laneenriqueschultz@gmail.com
lsschultz@wisc.edu
(806) 678-6904

LinkedIn: lane-schultz-983920236
Website: leschultz.github.io
GitHub: leschultz

Lane E. Schultz, Ph.D.
Curriculum Vitae

EDUCATION

Ph.D. Materials Science and Engineering, *University of Wisconsin-Madison* (GPA: 3.70/4.0) Aug 2024
M.S. Materials Science and Engineering, *University of Wisconsin-Madison* (GPA: 3.70/4.0) Dec 2020
B.S. Engineering, *Fort Lewis College* (GPA: 3.99/4.0) Dec 2017

TECHNICAL EXPERIENCE

Research Assistant **Jun 2018 — Aug 2024**
Computational Materials Group, UW-Madison . . . . Madison, WI
Summer Undergraduate Research Experience **May 2017 — Aug 2017**
Computational Nuclear Engineering Research Group, UW-Madison . . . . Madison, WI
Summer Undergraduate Research Fellowship **May 2016 — Aug 2016**
Advanced Diagnostics and Propulsion Research Laboratory, Purdue . . . . West Lafayette, IN

JOURNAL PUBLICATIONS

- Lane E. Schultz, Yiqi Wang, Ryan Jacobs, and Dane Morgan. "A General Approach for Determining Applicability Domain of Machine Learning Models". In: *npj Computational Materials* (2025). DOI: 10.1038/s41524-025-01573-x

- Lane E. Schultz, Benjamin Afflerbach, Paul M. Voyles, and Dane Morgan. "Machine learning metallic glass critical cooling rates through elemental and molecular simulation based featurization". In: *Journal of Materiomics* (2024). DOI: 10.1016/j.jmat.2024.100964

- Lane E. Schultz, Benjamin Afflerbach, Izabela Szlufarska, and Dane Morgan. "Molecular dynamic characteristic temperatures for predicting metallic glass forming ability". In: *Computational Materials Science* (2022). DOI: 10.1016/j.commatsci.2021.110877

- Lane E. Schultz, Benjamin Afflerbach, Carter Francis, Paul M. Voyles, Izabela Szlufarska, and Dane Morgan. "Exploration of characteristic temperature contributions to metallic glass forming ability". In: *Computational Materials Science* (2021). DOI: 10.1016/j.commatsci.2021.110494

- Jun Meng, Md Sariful Sheikh, Lane E. Schultz, William O. Nachlas, Jian Liu, Maciej P. Polak, Ryan Jacobs, and Dane Morgan. "Ultrafast Oxygen Conduction in Sillén Oxychlorides". In: *Chemistry of Materials* (2025). DOI: doi.org/10.1021/acs.chemmater.4c03163

- Vidit Agrawal, Shixin Zhang, Lane E. Schultz, and Dane Morgan. "Accelerating ensemble uncertainty estimates in supervised materials property regression models". In: *Computational Materials Science* (2025). DOI: 10.1016/j.commatsci.2024.113494

- Ryan Jacobs, Lane E Schultz, Aristana Scourtas, KJ Schmidt, Owen Price-Skelly, Will Engler, Ian Foster, Ben Blaiszik, Paul M Voyles, and Dane Morgan. "Machine learning materials properties with accurate predictions, uncertainty estimates, domain guidance, and persistent online accessibility". In: *Machine Learning: Science and Technology* (2024). DOI: 10.1088/2632-2153/ad95db

- Kj Schmidt, Aristana Scourtas, Logan Ward, Steve Wangen, Marcus Schwarting, Isaac Darling, Ethan Truelove, Aadit Ambadkar, Ribhav Bose, Zoa Katok, Jingrui Wei, Xiangguo Li, Ryan Jacobs, Lane Schultz, Doyeon Kim, Michael Ferris, Paul M. Voyles, Dane Morgan, Ian Foster, and Ben Blaiszik. "Foundry-ML - Software and Services to Simplify Access to Machine Learning Datasets in Materials Science". In: *Journal of Open Source Software* (2024). DOI: 10.21105/joss.05467

