

## KRISTA B. OKE, Ph.D., B.Sc. (Hons)

### Centennial Postdoctoral Fellow

College of Fisheries and Ocean Sciences, University of Alaska Fairbanks,  
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### ACADEMIC BACKGROUND

**Postdoctoral Researcher** 2017-2018, University of California Santa Cruz, Santa Cruz, CA

**Ph.D.** 2011-2017, Department of Biology, McGill University, Montreal, QC  
Dissertation title: Parallel evolution in North American post-glacial fishes

**B.Sc. (Honours)** 2007-2011, Department of Biology, Memorial University, St. John's, NL  
Dissertation title: Ecological interactions between hybrids of brown trout and genetically modified Atlantic salmon: Insights into behaviour, competition, and morphology

### PUBLICATIONS

**Oke, K.B.** & Hendry, A.P. (2019) Genetic insights into the past, present, and future of a keystone species. *Proceedings of the National Academy of Sciences U.S.A.* 116-2: 344-346

**Oke, K.B.**, Motivans, E., Quinn, T.P., Hendry, A.P. (2018) Sexual dimorphism modifies habitat-associated divergence: Evidence from beach and creek breeding sockeye salmon. *Journal of Evolutionary Biology*. doi: 10.1111/jeb.13407

Bolnick, D.I., Barrett, R., **Oke, K.B.**, Rennison, D., Stuart, Y.E. (2018) (Non)Parallel Evolution. *Annual Reviews of Ecology, Evolution, and Systematics*. 49: 303-330

**Oke, K.B.**, Rolshausen, G., LeBlond, C., Hendry, A.P. (2017) How parallel is parallel evolution? A comparative analysis in fishes. *The American Naturalist*. 190-1: 1-16

**Oke, K.B.\***, Bukhair, M., Kaeuffer, R., Rolshausen, G., Räsänen, K., Bolnick, D.I., Peichel, C.L., Hendry, A.P. (2016) Does plasticity enhance or dampen phenotypic parallelism? A test with three lake-stream stickleback pairs. *Journal of Evolutionary Biology*. 29-1: 126-143

**\*Web of Science Highly Cited Paper (top 1% of Plant and Animal Science field)**

Rolshausen, G., Muttalib, S., Day, T., Kaeuffer, R., **Oke, K.**, Hanson, D., Hendry, A.P. (2015) When maladaptive gene flow does not increase selection. *Evolution*. 69-9: 2289-2302

Chaulk, A. C., Driscoll, S., **Oke, K. B.**, Coates, P. J., Caravan, H. E., & Chapman, T. W. (2014). Flight muscle breakdown in the soldier caste of the gall-inducing thrips species, *Kladothrips intermedius* Bagnall. *Insectes Sociaux*, 61(1), 57-66. DOI: 10.1007/s00040-013-0324-4

**Oke, K. B.\***, Westley, P. A., Moreau, D. T., & Fleming, I. A. (2013). Hybridization between genetically modified Atlantic salmon and wild brown trout reveals novel ecological interactions. *Proceedings of the Royal Society B: Biological Sciences*, 280(1763). DOI: 10.1098/rspb.2013.1047. **\*F1000 Prime Recommended.**

*Google Scholar account at:* scholar.google.com/citations?user=WuxV5YIAAAAJ&hl=en

# Curriculum Vitae

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## HONOURS AND AWARDS

Finalist — W.D. Hamilton Award (Society for the Study of Evolution): July, 2017

Vineberg Fellowship in Freshwater Biology/Limnology (McGill): January, 2017

**Excellence in Doctoral Research Award, Canadian Society for Ecology and Evolution (CSEE):**  
July, 2016

Graduate Research Travel Award (McGill): 2013, 2015, 2016

**Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship (NSERC PGS-D):** 2012-2015

Lorne Trottier Science Accelerator Fellowship: 2012-2013

**Alexander Graham Bell Canada Graduate Scholarship (NSERC CGS-M):** 2011-2012

Graduate Excellence Fellowship (McGill): 2011-2013

University Medal for Academic Excellence, Biology (Memorial): 2011

NSERC Undergraduate Student Research Award (USRA): 2009, 2010, and 2011

Held in the labs of Dr. Ian Fleming and Dr. Tom Chapman, Memorial University

Project titles:

