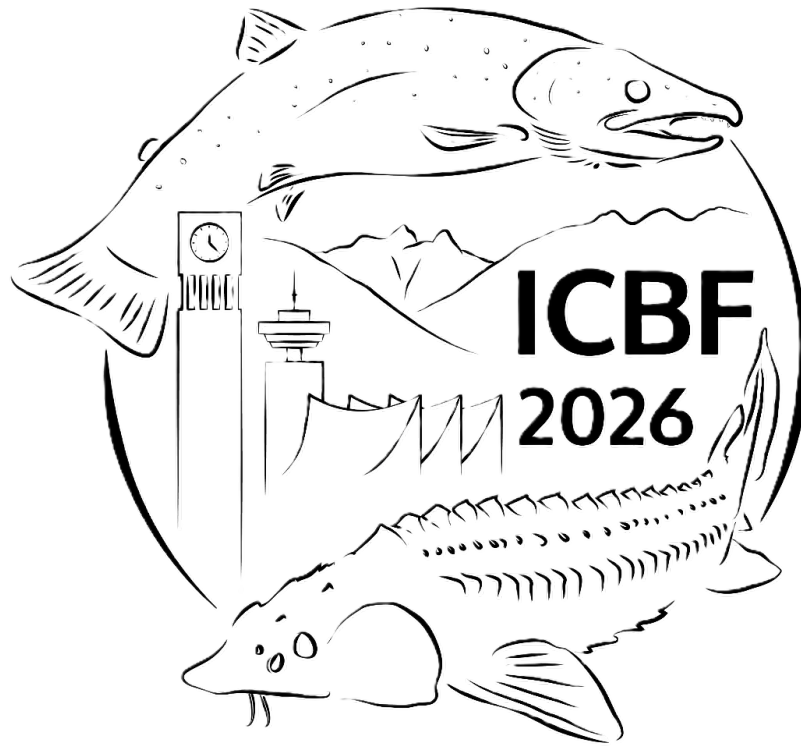




16th International Congress on the Biology of Fish 2026

University of British Columbia

July 13- 16, 2026

**Detailed Schedule for Contributed Symposia Oral Presentations and
Posters**



FINAL PROGRAM

16th International Congress on the Biology of Fish (ICBF 2026)

July 12-16, 2026

UBC Vancouver Campus

Sunday July 12	
17:30-20:30	Welcome Reception Jack Poole Hall

Monday July 13	
08:30	Welcome remarks: WOODWARD IRC 2 Co-Conference chairs: Don MacKinlay, DFO, SEP and Colin Brauner, UBC Zoology. Dean of Science: Mark MacLachlan, UBC
08:45	American Fisheries Society, Physiology Section “Award of Excellence” Introduction: WOODWARD IRC 2 Erika Eliason, AFS Physiology, President and Patricia Schulte, on behalf of The Journal of Experimental Biology, the sponsor of this years’ award.
09:00	AFS Physiology Section “Award of Excellence Lecture.” Adaptations and Acclimation to the Environment in Fishes: Integrating Basic and Applied Research: WOODWARD IRC 2 Colin Brauner, UBC Zoology
09:45	Plenary Lecture 1: From Shark Gills to Coral Reefs: Discovering Mechanisms and Developing Solutions: WOODWARD IRC 2 Martin Tresguerres, UC San Diego
10:30-11:00	BREAK: Woodward Lobby
11:00	Plenary Lecture 2: Using Mechanistic Physiology to Inform Salmon Conservation WOODWARD IRC 2 Erika Eliason, DFO Science
11:45	Plenary Lecture 3: The Importance of Mechanistic Physiology in Addressing Real-World Problems WOODWARD IRC 2 Chris Wood, UBC Zoology
12:30-14:00	LUNCH: On Own
14:00-15:30	Stress I WOODWARD IRC2 Growth WOODWARD IRC 6 Change II WOODWARD IRC 1 Ancient WOODWARD IRC 4 Motion I WOODWARD IRC 5
15:30-16:00	BREAK: Woodward Lobby
16:00-17:30	Stress I WOODWARD IRC2 Growth WOODWARD IRC 6 Change II WOODWARD IRC 1 Ancient WOODWARD IRC 4 Motion II WOODWARD IRC 5
19:30-22:00	Student and Post-Doctoral Fellow Network Mixer Koerner’s Pub

Tuesday July 14	
09:00-10:30	Stress II WOODWARD IRC2 Neuro WOODWARD IRC 6 Change I WOODWARD IRC 1 Toxicology WOODWARD IRC 4 Development WOODWARD IRC 5 Immunology WOODWARD IRC 3
10:30-11:00	BREAK Woodward Lobby
11:00-12:30	Stress II WOODWARD IRC2 Neuro WOODWARD IRC 6 Change I WOODWARD IRC 1 Toxicology WOODWARD IRC 4 Development WOODWARD IRC 5 No Session



12:30-14:00	LUNCH On Own					
14:00-15:30	Stress II WOODWARD IRC2	Neuro WOODWARD IRC 6	Change I WOODWARD IRC 1	Toxicology WOODWARD IRC 4	Development WOODWARD IRC 5	Evolution WOODWARD IRC 3
15:30-17:30	Poster Reception and "Meet the Editor: Journal of Experimental Biology"					

Wednesday July 15						
09:00-10:30	Ions I WOODWARD IRC2	Aquaculture WOODWARD IRC 6	Welfare WOODWARD IRC 1	Reproduction WOODWARD IRC 4	Advances WOODWARD IRC 5	Respiration WOODWARD IRC 3
10:30-11:00	BREAK Woodward Lobby					
11:00-12:30	Ions I WOODWARD IRC2	Aquaculture WOODWARD IRC 6	Welfare WOODWARD IRC 1	Reproduction WOODWARD IRC 4	Advances WOODWARD IRC 5	Respiration WOODWARD IRC 3
12:30-14:00	LUNCH On Own					
14:00-15:30	Ions I WOODWARD IRC2	Aquaculture WOODWARD IRC 6	Welfare WOODWARD IRC 1	Reproduction WOODWARD IRC 4	Advances WOODWARD IRC 5	Polar WOODWARD IRC 3
15:30	FREE AFTERNOON Free Admission to Beaty Biodiversity Museum (Please present your conference badge)					

Thursday July 16						
09:00-10:30	Ions II WOODWARD IRC2	Tropical WOODWARD IRC 6	Sensing WOODWARD IRC 1	Cardio WOODWARD IRC 4	Digestion WOODWARD IRC 5	Mechanism WOODWARD IRC 3
10:30-11:00	BREAK Woodward Lobby					
11:00-12:30	Ions II WOODWARD IRC2	Tropical WOODWARD IRC 6	Sensing WOODWARD IRC 1	Cardio WOODWARD IRC 4	Digestion WOODWARD IRC 5	Mechanism WOODWARD IRC 3
12:30-14:00	LUNCH On Own					
14:00-15:30	Ions II WOODWARD IRC2	Tropical WOODWARD IRC 6	Sensing WOODWARD IRC 1	Deep Blue WOODWARD IRC 4	Invasive WOODWARD IRC 5	Mechanism WOODWARD IRC 3
15:30-16:00	BREAK Woodward Lobby					
16:00-17:30	Ions II WOODWARD IRC2	Tropical WOODWARD IRC 6	Sensing WOODWARD IRC 1	Deep Blue WOODWARD IRC 4	Invasive WOODWARD IRC 5	Mechanism WOODWARD IRC 3
17:30-18:00	American Fisheries Society, Physiology Section Annual General Meeting					
18:30-22:00	Banquet Dinner Great Hall, The Nest					



Abbreviation	Symposium Name
Ancient	Ancient fishes in comparative physiology: Agnathan and chondrichthyan fishes
Aquaculture	Applying knowledge of fish biology to sustainable aquaculture
Mechanism	Bridging experimental biology and conservation: From mechanism to application
Cardio	Cardiac responses to changing environmental conditions
Growth	Current trends in growth and metabolism of fishes
Ions II	Environmental physiology of life-history transitions: A tribute to Steve McCormick
Evolution	Fish evolution in human-altered environments
Immunology	Fish immunology in a changing environment: Implications for aquaculture and conservation
Neuro	Fish integrative neurobiology in changing environments
Toxicology	Fish talks on phys tox
Reproduction	From reproductive physiology to molecular physiological ecology of fish
Change I	Integrating physiology and behaviour in a changing environment
Change II	Investigating the interrelated responses of climate, contaminants, & biodiversity loss in fishes
Ions I	Ion and acid-base regulation in fishes
Motion I	Metabolism in motion: Mechanics, physiology, and ecology of fish movement
Motion II	Physiology in motion: Linking movement, metabolism, and life history of fishes
Advances	Recent advances in fish biology and physiology (general session)
Respiration	Respiratory gas exchange and circulation: The legacy of Dave Randall
Sensing	Sensing the environment: Altered waters and changing behaviours
Stress II	Stress in fish I (regulation of HPI) and II (stress effects on physiology)
Stress I	Stress in fish: A tribute to George Iwama
Deep Blue	The deep blue sea: Probing the physiology and behaviour of large marine fishes
Digestion	The fish gut: Digestion and beyond
Polar	The physiology, biology and ecology of polar fish
Invasive	The physiology, ecology and control of invasive fish species
Tropical	Tropical fish: A tribute to Dave Randall
Welfare	Using behaviour and physiology to understand fish welfare
Development	Vulnerability and adaptations of developmental stages to global change stressors

Detailed Schedule for Contributed Symposia for Oral and Poster Presentations at ICBF 2026

