

Geoffrey Legault

Postdoctoral Fellow, [Wolkovich Group](#)

Forest and Conservation Science

University of British Columbia

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Professional Experience

- 2019 - present Postdoctoral Fellow, *University of British Columbia*
2017 - 2019 Postdoctoral Research Associate, *University of North Carolina at Chapel Hill*

Education

- 2014 - 2017 Ph.D., Ecology and Evolutionary Biology, *University of Colorado at Boulder*
 Advisor: Dr. Brett Melbourne
2011 - 2013 Graduate Program in Biology, *University of Calgary* (transferred to Boulder)
2009 - 2011 M.Sc., Environmental Science, *University of Toronto*
2006 - 2009 B.Sc., *University of Toronto*

Publications († denotes undergraduate student)

9. **G. Legault**, M.E. Bitters, A. Hastings, B.A. Melbourne. (2020) Interspecific competition slows range expansion and shapes range boundaries. *Proceedings of the National Academy of Sciences of the United States of America*. 117(43): 26854-26860 [link](#)
8. **G. Legault**, J.G. Kingsolver. (2020) A stochastic model for predicting age and mass at maturity of insects. *The American Naturalist* 196: 227-240. [link](#)
7. M. Bullock†, **G. Legault (Corresponding author)**, B.A. Melbourne. (2020) Interspecific chemical competition between *Tribolium castaneum* and *Tribolium confusum* reduces fecundity and hastens development time. *Annals of the Entomological Society of America* 113(3): 216-222 [link](#)
6. **G. Legault**, J.W. Fox, B.A. Melbourne. (2019) Demographic stochasticity alters expected outcomes in experimental and simulated non-neutral communities. *Oikos* 128(12): 1704-1715 [link](#)
5. **G. Legault**, B.A. Melbourne. (2019) Accounting for environmental change in continuous-time stochastic population models. *Theoretical Ecology* 12(1): 31-48 [link](#)
 - Recommended ("Very Good") by Faculty of 1000 Prime 
4. Contributing author (2018) "Direct and indirect drivers of land degradation and restoration" in *Assessment Report on Land Degradation and Restoration*. Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) [link](#)
3. **G. Legault**, M. Cusa†. (2015) Temperature and delayed snowmelt jointly affect the vegetative and reproductive phenologies of four sub-Arctic plants. *Polar Biology* 38: 1701-1711 [link](#)
2. J.W. Fox, **G. Legault**, D.A. Vasseur, J. Einarson. (2013) Nonlinear effect of dispersal rate on spatial synchrony of predator-prey cycles. *PLoS ONE* 8(11): e379527 [link](#)
1. **G. Legault**, A.E. Weis. (2013) The impact of snow accumulation on a heath spider community in a sub-Arctic landscape. *Polar Biology* 36: 885-894 [link](#)

Submitted

T. Dallas, B.A. Melbourne, **G. Legault**, A. Hastings. Initial abundance and stochasticity influence competitive outcome in communities. (*Previously submitted*)

In revision

T. Dallas, **G. Legault**, B.A. Melbourne, A. Hastings. Context-dependent dispersal in two species communities (*Previously submitted*)

In preparation

G. Legault, M.J. Riley[†], B.A. Melbourne. Intrinsic dispersal ability and environment affect trait evolution during range expansion. (*Preprint available on request*)

A.L. Parker, A.M. Albright[†], J.G. Kingsolver, **G. Legault**. Connecting feeding behavior, diet quality and life history traits in *Manduca sexta*

H.A. Woods, B.G. Larkin, **G. Legault**, J.G. Kingsolver, S. Pincebourde. Thermal ecology of ectotherms in plant-generated microclimates: aspens and aspen leaf miners

Awards / Grants

2017	Dissertation Completion Fellowship, <i>University of Colorado at Boulder</i>
2015	Volterra prize for best poster, <i>ESA Theory Section</i>
2015	EBIO Department Research Grant, <i>University of Colorado at Boulder</i> (\$2,300)
2011	1st prize for student poster, <i>Canadian Society for Ecology & Evolution</i>
2010	NSERC Northern Research Internship (\$9,250)
2010	Northern Scientific Training Program (\$2,900)
2010	Northern Research Fund, <i>Churchill Northern Studies Centre</i> (\$1750)

