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Professor
Biology Department
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EDUCATION

2010 Doctorate of Philosophy, Zoology, University of British Columbia
2005 Master of Science, Biology, McGill University
2003 Bachelor of Science, Biological Sciences, University of Guelph

APPOINTMENTS

2024- Full Professor, Biology Department, McGill University
2022-2024 Interim Director, Redpath Museum, McGill University
2019-2024 Associate Professor, Redpath Museum, McGill University
2013-2023 Canada Research Chair (Tier 2), Redpath Museum, McGill University
2013-2024 Associate Member, Department of Biology, McGill University
2013-2019 Assistant Professor, Redpath Museum, McGill University
2012-2013 Banting Postdoctoral Fellow, Natural Sciences and Engineering Research Council of Canada, Harvard University
2010-2012 Howard Alper Postdoctoral fellow, Natural Sciences and Engineering Research Council of Canada, Harvard University
2010-2012 Foundational Questions in Evolutionary Biology Fellow, Harvard University

HONOURS

2021 Elected Member of the Royal Society of Canada, College of New Scholars, Artists, and Scientists
2019 Principal's Prize for Outstanding Emerging Researchers, McGill
2018 Canada Research Chair, Tier II (renewed)
2014 Early Career Award, Canadian Society for Ecology and Evolution
2013 Canada Research Chair, Tier II
2013 Dobzhansky Prize, Society for the Study of Evolution
2012 Young Investigators Prize, American Society of Naturalists
2012 Biology Fellow, Wissenschaftskolleg, Berlin, Germany
2011 John Maynard Smith Prize, European Society for Evolutionary Biology
2011 Governor General Gold Medal, Government of Canada
2011 Faculty of Science Graduate Prize, University of British Columbia
2010 Howard Alper Prize, Natural Sciences and Engineering Research Council of Canada

RESEARCH FUNDING

- 2026-2027 Resources for Research Groups Award: Genomic mechanisms of resilience to environmental change (12,444 CAD, PI, 100% funding)
- 2026-2031 Natural Science and Engineering Research Council, Discovery Grant: Genomic mechanisms of resilience to environmental change (315,000 CAD, PI, 100% funding)
- 2026-2027 Nunatsiavut Government, Contract, Biological effects of contaminants on wildlife microbiomes (27,940 CAD, PI, 100% funding)
- 2026-2027 Swiss National Science Foundation, Scientific Exchange Grant, Linking pollutant exposure to within-species microbial adaptation in vertebrate gut microbiomes (20,200 CHF, co-PI with Claudia Bank, 100% funding)
- 2025-2026 Environment and Climate Change Canada, Strategic Environmental Assessment of the Baffin Bay – Davis Straight, contract to analyze biological effects of contaminants on wildlife microbiomes (39,100 CAD, PI, 100% funding)
- 2025-2026 McGill University Department of Earth and Planetary Sciences, Robert Wares Faculty Scholar Fund, Harnessing the power of experimental evolution to manipulate microbial diets (80,000 CAD, co-PI with Nagissa Mahmoudi, Rees Kassen, 33% funding)
- 2024-2026 Crown-Indigenous Relations and Northern Affairs Canada, Marine Conservation Targets Initiative, Heritability of DNA methylation in Arctic Seabirds (91,226 CAD, PI, 100% funding)
- 2024-2026 Natural Science and Engineering Research Council, Alliance Grant, Discovering and Protecting Unique Freshwater Diversity in Eastern Canada, With Special Focus on Threespine Stickleback Fish in Quebec Parks (298,490 CAD, co-PI with Andrew Hendry, Alison Derry, Oliver Morissette, and Jaclyn Hill, 20% funding)
- 2024-2025 Resources for Research Groups award, Digital Research Alliance of Canada: Population genomic responses to environmental change (17,050 CAD, PI, 100% funding)
- 2024-2027 Northwest Territories, Cumulative Impact Monitoring Program: Contaminants, Caribou Epigenetics and Genomic Health (467,000 CAD, PI, 100% funding)
- 2023-2025 Fonds de Recherche Nature et Technologies, Team Research Project Grant: Understanding the genetic basis of coral adaptation through multi-omics analyses of host-microbiome interactions (120,000 CAD, Co-PI with Nicolas Derome, Pierre Blier, and Ilga Porth, 25% funding)
- 2023-2024 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (33,536 CAD, PI, 100% funding)
- 2022-2023 Natural Science and Engineering Research Council, Alliance Grant: The role of epigenetics in rapid environmental adaptation: How do threespine stickleback fish in Californian bar-built estuaries rapidly adapt to seasonal salinity changes? (25,000 CAD; co-PI with Nicole Francis, 50% funding)
- 2022-2023 Crown-Indigenous Relations and Northern Affairs Canada, Marine Conservation Targets Initiative, Assessing sub-lethal effects of oil-related contaminants in seabirds and their habitat in protected areas and adjacent regions in the Baffin Bay – Davis Strait region (123,000 CAD, PI, 100% funding)
- 2022-2023 Environment and Climate Change Canada, Strategic Environmental Assessment of the Baffin Bay – Davis Straight, contract to analyze epigenetic responses in arctic seabirds in relation to contaminants (11,500 CAD, PI, 100% funding)
- 2022-2023 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (37,744 CAD, PI, 100% funding)

- 2022-2023 Carnegie Canada Grant: Exploring coral microbiome's responses to heat with a sea anemone model system (17,571 USD; Co-PI with Phillip Cleves, 50% funding)
- 2022-2026 National Science Foundation, Rules of Life Grant: Does re-wilding lead to re-wiring of gene expression and species interaction networks? (2,999,999 USD; Senior Personnel, PI: Daniel Bolnick, 5% funding)
- 2021-2022 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (4,397 CAD, PI, 100% funding)
- 2021-2023 Fonds de Recherche Nature et Technologies, Team Research Project Grant: Interactions between local adaptation and range expansion in the context of climate change, (120,000 CAD; Co-PI with Lauren Chapman, 30% funding)
- 2020-2021 Environment and Climate Change Canada, Strategic Environmental Assessment of the Baffin Bay – Davis Straight, contract to analyze epigenetic responses in arctic seabirds in relation to contaminants (20,000 CAD, PI, 100% funding)
- 2020-2021 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (4,397 CAD, PI, 100% funding)
- 2019-2021 Natural Science and Engineering Research Council, Discovery Accelerator Supplement (120,000 CAD, PI, 100% funding)
- 2019-2024 Natural Science and Engineering Research Council, Discovery Grant: Mechanisms of resilience to environmental change in eco-evolutionary systems (325,000 CAD, PI, 100% funding)
- 2019-2020 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (4,397 CAD, PI, 100% funding)
- 2018-2021 Open Grant: Identification of endangered species using DNA barcoding of steeped alcohol, Chinese Academy of Sciences (70,000 RMB = 13,288 CAD; co-PI with Chen Jing, Weijing Zhu, Wang Yunyu, and Yang Chunyan, 20% funding)
- 2018-2019 CanSeq150 grant: Illuminating the genomic basis of adaptation to ionic gradients in Canadian freshwater fishes, Canada's Genomics Enterprise (Free of cost sequencing of the *Perca flavescens* and *Percina caprodesa* genomes; co-PI with Ioannis Ragoussis)
- 2018-2019 Liber Ero Conservation Biology Allocation: The genetic basis of community evolutionary rescue, McGill University (35,000 CAD, PI, 100% funding)
- 2018-2019 CanSeq150 grant: Evolutionary resilience of calanoid copepods at the base of northern aquatic food webs in the face of rapid environmental change, Canada's Genomics Enterprise (Free of cost sequencing of the *Leptodiptomus minutus* genome; co-PI with Ioannis Ragoussis and Alison Derry)
- 2018-2023 Canada Research Chair, Tier 2 (500,000 CAD, PI, 100% funding)
- 2018 Fessenden Innovation Prize: PyType – a simple method for genotyping captive-bred ball pythons, McGill University (5,000 CAD, PI, 100% funding)
- 2018-2019 Quebec Center for Biodiversity Science Seed Grant: Investigating the role of foraging behavior in eco-evolutionary dynamics (5,000 CAD; Co-PI with Pierre-Olivier Montiglio, 50% funding)
- 2018 Fessenden Innovation Prize: Identification of endangered species using DNA barcoding of steeped alcohol, McGill University (5,000 CAD, PI, 100% funding)
- 2018-2019 CanSeq150 grant: Integrating genomics for understanding the role of population structure and selection in native gastropod resilience in the face of exotic invasion in the Upper St. Lawrence River, Canada's Genomics Enterprise (Free of cost sequencing of the *Amnicola limosa* genome; co-PI with Ioannis Ragoussis and Alison Derry)
- 2018-2019 Quebec Center for Biodiversity Science Seed Grant: Evolutionary resilience at the base of aquatic food webs (5,000 CAD; Co-PI with Alison Derry, 50% funding)

