SHAUN B. JEFFS

MS, PE

385.484.4068
sjeffs@explico.com

BIOMECHANICS

EDUCATION

BRIGHAM YOUNG UNIVERSITY
MS, Mechanical Engineering, 2011
BS, Mechanical Engineering, 2009

LICENSES & CERTIFICATIONS

Professional Engineer
#40461 CA
Professional Engineer
#14224252-2202 UT
SAE Accident Reconstruction Certificate
Remote Pilot Certification
#4615273

AFFILIATIONS

Society of Automotive Engineers

Association for the Advancement of Automotive Medicine
Policy Committee

American Society of Mechanical Engineers
Technical Reviewer

PROFESSIONAL PROFILE

Mr. Shaun Jeffs is a consultant with forensic engineering expertise in biomechanics, occupant kinematics, human injury tolerance, and general mechanical engineering fields. He holds a B.S. and M.S. in mechanical engineering from Brigham Young University. His graduate research focused on the natural load-bearing capacity of the human lumbar spine.

Mr. Jeffs has specific expertise investigating a diverse range of injury modalities, including catastrophic automobile collision, low-speed automobile collisions, recreational off-road vehicles, personal watercraft (PWC), power tools, exercise equipment, lift-trucks (forklifts), heavy trucking, and bicycles. In the context of biomechanics and occupant protection, Mr. Jeffs analyzes the performance of vehicle roof structures, seat belts, airbags, child restraints, helmets, consumer products, and guarding systems.

Mr. Jeffs has conducted and overseen dozens of large- and small-scale testing programs, including full-scale crash tests, vehicle inversion studies, open-water PWC tests, powered lift gate tests, projectile impact tests, anthropometric test device (ATD) tests, forklift-pedestrian tests, and power tool tests.

AREAS OF EXPERTISE

Biomechanics
Spinal Injury
Human Injury Tolerance
Occupant Kinematics
Scene and Vehicle Damage Documentation
Biomechanical Testing
Accident Reconstruction

JEFFS

MS, PE

Experience

Explico

2026 - Present *Senior Managing Engineer*
2024 - 2025 *Managing Engineer*
2020 - 2023 *Senior Engineer*

Delta V Biomechanics

2013 - 2020 *Managing Engineer*

Applied Research Associates

2011 - 2013 *Mechanical Engineer, Biomechanics*

Brigham Young University

2009 - 2011 *Graduate Research and Teaching Assistant*

Fellowships and Grants

Brigham Young University, Office of Research & Creative Activities (ORCA) grant for undergraduate research, 2008

Teaching

Kinematics, Brigham Young University, Teaching Assistant, 2010

Dynamic Systems, Brigham Young University, Teaching Assistant, 2010

Mechanical Systems Design, Brigham Young University, Teaching Assistant, 2009

Publications & Presentations

Jeffs SB, Nolasco LA, Petroskey KJ. “Predicting Head Injury Metrics During Low- to Moderate-Speed Frontal Collisions Using Computational Simulations.” Accident Analysis and Prevention, 2023.

Jeffs SB, Demma DR, Petroskey KJ, Bland ML, Rundell SA. “Computational Simulation of Sideswipe Collisions to Predict Head Injury Metrics.” XXVIII Congress of the International Society of Biomechanics, Stockholm, Sweden, 2021.

Jeffs SB and Bowden AE. “A New Paradigm on the Passive Stability of the Human Lumbar Spine.” Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.

Walilko T and Jeffs SB. “Orthopedic Injury Risk and Mitigation for Underwater Explosions.” Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.

Smith JL, Needham C, Rule GT, Jeffs SB. “Blast Testing with Biological Subjects: A Harder Problem than Structures.” ASME Fall Symposium, Dallas, TX 2013.

Rule GT, Jeffs SB, and Needham CE. “Laboratory Blast Testing Methodologies.” Paper presented at the 2nd Army Research Lab Research in Ballistic Technologies Workshop, Aberdeen Proving Ground, MD, 2012.

Jeffs SB. “The Passive Load-Bearing Capacity of the Human Lumbar Spine in the Neutral Standing Posture.” Master’s Thesis, Brigham Young University, 2011.

Jeffs SB, Robertson D, Samuels M. Dynamic Axes of Rotation. Biomechanics Showcase, Oak Canyon Junior High School, Lindon, UT, 2009.

Professional Development

Northwestern University Center for Public Safety

Crash Data Retrieval System Operators Course — November 2022

Society of Automotive Engineers (SAE)

Injuries, Anatomy, Biomechanics & Federal Regulation — May 2025

Photogrammetry and Analysis of Digital Media — August 2024

Driver Distraction from Electronic Devices: Insights and Implications — February 2024

Applied Vehicle Dynamics — October 2021

Applying Automotive EDR Data to Traffic Crash Reconstruction — May 2020

Vehicle Crash Reconstruction: Principles and Technology — November 2018