ANDREW G. MCADAM

Chair, Department of Ecology and Evolutionary Biology
University of Colorado

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EDUCATION AND DEGREES

Ph.D.	University of Alberta, Department of Biological Sciences	2003
M.Sc.	Western University, Department of Zoology	1998
B.Sc.	McGill University, Department of Biology	1995

EMPLOYMENT HISTORY

Chair, Department of Ecology and Evolutionary Biology, University of Colorado	2023 – present
Professor, Department of Ecology and Evolutionary Biology, University of Colorado	2024 – present
Interim Chair, Department of Ecology and Evolutionary Biology, University of Colorado	2022 – 2023
Associate Professor, Department of Ecology and Evolutionary Biology, University of Colorado	2020 – 2024
Associate Director, Mountain Research Station	2020 – 2021
Associate Professor, Department of Integrative Biology, University of Guelph. *Parental leave: August – December 2011, Parental leave: January – May 2014.*	2011 – 2019
Assistant Professor, Department of Integrative Biology, University of Guelph. *Parental leave: January – May 2010.*	2008 – 2011
Assistant Professor, Department of Fisheries and Wildlife, Department of Zoology, Michigan State University	2005 – 2008
Visiting Assistant Professor, Department of Fisheries and Wildlife, Department of Zoology, Michigan State University	2004 – 2005
Natural Sciences and Engineering Research Council (NSERC) of Canada Postdoctoral Fellow, University of California, Santa Cruz.	2003 – 2004

ADMINISTRATIVE EXPERIENCE

Responsibilities as Chair of the Department of Ecology and Evolutionary Biology, University of Colorado (interim 2022 – 2023; 2023 to present):
As the Chair of the Department of Ecology and Evolutionary Biology (EBIO), I oversee all aspects of the department's educational and research missions. This includes budget, personnel, instruction, facilities, reporting/accreditation, fundraising. Our department currently has 33 tenure-track faculty, 9 teaching professors, 8 departmental staff, and roughly 100 graduate students. We instruct approximately 700 majors and >20,000 student-credit-hours per year. Our department has an annual operating budget of approximately $5M with research expenditures from external grant funding representing an additional $5M per year.

UNIVERSITY OF COLORADO COMMITTEES

Executive Committee Member, Arts and Science Faculty Senate	2024 – present
Member, Arts and Science Faculty Senate	2024 – present
Chair, Arts and Sciences Salary Equity Committee	2024
Chair, Department of Ecology and Evolutionary Biology Executive Committee	2022 – present
Member, Natural Sciences Council	2022 – present
Institutional Animal Care and Use Committee (IACUC)	2021 – present
Member of the Merit Review Committee, Department of Ecology and Evolutionary Biology (EBIO)	2022
Member of the Justice, Equity, Diversity and Inclusion Committee, EBIO	2021 – 2022
Member of the Executive Committee, EBIO	2020 – 2021
Chair of the Faculty Affairs Committee, EBIO	2021 – 2021
Member of the Graduate Committee, EBIO	2020

ACADEMIC AND SCHOLARLY ACCOMPLISHMENTS

RESEARCH PUBLICATIONS

ORCID: orcid.org/0000-0001-7323-2572

Google Scholar: https://scholar.google.ca/citations?user=YGcm80oAAAAJ&hl=en

h-index: 45; i10-index: 110; >7000 citations

Notations: *undergraduate student, **graduate student, ***postdoc in my lab

Articles in Review or Under Revision

128. Tapper, S., J. Bowman, **A. G. McAdam**, and A. I. Schulte-Hostedde. Resilience of a small mammal community to environmental change over 70 years. Revisions submitted to *Ecosphere* (ECS22-0621).

Peer Reviewed Articles and Book Chapters

127. Petrullo, L., D. Delaney***, S. Boutin, J. E. Lane, **A. G. McAdam**, and B. Dantzer. 2024. A future food boom rescues the negative effects of cumulative early-life adversity on lifespan in a small mammal. *Proceedings B* 291: 20232681. DOI: 10.1098/rspb.2023.2681

126. Hare, A. J.**, **A. G. McAdam**, B. Dantzer, J. E. Lane, S. Boutin, and A. E. M. Newman. 2024. Reproductive state alters vocal characteristics of female North American red squirrels (*Tamiasciurus hudsonicus*). *Journal of Mammalogy* 105: 358-371.

125. Wishart, A. E., A. L. Guerrero-Chacón, R. Smith, D. M. Hawkshaw**, A. G. McAdam**, B. Dantzer, S. Boutin, and J. E. Lane. 2024. Inferring condition in wild mammals: body condition indices confer no benefit over measuring body mass across ecological contexts. *Oecologia* DOI: 10.1007/s00442-023-05495-7.

124. Halhed, A., L. Petrullo, S. Boutin, B. Dantzer, **A. G. McAdam**, M. Wu, and K. Cottenie. 2023. Consistent spatial patterns in microbial taxa of red squirrel gut microbiomes. *Environmental Microbiology Reports*, 16(1), e13209. DOI: 10.1111/1758-2229.13209.

123. Petrullo, L., S. Boutin, J. E. Lane, **A. G. McAdam**, and B. Dantzer. 2023. Phenotype-environment mismatch errors enhance lifetime fitness in wild red squirrels. Phenotype-environment mismatch errors enhance lifetime fitness in wild red squirrels. *Science* 379: 269-272. DOI: 10.1126/science.abn0665.

122. Walmsley, S. F., S. Boutin, B. Dantzer, J. E. Lane, D. W. Coltman, and **A. G. McAdam**. 2023. Benefits of living closer to kin vary by genealogical relationship in a territorial mammal. *Proceedings B* 290: 20221569 DOI: 10.1098/rspb.2022.1569.

121. Webber, Q.***, B. Dantzer, J. Lane, S. Boutin, and **A. G. McAdam**. 2023. Density-dependent plasticity in territoriality revealed using social network analysis. *Journal of Animal Ecology* 92: 207-221. DOI: 10.1111/1365-2656.13846

120. Studd, E. K., M. J. L. Peers, A. K. Menzies, R. Derbyshire, Y. N. Majchrzak, J. Seguin, D. L. Murray, B. Dantzer, J. E. Lane, **A. G. McAdam**, M. M. Humphries, and S. Boutin. 2022. Behavioural adjustments of predators and prey to wind speed in the boreal forest. *Oecologia* 200: 349-358. DOI: 10.1007/s00442-022-05266-w

119. Haines, J. A., D. M. Delaney***, A. E. Wishart, **A. G. McAdam**, D. W. Coltman, J. E. Lane, B. Dantzer, and S. Boutin. 2022. Sex-specific effects of capital resources in reproductive timing and success in red squirrels. *Behavioral Ecology and Sociobiology* 76: 142. DOI: 10.1007/s00265-022-03245-y

118. Petrullo, L., D. Delaney***, S. Boutin, **A. G. McAdam**, J. E. Lane, R. Boonstra, R. Palme, and B. Dantzer. 2022. The glucocorticoid response to environmental change is not specific to agents of natural selection in wild red squirrels. *Hormones and Behavior*. 146: 105262. DOI: 10.1016/j.yhbeh.2022.105262

117. Bonnet, T., M. B. Morrissey, P. de Villemereuil, S. C. Alberts, P. Arcese, L. Bailey, S. Boutin, P. Brekke, L. J. Brent, G. Camenisch, A. Charmantier, T. H. Clutton-Brock, A. Cockburn, D. W. Coltman, A. Courtiol, E. Davidian, S. R. Evans, J. G. Ewen, M. Fest-Bianchet, C. de Franceschi, L. Gustafsson, O. P. Honer, T. Houslay, L. F. Keller, M. Manser, **A. G. McAdam**, E. McLean, P. Nietlisbach, H. L. Osmond, J. M. Pemberton, E. Postma, J. M. Reid, A. Rutschmann, A. W. Santure, B. C. Sheldon, J. Slate, C. Teplitsky, M. Visser, B. Wachter, and L. E. B. Kruuk. Genetic variance in fitness indicates rapid contemporary adaptive evolution in wild animals. 2022. *Science* 376: 1012-1016.

