

Scotland's Rural College

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

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

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



# GILL HEALTH INITIATIVE MEETING 2023

RED CROSS CONFERENCE CENTER, HAUSMANNSGATE 5, OSLO

DAY 2: 26 October 2023

## MEETING PROGRAMME

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

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

