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Associate Professor and Canada Research Chair  
Redpath Museum and Biology Department  
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## EDUCATION

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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

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2019-      Associate Professor, Redpath Museum, McGill University  
2013-      Canada Research Chair (Tier 2), Redpath Museum, McGill University  
2013-      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

## AWARDS & PRIZES

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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

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2020-2021   Environment and Climate Change Canada, contract to analyze epigenetic responses in  
              arctic seabirds in relation to contaminants (20,000 CAD)

- 2019-2021 Natural Science and Engineering Research Council, Discovery Accelerator Supplement (120,000 CAD)
- 2019-2023 Natural Science and Engineering Research Council, Discovery Grant: Mechanisms of resilience to environmental change in eco-evolutionary systems (325,000 CAD)
- 2019-2021 Population genomic responses to environmental change, Compute Canada Resources for Research Groups award (8,794 CAD)
- 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)
- 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)
- 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 *Leptodiatomus minutus* genome; co-PI with Ioannis Ragoussis and Alison Derry)
- 2018-2023 Canada Research Chair, Tier 2 (500,000 CAD)
- 2018 Fessenden Innovation Prize: PyType – a simple method for genotyping captive-bred ball pythons, McGill University (5,000 CAD)
- 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)
- 2018 Fessenden Innovation Prize: Identification of endangered species using DNA barcoding of steeped alcohol, McGill University (5,000 CAD)
- 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)
- 2017-2019 Canada First Research Excellence Fund: Food from Thought (372,000 CAD; Investigator, Lead PI: Melania Cristescu)
- 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)
- 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)
- 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)
- 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)
- 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)
- 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)
- 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)
- 2013-2018 Canadian Foundation for Innovation Leaders Opportunity Fund: Integrated Facilities for Ecological Genomics and Bioinformatics (350,000 CAD)
- 2013-2018 Canada Research Chair, Tier 2 (500,000 CAD)
- 2013-2018 Natural Science and Engineering Research Council, Discovery Grant: Experimental genomics of adaptation to changing environments (190,000 CAD)
- 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)
- 2013-2014 Quebec Center for Biodiversity Science Seed Grant: Parallelism in gene expression during speciation (5,000 CAD; Co-PI with Andrew Hendry)
- 2012-2013 Putnam Expedition Grant, Harvard University (11,080 USD = 14,342 CAD)
- 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)
- 2011-2012 Putnam Expedition Grant, Harvard University (14,350 USD = 18,575 CAD)
- 2010-2011 Putnam Expedition Grant, Harvard University (8,360 USD = 10,822 CAD)

#### FELLOWSHIPS & SCHOLARSHIPS

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- 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)

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Preprints and journal articles submitted or in review/revision:

56. Xu, C.C.Y., Ramsay, C., Cowan, M., Lasko, P., **Barrett, R.D.H.** Transgenic leakage of genetically modified animals via environmental DNA. Submitted to *Biology Letters*.
55. Garcia-Elfring, A., Roffey, H., Hendry, A.P., **Barrett, R.D.H.** (2020) A nonsense mutation in TFEC is the likely cause of the recessive piebald phenotype in ball pythons (*Python regius*). [www.biorxiv.org/content/10.1101/2020.10.30.362970v1](http://www.biorxiv.org/content/10.1101/2020.10.30.362970v1).
54. 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. (2020) Widespread agrochemicals differentially affect zooplankton biomass and community structure. *Global Change Biology* in review. [www.biorxiv.org/content/10.1101/2020.10.01.322370v1](http://www.biorxiv.org/content/10.1101/2020.10.01.322370v1).
53. Wuitchik, S.J.S., Morgensen, S., Barry, T.N., Paccard, A.P., Jamniczky, H.A., **Barrett, R.D.H.**, Rogers, S.M. Evolution alters predicted species distributions under climate change. *Science* in review.
52. 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. (2020) Resistance, resilience, and functional redundancy of freshwater microbial communities facing multiple agricultural stressors in a mesocosm experiment. *Molecular Ecology* in revision. [www.biorxiv.org/content/10.1101/2020.04.12.038372v1](http://www.biorxiv.org/content/10.1101/2020.04.12.038372v1).
51. Garcia-Elfring, A., Paccard, A., Thurman, T.J., Wasserman, B.A., Palcovacs, E.P., Hendry, A.P., **Barrett, R.D.H.** (2020) Using seasonal genomic changes to understand historical adaptation: parallel selection on stickleback in highly-variable estuaries. *Molecular Ecology* in revision. [www.biorxiv.org/content/10.1101/2020.11.24.396291v1](http://www.biorxiv.org/content/10.1101/2020.11.24.396291v1).

