



3310 Green Park Circle
Charlotte, NC 28217

GARY R. ROGERS, MSME, PE
Principal & Director of Commercial Vehicles

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Mr. Gary Rogers is a Principal for Engineering Systems Inc. (ESi) in Charlotte, North Carolina. Mr. Rogers has broad experience in design, test and analysis, safety, and manufacturing. He has directed and conducted projects in the automotive, watercraft, aerospace, and communications industries. At General Motors, he served as Vehicle Safety Integration Engineer in the Vehicle Systems Synthesis and Analysis group. Mr. Rogers performed finite element analyses for vehicle structural integrity, NVH, durability, crashworthiness and occupant protection. As a Vehicle Safety Integration Engineer, he was responsible for all vehicle crashworthiness and occupant protection analysis and testing for the minivan family, as well as compliance to NHTSA and in-house standards. He has managed an analysis group responsible for predicting structural and crash performance of commercial aircraft seating for compliance with FAA and Federal regulations. Mr. Rogers also directed the R&D group responsible for simulating fiber optic cabling processes, as well as developing next generation fiber optic processes and equipment. His background also includes extensive experience in automatic transmission design for passenger car and heavy-truck applications. He also holds a B.S. degree in agriculture and has significant experience in agricultural equipment and farm processes.

Areas of Specialization

Machinery design and industrial processes
Vehicle dynamics, computer simulation
Vehicle body structure design, crashworthiness and occupant protection issues
Manlift and crane accident investigations
Structural fatigue and durability
Automotive transmissions
Agricultural, off-road and mining equipment
Vehicle and heavy truck accident reconstruction
Finite Element Analysis (FEA)
Automotive and commercial aerospace seat design for crashworthiness and durability
Recreational vehicle accident investigations
Farm premises investigations
Fiber optic cable loss investigations
Hydraulics, fluid systems and plumbing systems

Education

M.S., Mechanical Engineering, University of Michigan-Dearborn
B.S., Mechanical Engineering, North Carolina State University-Raleigh
B.S., Animal Science, Michigan State University-East Lansing

Licensed Professional Engineer (P.E.)

State of MichiganLicense No. 6201051198
State of IllinoisLicense No. 062-058102

March 2025



State of North CarolinaLicense No. 030601
State of OhioLicense No. E-69916
State of South CarolinaLicense No. 27255
State of VirginiaLicense No. 0402047596

Other Licenses and Registrations

National Council of Examiners for Engineering and Surveying (NCEES) (No. 25804)

Professional Affiliations/Honors

Professional Affiliations:

Society of Automotive Engineers (SAE)
American Society of Mechanical Engineers (ASME)
American Society of Agricultural and Biological Engineers (ASABE)
American National Standards Institute (ANSI)

Honors:

Lean Engineering Award, General Motors Corp., Vehicle Systems Synthesis & Analysis Group. "MVSS210 Rear Seat Belt Attachment Design Synthesis for MS2000, First Hardware Test Meets Requirements," November 1995.

Lean Engineering Award, General Motors Corp., Vehicle Systems Synthesis & Analysis Group. "CMVSS210.1 Child Seat Tether Anchorage Attachment Design Synthesis for GMX170, First Hardware Test Meets Requirements," April 1996.

Lean Engineering Award, General Motors Corp., Vehicle Systems Synthesis & Analysis Group. "Door Slam Durability for GMX170, First Hardware Test Meets Requirements," July 1996.

Lean Engineering Award, General Motors Corp., Vehicle Systems Synthesis & Analysis Group, "Door Slam Durability for MS2000, First Hardware Test Meets Requirements," July 1996.

Recognition Award, General Motors Corp., Vehicle Systems Synthesis & Analysis Group, "For Creating An Engineering Solution For Crashworthiness Improvements For The 1997 U-Van In The Limited Time Allowed," November 1996.

Patents

Multi-Axis Fiber Optic Cable Ribbon Design, U.S. Patent No.: 6,879,761
Inventor: Gary R. Rogers, April 12, 2005.

Positions Held

Engineering Systems Inc., Charlotte, North Carolina

Principal & Director of Commercial Vehicles, 2021-Present
Principal, 2016-2021
Senior Managing Consultant, 2014-2016
Senior Consultant, 2011-2014
Manager of North Carolina Operations, 2011-2018

Packer Engineering, Inc., Charlotte, North Carolina

Vice President, Engineering Mechanics, 2002-2010

Alcatel Telecommunications, Inc., Claremont, North Carolina

Group Leader - Process Modeling Group, 2000-2002

B/E Aerospace, Inc., Winston-Salem, North Carolina

Manager - CAE/Simulation, Synthesis and Analysis, 1997-2000

General Motors Corporation, Warren, Michigan

Vehicle Safety Integration Engineer, 1990-1997

Rockwell International, Troy, Michigan

Project Engineer, 1988-1990

General Motors Corporation, Ypsilanti, Michigan

Project Engineer, 1985-1988

North Carolina Dairy Herd Improvement Association, Raleigh, North Carolina

Computer Programmer & Lab Technician, 1982-1985

Jay Landis Farms, Homer, Michigan

Dairy Farm Manager, 1981-1982

Specialized Training

Motor Vehicle Accident Reconstruction, SAE (11/8/2002)

PC-Crash Advance Training (4/24/2003)

PC-Rect Training (4/22/2003)

Heavy Vehicle Accident Reconstruction, Northwestern University (5/9/2003)

