
DR. ROBERT I. COLAUTTI

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<http://colauttilab.github.io>

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Citizenship: Canadian

ACADEMIC APPOINTMENTS

2015-Present Assistant Professor, Queen's University, Department of Biology
2015-2020 Canada Research Chair, Tier II
2014-2015 Postdoctoral Assistant, University of Tübingen, Institute of Evolution & Ecology
2012-2014 Banting Postdoctoral Fellow, University of British Columbia, Botany Department
2010-2012 NSERC Postdoctoral Fellow, Duke University, Biology Department

ACADEMIC DEGREES

2010 University of Toronto, Ph.D., Ecology and Evolutionary Biology
2003 University of Windsor, M.Sc., Biological Sciences
2001 University of Windsor, B.Sc. (Honours), Biological Sciences

MAJOR FUNDING & AWARDS

Primary investigator

Queen's University

2019-2021 New Frontiers Research Fund – Exploration Grant (SSHRC/NSERC/CIHR) (\$250,000)
2016-2021 Natural Sciences and Engineering Research Council (NSERC) – Discovery (\$185,000)
2017 Canadian Foundation for Innovation (CFI) Infrastructure Operating Fund (\$22,500)
2016 NSERC – Research Tools and Instruments (\$107,000)
2015-2020 Canada Foundation for Innovation, John R Evans Leaders Fund (\$150,000)
2015-2020 Ontario Research Fund (\$150,000)
2015 Queen's University Research Initiation Grant (\$100,000)
2015-2020 Queen's University Special Research Funding (\$100,000)

University of British Columbia

2012-2014 NSERC Banting Postdoctoral Fellowship (\$140,000)

Duke University

2010-2012 NSERC Postdoctoral Fellowship (\$80,000)

Co-applicant

2018 CLyDRN – Canadian Lyme Disease Research Network (\$4,000,000)
2018 Northwest Territories Environmental Research Funds (\$50,000)
2017-2019 NSERC – Research Tools and Instruments (\$280,000)

PROFESSIONAL AND OUTREACH ACTIVITIES (LAST 6 YEARS)

2009-2018 Associate Editor, Neobiota (open access journal for biological invasions)

2016-2018 Associate Editor, *Perspective in Plant Ecology, Evolution & Systematics* (Elsevier)
2017 Co-organizer – Functional Diversity of Microbiomes Workshop (Portland, OR)
2015 Organizational Board Member, POPBIO2015 (Tuebingen, Germany)
2014 Co-organizer – Invasion Genetics Symposium (Asilomar, CA)
2014 Organizer – Integrative Biology of *Alliaria petiolata* Workshop (Detroit, MI)
2014 Molecular Ecology – Special Issue Editor
2011-2013 Group on Earth Observation, Biodiversity Observation Network (GEO BON)
2008-2012 NSF Global Invasions Network – steering committee

QUEEN'S UNIVERSITY SERVICE

2016-2018 Biology Graduate Studies Committee
2018 Hiring Committee
2018 Statistics Group for Graduate Students

PERSONNEL TRAINING (SINCE 2015)

12 Undergraduate Thesis Students (4 co-supervised)
8 Undergraduate Research Associates (2 co-supervised)
5 Masters Thesis Students (4 co-supervised)

TEACHING EXPERIENCE (LAST 6 YEARS)

University of Tübingen, Germany (graduate):

2014 Frontiers in Evolutionary Ecology
2014 Invasion Biology
2014 Computational Methods for Ecology and Evolution

Queen's University (graduate)

2018 Introduction to Modern Computation in Biology
2017 Advanced Ecological Genetics

Queen's University (undergraduate)

2018 Invasion Genetics
2018 Field Methods in Ecological and Environmental Genomics
2016-2018 High Performance Computing Tutorials (Joint with Centre for Advanced Computing)
2015-2017 Intro Ecology (Core course)
2017 Population and Ecological Genetics (Graduate)
2017 Advanced Studies in Ecology, Evolution and Behaviour (Graduate)

MEETINGS & SEMINARS (LAST 6 YEARS)

