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# Watermark

News from the Aquaculture Association of Canada

November 2018 Issue 20181107

## President's Message



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It's an honour to serve as your 2018-19 President. The Aquaculture Association of Canada has meant a great deal to me over the years, particularly in the transition from being a student in aquaculture to developing my career path. So I'm grateful for the opportunity to be able to give back through this role.

From the time I had become engaged in Canadian aquaculture, in the late 2000's, the industry has not stood still. They were exciting times then and continue to be exciting times today. The potential for Canada's industry, from coast to coast, through technological developments in farming production and infrastructure investment, to educational and skills development programs, and the development and fostering of new and old partnerships, is incredible.

The AAC continues to find meaningful ways to fulfill our mandate of transferring information between the various sectors of the aquaculture community, and strives to meet our objectives including fostering an aquaculture industry in Canada.

Our Board is taking a particularly close look at how we refresh our approach to fostering public awareness and understanding of aquaculture, which is more important than ever in this era of Fake News.

This year we have a number of new Board members who bring fresh ideas and eyes to the Association's work. I really appreciate having the opportunity to work with such a talented and dedicated group of individuals from across the country.

Thank you to those who contributed to the success of our 2018 Quebec City conference and thanks to our many members who could join us. It was a beautiful time of year to meet up in Quebec City and all events were again a success in providing a significant networking and learning opportunity.

Plans are underway for Aquaculture Canada 2019: Victoria, BC in the springtime! Please mark your calendars for May 5 – 8, 2018 at the Victoria Conference Centre, and check back to our website in the near future for updates on registration, call for papers, and accommodation information.

I would also like to make special mention of Aquaculture Canada & North America WAS 2020. In partnership with the World Aquaculture Society and the Newfoundland Aquaculture Industry Association, we will be convening in St. John's, NL in late August/early September 2020. Stay tuned for details; this is not one to be missed!

Finally, don't hesitate to get in touch with your ideas on how we can further foster the spread of aquaculture knowledge across the country, and particularly as we prepare for our upcoming conference in May on the West Coast.

*Joanne Liutkus, President, Aquaculture Association of Canada ([president@aquacultureassociation.ca](mailto:president@aquacultureassociation.ca))*

## Aquaculture Canada 2019

Aquaculture Canada 2019 will be held at the Victoria Conference Centre in Victoria, BC from May 5 – 8, 2019. Planning is already underway, stay tuned for further details!



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## AC 2019 Important Dates

Conference Dates	May 5-8
Student Travel Award	Feb 22
Student Scholarship Award	Feb 22

## Research Award of Excellence

The AAC is once again seeking to recognize individuals for their outstanding research contribution in the area of aquaculture.

This award recognizes high quality, innovative, current research that has had a significant impact on the aquaculture industry in Canada.

AAC Members may submit their nominations to Dr. Debbie Plouffe, Chair of the Awards Committee at

[awards@aquacultureassociation.ca](mailto:awards@aquacultureassociation.ca) in the form of a letter of support for the candidate.

**\*\*\*DEADLINE for submitting a nomination is February 22, 2019\*\*\***

## New email addresses:

For Awards: [awards@aquacultureassociation.ca](mailto:awards@aquacultureassociation.ca)

For Communications (Publications):

[communications@aquacultureassociation.ca](mailto:communications@aquacultureassociation.ca)

## Canadian Aquaculture R&D Review 2019

Once again the AAC will be partnering with DFO on the *Canadian Aquaculture R&D Review*. This important publication highlights the excellent research and development projects underway in our aquaculture community.

The *Canadian Aquaculture R&D Review* is intended to allow those involved with aquaculture to increase awareness of projects related to aquaculture in Canada. This will help to solidify a community with a common vision for the future development of a sustainable Canadian aquaculture sector. Similar to the previous editions, this national review of aquaculture research and development will provide brief summaries of recent research projects (2017-present), in-depth coverage of select projects, and overviews of the various funding organizations in Canada supporting aquaculture R&D. There will be French and English versions, and it is intended to be published Spring of 2019 in a professional e-magazine format. The full text of the 2019 publication will be available online in HTML and PDF format.