Date: July 13 Monday	Room: IRC 2 (503 seats)	
Time	Title	Presenter:
8:30	Welcome to ICBF 2026 and the plenary sessions	Don MacKinlay, DFO SEP, Colin Brauner, Co-Chairs,
8:45	American Fisheries Society, Physiology section "Award of Excellence" introduction	Erika Eliason AFS Physiology President
9:00	"Award of Excellence Lecture: Adaptations and acclimation to the environment in fishes: Integrating basic and applied research	Colin Brauner UBC Zoology
9:45	From shark gills to coral reefs: Discovering mechanisms and developing solutions	Martin Tresguerres UC San Diego
10:30 – 11:00	BREAK	
11:00	Using mechanistic physiology to inform salmon conservation	Erika Eliason, DFO Science
11:45	The importance of mechanistic physiology in addressing real-world problems	Chris Wood, UBC Zoology
12:30 – 14:00	LUNCH	
	STRESS I Stress in fish: A tribute to George Iwama	Matt Vijayan, and Paige Ackerman,
14:00	Everything is connected: Stress, fish health, and the lab that shaped my career	Ackerman, Paige
14:15	Science and socials - a decade of adventures with the Iwama lab	Morgan, John
14:30	It's complicated! Incorporating environmental complexity into multiple stressor experiments	Todgham, Anne
14:45	Stress in fish or de-stress in me: Lessons learned to identify which genes are most sensitive to chemical pollutants in trout alevins.	Basu, Niladri
15:00	Is scale cortisol the long-sought biomarker for chronic stress in fishes?	Bernier, Nick
15:15	Transcriptome responses in Atlantic salmon and Chinook salmon livers following microcystin-LR exposure	Ellingson, Brandon
15:30 - 1600	BREAK	
16:00	Beneficial effects of environmental stress in fish: Integrating stress physiology with aquaculture applications	Nakano, Toshiki
16:15	Out of air again: Effects of repeated hypoxic stress on the hypoxia tolerance of brook trout	Stairs, Chandler
16:30	Operationally simple environmental RNA collection using polyester wool enables accurate detection of physiological gene expression rhythms in cultured fish	Takemura, Akihiro
16:45	Different mucosae show differential physiological responses associated to specific stressors	Tort, Lluís

17:00	The ameliorating effect of calcium on alkaline stress in fish. Claudin 14 takes the stage.	Wilson, Jonathan
17:15	Reminiscing George Iwama's influence: Extracellular heat shock protein 70 modulate stress signaling in rainbow trout	Vijayan, Matt
17:30	The physiological effects of metals: finding peace in the study of stress	McGeer, Jim
17:45	END	

Date: July 13 Monday	Room: IRC 6 (181 seats)	
Time	Title	Author(s)
12:30 – 14:00	LUNCH	
	GROWTH Current trends in growth and metabolism of fishes	Brian Small, Brian Peterson and Suraj Unniappan
14:00	How marine three-spined stickleback modulate metabolic pathways in chronic hypoxia	Negrete Jr., Benjamin
14:15	Growth reduction and aerobic metabolic changes induced by warming and hypoxia in Gulf of St. Lawrence redfish (<i>Sebastes fasciatus</i>)	Guitard, Joëlle
14:30	Towards the sustainable production of more robust and resilient European sea bass juveniles in a climate change scenario.	Gutierrez, Joaquin
14:45	Routine metabolic rate across early developmental stages of Atlantic salmon (<i>Salmo salar</i>) in relation to survival and growth	Bair, Halli
15:00	Warm and well-fed: how ration availability shapes aerobic scope and growth across temperatures in juvenile Chinook salmon	Zillig, Kenneth
15:15	Growth inhibition under high-density and brain transcriptome analysis in rainbow trout	Fujishiro, Kouyou
15:30 - 1600	BREAK	
16:00	Inflammation modulates central regulation of homeostasis in rainbow trout	Soengas, José L
16:15	Baseline electrogenic characterization of methionine transport and gut barrier function, and responses to specific anti-nutritional factors in Atlantic salmon (<i>Salmo salar</i>) and rainbow trout (<i>Oncorhynchus mykiss</i>)	Subramaniam, Marina
16:30	Central activation of chaperone-mediated autophagy reduces appetite by fine-tuning hypothalamic amino acid pools: new insights from fish	Reji, Steffi
16:45	Do household plasticizers affect taste receptors in extra-oral tissues of female zebrafish?	Naher, Nazmun

17:00	Crosstalk between the gut-brain axis and the endocannabinoid system in rainbow trout: Implications for appetite regulation	Blanco, Ayelén M.
17:15	Artificial light including blue-green wavelengths promote growth of <i>Rachycentron canadum</i> with mRNA upregulation of appetite, growth axis and lipid synthesis	Zhu, Yafan
17:30	Chronic high-fat diet intake disrupts gonadal growth and development in zebrafish	Mustapha, Umar Farouk
17:45	END	

Date: July 13 Monday	Room: IRC 1 (120 seats)	
Time	Title	Author(s)
12:30 – 14:00	LUNCH	
	CHANGE II Investigating the interrelated responses of climate, contaminants, & biodiversity loss in fishes	Tamzin Blewett and Ivan Cadonic
14:00	Environmental variability in estuaries modulates pfas exposure and early life stage development in fishes	Ackerly, Kerri Lynn
14:15	Physiological and molecular impacts of Nickel exposure during thermal acclimation in Rainbow trout	Cadonic, Ivan
14:30	Beyond bottom-up effects: suspended sediment directly suppress reef fish assemblages and herbivore functions	Schakmann, Mathias
14:45	Glacial retreat as a vector for mercury (Hg) exposure: Evidence for uptake of glacially derived Hg in a coastal food web	Nielsen, Kristin
15:00	Copper and a common cold: Understanding the immune system modulation of physiological & behavioural impacts of copper exposure in goldsinny wrasse.	Martin, Sidney
15:15	Will wildfire ash smoke the salmon? Disentangling acid-base and contaminant impacts in UK and Australian fishes	Kwan, Garfield
15:30 - 1600	BREAK	
16:00	Characteristics of drought in Amazonian-river systems: relevance to fish communities.	Johannsson, Ora
16:15	Climate vs. weather: short-term environmental change leads to altered phenotypes across generations	Martinez Bautista, Gil
16:30	Individual and cumulative effects of nylon microplastic fibres and warming temperature on threespine stickleback behavior	Hajji, Angelina Lyla
16:45	Caught in a thermal loop: Unraveling the molecular, biochemical, and whole-animal responses to diel thermal variability in zebrafish	Clow, Tanner

17:00	Stress in the waters: Physiological and morphological responses to environmental stressors in imperiled fishes from Southwestern Ontario	Dodsworth, Emily
17:15	END	

Date: July 13 Monday	Room: IRC 4 (120 seats)	
Time	Title	Author(s)
12:30 – 14:00	LUNCH	
	ANCIENT FISHES Ancient fishes in comparative physiology: Agnathan and chondrichthyan fishes	Gary Anderson, Ian Bouyoucos and Alyssa Weinrauch
14:00	Evidence for cortisol in a shark	Weinrauch, Alyssa
14:15	The latest research on spiny dogfish aquaporin gene/protein expression...	Cutler, Christopher
14:30	Dietary state influences olfactory and cardiovascular responses to odorants in North Pacific Spiny Dogfish	Edwards, Tyler
14:45	Impacts of warming on cardiac function in the temperate Pacific spiny dogfish	Folkerts, Erik
15:00	Molecular characterization of potassium channels and their osmoregulatory role in the gills of sea lamprey	Cannizzaro, Ava
15:15	Anoctamin1/TMEM16A expression in the spiny dogfish: Is one of its roles likely to be osmoregulatory?	Cutler, Christopher
15:30 - 1600	BREAK	
16:00	Effects of salinity transfer on cardiac function in the partially euryhaline North Pacific spiny dogfish	Hutton, Melody
16:15	Blueprints for survival: Genetic mechanisms underpinning physiological performance in the epaulette shark <i>Hemiscyllium ocellatum</i>	Hasenei, Aaron
16:30	An integrative approach toward quantifying physiological responses to stressors in spiny dogfish	Debaere, Shamil
16:45	How pacific hagfish survive reoxygenation following extended anoxia	Yutsyschyna, Maria
17:00	Physiological performance and stress resilience in larval sea lamprey	Wilkie, Michael
17:15	Regulatory mechanisms of selective follicle development, maturation and ovulation leading to an ovarian hierarchy in cloudy catshark	Inoue, Ryotaro
17:30	END	

Date: July 13 Monday	Room: IRC 5 (120 seats)	
Time	Title	Author(s)
12:30 – 14:00	LUNCH	
	MOTION I Metabolism in motion: Mechanics, physiology, and ecology of fish movement	Katja Anttila (Yangfan Zhang, and George Lauder)
14:00	Linking energetics, acoustic telemetry, hydrodynamics, and neurophysiology to understand wild fish behavior	Liao, James
14:15	An optimised workflow for automated multiple fish tracking in challenging experimental settings	Bellio, Martina
14:30	The effect of salinity on the hypoxia tolerance, metabolism and swimming performance of a euryhaline teleost, white perch	Nelson, Jay
14:45	Survival of the slowest? Using activity to predict climate change vulnerability of fishes	Dichiera, Angelina
15:00	Exercise training in rainbow trout: from cardiac action potential modulation to heart rate adjustments	Le, Thuy
15:15	Kinematic modulation for flow exploitation as a foundation for Locomotor energy conservation	Zhang, Yangfan
15:30 - 1600	BREAK	
	MOTION II Physiology in motion: Linking movement, metabolism, and life history of fishes	Christian Bihun and Erin Stewart
16:00	Exploring the ecological relevance of metabolism and bioenergetics for wild fishes: new technological approaches and key questions	Brownscombe, Jacob
16:15	(Continued)	
16:30	Quantifying burst swimming in sockeye salmon during their 1100km upstream migration	Birnie-Gauvin, Kim
16:45	Brook trout in hot (and hypoxic) water	Reeve, Connor
17:00	The effect of size, age and sexual maturity on acoustic tagging success in an annual, endangered fish species	Steel, Anna
17:15	Telemetry tracking and physiological sampling indicate large smolt survival differences at a fish-friendly flood pump	Lingard, Stephanie
17:30	Evaluating the "fish-friendliness" of flood pumps using Sensor Fish	Kinnard, Hollis
17:45	Investigating walleye activity with accelerometer-bearing acoustic tags in the Great Lakes	Bihun, Christian
18:00	END	

