Ben J. G. Sutherland

Genetics | Genomics | Bioinformatics | Molecular Ecology
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ACADEMIC / RESEARCH POSITIONS

2024-*present*	Adjunct Professor, Vancouver Island University, Fisheries and Aquaculture
2022-*present*	Scientist, Sutherland Bioinformatics (Lantzville, BC)
2022-*present*	Research associate at Vancouver Island University, Centre for Shellfish Research
2023-2024	Research associate at University of Victoria, Centre for Biomedical Research
2019-2021	Research scientist and program head at Fisheries and Oceans Canada
2018-2019	Biologist at Fisheries and Oceans Canada (Nanaimo, BC)
2017-2018	Postdoctoral researcher at the University of British Columbia (Vancouver, BC) and Fisheries and Oceans Canada (Nanaimo, BC)
2014-2017	Postdoctoral researcher at Université Laval (Québec city, QC)
2008-2014	Ph.D. Biology at the University of Victoria (Victoria, BC)
2004-2008	B.Sc. Biology (Honours) at Thompson Rivers University (Kamloops, BC)

GRANTS

2025	Indigenous Stewardship Fund and First Nations Fisheries Council of British Columbia, Salmon Resiliency Fund Program: Decentralizing salmonid genetic stock identification. Project team with Ha'oom Fisheries Society and Vancouver Island University.
2024	Climate Ready B.C. Seafood Program (CRBS) (Tula Foundation, Prov. of BC): Implement genomic selection for Ocean Acidification and Hypoxia (OAH) resistance in B.C. oysters, project team at Vancouver Island University.
2022	Province of BC: Scallop Productivity & Adaptation Research for Climate Change (SPARCC), co-investigator at Vancouver Island University.
2021	Pacific Salmon Commission, Southern Endowment Funds: Expanded bilateral chum salmon SNP genetic baseline for genetic stock identification: southern baseline augmentation
2021	Pacific Salmon Commission, Southern Endowment Funds: Sockeye salmon SNP panel genetic baseline for the Fraser River
2021	Genome BC: GeneSolve: Sockeye salmon genetic tools to inform sustainable fisheries and rebuild at-risk populations
2019	Fisheries and Oceans Canada, Aquaculture Ecosystem Interactions Program (AEIP): Whole genome resequencing of Chinook salmon
2018	CanSeq150 Genome Sequencing – White sturgeon (*Acipenser transmontanus*)

FELLOWSHIPS

2016	Postdoctoral Fellowship Fonds de recherche Santé Quebec ($30,000 over 1 yr) - *renewal*
2014	Postdoctoral Fellowship NSERC ($90,000 over 2 yr)
2014	Postdoctoral Fellowship Fonds de recherche Santé Quebec ($60,000 over 2 yr) – *offered and declined*
2012	Alexander Graham Bell Canadian Graduate Scholarship NSERC ($70,000 over 2 yr)
2008	Graduate Fellowship, University of Victoria ($52,000 over 4 yr)

AWARDS & SCHOLARSHIPS

2021 Fisheries and Oceans Canada: Immediate award, leadership through COVID19 response
2016 RAQ Postdoctoral Travel Award
2014 Best student oral presentation at Sea Lice 2014 (Portland, Maine)
2012 UVic: UVic President's Research Scholarship
2011 UVic: Bob Wright Graduate Scholarship
2011 UVic: Maureen De Burgh Memorial Scholarship
2011 UVic: B&C Food Distributors Graduate Scholarship
2010 Best poster presentation at Ecol. and Evol. Ethology of Fishes (Vancouver, BC)
2008 UVic: W. Gordon Fields Memorial Fellowship

CERTIFICATIONS

2026 Registered Professional Biologist (RPBio #5933), College of Applied Biologists

PUBLICATIONS

Preprints:

Sutherland BJG, Walker CY, Moody D, Bennett C, Wright-LaGreca M, Shamash-McLaughlin C, Leask K, Roth D, Lebeuf M, Green TJ (2025). An amplicon panel for high-throughput and low-cost genotyping of Yesso scallop *Mizuhopecten yessoensis*. *bioRxiv* 2025.11.05.686843.

Sutherland BJG, Williamson C, Toth B, Sterritt G (2025). Genome-wide characterization of upper Fraser River sockeye salmon identifies a region of major differentiation between run timing groups in the Stuart River Watershed. *bioRxiv* 2025.06.04.657877.

Peer-reviewed journal articles:

46. Surry LB, **Sutherland BJG**, Lunda SL, Loudon AH, Divilov K, Langdon CJ, Green TJ (2024) The presence of the Pacific oyster OsHV-1 resistance marker on chromosome 8 does not impact susceptibility to infection by *Vibrio aestuarianus*. *Aquaculture Science and Management*. **3**, 10.

45. Raap MR, Gurney-Smith HJ, Dudas SE, Pearce CM, Leong JS, **Sutherland BJG**, Koop BF (*in press*) Effects of ancient anthropogenic clam gardens on the growth, survival, and transcriptome of Pacific littleneck clams (*Leukoma staminea*). *FACETS*. **11**, 1-20.

44. Lunda SL, Divilov K, Green TJ, **Sutherland BJG**, Wang X, Jin L, Jennings J, Mandour M, Mueller RS, Langdon C (2026). Selection for a single nucleotide polymorphism on chromosome 8 of the genome of *Crassostrea gigas* improves resistance to both ostreid herpesvirus 1 and *Vibrio coralliilyticus*. *Aquaculture*. **614**(1), 743597.