Articles for this publication can come from the diverse scientific fields that contribute to Canadian aquaculture research, including, among others, advances in husbandry, development of new species or farming practices, research on disease and its management, interactions between aquaculture and the environment, or new uses for aquaculture products. Species studied can include finfish, shellfish, other invertebrates, and plants in both freshwater and marine environments.

If you are interested in sharing information about your recent or current aquaculture-related research, please submit project summaries accompanied by photographs and video files (10-15 sec.) by **November 9, 2018**. The accompanying attachments provide guidance on the format and content sought for inclusion.

To assist you with the editing and compilation process, please submit your contribution using the attached template (Word format), including your graphic and hi-res image and/or video files, and return these as email attachments to [DFO.AquacultureRD.MPO@dfo-mpo.gc.ca](mailto:DFO.AquacultureRD.MPO@dfo-mpo.gc.ca). Photo credits will be provided in all cases (see attached Photo Release consent form).

If you don't have a written contribution, you can submit any high resolution images of Canadian aquaculture science which could potentially benefit the visual aspect of the review. The best ones will be used for the cover!

The 2017 Canadian Aquaculture R&D Review can be seen by clicking on the hyperlinked image below.



## Student's Corner

The Aquaculture Canada Conference in Quebec City (May 27-30, 2018 - Hotel Le Concorde) was a great success this year. The participants were interactive and enjoyed the conference sessions either in French or English. We would like to thank everybody for their enthusiasm and engagement at AC2018.

Students presented innovative and creative poster and oral presentations, highlighting excellent research and future potential for the aquaculture sector. It was also good to see a number of students conducting research on a variety of topics relevant to the Canadian aquaculture industry; including research on salmon, trout, mussel, oyster, sea urchin and sea cucumber. It was also an excellent opportunity to hear about aquaculture initiatives in Quebec.

The conference abstracts can be seen at the link below:

<http://aquacultureassociation.ca/wp-content/uploads/2017/01/Abstracts-by-Session-2018.pdf>

The student gathering, at a local pub, prior to the conference, was awesome this year and well attended. This event, held at the beginning of the conference has been a regular event of the AAC and it is a great opportunity for students to interact with others in the same field, exchange research ideas, meet new researchers, and make great friends.

Students looking for jobs can visit the AAC website and have a look at the job opportunities posted throughout the country. The link is provided below:

<http://aquacultureassociation.ca/jobs/>

The AAC will keep bringing a powerful and engaging learning experience to its students across Canada.

Stay tuned for the next AAC conference in Victoria, British Columbia, May 5-8, 2019 and do not forget to check for the deadline for the Student Travel Awards.

*Bruno Gianasi*

*AAC Student Board Member*

*Student Affairs Committee*



*The Aquaculture Association of Canada would like to thank all donors of product and auction items for Aquaculture Canada 2018!*

*If you have items to donate for AC2019, contact Bruno at*

[brunolg@gmail.com](mailto:brunolg@gmail.com)

# Student Profile - Yangfan Zhang, M.Sc., Ph.D. student

## ***Where and what are you studying?***

I am a Ph.D. student in the Faculty of Land and Food Systems at the University of British Columbia studying cardiorespiratory physiology and metabolism of fish from both mechanistic and ecological standpoints.

## ***Who is your supervisor?***

Dr. Tony Farrell was my M.Sc. supervisor, and is now my Ph.D. supervisor, along with Dr. Guy Claireaux as my Ph.D. co-supervisor at the University of Western Brittany, France.

## ***What is your background?***

I began to appreciate the importance of fish physiology in an aquaculture context from Dr. James Duston, my undergraduate research supervisor at Dalhousie University. My research now focuses on cardiorespiratory physiology and metabolism in fish.

## ***Describe your graduate project and your thesis. How will your research contribute to the Canadian aquaculture sector?***

The overarching theme of my graduate research program is to unfold the complex issue to ask questions of fish that relate to genetic divergence and phenotypic plasticity in the context of local adaptation, acclimation potential and phenotypic resilience to viral infections. Because metabolic rate is a fundamental currency of what a fish might or might not be able to do (and I have yet to get an answer to any of my questions directly from the fish itself!) and is something that can be inferred from respiratory performance. I am exploiting an integrated respiratory assessment paradigm (IRAP) that I have refined as a physiological framework to ask my questions. IRAP was developed and validated through a series of publications during my M.Sc. and is being further refined and applied in my Ph.D.. IRAP uses respirometry to accurately estimate 14 indices of whole-animal metabolic rate under normoxic and hypoxic conditions using eight fish at a time.

