SETH J. BEHRENS, P.E., DFE

EDUCATION:

B.S. Engineering, Mechanical Engineering, Arizona State University, Summa Cum Laude

REGISTRATION:

Registered Professional Engineer (P.E.) in Arizona (62687), Utah (12753705-2202), Nevada (029856), New Mexico (27799), Colorado (61694), California (41137), Texas (145080), and Georgia (PE050895).
Board Certified Diplomate in Forensic Engineering (DFE).
Accredited Traffic Accident Reconstructionist (ACTAR), Registration No. 3596

EXPERIENCE:

Director of Engineering, Knott Laboratory, LLC, Phoenix, Arizona, January 2025 to present
Engineering Manager, Knott Laboratory, LLC, Phoenix, Arizona, January 2024 to January 2025
Project Engineer, Knott Laboratory, LLC, Phoenix, Arizona, November 2022 to December 2023
Team Lead Vehicle Accident Reconstruction, EFI Global, Inc., Phoenix, AZ, April 2019 to November 2022
Forensic Engineer, Unified/EFI Global, Inc., October 2016 to April 2019
Mechanical Engineer, U-Haul International, Tempe, AZ, June 2010 to September 2016
Engineering Intern, Medtronic MicroElectronics Center, Tempe, AZ, Summer 2009
Engineering Intern, General Dynamics C4 Systems, Tempe, AZ, Summer 2008
Forensic Engineering Assistant, Behrens Engineering Investigations, Phoenix, AZ, Summer 2007

AREAS OF EXPERTISE:

Mr. Behrens has conducted, analyzed, and testified in numerous forensic engineering investigations involving property damage, personal injury, and death. He also has extensive experience in the design, testing, and manufacture of mechanical systems and vehicles. His experience includes, but is not limited to, the following areas:

- Crash Reconstruction
  - Passenger vehicles
  - Heavy truck/commercial vehicles
  - Pedestrians
  - Motorcycles
  - Bicycles/scooters/skateboards
  - E-bikes/E-scooters/E-skateboards
  - Offroad vehicles (ATVs, UTVs, etc.)
  - Heavy equipment (mining vehicles)
  - Light/medium/heavy/semi-trailers
  - Conservation of momentum, conservation of energy, collision severity, speed and delta-V determination
  - Spatial analysis (time-distance)
  - Crashworthiness
  - Occupant compartment intrusion
  - Vehicle dynamics
  - Trailer dynamics
  - Vehicle performance steering/suspension/brakes/tires/structures/seatbelts/airbags
  - Event Data Recorder (EDR or “black box”) data downloads and analysis
  - Heavy Vehicle Event Data Recorder (HVEDR) data downloads and analysis
  - Infotainment/telematics data downloads and analysis (Berla)
  - Federal and state regulations, driving rules and regulations
  - PC-Crash computer crash simulations

  - Video analysis
  - Video visualizations
  - Vehicle/trailer testing
- Forensic Engineering Technologies
  - Drone aerial video and photography
  - Vehicle electronic data collection systems
  - 3D laser scanning
  - Photogrammetry
  - Videogrammetry/Camera Tracking/Match Moving/Object tracking/Virtual Camera Calibration
- Human Factors in Crash Reconstruction
  - Response software
  - Driver perception, response, and reaction
  - Visibility, lighting, & nighttime visibility studies
  - Headlight illumination
  - Emergency response/avoidance analysis
  - Gap acceptance
- Mechanical Design
  - Design/manufacture/testing of medium trucks and trailers
  - Design/manufacture/testing of mechanical structures and components including structures, springs, gears, bearings, etc.
  - Fabrication/assembly methods including injection molding, investment casting, sand casting, sheet metal forming, thermoforming, roll forming, aluminum extrusions, welding, adhesives, hot rolling, cold rolling, fasteners, machining
  - Static/dynamic load calculations and material selection
  - 3D printing and prototyping
  - Heat/energy transfer, aerodynamic drag
  - Test plans
  - Assembly/fabrication drawings and instructions
  - Vehicle/trailer weight limits, loading, and safety
- Failure Analysis
  - Fatigue/durability testing/analysis
  - Weathering/corrosion testing/analysis
  - Brittle/ductile fractures
  - Structures and mechanical systems
  - Wear and overload
  - Fastener failure (bolts, screws, rivets, specialty fasteners)
  - Oxidative degradation, hydrogen embrittlement, environmental stress cracking, electrolysis/galvanic corrosion, material compatibility
- Product Defects/Product Liability
  - Design defects
  - Manufacturing defects
  - Product recalls
  - Industry codes, standards, and regulations
  - Visualizations to portray failures/defects
- Incident Reconstruction
  - Reconstruction from video/photographs
  - Photogrammetry/videogrammetry/virtual camera calibration

CERTIFICATIONS:

Mr. Behrens holds, or previously held, the following certifications:

- Licensed Drone Pilot (FAA Part 107 Remote Pilot Certificate)
- Bosch Crash Data Retrieval Technician
- Event Data Recorder (EDR) Analyst Level I
- Event Data Recorder (EDR) Analyst Level II
- Berla (iVe) Vehicle Systems Forensic Technician and Analyst
- Recon3D Lidar Scanning Operator
- Faro 3D Laser Scanner Operator
- Certified English CL Tribometrist (CXLT)

EXPERT TESTIMONY:

As a result of Mr. Behrens' investigations and analysis, he has provided expert witness testimony in multiple courts related to forensic engineering, mechanical engineering, crash reconstruction, investigations, driver perception response, nighttime visibility, and more. Mr. Behrens has consulted for both plaintiffs and defendants.

PROFESSIONAL AFFILIATIONS:

Mr. Behrens is a current member of the following societies:

SAE	Society of Automotive Engineers	NSPE	National Society of Professional Engineers
NAFE	National Association of Forensic Engineers	TBP	Tau Beta Pi Engineering Honor Society
SATAI	Southwest Association of Technical Accident Investigators	NAPARS	National Association of Professional Accident Reconstruction Specialists