2019 Soil Ecology Society Biennial Meeting, Toledo, Ohio (MS student)
2019 University of Georgia, Athens, GA
2018 ANDiNA Workshop, San Carlos de Bariloche, Argentina
2018 Syracuse University, Syracuse, NY
2018 Indiana University, Bloomington, IN
2017 Boise State University, Boise, ID
2017 University of Ottawa, Ottawa, ON
2017 **BES: Macroecology of Alien species [Keynote]**, Durham, UK
2017 McGill University, MacDonald Campus, Sainte-Anne-de-Bellevue, QC
2016 **Garlic Mustard Workshop**, ESA Conference, Ft. Lauderdale, FL
2016 Trent University, Peterborough, ON
2015 **CAISN Aquatic Invasions Workshop [Keynote]**, ASLO Conference, Granada, Spain
2015 University of Konstanz, Konstanz, Germany

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| 2014 | Ecological Genomics . Symposium, Plant & Animal Genome XXII, San Diego CA |
| 2014 | Harvard University, Cambridge, MA |
| 2014 | Purdue University, West Lafayette, IN |
| 2014 | University of Connecticut, Storrs, CN |
| 2014 | Invasion Genetics: The Baker & Stebbins Legacy Symposium , Asilomar, CA |
| 2014 | University of Tübingen, Tübingen, Germany |
| 2014 | University of Regina, Regina, SK |
| 2013 | North Dakota State University, Fargo, ND |
| 2013 | Colorado State University, Fort Collins, CO |
| 2013 | University of Edinburgh, Edinburgh, Scotland |
| 2013 | Aberdeen University, Aberdeen, Scotland |

MEDIA COVERAGE (LINKS TO ONLINE ARTICLES)

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| 2017 | British Ecological Society Press Briefing, London, UK Coverage in The Guardian , Daily Mail , Daily Star , Daily Express |
| 2013 | Rapid Evolution of an invasive plant Coverage in Bioscience , CBC.ca , PopSci Blog , io9 Blog |

FULL PUBLICATION RECORD

(*/**/***ARTICLES WITH > 100/200/500 CITATIONS ON GOOGLE SCHOLAR)

(† SUPERVISED STUDENT)

Pre-prints and Manuscripts in Preparation

Lavoie, K[†], PM Antunes **RI Colautti**. Effects of *Alliaria petiolata* invasion on soil microbial community structure inferred from bacterial 16S and fungal ITS metabarcodes.

Lavoie, K[†], PM Antunes **RI Colautti**. A MCMC model for inferring microbial interactions from root cross section scans.

Wu, Y[†], **RI Colautti**. Herbarium records support rapid evolution of phenological clines in invasive populations of *Lythrum salicaria*.

Wu, Y[†], DR Lougheed, SC Lougheed, K Moniz, VK Walker, **RI Colautti**. baRcodeR with PyTrackDat: Open-source labelling and tracking of biological samples for repeatable science.

Software

36. Wu, Y[†], **RI Colautti** (2018) *baRcodeR*: Labelling, tracking and collecting data from biological samples.

Books

35. Barrett, SCH, **Colautti RI**, Dlugosch KM, Rieseberg LH (2016) *Invasion Genetics: The Baker and Stebbins Legacy*. Wiley, NJ.

Articles Accepted or Published in Refereed Journal

34. Muhaidat, R, MH Brake, M Al Zoubi, **RI Colautti**, A Al-Nasser, M Awawdeh, K Al-Batayneh, W Al Khateeb, A McKown, J Lahham, A El-Oqlah (2018) Integrating morphological characters, molecular markers, and distribution patterns to assess the identity of *Blepharis* species from Jordan. *Botanical Studies*. 59:18