116. Martinig, A. R., H. J. Karst, E. R. Siracusa**, E. K. Studd, **A. G. McAdam**, B. Dantzer, D. M. Delaney***, J. E. Lane, P. Pokharel, and S. Boutin. 2022. Animal personality: a comparison of standardized assays and focal observations in North American red squirrels. *Animal Behaviour* 190: 221-232. DOI: 10.1016/j.anbehav.2022.05.012

115. Hacket-Pain, A., and 88 other co-authors (including **A. G. McAdam).** 2022. MASTREE+: time-series of plant reproductive effort from six continents. *Global Change Biology*. DOI: 10.1111/gcb.16130

114. Petrullo, L., T. Ren, M. Wu, R. Boonstra, R. Palme, S. Boutin, **A. G. McAdam**, and B. Dantzer. 2022. Glucocorticoids coordinate changes in gut microbiome composition in wild North American red squirrels. *Scientific Reports* 12: 2605. DOI: 10.1038/s41598-022-06359-5

113. **McAdam, A. G.**, Q. M. R. Webber***, B. Dantzer, J. E. Lane, and S. Boutin. 2022. Social effects on annual fitness in red squirrels. *Journal of Heredity* 113(1): 69-78. DOI: 10.1093/jhered/esab051

112. Denomme-Brown, S. T.**, K. Cottenie, J. B. Falls, E. A. Falls, R. J. Brooks, and **A. G. McAdam**. 2021. Examining the effects of heterospecific abundance on dispersal in forest small mammals. *Journal of Mammalogy* 102(6): 1484-1496. DOI: 10.1093/jmammal/gyab096

111. Hare, A. J.**, A. E. M. Newman, B. Dantzer, J. E. Lane, S. Boutin, D. W. Coltman, and **A. G. McAdam**. 2021. An independent experiment does not support stress-mediated kin discrimination through red squirrel vocalizations. *Animal Behaviour* 176: 185-192. DOI: 10.1016/j.anbehav.2021.04.010

110. Westrick, S. E., F. van Kesteren, S. Boutin, J. E. Lane, **A. G. McAdam**, and B. Dantzer. 2021. Maternal glucocorticoids have minimal effects on HPA axis activity and behavior of juvenile wild North American red squirrels. *Journal of Experimental Biology* 224 (10): jeb236620. DOI: 10.1242/jeb.236620

109. Siracusa, E. R.**, S. Boutin, B. Dantzer, J. E. Lane, D. W. Coltman, and **A. G. McAdam**. 2021. Familiar neighbours, but not relatives, enhance fitness in a territorial mammal. *Current Biology* 31 (2): 438-445. DOI: 10.1016/j.cub.2020.10.072

108. de Villemereuil, P., A. Charmantier, D. Arlt, P. Bize, P. Brekke, L. Brouwer, A. Cockburn, S. D. Côte, F. S. Dobson, S. R. Evans, M. Festa-Bianchet, M. Gamelon, S. Hamel, J. Hegelbach, K. Jerstad, B. Kempenaers, L. E. B. Kruuk, J. Kumpula, T. Kvalnes, **A. G. McAdam**, S. E. McFarlane, M. B. Morrissey, T. Part, J. M. Pemberton, A. Qvarnström, O.-W. Røstad, J. Schroeder, JC. Senar, B. C. Sheldon, M. van de Pol, M. E. Visser, N. T. Wheelwright, J. Tufto, and L.-M. Chevin. 2020. Fluctuating optimum and temporally variable selection in the wild. *Proceedings of the National Academy of Sciences*. 117: 31969-31978. DOI: 10.1073/pnas.2009003117

107. Denomme-Brown, S. T.**, K. Cottenie, J. B. Falls, A. Falls, R. J. Brooks, and **A. G. McAdam**. 2020. Variation in space and time: a long-term examination of density-dependent dispersal in a woodland rodent. *Oecologia* 193: 903-912. DOI: 10.1007/s00442-020-04728-3

106. Dantzer, B., **A. G. McAdam**, M. M. Humphries, J. E. Lane, and S. Boutin. 2020. Decoupling the effects of food and density on life history plasticity of wild animals using field experiments: insights from the steward who sits in the shadow of its tail, the North American red squirrel. *Journal of Animal Ecology* 89: 2397-2414. DOI: 10.1111/1365-2656.13341

105. Menzies, A. K., E. K. Studd, Y. N. Majchrzak, M. J. L. Peers, S. Boutin, B. Dantzer, J. E. Lane, **A. G. McAdam**, and M. M. Humphries. 2020. Body temperature, heart rate, and activity patterns of two boreal homeotherms in winter: homeostasis, allostasis, and ecological coexistence. *Functional Ecology* 34: 2292-2301. DOI: 10.1111/1365-2435.13640.

104. Westrick, S. E., R. W. Taylor**, S. Boutin, J. E. Lane, **A. G. McAdam**, and B. Dantzer. 2020. Attentive red squirrel mothers have faster growing pups and higher lifetime reproductive success. *Behavioral Ecology and Sociobiology* 74:72. DOI: /10.1007/s00265-020-02856-7

103. Haines, J. A., S. E. Nason, A. M. M. Skurdal, T. Bourchier, S. Boutin, R. W. Taylor**, **A. G. McAdam**, J. E. Lane, A. D. Kelley, M. M. Humphries, J. C. Gorrell, B. Dantzer, D. W. Coltman, and A. Hämäläinen. 2020. Sex- and context-specific associations between personality and a measure of fitness but no link with life history traits. *Animal Behaviour* 167: 23-39. DOI: /10.1016/j.anbehav.2020.06.013

102. Studd, E. K., A. K. Menzies, E. R. Siracusa**, B. Dantzer, J. E. Lane, **A. G. McAdam**, S. Boutin, and M. M. Humphries. 2020. Optimisation of energetic and reproductive gains explains behavioural responses to environmental variation across seasons and years. *Ecology Letters* 23 (5): 841-850. DOI: 10.1111/ele.13494

101. Hendrix, J. G.**, D. N. Fisher***, A. R. Martinig, S. Boutin, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2020. Territory acquisition mediates the influence of predators and climate on juvenile red squirrel survival. *Journal of Animal Ecology* 89: 1408-1418. DOI: 10.1111/1365-2656.13209

100. Dantzer, B., F. van Kesteren, S. Westrick, S. Boutin **A. G. McAdam**, J. E. Lane, R. Gillespie, A. Majer, M. F. Haussmann, and P. Monaghan. 2020. Maternal glucocorticoids promote offspring growth without inducing oxidative stress or shortening telomeres in wild red squirrels. *Journal of Experimental Biology*. 223: jeb212373. DOI: 10.1242/jeb.212373

99. Martinig, A. R., **A. G. McAdam**, B. Dantzer, J. E. Lane, D. W. Coltman, and S. Boutin. 2020. The new kid on the block: immigrant males win big whereas females pay fitness costs after dispersal. *Ecology Letters* 23 (3): 430-438. DOI: 10.111/ele.13436

98. Brady, S. P., D. I. Bolnick, A. L. Angert, A. Gonzalez, R. D. H. Barrett, E. Crispo, A. M. Derry, C. G. Eckert, D. J. Fraser, G. F. Fussmann, F. Guichard, T. Lamy, **A. G. McAdam**, A. E. M. Newman, A. Paccard, G. Rolshausen, A. M. Simons, and A. P. Hendry. 2019. Causes of maladaptation. *Evolutionary Applications.* 12: 1229-1242. DOI**:** 10.1111/eva.12844