My recent research contribution to the Canadian aquaculture sector is through the application of IRAP to evaluate if a piscine orthoreovirus (PRV) infection significantly harms the respiratory capacity and capability of juvenile farmed Atlantic salmon and wild sockeye salmon. PRV targets the heart and red blood cells and as these target tissues and organs are central to internal oxygen transport in fish, my prediction was that a PRV infection would impair some of the respiratory indices measured with the IRAP indices. However, in spite of this theoretical prediction my results revealed no consistent or marked physiological harm, even to the maximum oxygen uptake of these fishes. My hope is that this body of new knowledge will provide useful scientific-based evidence for the development of policies that ensure aquaculture operations are ecologically and socially sustainable, and can co-exist with wild fishery resources, the very objectives contained in the recent policy updates to our *Fisheries Act* in Canada.

## ***How did you get interested in what you are studying?***

I grew up in a coastal city and observed the already damaging impacts of fisheries on wild stocks that is further impacted by global climate change. These observations in my childhood played a role in choosing a biology major in university. My undergraduate degree in fish physiology at an aquaculture setting most definitely sparked my interest in evaluating animal welfare and the physiological robustness of fish. During my M.Sc. I pursued this passion by testing effects of exercise training on respiratory responses and metabolism in domesticated Atlantic salmon in collaboration with Fish health group of Nofima, Norway. This overseas collaboration resulted in a paper that was featured in the Canadian Aquaculture R&D review in 2017. More recently, my Ph.D. has expanded my interests with a recent collaboration with the virology lab at the Pacific Biological Station, Fisheries and Oceans Canada for the above mentioned PRV. Underlying themes in my research are collaborations with experts around the world and free exchange of ideas, values that my Ph.D. supervisor espouses. As a result, I have greatly broadened my interest in reliably and effectively measuring needs, capacities and capabilities of fish. My work also has profound implications in understanding the ecological performances and evolutionary potentials of wild populations.

## ***What, if any, challenges do you face in your studies?***

My greatest challenge has been finding answers to the questions how and why the cardiorespiratory system and metabolism have evolved to their current states in fish. I feel that I am still adding pieces to the jigsaw puzzle, but these pieces have so far found application in aquaculture.

## ***What has been your most positive experience in your studies so far?***

I really appreciate how supportive the fish research community is. This is really encouraging for early-career scientists to further advance themselves in the field and contribute to the community.

## ***Do you see opportunities for yourself in the aquaculture field when you finish your studies? If so, where, and doing what?***

I would definitely like to contribute fulltime to the Canadian aquaculture sector. Although it is still too early to predict where I will hold my permanent position, I would hope to continue to apply my research in fish physiology, culture and conservation to fish husbandry practices, health management and animal welfare in aquaculture.

# Perspectives Flying East to West

By Eric Ignatz, MUN MSc. Student/AquaBounty Research Associate



In June, I was fortunate enough to attend the BC Salmon Farmers Association (BCSFA) Research Priorities Workshop at the BC Seafood Expo through the Emerging Leaders in Canadian Aquaculture Program, through the Aquaculture Association of Canada (AAC). Flying from Prince Edward Island to Vancouver Island, I was excited to learn more about the industry on the west coast.

On the first day I was able to tour one of Marine Harvest's cage sites at Okisollo, in the Discovery Islands. As my own experience is mainly with on-land, recirculation facilities, it was remarkable comparing how many fish are able to be grown in such a relatively small area of ocean. The feed systems employed were also highly impressive, with monitoring performed from the comfort of an office chair sheltered from the seemingly unpredictable outside weather.

One of the main differences I found though was in relation to public perception and the amount of energy companies on Vancouver Island have to devote to community outreach and marketing campaigns designed to increase local awareness. While I am sure most would agree that the aquaculture industry across Canada faces an unreasonable amount of public backlash in comparison to other agricultural branches, British Columbia appears to take on the greatest brunt of the attacks. These challenges are being met head on though, with one of the main topics of the workshop focused on addressing and improving the PR image of aquaculture on the Island. Playing an active role in the community by sponsoring local charities and groups and hosting BBQs where companies can promote their product in a more casual setting seems to be the way many companies are turning the tide of misinformation.