Teaching Experience

Instructor

2019	Current Issues in Ecology, <i>University of North Carolina at Chapel Hill</i> - Group project course for E3P graduate students - Project: Analysis of the drivers of insect diversity based on NEON data
2018	Current Issues in Ecology, <i>University of North Carolina at Chapel Hill</i> - Project: Meta-analysis of the effects of agricultural abandonment on plant diversity

Guest Lecturer

"Fitting models to data using maximum likelihood estimation" for *Biology 669: Simulating ecology*, Graduate course (2019-03-04, UNC)

Teaching Assistant

2015	Principles of Ecology, <i>University of Colorado at Boulder</i> General Biology II, <i>University of Colorado at Boulder</i>
2014	General Biology I, <i>University of Colorado at Boulder</i>
2013	Conservation Biology, <i>University of Calgary</i>
2012	Conservation Biology, <i>University of Calgary</i> Quantitative Biology II, <i>University of Calgary</i>
2011	Introduction to Ecology, <i>University of Toronto</i>
2010	Adaptation and Biodiversity, <i>University of Toronto</i>

Mentoring

M. Cusa (Undergraduate, 2009-2011) <i>University of Toronto</i>	Field research on sub-Arctic plant phenology - Legault & Cusa 2015, Polar Biology - Now Ph.D. student at University of Salford, (UK)
M. Bullock (Undergraduate, 2016-2018) <i>University of Colorado</i>	Funded UROP project on chemical competition - Research presented at 2017 ESA conference - Bullock et al. 2020, AESA
M. Riley (Undergraduate, 2016-2017) <i>University of Colorado</i>	Laboratory project on spatial evolution - Research presented at 2017 ESA conference
A. Fong (Undergraduate, 2019-present) <i>University of British Columbia</i>	Project on B.C. climate projections - Published on http://stateofwine.org/mapping/
P. Autio (Undergraduate, 2020-present) <i>University of British Columbia</i>	Project on predicting wine quality
T. Amuwo (Undergraduate, 2020-present) <i>University of British Columbia</i>	Project on winegrape phenology

Presentations

Invited

- "The effects of interspecific competition on range boundaries during experimental invasions". *Department of Biology, San Diego State University* (November 2020)
- "A stochastic model for predicting age and size at maturity of insects" (Poster). *The Society of Population Ecology Conference, Kyoto Japan* (September 2019)

Contributed

- *Ecological Society of America Meeting, Salt Lake City USA* (August 2020)
- *Biodiversity Legendary Internal Seminar Series, University of British Columbia, Vancouver Canada* (February 2020)
- *Ecological Society of America Meeting, New Orleans USA* (August 2018)
- *Evolution Meeting, Austin USA* (June 2016)
- *Ecological Society of America Meeting, Baltimore USA* (August 2015)
- *Ecological Society of America Meeting, Sacramento USA* (August 2014)
- *Ecological Society of America Meeting, Portland USA* (August 2012)
- *Canadian Society for Ecology & Evolution Meeting, Ottawa Canada* (July 2012)
- *Canadian Society for Ecology & Evolution Meeting, Banff Canada* (May 2011)

Professional Activities

Reviewer

American Naturalist, Ecology, Ecology Letters, Evolutionary Applications, Functional Ecology, National Geographic Society, Nature Plants, Oecologia, Oikos, Polar Biology, Proceedings of the Royal Society B: Biological Sciences, Science

Service

- 2019-present Organizer
LETS (League of Extraordinary Theoreticians) Discussion Group, *UCB*
- 2016-2017 Graduate student member-at-large
Undergraduate Research Opportunities Program Advisory Board, *UCB*
- 2016-2017 Graduate student representative
Fungal Biologist Faculty Search Committee, *UCB*
- 2016-2017 Graduate student representative
Inclusive Excellence Committee, *UCB*

Outreach

- 2019 Classroom demonstration of complete metamorphosis in insects
Creedmoor Elementary School of the Arts, Creedmoor NC
- 2019 Classroom demonstration of complete metamorphosis in insects
C. G. Credle Elementary, Oxford NC

Skills

- **Quantitative:** Probability theory, Mathematical optimization, Linear algebra, Differential and Integral calculus
- **Computer languages:** R, Stan, Maxima, Lisp, \LaTeX , git
- **Miscellaneous:** Experimental mesocosms, Remote field work, Canadian Firearms Safety Course (CFSC), Phenological monitoring, sub-Arctic plant identification