DESIGN RESEARCH ENGINEERING
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MICHELLE M. VOGLER, Ph.D., P.E.

Professional Specialization

Failure analysis/design evaluation of motor vehicle systems, mechanical components, consumer products, and industrial machinery. Accident reconstruction and analysis of accident-related issues for motor vehicles and automotive components including body structures, body closures, suspension systems, steering systems, and seating systems. Risk analysis and statistical evaluation of system and component field performance. Design and implementation of mechanical test programs. Fire investigation. Guarding and safety standard issues.

Solid mechanics and stress analysis. Metallurgical evaluation of materials-related issues in field applications. Mechanical, thermal, and electrical finite element analysis (FEA) modeling. Fatigue and fracture mechanics testing/analysis.

Research includes investigation of resistance spot welding process, evaluation of material characteristics based on environmental and loading conditions, and design/development of restraint system for physically disabled individuals with mobility aids.

Professional Background

B.S. (Mechanical Engineering); Michigan State University, 1980
M.S. (Mechanical Engineering); University of Santa Clara, 1985
Ph.D. (Mechanical Engineering/Design Division); Stanford University, 1993
Graduate Materials/Metallurgy Courses (Advanced Mechanical Properties of Materials, Strength and Microstructure, Electron Microscopy, Mechanical Behavior of Solids, Techniques for Microstructural Characterization); University of Santa Clara, Stanford University
Graduate Statistics Courses (Product Reliability Modeling, Regression Models and Variance Analysis); University of Santa Clara, Stanford University
Additional Post-Degree Engineering Courses (Accident Reconstruction, Northwestern University Traffic Institute; Applied Testing, Union College of New York; Corrosion Engineering, Massachusetts Institute of Technology; Fatigue, University of Iowa; Fracture Mechanics, University of California, Berkley; and Reverse Engineering, Society of Automotive Engineers)

Principal Engineer,
Design Research Engineering
1996 to Present

Managing Engineer,
Failure Analysis Associates, Inc.
1993 to 1995 Full Time
1989 to 1992 Part Time
1983 to 1989 Full Time

Research Assistant, Department of Mechanical Engineering,
Stanford University
1989 to 1991

Test Engineer, Nuclear Energy Division,
General Electric Company
1980 to 1983

Engineer,
Packard Electric, Division of General Motors
1977 to 1978

MICHELLE M. VOGLER, Ph.D., P.E.

Professional Affiliations
Member, Society of Automotive Engineers (SAE)
Member, American Welding Society (AWS)
Member, American Society of Mechanical Engineers (ASME)
Member, American Society for Materials (ASM)
Member, American Statistical Association (ASA)
Member, National Safety Council (NSC)

Professional Licenses
Registered Professional Mechanical Engineer, 1984 to present, California #22720
Registered Professional Engineer, 2000 to present, Michigan #046483
Licensed Professional Engineer, 2011 to present, Mississippi #20379LTD

Honors
National Science Foundation, Fellowship (Stanford University)
American Welding Society, Charles H. Jennings Memorial Award for a Significant Contribution to Welding Literature, 1994

Publications
"Evaluation of Drivers of Very Large Pickup Trucks: Size, Seated Height and Biomechanical Responses in Drop Tests", SAE 2023-01-0649 (with R. Burnett, C. Parenteau, D. Toomey, K. Orlowski and R. Krishnaswami)
"Analysis of Tie Rod Separations in Motor Vehicle Crashes," SAE 2008-01-0177 (with R.J. Pascarella).
"Enhanced Vehicle Identification in Motor Vehicle Accident Databases," SAE 2004-01-1186 (with B. Moroski-Browne, T. Angelos, and R. Firestone).
"Development of Wheelchair Restraint System," California Department of Transportation, Final Report, Sacramento, California, August 1993.
"Electrical Contact Resistance Under High Loads and Elevated Temperatures," Welding Journal, Vol. 72, No. 6, June 1993 (with S. Sheppard).
"Investigation of Resistance Spot Weld Formation," Ph.D. Thesis, Stanford University, 1992.
"A Study of Temperature Histories in Resistance Spot Welding," Trends in Welding Research International Conference, Gatlinburg, Tennessee, 1992 (with S. Sheppard).
"Contact Resistance Under High Loads and Elevated Temperatures," 26th Annual Technical Meeting, Society of Engineering Science, Ann Arbor, Michigan, 1989 (with S. Sheppard).
"Investigation of the Reliability of Solid Aluminum Main Bearings, in Emergency Diesel Generators," 9th International Conference on Structural Mechanics in Reactor Technology, Vol. D, Lausanne, Switzerland, August 1987 (with L. A. Swanger and S. A. Rau).
"Type 304 Stainless Steel High Cycle Fatigue Behavior," Conference on Fracture and Fatigue, General Electric Technical Conference, Schenectady, New York, 1982.

Guest Lecturer
"Using Micro Evidence Effectively to Defend Automotive Cases", Strictly Automotive – Cutting Edge Issues in Automotive Product Liability Litigation, DRI, La Jolla, CA, September 24-25, 2009 (with M. Weber and A. Monaco).
"Roof Crush Standard", Strictly Automotive – Cutting Edge Issues in Automotive Product Liability Litigation, DRI, San Diego, CA, September 6-7, 2007 (with G. Pappas).
"Child Injury Risk", Product Liability Conference – Taking Products Out of the Box, DRI, Las Vegas, NV, February 8-10, 2006.
"Enhanced Vehicle Identification in Motor Vehicle Accident Databases", Society of Automotive Engineers, 2004 World Congress, Detroit, MI, March 2004 (with B. Moroski-Browne, T. Angelos, and R. Firestone).
"Airbags – Perspectives from Experts in Accident Reconstruction, Biomechanics, Statistics and Mathematical Modeling", Emerging Issues in Motor Vehicle Product Liability Litigation, American Bar Association, Phoenix, AZ, April 2-3, 1998.