- Evolutionary ecology of interspecific interactions among Atlantic salmonids
- Evolutionary ecology of interspecific interactions involving transgenic Atlantic salmon
- Wing length and behaviour in an Australian gall-inducing thrips

Lou Visentin Award (Memorial): 2010-2011

Faculty of Science Dean's List (Memorial): 2007-2008, 2008-2009, 2009-2010, and 2010-2011

Lee Wulff Scholarship (Memorial): 2009-2010

Dean of Science Book Award (Memorial): 2009-2010

Poster Prize, Third Annual Summer Student Symposium (Memorial): 2009

## PRESENTATIONS

### *Invited seminars*

**Ecology and Evolutionary Biology Seminar Series, UCSC:** April 2018, Santa Cruz, California  
Oke, K.B. (Non)parallel evolution in salmon and other fishes

**College of Fisheries and Ocean Sciences Department of Fisheries Seminars, UAF:** February 2018, Juneau, Alaska  
Oke, K.B. (Non)parallel evolution and salmon

**McGill Organismal Seminar Graduate Student Speaker:** March 2016, Montreal, Quebec  
Oke, K.B. Parallel evolution in fishes.

**FishBase Symposium 2014 – Fishes and Genes:** October 2014, Stockholm, Sweden  
Oke, K.B., Westley, P.A.H., Moreau, D.T.R., Fleming, I.A.F. Hybridization between genetically modified Atlantic salmon and wild brown trout.

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## ***Invited public outreach talks***

**Kenai Classic Roundtable:** August 2018, Soldotna, Alaska

Oke, K.B., Cunningham, C.J., Westley, P., Lewis, B., Baskett, M., Carlson, S., Hendry, A.P., Kindsvater, H., Reynolds, J., Kendall, N., Munch, S., Kobayashi, K., Vick, G., Jovanovich, M., Karaytayev, V., Clark, J., Kibele, J., Cornejo-Donoso, J., Palkovacs, E. Changes in the size and age of Alaska Salmon

**University of Alaska Anchorage Bookstore Public Lecture Series:** January 2018, Anchorage, Alaska

Oke, K.B. (Non)parallel evolution and Alaska salmon

## ***Selected contributed talks***

**Alaska Marine Science Symposium:** January 2018, Anchorage, Alaska

Oke, K.B., Cunningham, C.J., Westley, P., Lewis, B., Baskett, M., Carlson, S., Hendry, A.P., Kindsvater, H., Reynolds, J., Kendall, N., Munch, S., Kobayashi, K., Vick, G., Jovanovich, M., Karaytayev, V., Clark, J., Kibele, J., Cornejo-Donoso, J., Palkovacs, E. How consistent are declines in the size and age of Alaska salmon?

**Evolution:** July 2017, Portland, Oregon

Oke, K.B., Cunningham, C.J., Quinn, T.P., Rolshausen, G., LeBlond, C., Hendry, A.P. The extent of parallelism in independent lineages in shared environments: Migration phenology of even-year and odd-year pink salmon (**W.D. Hamilton Award Finalist**)

**Canadian Society for Ecology and Evolution (CSEE):** July 2016, St. John's, Newfoundland

Oke, K.B., Rolshausen, G., LeBlond, C., Bukhari, M., Kaeuffer, R., Bolnick, D., Peichel, K., Quinn, T.P., Hendry, A.P. (Non)Parallel evolution in fishes: investigating potential drivers of non-parallelism in stickleback and salmon. (**Graduate Student Symposium**)

**Evolution:** June 2015, Guarujá, Sao Paulo, Brazil

Oke, K.B., LeBlond, C., Rolshausen, G., Hendry, A.P. How parallel is parallel evolution? A comparative analysis in fishes.