- 2017-2019 Canada First Research Excellence Fund: Food from Thought (372,000 CAD; Investigator, Lead-PI: Melania Cristescu, 5% funding)
- 2016-2018 Fonds de Recherche Nature et Technologies, New University Researcher Grant: Physiological, epigenetic, and genetic mechanisms of resilience to temperature change (50,800 CAD, PI, 100% funding)
- 2017-2018 National Science and Engineering Research Council, Research Tools and Instruments Grant: Portable array for remote monitoring of cryptic vertebrate biodiversity (89,013 CAD; Co-PI with Andrew Hendry, 0% funding)
- 2016-2017 Quebec Center for Biodiversity Science Seed Grant: The genomics and epigenetics of adaptation to temperature change (5,000 CAD; Co-PI with Dan Schoen, 50% funding)
- 2016-2018 Fonds de Recherche Nature et Technologies, Team Research Project Grant: Swimming and sensing: Effects of hypoxia and thermal stress on performance and sensory information acquisition in fishes (120,000 CAD; Co-PI with Lauren Chapman, 20% funding)
- 2015-2018 National Science Foundation, Population and Community Ecology Research Grant: Eco-evolutionary dynamics of community assembly on islands (882,925 USD = 1,142,902 CAD; Co-PI with Robert Pringle, 25% funding)
- 2015-2016 Natural Science and Engineering Research Council, Research Tools and Instruments Grant: Freshwater wells to support research in evolutionary genomics, physiology, and aquaculture at the Bamfield Marine Sciences Centre (61,716 CAD; Co-PI with Bradley Anholt, Andrew Hendry, Greg Goss, and Chris Wood, 0% funding)
- 2015-2016 Canadian Institute for Ecology and Evolution Thematic Program Grant: Maladaptation working group (12,548 CAD; Co-PI with Alison Derry, Andrew Hendry, and Gregor Fussmann, 0% funding)
- 2013-2018 Canadian Foundation for Innovation Leaders Opportunity Fund: Integrated Facilities for Ecological Genomics and Bioinformatics (350,000 CAD, Lead-PI, 100% funding)
- 2013-2018 Canada Research Chair, Tier 2 (500,000 CAD, PI, 100% funding)
- 2013-2018 Natural Science and Engineering Research Council, Discovery Grant: Experimental genomics of adaptation to changing environments (190,000 CAD, PI, 100% funding)
- 2013-2014 Natural Science and Engineering Research Council, Research Tools and Instruments Grant: Environmental chamber and aquatic housing to study adaptation to temperature in fishes (116,875 CAD; Co-PI with Daniel Schoen, Andrew Hendry, and Melania Cristescu, 100% funding)
- 2013-2014 Quebec Center for Biodiversity Science Seed Grant: Parallelism in gene expression during speciation (5,000 CAD; Co-PI with Andrew Hendry, 50% funding)
- 2012-2013 Putnam Expedition Grant, Harvard University (11,080 USD = 14,342 CAD, PI, 100% funding)
- 2012-2013 National Geographic Society Research and Exploration Grant: Natural selection on genes in the Sand Hills of Nebraska (21,866 USD = 28,304 CAD, PI, 100% funding)
- 2011-2012 Putnam Expedition Grant, Harvard University (14,350 USD = 18,575 CAD, PI, 100% funding)
- 2010-2011 Putnam Expedition Grant, Harvard University (8,360 USD = 10,822 CAD, PI, 100% funding)

FELLOWSHIPS

- 2012 Banting Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada

2012	Wissenschaftskolleg zu Berlin Fellowship, Ernst Reuter Foundation for Advanced Study
2010	Foundational Questions in Evolutionary Biology Fellowship, Harvard University
2010	Howard Alper Postdoctoral Fellowship, Natural Sciences and Engineering Research Council
2010	Zoology Department Graduate Scholarship, University of British Columbia
2009	Dr. Chi-Kit Wat Scholarship, University of British Columbia
2009	Four-Year Scholarship, University of British Columbia
2006	Post-Graduate Doctoral Scholarship, Natural Sciences & Engineering Research Council

PUBLICATIONS

(trainees underlined, * = equal contributions)

Journal articles submitted or in review/revision:

99. Eckert, L., Bolnick, D.I., Derry, A.M., Haines, G.E., Heckley, A.M., Lind, A.J., Peichel, C.L., Roth, A.M., Steinel, N.C., Vlahiotis, K., Weber, J.N., Hendry, A.P., **Barrett, R.D.H.** Intrinsic fitness differences outweigh environmental matching in shaping introduction outcomes in nature. *Current Biology* submitted.
<https://www.biorxiv.org/content/10.64898/2026.02.04.699496v1>
98. Eckert, L., Bolnick, D.I., Peichel, C.L., Hendry, A.P., **Barrett, R.D.H.** Disassortative mating in replicated secondary contact experiments in nature. *Evolution Letters* submitted.
<https://www.biorxiv.org/content/10.64898/2026.04.28.721371v1>
97. Glynn, V.M., Lawrence, E.C., Cleves, P.A., **Barrett, R.D.H.** Symbiont identity impacts prokaryotic microbiome dynamics during heat stress in a model system for corals. *Integrative and Comparative Biology* in review.
96. Pal, N., Gemeinhardt, T.M., **Barrett, R.D.H.**, Francis, N.J. More than SAM: Mechanisms of action of the Polycomb Group protein Polyhomeotic. *Nucleus* submitted.
95. Hickox, M.K., Wasserman, B.A., Garcia-Elfring, A., Palcovacs, E.P., Hendry, A.P., **Barrett, R.D.H.** Stickleback populations in highly dynamic environments reveal the spatial and temporal repeatability of natural selection. *Molecular Ecology* in review.
94. Lin, M.K.R., Gossard, D., Glynn, V., Anthony, M., Jones, A., Kerr, H., Pierce, S., Lindell, S., **Barrett, R.D.H.***, Mahmoudi, N.* Warming modifies the assembly and succession of the kelp microbiome. *FEMS Microbiology Ecology* in review.
93. Derrick, E., Costa, N.B., **Barrett, R.D.H.**, Shapiro, B.J. A glyphosate-based herbicide selects for genetic changes while retaining within-species diversity in a freshwater bacterioplankton community. *The ISME Journal* in review.
<https://www.biorxiv.org/content/10.1101/2024.09.17.613573v1.full.pdf>

Journal articles published or accepted/in press:

92. Kholwadwala, A., Katkov, E., Lypaczewski, P., Gonzalez, A., **Barrett, R.D.H.***, Shapiro, B.J.* (2026) Nutrient enrichment and connectivity jointly shape bacterioplankton diversity. *Environmental Microbiology* accepted.
91. Lardinois, L.L., Hinojosa, N.A., Arrieta, H.Q., Sellers, A.J., Leray, M.* **Barrett, R.D.H.*** (2026) Host matters: coral reef fish species show distinct skin microbiome responses to abrupt environmental change. *BMC Microbiology* accepted.
90. Heckley, A.M., **Barrett, R.D.H.**, Bell, A.M., Bolnick, D.I., Dinh, F., Eckert, L., Haines, G.E., Peichel, C.L., Hendry, A.P., Gotanda, K.M. (2026) Correlates of post-introduction displacement in a conservation translocation of threespine stickleback. *Freshwater Biology* 71(4): e70214.

