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

2012 | 2016

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, 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