

# SHAUN B. JEFFS

MS, PE

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## BIOMECHANICS

### EDUCATION

#### BRIGHAM YOUNG UNIVERSITY

MS	Mechanical Engineering	2011
BS	Mechanical Engineering	2009

### LICENSES & CERTIFICATIONS

Professional Engineer	CA
#40461	
Professional Engineer	UT
#14224252-2202	
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

## EXPERIENCE

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### 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

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

## TEACHING

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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

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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

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### 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*