89. Garcia-Elfring, A., Paccard, A., Barrett, R.D.H. (2026) Genomics of freshwater adaptation in threespine stickleback from eastern Canada. *Genome Biology and Evolution* accepted.
88. Bolnick, D.I., Eckert, E., Barrett, R.D.H., Choi, E., Hendry, A.P., Kerns, E.V., Lind, Å.J., Milligan-McClellan, K., Peichel, C.L., Sasser, K., Thornton, A.R., Wolf, C., Weber, J.N., Steinel, N.C. (2026) Eco-evolutionary dynamics of infection and immunity in experimentally founded lake populations of threespine stickleback. *American Naturalist* accepted. <https://www.biorxiv.org/content/10.1101/2024.06.24.600494v1.full.pdf>.
87. Luo, M., Guo, H., **Barrett, R.D.H.**, Hu, J. (2026) Parallel plastic responses and standing genetic variation in salinity responsive genes under projected salinization in freshwater fish. *Molecular Ecology* 35(2): e70246.
86. Salamon, M., Saint-Martin, M., **Barrett, R.D.H.***, Derry, A.M.* (2026) Evolutionary rescue and adaptive reversal allowed the persistence of freshwater copepods during historical lake acidification and pH recovery. *Proceedings of the Royal Society of London B* 293(2064): 20252650.
85. Sanderson, S., Eckert, L., **Barrett, R.D.H.**, Reimchen, T., Hendry, A.P. (2026) Contemporary evolution of an at-risk stickleback population during a severe drought. *Evolutionary Applications* 19(1): e70189.
84. Ho, W., Lind, Å., Smith, R., Dwyer-Samuel, F., Tomy, G., Mallory, M.L., Provencher, J., **Barrett, R.D.H.** (2025) Epigenetic responses to anthropogenic versus natural sources of oil exposure differ in wild Arctic seabird populations. *Evolutionary Applications* 18(7): e70125. doi.org/10.1111/eva70125.
83. He, X., Maruki, T., Gamero, W.M., **Barrett, R.D.H.**, Fugère, V., Fussmann, G.F., Gonzalez, A., Shapiro, B.J., Cristescu, M.E. (2025) Metatranscriptomics based on environmental RNA reveals glyphosate-based herbicide effects on a freshwater eukaryotic community. *Molecular Ecology* 34(22): e70164.
82. Carrión, P.L., Beausoleil, M., Raeymaekers, J.A.M., De León, L.F, Chaves, J.A., Sharpe, D.M.T., Huber, S.K., Herrel, A., Gotanda, K.M., Koop, J.A.H., Knutie, S.A., Clayton, D.H., Podos, J., **Barrett, R.D.H.**, Guichard, F., Hendry, A.P. (2025) Darwin's finches and climate change: insights from a resilient system. *Journal of Evolutionary Biology* doi: 10.1093/jeb/voaf138.
81. Katkov, E. Gros, M., Fugère, V., Sychterz, A., Tadiri, C.P., **Barrett, R.D.H.**, Cristescu, M., Fussmann, G.F., Gonzalez, A. (2025) Connectivity and nutrient enrichment affect the productivity and stability of aquatic meta-ecosystems. *Proceedings of the Royal Society of London B* 292: 202511197.
80. Eckert, L., Eckert, I., Rahn, O., So., C., **Barrett, R.D.H.** (2025) Genetic insights from herbarium collections and implications for global change research. *New Phytologist* doi.org/10.1111/nph.70454.
79. Hu, J., Ren, X., **Barrett, R.D.H.**, Samma, E., Sulkowski, M., Brady, S.P. (2025) Alternative splicing and parallel patterns of gene expression underlie population and life history divergence in an amphibian. *Ecology and Evolution* 15(11): e72481.
78. Fox, J., Reader, S., Guigueno, M.F., **Barrett, R.D.H.** (2025) Changes in grouping behaviour and DNA methylation patterns in response to early-life stress in Trinidadian guppies. *Molecular Ecology* 34(14): e:17831.
77. Glynn, V.M., Marangoni, L.F., Guglielmetti, M., Tapia, E.R., Ali, V., Quintero, H., Guerra, E.C.R., Yuval, M., Kline, D.I., Leray, M., Connolly, S.R., **Barrett, R.D.H.** (2025) The role of holobiont composition and environmental history in thermotolerance of Tropical Eastern Pacific corals. *Current Biology* 35: 1-16.e1-e7.
76. Fox, J., Reader, S., **Barrett, R.D.H.** Rapid neural DNA methylation responses to predation stress in Trinidadian guppies. (2025) *Molecular Ecology* 34(10): e17774.

75. Garcia-Elfring, A., Roffey, H.L., Abergas, J.M., Hendry, A.P., **Barrett, R.D.H.** *GTP cyclohydrolase 1* and axanthism in ball pythons: a new vertebrate model for pterin-based pigmentation. (2025) *Animal Genetics* 56: e70011.
74. Zhao, J., Luo, M., Merila, J., **Barrett, R.D.H.**, Guo, B., Hu, J. The interplay between epigenomic and transcriptomic variation in divergence of stickleback ecotypes. (2025) *BMC Biology* 23(1):70. doi.org/10.1186/s12915-025-02176-0.
73. Xu, C.C.Y., Fugère, V., Costa, N.B., Beisner, B.E., Bell, G., Cristescu, M.E., Fussmann, G.F., Gonzalez, A., Shapiro, B.J., **Barrett, R.D.H.** Pre-exposure protects against severe environmental stress in complex natural communities. (2025) *Current Biology* 35: 1-13.
72. Garcia-Elfring, A., Roffey, H.L., Abergas, J.M., Hendry, A.P., Tzika, A.C., **Barrett, R.D.H.** Ball python colour morphs implicate *mc1r* in skin color patterning. (2025) *Pigment Cell and Melanoma Research* 38(1): e13215. doi.org/10.1111.pcmr13215.
71. Loria, A., Tournayre, O., Hébert M.-P., Costa N.B., Fugère V., **Barrett R.D.H.**, Beisner, B.E., Bell G., Shapiro B.J., Gonzalez A., Cristescu, M.E. Estimating rapid zooplankton diversity changes during acute herbicide contamination using environmental DNA. (2025) *Environmental DNA* 7: e70029. doi.prg10/1002/edn370029.
70. Salamon, M., Astorg, L., Paccard, A., Chain, F., Hendry, A.P., Derry, A.M.*, **Barrett, R.D.H.*** Limited migration from physiological refugia constrains the rescue of native gastropods facing an invasive predator. (2024) *Evolutionary Applications* 17(10): e70004.
69. Fox, J., Hunt, D., Hendry, A.P., Chapman, L., **Barrett, R.D.H.** (2024) Counter-gradient variation contributes to divergence of colonizing populations of fish in varying dissolved oxygen environments. *Molecular Ecology* doi.org/10.1111/mec/17419.
68. Hendry, A.P., **Barrett, R.D.H.**, Bell, A., Bell, M., Bolnick, D.I., Gotanda, K., Haines, G., Lind, Å., Packer, M., Peichel, C.L., Peterson, C., Poore, H., Massengill, R., McClellan, K., Steinel, N.C., Sanderson, S., Walsh, M., Weber, J.N., Derry, A.M. (2024) Designing eco-evolutionary experiments restoration projects: opportunities and constraints revealed during stickleback introductions. *Ecology and Evolution* doi.org/10.1002/ece3.11503.
67. Baduel, P., Sammarco, I., **Barrett, R.D.H.**, Coronado-Zamora, M., Crespel, A., Díez-Rodríguez, B., Fox, J., Galanti, D., González, P., Jueterbock, A., Wootton, E., Harney, E. (2024) The evolutionary consequences of interactions between the epigenome, the genome, and the environment. *Evolutionary Applications* doi.org/10.1111/eva.13730.
66. Fox, J., Toure, M.W., Heckley, A., Raina, F., Reader, S., **Barrett, R.D.H.** (2024) Guppies as a powerful model to understand adaptive behavioural plasticity. *Proceedings of the Royal Society of London B* doi.org/10.1098/rspb.2023.2625.
65. Xu, C.C.Y., Lemoine, J., Albert, A., Whirter, E.M., **Barrett, R.D.H.** (2023) Community assembly of the human piercing microbiome. *Proceedings of the Royal Society of London B* doi.org/10.1098/rspb.2023.1174.
64. Beausoleil, M., Carrion-Aviles, P.L., Podos, J., Camacho, C., Richard, R., Lalla, K., Raeymaekers, J.A.M., Knutie, S.A., De Leon, L.F., Huber, S.K., Chaves, J.A., Clayton, D.H., Koop, J.A.H., Sharpe, D., Gotanda, K.M., **Barrett, R.D.H.***, Hendry, A.P.* (2023) The fitness landscape of a community of Darwin's finches. *Evolution* doi.org/10.1093/evolut/qpad160. [SSE Presidents' Award for Outstanding Dissertation Paper]
63. Martins, A.R.P., Warren, N., McMillan, W.O., **Barrett, R.D.H.** Spatiotemporal dynamics in butterfly hybrid zones. *Insect Science* (2023) doi.org/10.1111/1744-7917.13262.
62. Garcia-Elfring, A., Roffey, H.L., Louchmanov, A.L., Sabin, C.E., Samudra, S.P., Alcalá, A.J., Lauderdale, J.D., Hendry, A.P., Menke, D.B., **Barrett, R.D.H.** (2023) Piebaldism and chromatophore development in reptiles is linked to the *tfec* gene. *Current Biology* doi.org/10.1016/j.cub.2023.01.004.
61. Taranu, Z.E., Garner, R.E., Rehill, T., Morissette, O., Iversen, L.L., Fugère, V., Littlefair, J.E., Barbosa da Costa, N., Desforges, J.E., Sanchez Schacht, J.R., Derry, A.M., Cooke, S.J.,

