

Faculty Vitae – Timothy A. Doughty

1. Name: Timothy A. Doughty
2. Education
 - Ph.D., Mechanical Engineering, Purdue University, 2002
 - M.S., Mechanical Engineering, Washington State University, 1993
 - B.S., Mechanical Engineering, Washington State University, 1991
3. Academic experience
 - University of Portland Vassallo Professor of Engineering, ME Chair (2019-2024), 2006-Present, Full Time
 - Smith College, Visiting Assistant Professor of Mechanical Engineering, 2003-2006, Full Time
 - Purdue University, Visiting Assistant Professor, 2002-2003, Full Time
4. Non-academic experience
 - Acumed, Technical Consultant, 2016, 2019, Part Time
 - Lawrence Livermore National Laboratory, Faculty Scholar, 2009-2011, Full Time, Summers
5. Certifications or professional registrations
 - N/A
6. Current membership in professional organizations
 - ASME Technical Committee for Model Identification and Intelligent Systems
 - ASME Vibrations Technical Committee
 - American Society of Mechanical Engineers
 - Society for Experimental Mechanics
 - American Society for Engineering Education
7. Honors and awards
 - Br. Godfrey Vassallo Endowed Professor of Engineering 2022-Present
 - Richard and Diane VanGrunsvan Endowed Professor of Engineering 2016-2018
 - Selected to SEQUOIA Leadership Training, 2014/2015
 - Butine Faculty Development Fund, Spring 2015
 - Dundon-Berchtold Fellow of Ethics, 2014
 - “The Difference” Award, University of Portland, 2011
 - Chosen to give “Last Lecture” to graduating senior class, University of Portland, 2010
8. Service activities
 - KEEN Lead for the University of Portland, 2016-Present
 - KEEN Rising Star Committee, 2025-Present
 - Committee on Rank and Tenure, 2025 – Present
 - Advisory Board Member, Dundon-Berchtold Institute for Moral Formation & Applied Ethics, 8/31/2021 - 5/31/2025
 - Shiley School of Engineering Representative on Innovation Committee, 2015-2017
 - Co-Director of Innovation Minor (Dean’s Council approval), 2017-2024
 - Member of Ad Hoc Committee reviewing Title IX Policy at UP, 2016-2017
 - ASME Dynamic Systems and Control Conference Editorial Board: two-year term

9. List publications and presentations – title, co-authors if any, where published and/or presented, date of publication or presentation
- Doughty, T, Rodriguez, N., Imdieke, C., Olander, R., (2026, June), “Hand Tremor Mitigation with Nonlinear Wearable Device,” *SEM Annual Conference and Exposition on Experimental and Applied Mechanics*, Norfolk, VA, June 2026 (Abstract accepted)
 - Student Researchers: Carsen Imdieke, Nikaela Rodriguez, Ryan Olander
 - Doughty, T., Gent, O, and Sokol, A., "Nonlinear Hand Tremor Suppression for Parkinson's Disease," *ASME International Mechanical Engineering and Congress Exposition*, November 2025.
 - Student Researchers: Owen Gent, Adin Sokol
 - Doughty, T., Shannon, C., and Neighbors, J., "The Effects of Nonlinear Modelling on Hand Tremor Mitigation Device Design," Conference Proceedings *ASME International Mechanical Engineering and Congress Exposition*, 2025.
 - Student Researchers: Connor Shannon, JP Neighbors
 - Neighbors, J., Shannon, C., and Doughty, T, "Wearable Device for Hand Tremor Mitigation," *Dynamic Behavior of Materials, Volume 1: Proceedings of the 2024 Annual Conference on Experimental and Applied Mechanics*, June 2024
 - Student Researchers: Connor Shannon, JP Neighbors
 - Gerards, Z.B., Stucki, J.G., Doughty, T.A. (2024). “Parkinsonian Hand Tremor Mitigation with Enhanced Wearable Device.” *Challenges in Mechanics of Biological Systems and Materials, Thermomechanics and Infrared Imaging, Time Dependent Materials and Residual Stress, Volume 2. SEM 2023. Conference Proceedings of the Society for Experimental Mechanics Series.* Springer, Cham.
 - Student Researchers: Zach Gerards, Gus Stucki
 - Dillon HE, Grzybowski DM, Hutson B, Morin M, Ralston N, Rust MJ, Sathy V, Tribelhorn B, Doughty TA. (2023) ”Work-In-Progress: Gap Analysis for Assessment of Entrepreneurial Mindset in Engineering.” American Society for Engineering Education Annual Conference. Baltimore, MD.
 - Doughty, T, Stucki, G., and Gerrards, Z., “Parkinsonian Hand Tremor Mitigation with Enhanced Wearable Device,” *SEM Annual Conference and Exposition on Experimental and Applied Mechanics*, Orlando, FL, June 2023
 - Student Researchers: Zach Gerards, Gus Stucki
 - Doughty, T., Winston, S., Dehmer, R., Horen, “Wearable Device for Tremor Suppression,” *J., Society of Experimental Mechanics*, 2021
 - Student Researchers: Riley Dehmer, Sam Winston, Joseph Horen
 - Doughty, T., Winston, S., and Dehmer, R., “Parkinsons Disease: Tremor Suppression with Wearable Device,” *ASME International Mechanical Engineering and Congress Exposition*, 2021.
 - Student Researchers: Riley Dehmer, Sam Winston, Joseph Horen
 - LeBar K, Prentice K, Doughty TA, “Design of Purely Mechanical Device to Aid in the Suppression of Parkinsonian Hand Tremors,” *Mechanics of Biological Systems and Materials & Micro-and Nanomechanics & Research Applications*, 2020
 - Student Researchers: Kristen LeBar, Nadine Prentice
 - Lebar, K, Prentice, N, and Doughty, TA “Design of Purely Mechanical Device to Aid in the Suppression of Parkinsonian Hand Tremors,” *Annual Conference and Exposition on Experimental and Applied Mechanics*, Orlando, FL June 2020.
 - Student Researchers: Kristen LeBar, Nadine Prentice
 - Doughty TA, Dillon HE, Lulay KE, Hensler ZY, “Design and Implementation of an Aspirational Ethics Laboratory Course,” *Proceedings of the American Society for Engineering Education Annual Conference*, Columbus, OH, 2017

