

# GRAYSON W. WHITE

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## EDUCATION

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**Ph.D. Statistics and Forestry**, Michigan State University, East Lansing, MI. 2022 – Present

- [Dual major doctoral degree.](#)

**B.A. Mathematics with a Concentration in Statistics**, Reed College, Portland, OR. 2017 – 2021

- Thesis: *A Hierarchical Bayesian Approach to Small Area Estimation of Forest Attributes*

## PUBLICATIONS

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Wieczorek J., **White G.**, Cody Z., Tan E., Chistolini J., McConville K., Frescino T., and Moisen G. (In review). *Assessing small area estimates via artificial populations from KBAABB: a kNN-based approximation to ABB*. Journal of Survey Statistics and Methodology

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

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### Research Positions

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

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

**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.

**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**, *USDA Forest Service*, Ogden, UT.

*July 2021 – May 2022*

- Full-time position contracting with the U.S. 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*.
- Began development of an open-source R software package and *tidymodels* extension for flexible small area estimation, including development to include hierarchical Bayesian models.

**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

**Data Science Educator**, *RStudio 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

*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

*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

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Frescino T., Moisen G., Patterson P., Toney C., White G. 2022. [FIESTA](#): Forest Inventory Estimation and Analysis. Maintainer.

Frescino T., Toney C., White G. 2022. [FIESTAutils](#): Utility Functions for Forest Inventory Estimation and Analysis. Maintainer.

White G. 2020. [ggglm](#): Grammar of Graphics for Linear Model Diagnostic Plots. Official *ggplot2* extension. Maintainer.

White G., Mobley B. 2020. [trimetStops](#): Data Package for all of the TriMet Stops in the Portland Metro Area. Maintainer.

## TECHNICAL SKILLS

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

## PROFESSIONAL AFFILIATIONS

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*Member* (since 2020), American Statistical Association

*Member* (since 2022), International Society for Bayesian Analysis