43. **Sutherland BJG**, Divilov K, Thompson NF, Delomas TA, Lunda SL, Langdon CJ, Green TJ (2026). Pedigree-based genome-wide imputation using a low-density amplicon panel for the highly polymorphic Pacific oyster *Crassostrea* (*Magallana*) *gigas*. *Aquaculture*. **612**(1), 743096.

42. Henson LH, Christensen KA, Sutherland BJG, Johnson HA, vonHoldt B, Vik Stronen A, Paquet PC, Moody J, Koop BF, Darimont CT (2025). Grizzly bear population genomics across a coastal-interior ecotone in British Columbia, Canada. *G3: Genes|Genomes|Genetics*, **15**(12), jkaf237.

41. Thompson NF, **Sutherland BJG**, Green TJ, Delomas TA (2025). A free lunch: microhaplotype discovery in an existing amplicon panel improves parentage assignment for the highly polymorphic Pacific oyster. *G3: Genes|Genomes|Genetics*, **15**(2), jkae280.

40. Jacquemot L, Hunt B, Li S, Schulze A, Deeg CM, **Sutherland BJG**, Tabata A, Lovejoy C, Miller KM (2024). Mapping biodiversity coast-to-coast-to-coast across Canada's three oceans using eDNA metabarcoding. *Environmental DNA*.**6**:e70028.

39. Johnson HA, Rondeau EB, **Sutherland BJG**, Minkley DR, Leong JS, Whitehead J, Despins CA, Gowen BE, Collyard BJ, Whipps CM, Farrell JM, Koop BF (2024) Loss of genetic variation and ancestral sex determination system in North American northern pike characterized by whole-genome resequencing. *G3: Genes|Genomes|Genetics*, **14**(10), jkae183. *Cover feature.*

38. Christensen KA, Flores A-M, Sakhrani D, Biagi CA, Devlin RH, **Sutherland BJG**, Withler RE, Rondeau EB, Koop BF (2024) Revealing the evolutionary history and contemporary population structure of Pacific salmon in the Fraser River through genome resequencing. *G3: Genes|Genomes|Genetics*, **14**(10), jkae169.

37. **Sutherland BJG**, Thompson NF, Surry LB, Reddy Gujjula K, Carrasco CD, Chadaram S, Lunda SL, Langdon CJ, Chan AM, Suttle CA, Green TJ (2024) An amplicon panel for high throughput and low-cost genotyping of Pacific oyster. *G3: Genes|Genomes|Genetics*, **14**(9), jkae125. *Cover feature*.

36. Zhong KX, Chan AM, Collicut B, Daspe M, Finke JF, Foss M, Green TJ, Harley CDG, Hesketh AV, Miller KM, Otto SP, Rolheiser K, Saunders R, **Sutherland BJG**, Suttle CA (2024). The prokaryotic and eukaryotic microbiome of Pacific oyster spat is shaped by ocean warming but not acidification. *Applied and Environmental Microbiology*, **90**(4), E00052-24.

35. **Sutherland BJG**, Rycroft C, Duguid A, Beacham TD, Tucker S (2024) Population genomics of harbour seal *Phoca vitulina* from northern British Columbia through California and comparison to the western Atlantic sub-species. *Molecular Ecology*, **33**(7): e17293. *Cover feature.*

34. **Sutherland BJG**, Itoh N, Gilchrist K, Boyle B, Roth M, Green TJ (2023) Genomic diversity of wild and cultured Yesso scallop *Mizuhopecten yessoensis* from Japan and Canada. *G3: Genes|Genomes|Genetics*, **13**(12): jkad242.

33. **Sutherland BJG**, Finke JF, Saunders R, Warne S, Schulze AD, Strohm JHT, Chan AM, Suttle CA, Miller KM (2023) Metatranscriptomics reveals a shift in microbial community composition and function during summer months in a coastal marine environment. *Environmental DNA* **5**(5), 920-933.

32. Beacham TD, Jonsen K, **Sutherland BJG**, Ramshaw B, Rondeau EB (2022) Parentage-based tagging and genetic stock identification applied to assessment of mixed-stock fisheries and hatchery broodstocks for Chinook salmon in British Columbia, Canada. *Fisheries Research* **253**, 106369.

31. Connors BM, Siegle MR, Harding J, Rossi S, Staton BA, Jones ML, Bradford MJ, Brown R, Bechtol B, Doherty B, Cox S, **Sutherland BJG** (2022) Chinook salmon diversity contributes to fishery stability and trade-offs with mixed-stock harvest. *Ecological Applications* **32**, e2709.

30. Deeg CM, Sutherland BJG, Ming TJ, Wallace C, Jonsen K, Flynn KL, Rondeau EB, Beacham TD, Miller KM (2022) In-field genetic stock identification of overwintering coho salmon in the Gulf of Alaska: Evaluation of Nanopore sequencing for remote real-time deployment. *Molecular Ecology Resources* **22**, 1824-1835.

29. Beacham TD, Jonsen K, **Sutherland BJG**, Lynch C, Rondeau EB (2022) Assessment of mixed-stock fisheries and hatchery broodstocks for coho salmon in British Columbia, Canada via parentage-based tagging and genetic stock identification. *Fisheries Research* **245**, 106136.

28. Quinn TP, Pess GR, **Sutherland BJG**, Brenkman SJ, Withler RE, Flynn K, Beacham TD (2021) Resumption of Anadromy or Straying? Origins of Sockeye Salmon in the Elwha River. *Transactions of the American Fisheries Society* **150**, 452-464.

