



JP Research, Inc.

8451 Boulder Court, Suite 200, Commerce Township, MI 48390
Phone: (248) 564-7852 • Fax: (248) 564-7925 • www.jpresearch.com

Robert Kuhn, PE

Managing Engineer

rkuhn@jpresearch.com

Mr. Robert Kuhn is a Managing Engineer in JP Research's Detroit area office. A skilled automotive systems engineer, Mr. Kuhn specializes in analysis of engineering design issues, instrumented testing and test data, analysis of warranty data, and investigation and analysis of failure events for a variety of vehicle types including passenger cars, SUVs, and light trucks. With significant vehicle (particularly powertrain and chassis) design, development, testing, and analysis experience in both hands-on and supervisory/management capacities, he brings a unique depth of knowledge to consulting projects.

At JP Research, Mr. Kuhn supports both vehicle OEM and component Tier Suppliers on a variety of mechanical system and vehicle projects ranging from individual on road vehicle components to marine and off road heavy equipment powertrain systems. As a consultant, Mr. Kuhn has testified in state, federal, and international venues on a variety of technical matters. His experience and depth of knowledge have allowed him to provide effective and compelling insight for his clients in cases involving crash investigation, warranty claims, class action and lemon law matters, vehicle recalls and investigations, patents and intellectual property, and real-world performance and design of vehicle- and non-vehicle-related products.

Prior to joining JP Research, Mr. Kuhn was a managing engineer with Exponent/Failure Analysis Associates. While there he supervised engineering and analysis projects across a variety of industries, with particular focus on vehicle and vehicle system performance. Many of these projects included full vehicle driving and performance evaluations of both on road and off road UTV/ROV-type vehicles.

While employed by DaimlerChrysler, Mr. Kuhn served in a number of positions including Vehicle Safety Office Chassis Systems Investigation Supervisor. During this assignment he worked directly with both corporate staff and the National Highway Traffic Safety Administration (NHTSA) on safety related investigations. In other positions he held lead roles in designing, developing, and testing complete vehicles and vehicle systems, including overseeing development for the Jeep Liberty (KJ) vehicle line.

In addition to his accomplishments in the automotive industry and technical consulting fields, Mr. Kuhn has assisted in the design and analysis of specialty truck equipment, solar powered cars, race, and specialty vehicles. He has also undertaken a variety of unique assignments including a six-month assignment as Manager of the US Army Rapid Equipping Force Laboratory in Kandahar, Afghanistan. During this assignment Mr. Kuhn oversaw the design, development, and rapid prototyping of numerous electrical, mechanical, and electromechanical devices for US soldiers serving in the Afghanistan conflict.

Mr. Kuhn is also an instructor for the Society of Automotive Engineers and teaches an SAE course on "Engine Failure Investigation and Analysis" several times a year. Most recently Mr. Kuhn was invited to be a guest lecturer in the mechanical engineering program at Yancheng Institute of Technology in Yancheng, China. Mr. Kuhn also holds a Professional Engineering License in the State of Michigan, as well as two United States patents involving steering and suspension system designs.

Industry Experience and Expertise

- Product design and development
 - o Component, system, & vehicle level
- Instrumented performance and durability testing
 - o Component, system & vehicle level
- Design FMEA (Failure Modes & Effect Analysis) creation
- DVP&R (Design Verification Plan & Report) creation
- Customer duty cycle evaluation and recreation
- Customer warranty review and root cause analysis
- Product Investigation and Recall Process (direct NHTSA interface)
- Full vehicle design, testing, & evaluation
- Powertrain and Chassis component design, analysis, testing, and evaluation

Consulting Experience and Expertise

- Product/component failure and root cause analysis
- Instrumented product Testing and Evaluation
- Client development and design process review and evaluation
- Product Litigation support and testimony
- Arbitration Support and testimony
 - o Patent and IP matters
 - o Design Infringement
 - o Manufacturing process review
 - o International and domestic arbitration hearings
- Client support worldwide including Korea, China, United States, Singapore, Hong Kong, Afghanistan
- Product warranty
 - o Review and analysis
 - o Countermeasure evaluation and assessment
 - o Root cause analysis and determination
- Class Action Lawsuit Support and Litigation
- ROV (recreation off-highway vehicles)
 - o crash analysis and recreation
 - o vehicle dynamics and driver performance evaluations

Education, Memberships, and Professional Honors

University of Michigan, Dearborn, Michigan	M.S., Automotive Systems Engineering	2001
Carnegie Mellon University, Pittsburgh, Pennsylvania	B.S., Mechanical Engineering	1984

