## Sara A. Stoudt


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**Research Interests** applied and computational statistics with applications to environmental data

**Education**

**Smith College**, Northampton, MA

B.A., Mathematics and Statistics , 2015
Magna Cum Laude with Highest Honors 3.95/4.0
Major GPA: 4.0/4.0
Phi Beta Kappa, Sigma Xi, Mu Sigma Rho
Goldwater Scholar

**University of California, Berkeley**, Berkeley, CA

Ph.D., Statistics, August 2015 - expected 2020
Advisors: Will Fithian and Perry de Valpine
Gertrude M. Cox Scholar (2015)
National Physical Science Consortium Fellow (2015-2018)
Data Sciences for the 21st Century (DS421): Environment and Society Fellow (2015-2017)

**Programming Languages**

- Proficient: R, Matlab, LaTeX
- Experience With: Python, SQL, Mathematica, WinBUGS, Java, GIS, AMPL, NIMBLE, D3, JavaScript, bash

**Research Experience**

**Graduate Research** Fall 2016- ongoing

- UC Berkeley
  - Supervisors: Will Fithian (Department of Statistics) and Perry de Valpine (Department of Environmental Science, Policy and Management)
  - parametric, non-parametric, partial, and practical identifiability in species distribution models

**Research Fellow** Summers of 2013-2017

- Statistical Engineering Division, National Institute of Standards and Technology
  - Supervisor: Antonio Possolo, Ph.D
  - Measuring Optical Apertures for Solar Irradiance Monitoring (Circles of Best Fit, Uncertainty Quantification)
  - Homogenization of Surface Temperature Records (Time Series Analysis, Uncertainty Quantification)
  - Errors in Variables Modeling for Force Calibrations (Errors in Variables, Uncertainty Quantification)
  - Errors in Variables Modeling for Force Calibrations, Size Measurement of Nanoparticles, Implementations for Easy Use by Scientists (Shiny applications)
  - Interpolation of Atmospheric Greenhouse Gas Fluxes (Lattice Kriging), Evaluation of the accuracy, consistency, and stability of measurements of the Planck constant (meta-analysis), Gas Standard Reference Material Analysis (Shiny application)

**Collaborations in Ecology** Fall 2016-ongoing

- Fitting Models with Phylogenetic and Measurement Errors with Soorim Song
- Hierarchical Modeling of Chronic Wasting Disease in Canadian Deer with Dana Seidel

**DS421 Research Project** August 2016

- San Francisco Estuary Institute (SFEI)
  - Mentors: David Senn (SFEI), Erica Spotswood (SFEI), Perry de Valpine (UC Berkeley, ESPM), Marcus Beck (EPA)
  - building Generalized Additive Models for understanding the variability in chlorophyll over space and time
  - creating a dashboard to visually compare the components of Generalized Additive Models and Weighted Regression on Time, Discharge, and Season
  - https://github.com/sastoudt/DS421_summerProject/

**Smith College Research** 2013-2015

- Mathematics and Statistics Department, Smith College
  - Supervisors: Ben Baumer, Nicholas Horton, Nessy Tania, Katherine Halvorsen
  - Using Machine Learning to Predict March Madness (KNN, SVM, Neural Nets, Random Forests)
  - Honors Project: Geostatistical Models for the Spatial Variability of the Abundance of Uranium in Soils and Sediments of the Continental United States (Local Regression, Generalized Additive Models, Gaussian Processes/Kriging)
  - Traffic Generation Model for Telecom Applications (Empirical Copulae)