

NSERC Postdoctoral Research Fellow  
University of Manitoba  
Polar Bears International  
San Diego Zoo Wildlife Alliance  
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# L. Ruth Rivkin

## CURRICULUM VITAE

### A. ACADEMIC HISTORY

#### Research Appointments

NSERC Postdoctoral Research Fellow 2022-2025  
Conservation genomics of polar bears under climate change  
University of Manitoba, Polar Bears International, and San Diego Zoo  
Wildlife Alliance

Data Scientist 2023  
Genetic evaluation and distribution modeling of polar bears  
Independent sole-source contract  
Environment and Climate Change Canada

Postdoctoral Researcher 2021-2023  
Conservation genomics of polar bears under climate change  
Polar Bears International, and San Diego Zoo Wildlife Alliance

#### Education

Ph.D. Ecology and Evolutionary Biology 2015-2021  
University of Toronto  
*Thesis:* The effects of urbanization on the ecology and evolution of species  
interactions  
*Supervisor:* Marc Johnson

Hon. B.Sc. Wildlife Biology-Statistics 2010-2015  
University Guelph

#### Significant Gaps in Research

Parental leave (1 year) 2022-2023

### B. SCHOLARLY AND PROFESSIONAL WORK

#### Refereed Publications (*Total = 15; h = 11; Citations = 584*)

15. Rivkin LR, AC Andrade. 2023. Increased herbivory but not cyanogenesis is associated with urbanization in a tropical wildflower. *Austral Ecology*. <https://doi.org/10.1111/aec.13274>

14. **Rivkin LR**, MTJ Johnson. 2022, The impact of urbanization on mating system and population genetic variation in the native wildflower, *Impatiens capensis*. *Journal of Urban Ecology*. juac009. <https://doi.org/10.1093/jue/juac009>.
13. Verrelli, BC, A Alberti, S Des Roches, NC Harris, AP Hendry, MTJ Johnson, AM Savage, A Charmantier, KM Gotanda, L Govaert, LS Miles, **LR Rivkin**, KM Winchell, KI Brans, Cn Correa, SE Diamond, B Fitzhugh, NB Grimm, S Hughes, JM Marzluff, J Munshi-South, C Rojas, JS Santangelo, CJ Schell, JA Schweitzer, M Szulkin, MC Urban, Y Zhou, C Ziter. 2022. A global horizon scan for urban evolutionary ecology. *Trends in Ecology and Evolution*. 37:1006-1019. <https://doi.org/10.1016/j.tree.2022.07.012>
12. KM Winchell, KJ Aviles-Rodriguez, EJ Carlen, LS Miles, A Charmantier, LF De León, KM Gotanda, **LR Rivkin**, M Szulkin, and BC Verrelli. 2022. Moving past the challenges and misconceptions in urban adaptation research. *Ecology and Evolution*. 12:ee9552. <http://doi.org/10.1002/ece3.9552>
11. **Rivkin LR**, RA Johnson, JA Chaves, MTJ Johnson. 2021. Urbanization alters ecological and evolutionary interactions between Darwin's finches and *Tribulus cistoides* on the Galápagos Islands. *Ecology and Evolution*. 11:15754–15765. <http://doi.org/10.1002/ece3.8236>
10. **Rivkin, LR**, V Nhan<sup>+</sup>, AE Weis, MTJ Johnson. 2020. Variation in pollinator-mediated plant reproduction across an urbanization gradient. *Oecologia*. 192:1073–1083. <https://doi.org/10.1007/s00442-020-04621-z>  
<sup>+</sup> Undergraduate researcher
9. Des Roches, S, K Brans, M Lambert, **LR Rivkin**, A Savage, C Schell, C Correa, L De Meester, S Diamond, N Grimm, N Harris, A Hendry, L Goevert, MTJ Johnson, J Munshi-South, E Palkovacs, M Szulkin, M Urban, B Verrelli, M Alberti. 2020 Socio-eco-evolutionary dynamics in cities. In *Evolutionary Applications*. 14:248– 267. <https://doi.org/10.1111/eva.13065>
8. Santangelo JS, **LR Rivkin**, C Advenard, KA Thompson. 2020 Multivariate phenotypic divergence along an urbanization gradient. *Biology Letters*. 16:20200511. <https://doi.org/10.1098/rsbl.2020.0511>
7. Santangelo, JS, LS Miles, ST Breitbart, D Murray-Stoker, **LR Rivkin**, MTJ Johnson, RW Ness. 2020. Urban environments as a framework to study parallel evolution. In Szulkin, M, Munshi-South, J, Charmantier, A, eds. *Urban Evolutionary Biology*. Oxford University Press.
6. **Rivkin, LR**, JS Santangelo, M Alberti, MF Aronson, CW de Keyser, SE Diamond, M Fortin, LJ Frazee, AJ Gorton, AP Hendry, Y Liu, JB Losos, JS MacIvor, RA Martin, M McDonnell, LS Miles, J Munshi-South, R Ness, AE Newman, MR Stothart, P Theodorou, KA Thompson, BV Verrelli, A Whitehead, KM Winchell, and MTJ Johnson. 2019. A roadmap for urban evolutionary ecology. *Evolutionary Applications*. 12:384–398. <https://doi.org/10.1111/eva.12734>