Date: July 14 Tuesday	Room: IRC 2	
Time	Title	Author(s)
	STRESS II Stress in fish I (regulation of HPI) and II (stress effects on physiology)	Luis Tort, Matt Vijayan, Nicholas Bernier and Katie Gilmour
9:00	The effects of PFAS on the stress axis in zebrafish	Gorissen, Marnix
9:15	Early life glucocorticoid overexposure primes cell-type specific stress hypersensitivity in adult zebrafish	Choi, Min-Kyeong
9:30	Interactive effects of thermal and social stress on developmental stress physiology in zebrafish	Vámos, Sofia
9:45	Nucleobindin-derived peptides cause stress in male zebrafish	Sethi, Paalki
10:00	Brain drain: applying dynamic energy budget theory to the regulation of adult neurogenesis	Alderman, Sarah
10:15	Cortisol alters the hypothalamic lipidome in rainbow trout	Antomagesh, F.
10:30 – 11:00	BREAK	
11:00	Investigating cortisol as a mediator of acute thermal tolerance in the Atlantic killifish	Flatt, Emma
11:15	Cellular thermal profiles in the mucus of wild bull trout	Lazaro-Côté, Analisa
11:30	Transcriptional profiling provides insights into how fasting affects the thermal tolerance and physiological response to acute thermal stress in lake sturgeon	Bernier, Nick
11:45	miR-140-5p as a biomarker of thermal challenges in the European seabass	Sniecinski, Elisa
12:00	Using transcriptomics to explore variation in cold stress physiology and resilience of gizzard shad to cold snaps	Waraniak, Justin
12:15		
12:30 – 14:00	LUNCH	
14:00	Leptin function in hypoxia and its implications in the adaptive stress response in tilapia	Borski, Russell
14:15	Stress endpoints in hatchery-raised striped mullet, in response to salinity challenge.	Merlo, Reilly
14:30	Sub-lethal impacts of sea lamprey parasitism on the stress responses and energy reserves of rainbow trout	Czuba, Karolina
14:45	Social history and stress adaptation: oxidative stress and mitochondrial adaptation in cichlid fish	Dijkstra, Peter
15:00	Modulation of stress responses through the diet: a natural additive to improve gilthead seabream (<i>Sparus aurata</i>) resilience during transport	Cartan, Sara
15:15	The air breathing physiology and temperature and hypoxia tolerance of the oriental weatherloach, (<i>Misgurnus anguillicaudatus</i>)	Burbules, Katherine
15:30	END	
15:30 – 19:30	POSTER SESSION	

Date: July 14 Tuesday	Room: IRC 6	
Time	Title	Author(s)
9:00	NEURO Fish integrative neurobiology in changing environments: Introduction	Martin Tresguerres, Mar Huertas and Trevor Hamilton
9:15	Resilient brains: behavioral and physiological homeostasis in highly variable environments	Hofmann, Hans
9:30	(Continued)	Hofmann, Hans
9:45	Mapping zebrafish neural activity following exposure to increased CO ₂ and temperature	Cordle, Jonathan
10:00	Characterization of environmental nitrite transport into the fish olfactory-brain axis	Restrepo, Nicole
10:15	Exposure to three levels of CO ₂ -induced freshwater acidification results in multi-tissue transcriptional and behavioural responses in medaka	Hasler, Caleb
10:30 – 11:00	BREAK	
11:00	Effects of environmental changes on the fish sense of smell: infections, pollution, and other horror stories.	Huertas, Mar
11:15	Changing environments affects neural nitric oxide pathways in fish	Moretta Urdiales, Maria Del Mar
11:30	Thermal modulation of sensory-motor integration: developmental hyperthermia and chemical alarm cues in larval zebrafish (<i>Danio rerio</i>)	Vámos, Sofia
11:45	Rising to a challenge: Identifying the mechanisms mediating 'surfacing' behaviour in zebrafish	Gilmour, Kathleen
12:00	The magic of mushrooms: Psilocybin influences behaviour in the mangrove rivulus, <i>Kryptolebias marmoratus</i>	Forsyth, Dayna
12:15	Trait stability in the open field test predicts selectively bred anxiety-like phenotypes in zebrafish	Johnson, Andréa
12:30 – 14:00	LUNCH	
14:00	Climate-driven selection on neurobiological traits: insights from population genomics	Rennison, Diana
14:15	(Continued)	Rennison, Diana
14:30	Neurogenetic mechanisms of behavioral resilience and susceptibility in larval fish within changing environments	Tatarsky, Rose
14:45	Neurobiological responses to thermal pressure in natural threespine stickleback populations	White, Matthew
15:00	Structure-function relationships of the rainbow trout visual system following environmental hypoxia	McKinley, Abigail
15:15	Teleost cerebrospinal fluid response to future ocean conditions	Kwan, Garfield
15:30 – 19:30	POSTER SESSION	

Date: July 14 Tuesday	Room: IRC 1	
Time	Title	Author(s)
	CHANGE I Integrating physiology and behaviour in a changing environment	Brad Howell, Caleb Hasler, Nann Fangue and Steve Cooke
9:00	Mechanistic conservation of wild fishes demands integration of animal physiology and behaviour	Cooke, Steven J.
9:15	Hot and bothered: behavioural and physiological responses to warming in freshwater fish	de Bonville, Jeremy
9:30	Does temperature variability change how we interpret climate resilience in a nocturnal reef shark?	Emmons, Sophia M.
9:45	Evaluating climate change resilience in wild white sturgeon populations	Earhart, Madison
10:00	Does tolerance to fast warming predict tolerance to slow warming in fishes?	Lechner, Emily
10:15	Physiological and genomic evidence of differential thermal performance in Kokanee salmon (<i>Oncorhynchus nerka</i>)	Mayer, Noa
10:30 – 11:00	BREAK	
11:00	Measuring thermal tolerance and metabolic recovery times of wild salmonids after high thermal exposures: Implications for angling policies in Atlantic Canadian river systems	Morash, Andrea
11:15	Habitat thermal variability predicts upper thermal tolerance in a coastal triplefin fish	Johnson, Sheri
11:30	Linking metabolism, physiological performance and oxygen transport in Baltic cod exposed to prolonged mild hypoxia	Husen, Magnus
11:45	No air, no action: cod hit the slow lane under hypoxia	Birnie-Gauvin, Kim
12:00	Developmental neurobehavioural toxicity of Bisphenol F in zebrafish larvae	Hasan, A K M Munzurul
12:15	Oxygen supply and demand in diel vertically migrating mesopelagic fishes (Myctophidae)	Seibel, Brad
12:30 – 14:00	LUNCH	
14:00	Biological responses of juvenile brook trout (<i>Salvelinus fontinalis</i>) to the interactive effects carbon dioxide and temperature	Bellinger, Imogen
14:15	CO ₂ induced spatial working memory impairment and recovery in medaka (<i>Oryzias latipes</i>)	Hryciw-Pang, Sage
14:30	Changing temperatures: can cool water recovery offset high temperatures for partially armored threespine stickleback native to California?	Cooper, Cassidy
14:45	Effects of live-well chilling on the physiology and behaviour of smallmouth bass	Thapar, Myra
15:00	END	
15:30 – 19:30	POSTER SESSION	

Date: July 14 Tuesday	Room: IRC 4	
Time	Title	Author(s)
	TOXICOLOGY Fish talks on phys tox	Sarah Alderman and Todd Gillis
9:00	The impacts of dietary PFOA on the reproductive behavior of male zebrafish (<i>Danio rerio</i>)	Khursigara, Alexis
9:15	Assessing lithium toxicity across a salinity gradient in coastal marine fishes	Esbaugh, Andrew
9:30	Timing is everything: Critical windows of road salt toxicity in early life stage Pacific salmonids	Kilgour, Clare L.
9:45	Impacts of road salt exposure on water hardening in coho salmon eggs (<i>Oncorhynchus kisutch</i>)	Hall, Jack
10:00	Caffeine as an emerging contaminant: behavioral and physiological effects of acute exposure in zebrafish	Chaves Morera, Victoria
10:15	Effects of chronic nitrite exposure on reproduction and maternal transfer in a live-bearing fish model (<i>Xiphophorus couchianus</i>)	Parkman, Trinity
10:30 – 11:00	BREAK	
11:00	The common pesticide azoxystrobin is toxic to the fish heart	Ruhr, Ilan
11:15	Alterations in transepithelial potential and ionoregulation in goldfish following exposure to differentially degraded microplastics in two different water chemistries	Zink, Lauren
11:30	Signals in the stream: Field-to-lab evidence of molecular and biochemical stress in fish exposed to wastewater-borne drugs of abuse	Craig, Paul
11:45	Thyroid receptor activity reporter: modelling the fundamental mechanisms of thyroid disrupting pollutants in a changing climate	Simm, Hayden
12:00	Environmental fate meets fish function: rethinking risk of sea lice chemotherapeutants in coastal salmon habitat	Kennedy, Chris
12:15	Acute impacts of wildfire ash exposure on larval Pacific coho salmon (<i>Oncorhynchus kisutch</i>) physiology and survivorship	Munro, Cole
12:30 – 14:00	LUNCH	
14:00	Cardiorespiratory alterations and arrhythmias after acute exposure to water-accommodated fraction from crude oil in juveniles of two North American fish species	Weber, Lynn
14:15	The response of Pacific salmon to diluted bitumen, working towards a lifecycle perspective	Gillis, Todd
14:30	Phenanthrene is a ubiquitous cardiac toxicant with exacerbated impacts on fish	Shiels, Holly
15:00	END	
15:30 – 19:30	POSTER SESSION	

