RAYMOND MERALA

Specialized Professional Competence

Motor vehicle, recreational equipment, and industrial equipment accident reconstruction. Vehicle dynamics, occupant dynamics. Mechanical system and component failure analysis. Static and dynamic test design, digital data acquisition and analysis. Design, testing, and failure analysis of recreational, agricultural, forestry, industrial, and construction equipment. Risk analysis. Analysis and design of dynamic systems.

Background and Professional Honors

B.S. (Agricultural Engineering), University of California, Davis
M.S. (Mechanical Engineering), University of California, Davis

Principal,
Talas Engineering, Inc.
Managing Engineer,
Piziali and Associates, Inc.
Managing Engineer,
Failure Analysis Associates, Inc.
Research Assistant,
Mikuni Corporation
Project Leader/Agricultural Engineer,
Equipment Development Center, USDA Forest Service
Engineering Aide,
Agricultural Engineering Department, University of California, Davis

Registered Professional Mechanical Engineer, California #M026171

Member, American Society of Mechanical Engineers
Member, Society of Automotive Engineers
Member, American Society for Testing and Materials,
Committee F-27 on Snow Skiing
Member, American Society of Agricultural and Biological Engineers

Selected Publications and Presentations

"Characterization of Janus V3 After Market Vehicle Camera with Global Positioning and 3-Axis Accelerometer," SAE Technical Paper 2017-01-1420, SAE International 2017 World Congress, Detroit, Michigan, April 2017 (with K. White).

"Rollout Deceleration of Modern Passenger Vehicles," SAE Technical Paper 2012-01-0616, SAE International 2012 World Congress, Detroit, Michigan, April 2012 (with K. White, D. Desautels, and T. Ellis-Caleo).

"Tractor Semitrailer Left Turns and Lane Changes," SAE Technical Paper 2010-01-0049, SAE International 2010 World Congress, Detroit, Michigan, April 12, 2010 (with K. White).

"Driver Perception of a Loose Left Rear Wheel," SAE Technical Paper 2010-01-0050, SAE International 2010 World Congress, Detroit, Michigan, April 12, 2010 (with K. White and D. Desautels).

"Injury Causation in Rollover Accidents and the Biofidelity of Hybrid III Data in Rollover Tests," SAE Technical Paper 980362, Society of Automotive Engineers, International Congress and Exposition, Detroit, Michigan, February 23-26, 1998 (with R.L. Piziali, et al.).

"The Biomechanics of Head and Neck Injuries in Skiing," 12th International Symposium on Ski Trauma and Skiing Safety, International Society for Skiing Safety, Whistler, British Columbia, Canada, May 1997 (with R.L. Piziali, and R.H. Hopper).

"Foot Injuries and Foot Protection on All-Terrain Vehicles," in Safety Engineering and Risk Analysis, 1994, D.W. Pyatt, Editor, American Society of Mechanical Engineers, 1994 International Mechanical Engineering Congress and Exposition, Chicago, Illinois, November 1994 (with T.J. Ayres, et al.).

"Evaluation of a Proposed ATV Design Modification," SAE Technical Paper 940276, Society of Automotive Engineers, International Congress and Exposition, Detroit, Michigan, February/March 1994 (with R.L. Piziali, et al.).

"Water Ski Binding Release Loads; Test Method and Results," Proceedings, International Symposium on Ski Trauma and Skiing Safety, International Society for Skiing Safety, Kaprun/Zell am See, Austria, May 1993 (with R.L. Piziali).

"Risk Analyses for Agricultural Vehicles," American Society of Agricultural Engineers, International Winter Meeting, Nashville, Tennessee, December 1992 (with T.J. Ayres, et al.).

"Evaluation of an Occupant Protection System for All-Terrain Vehicles," American Society of Mechanical Engineers, Winter Annual Meeting, Anaheim, CA, November 1992 (with R.L. Piziali, et al.).

"The Application of Biomechanics to the Analysis of Automotive and Skiing Accident Injuries," Proceedings, 4th International Conference on Structural Failure, Product Liability and Technical Insurance, Vienna, Austria, July 1992 (with R.L. Piziali and T.P. Khatua).

"Accident Mode Risk Analysis of Agricultural Tractors," American Society of Mechanical Engineers, Winter Annual Meeting, Atlanta, Georgia, December 1991 (with J.M. Weiss, et al.).

"The Biomechanics of Lower Extremity Snow Ski Injuries," Ninth International Symposium on Ski Trauma and Skiing Safety, International Society for Skiing Safety, Thredbo, NSW, Australia, June 1991.

"Modeling and Simulation of a Supercharger," Journal of Dynamic Systems, Measurement and Control, American Society of Mechanical Engineers, Vol. 110, Sept. 1988 (with M. Hubbard, and T. Miyano).

"Guidelines for Evaluating Mechanical Tree Planters," USDA Forest Service Project Record 8624-1207, November 1986 (with D.W. McKenzie).

"Retardant Measurement System-Operational and Laboratory Evaluation of Mass Flowmeter," USDA Forest Service Project Record 8651-1206, August 1986 (with L. Pope).

"User and Procurement Manual for Retardant Measurement System - Mass Flowmeter," USDA Forest Service, February 1986 (with R.T. Harrison).

"Engineering Field Evaluation of Intermittent Tree Planters," American Society of Agricultural Engineers, Paper #85-2804, 1985 (with J.A. Miles and J.E. Burk).

"Evaluation of an Intermittent Furrow Tree Planting Machine," USDA Forest Service Project Record 8224-1201, July 1984 (with D.W. McKenzie and A. Alsobrook).