Journal articles published, in press, or accepted:

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* accepted. <https://www.biorxiv.org/content/10.1101/2020.11.26.400531v1>.
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* <https://doi.org/10.1038/s41576-020-00288-7>.
48. Ecosystem size shapes antipredator trait evolution in estuarine threespine stickleback. Wasserman, B.A., Paccard, A., Apgar, T.M., Des Roches, S., **Barrett, R.D.H.**, Hendry, A.P., Palkovacs, E.P. (2020) *Oikos* <https://doi.org/10.1111/oik.07482>.
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*. doi.10.1038/s41559-020-1134-5.
46. 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.
45. 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.
44. **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
43. 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.
42. 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. (2019) Horizon scan of conservation

issues for inland waters in Canada. *Canadian Journal of Fisheries and Aquatic Sciences* doi.org/10.1139/cjfas-2019-0105.

41. 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. (2019) The population genetics of crypsis in vertebrates. *Heredity* doi.org/10.1038/s41437-019-0257-4.
40. 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.** (2019) (Non)parallel evolution in lake-stream threespine stickleback at local versus global scales. *Journal of Heredity* doi.10.1093/jhered/esz056.
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* 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* 1: article 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* 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 PLENARIES

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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, Tübingen, Germany (2011)

INVITED SEMINARS

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33. Departamento de Biologia 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 à 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

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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)

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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

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##### Courses:

- 2018- Biology of Organisms (BIOL205; McGill)  
 2016- Science and Museums (REDM400; McGill)

2016           Adaptation (REDM511; McGill)  
2015-          Animal Diversity (BIOL305; McGill)  
2015-2016     Molecular Ecology (BIOL509; McGill)  
2014-          Ecology/Behaviour Field Course (BIOL331; McGill)

Workshops:

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

Guest lectures:

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)  
2005           Biometry (BIOL373; McGill)

EDITORIAL SERVICE

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*Heredity* (subject editor), *Public Library of Science Genetics* (guest associate editor)

REVIEWING

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

Journals and books:

*Nature* (recognized for “Exceptional Reviewing” in 2013), *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” in 2012, 2014, 2015), *Ecology*, *Evolution*, *American Naturalist*, *Genetics*, *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),

## SUPERVISION

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### Postdoctoral fellows:

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

### PhD students:

12. Victoria Glynn (co-supervised with David Kline, McGill, 2019-)
11. Janay Fox (McGill, 2018-)
10. Mathilde Salmon (co-supervised with Alison Derry, UQAM, 2017-)
9. Alan Garcia-Efring (McGill, 2017-)
8. Marc-Olivier Beausoliel (McGill, 2017-)
7. Charles Xu (McGill, 2016-)
6. Juntao Hu (McGill, 2015-2018)
5. Ananda Regina (co-supervised with Owen McMillan, McGill-STRI, 2015-)
4. Arash Askary (co-supervised with Owen McMillan, McGill-STRI, 2015-2016)
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:

3. Mary-Kathleen Hickox (co-supervised with Andrew Hendry, McGill, 2020-)
2. Marc-Olivier Beausoliel (McGill, 2015-2017)
1. Sara Kurland (co-supervised with Andrew Hendry, McGill, 2014-2015)

### Undergraduate students:

36. Wing Zheng-ho (Volunteer, 2020-)
35. Frida-Cecilia Acosta-Parenteau (BIOL 466, 2019-2020)
34. Savannah Bissenger O'Connor (BIOL 466, 2019-2020)
33. Judy Liu (Volunteer, 2020)
32. James Cyr (BIOL 396, 2019-2020)
31. Brooklyn Frizzle (BIOL 396, 2019-2020)
30. Anya Mueller (BIOL 466, 2019-2020)
29. Cathy Shen (Volunteer, 2019-2020)
28. Juliette Lemoine (BIOL 479, 2019-2020)
27. Kate Arshinova (MIMM 496, 2019-2020)
26. Avery Albert (Research assistant, 2019)
25. Michael Maddelena (Volunteer, 2018-2019)
24. Rachel Takasaki (Volunteer, 2018-2019)
23. Nicole Stinson (Volunteer, 2018-2019)
22. Lauren Bennett (Research assistant, 2018)

