



# Sophie T. Breitbart

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PhD Candidate, University of Toronto  
Department of Ecology & Evolutionary Biology

✉ [sophie.breitbart@mail.utoronto.ca](mailto:sophie.breitbart@mail.utoronto.ca)  [sbreitbart](https://github.com/sbreitbart)  [sophiebreitbart.wordpress.com](https://sophiebreitbart.wordpress.com)

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## Education

**University of Toronto**, Toronto, ON, Canada 2018-present  
PhD Candidate, Ecology & Evolutionary Biology  
Advisors: Drs. Marc Johnson and Helene Wagner

**Wesleyan University**, Middletown, CT, USA 2012-2016  
B.A., Biology, Certificate in Integrative Genomics Sciences: Informatics & Modeling

**Queen Mary, University of London**, London, UK 1-5/2015  
Study Abroad Program

## Research & Professional Experience

**Graduate Research Assistant**, University of Toronto Mississauga 2018-present  
Mississauga, ON, Canada  
PIs: Drs. Marc Johnson and Helene Wagner  
Thesis title: Effects of Urbanization on the Evolutionary Ecology & Population Genetics of Common Milkweed (*Asclepias syriaca*)

**Staff Scientist I**, Princeton Hydro 2016-2018  
South Glastonbury, CT, USA  
Devising dam removal plan sets with AutoCAD, spatial analysis and map creation with ArcGIS, watershed management plan writing.

**Aquatics Intern**, Princeton Hydro 2016  
South Glastonbury, CT, USA  
Water quality testing, aquatic plant mapping, spatial analysis with ArcGIS.

**Undergraduate Researcher**, Wesleyan University 2014-2016  
Middletown, CT, USA  
PIs: Drs. Barry Chernoff and Helen Poulos  
Dace (*Rhinichthys atratulus*, *Rhinichthys cataractae*) biogeography and phylogeography.

**Undergraduate Researcher**, Wesleyan University 2013-2014  
Middletown, CT, USA  
PI: Dr. Fred Cohan  
*Bacillus* phylogeography and speciation.

**Independent Study**, Skidmore College 2009-2011  
Saratoga Springs, NY, USA  
PI: Dr. Bernard Possidente  
Circadian locomotor activity in *Drosophila melanogaster*.

## Honors & Awards

### RESEARCH GRANTS

University of Toronto EEB PhD Research Grant (\$2,000)	2021
Centre for Urban Environments Research Grant (\$1,940)	2021
Sigma Xi Grant in Aid of Research (\$1,000)	2020
Centre for Urban Environments Workshop/Symposium Grant (\$2,500)	2020
<i>Co-applicants: L. Miles, H. Abdel Hafez.</i>	
NSERC CREATE Enviro Trainee (\$23,700)	2018-2019
<i>Primary applicants: H. Wagner, M. Johnson.</i>	
Wesleyan University College of the Environment Summer Research Fellowship (\$4,000)	2014
Wesleyan University Carol and Robert Lynch Student Research Fund Grant (\$905)	2013
Wesleyan University Howard Hughes Medical Institute Grant (\$884)	2013

### SCHOLARSHIPS & AWARDS

Zimmerman/Weis Graduate Award (\$10,950)	2020
International Association for Landscape Ecology Conference Travel Award (\$600)	2019
Joseph Scacalossi Scholarship (\$4,000)	2012

## Publications

### BOOK CHAPTERS

1. Santangelo J.S., Miles, L.S., **Breitbart, S.T.**, Murray-Stoker, D., Rivkin, L.R., Johnson, M.T.J. and Ness, R.W., *Urban environments as a framework to study parallel evolution*. In: *Urban Evolutionary Biology*. Edited by Marta Szulkin, Jason Munshi-South and Anne Charmantier: Oxford University Press (2020). © Oxford University Press. DOI: [10.1093/oso/9780198836841.003.0003](https://doi.org/10.1093/oso/9780198836841.003.0003)

