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
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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 & Instructor
University of Toronto & Blood Tribe 📍 Alberta, Canada
- Collaborate with the Blood Tribe of the Kainai First Nation to co-create project assessing reservation's rangeland health
- Creating an interactive Shiny App to guide various stakeholders through the data analysis while teaching key data science concepts

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
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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 WORKSHOP

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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- 🏠 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, geospatial analysis

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