**Quebec Centre for Biodiversity Science Symposium:** December 2014, Montreal, Quebec

Oke, K.B., Bukhari, M., Kaeuffer, R., Rolshausen, G., Räsänen, K., Bolnick, D., Peichel, K., Hendry, A.P. Does plasticity enhance or dampen phenotypic parallelism in lake-stream stickleback?

**Genomes to Biomes:** May 2014, Montreal, Quebec

Oke, K.B., Bukhari, M., Kaeuffer, R., Rolshausen, G., Bolnick, D., Peichel, K., Hendry, A.P. (Non)parallelism in lake-stream stickleback: Plastic, genetic, or both?

**First Joint Conference on Evolutionary Biology:** July 2012, Ottawa, Ontario

Oke, K.B., Westley, P.A.H., Moreau, D.T.R., Fleming, I.A.F. Hybridization between genetically-modified Atlantic salmon and wild brown trout results in novel ecological interactions and potential genetic introgression

# Curriculum Vitae

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## MENTORING

Minxin Lu: 2017, Independent Studies project, McGill

Project title: Population estimates for the endangered Misty Lake stickleback pair

Tristan Kosciuch: 2016, Biodiversity Science Discovery Award, Quebec Centre for Biodiversity Science (QCBS)

Project title: Research project on intraspecific variation within Misty Lake lentic and lotic stickleback populations

Elena Motivans: 2013-2014, Independent Studies project, McGill

Project title: The parallelism of body shape and dimorphism between the sexes under similar selective pressures in *Oncorhynchus nerka*

Mehvish Bukhari: 2013, Independent Studies project, McGill

Project title: Does plasticity enhance or reduce parallelism?

## PROFESSIONAL AFFILIATIONS

American Society of Naturalists, Canadian Society for Ecology and Evolution, Society for the Study of Evolution, American Fisheries Society

## PEER REVIEWER

Evolution, Evolutionary Applications, Journal of Evolutionary Biology, Environmental Biology of Fishes

## TEACHING

### *Teaching assistantships*

BIOL 111: Principles: Organismal Biology, Fall 2015

BIOL 215: Introduction to Ecology and Evolution, Fall 2015

BIOL 304: Evolution, Fall 2016

### *Guest lectures*

Fish and Fisheries in a Changing World (University of Alaska Fairbanks, 4 lectures)

Pacific Salmon Life Histories (University of Alaska Fairbanks, 1 lecture)

Advanced Design and Statistics (McGill, 1 lecture)

Contemporary Topics in Aquatic Ecology (McGill, 1 lecture)

### *Workshops*

Quebec Centre for Biodiversity Science R workshop presenter 2015-2016

Workshop 1: introduction to R

Workshop 2: loading and manipulating data

Workshop 3: introduction to ggplot2, plyr, and reshape

Workshop 4: linear models

Workshop 7: generalized linear mixed models (GLMMs)

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## **EXTRACURRICULAR INVOLVEMENT**

Organismal biology representative, Biology Graduate Student Association: 2015-2016

Green committee representative, Biology Graduate Student Association: 2014-2016

Counselor, Biology Graduate Student Association: 2013-2016

Vice president, Biology Graduate Student Association: 2012-2013

## **PROFESSIONAL BACKGROUND**

Quebec Centre for Biodiversity Science R Workshop Coordinator: July 2016-June 2017

NSERC USRA Summer Research Student: May-August 2011

Fish Laboratory Research Technician: September 2009-May 2010, September 2010-December 2010

NSERC USRA Summer Research Student: May-August 2009, May-August 2010

Federal Student Work Experience Program (FSWEP) Student Assistant, Department of Fisheries and Oceans Canada: May-August 2008