### JOURNAL ARTICLES

2. Miles, L.S.\*, **S.T. Breitbart\***, H.H. Wagner, and M.T.J. Johnson. 2019. Urbanization Shapes the Ecology and Evolution of Plant-Arthropod Herbivore Interactions. *Frontiers in Ecology and Evolution* 7:1–14. DOI: [10.3389/fevo.2019.00310](https://doi.org/10.3389/fevo.2019.00310)
1. **Breitbart, S.** and Weigel, E. February 2019, posting date. Visualizing a Disease Outbreak Using ESRI Story Maps. *Teaching Issues and Experiments in Ecology*, Vol. 15: Practice #1 [online]. [https://tiee.esa.org/vol/v15/issues/data\\_sets/breitbart/abstract.html](https://tiee.esa.org/vol/v15/issues/data_sets/breitbart/abstract.html)

### OTHER PUBLICATIONS

2. **Breitbart, S.** Urban Evolution: A Brief Introduction. ESRI StoryMap. May 2020. <https://storymaps.arcgis.com/stories/446efee44f8d49578d3c62bfe2c25fc1>
1. **Breitbart, S.**, Hildebrandt, A., Possidente, B. 2010. [Assessing Effects of Sex, Mating Status, and a White-Eye Mutation in a Co-Isogenic Background on Circadian Locomotor Activity in \*Drosophila melanogaster\*](#). *Drosophila Information Service* 93:171-175.

## Presentations

12. **Breitbart, S.** Applying to and Succeeding in Graduate School. Seminar Panel. Honors Biology Thesis Course (BIO481), Virtual Seminar. 11/27/2020.

11. **Breitbart, S.**, Wagner, H., Johnson, M. Effects of Urbanization on Reproductive Success in Common Milkweed. Presentation. University of Toronto Mississauga Graduate Research Colloquium, Virtual Conference. 5/27/2020.
10. **Breitbart, S.**, Wagner, H., Johnson, M. Effects of Urbanization on Reproductive Success in Common Milkweed. Presentation. Annual Meeting of the North American Regional Association of the International Association for Landscape Ecology, Virtual Conference. 5/11/2020.
9. **Breitbart, S.** Urban Evolutionary Ecology & Career Path Advice. Invited Seminar Panel. Biodiversity and the City (EEB197), Toronto, Ontario. 1/28/2020.
8. **Breitbart, S.**, Wagner, H., Johnson, M. Effects of Urbanization on Reproductive Success in Common Milkweed. Seminar Presentation. Swiss Federal Institute for Forest, Snow and Landscape Research, Birmensdorf, Switzerland. 7/10/2019.
7. **Breitbart, S.**, Wagner, H., Johnson, M. Effects of Urbanization on Reproductive Success in Common Milkweed. Flash Talk. International Association for Landscape Ecology World Congress, Milan, Italy. 7/2/2019.
6. **Breitbart, S.** Urban Evolution of Common Milkweed. Guest Lecture. Temperate Field Biology (EEB 405), King City, Ontario. 5/25/2019.
5. **Breitbart, S.** Elevator Pitch. Atwood Colloquium, Toronto, Ontario. 4/13/2019.
4. **Breitbart, S.**, Poulos, H., Krackowski, M., Chernoff, B. (2016). Using GIS to Predict Effects of Landscape Metrics on Genetic Diversity in *R. atratulus*. Poster Presentation. Northeast Arc Users Group Spring Spatial Technologies Conference, Amherst, Massachusetts. 5/9/2016.
3. **Breitbart, S.** Ecological Niche Modeling with Maxent. Guest Lecture. Evolutionary and Ecological Bioinformatics (BIOL 327), Middletown, Connecticut. 11/19/2015.
2. Chernoff, B., Krackowski, M., Angel, J., Meyer, A., Nash, C., Roman-Johnston, N., **Breitbart, S.** Over the Falls: Population Differentiation of Blacknose and Longnose Dace, *Rhinichthys atratulus* and *R. cataractae*, in Connecticut. Poster Presentation. Wesleyan Summer Research Symposium, Middletown, Connecticut. 7/31/2014.
1. **Breitbart, S.**, Hildebrandt, A., Possidente, B. (2010). Assessing Effects of Sex, Mating Status, and a White-Eye Mutation in a Co-Isogenic Background on Circadian Locomotor Activity in *Drosophila melanogaster*. University at Albany Undergraduate Research Symposium, Albany, New York. 4/29/2011.