- “Monitoring the Health of a Cantilever Beam Using Nonlinear Modal Tracking,” Doughty TA, Johnston JR, Blaser AK, *Proceedings of the International Modal Analysis Conference (IMAC) and Exposition on Structural Dynamics*, Garden Grove, CA, 2017
 - Student Researchers: Kristen LeBar, Nadine Prentice
- Doughty, T.A., Cassidy, L.J., Danforth, S.M. “Implementing Noise, Multi-Frequency Stimulus, and Realtime Analysis to Nonlinear Model Tracking,” *Fracture, Fatigue, Failure and Damage Evolution, Volume 8. Conference Proceedings of the Society for Experimental Mechanics Series*, 2017
 - Student Researchers: Shannon Danforth, L Cassidy
- “Building Inclusive Undergraduate Project Teams,” Barr RD, Pfeiffer CG, Dillon HE, Doughty TA, *American Society of Mechanical Engineers International Mechanical Engineering Conference*, Phoenix, AZ, 2016
 - Student Researchers: Ryan Barr, CG Pfeiffer
- Dillon HE, Schmedake NJ, Eifler KE, Doughty TA, and Lulay KE. (2016) Design of a Curriculum- Spanning Mechanical Engineering Laboratory Experiment. *American Society for Engineering Education Annual Conference*. New Orleans, LA.
 - Student Researcher: Nathan Schmedake
- Doughty, T. A., Pendowski, N., and Belle-Isle, A., “Experimental Validation of Nonlinear Modal Tracking with Varying Geometries,” *International Modal Analysis Conference (IMAC) and Exposition on Structural Dynamics*, Orlando, January 2016.
 - Student Researchers: Nick Pendowski, Andrew Belle-Isle
- Lulay KE, Dillon HE, Doughty TA, Khan KH, Munro DS, Murty VD, Vijlee SZ. (2015) Implementation of a Design Spine for a Mechanical Engineering Curriculum. *American Society for Engineering Education Annual Conference*. Seattle Washington.
- Doughty, T. A., Hector, M., “Numerical Enhancement of Nonlinear Model Tracking for Health Monitoring,” *International Modal Analysis Conference (IMAC) and Exposition on Structural Dynamics, Orlando, February 2015*.
 - Student Researcher: Michael Hector
- Doughty, T. A., Dally, M., and Bacon, M., , “Numerical Enhancement of NMT for Predicting Fatigue Failure,” *International Modal Analysis Conference (IMAC) and Exposition on Structural Dynamics, Orlando, February 2014*.
 - Student Researchers: Matthew Dally, Mikah Bacon
- Doughty, T. A., Heintz, J., and Ishii, M., , “Reducing Parkinsonian Hand Tremor with a Novel Dynamic Eating Utensil,” *International Mechanical Engineering Conference and Exposition (ASME IMECE), San Diego, November 2013*.
 - Student Researchers: Jordan Heintz, Melissa Ishii
- Doughty, T. A. Bacon, M., Dally, M., and Etzel, N., “Nonlinear Model Tracking for Varying System Geometries,” *International Modal Analysis Conference (IMAC) and Exposition on Structural Dynamics, Los Angeles, February 2013*.