97. Westrick, S. E., F. van Kesteren, R. Palme, R. Boonstra, J. E. Lane, S. Boutin, **A. G. McAdam**, and B. Dantzer. 2019. Stress activity is not predictive of coping style in North American red squirrels. *Behavioral Ecology and Sociobiology*. 73: 113. DOI: 10.1007/s00265-019-2728-2

96. Kilgour, R. J.**, D. R. Norris, and **A. G. McAdam**. 2019. Carry-over effects of resource competition and social environment on aggression. *Behavioural Ecology* 31: 140-151. DOI: 10.1093/beheco/arz170

95. Guindre-Parker, S.***, **A. G. McAdam**, F. van Kesteren, R. Palme, R. Boonstra, S. Boutin, J. E. Lane, and B. Dantzer. 2019. Individual variation in phenotypic plasticity in the stress axis. *Biology Letters* 15:20190260. DOI: 10.1098/rsbl.2019.0260

94. van Kesteren, F., B. Delehanty, S. E. Westrick, R. Palme, R. Boonstra, J. E. Lane, S. Boutin, M. M. Humphries, **A. G. McAdam**, and B. Dantzer. 2019. Experimental increases in stress hormones alter function of the neuroendocrine stress axis in wild red squirrels without negatively impacting survival and reproduction. *Physiological and Biochemical Zoology* 92: 445-458. DOI: 10.1086/705121

93. Brady, S. P., D. I. Bolnick, R. D. H. Barrett, L. J. Chapman, E. Crispo, A. M. Derry, C. G. Eckert, D. J. Fraser, G. F. Fussmann, A. Gonzalez, F. Guichard, T. Lamy, J. E. Lane, **A. G. McAdam**, A. E. M. Newman, A. Paccard, B. A. Robertson, G. Rolshausen, P. M. Schulte, A. M. Simons, M. Vellend, and A. P. Hendry. 2019. Understanding maladaptation by uniting ecological and evolutionary perspectives. *The American Naturalist* 194: 495-515. DOI: 10.1086/705020

92. Sehrsweeney, M., D.R. Wilson, M. Bain**, S. Boutin, J. E. Lane, **A. G. McAdam** and B. Dantzer. 2019. The effects of stress and glucocorticoids on vocalizations: a test in North American red squirrels. *Behavioural Ecology* 30: 1030-1040. DOI:10.1093/beheco/arz044

91. **McAdam, A. G.**, S. Boutin, B. Dantzer, J. E. Lane, and M. M. Humphries. 2019. Seed masting causes fluctuations in optimum litter size and lag load in a seed predator. *The American Naturalist* 194: 574-589. DOI: 10.1086/703743

90. Siracusa, E. R.**, D. R. Wilson, E. K. Studd, S. Boutin, M. M. Humphries, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2019. Red squirrels mitigate costs of territory defence through social plasticity. *Animal Behaviour.* 151: 29-42. DOI: 10.1016/j.anbehav.2019.02.014.

89. Fisher, D. N.***, A. J. Wilson, S. Boutin, B. Dantzer, M. M. Humphries, J. E. Lane, D. W. Coltman, J. C. Gorrell, and **A. G. McAdam**. 2019. Social effects of territorial neighbours on the timing of spring breeding in North American red squirrels. *Journal of Evolutionary Biology* 32: 559-571. DOI: 10.1111/jeb.13437

88. Fisher, D. N.***, J. A. Haines, S. Boutin, B. Dantzer, J. E. Lane, M. M. Humphries, D. W. Coltman, and **A. G. McAdam**. 2019. Indirect effects on fitness between individuals that have never met via an extended phenotype. *Ecology Letters* 22: 697-706. DOI: 10.1111/ele.13230

87. Fisher, D. N.***, and **A. G. McAdam**. 2019. Indirect genetic effects clarify how traits can evolve even when fitness does not. *Evolution Letters* 3: 4-14. DOI: 10.1002/evl3.98

86. Studd, E., M. Landry-Cuerrier, A. Menzies, S. Boutin, **A. G. McAdam**, B. Dantzer, J. Lane, and M. M. Humphries. 2019. Behavioral classification of low frequency acceleration and temperature data from a free ranging small mammal. *Ecology and Evolution* 9: 619-630. DOI: 10.1002/ece3.478

85. Wishart, A., C. Williams, **A. G. McAdam**, S. Boutin, B. Dantzer, M. M. Humphries, D. W. Coltman, and J. E. Lane. 2018. Is biasing offspring sex ratio adaptive? A test of Fisher's principle across multiple generations of a wild mammal in a fluctuating environment. *Proceedings B* 285: 20181251. DOI: 10.1098/rspb.2018.1251

84. Robertson, J. G.**, S. Boutin, M. M. Humphries, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2018. Individual variation in the dear enemy phenomenon via

territorial vocalizations in red squirrels. *Behaviour* 155: 1073-1096. DOI: 10.1163/1568539X-00003524

83. Lane, J. E., **A. G. McAdam**, S. E. McFarlane**, C. T. Williams, M. M. Humphries, D. W. Coltman, J. C. Gorrell, and S. Boutin. 2018. Phenological shifts in North American red squirrels: disentangling the roles of phenotypic plasticity and microevolution. *Journal of Evolutionary Biology* 31: 810-821. DOI: 10.1111/jeb.13263

82. Kilgour, J.**, **A. G. McAdam**, G. Betini*, and D. R. Norris. 2018. Experimental evidence that density mediates negative frequency-dependent selection on aggression. *Journal of Animal Ecology* 87: 1091-1101. DOI: 10.1111/1365-2656.12813

81. Haines, J. A., D. W. Coltman, B. Dantzer, J. C. Gorrell, M. M. Humphries, J. E. Lane, **A. G. McAdam**, and S. Boutin. 2018. Sexually-selected infanticide by male red squirrels in advance of a mast year. *Ecology* 99: 1242-1244. DOI: 10.1002/ecy.2158

80. Fiorino, G. E.**, and **A. G. McAdam**. 2018. Local differentiation in the defensive morphology of an invasive zooplankton species is not genetically based. *Biological Invasions,* 20: 235-250. DOI: 10.1007/s10530-017-1530-1

79. Ren, T., S. Boutin, M. M. Humphries, B. Dantzer, J. C. Gorrell, D. W. Coltman, **A. G. McAdam**, and M. Wu. 2017. Seasonal, spatial and maternal effects on gut microbiome in wild red squirrels. *Microbiome*. DOI: 10.1186/s40168-017-0382-3

78. Fisher, D. N.*** and **A. G. McAdam**. 2017. Social traits, social networks, and evolutionary biology. *Journal of Evolutionary Biology*. 30 (12): 2088-2103. DOI: 10.1111/jeb.13195

77. Siracusa, E.**, M. Morandini, S. Boutin, M. M. Humphries, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2017. Red squirrel territorial vocalizations deter intrusions by conspecific rivals. *Behaviour*. DOI: 10.1163/1568539X-00003467

76. Prentice, M. B., J. Bowman, J. L. Lalor, M. M. McKay, L. A. Thomson, C. M. Watt, **A. G. McAdam**, D. L. Murray, and P. J. Wilson. 2017. Signatures of selection in mammalian clock genes with coding trinucleotide repeats: Implications for studying the genomics of high-pace adaptation. *Ecology and Evolution*, 7 (18): 7254-7276. DOI: 10.1002/ece3.3223

75. Cooper, E. B.*, R. W. Taylor, A. D. Kelley, A. R. Martinig, S. Boutin, M. M. Humphries, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2017. Personality is correlated with natal dispersal in North American red squirrels (*Tamiasciurus hudsonicus*). *Behaviour*. 154: 939-961. DOI: 10.1163/1568539X-00003450

