Exponent
Failure Analysis Associates®

Exponent
39100 Country Club Drive
Farmington Hills, MI 48331

telephone 248-324-9100
facsimile 248-324-9199
www.exponent.com

Karen M. Balavich
Manager

Professional Profile

Ms. Karen Balavich is a Manager in Exponent's Vehicle Engineering practice. Ms. Balavich is an experienced automotive design engineer with expertise in Side Impact and Rollover Restraints. She was the technical leader in the design, development, and implementation of the safety technology for the industry's first rollover curtain. Ms. Balavich has knowledge in generating design specifications for side impact and rollover restraints which align with the requirements of the Federal Motor Vehicle Safety Standards (FMVSS), guidelines suggested by the Insurance Institutes for Highway Safety (IIHS), and procedures developed by other recognized industry working groups. She has also researched and applied side impact and rollover evaluation methods to alternative technologies such as glazing and seat belt system performance. Most recently, Ms. Balavich worked with NHTSA on their Containment Regulation proposal.

Prior to joining Exponent, Ms. Balavich held the position of Technical Expert in Side Impact and Rollover Restraints at the Ford Motor Company where she conducted research and development for the Ford Safety Canopy System. She also directed and implemented the industry's first application in the 2003 Ford Explorer. Prior to her position as Technical Expert, she held Design Engineering positions in Vehicle Restraints, Door Systems, and Corrosion Protection Engineering also with Ford.

Academic Credentials and Professional Honors

M.S., Finance, Walsh College, 1993
B.S., Mechanical Engineering, Michigan Technological University, 1988

Patents

US 7,338,070: A Multi Chamber Airbag for a Motor Vehicle, March 04, 2008 (K. Balavich, J. Belwafa, C. Madasamy).

US 7,178,827: Occupant Ejection Prevention Assembly, February 20, 2007 (K. Balavich, C. Chou, J. Le, F. Wu).

US 20060131845 A1: A Multi Chamber Airbag for a Motor Vehicle, June 22, 2006 (K. Aekbote, K. Balavich, J. Belwafa).

JP2005225487: Occupant Release Prevention Assembly, August 25, 2005 (K. Balavich, C. Chou, J. Le, F. Wu).

US 20070108745: Side Impact Air Bag, May 17, 2005 (K. Balavich, J. Belwafa, B. Spahn, I. Reyes-Helfrich).

US 6,237,943 B1: Vehicle Rollover Curtain with Improved Deployment, May 29, 2001 (K. Balavich, J.R. Brown, J.A. Zychowicz).

Publications

Balavich KM, McCoy RW. Analysis of a prototype electric retractor, a seat belt pre-tensioning device and dummy lateral motion prior to vehicle rollover. SAE Paper 05B-27, SAE 2005 World Congress.

Balavich KM, Nayef E. Dummy head kinematics in tripped rollover tests and a test method to evaluate the effect of curtain airbag deployment. SAE Paper 02B-193, SAE 2002 World Congress.

Presentations

Balavich K, Leigh M. Ford Motor Company—Ford ejection mitigation. Presentation to NHTSA (NHTSA-2006-26467-0002), Washington DC, February 2007.

Balavich K, Clark T. Safety canopy system overview. SAE Rollover Forum, Dearborn, MI, February 2004.

Balavich K. Occupant impact energy level study for development of a component containment evaluation method. The Alliance of Automotive Manufacturers Meeting, Southfield, MI, July 2003.

Balavich K, Nayef E. Dummy head kinematics in tripped rollover tests and a test method to evaluate the effect of curtain airbag deployment. 2002 SAE World Congress,SAE Paper 02B-193, Detroit, MI, April 2002.

Balavich K. Side airbags as supplemental protection in rollover accidents. SAE Government Industry Meeting, Washington DC, May 2000.

Prior Experience

Technical Expert Side Impact and Rollover Restraints, Ford Motor Company, 2000–2007
Design Engineer Side Impact and Rollover Restraints, Ford Motor Company, 1998–1999
Vehicle Design Engineer, Escort/Tracer Door Systems, Ford Motor Company, 1994–1997
Design Engineer, Corrosion Protection Engineering, Ford Motor Company, 1990–1993
Ford College Graduate Program, Ford Motor Company, 1988–1989

Professional Affiliations

- Society of Automotive Engineers (member)