Date: July 14 Tuesday	Room: IRC 5	
Time	Title	Author(s)
	DEVELOPMENT Vulnerability and adaptations of developmental stages to global change stressors	Jeremy Bonville, Zara-Louise Cowan and Patrice Pottier
9:00	Which fish life stage is most vulnerable to warming?	Cowan, Zara
9:15	Thermal sensitivity of metabolism across the lifespan of a fish	Clark, Timothy
9:30	Effects of temperature on three life stages of partially armored threespine stickleback	Cooper, Cassidy
9:45	Comparing thermal tolerance of adult and embryonic life stages: Is survival a good measure of tolerance?	Harman, Adam
10:00	Unifying heat tolerance assessments across fish life stages	Pottier, Patrice
10:15	Temperature-driven embryo vulnerability as a recruitment bottleneck for European smelt (<i>Osmerus eperlanus</i>) in a warming estuary	Harvey, Megan
10:30 – 11:00	BREAK	
11:00	Early life vulnerability of coregonids to warming: species and population-specific thermal tolerance across Great Lakes and inland lakes	Zillig, Kenneth
11:15	Can fish embryos acclimate to warming?	Tomás, Mafalda
11:30	Physiological effects of chronic elevated CO ₂ exposure from fertilization to yolk-sac absorption and the freshwater-to-seawater transition in pink salmon (<i>Oncorhynchus gorbuscha</i>).	Lee, Seungyeon
11:45	Assessing seaweed's potential to buffer ocean acidification in Pacific herring embryos	Chalifoux, Virginie
12:00	The effect of fluctuating hypoxia on the physiology of larval coho salmon	Osborne, Courtney
12:15	Impact of maternally transferred methylmercury on embryo development and neurobehavior in fathead minnows (<i>Pimephales promelas</i>)	Ortega-Rodriguez, Celeste
12:30 – 14:00	LUNCH	
14:00	Lasting effects of variation in developmental temperature on later-life hypoxia tolerance	Eisenberg, Rachel
14:15	Early-life stress history determines thermal tolerance in larval zebrafish	Vámos, Sofia
14:30	Plasticity of cellular and whole animal responses after embryonic thermal and hypoxic stress related to climate change and thermal pollution.	Manzon, Richard G.
14:45	END	
15:30 – 19:30	POSTER SESSION	

Date: Tuesday July 14	Room: IRC 3	
Time	Title	Author(s)
	IMMUNOLOGY Fish immunology in a changing environment: Implications for aquaculture and conservation	Mark Fast and Ensiyeh (Forough) Ghanizadeh-Kazerouni
9:00	Spatial transcriptomic analysis of gill regeneration in Atlantic salmon using Hi-Plex RNAscope	Ghanizadeh-Kazerouni, Ensiyeh (Forough)
9:15	Salmonid red blood cells act as sensors of stress and infection	Dahle, Maria
9:30	Cut it out! Functional genomics of sea lice resistance in CRISPR-edited Coho salmon	Lo, Javon
9:45	Effects of temperature on host immunity and disease severity in salmonid bacterial kidney disease	Wheatley, Taylor
10:00	Integrating Host Immunity and Environmental Surveillance to Manage PKD in Rainbow Trout Aquaculture	King Wolf, Lisa
10:15	The effect of chronic CO ₂ exposure on the growth, metabolic rate and immune response of juvenile Lake Whitefish (<i>Coregonus clupeaformis</i>)	Fajei, Eyesun
10:30 – 11:00	BREAK	
11:00	Effect of florfenicol and oxytetracycline on the expression of proinflammatory genes in SHK-1 cell line from <i>Salmo salar</i> : focus on histone acetylation	Morera, Francisco J.
11:15	END	
12:30 – 14:00	LUNCH	
	EVOLUTION Fish evolution in human-altered environments	Andrew Whitehead
14:00	Evolutionary rescue from climate warming - insights from two artificial selection experiments	Jutfelt, Fredrik
14:15	Making sense of a hot mess: How larval fish may evolve in a warming, but variable ocean	Johnson, Darren
14:30	The ecology of gene expression in response to temperature in threespine stickleback	Rogers, Sean
14:45	The presence of domesticated alleles reduces survival and influences the phenotypes of rainbow trout in a semi-natural environment.	Schulte, Patricia
15:00	Evolved transcriptomic responses to multiple pollutant classes in Atlantic killifish	Rios, Carolina
15:15	Evidence of evolutionary adaptation following a series of environmental and demographic disasters in Pacific herring	Whitehead, Andrew
15:30	END	
15:30 – 19:30	POSTER SESSION	

Date: Wednesday July 15	Room: IRC 2	
Time	Title	Author(s)
	IONS I Ion and acid-base regulation in fishes	Greg Goss, Colin Brauner and Steve McCormick
9:00	Differential gene expression analysis of zebrafish gills from fish exposed to low pH, low ionic strength waters	Goss, Greg
9:15	What are the ecophysiological implications of periodic acidification of riverine systems?	Zimmer, Alex
9:30	Gill methylome shifts across multigenerational acidification in marine medaka	Tseng, Yung-Che
9:45	Linking molecular transport processes to acid–base regulation strategies in fishes	Shartau, Ryan
10:00	Distinct acid-base regulatory strategies in teleosts and elasmobranchs under ocean acidification	Chuang, Hsin-Ju
10:15	Characterizing bicarbonate transporters and their osmoregulatory roles in the Sea Lamprey intestine	Flowers, Dillon
10:30 – 11:00	BREAK	
11:00	Up-regulation of Fgf23 contributes to kidney stone formation in <i>stc1a</i> ^{-/-} mutant fish	Aburatani, Naotaka
11:15	Gill remodelling and increased Rh glycoprotein abundance enhance postprandial ammonia excretion by blood-feeding parasitic juvenile sea lamprey	Wilkie, Michael
11:30	Possible ammonia removal mechanism in the seahorse brood pouch revealed by rhesus glycoprotein expression and localization	Kawaguchi, Mari
11:45	Integrating gene expression, eQTL, and population genomic variation to reveal molecular adaptation in prickly sculpin (<i>Cottus asper</i>) across British Columbia	Liu, Shuang
12:00	Salinity and sex dependent ionoregulatory mechanisms in reproductively active <i>Fundulus heteroclitus</i>	Diakanastasis, Eleni
12:15	Hormonal control of determinants of hydromineral balance in gill and intestine of Atlantic killifish	Tipsmark, Christian
12:30 – 14:00	LUNCH	
14:00	Prolactin, cortisol, and extracellular osmolality regulate <i>cfr</i> , <i>ostf1</i> , and <i>sgk1</i> in tilapia ionocytes	Breves, Jason
14:15	Functional organization of ion transport in the trunk skin of European seabass (<i>Dicentrarchus labrax</i>): Evidence of an apical localization of Na ⁺ /K ⁺ -ATPase	Sundh, Henrik
14:30	Photoperiod- and salinity-dependent transcriptional regulation of renal CaSR and calcium transporters supports calcium homeostasis during seawater acclimation in Atlantic salmon	Takvam, Marius

14:45	Impact of commercial feed mineral load on urine composition and transcriptional regulation of divalent ion transporters in Atlantic salmon kidney	Denker, Elsa
15:00	The calcium binding protein S100a11 regulates zebrafish ionocyte quiescence–proliferation balance	Shih, Shang-Wu
15:15	END	
15:30	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Wednesday July 15	Room: IRC 6	
Time	Title	Author(s)
	AQUACULTURE Applying knowledge of fish biology to sustainable aquaculture	Andrea Frommel and Tillmann Benfey
9:00	Impact of intergenerational enrichment on juvenile westslope cutthroat trout methylome and phenotypic traits	Firth, Britney
9:15	Balancing natural and artificial selection in captive rearing programs	Maynard, Desmond
9:30	Comparative analysis of skin and gut microbiome dynamics in wild versus farmed Atlantic salmon smolts	Tang, Patrik Anthony
9:45	Developments in fish swimming technology for high-volume aquaculture systems	Herbert, Neill
10:00	Development of a gut dysbiosis assay for chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Vandersteen, Wendy
10:15	Joint morphological and DNA metabarcoding gut content analysis reveals adult body size but not biological sex as factors influencing dietary composition divergence in multiple populations of cunner wrasse (<i>Tautoglabrus adspersus</i>).	Bender, Chris
10:30 – 11:00	BREAK	
11:00	Farmed sea lettuce (<i>Ulva fenestrata</i>) as a promising ingredient for rainbow trout (<i>Oncorhynchus mykiss</i>)	Andersson, Marica
11:15	Dietary and environmental interventions to optimize growth, stress, and reproductive outcomes in cultured longfin yellowtail, <i>Seriola rivoliana</i>	Chang, Ryan
11:30	Fasting reduces intestinal tissue mass and transport capacity in salmonids	de Fonseca, Raneesha
11:45	Use of alternative insect feed ingredients in sustainable wolf eel aquaculture	Dykstra, Jeremy
12:00	Enhancing growth, coloration, and fitness of koi (<i>Cyprinus rubrofuscus</i>) with purple bacteria	Opinion, April Grace
12:15	Insect-based diets modulate welfare, health, and gut microbiome functions in farmed Atlantic salmon	Tang, Patrik Anthony
12:30 – 14:00	LUNCH	

14:00	Effects of exercise training on cardiac morphology of rainbow trout	Anttila, Katja
14:15	Osmorespiratory compromise in triploid (sterile) salmonids	Benfey, Tillmann
14:30	Temperature and ploidy effect on red blood cell physiology in brook charr (<i>Salvelinus fontinalis</i>)	Virag, Victoria
14:45	Effect of environmental variation on the regulation of skin barrier function in rainbow trout in aquaculture	von Ehr, Michelle
15:00	Nephrocalcinosis in a jar: a multi-factor in vitro model of CO ₂ induced nephrocalcinosis	Emadi, Cameron
15:15	Set in stone: The effect of diet and carbon dioxide on nephrocalcinosis development	Mullins, Julia
15:30	Microbiome effects of fulvic and humic acid diets and baths	Niemann, Benjamin
15:45	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Wednesday July 15	Room: IRC 1	
Time	Title	Author(s)
	WELFARE Using behaviour and physiology to understand fish welfare	Katherine Sloman and Lynne Sneddon
9:00	Melanin-based skin pigmentation as an indicator of stress and welfare in Atlantic salmon (<i>Salmo salar</i>)	Gunnes, Mikkel
9:15	A fluttering heart: Use of biologgers during behavioural stress tests in rainbow trout	Sneddon, Lynne
9:30	From signals to states: biollogger-based classification of seabass welfare states in sea-cages	Hoyo-Alvarez, Esther
9:45	Behavioural and neurophysiological evidence for exercise choice as a welfare intervention in salmonids (<i>Salmo salar</i> and <i>Oncorhynchus mykiss</i>)	Bellio, Martina
10:00	Enrichment and aggression in fishes: implications for animal welfare	Dijkstra, Peter
10:15	Why “stress” no longer serves us: retiring an ambiguous term to advance fish welfare	Currie, Suzie
10:30 – 11:00	BREAK	
11:00	Effect of fishing stress on reproductive output of wild cod	Jacson, Lea
11:15	Turbine design shapes fish welfare: acute injury, mortality, and sublethal growth effects in juvenile white sturgeon	Zillig, Kenneth
11:30	Time-dependent effects of structural environmental enrichment on cognition and stress responses on juvenile European seabass	Rodríguez López, Noelia
11:45	Bringing together physiology, behavior, and cognition to understand the effect of environmental enrichment on positive welfare of farmed fish	Pettinau, Luca

