Meghan Zech

Biomechanist

Department
Accident Reconstruction & Forensic Animation

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Locations
Seattle, WA

Biography

Meghan was born and raised in Seattle, Washington, where she currently resides after attending Marquette University in Milwaukee, Wisconsin. She obtained a Bachelor of Science in Biomedical Engineering with a concentration in Biomechanics there. Her scientific research included utilizing human motion capture for sports injury prevention and rehabilitation, clinical gait analysis, and occupational biomechanics. Throughout her undergraduate career, she used mechanical testing equipment and bone models to study the effects of force and surgical intervention on the human body, focusing particularly on the spine. She also studied abroad in Florence, Italy, through Gonzaga University and completed internships at Merz North America and the Seattle-based startup Uptake Medical. In 2022, she became a certified drone pilot to enhance site inspections, as well as a certified Bosch CDR technician to perform vehicle downloads. Meghan has worked as a Biomechanist for over five years, analyzing human tolerance and injury potential in motor vehicle incidents and slip, trip, and fall events. In addition to her consulting work, she researched and improved athlete performance and sports injury prevention at ARCCA's sister company, Epic Sports Biomechanics.

Credentials

- Bosch CDR Tool Technician
- Remote Aircraft (Drone) Pilot Certification | Federal Aviation Administration

Representative Consulting Assignments

- Accident Reconstruction | Determination of acceleration and velocity in rear-end, front-end, and sideswipe motor vehicle incidents.
- Visual Site Mapping | Leads site and vehicle inspections with drone piloting, photography, and a variety of measuring devices.
- Vehicle Electronic Data Download | Retrieve input and response data from "black boxes" of motor vehicles to determine velocities and event sequences.
- Injury Potential | Utilization of medical records, government testing and computer modeling to determine whether claimed injuries are consistent with specific events.
- Injury Potential | Calculation of body segment forces, occupant motion, and incident event energy in slip and fall events.
- Injury Potential | Comparison of human body motion and loading between a litigated event and activities of daily living.
- Seatbelt Use Analysis | Establishment of seatbelt use and occupant seating position based on forensic evidence and its role in injury outcomes.

Professional Experience

- 2023 - Current | Biomechanist | YA Engineering Services
- 2019 - 2023 | Biomechanist | ARCCA, Inc.

Area of Practice

- Accident Reconstruction
- Biomechanics
- Human Factors
- Slip and Fall Evaluations

Education

- Marquette University - Bachelor of Science - Biomedical Engineering (Biomechanics) - Milwaukee - Wisconsin

Training Courses

- Bosch© CDR Tool Technician - IPTM - Institute of Police Technology and Management - University of North Florida - 2022
- At-Scene Traffic Crash/Traffic Homicide Investigation - IPTM - Institute of Police Technology and Management - University of North Florida - 2024
- Recon 3D Training - Eugene Liscio - 2024