

Tyler Deal

Forensic Engineering Expertise

Collision Analysis

Including work with passenger vehicle dynamics, speed and timing determination, mapping, crash severity analysis, biomechanics and occupant kinematics, seatbelts and supplemental restraint systems, off-road vehicles and equipment, motorcycles, bicycles, and pedestrians, and more.

Slips, Trips, and Falls

Evaluation of mechanics and circumstances of slip, trip and fall events and associated injuries. Work includes slip, trip, and fall cases related to altered gait, interior and exterior means of egress, stairs, curbs, and public access areas; and personal injury-related falls from barrier protected elevated areas, and more.

Injury Biomechanics

Evaluation and analysis of occupant kinematics and injury patterns in motor vehicle collisions, bicycle and pedestrian impacts, slips, trips, falls, falling objects, altercations, blast/explosions, and various niche cases. Application of complex analyses considering past medical history, injury mechanisms and tolerances, body position, and more.

Qualifications & Training

Professional engineering education training covering:

- Bosch Crash Data Retrieval (CDR) Data Analyst
- PC-Crash
- Mathematical Dynamics Model (MADYMO) occupant simulation
- Bosch Crash Data Retrieval (CDR) Technician
- Motor Vehicle Dynamics
- Pedestrian and Bicycle Analysis
- Helmeted Impact Analysis and Biomechanics
- Crash Data Retrieval (CDR) Supplemental Restraint System Imaging
- Impact Biomechanics and Kinematics
- Injury Biomechanics

Education

Master of Science in Bioengineering
Penn State University, State College, PA
August 2020

Bachelor of Science in Biomedical Engineering
Penn State University, State College, PA
August 2020

Employment History

Collision and Biomechanical Analyst
Nederveld, Inc.

October 2023 - Present

Responsible for the investigation, analysis, and reconstruction of vehicle collisions, occupant safety, occupant kinematic analysis, and occupant biomechanics.

Download and interpret electronic data from passenger vehicles, including airbag control modules. Rapid response for collision evidence documentation, vehicle inspections, and scene surveys/documentation. Plan, execute, and compile High-Definition Survey (HDS) scans of vehicles, objects, and incident scenes for precise measurement, documentation, and animation purposes. Plan, execute, and process aerial drone surveys and documentation of collision scenes. Conduct research, complete engineering calculations and analysis, prepare expert reports, develop conclusions, and provide forensics engineering testimony relative to results, findings, and conclusions.

Engineering Consultant

Peter R. Thom & Associates, Inc., Orinda, CA

November 2022 - October 2023

Responsible for review and analysis of legal documents, medical records, and miscellaneous documentation associated with motor vehicle collisions. Conducted vehicle investigations, documentation, and event data recorder imaging. Provided expert analysis of car, motorcycle, and pedestrian impact scenarios, considering associated bodily motion. Generated reports to represent findings and opinions for use in deposition and trial.

Forensic Biomedical Engineer

National Biomechanics Institute, Santa Monica, CA

September 2021 - July 2022

Reviewed personal injury legal and medical documentation to provide expert biomechanical analysis of car and motorcycle accidents, slips, trips, falls, pedestrian impacts, and miscellaneous unique scenarios. Collaborated with a diverse team of engineers and field experts to develop research-based calculation methods for a wide variety of bodily injuries. Conducted and assisted research regarding helmet impacts. Summarized advanced calculation methods in digestible media, such as reports.

Neuroscience Research

Eberly College of Science, State College, PA

February 2017 - August 2020

Studied physiological activity of evolutionary models using *Drosophila melanogaster* and *Xenopus* oocytes. Managed and maintained the well-being of animal and insect stocks. Developed and completed advanced data analysis and statistical techniques, generating process improvements by providing laboratory with novel algorithms for mathematical fitting of electrophysiological datasets. Performed hypothesis-driven experimentation and optimized kinetic models for voltage-gated ion channel activity. Analyzed and processed multidimensional images of neuronal components for data acquisition.

Expert Witness Experience

Depositions

March 2025

Vince LaSpina vs Danny Oshiro and James Lukas

DuPage County Circuit Court, State of Illinois, Case No. 2020 L 000770, R. Aeschliman

December 2024

Dawn Winkiel vs Matthew Mendez and WOR, Inc.

Cook County Circuit Court, State of Illinois, Case No. 2023 L 006246, K. Schank

October 2024

Bruce Fifer vs Travelers Property Casualty Company of America

United States District Court for the District of Colorado, Civil Action No. 1:23-cv-00294-NYW-Meh, K. Henkel

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