12:00	The key importance of behavior and physiology to better understand fish welfare and resilience in aquaculture scenarios	Gesto, Manuel
12:15	Disruption of the endocannabinoid system during gastrulation produces long-term behavioral and reproductive deficits in zebrafish.	Khan, MD Hasanuzzaman
12:30 – 14:00	LUNCH	
14:00	Density and aggression in zebrafish: Resource Defense Theory explains conflicting results	Oldfield, Ronald
14:15	Improving the stress response and welfare of Nile tilapia, <i>Oreochromis niloticus</i> (Linnaeus, 1758) through environmental enrichment	Campang, Joseph
14:30	From behavior to biomass: early enrichment enhances trout welfare and performance	Jonassen, Ane
14:45	Enrichment, emotions and fish welfare - integrating behavioural measures to provide better fish care	Rose, Paul
15:00	Stress coping, allostasis, and the welfare of fish in aquaculture	Øverli, Øyvind
15:15	Improving fish welfare in the ornamental trade	Sloman, Katherine
15:30	Stunning challenges: Operational indicators flag failures, but neurological validation is needed to confirm stunning effectiveness in seabass and seabream	Saraiva, Joao
15:45	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Wednesday July 15	Room: IRC 4	
Time	Title	Author(s)
9:00	REPRODUCTION From reproductive physiology to molecular physiological ecology of fish: A tribute symposium to Rick Goetz	Josep Planas, Julien Bobe and Simon MacKenzie
9:15	Assessing heritable phenotypic variation in lake charr ecomorphs of Lake Superior	Goetz, Rick
9:30	Linking molecular responses to population consequences: differential effects of sea lamprey parasitism in siscowet and lean lake trout	Murphy, Cheryl
9:45	Gene presence-absence variation and DNA methylation landscapes underlying ecotype divergence in lake trout	Roberts, Steven
10:00	Phenotypic and genotypic variability of Lake Char sharing the same spawning reef complex	Euclide, Peter
10:15	Genomic evidence supporting panmixia of Pacific halibut in the Northeast Pacific Ocean	Jasonowicz, Andy
10:30 – 11:00	BREAK	
11:00	The influence of sea lamprey parasitism on Lake Charr reproductive physiology	Firkus, Tyler

11:15	Prostaglandin F2a is metabolized in taxon-specific manners demonstrating that this lipid may commonly serve as a precursor for species-specific spawning pheromones in ovulated fishes	Sorensen, Peter
11:30	Circulating microRNAs reveal egg-brain crosstalk and a brain-specific microRNA linked to the onset of the next reproductive cycle in iteroparous salmonids	Bobe, Julien
11:45	Mediating role of thyroid hormone in the regulation of temperature-induced changes in early gonadal differentiation in zebrafish	Taylor, Nurulain
12:00	The integrated role of arginine vasotocin in zebrafish spermatogenesis	Habibi, Hamid R
12:15	The reproductive biology of female Pacific halibut, a key species in the North Pacific Ocean	Planas, Josep V.
12:30 – 14:00	LUNCH	
14:00	A tale of rainbow trout myostatin – an unconventional journey	Biga, Peggy
14:15	From bacterial lipopolysaccharides to behavioural fever in fish; 3 decades of impactful collaborative research with Rick Goetz	MacKenzie, Simon
14:30	Closing remarks	Planas, Josep, Bobe, Julien, MacKenzie, Simon
15:00	END	
15:30	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Wednesday July 15	Room: IRC5	
Time	Title	Author(s)
	ADVANCES Recent advances in fish biology and physiology (general session)	Adam Harman and Ben Negrete Jr.
9:00	Get your hands wet! Developing high-impact laboratory exercises for undergraduate fish physiology courses.	Myrick, Christopher
9:15	Internal heating rates do not directly reflect water temperature in rainbow trout during CTmax trials	Sutherland, James
9:30	Growth, sexual maturation, and adult body size are linked with the ontogenetic development of aerobic metabolic scope in fish	Norin, Tommy
9:45	Open-source modular respirometry platform for measuring metabolic rate in fishes: PumpResp, SensResp, and SwimResp	Morozov, Sergey
10:00	Effects of warm exposure on swimming performance and aerobic metabolic capacity in juvenile Yukon River Chinook salmon	Snyder, Augustus

10:15	Changes to group dynamics reflect changes in individual behaviour under thermal stress in a model fish species	Tiddy, Izzy C
10:30 – 11:00	BREAK	
11:00	Does the rate of temperature change affect thermal plasticity in fishes?	Welsh, Emily
11:15	Modeling 125 years of spatial and temporal variability in climate and fish assemblages of temperate inland lakes	Lucas, Kelsey
11:30	Application of environmental RNA in the ecophysiological studies of fish	Wong, Marty Kwok-Shing
11:45	Impacts of body size and parasite load on the preferred temperature and avoidance temperatures of the diadromous fish <i>Galaxias maculatus</i>	Gradito, Maryane
12:00	The influence of food availability on metabolic thermal plasticity in overwintering brook char (<i>Salvelinus fontinalis</i>)	Hartenstein, Peyton
12:15	The impact of environmental conditions on Atlantic sturgeon (<i>Acipenser oxyrinchus oxyrinchus</i>) habitat use	Gonzalez, Kelly
12:30 – 14:00	LUNCH	
14:00	Oxygen uptake of rainbow trout during acute warming: effects of oxygen supersaturation and aerobic exercise	Bellinger, Imogen
14:15	Effects of experimental infections on host metabolism and oxidative damage in naïve and experienced populations of pumpkinseed sunfish (<i>Lepomis gibbosus</i>)	Mélançon, Vincent
14:30	Abiotic and biotic drivers of declining flounder abundance, distribution, and condition	Zavell, Max
14:45	END	
15:30	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Wednesday July 15	Room: IRC 3	
Time	Title	Author(s)
	RESPIRATION Respiratory gas exchange and circulation: The legacy of Dave Randall	Danielle McDonald and Alex Zimmer
9:00	Notes on my travels with Dave	Iwama, George
9:15	Insights from 'omics about anoxic crucian carp	Lefevre, Sjannie
9:30	Comparative red blood cell physiology: Uncovering novel cellular mechanisms to understand the impact of climate change on fishes	Harter, Till
9:45	Trading athleticism for hypoxia tolerance: Ontogenetic reorganisation of oxygen transport in coral reef fishes	Rummer, Jodie
10:00	Importance of blood (tissue) oxygen extraction to the environmental tolerances of fishes	Gamperl, Anthony
10:15	Evolution of respiratory tolerance to suspended sediment in freshwater fishes	Koseck, Benjamin
10:30 – 11:00	BREAK	

11:00	Respiratory physiology in the era of climate change	Esbaugh, Andrew
11:15	Interactive effects of temperature and deoxygenation on the acclimation capacity of Atlantic croaker	Hancock, Grace
11:30	Legacy effects of fishing on the climate resilience of fish	Goodrich, Harriet
11:45	To boldly go... to the surface: linking use of aquatic surface respiration to personality and hypoxia tolerance in zebrafish	Flear, Kaitlyn
12:00	When do plecospirans breathe air? developmental emergence and environmental drivers of aerial respiration in <i>ancistrus cirrhosis</i>	Dzialowski, Edward
12:15	Zebrafish biology: ignore sex at your peril	Burggren, Warren
12:30 – 14:00	LUNCH	
	POLAR The physiology, biology and ecology of polar fish	Pedro Guerreiro and Luis Vargas-Chacoff
14:00	Temperature sensing channels in Arctic gadids	York, Julia
14:15	Assessing fish community structure beneath the perennial ice-covered McMurdo Sound, Antarctica by environmental DNA metagenomics	Kim, Jinmu
14:30	Short-term resilience with hidden costs: physiological and molecular responses of juvenile <i>Notothenia rossii</i> to simulated marine heatwaves	Guerreiro, Pedro M
14:45	Photoperiod–temperature mismatch has impacts on feeding, metabolism, and thermal tolerance in the Antarctic spiny plunderfish <i>Harpagifer antarcticus</i>	Guerreiro, Pedro M
15:00	Impact of microplastic PVC and thermal stress on fish microbiomes and cellular stress genes in Antarctic and sub-Antarctic fish	Nualart Carrasco, Daniela Paz
15:15	Antarctic fish as a novel source for age-related disease therapeutics: KOPRI's bioprospecting initiative	Kim, Jin-Hyoung
15:30	END	
15:30	FREE AFTERNOON (MUSEUM EXCURSIONS)	

Date: Thursday July 16	Room: IRC 2	
Time	Title	Author(s)
9:00	IONS II Environmental physiology of life-history transitions: A tribute to Steve McCormick: Introduction	Ciaran Shaughnessy, Jill Leonard and Jason Breves
9:15	The light-pituitary TSH/brain DIO ₂ /T ₃ pathway for stimulating plasma GH and smoltification in juvenile Atlantic salmon	Björnsson, Björn Thrandur
9:30	Regulatory Plasticity of New Salmonid Na ⁺ /K ⁺ -ATPase α -subunit Paralogs and Functional Compensation in nka α 1b1/b2 Crispants	Nilsen, Tom Ole

