

# NoWPaS 2020

Laugarvatn, Iceland

2<sup>nd</sup> – 7<sup>th</sup> March 2020



@NoWPaS #nowpas2020



NoWPaS



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## **Preface**

NoWPaS – International (formerly Nordic) Workshop for PhD and post-doctoral fellows on Salmonid research NoWPaS stands for International - formerly known as Nordic - workshop of PhD and post-doctoral fellows working on anadromous salmonids. The annual workshop aims to build and maintain an international network of young scientists working on migratory salmonids, such as Atlantic salmon (*Salmo salar*) and brown trout (*Salmo trutta*). The workshops have helped facilitate the sharing and dissemination of salmonid science. They have also been instrumental in initiating new international collaborations, as well as in identifying novel and timely research topics for the coming years.

The first NoWPaS workshop was held in 2005 in Norway, and was followed by others in Sweden, Finland, Denmark, England, Scotland, France, Canada and Wales. Although it started out as European initiative, due to the migratory nature of the species, it has grown into a global meeting with Canadian and US early stage researchers regularly attending.

In 2020, NoWPaS will be held in beautiful Laugarvatn, Iceland (hosted in part by the University of Iceland). Lake Laugarvatn is located in east of the capital city, where delegates will be surrounded by beautiful wilderness, giving the opportunity to experience some Icelandic nature between scientific sessions. In addition, we will visit the Marine and Freshwater Research Institute fish labs as well as the Vaki and Star-Oddi facilities to learn about the ongoing research in Iceland.

## Acknowledgements

NoWPaS 2020 has been made possible largely in thanks to the voluntary dedication of the organizing committee who have contributed their time and effort to ensure the continuation and success of the workshop. However, the workshop would not succeed without the contributions of the delegates whose presence and support is the lifeblood of the network. A huge thank you also goes to the keynote speakers and invited speakers, who have generously donated their time in presenting and participating at the workshop.

One of the founding and foremost principles of the NoWPaS network is that it be free to attend to all participants. Because of this we are especially grateful to the generous support and contributions from the following sponsors:



Government of Iceland  
Ministry for the Environment  
and Natural Resources



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## Schedule

### Monday, March 2<sup>nd</sup> Arrival to Reykjavik

Time	Activity
	<b>Casual Meet &amp; Greet at the Student Cellar Pub</b>
19.00 – 22.00	Address: <i>Student Cellar pub, Háskólatorg - University Square, University of Iceland, Sæmundargata, 101 Reykjavík</i> <i>This activity is totally optional; dinner/drinks not included in registration</i>

### Tuesday, March 3<sup>rd</sup> Day 1: Excursion

Time	Activity
8.30	<b>Meet at Askja, University of Iceland</b>
8.30 – 10.30	<b>Travel to and visit of Star-Oddi facilities</b> <i>Skeiðarás, Garðabær, Iceland</i>
10.30 – 13.30	<b>Travel to and visit of Vaki facilities + Lunch</b> <i>Akralind, Kópavogur, Iceland</i>
12.30 – 15.00	<b>Travel to and visit of the Marine &amp; Freshwater Research Institute</b> <i>Grindavík, Iceland</i>
15.00 – 17.30	<b>Travel to Laugarvatn</b> <i>The bus ride to Laugarvatn is about 1.5hours but we will stop along the way to see some of Iceland's iconic spots. We will make a quick stop at a supermarket if you wish to buy optional drinks and snacks for the week. All meals will be provided during the workshop, but perhaps you want to bring a few treats!</i>
17.30 – 18.30	<b>Arrive at Laugarvatn</b> <i>Delegates will get their room key and can take the time to get settled in.</i>
18.30 – 20.00	<b>Dinner</b>
20.00	<b>Socializing – Quiz night</b>

**Wednesday, March 4<sup>th</sup>**  
**Day 2**

<b>Time</b>	<b>Activity</b>
7.30 – 8.40	<b>Breakfast</b>
8.50 – 9.00	<b>Opening of Physiology Session (Sponsored by Loligo Systems)</b> Session 1 Chair: Kim Birnie-Gauvin
	