74. Hämäläinen, A., **A. G. McAdam**, B. Dantzer, J. E. Lane, J. A. Haines, M. M. Humphries, and S. Boutin. 2017. Fitness consequences of peak reproductive

effort in a resource pulse system. *Scientific Reports*. DOI:10.1038/s41598-017-09724-x

73. Siracusa, E.**, S. Boutin, M. M. Humphries, J. C. Gorrell, D. W. Coltman, B. Dantzer, J. E. Lane, and **A. G. McAdam**. 2017. Familiarity with neighbours affects intrusion risk in a territorial squirrel (*Tamiasciurus hudsonicus*). *Animal Behaviour* 113:11-20. DOI: 10.1016/j.anbehav.2017.08.024

72. Fisher, D. N.***, S. Boutin, B. Dantzer, M. M. Humphries, J. E. Lane, and **A. G. McAdam**. 2017. Multilevel and sex-specific selection on competitive traits in North American red squirrels. *Evolution* 71: 1841-1854. DOI: 10.1111/evo.13270

71. Stewart, F. E. C.**, and **A. G. McAdam**. 2017. Wild *Peromyscus* adjust maternal nest-building behaviour in response to ambient temperature. *Canadian Journal of Zoology.* 95: 411-415. DOI: 10.1139/cjz-2016-0236

70. Betini, G. S.***, **A. G. McAdam**, C. K. Griswold, and D. R. Norris. 2017. A fitness trade-off between seasons causes multigenerational cycles in phenotype and population size. *eLife* DOI: 10.7554/eLife.18770

69. Shonfield, J.**, J. C. Gorrell, D. W. Coltman, S. Boutin, M. M. Humphries, D. Wilson, and **A. G. McAdam**. 2017. Using playback of territorial calls to investigate mechanisms of kin discrimination in red squirrels. *Behavioral Ecology*. 28: 382-390. DOI: 10.1093/beheco/arw165

68. Studd, E., S. Boutin, **A. G. McAdam**, and M. M. Humphries. 2016. Nest attendance of lactating red squirrels: influence of biological and environmental correlates. *Journal of Mammalogy* 97 (3): 806-814. DOI: 10.1093/jmammal/gyw010

67. Mills, J. A., C. Teplitsky, *et al.* 2016. Solutions for archiving data in long-term studies: A reply to Whitlock et al. *Trends in Ecology and Evolution* 31 (2): 85-87. DOI: 10.1016/j.tree.2015.12.004

66. Mills, J. A., C. Teplitsky, *et al.* 2015. Archiving primary data: solutions for long-term studies. *Trends in Ecology and Evolution* 30 (10): 581-589. DOI: 10.1016/j.tree.2015.07.006

65. Kelley, A. D., M. M. Humphries, **A. G. McAdam**, and S. Boutin. 2015. Changes in wild red squirrel personality across ontogeny: activity and aggression regress towards the mean. *Behaviour*, 152: 1291-1306.

64. Wilson, D. R.***, A. R. Goble, S. Boutin, M. M. Humphries, D. W. Coltman, J. C. Gorrell, J. Shonfield, and **A. G. McAdam**. 2015. Red squirrels use territorial vocalizations for kin discrimination. *Animal Behaviour*, 107: 79-85.

63. Miehls, A. L. J.**, S. D. Peacor, L. Valliant* and **A. G. McAdam**. 2015 Evolutionary stasis despite selection on a heritable trait in an invasive

zooplankton. *Journal of Evolutionary Biology*. 28 (5): 1091-1102. DOI: 10.1111/jeb.12632

62. Lane, J. E., **A. G. McAdam**, A. Charmantier, M. M. Humphries, D. W. Coltman, J. C. Gorrell, and S. Boutin. 2015. Post-weaning parental care increases fitness but is not heritable in North American red squirrels. *Journal of Evolutionary Biology* 28 (6): 1203-1212. DOI: 10.1111/jeb.12633

61. McFarlane, S. E.**, J. C. Gorrell, D. W. Coltman, M. M. Humphries, S. Boutin, and **A. G. McAdam**. 2015. The nature of nurture in a wild mammal's fitness. *Proceedings B* 282 (1806): p. 20142422.

60. Fletcher, Q. E., J. R. Speakman, S. Boutin, J. E. Lane, **A. G. McAdam**, J. C. Gorrell, D. W. Coltman, and M. M. Humphries. 2015. Daily energy expenditure during lactation is strongly selected in a free-living mammal. *Functional Ecology* 29: 195-208.

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of a seed-hoarder in response to a mast seed producer. *Ecology* 91: 2673-2683.

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12. Berteaux, D., D. Réale, **A. G. McAdam** and S. Boutin. 2004. Keeping pace with fast climate change: can arctic life count on evolution? *Integrative and Comparative Biology* 44: 140-151.

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10. Réale, D., D. Berteaux, **A. G. McAdam** and S. Boutin. 2003. Lifetime selection on heritable life-history traits in a natural population of red squirrels. *Evolution* 57: 2416-2423.

9. **McAdam, A. G.** and S. Boutin. 2003. Effects of food abundance on genetic and maternal variation in the growth rate of juvenile red squirrels. *Journal of Evolutionary Biology* 16: 1249-1256.

8. **McAdam, A. G.** and S. Boutin. 2003. Variation in viability selection among cohorts of juvenile red squirrels (*Tamiasciurus hudsonicus*). *Evolution* 57: 1689-1697.

7. Réale, D., **A. G. McAdam**, S. Boutin, and D. Berteaux. 2003. Genetic and plastic responses of a northern mammal to climate change. *Proceedings of the Royal Society of London, Series B*. 270: 591-596.

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3. **McAdam, A. G.**, and J. S. Millar.1999. Breeding by young-of-the-year female deer mice: why weight? *Écoscience* 6: 400-405.

2. **McAdam, A. G.**, and J. S. Millar.1999. Dietary protein constraint on age at maturity: an experimental test with wild deer mice. *Journal of Animal Ecology* 68: 733-740.

1. **McAdam, A. G.**, and D. L. Kramer. 1998. Vigilance as a benefit of intermittent locomotion in small mammals. *Animal Behaviour* 55: 109-117.

Book Chapters and Other Articles

3c. Svensson, E. I., P. Blaimont, R. Calsbeek, L. T. Lancaster, **A. G. McAdam**, S. C. Mills. 2021. In Memorium: Barry Sinervo 1961-2021. *Evolution.* doi:10.1111/evo.14416

2c. **McAdam, A. G.**, D. Garant, and A. J. Wilson. 2014. The effects of others' genes: maternal and other indirect genetic effects. In *Quantitative Genetics in the Wild*. Oxford University Press.

1c. **McAdam, A. G.** 2009. Maternal effects on evolutionary dynamics in wild small mammals. In *Maternal Effects in Mammals*. Edited by D. Maestripieri and J.M. Mateo. University of Chicago Press.