The workshop was full of interesting topics, ranging from finding new solutions to resolving fish health concerns, determining the relationship between wild and farmed salmon interactions and mitigating environmental impacts, both from the farms themselves but also investigating the impact global climate change will have on the industry. As both a part-time Master's student as well as being employed full-time in industry, the discussions from the week were hugely informative for me.

Overall, while a pile of challenges still exist for the industry regardless of which side of the country you are on, there appears to be a large group of individuals interested in collaborating to find innovative solutions to these problems. It was encouraging to see farmers, government officials, researchers and environmental groups at this meeting all agree that behind their own agendas, many of their goals were similar.

I would like to thank the BCSFA as well as the AAC for granting me the opportunity to travel to Courtenay, BC to attend this workshop. The information I learned and contacts I made are invaluable as I continue to pursue my career with aquaculture.

# Aquaculture leaders heading to Ottawa for Canada's Farmed Seafood Policy Conference 2018

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About 150 participants, passionate about Canada's seafood farming opportunity, will convene in Ottawa for Canada's Farmed Seafood Policy Conference 2018 and Annual General Meeting hosted by the Canadian Aquaculture Industry Alliance (CAIA) on November 27-28.

CAIA's annual conference is Canada's top public policy forum for seafood producers and sector stakeholders. This year, the program features influential experts in the areas of aquaculture innovation, marketing, international and policy developments. Presenters include:



- Jacqueline Claudia, Co-Founder and CEO, Love The Wild
- Robert Jones, Global Aquaculture Lead, The Nature Conservancy
- Chris Forbes, Deputy Minister, Agriculture and Agri-Food Canada
- Mike Lipkin, President, Environics/Lipkin
- Kevin Stringer, Associate Deputy Minister, Fisheries and Oceans Canada
- Jean-Guy Forgeron, Assistant Secretary, Regulatory Affairs Sector, Treasury Board of Canada Secretariat
- France Pégeot, Executive Vice-President, Canadian Food Inspection Agency
- Dr. Jamey Smith, Executive Director, Huntsman Marine Science Centre
- Dallas Smith, President and CEO, Nanwakolas Council
- Jennifer Woodland, Chief Executive Officer, Nuu-chah-nulth Seafood Limited Partnership
- Richard Harry, Executive Director, Aboriginal Aquaculture Association

This year's conference theme, Accelerating Sustainable Growth, reminds participants of the growing demand for seafood and the tremendous opportunities for Canada and Canada's seafood farmers in terms of global leadership, job creation, indigenous partnerships, innovation, and sustainable development.

The annual conference brings together leaders from the Canadian farmed seafood sector with federal government leaders for policy discussions and building awareness. It is unique forum for Canada's seafood farmers to learn about and impact on the federal initiatives leading to the future growth and development of our sector.

Program details are available online at <http://www.aquaculture.ca/farmed-seafood-policy-conference-2018>. Follow CAIA on Twitter, [@CDNaquacultre](https://twitter.com/CDNaquacultre).

## We Have Moved!

After 30 years, the Aquaculture Association of Canada has parted ways with the Medcof Building at the St. Andrews Biological Station. The AAC home office has moved to Ambridge Offices at the Huntsman Marine Science Centre in St. Andrews. We are delighted about this new partnership! Conveniently, the mailing address remains the same, 16 Lobster Lane. If you are in and around St. Andrews, consider popping over to the Huntsman to say hello.



