

# Hannah Correia

✉ [hcorreia@hsph.harvard.edu](mailto:hcorreia@hsph.harvard.edu)  
 🔗 <https://hannahcorreia.github.io>

## EDUCATION

### PHD IN BIOLOGY

#### AUBURN UNIVERSITY

August 2019 | Auburn, Alabama, USA  
 “Modeling complex climate change effects on fluctuating populations of fish communities in the Northern Pacific Ocean”

### MS IN STATISTICS

#### AUBURN UNIVERSITY

August 2016 | Auburn, Alabama, USA  
 “Rank-based estimation for generalized additive models”

### BA IN MATHEMATICS AND BIOLOGY

#### HUNTINGDON COLLEGE

May 2011 | Montgomery, Alabama, USA

## GRANTS, AWARDS, & HONORS

- NSF GRFP Fellowship | 2015-19
- NSF GROW Additional Funding (Norway) | 2017-18
- ESA Katherine S. McCarter Graduate Student Policy Award | 2019
- Auburn University COSAM Dean’s Research Award | Spring 2019
- AU COSAM Travel Grant | Fall 2018
- DoD SMART Scholarship | 2015 (declined)

## SKILLS

### PROGRAMMING

Proficient:

R •  $\text{\LaTeX}$  • CSS • HTML

Familiar:

Google Earth Engine • JavaScript • Python • Shell • Fortran • C++ • Sage • SAS

## SELECT TRAINING & CONFERENCES

### 2021

- OTS Course: [Google Earth Engine for Ecology and Conservation](#)
- [Columbia University Environmental Justice Boot Camp](#)
- [Columbia University Causal Mediation Analysis Training](#)

### 2020

- Joint Statistical Meetings
- International Statistical Ecology Conference

### 2019

- Harvard Data Science Initiative Annual Conference
- Harvard Summer Short Course: An Introduction to Causal Inference

### 2016

- Workshop on Infusing Data-Enabled Active Learning in Mathematics and Statistics Courses

## APPOINTMENTS & EXPERIENCE

### JOHNS HOPKINS UNIVERSITY

#### POSTDOCTORAL FELLOW

September 2022 – Present | Baltimore, Maryland, USA

Working with [Paul Ferraro](#) on behavioral changes in agri-environmental systems, as well as causal inference more broadly in natural and coupled human-natural systems.

### HARVARD UNIVERSITY DATA SCIENCE INITIATIVE HARVARD TH CHAN SCHOOL OF PUBLIC HEALTH

#### POSTDOCTORAL FELLOW

September 2019 – August 2022 | Cambridge, Massachusetts, USA

Examined weaknesses in causal analysis techniques for ecological data and improved methods in detecting multiple causal influences in dynamic, nonlinear systems with [Francesca Dominici](#) and [Tyler VanderWeele](#).

### AUBURN UNIVERSITY DEPT. OF BIOLOGICAL SCIENCES

#### NSF GRADUATE RESEARCH FELLOW

May 2015 – August 2019 | Auburn, Alabama, USA

Developed novel statistical methods for ecological data. Improved and applied complex statistical techniques to fisheries data to explain interactions and quantify trends in fish population dynamics with [Prof F. Stephen Dobson](#).

### NORWEGIAN INSTITUTE FOR NATURE RESEARCH

#### NSF VISITING GRADUATE RESEARCH FELLOW

August 2017 – February 2018 | Tromsø, Norway

Conducted original research on the effects of climate change on semi-domesticated reindeer in Norway.

### MASAMU ADVANCED STUDY INSTITUTE (MASI) AND WORKSHOPS IN MATHEMATICAL SCIENCES

#### RESEARCHER

2022 - Maputo, Mozambique | 2021 - Virtual | 2020 - Virtual | 2019 - Blantyre, Malawi | 2018 - Palapye, Botswana | 2017 - Arusha, Tanzania | 2015 - Windhoek, Namibia | 2014 - Victoria Falls, Zimbabwe

Leading research working group in statistics (machine learning and causal inference) since 2020. Working with members of the Auburn University Department of Mathematics and Statistics to further research in statistics and mathematical biology in southern Africa.

## SELECT RECENT PUBLICATIONS

**Correia HE**, Stien A, Tveraa T, Yoccoz N. (2022) Nonlinear spatial and temporal decomposition provides insight for climate change effects on sub-Arctic herbivore populations. *Oecologia*. 198:889–904.

Otlaadisa M, Bindele HF, Abebe A, **Correia HE**. (2022) Varying coefficient single-index regression model with missing responses under rank-based modeling. *Journal of Nonparametric Statistics*.

Buley, R., **Correia, H. E.**, Abebe, A., Issa, T. B., Wilson, A. E. (2021) Predicting microcystin occurrence in freshwater lakes and reservoirs: assessing environmental variables. *Inland Waters*. 11(3): 430–444.

**Correia, H. E.** (2021). Selecting environmental covariates related to adult groundfish catches and weights in the Gulf of Alaska. *Scientific Reports* 11, 9949.

**Correia, H. E.**, Abebe, A. (2021) Regularised rank quasi-likelihood estimation for generalised additive models. *Journal of Nonparametric Statistics*. 33(1).

Levy, B., **Correia, H. E.**, Chirove, F., Ronoh, M., Abebe, A., Kgosimore, M., Chimbola, O., Machingauta, M. H., Lenhart, S., White, K. A. J. (2021) Modelling the effect of HIV/AIDS stigma on HIV infection dynamics in Kenya. *Bulletin of Mathematical Biology*. 83(55).

**Correia, H. E.**, Abebe, A. (2021) Capturing spatio-temporal dynamics of Alaskan groundfish catch using rank estimation for varying coefficient models. *Journal of Applied Statistics*. 49:8, 2137-2156.

**Correia, H. E.**, Abebe, A., Dobson, F. S. (2021) Multiple paternity and the number of offspring: A model reveals two major groups of species. *BioEssays*. 43(4).

Sun, W., Bindele, H. F., Abebe, A., **Correia, H. E.** (2021) Robust functional selection for the single-index varying coefficients regression model. *Journal of Statistical Computation and Simulation*. 91(8). 1681–1697.

A complete list of publications can be found on my [personal website](#) or my [Google Scholar page](#).