RESEARCH GRANTS	**AMOUNT**	**DATE**
National Science Foundation – Long Term Research in Environmental Biology. **A. G. McAdam** & B. Dantzer. LTREB: The importance of resource availability, acquisition, and mobilization to the evolution of life history trade-offs in a variable environment. (DEB-2338394)	$460,855	2024 - 2029
NSERC Discovery Grant. **A. G. McAdam**. Maternal and social effects on adaptation. (RGPIN-2015-04707)	$245,000	2015 – 2020
NSERC Discovery Accelerator Supplement (RGPAS 478027-2015)	$120,000	
NSERC Northern Research Supplement (RGPNS-2015-377988)	$87,500	
NSERC Discovery Grant. **A. G. McAdam**. The Ecology of Adaptations in Wild Animals. (RGPIN 371579-2009)	$174,000	2009 - 2015
NSERC Northern Research Supplement (RGPNS-377988-2009)	$75,120	
Ontario Ministry of Research and Innovation, Early Researcher Award. **A. G. McAdam**. Contemporary adaptation in wild animals. (ER08-05-119)	$150,000	2009 - 2014
Canadian Association for Humane Trapping. **A. G. McAdam**. Effects of mealworm bait supplements on small mammal capture rates.	$23,128	2012
Canadian Association for Humane Trapping. **A. G. McAdam**. Reducing shrew mortality rates associated with small mammal live-trapping: a meta-analysis and experimental field study.	$42,145	2011
Canada Foundation for Innovation/Ontario Ministry of Innovation - Leaders Opportunity Fund. **A. G. McAdam.** Field data acquisition, integration and communication infrastructure for studying adaptation in action.	$138,425	2011

Great Lakes Fishery Commission. **A. G. McAdam** & S. D. Peacor. Evolution of trophic linkages in an invaded food web.	$121,647	2007 - 2010
Michigan State University Intramural Research Program Grant. **A. G. McAdam**. The coevolution of handedness in red squirrels and spruce cones.	$37,413	2007 - 2008
National Science Foundation. **A. G. McAdam**. Testing Ecological Mechanisms of Adaptation in Red Squirrels. DEB-0515849.	$299,929	2005 – 2008
Research Experience for Undergraduates supplements:		
DEB-0724743	$6,000	2007
DEB-0620870	$6,000	2006
National Science Foundation – Long Term Research in Environmental Biology. B. Sinervo & **A. G. McAdam**. Relatedness Asymmetries, Antagonistic Natural Selection and Nonmendelian Inheritance in a Natural Population of Lizards. DEB-0515973.	$299,990	2006 - 2010
Several small research grants from: *Circumpolar/Boreal Alberta Research, Northern Scientific Training Program, Arctic Institute of North America,* and *American Society of Mammalogists.*	$12,190	1999 - 2002

SCHOLARSHIPS AND AWARDS	**AWARDING AGENCY**	**DATE**
Early Researcher Award	Ontario Ministry of Research and Innovation	2009
NSERC Postdoctoral Fellowship	NSERC	2003 – 2004
NSERC Doctoral Prize - excellence in student research in the natural sciences.	University of Alberta nominee	
Fellowship in Mammalogy	American Society of Mammalogists	2002 – 2003
Dissertation Fellowship	University of Alberta	2002 – 2003

Andrew Stewart Memorial Graduate Prize - excellence in doctoral research	University of Alberta	2002
Izaak Walton Killam Memorial Scholarship	The Killam Trusts	2000 – 2002
Walter H. Johns Graduate Fellowship	University of Alberta	1998 – 2000
NSERC Postgraduate Scholarship	NSERC	1998 – 2000
Faculty of Science Graduate Scholarship	University of Alberta	1998
Detwiler Award - best thesis and defence in Zoology	University of Western Ontario	1998
Scarlet Key – for outstanding leadership	McGill University	1995

TEACHING EXPERIENCE

Seminar in Environmental Biology: Reciprocity and Reconciliation in Remote Field Research (EBIO*6100; University of Colorado). Historically, many field researchers took colonial approaches to field data/sample collection. It is now widely recognized that ethical field research involves more than just formal government approval. The social license to collect data/samples requires reciprocity with people in whose communities or traditional territories the data were collected. The process of reconciliation in field research involves 1) developing an understanding of the historical, cultural and political context of the area in which you are working, 2) acknowledgement of the harm that has been done previously through colonial field research, 3) atonement for the causes of past harms, and 4) taking action to enhance reciprocity and build capacity in local Indigenous and non-Indigenous communities. This course involved weekly student-led discussions of the core concepts and components of reciprocity and reconciliation through field research using Wong et al. (2020) "Towards reconciliation: 10 Calls to Action to natural scientists working in Canada" as a guiding framework. Following an initial overview of the relevant concepts, students selected one of the 10 calls to action and developed one weekly learning experience for the class based around this call to action. Over the course of the semester, students also developed a Reciprocity and Reconciliation Action Plan describing how they planned to engage in reciprocity and reconciliation in their graduate research. (Fall 2024; 14 students)

Evolutionary Biology (EBIO*3080; University of Colorado). This course focuses on the study of the principles of evolution and covers such topics as the origin and fate of

variation, the role of natural selection and genetic drift in populations, the origin and evolution of phenotypes, and the history of biological diversity on the planet from the origin of life to the present. (Fall 2021: 98 students)

Biological Statistics (EBIO*4410/5410; University of Colorado). The overall goal of this course is to create an interactive environment that will promote statistical thinking and introduce students to the use of statistical models for investigating biological data and making decisions in the presence of uncertainty. Statistics is a foundational tool for much of biology; we use statistics to test our hypotheses and learn about the world. Knowledge of statistics is therefore necessary for students who wish to pursue a career in the sciences. It is also enormously useful for people in non-scientific careers, particularly in thinking about how to critically evaluate evidence as citizens. (Fall 2020: 27 students; Spring 2021: 18 students; Spring 2022: 30 students)

Evolution (BIOL*2400; University of Guelph). This course provides a broad overview of evolutionary biology. It examines the concepts and mechanisms that explain evolutionary change and the evolution of biological diversity at different levels of biological organization (gene to ecosystem) and across space and time. It also introduces historical forms of scientific inquiry, unique to biology. The course is designed to be of interest to students with general interests in science and in research in all areas of biology. (Winter 2015: 202 students; Winter 2016: 163 students; Fall 2016: 389 students; Fall 2017: 435 students)

Ecology (BIOL*2060; University of Guelph) This course introduces students to the basic concepts, theories and evidence about ecological processes that determine the distribution and abundance of organisms. We include a mix of theory and field and laboratory techniques presented in lecture and discussed in tutorials. We also take time during lectures to apply principles to topics related to conservation, resource use, and human impacts on the biosphere. (Winter 2017: 233 students; Winter 2018: 224 students; Fall 2018: 300 students)

Biostatistics for Integrative Biology (STAT*2230; University of Guelph). This course introduces students to the design, completion and interpretation of research projects, including identifying categories of research questions, types of data, data gathering methods, efficient graphic and numeric methods to summarize data, standard statistical analyses involving parameter estimation and hypothesis tests and interpreting results in the context of research goals. Statistical concepts underlying practical aspects of biological research will be emphasized. Computer-intensive laboratory sessions will focus on practical data organization, visualization, statistical analysis using software, and interpretation and communication of statistical results. (Winter 2016: 168 students; Winter 2017: 172 students; Winter 2018: 173 students; Winter 2019: 165 students)

Advances in Ecology and Behaviour (IBIO*6000; University of Guelph). This is a general course code for a graduate course in Integrative Biology, but I have taught this course as a graduate statistics course. The objective of this course was to provide

students with a practical introduction to ecological data analysis using R. The course was based on a series of teaching modules that covered a variety of topics relevant to graduate statistics (general linear models, model selection, generalized linear models, mixed-effect models). (Fall 2012: 16 students; Fall 2015: 14 students; Winter 2019: 22 students)

Advances in Ecology and Behaviour (IBIO*6000; University of Guelph). This is a general course code for a graduate course in Integrative Biology. In fall 2019 I led a discussion-based course on the role of Bayesian updating in behaviour, ecology and evolution. (Fall 2019: 11 students)

Evolutionary Ecology (BIOL*4120; University of Guelph). This undergraduate course in evolutionary ecology examines the ways in which organisms have responded to the selective pressures imposed by their environment. We address both theoretical and empirical issues in evolutionary ecology, with an emphasis on the process of scientific inquiry. (Winter 2009: 64 students; Fall 2009: 46 students; Winter 2011: 65 students; Winter 2012: 75 students; Winter 2013: 85 students)

Lab Studies in Mammalogy (BIOL*4950; University of Guelph). This course provides a practical experience in the study of Mammalogy. Using University collections of prepared and preserved specimens and field observations where possible, students will develop and apply skills in identification and sampling, explore relations between species diversity and habitat, and investigate through guided study, the extent of anatomical, skeletal, reproductive and morphological variation and its functional and evolutionary causes. (Winter 2012: 91 students; Winter 2013: 85 students).