- Barrett, R.D.H.**, Walsh, D.A., Ragoussis, I., Albert, M., Cristescu, M.E., Gregory-Eaves, I. (2022) Prioritizing taxa for genetic reference database development to advance freshwater conservation. *Conservation Biology* doi.org/10.1016/j.biocon.2023.109963.
60. **Hu, J.** and **Barrett, R.D.H.** (2022) Plastic and evolved DNA methylation during parallel adaptation of threespine stickleback (*Gasterosteus aculeatus*). *Molecular Ecology* doi: 10.1111/mec.16832.
59. **Glynn, V.M.**, Vollmer, S.V., Kline, D.I., **Barrett, R.D.H.** (2022) Environmental and geographic factors structure the biogeography of the coral-algal symbiosis of the cosmopolitan cauliflower coral *Pocillopora damnicornis* across the Indo-Pacific. *Journal of Biogeography* doi.org/10.1111/jbi.14560.
58. **Thurman, T.J.**, Palmer, T.M., Kolbe, J.J., **Askary, A.**, Daskin, J.H., Gotanda, K.M., LaPierda, O., Kartzinel, T.R., **Man in't Veld, N.A.**, Revell, L., Wegener, H., Spiller, D.A., Losos, J.B., Pringle, R.M.P., **Barrett, R.D.H.** (2022) Predicting evolutionary change in response to novel ecological interactions: a field experiment with Anolis lizards. *American Naturalist* doi.org/10.1086/723209.
57. **Martins, A.P.**, Martins, L.P., **Zheng Ho, W.**, McMillan, O., Ready, J.S., **Barrett, R.D.H.** (2022) Scale-dependent effects of environmental gradients on phenotypic distributions in *Heliconius* butterflies. *Ecology and Evolution* doi.org/10.1002/ece3.9286.
56. **Smith, S.J.S.**, Morgensen, S., Barry, T.N., **Paccard, A.P.**, Jamniczky, H.A., **Barrett, R.D.H.***, Rogers, S.M.* (2022) Evolution of thermal physiology alters the projected range of threespine stickleback under climate change. *Molecular Ecology* doi.org/10.1111/mec.16396.
55. **Beausoleil, M.**, Camacho, C., Rabadán-González, J., Richard, R., Lalla, K., Carrion-Aviles, P., Hendry, A.P., **Barrett, R.D.H.** (2022) Where did the finch go? Insights from radio telemetry of the medium ground finch (*Geospiza fortis*). *Ecology & Evolution* doi.org/10.1002/ece3.8768.
54. **Xu, C.C.Y.**, Ramsay, C., Cowan, M., Lasko, P., **Barrett, R.D.H.** (2021) Transgenic leakage of genetically modified animals via environmental DNA. *PLOS ONE* doi.org/10.1371/journal.pone.0249439
53. Costa N.B., Fugère V., Hébert M.-P., Costa N.B., **Xu C.C.**, **Barrett R.D.H.**, Beisner, B.E., Bell G., Fussmann G.F., Yargeau V., Fussmann, G.F., Gonzalez A., Shapiro B.J. (2021) Resistance, resilience, and functional redundancy of freshwater microbial communities facing multiple agricultural stressors in a mesocosm experiment. *Molecular Ecology* doi.org/10.1111/mec.16100.
52. Hébert M.-P., Fugère V., Beisner, B.E., Costa N.B., **Barrett R.D.H.**, Bell G., Shapiro B.J., Yargeau V., Gonzalez A., Fussmann G.F. (2021) Widespread agrochemicals differentially affect zooplankton biomass and community structure. *Global Change Biology* doi.org/10.1002/eap.2423
51. **Garcia-Elfring, A.**, **Paccard, A.**, **Thurman, T.J.**, Wasserman, B.A., Palkovacs, E.P., Hendry, A.P., **Barrett, R.D.H.** (2021) Using seasonal genomic changes to understand historical adaptation: parallel selection on stickleback in highly-variable estuaries. *Molecular Ecology* 30: 2054-2064.
50. **Hu, J.**, **Smith, S.J.**, Barry, T., Rogers, S.M., Jamniczky, H.A., **Barrett, R.D.H.** (2021) Heritable DNA methylation in threespine stickleback (*Gasterosteus aculeatus*). *Genetics* 217 (1-15) iyab001.
49. **Stange, M.**, **Barrett, R.D.H.**, Hendry, A.P. (2020) Genetics and genomics for ecosystem services and nature's contributions to people. *Nature Reviews Genetics* doi.org/10.1038/s41576-020-00288-7.
48. Wasserman, B.A., **Paccard, A.**, Apgar, T.M., Des Roches, S., **Barrett, R.D.H.**, Hendry, A.P., Palkovacs, E.P. (2020) Ecosystem size shapes antipredator trait evolution in estuarine threespine stickleback. *Oikos* 129(12): 1795-1806.
47. Fugère V., Hébert M.-P., Costa N.B., **Xu C.C.**, **Barrett R.D.H.**, Beisner, B.E., Bell G., Fussmann G.F., Shapiro B.J., Yargeau V. & Gonzalez A. (2020) Community rescue in experimental

- freshwater ecosystems facing severe pesticide pollution. *Nature Ecology and Evolution*. 4(4): 578-588.
46. Harris, R.B., Irwin, K., Jones, M.R., Laurent, S., **Barrett, R.D.H.**, Nachman, M.W., Good, J.M., Linnen, C.R., Jensen, J.D., Pfeifer, S.P. (2020) The population genetics of crypsis in vertebrates. *Heredity* 124(1):1-14.
 45. Paccard, A., Hanson, D., Stuart, Y.E., Berner, D., von Hippel, F.A., Kalbe, M., Klepaker, T., Skúlason, S., Kristjánsson, B.K., Bolnick, D.I., Hendry, A.P., **Barrett, R.D.H.** (2020) (Non)parallel evolution in lake-stream threespine stickleback at local versus global scales. *Journal of Heredity* 111(1):43-56.
 44. Pérez-Jvostov, F., Sutherland, W., **Barrett, R.D.H.**, Brown, C., Cardille, J., Cooke, S., Cristescu, M., St-Gelais, N., Fussmann, G., Griffiths, K., Hendry, A.P., Lapointe, N., Nyboer, E., Pentland, R., Reid, A., Ricciardi, A., Sunday, J., Gregory-Eaves, I. (2020) Horizon scan of conservation issues for inland waters in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* 77(5): 869-881.
 43. Brady S.P., Bolnick D.I., **Barrett R.D.H.**, Chapman L, Crispo E, Derry A.M., Eckert C.G., Fraser DJ, Fussmann GF, Gonzalez A, Guichard F, Lamy T, Lane J, McAdam AG, Newman A.E.M., Paccard A., Robertson B., Rolshausen G., Schulte P.M., Simons A.M., Vellend M., Hendry A.P. (2019) Understanding maladaptation by uniting ecological and evolutionary perspectives. *American Naturalist* 194(4): 495-515.
 42. Beausoleil, M., Frishkoff, L.O., M'Gonigle, L.K., Raeymaekers, J.A.M., Knutie, S.A., De Leon, L.F., Huber, S.K., Chaves, J.A., Clayton, D.H., Koop, J.A.H., Podos, J., Sharpe, D., Hendry, A.P., **Barrett, R.D.H.** (2019) Temporally varying disruptive selection in Darwin's finches. *Proceedings of the Royal Society of London B* 286: 20192290.
 41. **Barrett R.D.H.**, Laurent S, Mallarino R, Pfeifer S, Xu C.Y., Foll M, Wakamatsu K, Duke-Cohan J, Jensen J, Hoekstra H.E. (2019) Linking a mutation to survival in wild mice. *Science* 363(6426): 499-504. *Selected as Exceptional by Faculty of 1000
 40. Pringle, R.M., Kartzinel, T.R., Palmer, T., Thurman, T.J., Fox-Dobbs, K., Coverdale, T.C., Daskin, J.H., Evangelista, D., Gotanda, K., Kolbe, J.J., Man in't Veld, N.A., Wegener, H., Xu, C.C., Schoener, T.W., Spiller, D.A., Losos, J., **Barrett, R.D.H.** (2019) Predator-induced collapse of niche structure and species coexistence on islands. *Nature* 570(7759): 58-64.
 39. Hu, J., Askary, A.M., Thurman, T.J., Spiller, D. Palmer, T.M., Pringle, R.M., **Barrett, R.D.H.** (2019) Epigenetic signatures of colonizing new environments in Anolis lizards. *Molecular Biology and Evolution* 36(10): 2165-2170.
 38. Bell, G., Fugère V., **Barrett, R.D.H.**, Beisner, B.E., Cristescu, M., Fussmann, G.F., Shapiro, B.J. & Gonzalez, A. (2019) Trophic structure modulates community rescue following acidification. *Proceedings of the Royal Society of London B* doi.org/1098/rspb.2019.0856.
 37. Brady, S., Bolnick, D., **Barrett, R.D.H.**, Chapman, L., Crispo, E., Derry, A., Eckert, E., Fraser, D., Fussmann, G., Gonzalez, A., Guichard, F., Lamy, T., Lane, J., McAdam, A., Newman, A., Paccard, A., Reale, D., Robertson, B., Rolshausen, G., Schulte, T., Simons, A., Vellend, M., Hendry, A. (2019) Causes of maladaptation. *American Naturalist* 12: 1229-1242.
 36. Garcia-Elfring, A., **Barrett, R.D.H.**, and Millien, V. (2019) Genomic signatures of parallel adaptation along a climatic gradient in the northern range margin of the white-footed mouse (*Peromyscus leucopus*). *Journal of Heredity* 2019: 684-695.
 35. Derry, A.M., Fraser, D.J., Brady, S., Astorg, L., Lawrence, E., Martin, G., Matte, J.-M., Negrin Dastis, J., Paccard, A., **Barrett, R.D.H.**, Chapman, K., Lane, J., Ballas, C., Close, M., and Crispo, E. (2019) Conservation through the lens of maladaptation. *Evolutionary Applications* doi: 10.1111/eva.12791.
 34. Hu, J., Pérez-Jvostov, F., Blondel, L., **Barrett, R.D.H.** (2018) Genome-wide DNA methylation patterns associated with infection status in Trinidadian guppies (*Poecilia reticulata*). *Molecular Ecology* 27(15): 3087-3102.

