

Jon A. van Poppel

M.Sc., PE

Senior Consultant



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.

Education

M.Sc., Mechanical Engineering, McGill University, Montréal, Canada, 1992

B.S., Mechanical Engineering, University of Texas at San Antonio, Texas, 1989

Licenses & Certifications

- State of Texas P.E. License No. 86433
- State of Louisiana P.E. License No. 45575
- Transportation Worker Identification Credential (TWIC®)

Languages

- Dutch, French

Positions Held

Engineering Systems Inc., Houston, Texas

- Senior Consultant, 2017 – Present

Contact Information

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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

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

Continuing Education

- **Hyundai-Kia & Tesla EDR Tools Technician** - University of North Florida Institute for Police Technology and Management (IPTM), Aurora, IL, August 2025
- **Bicycle Pitch-Over Reconstruction Analysis** - Automotive and Mobility WCX Conference, Presenter, Detroit, MI, April 8-10, 2025
- **CA MEA Forensic** - PC-Crash Workshop, 15.0 Webinar - Video, Rancho Santa Margarita, P-C Crash, September 17, 2024
- **Bendix Commercial Vehicle Systems** - Valves, Disc and Drum Brakes, Vehicle Stability, Electronics, and Air Brake System Training, Bendix Online Brake School, May 7, 2024
- **Event Data Recorder Update and Analysis** - ESI Offices, Atlanta, GA, September 12, 2023
- **Understanding Airbag Non-Deployment Claims - Case Studies** - H. Mercado-Corujó & J. van Poppel, presented at the ABA Motor Vehicle Product Liability Litigation Conference, Scottsdale, AZ, April 2023
- **Intro to PC-Crash Training** - MEA Forensic, Rancho Santa Margarita, CA, 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, 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
- **Enhanced Safety of Vehicles (ESV)** - 26th International Technical Conference, Eindhoven, Netherlands, June 10 – 13, 2019
- **Accident Reconstruction, The Autonomous Vehicle and ADAS** - SAE Course Detroit, MI, April 11, 2019

- **Investigation of Motorcycle Crashes, Institute of Police Technology and Management -** University of North Florida, 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, 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
- **Failure Modes and Effects Analysis for Products and Processes** - SAE Course, Detroit, MI, November 14 - 15, 2016
- **Applying Automotive EDR Data to Traffic Crash Reconstruction** - SAE Course, Detroit, MI, September 9 - 11, 2015
- **Restraints and Automotive Safety Sections** - SAE Congress, Detroit, MI, April 16 - 18, 2013
- **Automotive Safety** - 8th International LS-DYNA Users Conference, Dearborn, MI, June 3 - 5, 2010
- **Understanding the Basis for FMVSS Injury Criteria, Injury Biomechanics, Accident Analysis, and Field Injuries** - TRW Seminar, 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
- **Enhanced Safety of Vehicles (ESV)** - 17th International Conference on the Amsterdam, The Netherlands, June 2001
- **Lagrangian and Euler (Fluid/Structure Interaction) Modeling Techniques** - Dytran Training Course, Detroit, MI, September 2000
- **Accident Reconstruction: State-of-the-Art TOPTEC** - SAE Toptec, Costa Mesa, CA, December 1999
- **Vehicle Safety Restraint Systems: Performance, Technologies, and Implementation Strategies TOPTEC** - SAE Toptec, Costa Mesa, CA, August 1999
- **Current Issues in Using Crash Injury Data** - SAE Professional Development Seminars, 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

- **Enhanced Safety of Vehicles (ESV)** - 16th International Technical Conference, 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
- **Head Impact Protection in Automobiles: The 201 Legislation Ruling** - SAE Toptec, 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

Professional Affiliations/Honors

Society of Automotive Engineers (SAE)

- Member

American Society of Mechanical Engineers (ASME)

- Member

Publications

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

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

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

"Human Head and Neck Kinematics after Low Velocity Rear-end Impacts - Understanding Whiplash," 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., SAE Paper #952724, 1995 Stapp Conference, San Diego, CA, November 1995.

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

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