

# Curriculum Vitae

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

## **Postdoctoral Research Associate**

Fisheries, Aquatic Science, and Technology (FAST) Laboratory, Alaska Pacific University and Alaska Fisheries Science Center, National Oceanic and Atmospheric Administration (NOAA), 17109 Point Lena Loop Road, Juneau, Alaska, USA, 99801; kristaoke@gmail.com; Citizenship: Canadian, U.S. permanent resident with work authorization

## **ACADEMIC BACKGROUND**

**Postdoctoral Research Associate** 2023-present, FAST Laboratory, Alaska Pacific University, and Alaska Fisheries Science Center, NOAA, Juneau, AK

Advisors: Dr. Bradley Harris, Dr. Steven Barbeaux, Dr. Peter Hulson

**National Research Council (NRC) Research Associate** 2022-2023, Alaska Fisheries Science Center, NOAA, Juneau, AK

Advisors: Dr. S. Kalei Shotwell, Dr. Elizabeth Siddon

**Postdoctoral Fellow** 2020-2022, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Juneau, AK

Advisors: Dr. Franz Mueter, Dr. Michael Litzow, Dr. Peter Westley

**Centennial Postdoctoral Fellow** 2018-2020, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Juneau, AK

Advisor: Dr. Peter Westley

**Postdoctoral Researcher** 2017-2018, Department of Ecology and Evolutionary Biology, University of California Santa Cruz, Santa Cruz, CA

Advisor: Dr. Eric Palkovacs

**Ph.D.** 2011-2017, Department of Biology, McGill University, Montreal, QC

Advisor: Dr. Andrew Hendry

Dissertation title: Parallel evolution in North American post-glacial fishes

**B.Sc. (Honours)** 2007-2011, Department of Biology, Memorial University, St. John's, NL

Advisor: Dr. Ian Fleming

Dissertation title: Ecological interactions between hybrids of brown trout and genetically modified Atlantic salmon: Insights into behaviour, competition, and morphology

## **EXTERNAL FUNDING**

Total lead PI funding: \$268,894, Total PI or co-I funding: \$355,650

North Pacific Research Board (NPRB):	<b>\$191,392</b>
Role: Co-investigator, led proposal development	
Pollock Conservation Cooperative Research Center (PCCRC):	<b>\$104,636</b>
Role: Lead PI	
National Institutes of Health (NIH) Subaward from Stony Brook University:	<b>\$164,258</b>
Role: Lead PI	
National Center for Ecological Analysis and Synthesis (NCEAS) working group.	
Role: Postdoctoral researcher, significant proposal development	

## PUBLICATIONS

First author: 8; Total: 14; Citations: 670; h-index: 8

- Oke, K.B.**, Mueter, F.J., Litzow, M.A. (2022) Warming leads to opposite patterns in weight-at-age for young versus old age classes of Bering Sea walleye pollock. *Canadian Journal of Fisheries and Aquatic Sciences*. 79: 1655-1666
- Heckley, A., Pearce, A., Gotanda, K., Hendry, A.P., **Oke, K.B.** (2022) Compiling forty years of guppy research to investigate the factors contributing to (non)parallel evolution. *Journal of Evolutionary Biology*. 35: 1414-1431
- Sanderson, S., Beausoleil, M.-O., O’Dea, R.E., Wood, Z.T., Correa, C., Frankel, V., Gorné, L.D., Haines, G.E., Kinnison, M.T., **Oke, K.B.**, Pelletier, F., Pérez-Jvostov, F., Reyes-Corral, W.D., Ritchot, Y., Sorbara, F., Gotanda, K.M., Hendry, A.P. (2021) The pace of modern life, revisited. *Molecular ecology*. doi: 10.1111/mec.16299
- Haenel, Q., **Oke, K.B.**, Laurentino, T.G., Hendry, A.P., Berner, D. (2021) Clinal genomic analysis reveals strong reproductive isolation across a steep habitat transition in stickleback fish. *Nature Communications*. 12: 4850
- Oke, K.B.**, Cunningham, C.J., Westley, P.A.H., Baskett, M.L., Carlson, S.M., Clark, J., Hendry, A.P., Karatayev, V.A., Kendall, N.W., Kibele, J., Kindsvater, H.K., Kobayashi, K.M., Lewis, B., Munch, S., Reynolds, J.D., Vick, G.K., Palkovacs, E.P. (2020) Recent declines in salmon body size impact ecosystems and fisheries. *Nature Communications*. 11: 4155
- Oke, K.B.**, Cunningham, C.J., Quinn, T.P., Hendry, A.P. (2019) Independent lineages in a common environment: the roles of determinism and contingency in shaping the migration timing of even- versus odd-year pink salmon over broad spatial and temporal scales. *Ecology Letters*. 22-10:1547-1556
- 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*. 32-3: 227-242
- 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.

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**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](https://scholar.google.com/citations?user=WuxV5YIAAAAJ&hl=en)

## *In revision*

**Oke, K.B.**, Litzow, M.A., & Mueter, F. Shifting temperature-abundance relationships for Bering Sea walleye pollock consistent with northward expansion during exceptionally warm conditions (*In post-review revision for Marine Ecology Progress Series*)

## **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

### *Select invited seminars*

**School of Aquatic and Fisheries Sciences Quantitative Seminar, University of Washington:**

April 2023, Seattle, Washington (remote)

Oke, K.B. What's next? Evaluating ecosystem indicator information at stock-specific levels

**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 Alaska 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.

### *Select contributed talks*

**Alaska Marine Science Symposium (AMSS):** January 2022, Anchorage, Alaska (Virtual due to COVID-19 pandemic)

Oke, K.B., Mueter, F., Litzow, M.A. Impacts of warming temperatures on Eastern Bering Sea walleye pollock growth and local abundance

**Association for the Sciences of Limnology and Oceanography (ASLO):** June 2021, Spain (Virtual due to COVID-19 pandemic)

**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., Mueter, F., Litzow, M.A. Broad-scale responses to novel ocean conditions in Alaskan fishes (invited symposium contribution)

**Canadian Society for Ecology and Evolution (CSEE):** August 2019, Fredericton, New Brunswick

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., Palkovacs, E. Patterns and consequences of widespread declines in Alaska salmon body size.

**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

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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

## *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

## **MENTORING**

Gautier Magne (Co-advisor): 2019, Masters Internship, University of California Berkley and Université de Pau et des Pays de L'Adour (France)

Project title: Influence of genetics and inter-annual environmental variation on juvenile morphology in a partially migratory species

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

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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, American Fisheries Society

## PEER REVIEWER

Evolution, Ecology, Proceedings of the Royal Society B, Global Change Biology, Evolutionary Applications, Canadian Journal of Fisheries and Aquatic Sciences, Journal of Evolutionary Biology, Ecology and Evolution, Environmental Biology of Fishes, Journal of Great Lakes Research, Transactions of the American Fisheries Society, Freshwater Biology, FACETS

## 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)

Data Analyses in Community Ecology (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 instructor 2015-2017

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)

## 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

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## **VOLUNTEERING**

SheJumps Far North Region Community Ambassador: January 2021-present

TrailMix Trail Steward: May 2022-September 2023

Canadian Ski Patrol Volunteer Patroller: September 2010-June 2012

## **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