21. Thomas Ramsey (BIOL 466, 2018)
20. Katherine Morelli (Volunteer, 2018)
19. Nadia Blostein (Volunteer, 2018)
18. Zoey Jin (B.Sc., Volunteer, 2018)
17. Sara Ghandour (Volunteer, 2018)
16. Scarlett Xiao (Volunteer, 2018)
15. Kiran Yendamuri (Volunteer, 2017-2018)
14. Ana Cataina Avile Virofino (Volunteer, 2017)
13. Samantha Wunderlich (BIOL 466, 2017-2018)
12. Alexandra Farquhar (BIOL 466, 2018)
11. Gwenn Duval (Volunteer, 2017)
10. Sarah Chamberland-Fontaine (Volunteer, 2017)
9. Anthony Zerafa (BIOL 466, 2017-2018)
8. Mehvish Bukhari (USRA, 2015-2016)
7. Dominique Danco (Research assistant, 2015-2016)
6. Areeb Butt (Work-study, 2015-2016)
5. Julianna Seok (Work-study, 2014-2015)
4. Denice Liu (Work-study, 2014-2016)
3. Nicole Peletz-Bohbot (Work-study, 2014-2015)
2. Bharath Sudarsan (Work-study, 2014-2015)
1. Nour Zein (BIOL 466, 2014-2015)

Research internships:

2. Bushra Sial (Ph.D., University of Sargodha, 2018)
1. Samantha Lepenna (Biogenius Competition, Vanier College, 2017)

Research technicians:

3. Åsa Lind (McGill, 2020-)
2. Hilary Poore (McGill, 2019)
1. Caroline LeBlonde (McGill, 2013-2017)

SUPERVISORY COMMITTEES

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20. Paola Carrion (Ph.D., McGill, 2018-)
19. Moritz Ehrlich (Ph.D., U. Miami, 2018-)
18. Lotte Skovmand (Ph.D., McGill, 2017-)
17. Kristina Krebs (Ph.D., McGill, 2017-)
16. Sara Nason (M.Sc., Concordia, 2017-)
15. David Hunt (Ph.D., 2016-)
14. Naïla Barbosa de Costa (M.Sc., UdeM, 2016-)
13. Ignacio Solaberrieta (M.Sc., UQAM, 2015-)
12. Brandon Javier Varela (M.Sc., McGill, 2015-2017)
11. Jonathas Pereira (Ph.D., McGill, 2015-)

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-)
3. Dustin Raab (Ph.D., McGill, 2013-2016)
2. Sarah Baldwin (Ph.D., McGill, 2013-)
1. Katie Millette (Ph.D., McGill, 2013-)

#### DEFENSE OR QUALIFYING EXAMINER

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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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| 2021      | Selection Committee for the Principal's Prize for Outstanding Emerging Researchers (McGill) |
| 2020-     | Equity, Diversity and Inclusion Committee, Redpath Museum (McGill)                          |
| 2018      | Tenure-track faculty position Search Committee, Biology Department (McGill)                 |
| 2017-     | Committee on Student Standing, Faculty of Science (McGill)                                  |
| 2016      | Pro-dean for Ph.D. defence (McGill)   |
| 2015      | Biology Department Career Development talk (McGill)   |
| 2015      | Pro-dean for Ph.D. defence (McGill)   |
| 2014-2019 | Coordinator, Natural History Minor, Redpath Museum (McGill)                                 |
| 2014-     | Chair, Curriculum committee, Redpath Museum (McGill)  |
| 2014-     | 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)

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- 2019 CBC “Quirks and Quarks” interview  
2019 Invited “Young Leader” at the Science and Technology in Society Forum, Kyoto, Japan  
2019 Barrett et al. *Science* 2019 and Pringle et al. *Nature* 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 “*Improbable Destinies: Fate, Chance, and the Future of Evolution*” by Jonathan Losos, Penguin Random House Publishing  
2017 Interviewed on CBC radio about primary research  
2017 Diversity in STEMM (McGill)  
2017 Soup and Science undergraduate outreach talk (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  
2010 Public education talk, Texada Island, Canada  
2009 Hip hop Darwin. *The Scientist magazine online*. Published 17th April 2009  
2009 Organizer for Vancouver Evolution Festival  
2008 Interviewed on CBC radio about primary research

#### PROFESSIONAL MEMBERSHIPS

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