

DANIEL M. STANGE, MS, MSL, EIT, ACTAR

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Forensic Reconstructionist

PROFESSIONAL PROFILE

Failure Analyst with extensive experience forensically reconstructing failures in accident reconstruction and metallurgical/materials failure. Skilled in applying scientific and engineering principles to document, inspect, analyze, and interpret various types of failures, such as metallurgical or polymeric materials, building or construction failures, and vehicular accidents including passenger vehicles, pedestrians, bicycles, motorcycles, heavy-articulated vehicles, and agricultural equipment. Possess a breadth of knowledge applicable to a variety of corporate environments and policies, legal ecosystems and processes. Able to absorb and adapt to different situations and challenges while providing support and direction through the perspective of science, technology, engineering, math, and law.

SELECTED ACHIEVEMENTS

- Conduct thorough **accident reconstructions** using **3D laser scanners, drones, and software packages**, to analyze various aspects of accidents such as **impact forces, collision angles, occupant kinematics, vehicle dynamics, and damage patterns** for various incidents involving passenger vehicles, pedestrians, bicycles, motorcycles, heavy-articulated vehicles, and agricultural equipment.
- **Write scientific/forensic reports** in support of litigation, mediation, arbitration, subrogation, and/or insurance adjustments using data collected from the **accident scene, vehicle investigations, roadway investigations** while incorporating reviews of applicable **Codes and Standards** for potential premises liability such as a requirement for landscape setback at intersections.
- Provide expert **understanding of engineering and scientific principles** and their relationship to credibility of **failure analysis** and **accident reconstruction** within the **courtroom**.
- Conduct metallurgical/materials **failure analysis** using microscopy, hardness testing, chemical analysis, and mechanical testing, to identify the **root causes of failures** such as fatigue, corrosion, stress, overload, wear, etc.
- Inspection of **building/construction failures** using visual examination, non-destructive testing, structural analysis, code compliance, and evaluated the factors contributing to **failures such as design flaws, material defects, environmental conditions, human errors, etc.**
- Constant analysis of current project workload while **maintaining short deadlines** while re-evaluating priorities to maintain a high-level of work throughput while applying systematic **problem-solving skills and techniques**.

AREAS OF EXPERTISE

Accident Reconstruction – Forensic, Diagnostic, & Remediation – Data Retrieval & Preservation – Client Relations – Analysis & Reporting – Expert Witness Legal Support

PROFESSIONAL EXPERIENCE

COMPASS CONSULTING ENGINEERS, SEATTLE, WA

2025 to Current

Forensic Reconstructionist

- Investigate failures with a focus on high-speed vehicular accident reconstruction involving impacts between passenger vehicles, commercial vehicles, motorcycles, bicycles, scooters and pedestrians.
- Perform advanced scene documentation and analysis utilizing 3D laser scanning, aerial drone photogrammetry, and event data recorder retrieval to evaluate collision dynamics, occupant motion, and damage consistency across complex traffic incidents.
- Prepare technical reports and provide expert witness support for litigation, mediation, and arbitration, integrating accident reconstruction findings with applicable traffic codes and industry standards.

APERTURE, LLC, BERKELEY, CA

2022 to 2025

Forensic Expert

- Perform forensic investigations in accident reconstruction, premises liability, and product liability for civil litigation cases.
- Document, analyze, interpret, and present accident reconstruction analysis using photography, 3D laser scanning,

drone aerial photography, photogrammetry software, and Event Data Recorder downloading.

- Examine and interpret Traffic Collision Reports to determine vehicle speeds based on data measured by first responders.
- Assist in premises liability inspections, analysis, and interpretation of applicable local, state, and federal codes and standards.
- Examine and test products involved in personal injury to understand the underlying failure mechanism, including material properties and electromechanical functionality.

SHANNON & WILSON, INC., FAIRBANKS, AK

2021 to 2022

Materials Laboratory Manager

- Supervised geotechnical testing and analysis on aggregate and concrete for various projects and clients.
- Supported geotechnical engineering investigations by evaluating and updating current testing standards and creating a high-performance culture among supervised technicians.
- Mentored and trained younger field and laboratory technicians on best practices, safety protocols, and quality standards for geotechnical testing and analysis.
- Established and implemented testing procedures and protocols according to international testing standards such as ASTM, AASHTO, and ISO.
- Created and disseminated testing protocols and curriculum to expand laboratory services beyond the current scope of available testing methods by interpreting and applying international standards to laboratory equipment.
- Facilitated the organizational methodology to exceed standardization requirements for laboratory accreditation through formal external accreditation entities such as AASHTO.