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- 33. Colautti RI**, Alexander JM, Dlugosch KM, Keller SR, Sultan SE (2017) Invasions and extinctions through the looking glass of evolutionary ecology. (**Special Issue**) *Philosophical Transactions of the Royal Society B*. 372: 20160031
- 32. Colautti RI**, Ågren J, Anderson JT (2017) Phenological shifts of native and invasive species under climate change: insights from the *Boechera - Lythrum* model. (**Special Issue**) *Philosophical Transactions of the Royal Society B*. 372: 20160032
- 31. Kamenova, S, TJ Bartley, D Bohan, JR Boutain, RI Colautti, I Domaizon, C Fontaine, A Lemainque, I Le Viol, G Mollot, M-E Perga, V Ravigné, F Massol** (2017) Invasions toolkit: current methods for tracking the spread and impact of invasive species. *Advances in Ecological Research* 56: 85-182.
- 30. Mimura M, Yahara T, Faith DP, Vázquez-Domínguez E, Colautti RI, Araki H, Javadi F, Núñez-Farfán J, Mori AS, Zhou S, Hollingsworth PM, Neaves LE, Fukano Y, Smith GF, Sato Y-I, Tachida H, Hendry AP** (2017) Understanding and monitoring the consequences of human impacts on intraspecific variation. *Evolutionary Applications*. 10: 121-139.
- *29. Colautti RI** and Lau JA (2015) Contemporary evolution during invasion: evidence for differentiation, natural selection, and local adaptation. (**Special Issue**) *Molecular Ecology* 24:1999-2017.
- 28. Colautti RI**, Parker JD, Cadotte MW, Pyšek P, Brown CS, Sax DF, Richardson DM (2013) Quantifying the invasiveness of species. (**Special Issue**) *NeoBiota* 21: 7-27.
Commentary: *F1000* | [link](#)
- 27. Colautti RI**, Franks SJ, Hufbauer RA, Kotanen PM, Torchin M, Byers JE, Pyšek P, Bossdorf O (2013) The Global Garlic Mustard Field Survey (GGMFS): challenges and opportunities of a unique, large-scale collaboration for invasion biology. (**Special Issue**) *NeoBiota* 21: 29-47
- *26. Colautti, RI** and Barrett SCH (2013) Rapid adaptation to climate facilitates range expansion of an invasive plant. *Science* 342:364-366.
- *25. Anderson J T, Lee C-R, Rushworth C, Colautti RI, Mitchell-Olds T** (2013) Genetic trade-offs and conditional neutrality contribute to local adaptation. *Molecular Ecology* 22:699-708.
- **24. Anderson J, Inouye D, McKinney A, Colautti RI, Mitchell-Olds T** (2012) Phenotypic plasticity and adaptive evolution contribute to advancing flowering phenology in response to climate change. *Proceedings of the Royal Society of London B* 279:3843-3852.
Commentary: *F1000* | [link](#)
- 23. Colautti RI**, Lee C-R, Mitchell-Olds T (2012) Origin, fate and architecture of ecologically relevant genetic variation. *Current Opinion in Plant Biology* (**Invited**). 15: 199-204.
- 22. Colautti RI** and Barrett SCH (2011) Population divergence along lines of genetic variance and covariance in the invasive plant *Lythrum salicaria* in eastern North America. *Evolution* 65: 2514-2529.
- *21. Colautti RI**, Eckert CG, Barrett SCH (2010) Evolutionary constraints on adaptive evolution during range expansion in an invasive plant. *Proceedings of the Royal Society of London B* 277: 1799-1806.
Commentary: *Nature* 463:1002 | [link](#); *F1000* | [link](#); *ScienceDaily Website* | [link](#)
- 20. Colautti RI** and Barrett SCH (2010) Natural selection and genetic constraints on flowering phenology in an invasive plant. *International Journal of Plant Science* (**Special Issue**) 171: 960-971.
- 19. Colautti RI**, White NA, Barrett SCH (2010) Variation of self-incompatibility within invasive populations of purple loosestrife (*Lythrum salicaria* L.) from eastern North America. *International Journal of Plant Science* 171: 158-166.
- *18. Colautti RI**, Maron JL, Barrett SCH (2009) Common garden comparisons of native and introduced plant populations: latitudinal clines can obscure evolutionary inferences. *Evolutionary Applications* 2: 187-199.
Commentary: *F1000* | [link](#)

