Ava Hoffman

Ecologist

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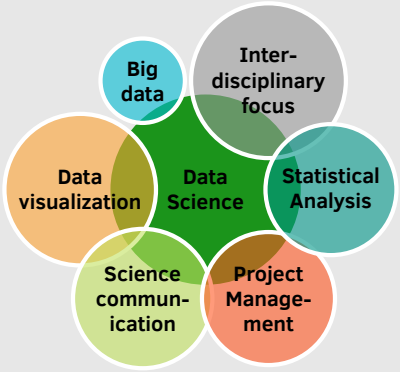
Skills

Overview



Programming

$0\ LOC$ $20000\ LOC$

R • RStan • JAGS

Python • LaTeX

Training

ESS 575 - Implemented Bayesian models for ecological data using JAGS

Stan Seminars - Implemented Bayesian models for ecological data using RStan

NSCI 588 - Analyzed genomic data (.fastq and .fasta) using Python

Overheard at ESA - Android app developed in MIT App Builder workshop

STAT 511 & 512 - implemented principles of statistical design, inference, methods, & toolbox skills for research

Teaching - 7 semesters teaching & 4 years student mentoring experience

Education

2013 - 2018 **Ph.D, Ecology** (GPA: 4.0/4.0) Colorado State University, USA

2008 - 2012 **B.S., Biology** (GPA: 3.7/4.0) University of Virginia, USA

Research

2013 - 2018 **Ph.D Candidate, USDA NIFA Predoc. Fellow** Colorado State University

- Awarded $118,112 in grants to perform research
- Research Mentoring for Inclusivity & Advancement in STEM Fellow, Sustainability Leadership Fellow, Vice President for Research Fellow, ESA Hackathon beginner app developer first place
- **Primary Tools**: R, RStan, shell scripts

Recent Publications

2018. **Hoffman, AM**, et al. Co-dominant grasses differ in gene expression under experimental climate extremes in native tallgrass prairie. *PeerJ*.

2017. **Hoffman, AM** and MD Smith. Gene expression differs in codominant prairie grasses under drought. *Molecular Ecology Resources*.

Projects

2018 - present **Dominant species in dry ecosystems** Colorado State University

- Processed data from existing studies in meta-analysis
- Determined the predictive power of dominant grasses in response to climate change

2017 - present **Metabolic responses to nitrogen** Colorado State University

- Synthesized scalar response to nitrogen (metabolomic, physiological, & community)
- Used path analysis, module clustering, & Bayesian analysis

2016 - Present **Genetic diversity in *Bouteloua* grass** US Dept of Agriculture

- Quantified changes in the genomes of grass populations &
- Related genomics to differences in plant appearance & drought strategy
- Developed hierarchical model for flowering rates

2014 - 2018 **Non-linear plasticity in *Andropogon* grass** Colorado State University

- Processed highly multivariate trait responses to a gradient of water availability using Bayesian analysis and principal components

2015 - 2017 **Gene expression (RNA) in dominant grasses** Colorado State University

- Analyzed gene expression responses of key grasses to drought using the de novo transcriptome assembler Trinity, next generation bioinformatics tools, & microarrays

2017 **Grasshopper preference for *Bouteloua*** Colorado State University

- Modeled the responses of grasshoppers in response to different cultivars of grass with Bayesian analysis

2012 - 2013 **Drought gene discovery** DuPont-Pioneer

- Performed assays & gene analysis in biotech industry