- Benjamin T. Afflerbach, Carter Francis, Lane E. Schultz, Janine Spethson, Vanessa Meschke, Elliot Strand, Logan Ward, John H. Perepezko, Dan Thoma, Paul M. Voyles, Izabela Szlufarska, and

Dane Morgan. "Machine Learning Prediction of the Critical Cooling Rate for Metallic Glasses from Expanded Datasets and Elemental Features". In: *Chemistry of Materials* (2022). DOI: 10.1021/acs.chemmater.1c03542

- Benjamin T. Afflerbach, Lane Schultz, John H. Perepezko, Paul M. Voyles, Izabela Szlufarska, and Dane Morgan. "Molecular simulation-derived features for machine learning predictions of metal glass forming ability". In: *Computational Materials Science* (2021). DOI: 10.1016/j.commatsci.2021.110728

- J. Xi, G. Bokas, L.E. Schultz, M. Gao, L. Zhao, Y. Shen, J.H. Perepezko, D. Morgan, and I. Szlufarska. "Microalloying effect in ternary Al-Sm-X (X=Ag, Au, Cu) metallic glasses studied by ab initio molecular dynamics". In: *Computational Materials Science* (2020). DOI: 10.1016/j.commatsci.2020.109958

- B.R. Halls, J.R. Gord, L.E. Schultz, W.C. Slowman, M.D.A. Lightfoot, S. Roy, and T.R. Meyer. "Quantitative 10-50 kHz X-ray radiography of liquid spray distributions using a rotating-anode tube source". In: *International Journal of Multiphase Flow* (2018). DOI: 10.1016/j.ijmultiphaseflow.2018.07.014

Submitted for Publication

- Shuoyuan Huang, Ajay Annamareddy, Carter Francis, Lane E. Schultz, Jittisa Ketkaew, M. D. Ediger, Lian Yu, Jan Schroers, Dane Morgan, and Paul M. Voyles1. "Composition-Resolved Dynamics in Metallic Supercooled Liquids from Momentum-Resolved Electron Correlation Microscopy". In: *Nature Materials* (2024)

- Ryan Jacobs, Maciej P. Polak, Lane E. Schultz, Hamed Mahdavi, Vasant Honavar, and Dane Morgan. "Regression with Large Language Models for Materials and Molecular Property Prediction". In: *Digital Discovery* (2024). DOI: 10.48550/arXiv.2409.06080

Presentations

- Lane Schultz, Benjamin T. Afflerbach, and Dane Morgan. "Molecular Dynamic Characteristic Temperatures for Predicting Metallic Glass Forming Ability". In: Materials Science & Technology. Columbus, OH, 2021

- Lane Schultz, Benjamin T. Afflerbach, and Dane Morgan. "Molecular Dynamics Features for Predicting Metallic Glass Critical Casting Thickness". In: Virtual Materials Research Society Spring/Fall Meeting & Exhibit. 2020

- Lane E. Schultz, Thomas J. Cogger, Ryan Good, James Schneider, Robert Rothschild, and William Nollet. "Design of Torsional Test Stand for Micro-Newton Force Detection". In: 2018 Aerodynamic Measurement Technology and Ground Testing Conference. 2018. DOI: 10.2514/6.2018-3737

- James Schneider, Lane E. Schultz, Sophie Mancha, Eric Hicks, and Ryan N. Smith. "Development of a portable water quality sensor for river monitoring from small rafts". In: OCEANS 2016 MTS/IEEE Monterey. 2016. DOI: 10.1109/OCEANS.2016.7761392

Teaching Experience

- Assisting undergraduates with research	Undergraduate
- Assisting laboratory group peers with software installation and cluster use	Graduate
- Assisted in class labs (molecular dynamics)	Graduate
- Grader for Thermodynamics of Solids	Graduate
- Public school substitute teacher	High/Middle/Elementary
- Teaching assistant for Thermal and Fluid Systems Laboratory	Undergraduate
- Teaching assistant for Engineering Fundamentals II (MATLAB)	Undergraduate