WILLIAM BARBOUR

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EDUCATION

Vanderbilt University, Nashville, TN (VU) *January 2018 - May 2020*
Doctor of Philosophy GPA: 4.0
Civil and Environmental Engineering

University of Illinois at Urbana-Champaign (UIUC) *June 2015 - December 2017*
Master of Science, Civil and Environmental Engineering GPA: 3.66

University of Tennessee, Knxoville (UTK) *August 2011 - May 2015*
Bachelor of Science, Biosystems Engineering GPA: 3.98

RESEARCH INTERESTS

- **Emerging technology in transportation:** Applying and understanding connectivity, automation, and data to improve efficiency, sustainability, and accessibility of transportation systems. This interest spans transportation modes to include rail freight transportation, shared micromobility, pedestrians and cyclists, and connected and automated vehicles.
- **Cyberphysical systems:** Bringing together computational tools, sensors, and the built environment to unlock new possibilities in our cities and infrastructure.
- **Societal applications of data science:** Designing new methods and using data in new ways to understand how people make decisions and how we can improve quality of life.

SELECTED HONORS

Top Doctoral Fellow, Dwight D. Eisenhower Transportation Fellowship *2020*

Dwight D. Eisenhower Transportation Fellowship,
United States Department of Transportation *2017, 2018, 2019, 2020*

Eno Leadership Development Fellow, Eno Center for Transportation *2018*

Tennessee Sustainable Transportation Award, Tennessee Department of Transportation *2018*

Student of the Year Award, Roadway Safety Institute *2016*

Invited Participant at ThinkChicago: Chicago Ideas Week *2016*

WORK EXPERIENCE

Institute for Software Integrated Systems, Vanderbilt University Apr 2020 - Present
Research Scientist

· Manage and work on a variety projects in the domain of transportation systems; these include freight railroad operation, urban mobility, and highway traffic control using autonomous vehicles.

Vanderbilt Center for Transportation and Operational Resilience Jan 2018 - Mar 2020
Graduate Research Assistant

CSX Transportation Summer 2016
Network Modeling and Analytics Intern

University of Illinois at Urbana-Champaign Jun 2015 - Dec 2017
Graduate Research Assistant

Oak Ridge National Laboratory Summer 2014
Utilities Engineering Intern

SELECTED PUBLICATIONS

Journal articles

- **W. Barbour**, S. Kuppa, D. B. Work. "Optimization-based evaluation of empirical dispatching results of freight trains." *Transportation Research Part B: Methodological*, 2020 (submission pending).
- **W. Barbour**, M. Wilbur, R. Sandoval, C. Van Geffen, B. Hall, A. Dubey, and D. Work. "Data driven methods for effective micromobility parking." *Transportation Research Part A: Policy and Practice*, 2020 (submission pending).
- D. Goudemans, **W. Barbour**, Z. Wang, C. T. Dick, D. B. Work. "Multi-label machine learning classification of simultaneous mechanical faults in electric motors." *Journal of Rail and Rapid Transit* 2020 (under review).
- C. Janssen, **W. Barbour**, E. Hafkenschiel, M. Abkowitz, C. Philip, D. B. Work. "A City-to-City and Temporal Assessment of Peer City Scooter Policy." *Transportation Research Record*, 2020 (in press).
- **W. Barbour**, S. Kuppa, D. B. Work. "Enhanced data reconciliation of freight rail dispatch data." *Journal of Rail Transport Planning & Management*, 2020.
- G. Gunter, C. Janssen, **W. Barbour**, R. E. Stern, and D. B. Work. "Model based string stability of adaptive cruise control systems using field data." *IEEE Transactions on Intelligent Vehicles*, 2019.
- **W. Barbour**, J. C. Martinez Mori, S. Kuppa, and D. B. Work. "Estimating Arrival Times for US Freight Rail Traffic." *Transportation Research Part C: Emerging Technologies*, 2018.
- **W. Barbour** and P. Ayers. "Multi-Pass Rut Volume and Applied Power Study." *Pursuit Journal of Undergraduate Research*, Volume 5: Issue 1, Article 5, 2014.

RECENT TEACHING EXPERIENCE

Undergraduate student mentorship

- Mentored ten undergraduate students in the last five years who have contributed on nine distinct projects, five conference publications, and four journal articles.

School for Science and Math at Vanderbilt (SSMV) Nov 2019 - present
Project Mentor

Vanderbilt Summer Academy (VSA), Peabody College Jan 2019 - Aug 2019
Course Designer and Instructor, "Sensors and Big Data Analysis"

Weekend Academy at Vanderbilt (WAVU), Peabody College Oct 2019
Course Designer and Instructor, "Sensors and Big Data Analysis"

CE 5890: Sustainable Infrastructure Systems Fall 2018
Graduate Teaching Assistant

UNHO 102: Humanity and the Environment (UTK) Spring 2013
Instructor