**Chandler Hines**

**CONTACT DETAILS**

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**SUMMARY**

 **Master of Science in Zoology**, University of British Columbia (2017-Present)

 Thesis: Effect of long-term salinity and photoperiod on thermal tolerance and growth of Atlantic and coho salmon

 **Bachelor of Science Degree in Fisheries and Aquaculture** (with distinction), Vancouver Island University (2016)

 Environmental Technician Diploma, Niagara College (2012)

 FISH 491 Honours Undergraduate Research Project (2015-16)

 Ability to work well in USA or Canada (dual citizen)

 **Published** “Effects of long-term salinity and photoperiod on thermal tolerance of Atlantic and coho salmon (Hines et al. 2018)

 Strong organizational skills, attention to detail and ability to think critically

 Experienced in data collection, entry and interpretation

**PAST WORK EXPERIENCE**

**Teaching Assistant** 2016-2018

University of British Columbia

Vancouver, BC

Employed as a lab instructor for BIOL 140 (Laboratory Investigations in Life Science) at University

of British Columbia. Primary role was running two, 3-hour labs/week and marking assignments.

**Fish Culturist** 2012 - 2016

International Centre for Sturgeon Studies (ICSS) Vancouver Island University, Nanaimo, BC

Employed as a work-op student at the newly constructed International Centre for Sturgeon Studies (ICSS) and worked with white sturgeon and rainbow trout of all life stages, including large adults up to eight feet long. Primary role was to culture and monitor health of the captive white sturgeon and rainbow trout, while maintaining the recirculated aquaculture system. Also assisted several researchers in a number of different white sturgeon research projects.

 Husbandry: general hatchery duties that consist of feeding, detailed record keeping, sampling, grading, monitoring water quality, feed preparation, anesthetizing, salt treatments, transporting, following bio-security protocols.

 Spawning: ripeness checks throughout the year, injecting brood males and females with LHRHa, collecting and assessing egg/sperm quality, fertilizing and hatching white sturgeon

 Recirculation operation: identified as the first responder for the ICSS alarm system and attended to emergency calls at all hours; maintained recirculated system, including: drum filters, UV systems, bio-filters, ozone generator, and foam fractionators

 Development: Trained students and new employees on various aspects of fish husbandry and how to maintain the recirculated system

 Received training from members from the Federal Centre of Selection and Genetics for

Aquaculture on how to use ultrasound technology to identify the sex of white sturgeon

 Experience in the early sex determination of white sturgeon, which involved anesthetizing, surgery, and suturing techniques

**Research assistant** 2013 - 2015

International Centre for Sturgeon Studies greenhouse

VIU, Nanaimo, B.C.

Employed as a research assistant to Dr. Daniel Baker to assist in sturgeon aquaponics recirculated system research project from 2013 - 2015. The study aimed to grow many fruits and vegetables using different forms of media such as vertical towers, nutrient film techniques, rock media etc. and 1-year old white sturgeon. This project continues to collect data that is useful for growth performance in white sturgeon, and the products it yields using a recirculated aquaculture system.

 Husbandry: General hatchery duties consisting of monitoring freshwater recirculated system in greenhouse, tank maintenance, record keeping, feeding, bead filtration system, clarifier, and monitored temperature and oxygen levels, fish sampling and fish health assessments

 Water Quality: Monitored and performed many water quality assays including ammonia, nitrite, nitrates, calcium and magnesium concentration levels and iron using spectrophotometer.

**Genomics Assistant** 2012

Vineland Research and Innovation Centre

Vineland, Ontario

Responsible for maintaining the crops in the experimental greenhouses and on the experimental farms. The research objective was twofold; a new type of cucumber with more desirable properties (size, shape, colour and flavour), and secondly to create a new strains and techniques for growing food crops not native to Ontario. For the cucumber experiment, I helped to cross the cucumber plants. I took detailed notes to keep track of all the crosses and entered the data into the computer. For the growth of non-native food crops (primarily from Asia and India), I planted, cared for and recorded harvest results and entered the data into the computer.