Alpine Ecology Field Course (ZOO*4700; University of Guelph). This course was taught between August 21 and September 5, 2009 with Jack Millar (University of Western Ontario) in Kananaskis Alberta as part of the Ontario University Program in Field Biology. This course surveyed the flora and fauna of subalpine and alpine environments. Activities included visits to different alpine areas during the first week, to learn the flora and fauna of alpine terrestrial and aquatic environments. Comparisons over elevational gradients were emphasized. Students conducted an independent field project during the second week of the course (Summer 2009: 16 students).

Evolution (ZOL 445; Michigan State University). This undergraduate course in evolutionary biology forms the foundation of many majors in biological sciences at Michigan State University. The course is fundamentally about patterns of descent with modification, which has generated the biological diversity that we see in the world today, as well as the fundamental process responsible for these patterns. (Fall 2007: 90 students)

Quantitative Methods in Ecology and Evolution (ZOL 851; Michigan State University). This graduate course covered the interpretation and analysis of ecological and evolutionary data using the statistical software package R. Topics included the philosophy

of statistics, general linear models, generalized linear models and mixed effect models (Fall 2005: 27 students; Fall 2006: 24 students; Fall 2007: 35 students)

Anthro-Evo: Humans as a Contemporary Evolutionary Force **(**FW893; Michigan State University). This graduate seminar offered in the spring of 2007 surveyed the literature focused on human impacts on evolutionary change in the wild. As a product of the course, we hope to produce an online meta-data and bibliographic database of published research on human-induced evolutionary change. (Winter 2007: 18 students)

SUPERVISORY AND MENTORING EXPERIENCE

Post-doctoral Researchers

Dr. David Delaney (2020 – 2023). *Currently a Postdoctoral Researcher at the Iowa Department of Natural Resources and Iowa State University.*

Dr. Quinn Webber (2020 – 2022). *Currently an Assistant Professor, University of Guelph*.

Dr. Sarah Guindre-Parker (2017 – 2019) *Currently an Assistant Professor at Kennesaw State University*.

Dr. David Fisher (2016 – 2018) Currently a *Lecturer, University of Aberdeen.*

Dr. Gustavo Betini (2014 - 2015) *Currently a Ph.D. student in the School of Public Health, University of Waterloo.*

Dr. David Wilson (2014) *Currently an Associate Professor at Memorial University*.

Dr. Amy Newman (2009 – 2012) *Currently an Associate Professor, University of Guelph.*

Graduate Students Supervised

Charlotte Sue Ph.D. student (2024 to present). The evolution of anticipatory phenotypic plasticity in red squirrels.

Gladiana Spitz Ph.D. candidate (2021 to present). The evolution of territoriality in red squirrels.

Katherine Kariatsumari Ph.D. candidate (2020 to present). The role of small mammal granivores in evolutionary divergence of two sunflower ecotypes.

Previous PhD Students

Alex Hare Ph.D. (2024). Interactions between stress physiology and social information in the North American red squirrel.

Shelby Bohn Ph.D. (2023). The effects of individual and environmental variation on a food hoarding rodent's stored resources.

Simon Denommé-Brown – Ph.D. (2022). Variable density-dependent dispersal and its metapopulation level consequences.

Julia Kilgour – Ph.D. (2019). The role of group composition and resource availability on selection for aggression. *Currently a postdoctoral researcher at Purdue University.*

Erin Siracusa – Ph.D. (2018). Effects of the social environment on the behaviour and fitness of a territorial squirrel. *Currently a postdoctoral researcher at the University of Exeter.*

Van La – Ph.D. (2015). Empirical tests of predictive models to advance waterbird monitoring in wetlands within forested landscapes. Department of Integrative Biology, University of Guelph. Note: I stepped in and provided supervision to Van at the very end of her degree following the retirement of her advisor. *Currently a sessional lecturer, University of Guelph.*

Andrea Jaeger Miehls - Ph.D. (2012) Preventing predation: evolution and adaptive plasticity in morphological defence of an invasive species. Department of Fisheries and Wildlife, Michigan State University. *Currently a communications associate, US Geological Survey.*

Ryan Taylor - Ph.D. (2012) Quantitative genetics, selection, mate choice and red squirrel behavior in a fluctuating environment. Department of Zoology, Michigan State University. *Founder and owner of End2End Genomics.*

Ben Dantzer – Ph.D. (2012) Adaptive endocrine and behavioral responses of free-living red squirrels to environmental variation. Department of Zoology, Michigan State University. *Currently an Associate Professor, University of Michigan.*

Previous MSc Students

Maggie Bain M.Sc. (2020). Investigating the acoustic niche hypothesis using territorial vocalizations of red squirrels (*Tamiasciurus hudsonicus*). *Currently an MA student in Geography at the University of Guelph*.

Jack Hendrix (Robertson) M.Sc. (2018). Individual variation in the dear enemy phenomenon via territorial vocalizations in red squirrels. *Currently a PhD student, Memorial University.*

Giuseppe Fiorino – M.Sc. (2016). Local differentiation in the defensive morphology of an invasive zooplankton species is not genetically based. Department of Integrative Biology, University of Guelph. *Currently a wildlife technician, Canadian Wildlife Service*

Morgan Trotter – M.Sc. (2015). The effects of acute noise on shrew mortality. Animal Behaviour and Welfare Program, University of Guelph. *Currently the Standard Operating Procedure Coordinator, Animal Health Unit, University of Calgary.*

Kayla Deasley – M.Sc. (2014). Red squirrels cause balancing selection on the length of white spruce cones. Department of Integrative Biology, University of Guelph. *Currently a research technician, University of Alberta.*

Gillian Merritt – M.Sc. (2014). Effects of population density on stress and maternal care in a wild rodent (*Peromyscus maniculatus*). Department of Integrative Biology, University of Guelph. *Currently an insurance analyst.*

Frances Stewart – M.Sc. (2012) Plasticity of maternal care and seasonal manipulation of masculinity in *Peromyscus maniculatus*. Department of Integrative Biology, University of Guelph. Currently an *Assistant Professor, Wilfred Laurier University.*

Eryn McFarlane – M.Sc. (2012) Mechanisms maintaining additive genetic variance in fitness in red squirrels. Department of Integrative Biology, University of Guelph. *Currently an Assistant Professor at York University, Toronto.*

Randy Do – M.Sc. (2011) The effects of bait and water provisioning on by-catch shrew mortality rates associated with small mammal live-trapping. Animal Behaviour and Welfare Program, University of Guelph. *Currently a veterinarian.*

Julia Shonfield – M.Sc. (2010) Territorial defence behaviour and a test of the mechanism of kin recognition in red squirrels. Department of Integrative Biology, University of Guelph. *Currently a Terrestrial Ecologist, LGL environmental consulting.*

Lauri Torgerson – M.Sc. (2010) Personality in Michigan's *Peromyscus*. Department of Zoology, Michigan State University. *Currently a biology instructor, Macomb Community College.*

Elizabeth L. Ball - M.Sc. (2008) Preferences and harvest intentions of hunters in Michigan and their effects on white-tailed deer harvest outcomes. Department of Fisheries and Wildlife, Michigan State University.

