

Education

- Ph.D. in Applied Mathematics, University of Washington, Seattle, WA, August 2018
Thesis: “Adjoint-Guided Adaptive Mesh Refinement for Hyperbolic Systems of Equations”
- M.S. in Applied Mathematics, University of Washington, Seattle, WA, March 2015
- B.S. in Mathematics, Whitworth University, Spokane, WA, May 2012
- B.S. in Computer Science, Whitworth University, Spokane, WA, May 2012
- B.A. in Physics, Whitworth University, Spokane, WA, May 2012

Professional Experience

- Adjunct Professor, School Of Engineering & Engineering Technology, LeTourneau University, Longview, TX, August 2022-Present
- Adjunct Professor, Mathematics Department, LeTourneau University, Longview, TX, January 2019-Present
- Guest Lecturer, School of Nursing, LeTourneau University, Longview, TX, January 2019-Present
- Software Tester Logos Bible Software, Bellingham, WA, August 2012-May 2013
- Undergraduate Researcher, Washington State University, May-July 2011
- Undergraduate Researcher, Princeton Plasma Physics Laboratory, May-July 2010

Teaching Experience

- Instructor, LeTourneau University, Longview, TX:
 - ENGR 6223: Advanced Engineering Mathematics Fall 2026
 - MATH 1903: Calculus I Fall 2026
 - MATH 1252: Trigonometry Fall 2026
 - MATH 1303: Precalculus Summer 2026
 - ENGR 6973: Applied Computational Methods Spring 2026
 - MATH 2013: Calculus II Spring 2026
 - MATH 1903: Calculus I Spring 2026
 - ENGR 6223: Advanced Engineering Mathematics Fall 2025
 - MATH 1903: Calculus I Fall 2025
 - MATH 1252: Trigonometry Fall 2025

- MATH 2013: Calculus II Spring 2025
- MATH 1903: Calculus I Spring 2025
- MATH 1903: Calculus I Fall 2024
- ENGR 6223: Advanced Engineering Mathematics Fall 2024
- MATH 2013: Calculus II Spring 2024
- MATH 1203: College Algebra with Applications Spring 2024
- ENGR 6223: Advanced Engineering Mathematics Fall 2023
- MATH 1252: Trigonometry Fall 2023
- MATH 1203: College Algebra with Applications Fall 2023
- MATH 2013: Calculus II Spring 2023
- MATH 1303: Precalculus Spring 2023
- ENGR 6223: Advanced Engineering Mathematics Fall 2022
- MATH 1303: Precalculus Fall 2022
- MATH 1252: Trigonometry Fall 2022
- MATH 1303: Precalculus Summer 2022
- MATH 2013: Calculus II Spring 2022
- MATH 1303: Precalculus Spring 2022
- MATH 1252: Trigonometry Spring 2022
- MATH 1252: Trigonometry Fall 2021
- MATH 2013: Calculus II Spring 2021
- MATH 1252: Trigonometry Spring 2021
- MATH 1203: College Algebra with Applications Fall 2020
- MATH 1252: Trigonometry Fall 2020
- MATH 1303: Precalculus Spring 2020
- MATH 1252: Trigonometry Spring 2020
- MATH 1423: Elementary Statistics Fall 2019
- MATH 1252: Trigonometry Fall 2019
- MATH 1423: Elementary Statistics Spring 2019
- MATH 1303: Precalculus Spring 2019
- Guest Lecturer, LeTourneau University, Longview, TX:
 - NURS 3153: Transition to Clinical Nursing Spring 2026
 - NURS 3153: Transition to Clinical Nursing Spring 2025
 - NURS 3153: Transition to Clinical Nursing Spring 2024
 - NURS 3153: Transition to Clinical Nursing Summer 2023
 - NURS 3153: Transition to Clinical Nursing Spring 2023

- NURS 3153: Transition to Clinical Nursing Spring 2019
- Instructor, University of Washington, Seattle, WA:
 - AMATH 351: Intro. to Differential Equations and Applications Winter 2017
 - AMATH 351: Intro. to Differential Equations and Applications Summer 2016
 - AMATH 352: Applied Linear Algebra and Numerical Analysis Summer 2015
- Teaching Assistant, University of Washington, Seattle, WA:
 - PHYS 123: Waves Fall 2017
 - PHYS 114: General Physics Fall 2017
 - PHYS 119: General Physics Laboratory Fall 2017
 - AMATH 301: Beginning Scientific Computing Summer 2013
- Teaching Assistant, Whitworth University, Spokane, WA:
 - PS 151L: General Physics I Lab Fall 2009
 - TH 317: Cross Cultural Ministry Fall 2009
 - PS 152L: General Physics II Lab Spring 2010
 - PS 151L: General Physics I Lab Fall 2010
 - PS 151L: General Physics I Lab Fall 2011
 - PS 152L: General Physics II Lab Spring 2012
- Grader, University of Washington, Seattle, WA:
 - PHYS 114: General Physics Fall 2017
- Grader, Whitworth University, Spokane, WA:
 - MA 150: Pre-Calculus Fall 2010
 - MA 172: Calculus II Spring 2011
 - MA 273: Calculus III Fall 2011
 - CS 401: Computer Architecture Spring 2012
 - MA 172: Calculus II Spring 2012
- Other Teaching Experience:
 - Mathematics Tutor Local High School students Spring 2012
 - Mathematics Tutor Whitworth University Spring 2012
 - Mathematics Tutor Local High School students Fall 2011
 - Mathematics Tutor Whitworth University Fall 2011
 - Mathematics Tutor Local High School students Spring 2011
 - Mathematics Tutor Local High School students Fall 2010
 - Mathematics Tutor Local High School students Spring 2010