5. Miles, LM, **LR Rivkin\***, MTJ Johnson, J Munshi-South, BC Verrelli. 2019. Gene flow and genetic drift in urban environments. *Molecular Ecology*. 28:4138-4151.  
<https://doi.org/10.1111/mec.15221>  
\*Co-first author
4. **Rivkin, LR**, SCH Barrett, MTJ Johnson. 2018. The effects of plant sexual system and latitude on resistance to herbivores. *American Journal of Botany*. 105:977-985.  
<https://doi.org/10.1002/ajb2.1098>
3. Santangelo, JS, **LR Rivkin**, MTJ Johnson. 2018. The evolution of city life. *Proceedings of the Royal Society B*. 20181529. <https://doi.org/10.1098/rspb.2018.1529>
2. **Rivkin, LR**, AL Case, CM Caruso. 2016. Why is gynodioecy a rare but widely distributed sexual system? Lessons from the Lamiaceae. *New Phytologist*. 211:688-696.  
<https://doi.org/10.1111/nph.13926>
1. **Rivkin, LR**, AL Case, CM Caruso. 2015. Frequency-dependent fitness in gynodioecious *Lobelia siphilitica*. *Evolution*. 69:1232-1243. <https://doi.org/10.1111/evo.12654>

### Manuscripts In Review

Urban, MC, M Alberti, L De Meester, Y Zhou, BC Verrelli, M Szulkin, C Schmidt, P Roberts, L. **LR Rivkin**, EP Palkovacs, J Munshi-South, A Melesis, NC Harris, KM Gotanda, CJ Garroway, SE Diamond, S Des Roches, A Charmantier, KI Brans. Interactions between climate change and urbanization will shape the future of biodiversity. *In review at Nature Climate Change*.

### Refereed Special Issues as Guest Editor

Santangelo, JS, **LR Rivkin**, MTJ Johnson. 2018. The evolution of city life. Special Issue in *Proceedings of the Royal Society B*.

### Honours, Awards, and Scholarships (Total funding: \$250,000; Academic (A); Leadership (L))

NSERC Postdoctoral Research Fellowship (\$90,000; A)	2022-2025
UTM Graduate Student Research Award (\$2,500; A)	2021
EEB Department Harold Harvey Award Honorable Mention (\$250; L)	2021
Roberta Bondar Graduate Student Excellence Award (\$1,126.43; L/A)	2020
CSEEE Excellence in Doctoral Research Award (\$500; L/A)	2020
EEB Department Peter Abrams Award Honorable Mention (\$250; A)	2020
QEII Graduate Scholarship in Science and Technology (\$15,000; A)	2019-2020
EEB Department Ramsay-Wright Award Honorable Mention (\$250; A)	2019
UTM Graduate Training Award (\$500; A)	2018
NSERC Canada Graduate Scholarship Doctoral (\$105,000; A)	2016-2019
Sigma Xi Grant-in-Aid of Research (\$900; A)	2016
Best Graduate Talk, CSEE (\$500; A)	2016
UTM Conference Travel Grant (\$400/year; A)	2016-2019

