




SOPHIE BREITBART

Data Scientist, Ecologist, Evolutionary Biologist



EDUCATION

- 2018
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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
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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
 - **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
 - **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

✉ sophie.breitbart@gmail.com
🏠 sbreitbart.github.io
🐙 github.com/sbreitbart
in linkedin.com/in/sophiebreitbart

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, Shiny apps, dashboards

Communication: Excellent oral and written communication skills including 8 invited and 14 conference presentations, 4 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