9.00 – 9.45	<b>Keynote speaker 1: Erika Eliason</b> <i>Can individual variation enable salmon to survive and succeed in a changing world?</i>
9.45 – 10.00	<b>Giovanna Mottola</b> <i>Molecular differences behind the reduced cardiovascular capacity of migrating char and trout to face high temperatures compared to resident conspecifics</i>
10.00 – 10.15	<b>David Nusbaumer</b> <i>Ovarian fluids improve competitiveness of sperm of more colourful lake char</i>
10.15 – 10.30	<b>Magdalene Papatheodoulou</b> <i>The Effects of Stress on Adult Atlantic salmon Prior to Spawning on the Viability of their Offspring</i>
10.30 – 11.00	<b>Coffee Break</b> Session 2 Chair: Jóhannes Guðbrandsson
11.00 – 11.15	<b>Luca Pettinau</b> <i>Aerobic exercise training with optimal intensity increases cardiac thermal tolerance in juvenile rainbow trout</i>
11.15 – 11.30	<b>Rhiannon Hunt</b> <i>A lousy problem: fish lice infections in UK freshwaters</i>
11.30 – 11.45	<b>Andrew House</b> <i>Muscle tissue lipids in Atlantic salmon juveniles</i>
11.45 – 12.00	<b>Kim Birnie-Gauvin</b> <i>Ecology and physiology of sea trout during their spawning migration</i>
12.00 – 13.00	<b>Lunch</b>

**Opening of Ecology & Behaviour Session  
(Sponsored by Vemco)**  
Session 3 Chair: Olivia Simmons



- 13.00 – **Keynote speaker 2: Kim Aarestrup**  
13.45 *Using telemetry to explore, understand and manage salmonids*
- 13.45 – **Helge Bostwick Bjerck**  
14.00 *Depth use and progression speed of Atlantic salmon post-smolt*
- 14.00 – **Jamie R. Dodd**  
14.15 *Can't pass, won't pass: the importance of displacing river-resident fish when quantifying fish pass performance*
- 14.15 – **Angus Lothian**  
14.30 *Boldly Going: Does personality relate to fishway passage performance in trout?*
- 14.30 – **Martin L. Kristensen**  
14.45 *The marine life of sea trout (*Salmo trutta*)*
- 14.45 – **Coffee Break**  
15.15 Session 4 Chair: Marcos Lagunas
- 15.15 – **Stephanie Muller**  
15.30 *Impact of anthropogenic structures on fish swimming kinematics and passage*
- 15.30 – **Tormod Haraldstad**  
15.45 *Hydropower-induced selection in anadromous salmonid fishes*
- 15.45 – **Jóhannes Guðbrandsson**  
16.00 *Hierarchical Bayesian state space model for estimating location of DST-tagged Atlantic salmon*
- 16.30 – **Pool**  
19.30
- 20.00 **Dinner**

**Thursday, March 5<sup>th</sup>**  
**Day 3**

<b>Time</b>	<b>Activity</b>
7.30 – 8.40	<b>Breakfast</b>
8.55 – 9.00	<b>Opening of Conservation &amp; Management Session</b> Session 5 Chair: Jamie R. Dodd
9.00 – 9.45	<b>Keynote speaker 3: Steven J. Cooke</b> <i>Migration biology in the Anthropocene</i>
9.45 – 10.00	<b>Amaia Lamarins</b> <i>Consequences of dispersal on Atlantic salmon metapopulation persistence and dynamics of local populations</i>
10.00 – 10.15	<b>Samantha Beck</b> <i>The impact of barriers on Scottish Atlantic salmon distribution and migration</i>
10.15 – 10.30	<b>David Roth</b> <i>Assessment of Smolt-to-Adult Supplementation (SAS) Strategy as a Conservation Tool in Depressed Atlantic salmon (<i>Salmo salar</i>) Populations</i>
10.30 – 11.00	<b>Coffee Break</b> Session 6 Chair: Rowena Diamond
11.00 – 11.15	<b>Fionn Bernthal</b> <i>Minimising adverse effects of conservation: ecological effects of restoration of salmon carcasses to upland streams</i>
11.15 – 11.30	<b>Olivia Simmons</b> <i>Timing is everything: factors that affect Atlantic salmon smolt migration phenology</i>
11.30 – 11.45	<b>Catherine Gutmann Roberts</b> <i>Reviewing the implications of climate change for the migration phenology of Atlantic salmon</i>
11.45 – 12.00	<b>Johan Leander</b> <i>Bubbles to help the lost traveller: Non-physical structures ability to guide migrating salmon past hydropower plants</i>
12.00 – 12.30	<b>Aurora Hatanpää</b> <i>Does rearing environment affect fluctuating asymmetry in body morphology of landlocked salmon (<i>Salmo salar m. sebago</i>) juveniles?</i>



12.30 – **Lunch**  
13.30

13.30 – **Outdoor activities**  
18.00 *Visiting some iconic Icelandic spots, guided by Skuli and co.*

