5th International Conference on Integrative Salmonid Biology
Monday 11 March – Thursday 14 March 2024

Bell Harbor International Conference Center

Monday 11 March		Location
14:00 – 19:00	Registration Open	Pre-Function Lobby
17:30 – 19:30	Meet and Greet	Pre-Function and Sound

Tuesday 12 March		Location
07:30 – 19:30	Registration Open	Pre-Function Lobby
07:30 - 08:30	Breakfast	Harbor
08:30 – 09:00	Welcome and Introduction: Kerry Naish and Krista Nichols Welcome by Programme Sponsors: Tony Brooks, Genome British Columbia Conference Background and History: Ben Koop, University of Victoria	Bay Auditorium
09:00 – 10:20	Session One: Genome resources, functional genomics, and evolution of salmonids *Moderator: Ben Koop*	Bay Auditorium
09:00 – 09:20	**T-Invited-1 Towards complete chromosome sequences and pan-genomic resources for salmonids** *Sigbjørn Lien, Norwegian University of Life Sciences, Norway*	
09:20 – 09:40	**T-Invited-2 Genomic analysis through the lens of pangenome** *Maria Simak, Universidad de Chile, Chile*	
09:40 – 10:00	**T-Invited-3 Pan-genomics reveals hidden genomic variation in Atlantic salmon** *Kristina Stenløkk, Norwegian University of Life Sciences, Norway*	
10:00 – 10:20	**T-Invited-4 Functional annotation of salmonid genomes: a window into regulatory changes following autopolyploidization** *Dan Macqueen, Roslin Institute, University of Edinburgh, UK*	

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10:20 – 10:50	**Networking/Exhibition/Refreshments**	
10:50 – 12:05	**Session Two: Genome resources, functional genomics, and evolution of salmonids** *Moderator: Sigbjørn Lien*	Bay Auditorium
10:50 – 11:10	**T-Invited-5 New rainbow trout genome assembly allows tracing 100 million years of gene evolution following whole genome duplication** *Ali Ali, University of Maryland, USA*	
11:10 – 11:30	**T-Invited-6 Wound atlas of the skin of Atlantic salmon** *Rose Ruiz Daniels, Institute of Aquaculture, University of Stirling, UK*	
11:30 – 11:50	**T-Invited-7 Uses of biotechnology to control reproduction in Atlantic salmon** *Lene Kleppe, Institute of Marine Research, Norway*	
11:50 – 12:05	**T-Oral-1 Single-cell transcriptomics indicates lasting impact of embryonic temperature on salmonid health** *Carl Milton, University of Edinburgh, UK*	
12:20 – 13:20	**Networking/Exhibition/Lunch**	
13:20 – 14:55	**Session Three: Functional genomics and annotation/Advances in aquaculture** *Moderators: Dan Macqueen*	Bay Auditorium
13:20 – 13:35	**T-Oral-3.1 The epigenome changes during interferon response genes in Atlantic salmon** *Shahmir Naseer, University of Aberdeen, UK*	
13:35 – 13:50	**T-Oral-3.2 Development of full-length nanopore RNA-Seq for alternative isoform discovery in Atlantic salmon** *Oliver Eve, University of Edinburgh, UK*	
13:55 – 14:15	**T-Invited-8 Implementing new technologies into existing structures – how, when and why?** *Serap Gonen, Aquagen, Norway*	

