

James W. Smith, P.E.
Principal Engineer

Professional Profile

Mr. James Smith is a Principal Engineer in Exponent's Vehicle Engineering practice and is based in Exponent's Test and Engineering Center in Phoenix, Arizona. Mr. Smith specializes in the failure analysis of vehicles, vehicle components, and vehicle systems. He has conducted hundreds of full-scale vehicle tests, including crash tests, sled tests, quasi-static strength tests, and handling and stability tests. He is experienced with test fixture design, instrumentation and data analysis, and component-level testing of vehicle systems and other mechanical systems.

Mr. Smith's expertise further includes the investigation and analysis of motor vehicle accidents involving automobiles, light trucks, SUVs, motorcycles, heavy trucks, forklifts, off-road vehicles, and pedestrians. Mr. Smith has expertise in the use of computer software and simulation in the analysis of vehicle accidents as well as the use of recorded sensor data stored in airbag control modules.

Academic Credentials and Professional Honors

M.S., Mechanical Engineering, Arizona State University, 1994

B.S., Aerospace Engineering, Arizona State University (*summa cum laude*), 1992

Sigma Gamma Tau; Allied Signal Fellowship recipient

Licenses and Certifications

Registered Professional Mechanical Engineer, Arizona, #37367

Additional Education

Crash Safety Research Center, Jeffrey W. Muttart, *Human Factors for Traffic Crash Reconstruction*, October 25-29, 2010.

T.E.A.M. Arizona Motorcyclist Training Centers, *Basic Rider Course* (Motorcycle Rider Skill Training Course), November 14-16, 2008.

Eos Systems Inc., *PhotoModeler Collision Investigation*, Phoenix, AZ, September 23-25, 2008.

Collision Safety Institute, *Crash Data Retrieval Data Analyst Course*, Phoenix, AZ, July 8-11, 2008.

Collision Safety Institute, *Crash Data Retrieval Technician Course*, Phoenix, AZ, July 7, 2008.

Exponent, *Forklift Operator's Training per OSHA 1910.178*, Phoenix, AZ, April 16, 2008.

Society of Automotive Engineers, *Vehicle Accident Reconstruction Methods Seminar*, Detroit, MI, April 3–4, 2006.

Engineering Dynamics Corporation, *HVE Forum*, San Francisco, CA, May 3–7, 2004.

Northwestern University Traffic Institute, *Traffic Accident Reconstruction I*, Chicago, IL, October 20–31, 2003.

National Instruments, *LabVIEW Hands-On Seminar*, Phoenix, AZ, March 27, 2003.

General Motors Service Technology Group, *Supplemental Inflatable Restraint Systems*, Phoenix, AZ, January 24, 1997.

Publications and Selected Presentations

Smith JW. Motorcycle accident reconstruction methods and recent advancements. Continuing Legal Education Seminar, Sanders & Parks, April 7, 2011.

Rodowicz KA, Dupont K, Smedley J, Raasch C, Mkandawire C, Fittanto D, Bare C, Smith J. Passenger vehicle occupant response to low-speed impacts with a tractor-semitrailer. SAE Technical Paper Series, 2011-01-1125, SAE World Congress and Exhibition, Detroit, MI, April 2011.

Fittanto D, Bare C, Smith J, Mkandawire C. Passenger vehicle response to low-speed impacts involving a tractor-semitrailer. SAE Technical Paper Series, 2011-01-0291, SAE World Congress and Exhibition, Detroit, MI, April 2011.

Cuadrado J, Smyth B, Smith J, Digges K. Validation of sled tests for far-side occupant kinematics using Madymo. SAE Technical Paper Series, 2010-01-1160, SAE World Congress and Exhibition, Detroit, MI, April 2010.

Peterson DS, Smith JW. Comparison of vehicle measurement techniques. Collision Fall 2009; 4(2).

Frank TA, Smith JW, Hansen DC, Werner SM. Motorcycle rider trajectory in pitch-over brake applications and impacts. SAE Technical Paper Series, 2008-01-0164, SAE World Congress and Exhibition, Detroit, MI, April 2008.

Carter JW, Luepke P, Henry K, Germane G, Smith JW. Rollover dynamics: An exploration of the fundamentals. SAE Technical Paper Series, 2008-01-0172, SAE World Congress and Exhibition, Detroit, MI, April 2008.

Luepke P, Carter J, Henry K, Germane G, Smith JW. Rollover crash tests on dirt: An examination of rollover dynamics. SAE Technical Paper Series, 2008-01-0156, SAE World Congress and Exhibition, Detroit, MI, April 2008.

Smith JW. Accident reconstruction and experts. Farmers Insurance Liability Zone Conference, September 25, 2007.

Smyth B, Smith JW. Developing a sled test from crash test data. SAE Technical Paper Series, 2007-01-0711, SAE World Congress and Exhibition, Detroit, MI, April 2007.

Smith JW. Developing a sled test from crash test data. Presentation for Toyota Motor Company, Torrance, CA, October 31, 2006.

Smith JW. Collecting evidence: A crash course in conducting inspections. Continuing Legal Education Seminar, Bowman and Brooke, August 5, 2005.

Smith JW. Gathering and preserving evidence for accident reconstruction. 16th Annual Update of Arizona Law 2005, Jones, Skelton & Hochuli, May 4, 2005.

Smith JW. Accident reconstruction. Continuing Legal Education Seminar, Jones, Skelton & Hochuli, January 25, 2005.

Smith JW. An introduction to engineering issues in automotive litigations. Continuing Legal Education Seminar and Workshop, Hyundai Motor America, April 27–28, 2004.

Larson S, Smith JW, Werner S, Fowler G. Vehicle rollover testing, methodologies in recreating rollover collisions. SAE Technical Paper Series, 2000-01-1641, SAE Automotive Dynamics and Stability Conference, Troy, MI, May 15–17, 2000.

Smith JW. Stabilizing controller design for the reference pressure regulator. Master's Thesis, Arizona State University, 1994.

Professional Affiliations

- Society of Automotive Engineers (member)
 - Accident Investigation and Reconstruction Practices Committee