Adam R. Goble - M.Sc. (2008) Signature signals in the territorial vocalizations of red squirrels (*Tamiasciurus hudsonicus*) and their use in kin recognition. Department of Zoology, Michigan State University. *Currently a high school biology teacher in West Virginia.*

Previous Undergraduate Researchers

Alex Tryon (2024) Food caching and outward intrusion behaviors in North American red squirrels. University of Colorado. *Currently working for a private drug discovery company.*

Katie Kariatsumari (2019) Effects of a long-term food supplementation experiment on population dynamics in an age-structured, wild population of North American red squirrels. University of Guelph. *Currently a PhD student at the University of Colorado.*

Nana Fukushima (2017) The presence of North American red squirrel territory owners deters intrusions by unfamiliar neighbours. University of Guelph.

Eve Cooper (2016) The role of personality in determining territory acquisition strategy in North American red squirrels (*Tamiasciurus hudsonicus*). University of Guelph. *Currently an Assistant Teaching Professor at the University of Colorado.*

Jack Hendrix (Robertson) (2015) Selection on growth rate and parturition date of juvenile red squirrels (*Tamiasciurus hudsonicus*) occurs prior to, but not during, competition for territories. University of Guelph. *Currently a PhD student, Memorial University of Newfoundland.*

Mya Van Woudenberg (2015) The causes and consequences of maternal care in red squirrels (*Tamiasciurus hudsonicus*). University of Guelph.

Dylan Pond (2012) Density-dependent habitat selection reduces the variability of *Peromyscus maniculatus* populations in preferred habitats in Algonquin Park. University of Guelph. *Currently an MSc student, University of Manitoba.*

Ariel Nelson (Porty) (2012) Red squirrel (*Tamiasciurus hudsonicus*) individuality encoded in territorial acoustic information. University of Guelph. *Completed an MSc at Laurentian University. Currently a biodiversity research assistant, City of Sudbury.*

Julia Maniecki (2010) Red squirrel (*Tamiasciurus hudsonicus*) cone preference and the implications for white spruce (*Picea glauca*) fitness. University of Guelph.

Eryn McFarlane (2009) The heritability of multiple male mating in red squirrels (*Tamiasciurus hudsonicus*). University of Guelph. *Completed a PhD at Uppsala University. Currently an Assistant Professor at York University, Toronto.*

Lindsey Valliant (2009) Trade-offs between predator defense and resource acquisition in an invasive zooplankton, *Bythotrephes longimanus.* University of Guelph. *Completed an MSc, Western University.*

Amanda Cheeseman (2008) Selective Predation of White Spruce cones by Red Squirrels. Michigan State University. *Currently an Assistant Professor, South Dakota State University.*

Jennifer Pellegrini (2007) An Analysis of Concerns Regarding White-tailed Deer Hunting Issues by Michigan Firearm Hunters. Michigan State University.

Rachel Bricklin (2006) Animal model approaches to estimating heritabilities in wild deer mice. Michigan State University. *Completed a PhD, Fordham University.*

Jacqueline Campos (2004) Phenotypic and genomic matching in side-blotched lizards (*Uta stansburiana*). University of California, Santa Cruz.

INVITED PRESENTATIONS

Invited conference presentations

American Genetics Association, President's Symposium. Virtual. Indirect Genetic Effects. November 2020.

American Genetics Association, President's Symposium. Toronto, ON. Maternal effects in wild mammals. March 2018.

Wildlife70: A symposium on long-term research. Peterborough, Ontario. Measuring changes in natural selection and evolution using long-term studies. May 2017.

European Meeting of PhD Students in Evolutionary Biology (EMPSEB 22). Gotland, Sweden. Adaptation in a changeable world: lessons from red squirrels and white spruce. September 2016.

Canadian Society for Ecology and Evolution. Saskatoon, SK. Understanding Individuals to Conserve Populations: Lessons learned from evolutionary biology and inter-individual variance in fitness. May 2015.

INTECOL. Symposium: Ecological Consequences of Evolutionary Change. London, UK. Fluctuating selection caused by masting leads to the maladaptation of a seed predator. August 2013.

Workshop of the Animal Behaviour Group - Phenotypic plasticity and flexibility: When and why are early acquired traits reversible? Bielefeld, Germany. Adaptive life history plasticity within and across generations in a fluctuating environment. May 2012.

Ninth International Mammalogical Congress. Sapporo, Japan. Life history adjustments of North American red squirrels to food abundance. August 2005.

83rd Annual Meeting of the American Society of Mammalogists. Lubbock, Texas. Maternal effects and the response to selection in red squirrels. June 2003.

Gordon Research Conference in Quantitative Genetics and Genomics. Ventura, California. Maternal effects and the potential for evolution in a natural population of animals. February 2001.

Invited external seminars

Evolutionary consequences of wearing someone else's genes: Lessons from a long-term study of red squirrels. University of Colorado, Denver. February 2024.

Evolutionary consequences of wearing someone else's genes: Lessons from a long-term study of red squirrels. Queen's University. May 2023.

Plastic responses to cues of natural selection in a wild population of red squirrels. Groupement de Recherche de Plasticité Phenotypique, France, November 2021. [https://youtu.be/-WD-xMRyqCw]

Social interactions can affect evolution despite physical distancing: Lessons from a long-term study of territorial red squirrels. Colorado State University, September 2020.

Social interactions can affect evolution despite social distancing: Lessons from a long-term study of territorial red squirrels. @EvoEcoSeminars April 2020 [https://youtu.be/JAeKR3tmvb0; 3,000 views as of July 2023].

Evolution in a Social Context: Lessons from a long-term study of red squirrels. University of Rochester. November 2019.

Evolution in a Social Context: Lessons from a long-term study of red squirrels. University of Toronto. October 2019.

Evolution in a social context: the importance of indirect genetic effects in red squirrels. University of Windsor. November 2017.

Maternal effect evolution in wild rodents. Department of Biology, Queens University. November 2015.

Maternal effect evolution in wild rodents. Départment de Biologie, Université de Sherbrooke. April 2015.

Maternal effect evolution in wild rodents. Department of Biology, Wilfred Laurier University. March 2015.

Maternal effect evolution in wild rodents. University of Aberdeen. November 2014.

Maternal effects in wild rodents. Institute of Evolutionary Biology, University of Edinburgh. October 2014.

Maternal effect evolution in wild rodents. Department of Biology, University of North Carolina Greensboro. February 2014.

Maternal effect evolution in wild rodents. Department of Biology, University of Virginia. October 2013.

Spruce masting induces a cost of adaptation in red squirrels. Département de Biologie, Université de Sherbrooke. February 2011.

Spruce masting causes feedbacks between ecology and evolution in red squirrels. Ecology and Evolutionary Biology and Behaviour series, McMaster University. October 2010.

Masting and eco-evolutionary feedbacks in red squirrels. Department of Ecology and Evolution. University of Toronto. January 2010.

Evolutionary interactions between red squirrels and white spruce. Department of Biology. University of Western Ontario, January 2008.

Ecology, Evolution and Energetics of Red Squirrels. Department of Biological Sciences. Purdue University, April 2006.

The Ecology of Adaptation in Red Squirrels. Laurentian University, Department of Biology, October 2004.

Genetic and maternal effects on juvenile growth in red squirrels. McGill University, Department of Natural Resource Sciences Seminar Series, November 1999.

Internal or other invited talks

Evolutionary interactions between white spruce and red squirrels. Hanover Forest Science Seminar Series. Michigan State University, April 2008.

Ecology, evolution and energetics of red squirrels. Kellogg Biological Station, Michigan State University. April 2006.

Red Squirrels: Using a long-term study to investigate short-term evolution. A presentation to the Fisheries and Wildlife Club, Michigan State University, March 2006.