33. Bolnick, D.I., **Barrett, R.D.H.**, Oke, K., Rennison, D., Stuart, Y.E. (2018) (Non)Parallel Evolution. *Annual Reviews of Ecology, Evolution, and Systematics* doi:10.1146/annurev-ecolsys-110617-062240.
32. Skovmand, L.H., Xu, C.Y., Nosil, P., Servidio, M., Nosil, P., **Barrett, R.D.H.**, Hendry, A.P. (2018) Keystone genes: single genes with large ecological effects. *Trends in Ecology and Evolution* 33: 689-700.
31. Paccard, A., Wasserman, B.A., Hanson, D., Astorg, L., Durston, D., Kurland, S., Apgar, T.M., El-Sabaawi, R.W., Palkovacs, E.P., Hendry, A.P., and **Barrett, R.D.H.** (2018) How does extreme temporal variation shape adaptive traits and their potential ecological consequences? Stickleback armor in periodically breaching bar-built estuaries. *Journal of Evolutionary Biology* 31: 735-752.
30. Bay, R., Rose, N., **Barrett, R.D.H.**, Bernatchez, L., Brem, R., Ghalambor, C., Lasky, J.R., Palumbi, S., Ralph, P. (2017) The future of population genomics: Predicting evolutionary responses to environmental change. *American Naturalist* 189: 1-11.
29. Hanson, D., Hu, J., Hendry, A.P., and **Barrett, R.D.H.** (2017) Heritable gene expression differences between lake and stream stickleback include both parallel and antiparallel components. *Heredity* doi:10.1038/hdy.2017.50.
28. Stuart, Y.E., Veen, T., Weber, J.N., Hanson, D., Lohman, B.K., Thompson, C.J., Tasneem, T., Ahmed, N., Doggett, A., Izen, R., **Barrett, R.D.H.**, Hendry, A.P., Peichel, C.L., and Bolnick, D.I. (2017) Contrasting effects of ecology and genetics on deviations from parallel evolution. *Nature Ecology and Evolution* doi:10.1038/s41559-017-0158.
27. Garcia-Elfring, A., **Barrett, R.D.H.**, Combs, M., Davies, T.J., Munshi-South, J., and Millien, V. (2017) Admixture on the northern front: Population and evolutionary genomics of range expansion in the white-footed mouse and evidence of introgression from the deer mouse. *Heredity* doi:10.1038/hdy.2017.57.
26. Hu, J. and **Barrett, R.D.H.** (2017) Epigenetics in natural animal populations. *Journal of Evolutionary Biology* 30: 1612-1632.
25. Gompert, Z., Egan, S., **Barrett, R.D.H.**, Feder, J., and Nosil, P. (2017) The measurement of selection on correlated genetic loci. *Molecular Ecology* 26: 365-382.
24. Hanson, D., Moore, J.S., Taylor, E.B., **Barrett, R.D.H.**, and Hendry, A.P. (2016) Assessing reproductive isolation using a contact zone between parapatric lake-stream stickleback ecotypes. *Journal of Evolutionary Biology* 29: 2491-2501.
23. Thurman, T., **Barrett, R.D.H.** (2016) The genetic consequences of selection in natural populations. *Molecular Ecology* 25: 1429-1488.
22. Hanson, D., **Barrett, R.D.H.**, and Hendry, A.P. (2016) A test for parallel allochronic isolation in lake-stream stickleback. *Journal of Evolutionary Biology* 29: 47-57.
21. Rennison, D.J., Heilbron, K.A., **Barrett, R.D.H.**, and Schluter, D. (2015) Dramatically different strengths of selection on a phenotypic trait and its major underlying gene in threespine stickleback. *American Naturalist* 185: 150-156.
20. Morris, M., Richard, R., Leder, E., **Barrett, R.D.H.**, Aubin-Horth, N. and Rogers, S.M. (2014) Molecular plasticity facilitates the colonization of freshwater in threespine stickleback. *Molecular Ecology* 23: 3226-3240.
19. Linnen, C.R., Poh, Y-P., Peterson, B.K., **Barrett, R.D.H.**, Larson, J., Jensen, J.D. and Hoekstra, H.E. (2013) Rapid adaptation of multiple traits through multiple mutations in a single gene. *Science* 339: 1312-1316. *Selected as a recommended read by Faculty of 1000
18. **Barrett, R.D.H.** (2012) Bad coat, ripped genes: cryptic selection varies with ontogeny in Soay sheep. *Molecular Ecology* 21: 2833-2835. *Perspective
17. **Barrett, R.D.H.** and Hoekstra, H.E. (2011) Molecular spandrels: tests of adaptation at the genetic level. *Nature Reviews Genetics* 12: 760-780.

16. **Barrett, R.D.H., Paccard, A.,** Healy, T., Bergak, S., Schluter, D., Schulte, P.M. and Rogers, S.M. (2011) Rapid evolution of cold tolerance in stickleback. *Proceedings of the Royal Society of London Series B* 278: 233-238.
15. **Barrett, R.D.H.** (2010) Adaptive evolution of lateral plates in three-spine stickleback: a case study in the functional analysis of natural variation. *Journal of Fish Biology* 77: 311-328.
14. Schluter, D., Marchinko, K.B., **Barrett, R.D.H.** and Rogers, S.M. (2010) Natural selection and the genetics of adaptation in three-spine stickleback. *Philosophical Transactions of the Royal Society Series B* 365: 2479-2486.
13. **Barrett, R.D.H.,** Rogers, S.M. and Schluter, D. (2009) Environment specific pleiotropy facilitates diversification at the *Ectodysplasin* locus in threespine stickleback. *Evolution* 63: 2831-2837.
12. **Barrett, R.D.H.,** Vines, T.H., Bystriansky, J. and Schulte, P.M. (2009) Should I stay or should I go? The *Ectodysplasin* locus is associated with habitat preference in three-spine stickleback. *Biology Letters* 5: 788-791.
11. **Barrett, R.D.H.,** Rogers, S.M. and Schluter, D. (2008) Natural selection on a major armor gene in three-spine stickleback. *Science* 322: 255-257. *Selected as a must-read by Faculty of 1000
10. **Barrett, R.D.H.** and Schluter, D. (2008) Adaptation from standing genetic variation. *Trends in Ecology and Evolution* 23: 38-44.
9. **Barrett, R.D.H.** and Vamosi, J.C. (2008) Ecology and evolution join forces to good effect. *Biology Letters* 4: 443-445. *Meeting report
8. **Barrett, R.D.H.,** M'Gonigle, L.K. and Otto, S.P. (2006) The distribution of beneficial mutations under strong selection. *Genetics* 174: 2071-2079.
7. **Barrett, R.D.H.** and Bell, G. (2006). The dynamics of diversification in evolving *Pseudomonas* populations. *Evolution* 60: 484-490.
6. **Barrett, R.D.H.,** MacLean, R.C. and Bell, G. (2006) Mutations of intermediate effect are responsible for adaptation in evolving *Pseudomonas fluorescens* populations. *Biology Letters* 2: 236-238.
5. **Barrett, R.D.H.,** MacLean, R.C. and Bell, G. (2005) Experimental evolution of *Pseudomonas fluorescens* in simple and complex environments. *American Naturalist* 160: 470-480. *Selected as a recommended read by Faculty of 1000
4. Hebert, P.D.N. and **Barrett, R.D.H.** (2005) Taxonomy takes flight. *Canadian Journal of Zoology* 83: 498-504. *Response article
3. **Barrett, R.D.H.** and Hebert, P.D.N. (2005) Identifying arachnids through DNA sequences. *Canadian Journal of Zoology* 83: 481-491.
2. Sleep, D. and **Barrett, R.D.H.** (2004) Insect hawking observed in the Long-eared Owl (*Asio otus*). *Journal of Raptor Research* 38: 29-30.
1. **Barrett, R.D.H.** and Agrawal, A.A. (2004) Interactive effects of genotype, environment and ontogeny on resistance of cucumber (*Cucumis sativus*) to the generalist herbivore, *Spodoptera exigua*. *Journal of Chemical Ecology* 30: 37-51.

