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), Georgia (PE050895), and Illinois (062.089584).
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

PUBLICATIONS

1. David Huskey, Seth Behrens, and Wade Bartlett. "A Comparison of Light Detection and Ranging (LIDAR) Measurements to Accepted Industry Practices." Accident Reconstruction Journal, Volume 32, No. 3. (May/June 2022).

SPEAKING ENGAGEMENTS

1. "Vehicle and Crash Scene Inspection Protocol and Best Practices." Speaker. Knott Laboratory. Glendale, AZ. 2026.
2. "Vehicle Accident Reconstruction Methods, Technology, and Hands-On Investigation Techniques." Speaker. Experts University Conference. Denver, CO. 2026.
3. "Introduction to Forensic Engineering and Accident Reconstruction." Speaker. Sierra Verde STEAM Academy. Glendale, AZ. 2025.
4. "Emerging Technology and Modern Investigations." Speaker. Hexagon Public Safety and Forensics Conference. Portsmouth, UK. 2025.
5. "Application of 3D Data Utilizing Photogrammetry and Matchmoving in Accident and Shooting Investigations." Speaker. Hexagon Public Safety and Forensics Conference. Portsmouth, UK. 2025.
6. "Recon3D Handheld iPhone Scanning for Forensics." Speaker. Knott Laboratory. Glendale, AZ. 2025.
7. "Introduction to Forensic Engineering and Accident Reconstruction." Speaker. Sierra Verde STEAM Academy. Glendale, AZ. 2024.
8. "Accident Reconstruction." Speaker. Experts University Conference. Centennial, CO. 2024.
9. "Drone Operations and Best Practices." Speaker. Knott Laboratory. Glendale, AZ. 2024.
10. "Light and Medium Duty Trailer Design." Speaker. Knott Laboratory. Glendale, AZ. 2023.
11. "Tesla Event Data Recorder (EDR) Data Download and Analysis." Speaker. Knott Laboratory. Glendale, AZ. 2023.
12. "Introduction to Vehicle Accident Reconstruction and Available Vehicle Data." Speaker. PLRB 2022 Eastern Regional Adjusters Conference. Providence, RI. 2022.
13. "Vehicle Accident Investigation and Reconstruction." Speaker. Bluegrass Claims Association. Lexington, KY. 2022.
14. "Accident Investigation, Reconstruction and Fleet Safety." Speaker. Western Energy Institute Fleet Conference 2020. Salt Lake City, UT. 2020.
15. "Berla Vehicle Data." Speaker. EFI Global, Inc. Tolleson, AZ. 2020.
16. "Vehicle Infotainment System Data – How Much Data Are You Sharing?" Speaker. Arizona Insurance Claims Association. Phoenix, AZ. 2020.
17. "Accident Investigation and Reconstruction for Fleet Vehicles." Speaker. Western Energy Institute Fleet Management Conference 2019. Salt Lake City, UT. 2019.
18. "Use of Technology in Forensic Investigations – Laser Scanners, Drones, and Photogrammetry." Speaker. EFI Global, Inc. Live Burn 2018. Phoenix, AZ. 2018.

SPECIALIZED TRAINING

1. "Bendix Data Recorder." Training. NAPARS. 2026.
2. "Tesla Florida Court Case Review." Training. NAPARS. 2026
3. "Bicycle and e-Bike Crash Analysis." Training. NAPARS. 2026.