Managing anthropogenic evolution: lessons from evolutionary stasis in non-game species. Department of Fisheries and Wildlife, Michigan State University, April 2005.

Fluctuating selection and the evolution of non-Mendelian inheritance. Behavioral Biology Group, Michigan State University, November 2004.

The ecology of adaptation in red squirrels. Ecology, Evolutionary Biology and Behavior seminar series, Michigan State University, October 2004.

Maternal effects and the response to natural selection in red squirrels. University of California, Santa Cruz, Ecology and Evolutionary Biology Seminar Series, March 2004.

The nature of nurture: evolution by maternal effects in a natural population of red squirrels. University of Alberta, Biological Sciences Departmental Seminar, Ecology Series, April 2002.

Dietary protein constraint on the maturation of female deer mice. University of Alberta, Biological Sciences Departmental Seminar, Ecology Series, October 1999.

CONFERENCE PRESENTATIONS

>75 student presentations on which I was included as a co-author.
>30 presentations for which I was the first author and presenter (10 invited – see above)

COMMITTEE SERVICE (UNIVERSITY OF COLORADO SERVICE IS ABOVE)

External Society Committees

Evolution Letters Oversight Committee (2023 – present; Chair 2024 – 2025)
Guy Cameron Award Committee, *American Society of Mammalogists* (2020 – present)

University Committees

University of Guelph Co-Ordinator for the Ontario Universities Program in Field Biology (2012)

College Committees

BIOS Curriculum Committee (2009 – 2010, 2015 – 2017), College of Biological Sciences, University of Guelph
Graduate Program Committee (2015 – 2016), College of Biological Sciences, University of Guelph

Departmental Committees

Integrative Biology Chair Search Committee, University of Guelph (2018)
Founder and Chair, Mental Health, Diversity and Equity Committee (2017 – 2019), Department of Integrative Biology, University of Guelph
Wellness at Work Champion (2017 - 2018), Department of Integrative Biology Champion (liaison) in the university-wide program, University of Guelph
Graduate Studies and Awards Committee (2015 – 2018), Department of Integrative Biology, University of Guelph
Graduate Curriculum Committee (2017 – 2018), Department of Integrative Biology, University of Guelph
Chair's Advisory Committee (2014 – 2017), Department of Integrative Biology, University of Guelph
Safety Committee (Winter 2015), Department of Integrative Biology, University of Guelph
Chair, Evolution Curriculum Subcommittee (2010 – 2011), Department of Integrative Biology, University of Guelph
Curriculum Committee (2010 – 2012), Department of Integrative Biology, University of Guelph
Seminar Committee (2009 – 2010), Department of Integrative Biology, University of Guelph
Chair, Graduate Committee (2008), Department of Zoology, Michigan State University
Graduate Committee (2005 – 2008), Department of Zoology, Michigan State University
Population Genetics Search Committee (2005), Department of Zoology, Michigan State University

WORKING GROUPS

Canadian Institute of Ecology and Evolution, Quebec Centre for Biodiversity Science working group on "Adaptation and maladaptation in response to environmental change." (December 2015).

MEETING ORGANIZATION

Local Organizing Committee. Canadian Society for Ecology and Evolution annual meeting, Guelph, Ontario. July 2018. (700 registrants)

Co-organizer. Peter Yodzis Colloquium in Fundamental Ecology. Theme: Integrating The Ecology and Evolution of Social Interactions. July 2018. (200 registrants)

EDITORIAL WORK AND PEER REVIEW

Handling Editor, *Evolution* (2020 – 2022)

Associate Editor, *Evolution* (2015 – 2017)

Editorial Board member, *Journal of Evolutionary Biology* (2004 – 2007; 2011 – 2015)

NSERC Discovery Grants Review Panel (Ecology and Evolution), 2021

Evolutionary and Population Ecology Panel, *National Science Foundation,* 2007

Manuscripts

Publons reviewer id: publons.com/a/1197034/

Manuscripts reviewed for: *Acta Theriologica*, *American Midland Naturalist, American Naturalist, Axios Review, Behavioral Ecology, Behavioural Ecology and Sociobiology, Biology Letters, BMC Ecology, Ecography, Ecology, Ecology Letters, Écoscience, Ethology, Evolution, Evolution Letters, Evolutionary Ecology, Forest Ecology and Management, Integrative and Comparative Biology, Journal of Animal Ecology, Journal of Evolutionary Biology, Journal of Heredity, Journal of Mammalogy, Journal of Zoology, Mammalia, Methods in Ecology & Evolution, Molecular Ecology, Northeastern Naturalist, Oecologia, Oikos, Phil. Trans. Roy. Soc. L., PlosOne, Proceedings B, Reproduction, PNAS, Fertility and Development, Science Reports, Theriogenology Wild, Trends in Ecology and Evolution.*

Grants: *Canada Foundation for Innovation*, *National Geographic Society (USA)National Science Foundation (USA), Natural Sciences and Engineering Research Council (Canada)*, *Natural Environment Research Council (UK), Netherlands Organisation for Scientific Research, Swiss National Science Foundation.*

EXTERNAL EVALUATIONS

External assessment of tenure and/or promotion applications: 4

External examination of PhD Candidates: 3

External examiner for MSc Candidates: 1

OTHER EXTERNAL SERVICE

Scientific advice to the Royal Canadian Mint, 2017

SCIENCE OUTREACH

Flying Seed Project. I initiated the *Flying Seed Project* for grade 11 biology students based around an inquiry-based lesson plan and citizen science model of data collection to test the hypothesis that mowing frequency imposes natural selection on dandelion (*Taraxacum officinale*) growth forms. Together with colleagues at the University of Guelph (S. Jacobs, R. Van Acker) and the Upper Grand District School Board (S. Bender) we developed a lesson plan (see Jacobs et al. 2015), which the national STEM outreach organization *Let's Talk Science* adopted and now implements. Students send us data on mowing frequency and dandelion phenotypes as well as seed from their schoolyards. We are currently growing dandelions in the *Phytotron* at the University of Guelph in a common-garden experiment to test whether phenotypic differences among schoolyards are genetically based.

PRESS COVERAGE - EXAMPLES

Red squirrel biology and natural history

- "What Trees Talk About" – documentary on interactions between red squirrels and spruce trees that aired on *CBC* television's "*The Nature of Things*", November 2017.
- Red squirrel segment aired on Daily Planet on the *Discovery Channel*, 2008.

Adaptive maternal hormone effects on red squirrel growth.

- Interviewed on CBC Radio's *Quirks and Quarks*, April 2013.
- "Babies of stressed squirrels grow faster" *Nature: Research Highlights*, April 2013.

Contemporary Evolution

- "Evolution: blink and you'll miss it" *New Scientist*, July 2005.
- "Marmots thriving amid climate change – for now" *LA Times*, July 2010.

Maternal effects

- Research reported in *Science (Science Shots), Edmonton Journal*, *Science Daily*, and *Innovations Report*.

Plastic and genetic responses of red squirrels to climate change

- "The New Climate Almanac 2007" *Globe and Mail*, February 2007.

- "Discover's guide to the top 100 science stories of 2003" *Discover* magazine, Jan. 2004
- "Red squirrels evolving with global warming" *New Scientist*, Feb. 2003
- I was also interviewed for articles or radio broadcasts by *The Scientist*, *LA Times*, CBC radio (Yukon), KVMR radio, *YES Mag*, *Frontiers in Ecology and the Environment*, and *Alaska Science Forum.* This work was also reported by CBC television (Edmonton), *The Guardian*, *Daily Telegraph*, *National Post* and *Edmonton Journal*.

Cooperation in side-blotched lizards

- "True-pal lizards may show odd gene" *Science News*, May 27, 2006.

Antipredatory benefits of intermittent locomotion

- "In nature, animals that stop and start with the race" *Science,* 288:83-5.