27. Beacham TD, Wallace C, Jonsen K, Sutherland BJG, Gummer C, Rondeau EB (2021) Estimation of conservation unit and population contribution to Chinook salmon mixed-stock fisheries in British Columbia, Canada, using direct DNA sequencing for single nucleotide polymorphisms. *Canadian Journal of Fisheries and Aquatic Sciences* **78**, 1422-1434.

26. Venney CJ, **Sutherland BJG**, Beacham TD, Heath DD (2021) Population differences in Chinook salmon (*Oncorhynchus tshawytscha*) DNA methylation: Genetic drift and environmental factors. *Ecology and Evolution* **11**, 6846-6861.

25. **Sutherland BJG**, Candy J, Mohns K, Cornies O, Jonsen K, Le K, Gustafson RG, Nichols KM, Beacham TD (2021) Population structure of eulachon (*Thaleichthys pacificus*) from Northern California to Alaska using single nucleotide polymorphisms from direct amplicon sequencing. *Canadian Journal of Fisheries and Aquatic Sciences* **78**, 78-89.

24. Akbarzadeh A, Houde ALS, **Sutherland BJG**, Gunther OP, Miller KM (2020) Identification of hypoxia-specific biomarkers in salmonids using RNA-sequencing and validation using high-throughput qPCR. *G3: Genes|Genomes|Genetics* **10**, 3321-3336.

23. Esenkulova S, **Sutherland BJG**, Tabata A, Haigh N, Pearce CM, Miller KM (2020) Comparing metabarcoding and morphological approaches to identify phytoplankton taxa associated with harmful algal blooms. *Facets* **5**, 784-811.

22. Blumstein DM, Campbell MA, Hale MC, **Sutherland BJG**, McKinney GJ, Stott W, Larson WA (2020) Comparative genomic analyses and a novel linkage map for cisco (*Coregonus artedi*) provide insights into chromosomal evolution and rediploidization across salmonids. *G3: Genes|Genomes|Genetics* **10**, 2863-2878.

21. Beacham TD, Jonsen K, McIntosh B, **Sutherland BJG**, Willis D, Lynch C, Wallace C (2020) Large-scale parentage-based tagging and genetic stock identification applied in assessing mixed-stock fisheries and hatchery brood stocks for coho salmon in British Columbia, Canada. *Canadian Journal of Fisheries and Aquatic Sciences* **77**, 1505-1517.

20. **Sutherland BJG**, Rycroft C, Ferchaud AL, Saunders R, Li L, Liu S, Chan AM, Otto SP, Suttle CA, Miller KM (2020) Relative genomic impacts of translocation history, hatchery practices, and farm selection in Pacific oyster *Crassostrea gigas* throughout the Northern Hemisphere. *Evolutionary Applications* **13**, 1380-1399.

19. **Sutherland BJG**, Prokkola JM, Audet C, Bernatchez L (2019) Sex-specific co-expression networks and sex-biased gene expression in the salmonid brook charr *Salvelinus fontinalis*. *G3: Genes|Genomes|Genetics* **9**, 955-968.

18. Moore JS, Harris LN, Le Luyer J, **Sutherland BJG**, Rougemont Q, Tallman RF, Fisk AT, Bernatchez L (2017) Genomics and telemetry suggest a role for migration harshness in determining overwintering habitat choice, but not gene flow, in anadromous Arctic Char. *Molecular Ecology* **26**, 6784-6800.

17. Poley JD*, **Sutherland BJG***, Fast MD, Koop BF, Jones SRM (2017) Effects of the vertically transmitted microsporidian *Facilispora margolisi* and the parasiticide emamectin benzoate on salmon lice (*Lepeophtheirus salmonis*). *BMC Genomics* **18**. *equal contribution

16. Benestan L, Moore JS, **Sutherland BJG**, Le Luyer J, Maaroufi H, Rougeux E, Normandeau E, Rycroft N, Atema J, Harris LN, Tallman RF, Greenwood SJ, Clark FK, Bernatchez L (2017) Sex matters in massive parallel sequencing: Evidence for biases in genetic parameter estimation and investigation of sex determination systems. *Molecular Ecology* **26**, 6767-6783.

15. **Sutherland BJG**, Rico C, Audet C, Bernatchez L (2017) Sex chromosome evolution, heterochiasmy, and physiological QTL in the salmonid brook charr *Salvelinus fontinalis*. *G3: Genes|Genomes|Genetics* **7**, 2749-2762.

14. **Sutherland BJG**, Covello JM, Friend SE, Poley JD, Koczka KW, Purcell SL, MacLeod TL, Donovan BR, Pino J, Gonzalez-Vecino JL, Gonzalez J, Troncoso J, Koop BF, Wadsworth SL, Fast MD (2017) Host-parasite transcriptomics during immunostimulant-enhanced rejection of salmon lice (*Lepeophtheirus salmonis*) by Atlantic salmon (*Salmo salar*). *Facets* **2**, 477-495.

13. Narum SR, Gallardo P, Correa C, Matala A, Hasselman D, **Sutherland BJG**, Bernatchez L (2017) Genomic patterns of diversity and divergence of two introduced salmonid species in Patagonia, South America. *Evolutionary Applications* **10**, 402-416.