ENGINEERING SYSTEMS INC., AURORA, IL

2016 to 2021

Failure Analysis Technologist

- Perform field documentation and field surveying utilizing aerial drone photogrammetry, laser scanning, and total station methods.
- Managed large analytical equipment within a metallography, optical, and polymer laboratories, diagnosing and resolving product performance problems.
- Averted business downtimes and delivered full integrated solutions by operating, maintaining, calibrating, and performing preventative maintenance.
- Triangulated analytical, engineering, and scientific based technological solutions to produce failure analysis reports, spanning polymeric and metallic products.
- Boosted service levels and generated trust through conceiving, authoring, and presenting testing results, distilling highly scientific principles to a non-scientific audience.
- Completed installations and upgrades with high velocity while mastering product portfolio within 1st 3 months of tenure, including scanning electron microscope, energy dispersive spectroscopy, Fourier transform infrared spectroscopy, thermogravimetric analyzer, differential scanning calorimeter, optical microscopes, metallographic mounting presses
- Championed a compliance culture by aligning testing procedures with recognized governing bodies ASTM or ISO
- Optimized laboratory output by serving equipment and performing software updates, troubleshooting equipment, and replacing thermocouple, silicon drift detector, and roughing pumps
- Supported Expert Witness Testifying experts during deposition and trial settings

EDUCATION & CERTIFICATIONS

MASTER OF SCIENCE, LAW (MSL) – NORTHWESTERN UNIVERSITY, CHICAGO, IL

MASTER OF SCIENCE (MSc), PHYSICS: PHYSICS TEACHING – NORTHERN ILLINOIS UNIVERSITY, DEKALB, IL

BACHELOR OF SCIENCE (BSc), PHYSICS – UNIVERSITY OF ALASKA, FAIRBANKS, AK

FAA PART 107 SUAS REMOTE PILOT 3925531, OCT. 2016

FARO LASER SCANNING CERTIFIED – FARO TECHNOLOGIES, AUG. 2017

ENGINEER IN TRAINING 177176 - CALIFORNIA BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS, 2022

FULL ACCREDITATION AS A TRAFFIC ACCIDENT RECONSTRUCTIONIST #4730 – THE ACCREDITATION COMMISSION FOR TRAFFIC ACCIDENT RECONSTRUCTION

PUBLICATIONS & TRIAL TESTIMONY

Daniel M. Stange, Modeling and Accident Reconstruction, *Failure Analysis and Prevention*, Vol 11, 2021 ed., *ASM Handbook*, Edited By Brett A. Miller, Roch J. Shipley, Ronald J. Parrington, Daniel P. Dennies, ASM International, 2021, p 151–160, <https://doi.org/10.31399/asm.hb.v11.a0006772>

Trial Testimony:

San Mateo County California Court Case CA 22-CIV-01891 Deposition 03/05/2025 Trial Testimony 04/10/2025

Merced County California Court Case 22CV-03409 Deposition 05/12/2026

CONTINUING EDUCATION

Northwestern University Center of Public Safety – Traffic Crash Investigation 1 – September 2022

Northwestern University Center of Public Safety – Traffic Crash Investigation 2 – November 2022

Northwestern University Center of Public Safety – Vehicle Dynamics – January 2023

Crash Academy – How to Use the Bosch CDR Pro Tool Kit – March 2023

Crash Academy – How to Perform a CDR Direct-to-Module Download – March 2023

Northwestern University Center of Public Safety – Traffic Crash Reconstruction 1 – March 2023

California Association of Accident Reconstruction Specialists – Quarterly Training – Traffic Engineering: How it Influences Accident Reconstruction – March 2023

California Association of Accident Reconstruction Specialists – Annual Conference 2023 – Pedestrian Collision Reconstruction – October 2023

Society of Automotive Engineers – Accessing and Interpreting Heavy Vehicle Event Data Recorders – November 2023

California Association of Accident Reconstruction Specialists – Quarterly Training – Bicycle/E-Bike Dynamics – February 2024

Northwestern University Center of Public Safety – Traffic Crash Reconstruction 2 – April 2024

California Association of Accident Reconstruction Specialists – Annual Conference 2025 – Advanced Driver Assistance Systems for the Crash Reconstructionist – October 2025

Driver Research Institute – Advanced Crash Reconstruction Utilizing Human Factors Research – May 2026