UTM Biology Travel Award (\$1000/year; A)	2016-2019
NSERC Canada Graduate Scholarships –Master’s Program (\$17,500; A)	2015-2016
Botanical Society of America Young Botanist Award (A)	2015
Best Undergraduate Talk, OE3C (\$150; A)	2014

### **Papers Presented at Meetings, Symposia, and Institutions** (*Total: 15*)

#### *Invited Talks*

**Rivkin LR.** 2023. Conservation genetics of polar bears in the Canadian Arctic. Government of Canada Genomic Resilience and Adaptation to Climate Change Project Seminar Series. Virtual. (T)

**Rivkin LR.** 2021. The effects of urbanization on the ecology and evolution of species interactions University of Toronto Mississauga Biology Department Seminar Series. Virtual

**Rivkin LR.** 2020. The effects of urbanization on the ecology and evolution of species interactions. Doctoral Excellence Award Talk. Canadian Society for Ecology and Evolution. [Virtual](#).

**Rivkin LR.** 2020. A roadmap for urban evolutionary ecology. Caribaea Initiative Research & Conservation Conference. Bridgetown, Barbados. Plenary. *Cancelled due to COVID-19*

**Rivkin LR, V Nahn, AE Weis, MTJ Johnson.** 2019. The strength of plant-pollinator interactions varies along an urbanization gradient. Urban Eco-Evolutionary Dynamics Workshop. Seattle, WA.

#### *Contributed Conference Presentations (Oral presentation (T), Poster presentation (P))*

**Rivkin LR.** Richardson, E, Garroway, C. 2023. Genetic vulnerability of polar bears to sea ice loss. Canadian Society for Ecology and Evolution. Winnipeg, MB. (T)

**Rivkin LR, RA Johnson, JA Chaves, MTJ Johnson.** 2021. Urbanization alters ecological and evolutionary interactions between Darwin’s finches and *Tribulus cistoides* on the Galápagos Islands. Society for the Study of Evolution (Evolution). Virtual. (T)

**Rivkin LR, V Nahn, AE Weis, MTJ Johnson.** 2019. The strength of plant-pollinator interactions varies along an urbanization gradient. Society for the Study of Evolution (Evolution). Providence, RI. (T)

Miles LS, **Rivkin LR**, Johnson MTJ, J Munshi-South, BC Verrelli. 2020. Gene flow and genetic drift in urban environments. Evolution. Providence, RI. (T)

**Rivkin LR, V Nhan, MTJ Johnson.** 2018. The influence of urbanization on plant fitness and pollinator communities. II Joint Congress on Evolutionary Biology. Montpellier, FR. (P)

**Rivkin LR, MTJ Johnson.** 2017. The role of urbanization on the evolution of selfing and population genetic structure in *Impatiens capensis*. Evolution. Portland, OR. (P)

- Rivkin LR**, SCH Barrett, MTJ Johnson. 2016. The role of sexual system and latitude on insect herbivory in *Sagittaria latifolia* (Alismataceae). Canadian Society for Ecology and Evolution. St. John's, NL. (T)
- Rivkin LR**, SCH Barrett, MTJ Johnson. 2016. The role of sex-biased herbivory on the evolution of dioecy in *Sagittaria latifolia* (Alismataceae). Ontario Ecology, Ethology and Evolution Colloquium. Toronto (OE3C), ON. (T)
- Rivkin LR**, AL Case, CM Caruso. 2015. Why is gynodioecy a rare but widespread sexual system? Lessons from the Lamiaceae. OE3C. Toronto, ON. (T)
- Rivkin LR**, AL Case, CM Caruso. 2014. Mechanisms of frequency dependent fitness in gynodioecious *Lobelia siphilitica*. Evolution. Raleigh, NC. (T)
- Rivkin LR**, AL Case, CM Caruso. 2014. Mechanisms of frequency dependent fitness in gynodioecious *Lobelia siphilitica*. OE3C. (T)

