




# SOPHIE BREITBART

Data Scientist, Ecologist, Evolutionary Biologist



## EDUCATION

- 2018  
|  
present
- **University of Toronto**  
PhD in Ecology & Evolutionary Biology  Toronto, Canada
    - Thesis: Effects of Urbanization on the Evolutionary Ecology and Population Genetics of Common Milkweed (*Asclepias syriaca*)
    - Advisors: Drs. Marc Johnson & Helene Wagner
  - **Wesleyan University**  
BA in Biology  Middletown, Connecticut
    - Completed Integrative Genomics Sciences Certificate
    - Undergraduate researcher (2013-2016): Minnow biogeography and bacterial phylogeography

## EXPERIENCE

- 2023  
|  
present
- **Data Scientist**  
University of Toronto & University Health Network  Toronto, Canada
    - Clean, wrangle, and visualize Twitter data for “#TeamVaccine: Exploring the History of Toronto’s COVID-19 Vaccination Initiative through Social Media” project
    - Maintain communication with team and revise deliverables accordingly
- 2018  
|  
present
- **Research Assistant**  
University of Toronto  Toronto, Canada
    - Studied how urbanization impacts reproductive success, genetic divergence, genetic diversity, and population structure of *A. syriaca*
    - Taught tutorials in data science, statistics, evolution, and ecology
- 2016  
|  
2018
- **Staff Scientist I**  
Princeton Hydro  South Glastonbury, Connecticut
    - Designed detailed dam removal engineering plan sets with AutoCAD
    - Analyzed geospatial data and generated maps using ArcGIS
    - Assisted developing strategies for protecting water resources and co-authored watershed management plans

## SELECTED WORKSHOPS

- 2022
- **An Ecologist’s Introduction to Data Science**  
SORTEE Webinar Series; Joint ESA/CSEE Conference  [Link](#)
    - Co-designed and instructed workshop about transferring ecologists’ existing skills into rewarding careers in data science.
- 2021
- **Fast-R: Making R Work Hard So That You Don’t Have To**  
SORTEE & CSEE Conferences; Santa Barbara R Meetup  [Link](#)
    - Co-designed and instructed workshop about conducting efficient and reproducible data analysis in R.

## CONTACT

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## SKILLS

**Languages:** R, including base & tidyverse (advanced); Bash (intermediate); Python, CSS, HTML, SQL (familiar)

**Project management & reproducibility:** Git/Github, summary reports with R Markdown, renv, documentation with READMEs, reproducible examples

**Data analysis:** Data cleaning & wrangling, high-performance computing, SLURM, parallelization

**Statistics:** Linear and mixed models, predictive modelling, multivariate statistics

**Data visualization:** ggplot2, maps, Shiny apps, dashboards

**Communication:** Excellent oral and written communication skills including 8 invited and 14 conference presentations, 5 peer-reviewed scientific publications

Full list of publications [here](#).

## FUNDING & AWARDS

Total funding: \$63,329

6 research grants; 2 awards; 2 scholarships; 2 travel grants; 1 workshop grant