

GRAYSON W. WHITE

(360) 298-2892 • whitegra@msu.edu • graysonwhite.com

1616 Beal Ave, Lansing, Michigan, 48910

EDUCATION

Ph.D. Forestry, Michigan State University, East Lansing, MI. *Expected 2026*

M.S. Statistics, Michigan State University, East Lansing, MI. *Expected 2024*

B.A. Mathematics (concentration Statistics), Reed College, Portland, OR. *2021*

- Thesis: *A Hierarchical Bayesian Approach to Small Area Estimation of Forest Attributes*
- Thesis advisor: Dr. Kelly McConville

PUBLICATIONS

* Indicates an undergraduate student.

White G., Yamamoto J.*, Elsyad D.*, Schmitt J.*, Korsgaard N.*, Hu K., McConville K., Frescino T., and Gaines G. (2024+). *Small Area Estimation of Forest Biomass via a Two-Stage Zero-Inflation Estimator*. [Available on ArXiv](#).

Wieczorek J., White G., Cody Z.*, Tan E.*, Chistolini J.*, McConville K., Frescino T., and Moisen G. (2024+). *Assessing small area estimates via artificial populations from KBAABB: a kNN-based approximation to ABB*. [Available on ArXiv](#).

Emick E., Babcock C., White G., Hudak A., and Finley A. (2023). *An approach to estimating forest biomass while quantifying estimate uncertainty and correcting bias in machine learning maps*. Remote Sensing of Environment.

Frescino T., Moisen G., Patterson P., Toney C., and White G. (2023). *FIESTA: A Forest Inventory Estimation and Analysis R Package*. Ecography.

Frescino T., McConville K., White G., Toney C., and Moisen G. (2022). *Small Area Estimates for National Applications: A Database to Dashboard Strategy Using FIESTA*. Frontiers in Forests and Global Change.

White G., McConville K., Moisen G., and Frescino T. (2021). *Hierarchical Bayesian Small Area Estimation Using Weakly Informative Priors in Ecologically Homogeneous Areas of Interior Western Forests*. Frontiers in Forests and Global Change.

EXPERIENCE

Research Positions

Graduate Research Assistant, Michigan State University, East Lansing, MI. *August 2022 – Present*

- Graduate research assistant position in the Finley Lab, focusing on small area estimation of forest attributes, geospatial modeling, and forest inventory estimation.

Harvard Fellow, *Harvard University*, Cambridge, MA. Summer 2023

- Co-director of the Harvard Undergraduate Forestry Data Science Lab, Department of Statistics, Harvard University.

Undergraduate Researcher Mentor, *Harvard University*, Cambridge, MA. Summer 2022

- Mentor for undergraduate researchers in the Undergraduate Forestry Data Science Lab at Harvard University.

Data Scientist, *Redcastle Resources Inc. [USDA Forest Service]*, Ogden, UT. July 2021 – May 2022

- Full-time position contracting with the USDA Forest Service Forest Inventory and Analysis Program. Primary projects include development of the *FIESTA* R package, small area estimation research, model-assisted estimation research, and R *shiny* dashboard development.

Research Fellow, *Reed College Forestry Data Science Lab*, Portland, OR. Summer 2021

- Prepared and submitted manuscript titled *Hierarchical Bayesian Small Area Estimation Using Weakly Informative Priors in Ecologically Homogeneous Areas of the Interior Western Forests to Frontiers in Forests and Global Change*.

Research Fellow, *Data Science for the Public Good*, Oregon State University. Summer 2020

- Developed forecasting tools for cost analysis of water and wastewater facilities in Oregon small towns and cities using Bayesian methods.
- Provided city planners with data-driven solutions such as an interactive dashboard for planning long-term developments and investments.

Education Positions

Guest Lecturer & Lab Instructor, *Michigan State University*, East Lansing, MI. Spring 2023

- Gave lectures and instructed labs for *Forestry 128: Practical Computing & Data Science Tools*, and *Forestry 372: Ecological Monitoring and Data Analysis* at Michigan State University.