14:15 – 14:35	**T-Invited-9 Beyond genomic selection: Next steps in aquaculture breeding** *José Manuel Yáñez, Universidad de Chile, Chile*	
14:35 – 14:55	**T-Invited-10 Improving production efficiency and thermotolerance in New Zealand Chinook salmon** *Jane E Symonds, Cawthorn Institute, New Zealand*	
14:55 – 15:25	**Networking/Exhibition/Refreshments**	
15:25 – 16:50	**Session Four: Advances in aquaculture** *Moderators: José Manuel Yáñez*	Bay Auditorium
15:25 – 15:45	**T-Invited-11 Mechanisms of interspecific variation in sea lice resistance revealed by single-cell transcriptomics** *Sarah Salisbury, Roslin Institute, University of Edinburgh, UK*	
15:45 – 16:05	**T-Invited-12 Leveraging microbiota services through hologenomic analyses in farmed fish** *Morten Limborg, University of Copenhagen, Denmark*	
16:05 – 16:20	**T-Oral-6 Loss of FSHR prevents maturation in male Atlantic salmon** *Ana Wargelius, Institute of Marine Research, Norway*	
16:20 – 16:35	**T-Oral-5.4 Lack of VGLL3a delays onset of male maturation in Atlantic salmon** *Erik Kjærner-semb, Institute of Marine Research, Norway*	
17:00 – 19:30	**Poster Networking Session, Welcome Reception**	Sound and Pre-Function Lobby

Wednesday 13 March		**Location**
08:00 – 17:00	**Registration Open**	Pre-Function Lobby

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07:30 - 08:45	**Breakfast**	Harbor
08:30– 10:10	**Session Five: Environment, Ecology and Conservation** *Moderators: Kerry Naish and Krista Nichols*	Bay Auditorium
08:30 – 08:40	**SESSION DEDICATION – Prof. Louis Bernatchez**	
08:40 – 09:10	**Keynote Session – Robin Waples, *The salmon genomics revolution: Prediction vs reality***	
09:10 – 09:30	**W-Invited-13 Sustainable development of small-scale commercial indigenous Arctic fisheries** *Stephan Schott, Carleton University, Canada*	
09:30 – 09:50	**W-Invited-14 Complementary insights from genomics and Indigenous knowledge to support salmonid fisheries stewardship in northern Canada** *Dylan Fraser, Concordia University, Canada*	
10:10 – 10:40	**Networking/Exhibition/Refreshments**	
10:40 – 12:10	**Session Six: Environment, ecology and conservation** *Moderators: Kerry Naish and Krista Nichols*	Bay Auditorium
10:40 – 11:00	**W-Invited-15 Limiting river access to escapees: Consequences for an admixed Atlantic salmon population** *Marine Brieuc, Institute of Marine Sciences, Norway*	
11:00 – 11:20	**W-Invited-16 The good, the bad & the ugly of non-native salmonids in South America** *Daniel Gomez-Uchida, Universidad de Concepción, Chile*	
11:20 – 11:40	**W-Invited-17 Insights into run timing diversity revealed by range-wide Chinook salmon whole genomes** *Tasha Thompson, Wild Salmon Center, USA*	
11:40 – 11:55	**W-Invited-18 Beyond GWAS: Complex mechanisms underlie the simple genomic architecture of Atlantic salmon age at maturity** *Craig Primmer, University of Helsinki, Finland*	
11:55 – 12:10	**W-Oral-8 Evidence of genetic adaptation in *Oncorhynchus kisutch* exposed to 2013-2015 marine heatwave** *Michelle Tsz Ting Chan, Simon Fraser University, Canada*	