Presentations

- Doughty, T., Shannon, C., and Neighbors, J. (2024, November). "The Effects of Nonlinear Modelling on Hand Tremor Mitigation Device Design," *ASME International Mechanical Engineering and Congress Exposition*, Portland, OR.
- Neighbors, J., Shannon, C., and Doughty, T. (2024, June). "Wearable Device for Hand Tremor Mitigation," *SEM Annual Conference and Exposition on Experimental and Applied Mechanics*, Vancouver, WA
- Rust, M., Dillon, H., Ralston, N. C., Hutson, B., Sathy, V., Grzybowski, D., & Doughty, T. (2025, January). *COMPASS tools for programmatic assessment of EM*. Workshop presented at the KEEN National Conference, Austin, TX.

- Ralston, N. C., Dillon, H. E., Grzybowski, D. M., Hutson, B., Ralston, N. C., Rust, M. J., Sathy, V., Tribelhorn, B., & Doughty, T. A. (2024, February). *EM Assessment Across the Network*. Invited workshop presented twice at the KEEN National Conference, Austin, TX.
- Doughty, T, Stucki, G., and Gerrards, Z., “Parkinsonian Hand Tremor Mitigation with Enhanced Wearable Device,” SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Orlando, FL
- Dillon HE, Ralson N, Welch J, Leviston R and Doughty TA (2020) Connecting with Expert Educators. 2020 Kern Entrepreneurial Engineering Network National Conference. Dallas, Texas.
 - Student Researchers: Rebecca Levison, Jeff Welch
- Dillon HE and Doughty TA. (2019) Character Development Through the Curriculum . Kern Entrepreneurial Engineering Network National Conference. Dallas, Texas.
- Dillon HE, Hoffbeck J, Ralson N, and Doughty TA. (2019) 3C Constellations - Spreading EML with Onsite Training . Kern Entrepreneurial Engineering Network National Conference. Dallas, Texas.
- Doughty TA and Dillon HE. (2017) Design and Implementation of an Aspirational Ethics Laboratory Course. American Society for Engineering Education Annual Conference. Columbus, Ohio.
- "Designing a New Innovation Minor for the University of Portland", Panel discussion and Workshop with Tim Doughty (UP - Engineering), Jennette Lovejoy (UP - CAS), and Peter Rachor (UP - Franz Center) at Design Week Portland, 2017
- Doughty TA and Dillon HE (2016) Building Inclusive Undergraduate Project Teams. American Society of Mechanical Engineers International Mechanical Engineering Conference. Phoenix, Arizona. November 2016.
- Hoffbeck JP, Dillon HE, Albright RJ, Lu W, and Doughty TA. (2016) Teaching Programming in the Context of Solving Engineering Problems. *Frontiers in Education* . Erie, PA.
- Rachor, P., Doughty TA, Lovejoy, J., and Parkman, I., "The Role of Innovation and Design." Design Week Portland, Portland, April, 2016
- Dillon HE, Doughty TA, Lulay KE, and Eifler KE. (2016) Backward Design to Improve Mechanical Engineering Curriculum. *2016 Summit for Transforming STEM Teaching in Higher Education*. Boise, Idaho.
- Dillon HE, Doughty TA, Lulay KE, Eifler KE, Schmedake NJ, Anderson DL, and Hensler ZY, (2016) Design of Open-Ended Experiments for Mechanical Engineering Laboratories. Kern Entrepreneurial Engineering Network Winter Conference.
 - Student Researchers: Nathan Schmedake, Daniel Anderson, Zoe Hensler
- Doughty, T. A., “Improving Student Learning through Labs at a T1 School,” *Presented to the University of Portland Faculty on Faculty Research Day: Research in Pedagogy. Portland, OR, January 2015.*
- Doughty, T. A., “Crash Dynamics and Vehicle Safety,” *Presented to the Beaverton Police Department Management Meeting, Beaverton, OR, April 2014.*

10. Briefly list the most recent professional development activities

- Developing expertise in new PLC technologies
- Expanding Research to include rapid prototyping
- Established LLC and developing patents for work with Parkinsonian Hand Tremor Devices.
- Virtues & Vocations Engineering Workshop at Notre Dame