



Garrick F. Mitchell, P.E., ACTAR

he/him/his

Transportation Practice Leader

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Background

Mr. Garrick Mitchell graduated *magna cum laude* from Rice University with a B.S. degree in Mechanical Engineering in 1993 and an M.S. degree in 1995. Since joining Rimkus in 2000, Mr. Mitchell has performed over well 1,000 forensic investigations, including vehicle accident reconstructions, mechanical failure investigations, and consumer product and patent infringement analyses.

Mr. Mitchell has reconstructed hundreds of vehicle accidents involving cars, trucks, buses, farm equipment, motorcycles, ATVs, forklifts, bicycles, and pedestrians. He mechanically inspects vehicles, performs site inspections, and analyzes pertinent data, including police reports, photographs, videos, driver/witness statements, weather data, cargo securement, and traffic signal data. He is trained and experienced in reconstruction technologies, including digital site mapping, the use of drones for aerial imagery, and the collection and analysis of event data recorder information and other electronic data from cars and trucks.

Mr. Mitchell investigates failures and accidents due to failures in a wide range of mechanical systems, such as vehicles (including engines, transmissions, tires, brakes, and airbags), plumbing (including pipe freezes), HVAC, fire sprinkler systems, consumer products, appliances, door systems, ladders, forklifts, aerial lifts, industrial equipment, and heavy machinery including petroleum drilling and production equipment. Mr. Mitchell has also inspected and analyzed vehicles and equipment involved in fires and evaluated sources of carbon monoxide exposure.

Mr. Mitchell is an expert in bicycle design, fabrication, assembly, and maintenance. He has been a licensed bicycle racer since 1989 and has won multiple state championships. He has ridden over 180,000 miles on- and off-road and has deep insight into how bicycles and other vehicles interact. He applies that expertise in reconstructing bicycle accidents, evaluating bicycle mechanical failures, and assessing the reasonableness and appropriateness of bicyclist actions in an accident. Mr. Mitchell is qualified to deliver deposition and trial testimony of his findings and has testified in federal and state courts.

Professional Engagements

• Oil and Gas Production Research

- Modeling of explosions on offshore platforms using Computational Fluid Dynamics software.
- Designed high-pressure benchtop flowloop for experimental studies of multiphase flow during hydrate formation and for assessing performance of thermodynamic and kinetic hydrate inhibitors.

• Field Testing

- Alberta, Canada (1996-1998) and offshore Gulf of Mexico (1999-2000), Field testing of new class of flowline hydrate inhibitors.

Forensic Engagements

• Reconstructions and Failure Analysis

- Over 1,000 accident reconstructions and failure analyses over 20-plus years.
- Sparks, NV (2016), Failure analysis of gravel trailer dumping load on freeway, causing fatal collision behind.
- Greeley, CO (2010), Conducted analysis of failed oil drilling rig mud hose resulting in a large fire.
- Winslow, AZ (2010), Reconstructed bicycle accident. Olympic athlete was struck by passing tractor-trailer.
- Parker, CO (2009), Failure analysis of excavator bucket dropping into trench and killing worker.
- Las Vegas, NV (2007), Accident reconstruction and mechanical analysis of vehicle driving off of upper floor of parking garage.

Professional Experience

• Rimkus

2000 – Present

- Transportation Practice Leader

Provide consulting and testimony services for legal, insurance, and corporate clients. Reconstruct and analyze motor vehicle accidents. Inspect and analyze mechanical failures in equipment, including vehicles, residential and commercial appliances, and commercial and industrial equipment. Analyze and determine causation of vehicle mechanical failures, including gasoline and diesel drivetrains, steering, suspensions, and brakes. Analyze a variety of consumer and industrial product failures. Particular expertise in reconstructions and mechanical failures involving bicycles. Conduct home inspections to analyze claims of water damage and mold growth. Provide expert testimony in patent infringement cases. Oversee and review the work of mechanical engineers and accident reconstructionists in the Western U.S. Train and mentor consultants in the Transportation Practice Area. Deliver seminars and webinars to clients on a wide range of technical topics for Continuing Education credit.

• ExxonMobil Development Company

2000

- Flow Assurance Engineer

Provided input to concept selection and operating strategy definition for deep water oil and gas prospects. Verified development concepts for multi-billion-dollar deep water projects. Served as technical contact to producing affiliates on hydrates, wax, scale, and fluid flow issues. Provided technical support and troubleshooting for problems associated with solids deposition in subsea production systems.

• Exxon Production Research Company

1995 – 1999

- Research Engineer – Production Operations Division

Developing new proprietary hydrate inhibition technology with engineers/chemists. Directed experimental test program in hydrate inhibitor testing. Set test requirements and scheduling, performed troubleshooting

and event re-creation to diagnose and correct operational problems. Served as lead engineer on chemical field trials in Canada and the Gulf of Mexico. Designed and managed construction of 5,000-psi hydrate flow loop. Programmed the control logic and data analysis utility for this experiment from scratch.

