Cora Allen-Savietta

Data Scientist & Software Developer

Statistician with 7 years of theoretical and applied statistics experience and 2 years of software development experience. Currently developing software in Julia for efficient topology search and accurate estimation in complex network space.

Education

2015-09 - present
PhD Statistics University of Wisconsin-Madison
expected August 2020

2008-09 - 2012-05
BA Psychology Oberlin College
high honors

Professional Experience

2018-03 - present
Statistics Researcher
Professor Cécile Ané, University of Wisconsin–Madison
- Develop software in **Julia** to reconstruct species' evolutionary history by combining efficient algorithms, novel search strategies, and efficient likelihood comparison. github.com/crsl4/PhyloNetworks.jl

2016-05 - present
Statistics Researcher
Professor Ron Gangnon, University of Wisconsin–Madison
- Develop a statistical method for flexible weighted clustered rankings using empirical Bayes nonparametric mixture models

2016-05 - present
Lead Data Analyst
University of Wisconsin-Madison Department of Epidemiology
- Assess breast cancer incidence and survival in a case-control study of over 26,000 women with generalized multivariate additive spatial models, covariate imputation, and variable width smoothing in **R**.

2018-02 - 2019-03
Lead Data Analyst
University of Wisconsin-Madison Department of Medicine
- Evaluated program success with multivariate generalized linear mixed effects models in **R**.

2012-06 - 2015-08
Epidemiology Researcher
Harvard Medical School & Brigham and Women's Hospital
- Led a clinical trial, supervising a team of five research assistants through patient recruitment and data analysis with **R**
- Managed large-scale healthcare claims data using **SAS**
- Assisted in design, analysis, and publication of pharmaceutical postmarketing surveillance studies

Teaching and Mentoring Experience

2018-09 - 2018-12
Teaching Assistant for STAT 679: Computational Tools for Data Analytics
- Taught 42 graduate students **Bash** scripting, **Python**, & **Julia**.
- Mentored students individually and in small groups through pair programming and **GitHub** code review.

Personal Info

Location
Madison, WI
(location flexible)

Phone
608-239-4068

E-mail
allencoleman@wisc.edu

GitHub
github.com/coraallensavietta

Skills

Julia

R

Python

Bash

Java

Courses

STAT 609 & 709 Advanced Probability (2 semesters)

STAT 849 & 850 Theory and Application of Regression (2 semesters)

STAT 610 Statistical Inference

STAT 710 Mathematical Statistics

STAT 771 Statistical Computing

COMPSCI 302 Programming with Java

COMPSCI 367 Data Structures with Java

STAT 327 Data Analysis with R

STAT 641 Statistical Methods for Clinical Trials

STAT 642 Statistical Methods for Epidemiology

STAT 992 Multilevel Models

STAT 679 Graphical Models

2016-01 - 2018-05

Undergraduate & Graduate Student Mentoring

- Mentored 6 Statistics undergraduates in preparing honors thesis projects.
- Tutored 7 undergraduates and graduate students in Statistics courses weekly.

2015-09 - 2015-12

Teaching Assistant for BMI 511: Introduction to Biostatistics

- Introduced 40 Masters of Public Health students to probability, research design, hypothesis testing, statistical inference, and regression.
- Taught one lecture per week and mentored students independently.

Peer-reviewed Publications

Allen-Savietta, C, Ané, C. Phylogenetic Network Structure Estimation and Identifiability from Concatenated Genetic Sequences. *In preparation.*

Heffron, A, Braun, KM, **Allen-Savietta, C**, Filut, A, Hanewall, C, Huttenlocher, A, Handelsman, J, Carnes, M. Gender Can Influence Student Experiences in MD-PhD Training. *Journal of Women's Health.* April 2020.

Fischer MA, **Allen-Coleman C**, Farrell SF, Schneeweiss S. Stakeholder assessment of comparative effectiveness research needs for Medicaid populations. *Journal of Comparative Effectiveness Research*. 2015 Sept 21.

Bateman BT, Huybrechts KF, Maeda A, Desai RJ, Patorno E, Seely EW, Ecker JL, **Allen-Coleman C**, Mogun H, Hernandez-Diaz S, Fischer MA. Calcium channel blocker exposure in late pregnancy and the risk of neonatal seizures: A cohort study. *Obstetrics and Gynecology.* 2015 Aug; 126(2): 271-8.

Bateman BT, Hernandez-Diaz S, Fischer MA, Seely EW, Ecker JL, Franklin JM, Desai RJ, **Allen-Coleman C**, Mogun H, Avorn J, Huybrechts KF. Statins and congenital malformations: a cohort study. *BMJ.* 2015 Mar 17;350:h1035.

Polinski JM, Kesselheim AS, Frolkis JP, Wescott P, **Allen-Coleman C**, Fischer MA. A matter of trust: Patient barriers to primary medication adherence. *Health Education Research.* 2014; 29: 755-63.

Conference Presentations

Allen-Coleman, C., Ané, Cécile M. Illuminate Evolutionary History with Phylogenetic Networks. Joint Statistical Meetings in August 2019

Allen-Coleman, C., Ané, Cécile M. Estimating Evolutionary Rates Efficiently in Phylogenetic Networks. Great Lakes Bioinformatics Conference May 2019

Allen-Coleman, C., Gangnon, R.E. Simultaneous Clustering and Ranking of Small Area Health Outcomes Using Nonparametric Empirical Bayes Mixture Models. Contributed presentation at the International Conference on Health Policy Statistics January 2020 (accepted)

Allen-Coleman, C., Gangnon, R.E. Making Ranking Priorities More Explicit. Contributed presentation at Joint Statistical Meetings August 2018

Allen-Coleman, C., Trentham-Dietz, A., McElroy, J.A., Hampton, J.A., Newcomb, P.A., Gangnon, R.E. Geographic Location and Mortality after Breast Cancer Diagnosis. Society for Epidemiologic Research Meeting June 2018

BMI 826 Computational Network Methods

STAT 679 Computational Tools for Data Analytics

STAT 998 Statistical Consulting

BMI 826 Ethics for Data Scientists

Awards

2017-07
National Institutes of Health
Data Science Traineeship

2015-09
National Institutes of Health
Biostatistics Traineeship

2012-03
Leah Freed Memorial Prize for
Honors Thesis Research

2012-01
Jerome Davis Prize for Social Science
Thesis Research

Professional Memberships

American Statistical Association

Caucus for Women in Statistics