12. Braden LM, **Sutherland BJG**, Koop BF, Jones SRM (2017) Enhanced transcriptomic responses in the Pacific salmon louse *Lepeophtheirus salmonis oncorhynchi* to the non-native Atlantic Salmon *Salmo salar* suggests increased parasite fitness. *BMC Genomics* **18**, 110.

11. **Sutherland BJG**, Gosselin T, Normandeau E, Lamothe M, Isabel N, Audet C, Bernatchez L (2016) Salmonid chromosome evolution as revealed by a novel method for comparing RADseq linkage maps. *Genome Biology and Evolution* **8**, 3600-3617.

10. Poley JD, **Sutherland BJG**, Jones SRM, Koop BF and Fast MD (2016). Sex-biased gene expression and sequence conservation in Atlantic and Pacific salmon lice *Lepeophtheirus salmonis*. *BMC Genomics* **17**, 483.

9. Müller A, **Sutherland BJG**, Koop BF, Johnson SC, Garver KA (2015). Infectious hematopoietic necrosis virus (IHNV) persistence in Sockeye Salmon: influence on brain transcriptome and subsequent response to the viral mimic poly(I:C). *BMC Genomics* **16**, 634.

8. **Sutherland BJG**, Poley JD, Igboeli OO, Jantzen JR, Fast MD, Koop BF, Jones SRM (2015). Transcriptomic responses to emamectin benzoate in Pacific and Atlantic Canada salmon lice *Lepeophtheirus salmonis* with differing levels of drug resistance. *Evolutionary Applications* **8**(2), 133-148.

7. **Sutherland BJG**, Koczka KW, Yasuike M, Jantzen SG, Yazawa R, Koop BF, Jones SRM (2014). Comparative transcriptomics of Atlantic *Salmo salar*, chum *Oncorhynchus keta* and pink salmon *O. gorbuscha* during infections with salmon lice *Lepeophtheirus salmonis*. *BMC Genomics* **15**, 200.

6. **Sutherland BJG,** Hansen K, Jantzen JR, Koop BF, Smith, CR (2014). Divergent immunity and energetic programs in the gills of migratory and resident *Oncorhynchus mykiss*. *Molecular Ecology* **23**(8), 1952-1964.

5. Sahlmann C, **Sutherland BJG**, Kortner TM, Koop BF, Krogdahl A, Bakke AM (2013). Early response of gene expression in the distal intestine of Atlantic Salmon (*Salmo salar L.*) during the development of soybean meal induced enteritis. *Fish & Shellfish Immunology* **34**(2), 599-609.

4. **Sutherland BJG**, Jantzen SG, Yasuike M, Sanderson DS, Koop BF, Jones SRM (2012). Transcriptomics of coping strategies in free-swimming *Lepeophtheirus salmonis* (Copepoda) larvae responding to abiotic stress. *Molecular Ecology* **21**(24), 6000-6014.
3. Jantzen SG*, **Sutherland BJG***, Minkley DR, Koop BF (2011). GO Trimming: Systematically reducing redundancy in large Gene Ontology datasets. *BMC Research Notes* **4**, 267. (**equal contributors*)
2. Pavey SA, **Sutherland BJG**, Leong J, Robb A, von Schalburg K, Hamon T, Koop B, Nielsen J (2011). Ecological transcriptomics of lake-type and riverine Sockeye Salmon (*Oncorhynchus nerka*). *BMC Ecology* **11**, 31.
1. **Sutherland BJG**, Jantzen SG, Sanderson DS, Koop BF, Jones SRM (2011). Differentiating size-dependent responses of juvenile Pink Salmon (*Oncorhynchus gorbuscha*) to sea lice (*Lepeophtheirus salmonis*) infections. *Comparative Biochemistry and Physiology D-Genomics & Proteomics* **6**(2), 213-223.

Technical Articles and Reports:

2. Urawa S, Beacham TD, **Sutherland BJG**, Sato S (2021). Winter distribution of Chum Salmon in the Gulf of Alaska: a review. Extended Abstract for NPAFC Technical Report.
1. Baillie S. M., McGowan C., May-McNally S., Leggatt R., **Sutherland B. J. G.**, Robinson S., (2019). Environmental DNA and its application to Fisheries and Oceans Canada: National needs and priorities. Canadian Technical Report of Fisheries and Aquatic Sciences. 3329.

INVITED PRESENTATIONS (*presenting author)

Invited presentations:

2026 Candace Picco and **B.J.G. Sutherland**. Developing First Nations Genetic Processing Capacity. Presentation at the Ha'oom Fisheries Society Knowledge Sharing Celebration (May 7th)

2024 **B.J.G. Sutherland.** Applied genetics in fisheries and aquaculture. Guest lecture for the Fisheries and Aquaculture department at VIU (Oct. 11).

2024 Rich Bussanich and **B.J.G. Sutherland.** Innovation: using genomics for the five Nations fisheries program. Presentation at the first Ha'oom Fisheries Society Knowledge Sharing Celebration (Feb. 14).

2022 **B.J.G. Sutherland.** Population genomic tools for application and research in shellfish breeding and aquaculture. Presentation to the BC Shellfish Growers Association AGM (Oct. 28).

2018 **B.J.G. Sutherland*** & J. Finke*. Investigating the environmental, microbial and genetic causes of oyster mortality. Presentation to the BC Shellfish Growers Association AGM (Oct. 26).