4. "Premises Liability Investigations." Training. Experts University Conference. Denver, CO. 2026.
5. "The Geometry of Safety: Understanding Conflict Points and Innovative Roadway Design." Training. Knott Laboratory. Centennial, CO. 2026.
6. "Residential & Commercial HVAC, Plumbing & Appliances Part 1." Training. Knott Laboratory. Glendale, AZ. 2025.
7. "Video Analysis - Matchmoving and Object Tracking." Training. Knott Laboratory. Glendale, AZ. 2025.
8. "Point Clouds – Point Cloud Registration and Processing." Training. Knott Laboratory. Glendale, AZ. 2025.
9. "Examining DeltaV from an EDR File with Excel." Training. NAPARS. Glendale, AZ. 2025.
10. "Forensic Investigations." Training. Knott Laboratory. Glendale, AZ. 2025.
11. "Analyzing Timing Accuracy in Video Evidence." Training. Hexagon Public Safety and Forensics Conference. Portsmouth, UK. 2025.
12. "The Optimized Field Retrieval of Audio-Visual Surveillance Media." Training. Hexagon Public Safety and Forensics Conference. Portsmouth, UK. 2025.
13. "Evidential Storytelling." Training. Hexagon Public Safety and Forensics Conference. Portsmouth, UK. 2025.
14. "Recon-3D Training and Certificate Course." Training. Recon-3D. 2025.
15. "Building Charts in Excel." Training. NAPARS. 2025.
16. "Speed from Video." Training. Lightpoint. Virtual. 2024.
17. "Toyota Techstream and Bosch CDR Update." Training. SATAI Fall Conference. Glendale, AZ. 2024.
18. "Response 2024 Human Factors User Forum." Training. Driver Research Institute. Long Beach, CA. 2024.
19. "Recon-3D User Group Forum." Training. Recon-3D. 2024.
20. "PC-Crash 201 Multibodies, 203 Trucks and Trailers, 401 Staged Collisions." PC-Crash Simulation. 2023.
21. "Ethics for Forensic Engineers." Training. National Academy of Forensic Engineers. 2023.
22. ""Getting Started with Point Cloud Data." Training. Knott Laboratory. 2023.
23. "Advanced Photogrammetry for Collision Reconstruction." Training. Lightpoint Scientific, Tempe, AZ. 2022.
24. "Event Data Recorder Use in Traffic Crash Reconstruction – Level 2." Training. Institute of Police Technology and Management. Scottsdale, AZ. 2021.
25. "PC-Crash 103 Collisions, 202 Point Clouds." Training. PC-Crash Simulation. 2021.
26. "Pedestrian/Bicycle Crash Investigation." Training. Institute of Police Technology and Management. Glendale, AZ. 2021.
27. "PC-Crash 101 Projects, 102 Vehicle Control." Training. PC-Crash Simulation. 2020.
28. EDR Summit 2019. Training. Crash Data Group. Houston, TX. 2019.
29. "PC-Crash Essentials 1, 2 & 3." Training. PC-Crash Simulation. 2018.
30. "Accident Reconstruction with Heavy Vehicle Event Data Recorders." Training. MSC Recon. Mesa, AZ. 2018.
31. "FAA Part 107 Test Prep and Training Course." Training. Drone Pilot Ground School. Phoenix, AZ. 2018.
32. "Berla iVe Vehicle Systems Forensics." Training. Berla Corporation. Annapolis, MD. 2018.

33. "Bosch Crash Data Retrieval Tool Technician Training." Training. Institute of Police Technology and Management. Tempe, AZ. 2018.
34. "ATA CFR 49 Part 396.25 (A) Meritor Air Brake Training." Training. Meritor. Phoenix, AZ. 2017.
35. "Using Microsoft Excel for Traffic Crash Reconstruction." Training. Rich Consulting. Scottsdale, AZ. 2017.
36. "Faro Scene 6 3D Laser Scanner Training." Training. Eugene Liscio. Mesa, AZ. 2017.
37. "Event Data Recorder Use in Traffic Crash Reconstruction Level 1." Training. Institute of Police Technology and Management. Tempe, AZ. 2017.
38. "Laser Scanner Training." Training. Faro. Los Angeles, CA. 2017.
39. "Forensic Investigation." Training. Unified Investigations and Sciences. Denver, CO. 2016.
40. "Advanced Fastener Seminar." Training. Fastenal. Tempe, AZ. 2016.
41. "Autodesk Inventor 3D Modeling and Stress Analysis." Training. Autodesk. Tempe, AZ. 2014.
42. "Computational Fluid Dynamics." Training. Autodesk. Tempe, AZ. 2013.
43. "Objet 3D Printer Operations." Training. Stratsys. Tempe, AZ. 2013.
44. "Diagnosing Material Failures Seminar." Training. American Society of Mechanical Engineers. Tucson, AZ. 2011.
45. "AutoCAD Mechanical." Training. Autodesk. Tempe, AZ. 2010.
46. "Internal Combustion Engines." Training. Arizona State University. Tempe, AZ. 2009.
47. "MATLAB Programming." Training. Arizona State University. Tempe, AZ. 2008.