Laura J Wendelberger

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EDUCATION

PhD, Statistics, North Carolina State University, 2022
MS, Statistics, North Carolina State University, 2019
BS, Mathematics, University of Notre Dame, 2017
BS, Mechanical Engineering, University of Notre Dame, 2017

RESEARCH INTERESTS

Remote sensing
Online land cover change monitoring; Spatiotemporal analysis; Computer vision; Weakly supervised object detection

Physics-based models
Calibration; Uncertainty attribution; Nonlinear mixed effects; Bayesian methods; Metal strength

POSITIONS

Lawrence Livermore National Laboratory
Postdoctoral Researcher, Applied Statistics Group, 2022-present

North Carolina State University
Visitor, Department of Statistics, 2022-present
Graduate Research Assistant, Department of Forestry, 2021-2022
Graduate Research Fellow, SEAS NRT, 2018-2020
Graduate Research Assistant, Department of Statistics, 2017-2018, 2020

Los Alamos National Laboratory
Graduate Research Assistant, Applied Computer Science Group, 2017

National Security Technologies
Associate Engineer, 2014-2017 (seasonally)

AWARDS

NCSU Center for Geospatial Analytics Interdisciplinary Advancement Award, 2022
NCSU Center for Geospatial Analytics Collaboration and Innovation Award, 2022
JSM SPES/Q&P student paper competition, 2021
SEAS NRT Fellowship, 2018
J. Robert Oppenheimer Scholarship in memory of Mary and Harold Argo, Spring 2013

PUBLICATIONS

Peer Reviewed Publications

Wendelberger LJ, Gray JM, Wilson AG, Houborg R, and Reich BJ. "Multiresolution Broad Area Search: Monitoring Spatial Characteristics of Gapless Remote Sensing Data." *Journal of Data Science*, 2022. 1-21. 10.6339/22-JDS1072.

Singh SP, Paterson AR, **Wendelberger LJ**, Fancher CM, Reich BJ, Smith RC, Wilson AG, and Jones JL. "Algorithms in Diffraction Profile Analysis." Handbook on Big Data and Machine Learning in the Physical Sciences. World Scientific Publishers. May 2020, 501-539.

Lindsay AE, Quaife B. and **Wendelberger LJ**. "A boundary element method for computing the vibrational modes of elastic plates with localized punctures." Advances in Computational Mathematics, 2018.

Working Papers

Wendelberger LJ, Gray JM, Reich BJ, and Wilson AG, "Monitoring Deforestation Using Multivariate Bayesian Online Changepoint Detection with Outliers." In preparation, arXiv:2112.12899 [stat.ME], 2021.

Wendelberger LJ, Reich BJ, and Wilson AG. "Multi-Model Penalized Regression." In preparation, arXiv:2006:09157 [stat.ME], 2021.

CONFERENCE PRESENTATIONS

Wendelberger LJ (Presenter), Schill, WJ, Nelms MD, Barton NR, and Schmidt KL, "Calibration of a Slip-Twinning Model for Beryllium Strength." Conference on Data Analysis, Santa Fe, NM, March 2023. (poster)

Wendelberger LJ (Presenter), Reich BJ, Wilson AG, and Gray JM, "Geospatial Monitoring of Remote Sensing Data." Women in Statistics and Data Science, St. Louis, MO, October 2022. (presentation)

Wendelberger LJ (Presenter), Reich BJ, Wilson AG, and Gray JM, "Detecting Deforestation Using Robust Online Bayesian Monitoring." Joint Statistical Meetings, Washington DC, August 2022. (presentation)

Wendelberger LJ (Presenter), Gray JM, Reich BJ, and Wilson AG, "Monitoring Change with Heterogeneous Satellites." Fall Meeting of the American Geophysical Union, New Orleans, Louisiana, December 2021. (poster)

Wendelberger LJ (Presenter), Reich BJ, and Wilson AG, "Multi-Model Penalized Regression." Joint Statistical Meetings, virtual, August 8-12, 2021. (presentation)

Wendelberger LJ (Presenter), Reich BJ, Wilson AG, "Multi-Model Penalized Regression for Feature Selection." Conference on Data Analysis (CoDA), Santa Fe, New Mexico, February 2020. (poster)

Wendelberger LJ (Presenter), Singh SP, Wilson AG, and Reich BJ, "A Bayesian Algorithm for Diffraction Profile Fusion." National Nuclear Security Administration's Office of Defense Nuclear Nonproliferation Research and Development University Program Review (DNN R&D UPR), Ann Arbor, Michigan, May 2018. (poster)

Singh SP (Presenter), Paterson AR, **Wendelberger LJ (Presenter)**, Fancher CM, Reich BJ, Smith RC, Wilson AG, and Jones JL. "Bayesian algorithms in diffraction profile analysis." CNEC Annual Workshop and Advisory Board Meeting, Raleigh, North Carolina, Feb 2018. (poster)

MENTORSHIP

Independent Research Mentor to Kavin Sankar, 11th Grade at Enloe High School, Raleigh, NC, 2021-2022

PROFESSIONAL SERVICE

Invited Talk
Accenture Federal Services Computer Vision: COI Seminar Series, June 2022.

Panel
WSDS Growing Statistical Careers, October 2022.

Corresponding Secretary Tau Beta Pi Engineering Honor Society
University of Notre Dame, 2016-2017

Member of
American Statistical Association, 2017-present
American Geophysical Union, 2021-present
Tau Beta Pi Engineering Honor Society, 2015-present
Pi Tau Sigma Mechanical Engineering Honor Society, 2016-present