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12:10 – 13:10	**Networking/Exhibition/Lunch**	
13:10 – 14:45	**Session Seven: Environment, Ecology and Conservation** *Moderators: Kerry Naish and Krista Nichols*	Bay Auditorium
13:10 – 13:30	**W-Invited-19 Documenting indigenous salmon stewardship practices through archaeology, ancient genomics and traditional knowledge** *Camilla Speller, University of British Columbia, Canada*	
13:30 – 13:45	**W-Oral-9 Genetic variation associated with adult migration timing in lineages of Steelhead & Chinook salmon in the Columbia River** *Shawn Narum, Columbia River Inter-Tribal Fish Commission, USA*	
13:45 – 14:00	**W-Oral-10 The distribution of adaptive genomic variation in space and time** *Devon Pearse, NOAA, National Marine Fisheries Service, Southwest Fisheries Science Center, USA*	
14:00 – 14:15	**W-Oral-11 Genomic basis of Canadian Atlantic salmon migration: Implications for climate-driven adaptation** *Samantha Beck, UHI Inverness, UK and Department of Fisheries and Oceans/Dalhousie University, Canada*	
14:15 – 14:30	**W-Oral-12 Genomic evidence for domestication selection in three hatchery populations of Chinook salmon** *Charlie Waters, NOAA, National Marine Fisheries Service, Alaska Fisheries Science Center, USA*	
14:30 – 14:45	**W-Oral-13 Major locus impacting run timing is conserved between Pink and Sockeye salmon** *Natasha Howe, Pacific States Marine Fisheries Commission, USA*	
14:45 – 15:15	**Networking/Exhibition/Refreshments**	
15:15 – 16:15	**Session Eight: Environment, ecology and conservation** *Moderators: Kerry Naish and Krista Nichols*	
15:15 – 15:25	**W-Flash-7 Evolutionary history and population structure of Fraser River salmon revealed by resequencing** *Kris Christensen, University of Victoria, Canada*	
15:25 – 15:35	**W-Flash-9 Genomic divergence of hatchery- and natural-origin Chinook salmon in two supplemented populations**	

	Michael Ford, NOAA, National Marine Fisheries Service, Northwest Fisheries Science Center, USA
15:35 – 15:45	**W-Flash-11 DNA methylation variation in hatchery Coho salmon and its potential heritability** *Kyle Wellband, Department of Fisheries and Oceans, Canada*
15:45 – 15:55	**W-Flash-13 Eco-evolutionary dynamics of dispersal: Insights from molecular pedigrees of wild Sockeye metapopulations** *Samuel May, University of Washington/USDA Agricultural Research Service, USA*
15:55 – 16:05	**W-Flash-14 Microbial community dynamics in a salmonid enhancement hatchery system** *Shelby Reimer, BC Centre for Aquatic Health Sciences, Canada*

Thursday 14 March		**Location**
08:00 – 17:00	**Registration Open**	Pre-function Lobby
07:30 - 08:30	**Breakfast**	Harbor
08:30 – 10:05	**Session Nine: Physiology and nutrition** *Moderator: Sam Martin*	Bay Auditorium
8:30 – 8:50	**TH-Invited-20 Gametes of semelparous Pacific salmon are repeatedly produced by surrogate Rainbow Trout** *Goro Yoshizaki, Tokyo University of Marine Science and Technology, Japan*	
8:50 – 9:10	**TH-Invited-21 Roles of miRNAs in reproduction** *Julien Bobe, INRAE, France*	
9:10 – 9:30	**TH-Invited-22 Cardiac morphological remodeling by environmental factors in Atlantic salmon** *Ida Beitnes Johansen, Norwegian University of Life Sciences, Norway*	

9:30 – 9:50	**TH-Invited-23 Chaperone-mediated autophagy regulates metabolism, energy balance, and oxidative stress in Rainbow Trout** *Beth Cleveland, USDA, National Center for Cool and Coldwater Aquaculture, USA*	
9:50 – 10:05	**TH-Oral-14 Impact of nutritional programming on intestinal transcriptome of Atlantic salmon (*Salmo salar*)** *Marwa Tawfik, University of Aberdeen, UK*	
10:05 – 10:35	**Networking/Exhibition/Refreshments**	Harbor
10:35 – 12:05	**Session Ten: Physiology and nutrition / Immunology, disease and host-pathogen interactions** *Moderators: Yniv Palti*	Bay Auditorium
10:35 – 10:50	**TH-Oral-15 Consequences of the embryonic environment in Atlantic salmon** *Erik Burgerhout, Norwegian Institute of Food, Fisheries and Aquaculture Research, Norway*	
10:50 – 11:05	**TH-Oral-16 Employing CRISPR genetic screens to identify mechanisms of environmental resilience in salmonids** *Michael Phelps, Washington State University, USA*	
11:05 – 11:15	**TH-Flash-15 Characteristics of gill tissue regeneration in Atlantic salmon (*Salmo salar*)** *Ensiyeh Ghanizadeh-Kazerouni, The University of British Columbia, Canada*	
11:15 – 11:25	**TH-Flash-16 Nutritional solutions to thermal stress in Atlantic salmon** *Nick Wade, The University 0f Edinburgh, UK*	
11:25 – 11:45	**TH-Invited-24 Moving sterile Crispr salmon from tank to sea cage environment - regulatory barriers and social impacts** *Anna Wargelius, Institute of Marine Research, Norway*	
11:45 – 12:05	**TH-Invited-25 What have we learned about T Lymphocytes in salmonid fishes?** *Monica Imarai, University of Santiago Chile, Chile*	
12:05 – 13:05	**Networking/Exhibition/Lunch**	Harbor
13:05 – 14:35	**Session Eleven: Immunology, disease and host-pathogen interactions**	Bay Auditorium