### C. TEACHING AND SUPERVISORY EXPERIENCE

#### Undergraduate Course Instructor

Evolutionary Biology (BIO342; 150 students; sole instructor) 2021

#### Teaching Assistantships and Course Development

##### *Teaching Assistantships*

Ecology (BIO205)	2020
Evolution (BIO152)	2019
Biology behind the news (BIO201)	2018
Ecology (BIO205)	2017
Evolutionary Biology (BIO342)	2016-2020
Biometrics II (BIO361)	2015-2018

##### *Course Development*

Biometrics II (BIO361)	2019
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#### Supervisory Experience

Vanessa Nhan, Honors Thesis (BIO481)	2018
Zahra Sina, Research Project (BIO299)	2016

### D. ACADEMIC SERVICE

#### Academic and Community Service

Steering Committee; NSF-RCN: Urban Eco-Evo Dynamics	2022-2025
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Advisory Council, NSF-DCL LTER Urban Evolution Workshop	2021-2022
Lead organizer, NSF-RCN: Urban Eco-Evo Dynamics Workshop Series	2021-2022
Panel Judge, Global Undergraduate Awards	2020
Volunteer, St. John's Ambulance Therapy Dog Program	2020
Graduate student representative, Canadian Society for Ecology and Evolution	2018-2020
Co-organizer, The evolution of city life. Special Issue in <i>Proceedings of the Royal Society B</i> .	2017-2018
Executive, Synthesis in the City: Urban Evolutionary Ecology of Plants Workshop Organizing Committee	2016-2017
Executive, OE3C	2015-2016

### **Departmental and University Service**

Graduate representative, UTM Biology Executive Committee	2020
Graduate Representative, UTM Health and Counselling Committee	2019
Founder, Path to Resilience: UTM Graduate Peer Support Group	2018-2020
Organizer, Path to Resilience: UTM Grad Wellness Workshop Series	2018-2020
Treasurer, UTM Association of Graduate Students	2018-2020
President, UTM Biology Graduate Student Society	2016-2017
Graduate representative, UTM Biology Executive Committee	2016-2017
Graduate representative, UTM Biology faculty meetings	2016-2017
Graduate representative, Information & Technology Student Advisory Committee	2015-2016

### **External reviews**

Botany  
 Plant Ecology  
 Scientific Reports  
 Journal of Ecology  
 Bioscience  
 New Phytologist  
 Urban Ecosystems  
 American Journal of Botany  
 Evolutionary Applications  
 PeerJ  
 Frontiers in Ecology and Evolution  
 Industrial Crops and Products  
 Journal of Evolutionary Biology  
 Molecular Ecology

**E. RELEVANT EXPERIENCE****Media Appearances**

City Animals. 2022. Frick, I love Nature. Season 1, Episode 2. CBC Gem.

<https://gem.cbc.ca/media/frick-i-love-nature/s01e02>

Ruth Rivkin wins Excellence in PhD Research Award. 2020. U of T Celebrates.

<https://www.utoronto.ca/celebrates/ruth-rivkin-wins-excellence-phd-research-award>

Why house sparrows can eat starch: the evolution of city wildlife. 2018. The Environment

Report. Michigan NPR Radio. <https://www.michiganradio.org/post/why-house-sparrows-can-eat-starch-evolution-city-wildlife>

**Research Experience**

Technician, EvoEco Lab 2015

University of Toronto Mississauga

*Supervisor:* Marc Johnson

Technician, Plant Evolutionary Ecology Research 2013-2015

University of Guelph

*Supervisor:* Christina Caruso

Technician, Marine Benthic Lab Research Technician 2012, 2010

Memorial University

*Supervisor:* Paul Snelgrove

Technician, Laboratoire Environnemental de Géochimie Organique Research 2011

Concordia University

*Supervisor:* Yves Gelin