Book chapters:

2. **Barrett, R.D.H.** and Hendry, A.P. (2012) Evolutionary rescue. In *Behavioral Responses to a Changing World*. Eds. Wong, B. and Candolin, Oxford University Press.
1. **Barrett, R.D.H.** and Schluter, D. (2010) Clarifying mechanisms of evolution in stickleback using field studies of natural selection on genes. In *In Search of the Causes of Evolution: From Field Observations to Mechanisms*. Eds. Grant, P. and Grant, R. Princeton University Press.

INVITED KEYNOTES

11. Keynote, Royal Society Publishing Ecology and Evolution Seminars (2024)
10. Plenary, Ontario Ecology, Ethology, and Evolution Colloquium, Kingston, Canada (2022)
9. Keynote, Advanced Ecological Symposium, Fudan University, China (2022)
8. Keynote, Zoology Graduate Student Symposium, University of British Columbia, Vancouver, Canada (2019)
7. Plenary, Ontario Ecology, Ethology, and Evolution Colloquium, Kingston, Canada (2017)
6. Early Career Award, Canadian Society for Ecology and Evolution, Montreal, Canada (2014)
5. Dobzhansky Prize, Society for the Study of Evolution, Salt Lake City, USA (2013)
4. Darwin seminar, Depts. of Biology and Geological Sciences, University of Minnesota, USA (2013)
3. Keynote presentation, Midwestern Ecology and Evolution Conference, University of Notre Dame, USA (2013)
2. Young Investigators Award, Joint Congress on Evolutionary Biology, Ottawa, Canada (2012)
1. John Maynard Smith Prize, European Society for Evolutionary Biology, Tubingen, Germany (2011)

INVITED SEMINARS

38. Swiss Federal Institute of Aquatic Science and Technology, Switzerland (2026)
37. Institute of Ecology and Evolution, Universität Bern, Switzerland (2026)
36. Department of Evolutionary Biology, National Institute of Genetics, Japan (2023)
35. Leibniz Institute for the Analysis of Biodiversity Change, Germany (2021)
34. Max Planck Institute for Evolutionary Biology, Germany (2021)
33. Departamento de Biologica Animal, Universidade de Lisboa, Portugal (2019)
32. Department of Biological Sciences, Université de Montréal, Canada (2018)
31. Department of Biological Sciences, Binghamton University, USA (2017)
30. Swiss Federal Institute of Aquatic Science and Technology, Switzerland (2017)
29. Biology Department, University of Ottawa, Canada (2016)
28. Biology Department, McMaster University, Canada (2016)
27. Biology Department, Queen's University, Canada (2016)
26. Department of Ecology and Evolution, Princeton University, USA (2015)
25. Département des Sciences Biologiques, Université du Québec a Montréal, Canada (2015)
24. Department of Biological Science, Florida State University, USA (2015)
23. Department of Biology, Notre Dame University, USA (2015)
22. Evolutionary Biology Centre, Uppsala University, Sweden (2014)
21. School of Life Sciences, Beijing Normal University, China (2014)
20. Dept. of Life Sciences, National Taiwan Normal University, Taiwan (2014)
19. Redpath Museum Mini-Museum Public Talk, McGill University, Canada (2014)
18. Dept. of Biology, Dalhousie University, Canada (2014)
17. Dept. of Biology, Université Laval, Canada (2014)
16. Dept. of Biology, Lakehead University, Canada (2014)
15. Hopkins Marine Center, Stanford University, USA (2013)
14. Dept. of Integrative Biology, University of Texas, USA (2013)
13. Institute of Biology, University of Basel, Switzerland (2012)

12. Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany (2012)
11. Dept. of Zoology, University of Oxford, England (2012)
10. Dept. of Biology, McGill University, Canada (2012)
9. Dept. of Ecology and Evolutionary Biology, Yale University, USA (2012)
8. Dept. of Biological Sciences, University of Alberta, Canada (2012)
7. Center for Ecological and Evolutionary Studies, University of Groningen, Netherlands (2012)
6. Institute of Biology, Université de Neuchâtel, Switzerland (2012)
5. College of Life and Environmental Sciences, University of Exeter, England (2012)
4. Dept. of Biology, University of Konstanz, Konstanz, Germany (2011)
3. Dept. of Ecology and Evolutionary Biology, University of California, Santa Cruz, USA (2011)
2. Dept. of Env. Science, Policy and Management, University of California, Berkeley, USA (2011)
1. Dept. of Biological Sciences, University of Idaho, Moscow, US (2008)

INVITED SYMPOSIUM PRESENTATIONS

NB: I now pass symposium invitations on to my trainees to assist with their career development

12. Mapping genotype and phenotype to fitness. Society for Molecular Biology and Evolution, Yokohama, Japan (2018)
11. Speciation. Gordon Research Conference, Barga, Italy (2017)
10. Using population genomics to predict evolutionary responses to environmental change. American Society of Naturalists, Asilomar, USA (2017)
9. Wild genomics workshop. Centre for Biodiversity Dynamics, Selbu, Norway (2016)
8. Evolutionary ecology and plant reproductive biology conference. Chinese Academy of Science, Guangzhou, China (2016)
7. Evolutionary biology conference. National Taiwan Normal University, Taipei, Taiwan (2016)
6. Ecological genomics as an emerging field: opportunities for non-model organisms. Ecological Society of America, Sacramento, USA (2015)
5. Genomic basis of adaptation, speciation and species interactions. Gordon Research Conference in Ecological and Evolutionary Genomics, Biddeford, USA (2014)
4. Biodiversity: A molecular perspective. Canadian Society for Ecology and Evolution, Quebec City, Canada (2013)
3. The origin of species 150 years after Darwin. Japanese Society for Evolutionary Studies, Sapporo, Japan (2012)
2. Functional analysis of natural variation. European Society for Evolutionary Biology, Turin, Italy (2012)
1. Genomics of speciation and species differences. Center for Advanced Study, Berlin, Germany (2011)

CONTRIBUTED TALKS (SELECTED)

25. Montreal Ecology and Evolution Symposium, Montreal, Canada (2018)
24. Canadian Society for Ecology and Evolution, Banff, Canada (2011)
23. Museum of Comparative Zoology Seminar, Harvard University, Cambridge, USA (2010)
22. Society for Study of Evolution, Portland, USA (2010)
21. Pacific Ecology and Evolution Conference, Bamfield, Canada (2010)

20. Evolutionary Biology of the Northwest, Port Townsend, USA (2010)
19. Society for Study of Evolution, Moscow, USA (2009)
18. Canadian Society for Ecology and Evolution, Vancouver, Canada (2008)
17. University of British Columbia Zoology Graduate Symposium, Vancouver, Canada (2008)
16. Society for the Study of Evolution, Christchurch, New Zealand (2007)
15. Canadian Society for Ecology and Evolution, Toronto, Canada (2007)
14. UBC, SFU, & UVic Ecology and Evolution Retreat, Squamish, Canada (2006)
13. American Genetics Association, Vancouver, Canada (2006)
12. Society for the Study of Evolution, New York, USA (2006)
11. Evolutionary Biology of the Northwest, Port Townsend, USA (2006)
10. University of British Columbia Zoology Graduate Symposium, Vancouver, Canada (2006)
9. UBC, SFU, & UVic Ecology and Evolution retreat, Squamish, Canada (2005)
8. European Society for Evolutionary Biology, Krakow, Poland (2005)
7. Ecological Society of America, Montreal, Canada (2005)
6. Gordon Research Conference in Microbial Population Biology, Andover, USA (2005)
5. Ontario Ecology and Ethology Colloquium, Ottawa, Canada (2005)
4. Experimental Evolution Workshop, Fribourg, Switzerland (2005)
3. Ontario Ecology and Ethology Colloquium, Mississauga, Canada (2005)
2. Graduate Student Seminar Series, Montreal, Canada (2004)
1. Ontario Ecology and Ethology Colloquium, Hamilton, Canada (2004)

TEACHING

Courses:

- | | |
|-----------|--|
| 2018- | Biology of Organisms (BIOL205; Instructor; McGill) |
| 2016- | Science and Museums (REDM400; Instructor; McGill) |
| 2016 | Adaptation (REDM511; Instructor and Coordinator; McGill) |
| 2015- | Animal Diversity (BIOL305; Instructor and Coordinator; McGill) |
| 2015-2016 | Molecular Ecology (BIOL509; Instructor and Coordinator; McGill) |
| 2014- | Ecology/Behaviour Field Course (BIOL331; Instructor and Coordinator; McGill) |