9:45	Comparative transcriptomics of three Atlantic salmon (<i>Salmo salar</i>) stocks sampled at West Greenland	Ellingson, Brandon
10:00	The Intestinal “Saga” started with Steve! or What is happening in the intestine during the parr-smolt transformation	Sundell, Kristina Snuttan
10:15	Prolactin promotes putative pathways for Cl ⁻ absorption in Atlantic salmon ionocytes	Breves, Jason
10:30 – 11:00	BREAK	
11:00	Endocrine coordination of appetite and reproductive migration by dual ghrelin receptors in the Japanese eel	Tsukada, Takehiro
11:15	Stress and growth – is myostatin a link between these two?	Biga, Peggy
11:30	Metabolic reprogramming in zebrafish: an obesity model platform for bioactive extract bioprospecting.	Ferreira-Martins, Diogo
11:45	Thermal tolerance in chinook salmon varies with life-history and smoltification	Metzger, David
12:00	Acclimation to high salinity confers cross-tolerance to acute heat stress in <i>Fundulus heteroclitus</i>	Monette, Michelle
12:15	Photoperiod is controlling the Thyroid axis in the Antarctic fish <i>Harpagifer antarcticus</i>	Vargas-Chacoff, Luis
12:30 – 14:00	LUNCH	
14:00	Interrelations of the growth hormone/insulin-like growth factor system and somatostatin associated with seawater adaptation of euryhaline fish	Sheridan, Mark
14:15	Prolactin signaling in the highly osmotolerant Mozambique tilapia, <i>Oreochromis mossambicus</i>	Seale, Andre
14:30	Life-history divergence in renal glomerular morphology of Alewife (<i>Alosa pseudoharengus</i>)	Schultz, Eric T.
14:45	Leftovers from fish physiology in osmoregulation: a mechanism of the primary environmental cue inducing drinking in seawater, revisited	Sakamoto, Tatsuya
15:00	Ontogeny of salinity tolerance and ionoregulatory plasticity in mummichog (<i>Fundulus heteroclitus</i>)	Berthelot, Evan
15:15	Functional classification of gill ionocytes in Pacific and Atlantic salmonids	Hiroi, Junya
15:30 - 1600	BREAK	
16:00	There and back again ... almost: tales of an anadromous fish researcher	Shrimpton, Mark
16:15	Ready and swimming: ontogenetic changes preceding emigration in juvenile Alewife (<i>Alosa pseudoharengus</i>)	Schultz, Eric T.
16:30	The genomic underpinnings of adaptation to freshwater in multiple, independently derived populations of landlocked alewife	Velotta, Jonathan
16:45	An increased thyroid hormone apparatus in the brain of chum salmon during smoltification	Wong, Marty Kwok-Shing

17:00	Transcriptomic remodeling of gill ion transport and respiratory mechanisms during metamorphosis in sea lamprey	Shaughnessy, Ciaran
17:15	END	

Date: Thursday July 16	Room: IRC 6	
Time	Title	Author(s)
	TROPICAL Tropical fish: A tribute to Dave Randall	Adalberto Val and Vera Almeida-Val
9:00	Life at the Edge: David Randall's Alpha Helix Legacy in the Amazon	Val, Adalberto
9:15	The tambaqui (<i>Colossoma macropomum</i>), a model neotropical species in fish physiology and toxicology	Wood, Chris
9:30	Variability and diversity: key factors in freshwater fish adaptation	Almeida-Val, Vera Maria Fonseca de
9:45	Current knowledge of lunar synchronized spawning in fish	Fukunaga, Kodai
10:00	External factors influencing air breathing behaviour of a facultative, gut air breathing fish, <i>Panaque maccus</i>	Nelson, Jay
10:15	Tracking tetra transport: how do conditions change for a popular ornamental fish in Brazil?	Addison Marcos, Alexander
10:30 – 11:00	BREAK	
11:00	Microplastic contamination in fish digestive tracts from the Rio Negro and Rio Solimões during an extreme low-water period	Tuvikene, Arvo
11:15	Altered temperature and pH modify key biomarker responses to gasoline exposure in a Neotropical fish	Dal Pont, Giorgi
11:30	Climate-change stress reshapes mRNA-miRNA regulatory networks in the Amazonian fish <i>Apistogramma agassizii</i>	Heinrichs-Caldas, Waldir
11:45	Developing thermal death time models from CTmax data to assess thermal tolerance in <i>Colossoma macropomum</i>	Moura, Lucas
12:00	Behavioural and physiological selection in a tropical ornamental fishery: Evidence from Amazonian species	Pineda, Mar
12:15	Physiological plasticity of tropical coral reef fishes during an extreme marine heatwave on the Great Barrier Reef	Rummer, Jodie
12:30 – 14:00	LUNCH	
14:00	It's O ² K ⁺ - a role for potassium in ion regulation for fish living in the acidic waters of the Rio Negro.	Goss, Greg
14:15	The air breathing physiology and temperature and hypoxia tolerance of the oriental weatherloach (<i>Misgurnus anguillicaudatus</i>)	Burggren, Warren
14:30	Rapid transformation in respiratory performance of coral reef fish larvae settling on a reef	Nilsson, Göran
14:45	Aerial and aquatic oxygen uptake during recovery from exercise and air exposure in <i>Arapaima gigas</i>	Pelster, Bernd

15:00	Chronic climate stress drives gill remodeling and energetic demand in Amazonian fish	Braz-Mota, Susana
15:15	Overcoming DNA degradation in passive eDNA sampling for ichthyofauna monitoring through optimized filter selection and short-fragment markers	Dal Pont, Giorgi
15:30 - 1600	BREAK	
16:00	Validation of environmental DNA metabarcoding for seasonal fish monitoring in the São Salvador reservoir: Identifying hidden biodiversity in the Tocantins River, Brazil	Dal Pont, Giorgi
16:15	Is there reversibility in the expression of microRNAs in <i>Colossoma macropomum</i> exposed to an extreme climate change scenario?	Sanches, Carlos Eduardo da Silva
16:30	END	

Date: Thursday July 16	Room: IRC 1	
Time	Title	Author(s)
	SENSING Sensing the environment: Altered waters and changing behaviours	Tyler Buchinger, Andy Dittman and Keith Tierney
9:00	Tuning out the noise: the role of habituation to underwater sound in freshwater fishes	Beneteau, Gabrielle
9:15	Polystyrene nanoplastics damage lateral-line neuromasts and impair flow-guided behaviors across zebrafish life stages	Gong, Chenxin
9:30	Does hypoxia impair vision in coral reef fish?	Morgan, Rachael
9:45	Cholinergic mucocytes evaluated as candidates for O ₂ sensors in rainbow trout gills	Brink, Deidre
10:00	Do group dynamics shape how fish sense and respond to warming temperatures?	Mercer, Jacob
10:15	Transient loss of olfaction in brown trout (<i>Salmo trutta</i>) following exposure to dissolved organic carbon: Behavioural, physiological, and cellular responses	Zink, Lauren
10:30 – 11:00	BREAK	
11:00	Escaping from danger: Neural mechanisms underlying olfactory aversive behaviours in zebrafish	Yoshihara, Yoshihiro
11:15	Pheromone behavioral antagonists reduce invasive sea lamprey spawning activity in a natural stream during 24-hour trials	Scott, Anne
11:30	Neural and sensory bases of social behavior in African cichlids: from mate choice to parental care	Li, Cheng-Yu
11:45	Pheromonal communication mediating courtship behaviour in zebrafish (<i>Danio rerio</i>) is impaired by environmentally relevant total ammonia nitrogen (TAN) concentrations	Rahman, Emir

12:00	Mechanisms of Neuropeptide Y (NPY) mediated modulation of olfactory sensory neurons in fed and fasted lake sturgeon (<i>Acipenser fulvescens</i>)	Edwards, Tyler
12:15	Impacts of early rearing substrate on the olfactory system development and function in chum salmon (<i>Oncorhynchus keta</i>)	Sevova, Ralitzia
12:30 – 14:00	LUNCH	
14:00	Ocean acidification disrupts olfactory signal transduction and receptor structure in the large yellow croaker	Shi, Wei
14:15	Evidence of wildfire-driven differential gene expression in juvenile steelhead olfactory epithelium	Abbott, Morgan M.
14:30	Behavioral responses of cisco (<i>Coregonus artedii</i>) to putative imprinted odors and conspecific odors	Gill, Hannah
14:45	Transcriptional responses of the olfactory system of Pacific salmon to aquatic acidification	Bouyoucos, Ian
15:00	Impact of CO ₂ on Pacific salmon olfaction during key imprinting periods	Reich, Eric
15:30 - 1600	BREAK	
16:00	Fixing an absence of evidence in chemosensory landscaping	Tierney, Keith
16:15	Changes in odorant receptor gene expression in naturally migrating adult Chinook salmon exposed to amino acid odorants as embryos.	Dittman, Andrew
16:30	END	

Date: Thursday July 16	Room: IRC 4	
Time	Title	Author(s)
	CARDIO Cardiac responses to changing environmental conditions	Todd Gillis and Erika Eliason
9:00	Myocardial contraction kinetics and performance underlie differences in cardiac pumping and metabolic capacity between tropical fish species	Gamperl, Anthony
9:15	Thermal stress and Lake Sturgeon cardiac cellular function: an electrophysiological study.	Folkerts, Erik
9:30	Embryonic temperature leaves lasting effects on cardiac phenotype in Atlantic salmon (<i>Salmo salar</i>)	Johansen, Ida
9:45	The role of cardiac remodelling in the acclimation of embryonic and juvenile Sheepshead minnow (<i>Cyprinodon variegatus</i>) to sub-optimal temperatures during embryonic development.	Harman, Adam
10:00	The molecular regulation of cardiac remodeling in trout (<i>Oncorhynchus mykiss</i>) caused by thermal acclimation and/or a high salt diet	Robinson, Sean