Licenses and Certification

Licensed Professional Engineer, Michigan, #6201035566	1990
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Patents

Patent 5,782,484: Short Long Arm Independent Suspension	1998
Patent 5,934,404: Rack & Pinion Steering System for Solid Front Axle (with L Delellis)	1999

Memberships / Professional Affiliations

- Society of Automotive Engineers (SAE), Member
 - SAE Instructor: “Engine Failure Investigation and Analysis,” a 2-day SAE seminar taught several times a year, in various locations around the world.
<http://training.sae.org/seminars/c1344/>
 - Invited guest lecturer Yancheng Institute of Technology, Yancheng, China
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Professional Experience

JP Research, Inc., Detroit, Michigan

Managing Engineer, 2014–Present

Providing engineering and technical support for research, analysis, and litigation related projects. Project experience and expertise includes; vehicle testing and performance analysis; component design and performance analysis; vehicle and component development methods, computer simulations; review of intellectual property and patent claims, analysis of warranty and class action related claims, accident reconstruction for passenger car, truck, SUV and off-road vehicles.

US Army Rapid Equipping Force (REF) Laboratory, Kandahar, Afghanistan

Manager, April 2012 –October 2012

During a unique assignment while at Exponent, directed efforts at the US Army REF lab, which was responsible for the design, development, and fielding of electrical and mechanical equipment and systems for US troops serving in the Afghanistan conflict.

Exponent, Inc. (formerly **Failure Analysis Associates**), Farmington Hills, Michigan

Managing Engineer, 2003–2014

Provided technical consulting, expert testimony, and analysis for a variety of clients including automotive OEMs, component and system manufacturers, off-road vehicle manufacturers, engine manufacturers, service parts suppliers, insurance companies, and others in both vehicle and non-vehicle related industries. Types of projects included product design, performance, development, testing, and warranty claims. Work involved the use of computer-aided engineering, analytical and statistical tools as well as instrumented testing, analysis, and evaluation of vehicle and product performance.

Responsibilities included project management (budgeting, planning, and execution), preparing technical reports and project presentations, and marketing of technical services to new and existing clients.

DaimlerChrysler, Detroit, Michigan

Supervisor, 1998–2003

Project responsibilities included:

Jeep Liberty (KJ) Vehicle Development & Synthesis Supervisor —

Responsible for all aspects of the vehicle development process

Vehicle Safety Office Chassis Systems Investigation Supervisor—

Responsible for project management and management presentations

Interact directly with the NHTSA to coordinate safety related investigations

Jeep CKD Market Vehicle Design Supervisor—

Responsible for all aspects of timing, design, and release of multiple Jeep platform products in Venezuela, Thailand, Egypt, and other “Complete Knock-Down” (CKD) kit markets on all vehicle systems, powertrain, and chassis.

Chrysler / DaimlerChrysler, Detroit, Michigan

Senior Engineer, 1995–1998

Jeep Platform Advanced Vehicle Engineering.

Responsible for all future Jeep vehicle chassis, suspension, and powertrain packaging, layout, and concept design; coordination of prototype vehicle design and build; and coordination of concept design studies, modeling, and analysis of chassis, suspension, and powertrain systems.

Ford Motor Company, Dearborn, Michigan

Development Engineer, 1992–1995

6.8l V-10 Base Engine Development Planning and Testing

Responsible for planning, coordination, and testing of prototype vehicle durability fleets, prototype engine build and test plan coordination and implementation, and creation of new engine testing protocols.

Algor FEA Software, Pittsburgh, Pennsylvania

Field Engineer, 1991–1992

Midwest Field Service Engineer

Responsible for customer service, sales, training, and liaison for PC-based finite element analysis (FEA) software. Also provided FEA instruction, client project tutoring, and assistance.

Chrysler Corp. / ARCAD, Highland Park, Michigan

Design & Development Engineer, 1984–1991

Responsible for exhaust system design, development, testing, planning, and release. While at the ARCAD project, responsibilities included chassis packaging, suspension design, and body structure analysis. Also part of the Large Car Platform Engine Development team.

Selected Presentations and Publications

“Recreational Off-Highway Vehicle (ROV) Handling and Control,” Society of Automotive Engineers 2012 World Congress, Detroit, MI; SAE Paper 2012-01-0239, 2012 (with JC Brown, R Larson, G Fowler).

“Effect of Weld Pitch Variation on the Performance of a Two Piece Spot-Welded Body Structure,” SAE 2001 World Congress Detroit, MI; SAE Paper 02M-123, 2001.