2018 **B.J.G. Sutherland***. Conservation Genomics. Lecture to the Summer Internship for Indigenous Peoples in Genomics Canada (SING), Simon Fraser University, BC, Canada (Aug. 3). Press coverage: https://vancouversun.com/news/local-news/indigenous-students-take-on-genomics-in-new-research-program

2018 **B.J.G. Sutherland***. Whole genome duplication and gene co-expression networks in salmonid fishes. Departmental Seminar (Biology), University of Victoria, BC, Canada (Mar. 2).

2017 Kristi Miller* & **B.J.G. Sutherland***. Presentation of preliminary results for the eDNA project to the Canada C3 participants. Pacific Biological Station, Nanaimo, BC, Canada. Press coverage: http://vancouversun.com/news/local-news/dna-tests-on-water-samples-provide-glimpse-into-biodiversity-on-canadas-coastline

2015 & 2016 **B.J.G. Sutherland***, S.R.M. Jones and B.F. Koop. Context-dependent interactions: salmon and salmon lice. *Guest lecturer* for Prof. J. Brodeur's Parasitology course at University of Montréal, Montréal, Québec, Canada.

2014 **B.J.G. Sutherland***. "Comparative transcriptomics in salmonids and their parasites: predictive smoltification markers and drug resistance traits." Seminar at University of Prince Edward Island, Charlottetown, PEI, Canada.

2014 D.R. Minkley* and **B.J.G. Sutherland*. "**There's something fishy about this genome!" Oral (Pecha Kucha-style) presentation for students and public at the Centre for Biomedical Research, Pecha Kucha Biomedica. Victoria, BC, Canada.

2013 B.F. Koop and **B.J.G. Sutherland***. "Genomics in lice and salmon (GiLS) project provides new tools and mechanisms for understanding louse biology." Oral presentation at World Aquaculture. Nashville, Tennessee, USA. *Multimedia available at:* http://aquacomgroup.com/Page_sections/Multimedia/Sea_Lice_AA2013/Sea_Lice_AA2013_main.html

2013 **B.J.G. Sutherland*.** "Sea lice and salmon – using gene expression to understand parasite stress and host susceptibility." Oral presentation for the Trainees in Biomedical Research Seminar Series. Victoria, BC, Canada

2011 **B.J.G. Sutherland***. "Comparative susceptibilities." Oral presentation for Managing for Uncertainty: Pathogens and Diseases in Pacific Salmon Invitational Scientists' Think Tank. Vancouver, BC, Canada

2010 **B.J.G. Sutherland***, S.G. Jantzen, J. Leong, S.R.M. Jones and B.F. Koop. "*L. salmonis* and Pacific salmon – Interactions, Sensitivities and Tools." Oral presentation for Microtek International (Pfizer). Victoria, BC, Canada

Contributed presentations and posters:

2026 C. Langdon, T.J. Green, B.J.G. Sutherland, K. Divilov, S. Lunda, J. Jennings. Marker-assisted selection for resistance to OsHV-1 in the Pacific oyster *Crassostrea gigas*. National Shellfisheries Association (March 2026).

2024 **B.J.G. Sutherland**, K. Divilov, N.F. Thompson, T.A. Delomas, S.L. Lunda, C.J. Langdon, T.J. Green. Application of a low-density amplicon panel to support breeding and selection programs in Pacific oysters. Pacific Coast Shellfish Growers Association Annual Shellfish Conference and Tradeshow (Sept. 2024).

2024 N.F. Thompson, **B.J.G. Sutherland**, T.J. Green, T.A. Delomas. Harvesting microhaplotypes within an existing SNP panel substantially increases power for relationship reconstruction in POGS breeding populations. Pacific Coast Shellfish Growers Association Annual Shellfish Conference and Tradeshow (Sept. 2024).

2024 S.L. Lunda, K. Divilov, T.J. Green, **B.J.G. Sutherland**, J.C. Jennings, M. Mandour, X. Wang, L. Jin, R.S. Mueller, C. Langdon. Selection for a single nucleotide polymorphism on chromosome 8 of the Crassostrea gigas genome improves resistance to *Vibrio coralliilyticus* and ostreid herpesvirus-1. Pacific Coast Shellfish Growers Association Annual Shellfish Conference and Tradeshow (Sept. 2024).

2024 A. Wiebe, A. Loudon, **B.J.G. Sutherland**, T. Green. Family-based phenotypic variation in response to ocean acidification in the Pacific oyster (*Crassostrea gigas*). Undergraduate student poster presentation for the VIU Biology 491 Undergraduate Research Symposium (April 2024).

2024 L. Surry, **B.J.G. Sutherland**, M. Hernandez, A. Loudon, T. Green. Impacts of OsHV-1 resistance on susceptibility to *Vibrio aestuarianus* in Pacific oysters. Undergraduate student poster presentation for the VIU Biology 491 Undergraduate Research Symposium (April 2024).

2024 S.L. Lunda, K. Divilov, T.J. Green, **B.J.G. Sutherland**, J.C. Jennings, M. Mandour, R.S. Mueller, X. Wang, L. Jin, and C. Langdon. Improved resistance to *Vibrio coralliilyticus* and ostreid herpesvirus 1 mortality in juvenile Pacific oysters (*Crassostrea gigas*) selected for a single nucleotide polymorphism on chromosome 8. 116th Annual Meeting of the National Shellfisheries Association (March 2024).

2023 L. Jacquemot*, B. Hunt, S. Li, A. Schulze, **B.J.G. Sutherland**, C. Deeg, C. Lovejoy, K.M. Miller. Coastal pan-Canadian biodiversity mapping using environmental DNA. Coastal Zone Canada CZC2023 (June 2023).

