

Curriculum Vitae for Devin Needs, Ph.D.

Education

- Ph.D. in Mechanical Engineering, Brigham Young University, 2024
- Dissertation: “Mathematical Modeling and Understanding the Physiological Mechanisms of Vibration on Wound Healing and Scar Remodeling”

Specialized Professional Competencies

- Biomechanical investigation, reconstruction, and failure analysis for a variety of situations and environments
- Analysis of human kinematics, injury potential, and injury mechanisms in traumatic events
- Evaluation of accident and injury data
- Surrogate/exemplar testing and analysis

Professional Experience and Qualifications

- Product Development Engineer I, ICU Medical, October 2018 to March 2019
- Research Assistant, BYU, Vibration and Acoustics Lab, January 2019 to April 2024
- Research Assistant, BYU, Exercise Physiology Lab, January 2019 to April 2024
- Senior Engineer, Carr Engineering, Inc., July 2024 to present

Publications and Presentations

- Needs, D; Blotter, J; Dallon, JC; Feland JB (2022); Development of Mathematical Model for Vibration Accelerated Wound Healing; J Biostat Biometric App 7(1): 101
- Needs, D; Blotter, J; Cowan M; Fellingham, G; Johnson, AW; Feland, JB; Effect of Localized Vibration Massage on Popliteal Blood Flow; J. Clin. Med. 2023, 12, 2047
- Needs, D; Blotter, J; Fellingham, GW; Cruse, G; Gifford, JR; Johnson, AW; Feland, JB; Antihistamine Medication Blunts Localized-Vibration-Induced Increases in Popliteal Blood Flow; Vibration 2024, 7, 351-361
- Mathematical Model of Vibration Aided Hypertrophic Burn Scar Remodeling; (2024); Under review “Biomechanics and Modeling in Mechanobiology”
- Biomedical Engineering Society Annual Meeting, Development of Mathematical Model for Vibration Accelerated Wound Healing, October 2022

Professional Affiliations

- American Society of Mechanical Engineers
- Biomedical Engineering Society