The Role of the Rear Seat in Crash Safety, SAE (3/12/2004)

Traffic Accident Reconstruction II Course, Northwestern University (2004)

HVE Accident Reconstruction Software Training (2005)

HVE Accident Reconstruction Software Advanced Training Forum (2006)

Product Liability and the Engineer, SAE (2006)

Occupant and Vehicle Kinematics in Rollovers, SAE (2006)

HVE Accident Reconstruction Software Advanced Training Forum (2008)

SAE Vehicle Dynamics for Passenger Cars and Light Trucks e-Seminar (2010)

SAE Introduction to Heavy Truck Tire, Steering, and Suspension Dynamics (2012)

HVE Accident Reconstruction Software Advanced Training Forum (2014)

CSI-Collision Safety Institute, Crash Data Retrieval Specialist – Technician Level 1 (2014)

HVE Accident Reconstruction Software Advanced Training Forum (2016)

Human Factors in Traffic Crash Reconstruction, Institute of Police Technology & Management (IPTM) (2017)

PC-Crash Advance Training (2018)

Applied Vehicle Dynamics Course, Autobahn Country Club, PowerTrain Technology & Precision Auto Research (2018)

Engineering Ethics for Ohio Professional Engineers, Continuing Education & Development, Inc. (2019)

HVE Forum, Engineering Dynamics Corporation (2020)

Traffic Signal Timing Records Interpretation & Analysis, Traffic Signal Academy, University of Tennessee (2020)

TurboCAD Professional 2D/3D Training (2021)

Engineering Ethics for Ohio Professional Engineers, Continuing Education & Development, Inc. (2021)

HVE Forum, Engineering Dynamics Corporation (2025)

Publications/Presentations

Publications:

Honeycutt, D., **Rogers, G.**, Yang, S., and Chinni, J., "Comparison of a Tractor-Semitrailer Rollover Test and HVE Simulations," SAE Technical Paper 2024-01-2487, 2024, <https://doi.org/10.4271/2024-01-2487>.

Brickman, D., Shah, A., **Rogers, G.**, Rewers, L., Petersen, J., "Best Safety Practices for Stability of PVC Pipe Bundles During Transportation," The XXXVth Annual International Occupational Ergonomics and Safety Conference, Munich, Germany, 2023.

Bedsworth, K., Butler, R., **Rogers, G.**, Breen, K., and Fischer, W., "Commercial Vehicle Skid Distance Testing and Analysis," SAE International 2013-01-0771, 2013.

"Integrating CAE into the B/E-SPG Design Process - A Modified 4-Phase EWIPP Approach," Internal Process Standard Publication, 1998.

"Input Mobility Analysis Procedure and Techniques Developed To-date. Observed Analysis Limitations and Recommended Future Activities," General Motors, Vehicle Systems Synthesis and Analysis Group, Internal Analysis Procedure Publication, 1996.

"Sheet Molding Compound (SMC) Design Considerations for Door Structures," General Motors, Vehicle Systems Synthesis and Analysis Group, Technical Review Publication and Presentation, 1995.

"Front and Rear Chassis Interface Input Mobility Simulation Techniques as Developed for the GMX170 SLA Vehicle," General Motors, Vehicle Systems Synthesis and Analysis Group, Internal Analysis Procedure Publication, 1994.

Presentations:

"Best Safety Practices for Stability of PVC Pipe Bundles During Transport," 12th Annual World Conference for the Society for Industrial and System Engineering, Co-lecturer with Dennis Brickman, Anand Shah, Lance Rewerts and John Petersen, 2023.

"Commercial Truck AR," ASTM Occupational Health & Safety Committee Meeting, 2021.

"Automotive Failure Analysis: How they Crash, How they Break," Continuing Education Technical Presentation at Crane Engineering (ESi) "Smart Sessions" Event, Co-lecturer with Hernan Mercado-Corujo, 2019.

"Automotive Failure Analysis: How They Crash, How They Break," Continuing Education Technical Presentation for attorneys, Quintairos, Prieto, Wood & Boyer, P.A., Roswell, GA, 2018.

"Automotive Failure Analysis: How they Crash, How they Break," Continuing Education Technical Presentation for attorneys and insurance professionals, ESi-Ann Arbor, MI Open House Event, Co-lecturer with James Sprague, Ph.D., P.E., 2012.

"Accident Reconstruction & Injury Analysis," Guest Lecturer, Chartis Insurance, Atlanta, GA, 2012.

"Engineering Consulting as a Career," Guest Lecturer, University of North Carolina-Charlotte, William States Lee College of Engineering, Engineering Multi-Disciplinary Professional Development Class, 2011.

"Engineering Ethics and the Professional Engineer," Guest Lecturer, University of North Carolina-Charlotte, William States Lee College of Engineering, ENGR 3295, 2009.

"FEA Evaluation of the Frontal Danner (VDS)/Thatcham Performance of the 1997 Opel Sintra Minivan," Presentation, General Motors North American Operations CAE Conference, 1997.

"Offset Barrier Strategies," Presentation of Analysis and Barrier Test Results to Chairman, NAO-Live, General Motors Desert Proving Grounds, 1997.

Strategic Task Groups and Committees

Durability Integration Team for U-Van Vehicle Family, Organizer, Developer & Leader, General Motors Corporation, 1995.

Discussion Panel Member, General Motors NAO Noise and Vibration Conference, 1996.

ANSI Z245 Standards committee member, since 2014.

Member of SAE Data Collection and Archiving Standards Committee, since 2017.