2022 **B.J.G. Sutherland**. Genetics of Sustainable oyster aquaculture. University of British Columbia. Suttle Lab Meeting (Oct. 19).

2018 K.M. Miller*, **B.J.G. Sutherland**, A. Tabata, A. Schulze, D. Callander, S. Li, C.M. Neville, B.P.V. Hunt. Environmental DNA for marine biodiversity surveys and quantification. ICES Annual Science Conference 2018, Theme Session on Modernizing fisheries stock assessment and monitoring with genetic methods. Hamburg, Germany (Sept. 24-27).

2018 **B.J.G. Sutherland**, T. Ming, T.D. Beacham, K.M. Miller*. In-field real-time sequencing for stock assessment and biodiversity monitoring. ICES Annual Science Conference 2018, Theme Session on Modernizing fisheries stock assessment and monitoring with genetic methods. Hamburg, Germany (poster: Sept. 24-27).

2018 **B.J.G. Sutherland***. The value of chromosomal information for studies in salmonid evolution, population genomics and transcriptomics. Oral presentation at the Coastwide

Salmonid Genetics meeting in Mukilteo, USA (June 16-19). Video available here: https://youtu.be/dzZYUoYaDEU

2017 J-S. Moore*, L. Harris, J. Le Luyer, **B.J.G. Sutherland**, Q. Rougemont, R.F. Tallman, A.T. Fisk, L. Bernatchez. Migration harshness drives habitat choice and local adaptation in anadromous Arctic char: evidence from integrating genomics and acoustic telemetry. Poster presentation at the Canadian Conference for Fisheries Research (CCFR) in Montréal, QC, Canada (Jan. 5-8).

2016 **B.J.G. Sutherland***, C. Audet, L. Bernatchez. Chromosome sexuel, frequencies de recombinaison dans chaque sexe et marqueurs lies aux traits phénotypique suite à une duplication entire du génome salmonidé chez l'omble de fontaine. Oral presentation at the Annual General Meeting of the Ressources Aquatic Québec (RAQ), Québec, QC, Canada. (Nov. 22-23; in French).

2016 J.D. Poley*, **B.J.G. Sutherland**, B.F. Koop, M.D. Fast, S.R.M. Jones. Transcriptomics of Pacific salmon lice infected with the microsporidian *Facilispora margolisi* and exposed to Emamectin Benzoate indicates synergistic stressors. Poster presentation at the 11th Sea Lice Conference in Ireland (Sept. 26-28).

2016 J.D. Poley*, **B.J.G. Sutherland**, O.O. Igboeli, B.F. Koop, M.D. Fast. Sea lice (*Lepeophtheirus salmonis*) responses to concurrent drug treatments with Emamectin Benzoate and Cypermethrin. Poster presentation at the 11th Sea Lice Conference in Ireland (Sept. 26-28).

2016 J.D. Poley*, C. van Iderstine, **B.J.G. Sutherland**, B.F. Koop, M.D. Fast. Drug treatment responses in *Lepeophtheirus salmonis* and need for new solutions in Canada. Oral presentation at the Aquaculture Association of Canada (AAC) 2016 conference (Special Section: Aquatic Animal Health and Integrated Pest Management) in St. John's, NL (Sept. 18).

2016 J.D. Poley*, **B.J.G. Sutherland**, S.R.M. Jones, B.F. Koop, M.D. Fast. Transcriptional responses to emamectin benzoate and other stressors in the salmon louse *Lepeophtheirus salmonis*. Invited seminar for DFO Pacific Biological Station, Nanaimo BC, Canada. (July 20).

2016 **B.J.G. Sutherland ***, T. Gosselin, E. Normandeau, M. Lamothe, N. Isabel, C. Audet and L. Bernatchez. Salmonid chromosome evolution as revealed by a novel method for comparing RADseq linkage maps. Oral presentation at the Canadian Society for Ecology Evolution conference in St. John's, NL, Canada (July 7-11).

2016 E. Normandeau *, **B.J.G. Sutherland**, and L. Bernatchez. Easily compare genetic maps with MapComp. Oral presentation and tutorial at the IBIS Club Bioinfo series, Université Laval, Québec, QC, Canada (March 15; in French).

2016 **B.J.G. Sutherland ***, T. Gosselin, E. Normandeau, M. Lamothe, N. Isabel, C. Audet and L. Bernatchez. Novel method for comparing RADseq linkage maps reveals chromosome evolution in salmonids. Oral presentation at the Interlabs-IBIS seminar series, Université Laval, Québec, QC, Canada (Feb. 17).

2015 **B.J.G. Sutherland ***, T. Gosselin, E. Normandeau, M. Lamothe, N. Isabel, C. Audet and L. Bernatchez. L'application de la carte génétique haute densité pour l'analyses des caractères quantitatifs du phénotype et de l'expression chez l'omble de fontaine, *Salvelinus fontinalis*. Oral presentation at the Annual General Meeting of the Ressources Aquatic Québec (RAQ), Québec, QC, Canada. (Nov. 10-11; in French).

2015 **B.J.G. Sutherland**, T. Gosselin, E. Normandeau, S.A. Pavey, L. Letourneau, M. Lamothe, N. Isabel, C. Audet and L. Bernatchez. High-density genetic map, phenotypic and (co)expression QTL analysis, and first draft genome assembly of the pseudotetraploid Brook

Charr *Salvelinus fontinalis*. Poster presentation at Evolutionary and Ecological Genomics (Gordon Research Conference), Maine, USA. (July 12-17).