18.00 – **Dinner**  
19.00

19.00 – **Invited speaker: Steven Campana**  
20.00

20.00 – **A bit of science, and a bit of ghost stories**  
22.30 *A true Icelandic tradition with Skuli*

**Friday, March 6<sup>th</sup>**  
**Day 4**

<b>Time</b>	<b>Activity</b>
7.30 – 9.15	<b>Breakfast</b>
9.25 – 9.30	<b>Opening Day 3: Evolution &amp; Genetics</b> Session 7 Chair: Cécile Tréhin
9.30 – 10.15	<b>Keynote speaker 4: Camille Leblanc</b> <i>Beyond genetics: phenotypic and developmental approaches to better understanding adaptive divergence in salmonids.</i>
10.15 – 10.30	<b>Dorian Jagusch</b> <i>The effect of genes associated with maturation on sperm trait variation in mature male Atlantic salmon parr</i>
10.30 – 10.45	<b>Dorinda Folio</b> <i>Demogenetic modelling: a tool to predict and understand the dynamic of intraspecific diversity in Brown trout (<i>Salmo trutta</i>)</i>
10.45 – 11.00	<b>Christian de Guttery</b> <i>Genetic load affects female sexual ornaments and offspring performance in whitefish</i>
11.00 – 11.30	<b>Coffee Break</b>  Session 8 Chair: Magdalene Papatheodoulou
11.30 – 11.45	<b>Marcos Lagunas</b> <i>Genetic and phenotypic diversity of Icelandic brown trout populations</i>
11.45 – 12.00	<b>William Perry</b> <i>A gut feeling: how has 12 generations of domestication impacted the Atlantic salmon (<i>Salmo salar</i>) gut microbiome?</i>
12.00 – 12.15	<b>Spencer Weinstein</b> <i>Diversity of chars (<i>Salvelinus</i> spp.) in the Coppermine River near Kugluktuk, Nunavut</i>
12.15 – 12.30	<b>Yann Czorlich</b> <i>Temporal variation and genetic variance of life-history traits in the Imsa Atlantic salmon population</i>
12.30 – 13.45	<b>Lunch</b>

## Salmon Session – Celebrating International Year of the Salmon

Session 9 Chair: Kim Birnie-Gauvin

- 13.45 – **Eirik R. Åsheim**  
14.00 *The physiology of a large-effect puberty gene in Atlantic salmon (*Salmo salar*)*
- 14.00 – **Emily Weigum**  
14.15 *Can the past explain the present? Using archived Atlantic salmon (*Salmo salar*) scales and stable isotopes to investigate long-term trends in marine resource use and migration*
- 14.10 – **Astrid Raunsgard**  
14.30 *A sex-dependent genotype by growth interaction underlying age at maturity in Atlantic salmon*
- 14.30 – **Sammi Lai**  
14.45 *The importance of understanding the role of environmental factors on Atlantic Salmon population dynamics and life stages at the northern outskirts of its distribution in Icelandic rivers*

Session 10 Chair: Olivia Simmons

- 14.45 – **Sarah Ryan**  
15.15 *Overwinter energy management strategies and survival of farmed Atlantic salmon offspring in the wild*
- 15.15 – **Cécile Tréhin**  
15.30 *Archived scales of Atlantic salmon reveal a sex-specific maturation reaction norm related to growth at sea*
- 15.30 – **Rowena Diamond**  
15.45 *The Impact of Climate on Water Quality, and the Subsequent Effects on Salmonids*
- 16.00 – **NoWPaS Committee Meeting**  
17.00
- 17.00 – **Free time**  
18.00
- 18.00 – **Dinner**  
19.00
- 19.00 – **Pool**  
20.30

<b>Saturday, March 7<sup>th</sup></b> <b>Departure home</b>
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Time	Activity
7.30 – 9.30	<b>Breakfast</b>
9.00 – 9.30	<b>Main party leaving Laugarvatn</b> <i>A shuttle will take you back, either at the airport or the city centre. Travel time is estimated to be 1.5 to 2 hour to each destination</i> <i>** early departures will be leaving on a smaller bus at 6:30</i>

## The NoWPaS Committee

Jóhannes Guðbrandsson, Marine and Freshwater Research Institute, Iceland

Marcos Lagunas, University of Iceland, Iceland

Magdalene Papatheodoulou, University of Glasgow, United Kingdom

Jamie R Dodd, Hull International Fisheries Institute, United Kingdom

Rowena Diamond, Cardiff University, United Kingdom

Olivia Simmons, Bournemouth University, United Kingdom

Cecile Trehin, INRA, France

Kim Birnie-Gauvin, Technical University of Denmark, Denmark

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