

# Laura J Wendelberger

---

wendelberger1@llnl.gov

- 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**  
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 Change-point 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.

## PRESENTATIONS

Nelms MD (Presenter), Schill WJ, **Wendelberger LJ**, Barton NR, and Schmidt KL, “Uncertainty quantification of material parameters in modeling coupled metal and high explosive experiments.” 23rd Biennial Conference of the APS Topical Group on Shock Compression of Condensed Matter, Chicago, IL, June 2023. (presentation)

**Wendelberger LJ (Presenter)**, Schill WJ, Nelms MD, Barton NR, and Schmidt KL, “Mixed Effects Calibration for Beryllium Strength.” Lawrence Livermore National Laboratory Postdoc Poster Symposium, Livermore, CA, May 2023. (poster)

**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)

## SHORT COURSE

Change Detection, Data Science Summer Institute, Lawrence Livermore National Laboratory, June 2023.

## MENTORSHIP

Engineering Summer Student Advisor Program, Lawrence Livermore National Laboratory, 2023.

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