



JON A. VAN POPPEL, M.Sc., P.E.
SENIOR CONSULTANT

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Mr. van Poppel is a Professional Engineer in Mechanical Engineering, with 15 years of experience in automotive restraint systems development and design, and 17 years of experience in accident reconstruction. He is a Licensed Professional Engineer (P.E.) in the State of Texas and Louisiana. Mr. van Poppel has been involved in hundreds of tests, including component tests for restraint systems, sled tests with crash test dummies (ATD's), and full-vehicle crash tests for final product performance verifications and validations. He specializes in the investigation of seatbelt systems, airbag systems, child seats, crash reconstruction, rollover events, occupant kinematics, and biodynamics. Other specialties include mechanical systems, hydraulics, laboratory testing, and the analysis of dynamic events in general, with FEA software tools such as LS-Dyna, Madymo and Fluent for CFD.

Areas of Specialization

Accident Reconstruction (Automotive, Motorcycles, Pedestrians, and Marine)
Biodynamics and Occupant Kinematics
Occupant Restraints Systems – Seatbelts / Airbag Systems / Child Seats / Wheelchair Occupants
Rollover Protection Systems
Vehicle Crashworthiness
Vehicle Dynamics and Crash Simulation
CFD and MADYMO Simulation
Airbag Inflator Pyrotechnics and Systems
Mechanical Systems and Testing
Hydraulic and Pneumatic Systems
Heavy Equipment and Machinery

Education

M.Sc., Mechanical Engineering, McGill University, Montréal, Canada, 1992
B.S., Mechanical Engineering, University of Texas at San Antonio, Texas, 1989

Licensed Professional Engineer (P.E.)

State of Texas License No. 86433
State of Louisiana License No. 45575

Certifications

Transportation Worker Identification Credential (TWIC®)

May 2025

Professional Affiliations/Honors

Society of Automotive Engineers (SAE)

Member

American Society of Mechanical Engineers (ASME)

Member

Positions Held

Engineering Systems Inc., Houston, Texas

Senior Consultant, 2017 – present

JEA Forensics (J. Eftekhari & Associates), San Antonio, Texas

Project Manager, 2015 – 2016

TRW Automotive, Washington, Michigan

Principal Product Engineer, 2004 - 2015

Senior Analysis Engineer, 2000 - 2004

Biodynamic Research Corporation (BRC), San Antonio, Texas

Staff Engineer, 1995 - 2000

Testing and Analysis Engineer, 1993 - 1995

Continued Education

SAE Automotive and Mobility WCX Conference, Presenter, "Bicycle Pitch-Over Reconstruction Analysis", April 8-10, 2025, Detroit, MI.

PC-Crash Workshop, Rancho Santa Margarita, CA MEA Forensic, September 17, 2024.

PC-Crash 15.0 Webinar – Video Analysis.

Bendix Commercial Vehicle Systems, Bendix Online Brake School, May 7, 2024.

Valves, Disc and Drum Brakes, Vehicle Stability, Electronics, and Air Brake System training.

Event Data Recorder Update and Analysis, ESi Offices, Atlanta, GA, September 12, 2023.

Understanding Airbag Non-Deployment Claims: Case Studies," H. Mercado-Corujo & J. van Poppel, presented at the ABA Motor Vehicle Product Liability Litigation Conference, Scottsdale, AZ, April 2023.

Intro to PC-Crash Training, Rancho Santa Margarita, CA, MEA Forensic, February 21-22, 2023.

PC-Crash Webinar Series 2 - Using EDR Data, MEA Forensic, April 22, 2021.

Traffic Signal Timing Records Interpretation & Analysis, Traffic Signal Academy, University of Tennessee Center for Transportation Research, held in Norcross, GA, October 21, 2020.

PC-Crash 12.1 – New Features, MEA Forensic, July 8, 2020.

Introduction to ANSYS Fluent, DRD Technology Corp., May 14 – 15, 2020.

26th International Technical Conference on the Enhanced Safety of Vehicles (ESV), Eindhoven, Netherlands, June 10 – 13, 2019.

SAE Course, Accident Reconstruction, The Autonomous Vehicle and ADAS, Detroit, MI, April 11, 2019.

Investigation of Motorcycle Crashes, Institute of Police Technology and Management, University of North Florida, held in Davie, FL, April 23 – 27, 2018.

Human Factors in Traffic Crash Reconstruction, Patrick J. Robbins, Institute of Police Technology and Management, University of North Florida, held in Fort Myers, FL, October 30 – November 1, 2017.

Pedestrian Crash Research Team Member, ARC-CSi Crash Conference by Collision Publishing, South Point Hotel, Las Vegas, NV, September 18 – 21, 2017.

