



P. Keith Rogers, P.E.
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EXPERTISE

- Vehicle and Component Test Design and Testing
- ATV/UTV/ROV Design, Analysis and Testing
- 3D Solid Modeling and Assembly Design
- Finite Element Analysis (FEA)
- Vehicle Suspension Optimization
- Kinematic Motion Studies
- Vehicle Dynamics Simulations
- Automotive Component Design
- Consumer Product Design
- Machine Design and Automation

EDUCATION

B.S.M.E., Mechanical Engineering, University of Arkansas, Fayetteville, Arkansas, 2001

PROFESSIONAL EXPERIENCE

2011-Present President, APPLIED DYNAMICS ENGINEERING GROUP, Fayetteville, AR

Founder and chief engineer of consulting engineering firm, specializing in automotive engineering, vehicle testing, and consumer product design.

Projects

- HMMWV recap steering and brake upgrade
Responsible for steering and brake system hydraulic circuit design and analysis for a military vehicle components supplier
- FMTV Pre-Purchase Vehicle Evaluation Consultation
- UTV/ Side by Side ATV ANSI - ROHVA validation
Responsible for review, testing, and engineering modifications required to safely bring several Recreational Off-Highway Vehicles to market
- UTV/ Side by Side Suspension Upgrade
Led team of customer engineers to improve the performance of a UTV suspension and optimize for dynamic vehicle stability and safety
- *Design of consumer electronics plastic enclosure and component packaging*
- *Design and Analysis of Side Under-Ride Guard for 53' over the road trailer. Deposited as expert witness for design concept. Two patents pending for the Side Under Ride Guard design*
- *Design, analysis, and control systems development for proprietary automated assembly machine*

2008 – 2011 Lead Mobility Engineer, BAE SYSTEMS, Ground Tactical Vehicles, Sealy, TX

Responsible for overall vehicle dynamics design and analysis, system integration, and testing validation of suspension, steering, and braking systems for large off-road tactical armored vehicles.

Projects

- Caiman MTV Suspension Engineering Lead: *Responsible for suspension kinematics optimization and overall vehicle dynamics simulation interpretation*
- Caiman MTV Steering Engineering Lead: *Responsible for design, development, integration, and testing of completely original hydraulically assisted steering system*
- FMTV Prop Shaft failure mode investigation: *Modeled and analyzed potential causes for failures. Instrumented vehicle with sensors and tested to verify computer model and developed solution.*

- HMMWV Recap Mobility Engineering Lead: *Responsible for suspension, steering, braking and chassis driveline design, analysis, prototyping, and vendor selection*
- LMTV Active Suspension Engineering Lead: *Acted as consultant to semi-active suspension vendor. Specialized in component integration into existing vehicle platform*
- MATV Suspension Engineering Lead: *Successfully designed and integrated production intent composite leaf spring suspension and coil over dampers into new vehicle platform within 2 months. Integral in aggressively expedited weight reduction team that enabled vehicle to be entered into Department of Defense competition.*

2004 - 2008 Design Engineer, Zeus Off-Road Engineering, Farmington, AR

Acted as lead engineer, simultaneously for several systems of complete ground vehicle design, analysis, procurement and prototyping.

Projects

- Light Strike Medical Evacuation Vehicle, LS-MEV: *Lead engineer for wheels and hubs, brake system, exhaust system, fuel system, interior/ergonomics, and supplemental storage of V-22 Compatible Internally Transportable Vehicle. Responsible for sourcing all sheet metal formed components. Involved in vehicle dynamics testing and validation*
- JLTV Fully Active Hydraulic Suspension Upgrade kit: *Responsible for component design, analysis, and prototyping of novel hydraulic damper/spring combination, control arms, and all mounting brackets and hardware. Specified and integrated electronic sensors, wiring, and hardware for modified sky-hook algorithm controller*
- Overfield side by side ATV: *Lead engineer for suspension, brakes, and steering system. Organized initial production line layout and tooling*

2000 - 2004 Design/Project Engineer, Superior Industries, Inc., Fayetteville, AR

Responsible for design, analysis, and production project management of cast aluminum automotive wheels for Original Equipment Manufacturer (OEM) supplier of Big Three.

PROFESSIONAL LICENSES

Arkansas Professional Engineer #13219

PROFESSIONAL AFFILIATIONS

Arkansas Academy of Mechanical Engineers, 2017 Inductee
Society of Automotive Engineers

AWARDS

- BAE Systems Chairman's Bronze Award
- Caiman MTV Enhancing Customer Performance, 2010
- Caiman MTV Design and Engineering, 2010
- M-ATV Lightweight Design Effort, 2009

PATENTS

- US Patent 9,352,714: "Adjustable Side Under-ride Guard for Sliding Axle Trailer"
- US Patent 9,487,171: "Telescoping Side Under-ride Guard for Sliding Axle Trailer"

PROFESSIONAL DEVELOPMENT

- SAE Applied Vehicle Dynamics at BMW Performance Center (2014)
- SAE Advanced Vehicle Dynamics for Passenger Cars and Light Trucks (2010)
- SAE Vehicle Braking Performance, Stopping Distance Fast Track (2010)
- Mechanism Design using Pro/ENGINEER Wildfire 3.0, PTC University (2009)
- Mechanism Simulation using Pro/ENGINEER Wildfire 3.0, PTC University (2009)
- Finite Element Analysis, COSMOSWorks Professional (2007)
- Motion Simulation, COSMOS Motion (2007)
- IDGA Armor Protection Convention (2006)
- SAE World Congress (2006)
- SAE World Congress (2005)
- Free Form Modeling, UG17 (2002)
- Parametric Modeling, UG16 (2001)