– Spanish Live Lab Leader	Whitworth University	Fall 2009
– Mathematics Tutor	Local High School students	Fall 2009
– Mathematics Tutor	Local High School students	Spring 2009
– Mathematics Tutor	Local High School students	Fall 2008
– Elementary School Instructor	Istanbul, Turkey	Spring 2008
– Elementary School Instructor	Istanbul, Turkey	Fall 2007

Professional Activities and Service

- Teaching Workshop, LeTourneau University, Longview, TX, January 2024
- Nontraditional Adjunct Faculty Workshop, LeTourneau University, Longview, TX, August 2023
- Dual Credit Conference, LeTourneau University, Longview, TX, July 2021
- Dual Credit Conference, LeTourneau University, Longview, TX, July 2019
- Spokane Intercollegiate Research Conference Planning Committee Member
Whitworth University, Spokane, WA, April 2010-April 2011
- Faculty Search Committee Member, Whitworth University, August-December 2009

Software Development Experience

- Conservation Law Package (Clawpack) Adjoint Method Development, September 2013-May 2018
- GeoClaw Developers' Workshop, Boulder, CO, May 2018
- Developers' Workshop and Hackathon, Seattle, Washington, August 2016
- Clawpack Developers' Workshop, Salt Lake City, Utah, March 2015
- Clawpack Developers' Workshop and Hackathon, Seattle, WA, July 2013
- Software Development Intern, Logos Bible Software, Bellingham, WA, May-August 2012

Publications

- B. N. Davis and R. J. LeVeque, *Analysis and Performance Evaluation of Adjoint-Guided Adaptive Mesh Refinement for Linear Hyperbolic PDEs Using Clawpack*, ACM Trans. Math. Softw. 46, 3, Article 26 (September 2020), 28 pages. <https://doi.org/10.1145/3392775>
- B. N. Davis and R. J. LeVeque, *Adjoint Methods for Guiding Adaptive Mesh Refinement in Tsunami Modeling*, Pure and Applied Geophysics, 173 (2016), pp. 4055-4074, doi:10.1007/s00024-016-1412-y
- J. C. Borrero, R. J. LeVeque, D. Greer, S. O'Neill, and B. N. Davis, *Observations and modelling of tsunami currents at the Port of Tauranga, New Zealand*, Proceedings of Australasian Coasts and Ports Conference 2015, Auckland, New Zealand, 2015, pp. 90-95.

Presentations

- *Targeted Adaptive Mesh Refinement for Tsunami Modeling Using Adjoint Equations* (Poster), CSDMS 2018, Boulder, CO, May 2018
- *Adjoint Methods for Selective Refinement of Tsunami Propagation* (Oral Presentation), AOS-Fall 2017 Workshop, Seattle, WA, November 2017
- *Adjoint Error Estimation for Tsunami Modeling* (Oral Presentation), SIAM Annual Meeting (AN16), Boston, Massachusetts, July 2016
- *Adjoint Methods for Guiding Adaptive Mesh Refinement in Wave Propagation Problems* (Poster), SIAM Conference on Computational Science and Engineering (CSE15), Salt Lake City, Utah, March 2015
- *Tsunami Prediction Using Adjoint Methods* (Oral Presentation), Scholars' Studio: Prediction Research at the Commons, University of Washington, Seattle, WA, May 2014
- *Low Voltage Operational Amplifier Design for Energy Harvesting Applications* (Poster), Research Experience for Undergraduates Poster Session, Pullman, Washington, July 2011
- *Interactive Plasma Physics Education Using Data from Fusion Experiments* (Poster), American Physical Society Division of Plasma Physics Conference, Chicago, Illinois, November 2010
- *Interactive Plasma Physics Education Using Data from Fusion Experiments* (Poster), Research Experience for Undergraduates Poster Session, Princeton Plasma Physics Laboratory, Princeton, NJ, July 2010

Scholarships and Awards

- Boeing Award for Excellence in Teaching, University of Washington, 2017
- National Science Foundation Graduate Research Fellowship, National Science Foundation, 2013
- Presidential Fellowship and Dissertation Award, University of Washington, 2013
- Graduated Summa Cum Laude, Whitworth University, 2012
- 2012 Outstanding Mathematics Major Award, Whitworth University, 2012
- Student Academic Achievement Award, Women of Color Magazine, 2011
- Physics Departmental Scholarship, Whitworth University, 2011
- Mathematics Departmental Scholarship, Whitworth University, 2011
- Enhance Talent in Math and Computer Science Scholarship, Whitworth University, 2010
- Glen Erickson Scholarship, 2010
- Physics Departmental Scholarship, Whitworth University, 2009
- Mathematics Departmental Scholarship, Whitworth University, 2009

- Heart and Mind Scholarship, Whitworth University, 2008-2012
- Laureate Society Member, Whitworth University
 - Honors upon entry
 - On the Dean's List each following semester
- National Hispanic Scholar, College Board National Hispanic Recognition Program, 2006-07