Workshops:

- | | |
|------|---|
| 2014 | Field work in Evolutionary Ecology (Chinese Academy of Science) |
|------|---|

Guest lectures:

- | | |
|------|---|
| 2023 | Introduction to Graduate Studies in Biology (BIOL601; McGill) |
| 2022 | Scientific Manuscript Writing (BIOL610; McGill) |
| 2022 | Advanced Conservation Biology (BIOL650; McGill) |
| 2021 | Introduction to Graduate Studies in Biology (BIOL601; McGill) |
| 2021 | Scientific Manuscript Writing (BIOL610; McGill) |
| 2020 | Tropical Biology and Conservation (BIOL640; McGill) |
| 2018 | Evolution (BIOL304; McGill) |
| 2014 | Science and Museums (REDM400; McGill) |

- 2014 Molecular Ecology (BIOL509; McGill)
- 2014 Biodiversity Science Intensive Course (BIOL645; McGill)
- 2013 Evolutionary Concepts (BIOL3671; Lakehead)

REVIEWING

I serve as a referee for approximately 10-20 papers, grant proposals, and books each year, including service for:

Journals and books:

Nature (recognized for “Exceptional Reviewing”), *Science*, *Proceedings of the National Academy of Sciences USA*, *Nature Ecology and Evolution*, *Nature Reviews Genetics*, *Nature Communications*, *Nature Climate Change*, *Current Biology*, *Ecology Letters*, *Molecular Ecology* (recognized as a “Top Reviewer”), *Ecology*, *Evolution*, *American Naturalist*, *Genetics*, *Genome Research*, *Trends in Ecology and Evolution*, *Trends in Genetics*, *BMC Evolutionary Biology*, *Genome*, *Heredity*, *Biology Letters*, *Proceedings of the Royal Society London - Biological Sciences*, *Evolutionary Ecology*, *Evolutionary Applications*, *Journal of Evolutionary Biology*, *McGill Science Undergraduate Journal of Research*, *Public Library of Science Genetics*, *Public Library of Science Biology*, *Philosophical Transactions of the Royal Society - Biological Sciences*, *Biological Journal of the Linnean Society*, *Journal of Heredity*, *Molecular Phylogenetics and Evolution*, *Molecular Biology and Evolution*, *Public Library of Science One*, *Diversity and Distributions*, *Oxford University Press*, *Annals of the New York Academy of Sciences*, *Evolution Letters*

Granting agencies:

The Natural Sciences and Engineering Research Council of Canada (NSERC - Canada), *The European Research Council* (ERC - EU), *The National Science Foundation* (NSF - USA), *The Natural Environment Research Council* (NERC - UK), *The Organization for Scientific Research* (OSR - Netherlands), *The National Science Center* (NCS - Poland), *The US-Israel Binational Science Foundation* (BSF), *The Wellcome Trust Biomedical Research Fellowship Programme for India*, *The National Geographic Society*, *Wissenschaftskolleg zu Berlin*, *Det Frie Forskningsrad* (DFF – Denmark), *Canada Research Chairs*, *Belgian Science Policy Office*, *The Royal Society Te Aparangi* (New Zealand), *Austrian Science Fund Lise Meitner Program*, *Global Excellence Initiative and Scholarship Partners Canada*.

EDITORIAL SERVICE

- 2. *Heredity* (subject editor, 2014-)
- 1. *Public Library of Science Genetics* (guest editor, 2013)

SUPERVISION

Postdoctoral fellows:

- 2. Madlen Stange (co-supervised with Andrew Hendry, McGill, 2018-2020)
- 1. Antoine Paccard (McGill, 2014-2018)

PhD students:

- 18. Paige Smallman (co-supervised with Matthew Leray, McGill, 2024-)
- 17. Akhil Kholwadwala (McGill, 2022-)

16. Eric Wootton (McGill, 2022-)
15. Tim Gemeinhardt (co-supervised with Nicole Francis, McGill, 2022-)
14. Laura Lardinois (co-supervised with Matthew Leray, McGill, 2021-)
13. Lucas Eckert (co-supervised with Graham Bell, McGill, 2021-)
12. Mary-Kathleen Hickox (co-supervised with Andrew Hendry, McGill, 2020-)
11. Victoria Glynn (co-supervised with Sean Connolly, McGill, 2019-2024)
10. Janay Fox (McGill, 2018-2024)
9. Mathilde Salmon (co-supervised with Alison Derry, UQAM, 2017-2023)
8. Alan Garcia-Efring (McGill, 2017-2023)
7. Marc-Olivier Beausoliel (McGill, 2017-2024)
6. Charles Xu (McGill, 2016-2023)
5. Juntao Hu (McGill, 2015-2018)
4. Ananda Regina (co-supervised with Owen McMillan, McGill-STRI, 2015-2026)
3. Sara Smith (Ph.D., co-supervised with Sean Rogers, U. Calgary, 2014-2018)
2. Dieta Hanson (Ph.D., co-supervised with Andrew Hendry, McGill, 2013-2016)
1. Tim Thurman (Ph.D., co-supervised with Owen McMillan, McGill-STRI, 2013-2019)

MSc students:

4. Marcus Lin (co-supervised with Nagissa Mahmoudi, McGill, 2023-2025)
3. Wing Zheng-ho (McGill, 2021-2023)
2. Marc-Olivier Beausoliel (McGill, 2015-2017)
1. Sara Kurland (co-supervised with Andrew Hendry, McGill, 2014-2015)

Undergraduate students:

51. Sebastian Sangha (BIOL 466, SURA, 2024-present)
50. Eva Savard (Research Assistant, 2023-2024)
49. Andrew Kemp (BIOL 499, 2023-)
48. Nicole San Cristobal (Research Assistant, 2024)
47. Min Peng (BIOL 466, 2023)
46. Haolun Liu (BIOL 396, 2023)
45. Brook Brown (BIOL 466, 2022-2023)
44. Johanna Arnet (BIOL 466, 2022-2023)
43. Linda Tang (BIOL 466, 2022-2023)
42. Maxime Guglielmetti (Gault Research Award, BIOL 466, 2022-2023)
41. Diane Cruiziat (Research Assistant, 2021-2022)
40. Jaren Mari Abergas (SURA, 2021)
39. Olivia Fraser Barsby (Volunteer, BIOL 466, Research Assistant, 2020-2022)
38. Natalie Warren (Volunteer, 2020-2021)
37. Frida-Ceclia Acosta-Parenteau (BIOL 466, Research Assistant, 2019-2021)
36. Savannah Bissenger O'Connor (BIOL 466, Research Assistant, 2019-2021)
35. Judy Liu (Volunteer, 2020)
34. James Cyr (BIOL 396, 2019-2020)
33. Brooklyn Frizzle (BIOL 396, 2019-2020)

32. Anya Mueller (BIOL 466, 2019-2020)
31. Cathy Shen (Volunteer, 2019-2020)
30. Juliette Lemoine (BIOL 479, 2019-2020)
29. Kate Arshinova (MIMM 496, 2019-2020)
28. Avery Albert (Research assistant, 2019)
27. Michael Maddelena (Volunteer, 2018-2019)
26. Rachel Takasaki (Volunteer, 2018-2019)
25. Nicole Stinson (Volunteer, 2018-2019)
24. Lauren Bennett (Research assistant, 2018)
23. Thomas Ramsey (BIOL 466, 2018)
22. Katherine Morelli (Volunteer, 2018)
21. Nadia Blostein (Volunteer, 2018)
20. Zoey Jin (B.Sc., Volunteer, 2018)
19. Sara Ghandour (Volunteer, 2018)
18. Scarlett Xiao (Volunteer, 2018)
17. Kiran Yendamuri (Volunteer, 2017-2018)
16. Ana Cataina Avile Virofino (Volunteer, 2017)
15. Samantha Wunderlich (BIOL 466, 2017-2018)
14. Alexandria Farquhar (BIOL 466, 2018)
13. Gwenn Duval (Volunteer, 2017)
12. Yue Jiao (Work-study, 2017)
11. Sarah Chamberland-Fontaine (Volunteer, 2017)
10. Anthony Zerafa (BIOL 466, 2017-2018)
9. Mehvish Bukhari (USRA, 2015-2016)
8. Dominique Danco (Research assistant, 2015-2016)
7. Areeb Butt (Work-study, 2015-2016)
6. Julianna Seok (Work-study, 2014-2015)
5. Denice Liu (Work-study, 2014-2016)
4. Zimeng Li (Work-study, 2015)
3. Nicole Peletz-Bohbot (Work-study, 2014-2015)
2. Bharath Sudarsan (Work-study, 2014-2015)
1. Nour Zein (BIOL 466, 2014-2015)

Research internships:

3. Melissa Razcon-Echeagaray (Ph.D., University of Calgary, 2025)
2. Bushra Sial (Ph.D., University of Sargodha, 2018)
1. Samantha Lepenna (Biogenius Competition, Vanier College, 2017)