Education and Certifications

- **Mechanical Engineering, M.S.:** Rice University (1995)
- **Mechanical Engineering, B.S. (magna cum laude):** Rice University (1993)
- **Registered Professional Engineer:** Arizona, California, Colorado, Idaho, Montana, North Dakota, Nebraska, New Mexico, Nevada, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming
- **Certified Accident Reconstructionist:** Accreditation Commission for Traffic Accident Reconstruction, ACTAR #1360
- **Certified Remote Pilot** (Drone operator) for commercial operations under FAA Part 107
- **Certified Forklift and Aerial Lift Operator**
- **Licensed Motorcycle Operator**

Publications

- **“Accuracy of Aerial Photogrammetric Point Cloud Data Using Different Ground Control Point Configurations,”** Accident Reconstruction Journal, Vol. 33, No. 6, November/December 2023.
- **“Comparison of Laboratory Results on Hydrate Induction Rates in a THF Rig, High-Pressure Rocking Cell, Miniloop, and Large Flowloop,”** Annals of the New York Academy of Sciences, Vol. 912, Issue 1, pg. 314-321, January 2000.
- **“Acoustically Levitated Droplet Viscosity Measurement,”** AIAA Journal of Thermophysics and Heat Transfer, Vol 12, #4:599-602, 199.
- **“Determination of Surface Tension from the Shape Oscillations of an Electromagnetically Levitated Droplet,”** Physics of Fluids, Volume 8, Issue 2, pg. 370-383, February 1996.
- **“Experiments in acoustic levitation: Surface tension measurements of deformed droplets,”** AIAA Journal of Thermophysics and Heat Transfer, Vol. 9, #4, pg. 694-701, 1995.

Continuing Education

- **Northwestern University Traffic Accident Investigation,** 2001
- **Fundamentals of Measurements & Diagramming,** Texas A&M, 2001
- **Photography for Motor Vehicle Crash Investigation,** Texas A&M, 2001
- **Traffic Crash Reconstruction,** Institute of Police Technology and Management (IPTM), 2002
- **Commercial Vehicle Accident Reconstruction,** IPTM, 2002
- **4th Annual Rocky Mountain Crash/DUI Conference,** Denver, CO, 2003
- **American IAQ Council Certified Microbial Consultant Review Course,** 2003
- **Detroit Diesel ECM Data Extraction Course,** 2005
- **Pedestrian/Bicycle Accident Investigation,** IPTM, 2005
- **Public Agency Training Council Hands-On Vehicle Fire/Arson Investigation,** 2006
- **Bendix Commercial Vehicle Air Brake School,** 2006
- **ARC/CSI Crash Conference,** Las Vegas, NV, 2007
- **Bosch Crash Data Retrieval Tool Technician Certification,** 2008
- **ARC/CSI Crash Conference,** Las Vegas, NV, 2009

- **How to Interpret Commercial Vehicle Event Data Recorders**, University of Tulsa, 2010
- **Forensic Traffic Specialists Crash Reconstruction at Traffic Signal Intersections**, 2010
- **Bosch Crash Data Retrieval Tool Analyst Certification**, 2011
- **Crash Safety Research Group Human Factors in Traffic Crashes**, 2012
- **Motorcycle Crash Investigation**, IPTM, 2013
- **Engineering Dynamics Corporation HVE Forum**, 2014
- **FARO Scanner** user training, 2015
- **World Reconstruction Exposition**, Orlando, FL, 2016
- **Advanced Photogrammetry for Collision Reconstruction**, LightPoint Scientific, 2017
- **Event Data Recorder Summit**, Houston, TX, 2019
- **Smart Cycling: Classroom & On-Bike**, League of American Bicyclists, 2022
- **Engineering Dynamics Corporation HVE Forum**, 2022
- **Point Clouds in Collision Reconstruction**, LightPoint Scientific, 2022
- **Event Data Recorder Update**, NAPARS, 2023
- **Introduction to Digital Video Analysis for Crash Reconstruction**, NAPARS, 2023
- **Energy Methods and Damage Analysis in Traffic Crash Reconstruction**, IPTM, 2023
- **Fuel Gas Systems**, Vector Solutions
- **Boiler Inspection, Operation, and Maintenance**, Vector Solutions
- **Intelligent Transportation Systems**, Vector Solutions
- **Indoor Air Quality**, Vector Solutions
- **Heating, Ventilation, and Air Conditioning (HVAC) Systems**, Vector Solutions
- **Design of Bicycle Facilities**, Vector Solutions