Artificial Intelligence for Computer-Assisted Diagnosis of Hyperplasia in Atlantic Salmon Gill Histology Images

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Veterinærinstituttet
Norwegian Veterinary Institute

GILL HEALTH INITIATIVE MEETING 2023

RED CROSS CONFERENCE CENTER, HAUSMANNSGATE 5, OSLO

MEETING PROGRAMME

DAY 1: 25 October 2023

TIME	PROGRAMME
10.00-10.05	***WELCOME:*** Mona Gjessing / Christine Huynh
10.05-10.15	***Gill Health initiative 10 year Anniversary*** Hamish Rodger
10.15-11.10	**INTERNATIONAL SECTOR UPDATE:** ***Chair: Christine Huynh*** **Australia/New Zealand** **Chile** **Norway** **Scotland** **Ireland**
	GILL HEALTH MANAGEMENT, PART I ***Chair: Ingunn Sommerset***
11.10-11.50	**KEYNOTE:** ***Gill diseases; Field experiences and possible interpretations***, Magnus Nyborg, Kvamvet
11.50-12.10	**BREAK: COFFEE AND FRUIT**
12.10-12.30	***Using gill mucus to monitor immune gene expression of farmed Atlantic salmon*** Amanda Vang, Fiskaaling
12.30-12.50	***Longitudinal analysis of the gill microbiomes of Atlantic salmon from four Scottish farms reveals dynamics in bacterial richness and seasonal trends in diversity*****.** Will J. Barr , University of Glasgow
12.50-13.10	***Clinical blood biochemistry as a predictive tool for managing gill challenges*****,** Josip Barisic, WellFish Diagnostics
13.10-13.30	***Temporal assessment of gill health during natural outbreak of AGD*** Sam Martin, University of Aberdeen
13.30-14.10	**BREAK: LIGHT LUNCH**

TIME	PROGRAMME
	GILL HEALTH MANAGEMENT, PART II ***Chair: Ingunn Sommerset***
14.10-14.30	***Scotland's SAIC funded "Gill Health in Scottish Farmed Salmon" project 2018 – 2023: Highlights*****,** Annette Boerlage, Scotland's Rural College
14.30-14.50	***NeoGiant, a natural alternative treatment for Amoebic Gill Disease*** Gaston Caspe, Moredun Research Institute
14.50-15.10	***Agile training to help enable standardisation of phytoplankton sampling and gross gill terminology across the Scottish sector*** Janina Costa, Sustainable Aquaculture Innovation Centre (SAIC)
	MODEL SYSTEMS ***Chair: Annette Boerlage***
15.10-15.30	***The Atlantic salmon gill epithelial cell line ASG-10 as tool for in vitro gill research*** Anita Solhaug, Norwegian Veterinary Institute
15.30-15.50	***Optimization of transfection methods and gene editing of the Atlantic salmon gill cell line ASG-10*** Maria Dahle, Norwegian Veterinary Institute
15.50-16.10	**BREAK: COFFEE AND CAKES**
	GILL HEALTH AND ARTIFICIAL INTELLIGENCE ***Chair: Christine Huynh***
16.10-16.30	***Harnessing the power of computer vision to provide early warning of jellyfish in fish farms*** Kylie Pitt, Griffith University, Queensland
16.30-16.50	***Artificial Intelligence for computer-assisted diagnosis of hyperplasia in Atlantic salmon gill histology images*** Alexander F. B. Carmichael, University of Stirling
16.50-17.10	***Digital pathology and specific markers: opportunities to expedite and harmonize microscopic gill assessment*** Ole Bendik Dale, Norwegian Veterinary Institute

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DAY 2: 26 October 2023

TIME	PROGRAMME
	HARMFUL PLANKTON BLOOMS AND THEIR IMPACT ON GILL HEALTH ***Chair: James Wynne***
09.00-09.20	***Harmful phytoplankton, cnidarian blooms and fish farms*** Ana Herrero, Patogen AS
09.20-09.40	***Mechanisms, monitoring, and mitigation for harmful plankton in salmon aquaculture*** Connor Dibble, Scoot Science
09.40-10.00	***Developing an experimental model for gill disease caused by gelatinous zooplankton*** Hamish Rodger
10.00-10-20	**BREAK: COFFEE AND FRUIT**
	AMOEBA AND GILL PATHOLOGY ***Chair: Renate Johansen***
10.20-10.40	**Insights into the viability and infective potential of *Neoparamoeba perurans post freshwater exposure*,** James Wynne, CSIRO
10.40-11.00	***Metagenomic analysis of Nodular Gill Disease in rainbow trout in Switzerland*** James Wynne, CSIRO
11.00-11.20	***Gill pathology as part of systemic infectious disease in farmed Atlantic salmon (Salmo salar)***, Marta Alarcón, Pharmaq Analytiq
11.20-11.40	***Gill transcriptomics of autumn and spring Atlantic salmon smolts*,** Ela Krol, University of Aberdeen
11.40-12.00	***Challenges and Opportunities in Addressing Amoebic Gill Disease (AGD) in Salmon Farming: A Global Perspective,*** Per Kristian Sætre, Aqua Pharma Group
12.00-12.40	**BREAK, LIGHT LUNCH**

TIME	PROGRAMME
	GILL HEALTH AND WELFARE ***Chair: Brit Tørud***
12.40-13.00	***Gill health from analog descriptions to digital quantification: towards standards,*** Karin Anna Pittman, University og Bergen, Quantidoc AS
13.00-13.20	***Ontogeny: New technique to assess gill health and animal welfare in salmonids - Clinical cases,*** Patricio Bustos, ADL Diagnostic Chile
13.20-13.40	***Leveraging an Integrated Fish Welfare Index to drive operational decisions,*** Iwen Su, Scoot Science
13.40-14.00	***GILL PROJECT CHILE,*** Daniel Woywood Wijnanat, Aquabench
14.00-14.20	**CLOSING AND CONCLUSIONS** ***Christine Huynh***