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17. **Colautti RI** and Richardson DM (2009) Subjectivity and flexibility in invasion terminology: too much of a good thing? *Biological Invasions* 11: 1225-1229.
 - **16. Barrett SCH, **Colautti RI**, Eckert CG (2008) Plant reproductive systems and evolution during biological invasion. *Molecular Ecology* 17:373-383.
 - ***15. **Colautti RI**, Grigorovich IA, MacIsaac HJ (2006) Propagule pressure: a null model for biological invasions. *Biological Invasions* 8: 1023-1037.
 - **14. **Colautti RI**, Bailey SA, van Overdijk CDA, Admunsen K, MacIsaac HJ (2006) Characterised and projected costs of nonindigenous species in Canada. *Biological Invasions* 8: 45-59.
 13. **Colautti RI**, Manca M, Viljanen M, Ketelaars HAM, Bürgi H, MacIsaac HJ, Heath DD (2005) Invasion genetics of the Eurasian spiny waterflea: evidence for bottlenecks and gene flow using microsatellite loci. *Molecular Ecology* 14: 1869-1879.
 12. **Colautti RI** (2005) Are characteristics of introduced salmonids biased by propagule pressure? *Canadian Journal of Fisheries and Aquatic Sciences* 62: 950-959.
 11. **Colautti RI**, Muirhead JR, Biswas RN, MacIsaac HJ (2005) Realized vs. apparent reduction in enemies of the European starling (*Sturnus vulgaris*) *Biological Invasions*. 7: 723-732.
 - ***10. **Colautti RI**, Ricciardi A, Grigorovich IA, MacIsaac HJ (2004) Is invasion success explained by the enemy release hypothesis? *Ecology Letters* 7: 721-733.
 - ***9. **Colautti RI** and MacIsaac HJ (2004) A neutral terminology to define invasive species. *Diversity and Distributions* 10: 135-141.
 - **8. Holeck K, Mills EL, MacIsaac HJ, Dochoda M, **Colautti RI**, Ricciardi A (2004) Bridging troubled waters: understanding links between biological invasions, transoceanic shipping, and other entry vectors in the Laurentian Great Lakes. *Bioscience* 54: 919-929.
 - *7. Grigorovich IA, **Colautti RI**, Mills EL, Holeck K, MacIsaac HJ (2003) Ballast-mediated animal introductions in the Laurentian Great Lakes: retrospective and prospective analyses. *Canadian Journal of Fisheries and Aquatic Sciences* 60: 740-756.
 6. Grigorovich IA, Korniushev AV, Gray DK, Duggan IC, **Colautti RI**, MacIsaac HJ (2003) Lake Superior: an invasion coldspot? *Hydrobiologia* 499: 191-210.
- Other Published Contributions**
5. **Colautti RI** (2005) In search of an operational lexicon for biological invasions. In: *Ecological and Agricultural Aspects of Invasive Plants*. Edited by Inderjit. Birkhauser, pp 1-15.
 4. Inderjit M, Cadotte W, **Colautti RI** (2005) The ecology of biological invasions: past, present and future. In: *Ecological and Agricultural Aspects of Invasive Plants*. Edited by Inderjit. Birkhauser, pp 19-43.
 3. **Colautti RI**, Niimi AJ, van Overdijk CDA, Mills EL, Holeck K, MacIsaac HJ (2004) Spatial and temporal analysis of transoceanic shipping vectors to the Great Lakes. In: *Invasive Species: Vectors and Management Strategies*. Edited by Ruiz GM and Carlton JT. Island Press, Washington, D.C. pp 227-246.
 2. Duggan IC, Bailey SA, **Colautti RI**, Gray D, Makarewicz J, MacIsaac HJ (2004) Biological invasions in Lake Ontario: past, present and future. In: *State of Lake Ontario, Past, Present and Future*. Edited by Munawar M, Edsall T and Munawar IF. Schweizerbart, Stuttgart, pp 541-558.
 1. MacIsaac HJ, Bandoni SA, **Colautti RI**, van Overdijk CDA, Admunsen K (2002) Economic impacts of invasive nonindigenous species in Canada: A case study approach. *A report to the Office of the Auditor General of Canada*, May 2002, 185 pp.