2015 J.D. Poley*, **B.J.G. Sutherland**, K. Fitzpatrick, S.K. Whyte, O.O. Igboeli, S.L. Purcell, B.F. Koop, M.D. Fast. Basal gene expression differences between free-floating copepodids and parasitic pre-adult sea lice provides insight on development. Oral presentation at Institutional Sea Lice Conference, Charlottetown, PEI, Canada.

2015 J.D. Poley*, **B.J.G. Sutherland**, B.F. Koop, M.D. Fast. A novel multi-drug assay shows distinct sea lice *Lepeophtheirus salmonis* responses to emamectin benzoate and cypermethrin. Oral presentation at the 40th Eastern Fish Health Conference, South Carolina, USA.

2015 J.D. Poley*, **B.J.G. Sutherland**, S.R.M. Jones, B.F. Koop, M.D. Fast. Sex-biased gene expression in the salmon louse *Lepeophtheirus salmonis*. Poster presentation at the 9th International Symposium on Fish Parasites, Valencia, Spain (Aug. 31-Sept. 4).

2015 L.M. Braden*, **B.J.G. Sutherland**, S.R.M. Jones. Susceptibility to infection by the salmon louse is related to both host and parasite responses. Host-Microbe Interaction Workshop at Plant and Animal Genomics (PAG) XXIII, San Diego, California, USA.

2014 A. Müller*, **B.J.G. Sutherland**, B.F. Koop, S.C. Johnson, K.A. Garver. Characterization of the Infectious Hematopoietic Necrosis Virus (IHNV) Carrier State in Sockeye Salmon (*Oncorhynchus nerka*). Poster presentation at Genomics: the Power and the Promise (Genome Canada), Ottawa, Ontario, Canada. Abstract: *Genome*, 57(7): 386-387.

2014 L.M. Braden*, **B.J.G. Sutherland**, D.R. Minkley, B.F. Koop, S.R.M. Jones. Host-specific virulence by the sea louse, *Lepeophtheirus salmonis*. Poster presentation at Genomics: the Power and the Promise (Genome Canada) 2014, Ottawa, Ontario, Canada.

2014 **B.J.G. Sutherland***, J.D Poley, O.O. Igboeli, J.R. Jantzen, M.D. Fast**,** B.F. Koop, S.R.M. Jones. Transcriptomics of emamectin benzoate responses in resistant Atlantic and sensitive Pacific salmon lice *Lepeophtheirus salmonis*. Oral presentation at Sea lice 2014, Portland, Maine, U.S.A. (*best student oral presentation*).

2014 **B.J.G. Sutherland***, K.C. Hanson, J.R. Jantzen, B.F. Koop, C.T. Smith. Divergent immunity and energetic programs in the gills of migratory and resident *Oncorhynchus mykiss*. Oral presentation at the American Fisheries Society meeting, Québec, QC, Canada, and as part of the Interlabs-IBIS seminar series, Université Laval (invited).

2014 S.R.M. Jones*, **B.J.G. Sutherland**, L.M. Braden and B.F. Koop. "Salmon – louse interactions: genomics and the evolution of the inflammation paradigm." Invited oral presentation at the 2nd International Conference for Integrative Salmonid Biology. Vancouver, BC, Canada.

2014 J.D Poley, **B.J.G Sutherland**, S.K. Whyte, O.O. Igboeli, S.L. Purcell, B.F. Koop, M.D. Fast*. Male lice are from Venus, Female lice are from Mars: Don't get me started on immature life stages. Oral presentation at the Aquaculture Association of Canada.

2014 J.D. Poley*, **B.J.G. Sutherland**, S.K. Whyte, O.O. Igboeli, S.L. Purcell, K. Fitzpatrick, B.F. Koop, M.D. Fast. Transcriptomic responses of copepodid sea lice (*Lepeophtheirus salmonis*) exposed to commonly used therapeutants in aquaculture. Oral presentation at Eastern Fish Health Workshop Meeting, Shepperdstown, West Virginia, USA & CSZ-CSEE-SCL First Joint Conference, Montréal, Quebec, Canada.

2014 **B.J.G. Sutherland***. "Living like a louse: Evading salmon defenses, chemical treatments and environmental stressors." Biology Departmental Seminar for the University of Victoria, Victoria, B.C. Canada.

2013 S.R.M. Jones*, **B.J.G. Sutherland**, L.M. Braden and B.F. Koop. Parasitological, physiological and molecular metrics of resistance to *Lepeophtheirus salmonis* among salmon.

Oral presentation at the 16th International Conference on Diseases of Finfish and Shellfish. Tampere, Finland.

2013 M.D. Fast,* J.D. Poley, O.O. Igboeli, **B.J.G. Sutherland**, B.F. Koop, S.L. Purcell, J.M. Covello, J.F. Burka, S. Whyte (2013). There and back again: Managing sea lice infection and resistance to treatment. Poster presentation at the 16th International Conference on Diseases of Fish and Shellfish. Tampere, Finland.