**West Nile Technician** 2011

City of Hamilton Public Health

Hamilton, Ontario

Responsible for the Ancaster/Stoney Creek region of Hamilton. Drove to pre-determined sites and used GPS to find exact sampling location. Took water samples and returned them to the lab. At the lab, I used a compound microscope and dichotomous key to identify mosquito larvae to species. If a species of concern was identified, I would send the sample to the main lab. After sampling and identifying species, I would input data into computer system.

**SKILL SECTION SUMMARY**

 Strong background in all aspects of **white sturgeon, salmon and trout culture** in recirculated aquaculture facilities including: feeding, detailed record keeping, sampling, spawning, egg incubation, rearing larvae, grading, cleaning, monitoring water quality, feed preparation, anesthetizing, applying salt treatments, transporting, and following bio-security protocols

 Involved in several **white sturgeon and salmonid research** projects including larval development, and growth/ density studies; projects involved following proper animal care procedures and a variety of sampling methods. Also trained how to perform suturing, ultrasound technology and surgery techniques to identify the sex of white sturgeon

 Completed an **undergraduate research project** where temperature tolerance and swimming performance was determined for juvenile white sturgeon between 40 and 100 days post hatch

 Involved in **experiment design, data collection and analysis** to assess the temperature tolerance and swimming performance of white sturgeon.

 Experience with **habitat assessment and restoration** in fish bearing streams.

**EDUCATION**

Zoology 2017-2019

Master of Science Degree

*University of British Columbia - Vancouver, British Columbia*

Fisheries and Aquaculture 2016

Bachelor of Science Degree with distinction

*Vancouver Island University - Nanaimo, British Columbia*

Environmental Technician 2012

Diploma

*Niagara College – Niagara Falls, Ontario*

**OTHER QUALIFICATIONS**

Canadian Council on Animal Care Core Module 2016

Pleasure Craft Operator Competency Card 2011

Backpack Electrofishing Certification 2011

WHIMS Safety Training 2010

Class 5 Driver’s Licence 2007

**AWARDS**

Zoology Graduate Student Award 2017 and 2018

Frank Bernard Fisheries Award 2015

Pacific Salmon Foundation Community Involvement Bursary 2014 and 2015

Marine Harvest Canada Scholarship 2014

**LIST OF PUBLICATIONS AND PRESENTATIONS**

Published papers

**Hines, C.W.**, Fang, Y., Chan, V.K.S., Stiller, K.T., Brauner, C.J. and Richards, J.G. 2019. The effect of salinity and photoperiod on thermal tolerance of Atlantic and coho salmon reared from smolt to adult in recirculating aquaculture systems. Comparative Biochemistry and Physiology, Part A (In Press). Vol 230. [doi.org/10.1016/j.cbpa.2018.12.008](https://doi.org/10.1016/j.cbpa.2018.12.008)

Fang, Y., Chan, V.K.S., **Hines, C.W.**, Stiller, K.T., Richards, J.G and Brauner, C.J. 2019. The effects of salinity and photoperiod on aerobic scope, hypoxia tolerance and swimming performance of coho salmon (Oncorhynchus kisutch) reared in recirculating aquaculture systems. Comparative Biochemistry and Physiology, Part A (In Press).

Presentations

 Brauner, C.J., Stiller, K., Chan, V., Fang, Y., **Hines, C.**, Gilbert, M., Zhang, Y., Krook. J., Hamilton, T.J., and Richards, J.G. 2017. The effect of salinity and photoperiod on Atlantic and coho salmon growth, maturation and physiological performance in recirculating Aquaculture Systems. Aquaculture Innovation Workshop: An International Summit on Fish Farming in Closed-Containment Systems. Vancouver, B.C. November 29-30, 2017.

Stiller, K., Chan, V., Fang, Y., **Hines, C.**, Gilbert, M., Zhang, Y., Krook. J., Hamilton, T.J., Richards, J.G. and Brauner, C.J. 2017. The effect of salinity and photoperiod on growth and performance of coho and Atlantic salmon in recirculating Aquaculture Systems. 4th Nordic RAS Workshop on Recirculating Aquaculture Systems. Aalborg, Denmark. October 12-13, 2017.

**REFERENCES**

 Dr. Colin Brauner

 Professor

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 David Switzer

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 Dr. Daniel Baker

Professor

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