



Brett O'Toole

MSBME, ACTAR

Senior Biomechanist

Department

Accident Reconstruction & Forensic Animation

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Locations

Phoenix, AZ

Biography

Brett O'Toole joined the YA Engineering team in 2023. He began working in the accident reconstruction and biomechanics industries in 2011 and has led or participated in over 1,000 accident and/or injury investigations. He has been an ACTAR-certified accident reconstructionist since 2015. Mr. O'Toole earned a Bachelor of Science degree in Biomedical Engineering from Arizona State University. He then went on to obtain a Master of Science degree in Biomedical Engineering from Arizona State University. He has extensive experience applying the principles of biomechanics to vehicular and non-vehicular accidents, both in civil and criminal matters. He has applied his combined accident reconstruction and injury biomechanics knowledge in evaluating a wide range of incidents. This includes cases involving pedestrians, bicycles, motorcycles, heavy vehicles, and other non-standard vehicles. Mr. O'Toole documents vehicles and accident sites with high-quality photographs, laser scans, aerial images, and by retrieval of electronic (EDR) information. Mr. O'Toole is licensed by the FAA to fly drones for commercial purposes. He has also been trained in the use of PC-Crash for accident simulations.

Credentials

- MSBME | Master of Science - Biomedical Engineering
- ACTAR | ACTAR - 2945 - Accreditation Commission for Traffic Accident Reconstruction
- FAA Certified Drone Pilot

Representative Consulting Assignments

- Vehicle Collision Analysis | Investigation and analysis of single and multi vehicle crashes involving passenger vehicle, motorcycle, bicycle, and heavy trucks
- Injury Potential Analysis | Biomechanical evaluation to determine human body motions and loading and how they compare to established injury tolerance thresholds
- Seatbelt Use Analysis | Determination of whether a seatbelt was being worn and how seatbelt use influenced injury outcomes
- Vehicle Electronic Data Download and Analysis | Retrieve input and response data to evaluate crash sequences
- Site Mapping and Visual Recreation | Use photography, drones, laser scanners, and hand measurements to document accident sites for accurate reconstruction and graphics

Professional Experience

- 2023 - Current | Senior Forensic Biomechanist | YA Engineer Services
- 2017 - 2023 | Biomechanical Engineer - Vehicle Mechanical & Accident Reconstruction | Momentum Engineering Corp.
- 2011 - 2017 | Engineering Associate - Biomechanics Research & Consulting |

Area of Practice

- Accident Reconstruction
- Biomechanics

Education

- Arizona State University - Bachelor of Science - Biomedical Engineering - Tempe - Arizona
- Arizona State University - Master of Science - Biomedical Engineering - Tempe - Arizona
- Northwestern University, Center for Public Safety - Traffic Accident Reconstruction 1
- Northwestern University, Center for Public Safety - Traffic Accident Reconstruction 2
- Collision Safety Institute - Bosch Crash Data Retrieval (CDR) Analyst
- Collision Safety Institute - Bosch Crash Data Retrieval (CDR) Technician
- Lightpoint Scientific - Point Clouds in Collision Reconstruction: Speed from Video and Crush from Photos
- Institute of Police Technology and Management - Investigation of Pedestrian Collisions Video Course
- Introduction to PC-Crash - Los Angeles - California

Affiliations

- Society of Automotive Engineers (SAE)
 - Southwestern Association of Technical Accident Investigators (SATAI)
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