*The new home of the Aquaculture Association of Canada, the Ambridge Office at Huntsman Marine Science Centre.*

## Employment Opportunities

The AAC has been receiving many (many!) aquaculture sector job postings from coast to coast. To see these, check out the frequently updated employment opportunities webpage at <http://aquacultureassociation.ca/jobs/#s=1>

## Upcoming Events

*Canada's Farmed Seafood Policy Conference 2018 and AGM* hosted by the Canadian Aquaculture Industry Alliance, **November 27-28, 2018**, Ottawa, ON <http://www.aquaculture.ca/farmed-seafood-policy-conference-2018>

*Northeast Aquaculture Conference & Exposition, January 9-11, 2019*, Boston, Massachusetts, USA  
<http://www.northeastaquaculture.org/>

*2019 SeaFarmers Conference, January 23-25, 2019*, Halifax, NS <http://seafarmers.ca/in-the-community/2019-seafarmers-conference/>

*Aquaculture 2019, March 7-11, 2019*, New Orleans, Louisiana, USA  
<https://www.was.org/meetings/default.aspx?code=AQ2019>

## Farmed Seafood Recipe - DELICIOUS BBQ SALMON



### **Ingredients:**

Salmon fillets  
½ cup butter – melted  
½ cup soya sauce  
½ cup lemon juice  
Salt  
Pepper  
Garlic Powder  
Chilli Powder

### **Method:**

Melt butter and allow to cool slightly. Mix with other liquids (soya sauce and lemon juice).

Place salmon fillets skin side down in a deep baking dish.

Sprinkle salmon fillets with pinch of salt, pepper and garlic powder.

Cover salmon fillets with chilli powder.

Pour liquid mixture over salmon fillets. Cover and place in fridge for 24 hours.

When ready, remove from fridge (butter will have hardened), spoon marinade over salmon fillets.

Transfer salmon fillets to an aluminum tray and place on bbq.

As the salmon cooks, pour remaining marinade over the salmon.

**Credit: Jennifer Wiper, Manager, Compliance and Certification with Cooke Aquaculture Inc. and AAC Board Member**

Our team of experts in broodstock development, fish health, aquatic toxicology and environmental monitoring offer regulatory compliant and customized research plans to support the business growth, risk management and competitive needs of the global aquaculture industry. Call us to talk about your next project and what we can do for you.

Contact:  
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## Aquaculture Association of Canada 2018/2019 Board of Directors

**President:** Joanne Liutkus, BC Salmon Farmer's Association, [joanne@bcsalmonfarmers.ca](mailto:joanne@bcsalmonfarmers.ca)

**President Elect:** Matthew Liutkus, Skretting [mliutkus@hotmail.com](mailto:mliutkus@hotmail.com)

**Vice-President:** Debbie Plouffe, Center for Aquaculture Technologies Canada, [dplouffe@aquatechcenter.com](mailto:dplouffe@aquatechcenter.com)

**Secretary:** Kim Gill, PEI Department of Agriculture and Fisheries, [klgill@gov.pe.ca](mailto:klgill@gov.pe.ca)

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**Past President:** Stefanie Colombo, Dalhousie University, [scolombo@dal.ca](mailto:scolombo@dal.ca)

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**Board Member:** Daria Gallardi, Department of Fisheries and Oceans Canada, [daria.gallardi@dfo-mpo.gc.ca](mailto:daria.gallardi@dfo-mpo.gc.ca)

**Board Member:** Jennifer Wiper, Cooke Aquaculture Inc., [Jennifer.wiper@cookeaqua.com](mailto:Jennifer.wiper@cookeaqua.com)

**Board Member:** Greg Gibson, Marine Harvest Canada, [Greg.Gibson@marineharvest.com](mailto:Greg.Gibson@marineharvest.com)

**Student Board Member:** Bruno Gianasi, Department of Ocean Sciences, Memorial University, [brunolg@mun.ca](mailto:brunolg@mun.ca)

***Thank you to outgoing Board Members Tara Daggett, Helen Gurney-Smith, and Tillmann Benfey. Your dedication to the Aquaculture Association of Canada is much appreciated.***

***Thank you to all who voted in the 2018 election!***

### Staff:

**Office Manager:** Catriona McLanaghan (Office Hours Mon-Fri, 8.30am - 2.00pm AST)

16 Lobster Lane, St Andrews, NB E5B 3T6, ph: 506-529-4766, Email: [info@aquacultureassociation.ca](mailto:info@aquacultureassociation.ca)

**Conference Manager:** Joanne Burry, Email: [jmburry@nl.rogers.com](mailto:jmburry@nl.rogers.com)

### Watermark Production

Kim Gill

Catriona McLanaghan

**Do you have suggestions for the next issue? Email:** [communications@aquacultureassociation.ca](mailto:communications@aquacultureassociation.ca)



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