Research technicians:

4. Wing Zheng-ho (2020-2021, 2023-)
3. Åsa Lind (2020-2023)
2. Hilary Poore (2019)
1. Caroline LeBlonde (2013-2017)

SUPERVISORY COMMITTEES

35. Isabelle Gurney (Ph.D., McGill 2025-)
34. Gregory Santangeli (M.Sc., McGill 2025-)
33. Anwyn Neraasen (M.Sc., McGill 2024-)
32. Tess Morelli (M.Sc., McGill 2024-)
31. Aditee Ashar (Ph.D., McGill 2024-)
30. Adam-Emmanuel Tremblay (M.Sc., McGill 2024-)
29. Emma Schubert (M.Sc., McGill 2023-)
28. Aleksei Sychterz (Ph.D., McGill 2023-)
27. Sol Parra Santos (Ph.D., McGill 2023-)
26. Marie Launay (Ph.D., McGill 2023-)
25. Michelle Cheng (Ph.D., McGill, 2022-)
24. Rebecca Pahulje (M.Sc., McGill, 2022-)
23. Laurie Dufour (M.Sc., McGill, 2022-)
22. Emma Derrick (Ph.D., McGill, 2021-)
21. Marianne Gousy-Leblanc (Ph.D., McGill, 2021-)
20. Paola Carrion (Ph.D., McGill, 2018-2025)
19. Moritz Ehrlich (Ph.D., U. Miami, 2018-2023)
18. Lotte Skovmand (Ph.D., McGill, 2017-2023)
17. Kristina Krebs (Ph.D., McGill, 2017-2021)
16. Sara Nason (M.Sc., Concordia, 2017-2021)
15. David Hunt (Ph.D., 2016-2023)
14. Naïla Barbosa de Costa (M.Sc., UdeM, 2016-2018)
13. Ignacio Solaberrieta (M.Sc., UQAM, 2015-2020)
12. Brandon Javier Varela (M.Sc., McGill, 2015-2017)
11. Jonathas Pereira (Ph.D., McGill, 2015-2021)
10. Tyler Moulton (M.Sc., McGill, 2015-2017)
9. Alan Garcia-Elfring (M.Sc., McGill, 2015-2017)
8. Guang Zhang (M.Sc., McGill, 2015-2018)
7. Sarah Finlayson (M.Sc., McGill, 2014-2016)
6. Anthony Serra (B.Sc. Hons., McGill, 2014-2015)
5. Magnus Bein (Ph.D., McGill, 2013-2015)
4. Jose Avila Cervantes (Ph.D., McGill, 2013-2020)
3. Dustin Raab (Ph.D., McGill, 2013-2016)
2. Sarah Baldwin (Ph.D., McGill, 2013-2020)
1. Katie Millette (Ph.D., McGill, 2013-2020)

DEFENSE EXAMINER

22. April Kowalchuk-Reid (M.Sc., McGill, 2025)
21. Alexandra McCallum (Ph.D., McGill, 2025)

20. Michael Catchen (Ph.D., McGill, 2024)
19. Lotte Jensen (Ph.D., McGill, 2023)
18. Paulo Pereira (Ph.D., U. Porto, 2023)
17. Moritz Ehrlich (Ph.D., U. Miami, 2023)
16. Mark Jewell (Ph.D., McGill, 2022)
15. Jessica Ewald (Ph.D., McGill, 2022)
14. Nathalie Jreidini (Ph.D., McGill, 2021)
13. Stephanie Constance (Ph.D., McGill, 2021)
12. Anthony Bayega (Ph.D., McGill, 2021)
11. Paul Sims (Ph.D., McGill, 2020)
10. Luke Anderson-Trocme (Ph.D., McGill, 2018)
9. Grant Haines (Ph.D., McGill, 2018)
8. David O'Connor (Ph.D., McGill, 2017)
7. Krista Oke (Ph.D., McGill, 2017)
6. Nicole Knight (Ph.D., McGill, 2016)
5. Luke Anderson-Trocme (M.Sc., McGill, 2016)
4. Felipe Dargent (Ph.D., McGill, 2015)
3. Adam Herman (Ph.D., McGill, 2015)
2. Catherine Baltzar (M.Sc., McGill, 2015)
1. Frederico Roda (Ph.D., U. Queensland, 2014)

SERVICE (SELECTED)

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|--------------|---|
| 2025-present | Faculty of Science Endowed Chair and Award Committee (McGill) |
| 2025 | Tenure evaluation, Trent University |
| 2025 | Graduate Student Presentation Award Selection Committee at the 11 th International Conference on Stickleback Behaviour and Evolution |
| 2025 | Faculty of Science Selection Committee for the President's Prize for Outstanding Emerging Researchers (McGill) |
| 2024 | Prodean, Department of Educational and Counselling Psychology |
| 2024-present | Awards Committee, Biology Department |
| 2024 | Chair of the Selection Committee for the Molecular Ecology Prize |
| 2024 | DJMP and CRC EDI Working Group, Standing Internal Review Committee for Canada Research Chairs and McGill University's Recognition Awards (McGill) |
| 2024 | Selection Committee for the Canadian Society for Ecology and Evolution Early Career Award |
| 2023 | Tenure evaluation, Harvard University |
| 2023 | Selection Committee for the Molecular Ecology Prize |
| 2023-2025 | Standing Internal Review Committee for Canada Research Chairs and McGill University's Recognition Awards (McGill) |
| 2022-2024 | Chairs Advisory Group, Biology Department (McGill) |
| 2022 | Selection committee for the McGill Postdoctoral Teaching Excellence Award (McGill) |
| 2022-2024 | University Tenure Committee (McGill) |
| 2021 | Selection Committee for NSERC Canada Graduate Scholarship – Doctoral (McGill) |

2021-2022	University Selection Committee for the Principal's Prize for Outstanding Emerging Researchers (McGill)
2021	Tenure evaluation, Western University
2020-2023	Equity, Diversity and Inclusion Committee, Redpath Museum (McGill)
2018	Tenure-track faculty position Search Committee, Biology Department (McGill)
2017-2020	Committee on Student Standing, Faculty of Science (McGill)
2016	Prodean, Department of Linguistics (McGill)
2015	Biology Department Career Development talk (McGill)
2015	Prodean, Department of Physics (McGill)
2014-2023	Coordinator, Natural History Minor, Redpath Museum (McGill)
2014-2023	Chair, Curriculum committee, Redpath Museum (McGill)
2014-2023	Chair, Awards committee, Redpath Museum (McGill)
2014	Chair, Awards committee, CSEE annual meeting
2014	Local organizing committee, Genomes to Biomes meeting (Montreal; CSEE, CSZ, SCL)
2014	Presentation to the Faculty of Science meeting (McGill)
2013-2015	McGill representative for the Canadian Institute for Ecology and Evolution
2013	Proposal Advisory Panel, National Science Foundation (USA)
2013	Academic Review, McGill Science Undergraduate Research Journal
2010-2012	Public outreach committee, Canadian Society for Ecology and Evolution

OUTREACH AND POLICY (SELECTED)

2023	Invited participant at the Science and Technology in Society Forum, Kyoto, Japan
2023	Outreach talks and interviews/featured articles in popular press for Garcia-Elfring et al. <i>Current Biology</i> and Xu et al. <i>Proc. Roy. Soc. London B</i>
2022	Interviews/featured articles in popular press for Beausoleil et al. <i>Ecology and Evolution</i>
2021	Soup and Science undergraduate outreach talk (McGill)
2020	Interviews/featured articles in popular press for Fugère et al. <i>Nature Ecology and Evolution</i>
2019	CBC "Quirks and Quarks" interview
2019	Invited "Young Leader" at the Science and Technology in Society Forum, Kyoto, Japan
2019	Barrett et al. <i>Science</i> 2019 and Pringle et al. <i>Nature</i> 2019 featured in numerous popular press articles (Atlantic, Nova, CBC, HHMI, etc.)
2018	Anolis project featured in Smithsonian Channel documentary film "Laws of the Lizard"
2018	Mouse project featured in the popular science book " <i>Improbable Destinies: Fate, Chance, and the Future of Evolution</i> " by Jonathan Losos, Penguin Random House Publishing
2017	Interviewed on CBC radio about primary research
2017	Diversity in STEMM (McGill)
2014	Interviewed on CBC radio about primary research
2014	Soup and Science undergraduate outreach talk (McGill)
2013	Interviewed on MSNBC about Darwin Day
2013	Interviewed for documentary about evolution and climate change by Smith College

PROFESSIONAL MEMBERSHIPS

Canadian Society for Ecology and Evolution (lifetime member), Society for the Study of Evolution, American Society of Naturalists, European Society for Evolutionary Biology, Society for Molecular Biology and Evolution, Genetics Society