Data Science Educator, *RStudio PBC (now Posit PBC)*, Remote. January 2022 – June 2022

- Write instructional materials and develop content for R users including tutorials, code recipes, practice exercises, datasets, and large-scale data science projects.
- Lead and mentor groups of adult learners through data science projects as they complete apprenticeships with R.

Course Assistant, *Reed College*, Portland, OR. August 2020 – May 2021

- Courses: *Mathematics 241: Data Science*, *Mathematics 141: Intro to Probability and Statistics*.
- Held office hours, attended and contributed to lectures.

Course Tutor, *Reed College*, Portland, OR. January 2020 – May 2021

- Courses: *Mathematics 392: Mathematical Statistics*, *Mathematics 241: Data Science*, *Mathematics 141: Intro to Probability and Statistics*, *Economics 311: Survey of Econometric Methods*.
- Held both individual tutoring sessions and bi-weekly drop-in tutoring sessions.

PRESENTATIONS

Conferences, invited

Improving Forest Inventory Small Area Estimates Through Ecological Borrowing and Hierarchical Bayesian Methods, FIA Science Stakeholder Meeting 2022, Remote, November 2022.

Small Area Estimation in Forestry Inventory, discussant, SAE 2022: Small Area Estimation, Surveys and Data Science, University of Maryland, College Park, MD, May 2022.

Conferences, contributed

A spatial small area model for predicting average forest biomass using fine resolution geospatial data, Joint Statistical Meetings 2023, Toronto, Ontario, Canada, August 2023.

How Do We Assess the Performance of Our Small Area Estimators?, FIA Science Stakeholder Meeting 2022, Remote, November 2022.

Hierarchical Bayesian Small Area Estimation Using Weakly Informative Priors in the Interior Western United States, SAE 2022: Small Area Estimation, Surveys and Data Science, University of Maryland, College Park, MD, May 2022.

Other speaking arrangements

A Hierarchical Bayesian Approach to Small Area Estimation of Forest Attributes, Reed College undergraduate thesis orals defense, Reed College, Virtual. May 2021.

Hierarchical Bayesian Small Area Estimation of Forest Attributes, Reed College Mathematics Colloquium, Virtual. January 2021.

Bayesian Cost Modeling of Wastewater Facilities, Reed College Empirical Research Workshop Series, Virtual. August 2020.

Bayesian Cost Modeling of Wastewater Facilities, Oregon State University Data Science for the Public Good Symposium, Virtual. August 2020.

SCIENTIFIC SOFTWARE: R PACKAGES

White G., Wieczorek J., Frescino T., McConville K. 2024. [kbaabb](#): A kNN-based approximation to the approximate Bayesian bootstrap. Author, maintainer.

Yamamoto J., Elsyad D., **White G.**, Schmitt J., Korsgaard N., McConville K., Hu K. 2024. [saeczi](#): Small Area Estimation for Continuous Zero Inflated Data. Author.

Frescino T., Moisen G., Patterson P., Toney C., **White G.**, Yamamoto J. 2022. *FIESTA*: Forest Inventory Estimation and Analysis. Author, maintainer.

Frescino T., Toney C., **White G.**, Yamamoto J. 2022. *FIESTAutils*: Utility Functions for Forest Inventory Estimation and Analysis. Author, maintainer.

White G. 2020. *ggglm*: Grammar of Graphics for Linear Model Diagnostic Plots. Official *ggplot2* extension. Author, maintainer.

PROFESSIONAL SERVICE

Panelist, Research Panel for the National Partnership for Small Area Estimation

Panelist, Development Panel for the National Partnership for Small Area Estimation

TECHNICAL SKILLS

- R, GitHub & Git, markdown (advanced)
- Python, LaTeX, Unix shell (intermediate)
- Stata, GIS (basic)

PROFESSIONAL AFFILIATIONS

Member (since 2020), American Statistical Association

Member (since 2022), International Society for Bayesian Analysis

Invitational Member (since 2022), National Partnership for Small Area Estimation