10:15	Structural cardiac plasticity in Atlantic bluefin tuna (<i>Thunnus thynnus</i>) under aquaculture and thermal regimes	Wierer, Amelie
10:30 – 11:00	BREAK	
11:00	Seasonal patterns in the cardiac temperature sensitivity of northern fishes	Williams, Emily
11:15	Egg size impacts embryonic cardiac thermal performance and growth in Atlantic salmon (<i>Salmo salar</i>)	Morefield, Robert
11:30	Chronic stress induced cardiac remodeling, depleted energy reserves, and reduced swimming performance of Atlantic Salmon	Opinion, April Grace
11:45	Acclimation to mild static and cyclic hypoxia reduces cardiac thermal tolerance in brook char (<i>Salvelinus fontinalis</i>); potential contribution of novel lactoylated amino acids	MacCormack, Tyson
12:00	Anaerobic metabolism and acidosis: supporting heart function in anoxic pacific hagfish (<i>Eptatretus stoutii</i>)	Yutsyschyna, Maria
12:15	Swimming performance of hagfish in hypoxia	Shaftoe, Jared
12:30 – 14:00	LUNCH	
	DEEP BLUE The deep blue sea: Probing the physiology and behaviour of large marine fishes	David McKenzie and Holly Shiels
14:00	Tracking the physiology pelagic fish from the lab to the blue Serengeti	Block, Barbara
14:15	(Continued)	Block, Barbara
14:30	Natural isotope tracer-based estimation of field metabolic rates of wild pelagic fishes: approaches, applications and challenges	Trueman, Clive
14:45	(Continued)	Trueman, Clive
15:00	Effects of body size on spontaneous swimming activity and energetics in Atlantic bluefin tuna	Thambithurai, Davide
15:15	Atlantic bluefin tuna recovery from catch-and-release	Birnie-Gauvin, Kim
15:30 - 1600	BREAK	
16:00	Mesothermic fishes face high fuel demands and overheating risk in warming oceans	Payne, Nicholas
16:15	Fine-scale spawning dynamics of Atlantic bluefin tuna	Cortese, Daphne
16:30	Effects of seasonal temperatures on cardiac and swimming activity in Atlantic bluefin tuna	McKenzie, David J.
16:45	Body size relationships in cardiac morphology and electrocardiographic intervals of Atlantic Bluefin tuna	Bjarnason, Asgeir
17:00	Thermal sensitivity of cardiac function in the Greenland Shark	Shiels, Holly
17:15	(Continued)	Shiels, Holly
17:30	END	

Date: Thursday July 16	Room: IRC 5	
Time	Title	Author(s)
	DIGESTION The fish gut: Digestion and beyond	Patricia Ferreira and Jonathan Wilson
9:00	Genomic foundations of the vertebrate stomach	Castro, Filipe
9:15	(Continued)	Castro, Filipe
9:30	Food for thought: The role of serotonin in mediating energy metabolism via the gut	Gomes Ferreira, Patricia
9:45	Structural support or functional necessity: Evaluating the importance of the gastric proton pump β -subunit in gastric function using gene knockout.	Seguin, Aiden
10:00	Thermal plasticity of intestinal function in satiated and starved European seabass	Ruhr, Ilan
10:15	Convergent gene losses and pseudogenizations in stomachless fishes	Kato, Akira
10:30 – 11:00	BREAK	
11:00	Digestive enzyme activities in prickleback fishes (Stichaeidae) appear to be driven by gene expression	German, Donovan
11:15	Integrating transcriptomics, qPCR and electrophysiology to assess intestinal adaptation to plant-based diets in Greater Amberjack	Fuentes, Juan
11:30	Secondary bile acids impact rainbow trout homeostasis through modulation of feeding and metabolism	Soengas, José L
11:45	Gastrointestinal nitrogen metabolism in a voracious predator: studying one or studying millions?	Wood, Chris
12:00	Multigenerational gut-brain axis remodeling in marine medaka under chronic hypercapnia	Liu, Tzu-Yen
12:15	Specific dynamic action and other related inconveniences	Goodrich, Harriet
12:30 – 14:00	LUNCH	
	INVASIVE The physiology, ecology and control of invasive fish species	Mike Wilkie and Pedro Guerreiro
14:00	A rainbow trout's guide to recovering from sea lamprey parasitism	Alderman, Sarah
14:15	A potential strategy to offset the greater tolerance of invasive sea lamprey to the lampricide, TFM, in warmer waters	Zhao, Zhijun (Tim)
14:30	Can rock ramp fishways exclude juvenile Common Carp while allowing passage of native fishes?	Myrick, Christopher
14:45	Fine scale response of invasive carp and native fish to an acoustic deterrent at a large riverine lock	Albers, Janice
15:00	Redds, carcasses, and contaminants: ecological impacts of invasive Chinook salmon in South American rivers	Fierro, Pablo
15:15	Born to survive: Movement ecology of invasive round goby during early life stages	Zarini, Sina

15:30 - 1600	BREAK	
16:00	Can biotic resistance to invasions come from behavioural competition? – a case study of gobies from the north east Atlantic	Green, Leon
16:15	Thermal plasticity with physiological trade-offs in the invasive cichlid <i>Australoheros facetus</i> under warming scenarios in Mediterranean-type rivers	Guerreiro, Pedro M
16:30	END	

Date: Thursday July 16	Room: IRC 3	
Time	Title	Author(s)
	MECHANISMS Bridging experimental biology and conservation: From mechanism to application	Heather Bauer Reid, Vincent Mélançon, Sandra Ann Binning, Mar Pineda and Leon Tran
9:00	Oxygen limitation decreases the recovery potential of exploited fish populations; the case of Baltic cod	Behrens, Jane
9:15	(Continued)	Behrens, Jane
9:30	Developmental acclimation to local thermal environments shapes physiological and hormonal warming responses in anemone-associated reef fish	Bauer Reid, Heather
9:45	Projecting habitat suitability for the convict tang (<i>Acanthurus triostegus</i>) in Hawai'i under future ocean conditions using physiology-based models	Tran, Leon
10:00	Seasonal thermal tolerance, growth and acclimation capacity in newly settled European plaice (<i>Pleuronectes platessa</i>) from Swedish coastal nursery habitats	Tamarit Castro, Elena
10:15	Impact of food restriction on the thermal tolerance and recovery rate of a differently acclimated endangered freshwater fish	Levet, Marie
10:30 – 11:00	BREAK	
11:00	Microplastics in riverine fishes – from the river to the lab – and back to the river	Shiels, Holly
11:15	(Continued)	Shiels, Holly
11:30	Acute shifts in water chemistry during stocking influence nutrient absorption by young-of-year lake sturgeon	Genz, Janet
11:45	Endurance swimming tests to inform entrainment risk	Hannan, Kelly
12:00	Physiology, movement, and ecology, oh my! Applying scientific insights to monitor fish at Site C Dam	Pleizier, Naomi
12:15	Age is just a number? Exploring the effects of establishment times on fish stress in marine protected areas.	Beach, Riley
12:30 – 14:00	LUNCH	
14:00	Bridging physiology and conservation science to promote the recovery of at risk salmonids	Enders, Eva

14:15	(Continued)	Enders, Eva
14:30	Molecular detections of food deprivation in juvenile chinook salmon: from lab development to field application	Bugg, William
14:45	Tracking road salt contamination through community monitoring: Surface water chloride trends in Vancouver streams, and the implications for local salmonids.	Kilgour, Clare
15:00	Thermal adaptation in freshwater stream fishes	Stanton, Olivia
15:15	Performance, plasticity, and resilience to warming in diverse populations of brook trout	Stewart, Erin
15:30 - 1600	BREAK	
16:00	Acclimation temperature reverses warming-rate effects on upper thermal limits in zebrafish	Ern, Rasmus
16:15	Investigating transcriptomic signatures to isolate a cold shock signal from impingement stress in yellow perch	Thapar, Myra
16:30	Minimally invasive sampling for transcriptional profiling to monitor acute stress and recovery in rainbow trout	Jeffries, Ken
16:45	Leveraging empirical science, agent-based modeling, and model sensitivity testing to make informed management decisions that support fish migration in data-poor systems	Dressler, Terra
17:00	Twenty years on ice: early-life performance following long-term milt cryopreservation in rainbow trout	Kostelnik, Mageleate
17:15	END	

POSTERS ICBF 2026

Poster #	Session Proposal Title	Presenter
Ancient fishes in comparative physiology: Agnathan and chondrichthyan fishes		
1	Sharks, steroids, and symbiosis? An investigation into the biosynthetic pathway of 1-alpha-hydroxycorticosterone	Cederberg, Elliot
2	Relaxed purifying selection in stress axis genes of ancient fishes relative to teleosts	Lazaro-Côté, Analisa
Applying knowledge of fish biology to sustainable aquaculture		
3	Interactive effects of warming and dietary nanoplastics on erythro-immune homeostasis in gilthead seabream (<i>Sparus aurata</i>)	Mancera Romero, Juan Miguel
4	Alternative vectors for fish nutrition: “mush” room for improvement?	Seethram, Maya
5	Biological authentication and traceability tools to strengthen seafood supply chain transparency: insights from the FishEUTrust project	Tang, Patrik Anthony
6	Physiological mechanisms of reduced feed intake and growth after vaccination in salmonid fish	Wallbom, Nicklas
7	Cardiac morphology as an indicator for growth in farmed Atlantic Salmon (<i>Salmo salar</i>)	Wong-Branscome, Olivia
8	Can exercise training improve mitochondrial function in rainbow trout cardiomyocytes?	Anttila, Katja
Bridging experimental biology and conservation: From mechanism to application		
9	Hot and Caught: Physiological recovery of Atlantic spiny dogfish following heatwave and trawl capture	Masters, Shyane
Cardiac responses to changing environmental conditions		
10	Cardiac mitochondrial function and the temperature-dependent physiology of tropical marine fishes	Gamperl, Anthony
11	Differential impact of the PAH fluorene and its associated oxyPAHs on the cardiac contractility of juvenile Chinook salmon (<i>Oncorhynchus tshawytscha</i>)	Labonte, Jennessa
12	Haematological and biochemical effects of the rapid screening protocol for cardiac thermal tolerance in brook char (<i>Salvelinus fontinalis</i>)	MacCormack, Tyson
13	A field study of interspecific anatomical diversity & comparative scope for seasonal plasticity of the cardiorespiratory organs using 15 species of co-habiting stream fish	Manchester, Elizabeth
14	Thermal acclimation potential of juvenile Alaskan Chinook (<i>Oncorhynchus tshawytscha</i>)	Wagner-Jones, Amelia
Current trends in growth and metabolism of fishes		
15	Routine metabolic rate across early developmental stages of Atlantic salmon (<i>Salmo salar</i>) in relation to survival and growth	Bair, Halli
16	Thermal constraints on feeding, growth and metabolism in juvenile Chinook Salmon (<i>Oncorhynchus tshawytscha</i>) in Alaska.	Bhagat, Siya
17	Bridging lab and field: <i>in situ</i> oxygen uptake measurements match laboratory-derived values in <i>Sebastes fasciatus</i>	Guitard, Joëlle