2013 A. Müller, K.A. Garver, **B.J.G. Sutherland**, B.F. Koop and S.C. Johnson*. "Characterization of the infectious hematopoietic necrosis virus (IHNV) carrier state in sockeye salmon (*Oncorhynchus nerka*). Oral presentation at The 1st Conference of the International Society of Fish and Shellfish Immunology. Vigo, Spain

2012 **B.J.G. Sutherland***, K.W. Koczka, S.R.M. Jones and B.F. Koop. Early responses of three salmonid species to *Lepeophtheirus salmonis* (Copepoda) infections." Oral presentation at the 1st International Conference for Integrative Salmonid Biology. Oslo, Norway

2012 S.R.M. Jones*, **B.J.G. Sutherland** and B.F. Koop. "Biological and transcriptional consequences of infection with *Facilispora margolisi* (Microsporidia: Crustaceacida) following vertical transmission among larval salmon lice *Lepeophtheirus salmonis*." Poster presentation at the 1st International Conference for Integrative Salmonid Biology. Oslo, Norway

2012 **B.J.G. Sutherland***, K.W. Koczka, S.R.M. Jones and B.F. Koop. "Stressed lice and refractory responses: Host-parasite transcriptomics." Oral presentation at the 9th International Sea Lice Conference. Bergen, Norway

2010 S.R.M. Jones*, **B.J.G Sutherland** and B.F. Koop. "Attractions and rejections: exploring host specificity among salmon using the model ectoparasitic copepod *Lepeophtheirus salmonis*." Oral presentation at The 12th International Congress of Parasitology (ICOPA). Melbourne, Australia

2010 **B.J.G. Sutherland***, S.G. Jantzen, D.S. Sanderson, E. Kim, S.R.M. Jones and B.F. Koop. "Understanding the varying sensitivities of salmon to *Lepeophtheirus salmonis* infections." Poster presentation at the 8th International Sea Lice Conference. Victoria, BC, Canada

2010 S.G. Jantzen*, **B.J.G. Sutherland**, D.S. Sanderson, S.R.M. Jones and B.F. Koop. "Sea lice (*Lepeophtheirus salmonis*) transcriptional responses to gradients of salinity, temperature, and emamectin benzoate." Poster presentation at the 8th International Sea Lice Conference. Victoria, BC, Canada

2009 **B.J.G. Sutherland***, S.G. Jantzen, D.S. Sanderson, E. Kim, S.R.M Jones and B.F. Koop. "Understanding the varying sensitivities of salmon to *Lepeophtheirus salmonis* infections." Poster presentation at Ecological and Evolutionary Ethology of Fishes, Vancouver, BC, Canada (*best poster prize*)

2009 **B.J.G. Sutherland***, G.A. Cooper, S.R.M. Jones and B.F. Koop. "Transcriptomic responses of juvenile pink salmon *Oncorhynchus gorbuscha* following exposure to the salmon louse *Lepeophtheirus salmonis*." Oral presentation at Aquaculture Canada 2009. Nanaimo, BC, Canada

SOCIETY & ORGANIZATION MEMBERSHIP

Pacific Coast Shellfish Growers Association (2024-2025)
Fisheries and Oceans Canada eDNA National Working Group (2018-2021)
Canada C3 Science Team (Canada 150 Year Expedition) (2017-2021)
Canadian Society of Ecology and Evolution (CSEE-SCEE) (2015-2017)
Ressources Aquatiques Québec (RAQ) (2014-2017)

American Fisheries Society (2014-2017)
World Aquaculture Society (2012-2014)

SUPERVISION & MENTORSHIP

2026	Claire Rycroft (Research Assistant, VIU)
2026	Bri Cooper (Undergraduate Research Assistant, VIU)
2024-*present*	James Dennis-Orr (MSc student, U. Calgary and VIU)
2024-*present*	Denman Moody (MSc student, U. Calgary and VIU)
2024	Tanzin King (Undergraduate research program, VIU)
2023-2024	Alexandra Wiebe (Undergraduate research program, VIU)
2023-2024	Liam Surry (Undergraduate research program, VIU)
2023	Chelsea Bennett (Post-graduate diploma program, VIU)
2017-2021	Claire Rycroft (Research Assistant, University of British Columbia)
2013-2016	Jordan Poley (Ph.D. student, University of PEI)
2011-2012	Kim Koczka (Research Assistant, UVic)
2012	Ben Cox (Undergraduate, UVic)

PEER REVIEW

I am a Web of Science top peer reviewer and have served as an external referee for more than 50 articles in 20 different journals, including verified reviews for *BMC Genomics* (11), *Molecular Ecology* (8), *Evolutionary Applications* (7), *Scientific Reports* (5), *Parasites & Vectors* (4), *Fish & Shellfish Immunology* (4), *G3: Genes|Genomes|Genetics* (2), *Genes* (2), *Heredity* (2), among others. For a complete list, including open reviews please see the following link: https://www.webofscience.com/wos/author/record/E-8471-2012

VOLUNTEER AND COMMITTEE ACTIVITY

2018	Member of the International Reviewer Committee for Sea Lice 2018 (Chile)
2016	Poster judge at la journée des étudiants d'IBIS (Université Laval, in French)
2016	Presentation judge at the Canadian Society for Ecology and Evolution meeting
2013-2014	Executive Member of Trainees in Biomedical Research, UVic
2013	Search Committee for the Director of the Centre for Biomedical Research, UVic
2011-2013	Dept. of Biology Graduate Student Committee (student representative)
2011	Finance Committee (co-chair) for the UVic Graduate Student Symposium
2010	Student Organizer Sea Lice 2010 conference at Victoria, BC, Canada
2010	Finance Committee for the UVic Graduate Student Symposium
2009	Glendale Gardens, Victoria, BC, Canada Volunteer
2007-2008	Thompson Rivers University Omega campus newspaper contributor
2007	Thompson Rivers University Science Fair Judging Committee