## Teaching & Supervisory Experience

### TEACHING

#### *University of Toronto Mississauga*

<b>Teaching Assistant</b> , Evolutionary Biology (BIO342)	2021
<b>Teaching Assistant</b> , Biometrics (BIO360)	2019, 2020
<b>Teaching Assistant</b> , Introduction to Evolution & Evolutionary Genetics (BIO152)	2019
<b>Teaching Assistant</b> , Ecology (BIO205)	2018

#### *Princeton Hydro*

<b>Intern Manager</b> , New England Regional Office	2017
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Wesleyan University

**Professorial Assistant, Peer Tutor, Cartographer, GIS Assistant Program** 2015-2016

#### SUPERVISORY EXPERIENCE

Danil Karimov, work-study student. Leaf image analysis with ImageJ. 2019-2021

#### Community Involvement

##### REVIEWER FOR

*Journal of Urban Ecology, Functional Ecology*

#### DEPARTMENTAL SERVICE

**Fundraising Representative** (elected), EEB Graduate Student Association 2020-present

**Treasurer**, UTM Biology Graduate Student Society 2020-present

**Undergraduate Mentor**, Grad Connect Mentorship Program (Mariana Walker) 2020-present

**Volunteer**, School of Graduate Studies Listening Sessions for Women in STEM 2020

**Organizer & Guide**, Greenhouse Tour (Wellness Event for UTM Grads) 2019

**Peer Mentor**, EEB Mentorship Program (Vicki Zhang, Siyu Wang) 2019-present

**Volunteer**, "Biodiversity in the City" Public Panel Discussion, Royal Ontario Museum 2019

**Volunteer**, Alumni and Friends Family Day at the Koffler Scientific Reserve 2019

**Member**, UTM Biology Graduate Student Society 2018-2020

#### ACADEMIC SERVICE

**Symposium Co-organizer**, "Landscape Genetics as a Tool for Managing Human-Impacted Landscapes". 2020 IALE-North America Conference. *Co-organizers: L. Miles, H. Abdel Hafez.* 2019-2020

**Mentor**, MentorNet (Jessie Moravek, Lancaster University) 2019

**Steering Committee Member**, Wesleyan Women in Science 2013-2016

**Panelist**, Wesleyan Women in Science Summer STEM Internship Info Session 2016

**Science Facilities Tour Guide**, WesFest (Wesleyan's Admitted Students Recruitment Event) 2014

**Member**, Wesleyan Women in Science 2012-2013

#### ORGANIZATIONS & MEMBERSHIPS

**Member**, Society for the Study of Evolution (SSE) 2021-present

**Member**, Sigma Xi: The Scientific Research Honor Society 2021-present

**Chapter Coordinator**, Canadian Association for Girls in Science- Toronto Chapter 2020-present

**Volunteer**, Canadian Association for Girls in Science- Toronto Chapter 2019-2020

**Founder & Leader**, Walking in the Woods with Words (Forest Bathing Club) 2019-2020

**Volunteer**, High Park Nature Stewards 2018-present

**Member**, Canadian Society of Ecology and Evolution (CSEE) 2018-present

#### SCIENCE COMMUNICATION

**Volunteer**, Skype a Scientist (3 classes) 2020-present

**Interviewee**, "Scientific Names", *Toronto Nature Now* Radio Show 2020

**Writer** (Top 3 Contributor), [Life in the City Urban Evolution Blog](https://www.urbanecvolution-litc.com) 2018-present

[www.urbanecvolution-litc.com](https://www.urbanecvolution-litc.com)