18	Past seawater experience enhances somatic growth in sturgeons	Miyanishi, Hiroshi
19	Profiling proteomic changes in taurine-treated myotubes of European sea bass	Solà, Roger
20	Artificial light including blue-green wavelengths promote growth of <i>Rachycentron canadum</i> with mRNA upregulation of appetite, growth axis and lipid synthesis	Yamauchi, Chihiro
Environmental physiology of life-history transitions: A tribute to Steve McCormick		
21	Paternal effects of diethyl phthalate (DEP) and cadmium (Cd) on the embryonic development of its offspring	Wu, Su Mei
Fish evolution in human-altered environments		
22	Evolutionary relationships among lake whitefish in the upper Laurentian Great Lakes	Gillespie, Jonah
23	The osmorespiratory compromise in freshwater prickly sculpins (<i>Cottus asper</i>)	Liu, Bing
Fish integrative neurobiology in changing environments		
24	Hidden in the vehicle: Behavioural effects of solvent exposure in larval zebrafish	Hagen, Ethan
25	Prolonged exposure to perfluorooctanesulfonic acid (PFOS) exposure alters anxiety-like behaviour in zebrafish (<i>Danio rerio</i>)	Kutcher, Ashley
26	Disruption of endocannabinoid signalling during gastrulation with 9 tetrahydrocannabinol (THC) or cannabidiol (CBD) alters γ aminobutyric acid (GABA) expression in developing zebrafish (<i>Danio rerio</i>)	Mamo, Grace
27	Single-nucleus RNA-sequencing of the hypothalamus reveals the molecular underpinnings of physiological and social homeostasis across variable environments	Phofolos, Demetrius
28	The anxiety-reducing drug buspirone has differential effects on selectively bred zebrafish at larval and adult stages	Steman, Tobin
Fish talks on phys tox		
29	Assessing lithium toxicity across a salinity gradient in coastal marine fishes	Esbaugh, Andrew
30	Sublethal citalopram exposure modulates antioxidant and neurotoxicity biomarker genes in rainbow trout	Bertucci, Juan, Ignacio
Integrating physiology and behaviour in a changing environment		
31	Seasonal habitat selection and activity patterns of juvenile burbot (<i>Lota lota</i>) in a laboratory setting	Anderson, Lars
32	Seasonal patterns of brain size plasticity in freshwater fish	Francispillai, Erin
33	Acute resilience, chronic costs: metabolic responses to warming and hypoxia in the sedentary Lusitanian toadfish, <i>Halobatrachus didactylus</i>	Guerreiro, Pedro M
34	Heat hardening in grey mullets: Physiological responses of juvenile <i>Chelon labrosus</i> and <i>Chelon aurata</i> under simulated short-term marine heatwaves	Guerreiro, Pedro M
35	ShoalBase: Global community database of fish social behaviour	Killan, Shaun
36	Methane exposure alters the transcriptome and behaviors of developing zebrafish (<i>Danio rerio</i>)	Steffler, Morgan
37	Coping with cloudy streams: Mechanisms of suspended sediment tolerance in fishes	Young-Veenstra, Sarah
Investigating the interrelated responses of climate, contaminants, & biodiversity loss in fishes		

38	Decadal trends in metal contamination and fish community responses in an industrialized river system (Nete river basin, Flanders, Belgium)	Balthazar, Iris
Ion and acid-base regulation in fishes		
39	Genomic variation that distinguishes euryhaline from stenohaline <i>Fundulus</i> species	Bernat, Tatum
40	Gill ionocyte diversity and metabolic adaptation to freshwater in Indian medaka (<i>Oryzias melastigma</i>)	Guh, Ying-Jey
Metabolism in motion: Mechanics, physiology, and ecology of fish movement		
41	Effects of social environment and energy efficiency on preferred swim speed in a marine generalist fish, pile perch (<i>Phanerodon vacca</i>)	Tiddy, Izzy C
Recent advances in fish biology and physiology (general session)		
42	Natural microalgal metabolites promote recovery of insulin-producing β -cells in zebrafish.	Ferreira-Martins, Diogo
43	Evidence for subfunctionalization of excitation-contraction coupling partners following the salmonid-specific genome duplication event	Franck, Jens
44	The feasibility of acoustic telemetry in longfin smelt, <i>Spirinchus thaleichthys</i> , using miniaturized acoustic transmitters	Gonzales, Sebastian
45	Distributional responses of European sea bass to operational floating wind turbine noise in a semi-natural outdoor mesocosm system.	Lefrancois, Christel
46	Reproductive steroid patterns during late-stage oocyte maturation in wild female burbot (<i>Lota lota</i>)	Leonard, Jill
47	Tracking American eel habitat use using non-lethal stable isotope analysis	Simon, Sage
48	Single parental cold exposure drives transgenerational rewiring of energy allocation across the tissue network in tilapia	Wang, Min-Chen
Sensing the environment: Altered waters and changing behaviours		
49	Hypoxia and CO ₂ /pH responses of S-NECs and gill raker chemosensory cells in rainbow trout (<i>O. mykiss</i>) gills	Brink, Deidre
50	Integrating automated behavioural tracking into standardized fish avoidance assays to expand behavioural endpoints	Castro Barquero, Pablo
51	Interregional comparison of gobiid fauna associated with alpheid shrimp burrows	Tamaki, Shotaro
52	Olfactory gene expression during three juvenile life stages in fall chinook	Obley, Miriam
Stress in fish I (regulation of HPI) and II (stress effects on physiology)		
53	Activation of the hypothalamic-pituitary-interrenal axis in fish embryos	Manzon, Rachel
54	Effects of prolonged heatwaves on facultative air-breathing, metabolism, and hypoxia tolerance in adult <i>Corydoras aeneus</i>	Rippamonti, Jessica
Stress in fish: A tribute to George Iwama		
55	Influences of embryonic ammonia exposure on Hypothalamic-Pituitary-Interrenal (HPI) axis gene expression in Atlantic salmon (<i>Salmo salar</i> L.)	Alipio, Hanna Ross
56	Hypoxia tolerance of salmonids within the Restigouche watershed: The role of thermal refuges	Stairs, Chandler
57	Developmental stage dictates the transcriptional response to chemical euthanasia stress in zebrafish embryos and larvae	Tort, Lluís

The fish gut: Digestion and beyond		
58	Effects of sodium propionate on fatty acid sensing mechanisms in rainbow trout proximal and distal intestinal cell lines	Blanco, Ayelén M.
59	Warming and food deprivation reshape gut barrier integrity and systemic metabolism in juvenile seabream	Guerreiro, Pedro M
60	Intestinal acid-base and nitrogenous waste regulation following blood feeding in sea lamprey, <i>Petromyzon marinus</i>	Quijada-Rodriguez, Alex
The physiology, biology and ecology of polar fish		
61	Compound effects of warming, hypoxia, and salinity on metabolic physiology in the Antarctic coastal fish <i>Harpagifer antarcticus</i>	Guerreiro, Pedro M
The physiology, ecology and control of invasive fish species		
62	Thermal plasticity with physiological trade-offs in the invasive cichlid <i>Australoheros facetus</i> under warming scenarios in Mediterranean-type rivers	Guerreiro, Pedro M
63	Changes in TFM tolerance & detoxification capacity of the bluegill (<i>Lepomis macrochirus</i>)	Curkovic, Gabriella
64	Characterizing the sensitivity of native, non-target lampreys to lampricides used to control invasive sea lamprey (<i>Petromyzon marinus</i>) in the Laurentian Great Lakes.	Kowalczyk, Sarah
Using behaviour and physiology to understand fish welfare		
65	Post-release welfare in marine recreational fisheries: integrating angling variables with physiological biomarkers in the two-banded seabream <i>Diplodus vulgaris</i>	Guerreiro, Pedro M
66	Links between forebrain monoaminergic activity and operational welfare indicators in farmed Atlantic salmon (<i>Salmo salar</i>)	Gundersen, Hannah N.
67	Effects of feeding time on diurnal expression of clock genes and lipid metabolism-related genes in the brain and peripheral tissues of Malabar grouper (<i>Epinephelus malabaricus</i>)	Lu, Siqi
68	Stress reactions in rainbow trout (<i>Oncorhynchus mykiss</i>) reared in enriched vs. barren environments underline the importance of behavioural observations for assessing coping ability and welfare status of fish	Olsen Methlie Wedaa, Louise
69	Behavioural responses of gilthead seabream (<i>Sparus aurata</i>) to the administration of painful stimuli	Saraiva, Joao
Vulnerability and adaptations of developmental stages to global change stressors		
70	How close is too close? Thermal injury accumulation and recovery near upper thermal limits in larvae and adult zebrafish.	Braz-Mota, Susana
71	Thermal performance of early life stage striped bass (<i>Morone saxatilis</i>)	Gaytan, Yvette
72	Effects of thermal challenge on burbot (<i>Lota lota</i>) egg survival and development	Hubert, Braden
73	Intermittent hypoxia modulates morphological and cardiorespiratory phenotypes in developing zebrafish (<i>Danio rerio</i>)	Horak, Bailey
74	Effects of developmental stage on thermal tolerance and thermal preference of larval burbot (<i>Lota lota</i>) and lake whitefish (<i>Coregonus clupeaformis</i>)	Simmons, Jonathan
75	Molecular signatures of early stress responses to emerging contaminants	Bertucci, Juan Ignacio