25th ESV Enhanced Safety of Vehicles Conference, Detroit, MI, June 5 – 8, 2017.

Online Bosch Full CDR Technician, Institute of Police Technology and Management, University of North Florida, February 13, 2017.

SAE Course, Failure Modes and Effects Analysis for Products and Processes, Detroit, MI, November 14 – 15, 2016.

SAE Course, Applying Automotive EDR Data to Traffic Crash Reconstruction, Detroit, MI, September 9 – 11, 2015.

SAE Congress, Restraints and Automotive Safety Sections, Detroit, MI, April 16 – 18, 2013.

8th International LS-DYNA Users Conference for Automotive Safety, Dearborn, MI, June 3 - 5, 2010.

TRW Seminar, Understanding the Basis for FMVSS Injury Criteria, Injury Biomechanics, Accident Analysis, and Field Injuries, presented by Dr. Patrick Atkinson, Washington, MI, March 2004.

SAE Passenger Vehicle Rollover Toptec: Causes, Prevention and Injury Prevalence, Scottsdale, AZ, April 22–23, 2002.

Madymo North American User's Conference, Farmington Hills, MI, October 2001.

Optimization software (HyperOpt/AutoDV) training course, Altair Engineering, Dearborn, MI, August 2001.

17th International Conference on the Enhanced Safety of Vehicles (ESV), Amsterdam, The Netherlands, June 2001.

Dytran training course, Lagrangian and Euler (Fluid/Structure interaction) modeling techniques, Detroit, MI, September 2000.

SAE Toptec, "Accident Reconstruction: State-of-the-Art TOPTEC", Costa Mesa, CA, December 1999.

SAE Toptec, "Vehicle Safety Restraint Systems: Performance, Technologies, and Implementation Strategies TOPTEC", Costa Mesa, CA, August 1999.

SAE Professional Development Seminars, "Current Issues in Using Crash Injury Data", presented by E. Garthe, and N. Mango, Detroit, MI, April 1999.

7th International MADYMO User's Conference, presented by TNO Crash-Safety Research Centre – MADYMO Group, Windsor, Ontario, Canada, June 1998.

16th International Technical Conference on the Enhanced Safety of Vehicles (ESV), Windsor, Ontario, Canada, May 1998.

MADYMO Introductory Training Course, presented by TNO North America, Rochester Hills, MI, January 1996.

39th Stapp Car Crash Conference, orally presented BRC publication (referenced below) in tandem with Dr. McConnell, San Diego, CA, November 1995.

SAE Toptec, "Head Impact Protection in Automobiles: The 201 Legislation Ruling", Novi, MI, September 1995.

38h Stapp Car Crash Conference, Fort Lauderdale, FL, October 1994.

Traffic Accident Reconstruction Course I and II (TAR I and II), Northwestern University Traffic Institute, Evanston, IL, October 1993.

Patents

US Patent #6,384,518, "Piezoelectric coupler for variably coupling two bodies and joint incorporating the coupler." May 7, 2002

US Patent #6,517,109, "Folded air bag." February 11, 2003

US Patent Application #20060157959, "Air Bag with tether-integrated electric switch." July 20, 2006

US Patent #11,577,685, "Adaptive Load-Limiting Seatbelt Assembly." February 14, 2023

US Patent #12,263,807, "An Adaptive Load-Limiting Seatbelt Assembly." April 1, 2025

Publications

Brach, R.M., Kelley, Mireille, **van Poppel, J.A.**, "Bicycle Pitch-over Reconstruction Analysis", SAE Technical Paper 2025-01-8684, 2025, doi:10.4271/2025-01-8684, Published 01 Apr 2025.

Brach, R.M., Fortenbaugh, D., **van Poppel, J.A.**, “Validation of the Han-Brach Vehicle-Pedestrian Impact Mechanics Model”, Collision Magazine, Volume 13, Issue 2, 2020, pp. 8-23.

van Poppel, J.A., Rath Stern, A., Fortenbaugh, D., Wilcox, G, “A Parametric Study of an Adaptive Load-Limiting Restraint System with Weight Sensing Considerations”, 2019 ESV International Technical Conference, Eindhoven, Netherlands, June 2019.

McConnell, W.E., Howard, R.P., **van Poppel, J.A.**, Krause, R.T., Guzman, H.M., Bomar, J.B., Raddin, J.H., Benedict, J.V., and Hatsell, C.P., “Human Head and Neck Kinematics after Low Velocity Rear-end Impacts — Understanding Whiplash”, SAE Paper #952724, 1995 Stapp Conference, San Diego, CA, November 1995.

van Poppel, J.A., Misra, A.K., “Active Control of Space Structures Using Bonded Piezoelectric Film Actuators”, 1992 AIAA/AAS Conference, Hilton Head, SC, August 1992.