCβ-cell function
11:00 am	Katarina Zosel	Deep learning investigation of the developmental pathways for maturation of stem-cell derived islet cells
11:15 am	Wayne Fan	Elucidating how glucose impacts human stem cell-derived pancreatic beta cell differentiation
11:30 am	Cassandra Locatelli	miR192 targets the Glp1r to improve glucose metabolism
11:45 am	Erin van Zyl	Variability in Cyp1a1 expression across human and mouse beta cell models
12:00 pm	Jamie Chu	INS gene activity states in stem cell derived beta-like cells

12:15 pm Break for Lunch and Activities

4:15 pm Session 6: Islet Inflammation and Immunology — Chair: Sue Tsai

4:15 pm	Aïsha Callebaut	A novel class of deamidated peptides formed in human islets increases their immunogenicity under conditions of stress
4:30 pm	Erin Strachan	Maternal dysbiosis offers protection against T1D development in offspring
4:45 pm	Janyne Johnson	Glucagon-like peptide-1 in alpha cells
5:00 pm	Vriti Bhagat	Investigating proinsulin processing deficiencies in non-obese diabetic mice

5:15 pm Keynote Presentation — Dr. Hubert Tse

Shining light on beta cell heterogeneity in the intact islet

Black Pine Social (#22 on Map)

7:00 pm Farewell Dinner and Reception

Silver Star Mountain Resort

Village Map

LEGEND

- Guest Services and Information Desk
- Ticket & Pass Office
- Patrol Clinic
- Shuttle Bus Stop
- Parking
- Washrooms
- NATC National Altitude Training Centre (NATC)

LODGING

1. Creekside Condominiums
2. Chilcoot Lodge
3. FireLight Lodge
4. Grandview Condominiums
5. Lord Aberdeen Hotel
6. Pinnacles Suite Hotel
7. Silver Creek Lodge
8. Snowbird Lodge
9. The Bulldog Hotel
10. Vacation Homes
11. Vance Creek Hotel

RESTAURANTS

12. Bugaboos
13. Final Run Bar & Bistro
14. HB Pizza
15. Hideaway Lounge
16. Long John's Pub
17. Out of Bounds Coffee
18. Silver Grill Dining
19. 1609 Restaurant & Lounge
20. The Bulldog Grand Café
21. The Den Bar & Bistro ATM
22. The Red Antler ATM
23. Town Hall & Coffee+
24. Tube Town Café

ON MOUNTAIN RESTAURANTS

Paradise Camp

The Lookout

SHOPS & SERVICES

25. Adventure Centre
26. Brewer's Pond Base NEW
27. Coldstream Dry Goods
28. Double Diamond Service Centre
29. Equipment Rentals
30. Fitness Centre NATC
31. Gallery Odin
32. Lord Aberdeen Market ATM
33. Ousia Day Spa NATC
34. Ski Dazzle
35. SnowSports School
36. The Goody Box
37. Village Ski Shop
38. Winter Wedding Meadow
39. Snowshoe Studio

ACTIVITIES

40. Brewer's Pond / Skating
41. Climbing Wall NATC
42. Cross Country Skiing Trail Head
43. Mini Snowmobiles
44. Pinheads Bowling Alley
45. Snowshoe Trail Head
46. Tube Town

NEW BREWER'S POND BASE A new cozy hub, located near FireLight Lodge; a place to relax or get outfitted with everything you need for cross country, snowshoe, skating and fat biking adventures.

Keynote Speakers

Introduction and Biography

Dr. Rebecca Hull-Meichle

University of Washington
Medicine Diabetes Institute

Director, Diabetes and the Islet Research Program

Dr. Rebecca L. Hull-Meichle is currently a Research Professor of Medicine at the University of Washington and VA Puget Sound Health Care System and is Program Director of the Diabetes and the Islet Program at the University of Washington Medicine Diabetes Institute.

She received her PhD in Biochemistry from the University of Nottingham, UK and undertook her postdoctoral training at the University of Washington. Her research is focused on mechanisms by which islet β-cell function and mass decline in diabetes, with a particular focus on novel aspects of the islet microenvironment. Two major areas of focus are: (i) the role of the islet vasculature in the development and progression of β-cell dysfunction and death, and (ii) elucidating mechanisms that govern communication between the exocrine and endocrine pancreas, with a focus on cystic fibrosis-related diabetes.

Dr. Hull-Meichle has been continuously funded by NIH/NIDDK since 2006 and is also supported by the US Department of Veterans Affairs and Cystic Fibrosis Foundation. Dr. Hull-Meichle holds several leadership roles. These include directing the University of Washington Diabetes Research Center's Cellular and Molecular Imaging Core and Enrichment Program, in addition to serving on numerous national/international planning, advisory, editorial and grant review boards.

Dr. Hull-Meichle is excited to be relocating to University or Alberta/Alberta Diabetes Institute later this spring, where she'll take up the Canada Excellence Research Chair in the Islet Microenvironment.

Keynote Speakers

Introduction and Biography

Dr. Hubert Tse

University of Kansas Medical Center

Professor and Chair, Department of Microbiology, Molecular Genetics, and Immunology

Dr. Hubert Tse is currently serving as the Professor and Chair of the Department of Microbiology, Molecular Genetics, and Immunology at the University of Kansas Medical Center (KUMC). He is also affiliated with the Diabetes Institute at KUMC and the University of Kansas Cancer Center to foster additional research programs on Type 1 diabetes and cancer immunotherapy.

Hubert Tse was born in Calgary, Alberta, Canada and grew up in Alexandria, VA. He considers both places home and proud to be both a Canadian and American citizen. He performed his graduate work on M. xanthus differentiation with Dr. Ronald E. Gill in the Department of Microbiology and Immunology at the University of Colorado Health Sciences Center. He obtained his Ph.D. in Microbiology and Immunology in 1999 and went on to a post-doctoral fellowship in Dr. Andrea Cooper's group at Colorado State University in Ft. Collins, CO studying macrophage responses following M. avium infection. In 2001, he went and did a second post-doctoral immunology fellowship in Dr. Jon Piganelli's group at the University of Pittsburgh studying the autoimmune mechanisms involved in pancreatic beta-cell destruction in Type 1 diabetes. In 2009, he moved to the University of Alabama at Birmingham (UAB), and started his own research lab. Over the next 13 years, Dr. Tse developed research programs studying genetics, innate immune (macrophage, dendritic cell), adaptive immune (CD4 and CD8 T cell), and beta-cell responses involved in Type 1 diabetes and islet transplantation rejection. In 2023, Dr. Tse and his lab was recruited to KUMC. His research objective is to define and prevent immune-mediated effector mechanisms involved in the destruction of insulin-producing pancreatic beta-cells in Type 1 diabetes (T1D) and islet transplantation. Specifically, this group is interested in determining how oxidative stress can regulate innate and adaptive immune responses.

In addition to research and mentoring, his other passions include music, travel, cooking, and golf. According to his wife, she would say that he is a "golf addict". She is not wrong…

This event was generously supported by:

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