	Moderators: Beth Cleveland	
13:05 – 13:25	**TH-Invited-26 Host responses associated with the evolution of viral generalism and specialism** *David Paez, US Geologic Survey/University of Washington, USA*	
13:25 – 13:45	**TH-Invited-27 How can single cell genomics help us understand the pathogenesis of infectious salmon anaemia and other viral infections?** *Johanna Hol Fosse, Norwegian Veterinary Institute, Norway*	
13:45 – 14:05	**TH-Invited-28 Genomic regulatory changes underlying the proinflammatory immune response in Atlantic salmon.** *Sam Martin, University of Aberdeen, UK*	
14:05 – 14:20	**TH-Oral-17 Exploring Atlantic salmon head kidney cellular diversity by single-cell and single-nucleus transcriptomics.** *Adriana Magalhães Santos Andresen, Veterinærinstituttet, Norway*	
14:20 – 14:35	**TH-Oral-18 Atlantic salmon spleen immune cell heterogeneity and cell-specific responses to bacterial infection revealed by single-nucleus transcriptomics** *Jianxuan Sun, and the Royal (Dick) School of Veterinary Studies, The University of Edinburgh, UK*	
14:35 – 15:05	**Networking/Exhibition/Refreshments**	
15:05 – 16:50	**Session Twelve: Immunology, disease and host-pathogen interactions** *Moderators: Dan Macqueen*	
15:05 – 15:20	**TH-Oral-19 Co-diversification of salmonid hosts and its intestinal Mycoplasma** *Morten Limborg, University of Copenhagen, Denmark*	
15:20 – 15:35	**TH-Oral-20 Haplotype-based association analyses to inform fine-mapping of QTLs linked to IHNV resistance** *Christopher Setzke, University of Washington, USA*	
15:35 – 15:50	**TH-Oral-21 Cell specific differential expression of duplicated genes in Atlantic salmon liver** *Richard Taylor, University of Edinburgh, UK*	

15:50 – 16:05	**TH-Oral-22 Gill health, microbial dysbiosis and husbandry interventions at sea** *Benjamin Clokie, University of Stirling, UK*
16:05 – 16:20	**TH-Oral-23 Hologenomics of resistant/susceptible Atlantic salmon families to sea lice** *Cristian Gallardo-Escárate, Interdisciplinary Center for Aquaculture Research, Chile*
16:20 – 16:30	**TH-Flash-17 Investigating the genetic basis underlying response against salmonid alphavirus in Atlantic salmon** *Domniki Manousi, Norwegian University of Life Sciences, Norway*
16:30 – 16:40	**TH-Flash-18 MicroRNAs and their predicted target genes associated with winter-ulcer in Atlantic salmon** *Rune Andreassen, Oslo Metropolitan University, Norway*
16:40 – 16:50	**TH-Flash-19 Supporting disease control in Atlantic salmon aquaculture using viral genomic surveillance** *Albert Knight, The Roslin Institute and the Royal (Dick) School of Veterinary Studies, The University of Edinburgh, UK*
19:00 – 23:00	**Conference Dinner**