

Devinder S. Grewal, Ph.D., P.E.

Principal Engineer

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Experience

Dr. Devinder Grewal specializes in four areas: failure analysis, accident reconstruction, injury biomechanics, and product design. Dr. Grewal is responsible for the multi-disciplinary investigations of accidents and product failures. He combines knowledge in the fields of engineering, medicine, biology, and materials science to help find the causes of these failures. His specific expertise is in the design and analysis of machines, electro-mechanical systems, and biomechanical devices. He has reconstructed accidents involving structural failures, fires, explosions, and transportation accidents such as aviation, marine, rail, off-road, and automotive accidents. He has investigated many "everyday" product failures and accidents involving sports equipment, appliances, medical devices, firearms, and automobile systems.

Dr. Grewal uses his knowledge and experience of product failures to work with clients to develop products for both consumers and industry. For example, he has worked on the development of ski and snowboard equipment, audio products, natural gas powered trucks, surgical tools, and dental products. In addition to product design, he assists clients with world-wide government regulatory matters regarding their products.

Dr. Grewal is Registered Patent Agent with the U.S. Patent and Trademark Office. He works in both patent prosecution and patent litigation to help clients with complex intellectual property issues.

Prior to BRC, Dr. Grewal founded Principia, was a Managing Engineer at Exponent, and a Process Development Engineer at IBM.

Education and Credentials

Ph.D. (Mechanical Engineering/Biomechanics), University of California, Berkeley, 2002
M.S. (Mechanical Engineering/Biomechanics, Product Design), Stanford University, 1994
B.S. (Mechanical Engineering), University of California, Berkeley, 1990

Instructor, Department of Mechanical Engineering, UC Berkeley, 2006

American Society of Mechanical Engineers Farber Award, 1990

Registered Professional Mechanical Engineer, California, #M28309
Registered Patent Agent, U.S. Patent and Trademark Office, #45766

Member: American Society of Mechanical Engineers (ASME)
Member: Society of Automotive Engineers (SAE)
Member: International Society for Skiing Safety (ISSS)

Member: American Society for Testing and Materials (ASTM)
Member: National Fire Protection Association (NFPA)
Member: Institute of Electrical and Electronics Engineers (IEEE)

PADI certified Open Water Diver, 1998

Private Pilot, Single Engine Land, 2010

Continuing Education

"Statistical Analysis of Experimental Data," seminar at *Eastern Michigan University*, 2001, 32 hours.

Oxy-Acetylene and Arc Welding, vocational training at *The Crucible*, 2002.

TIG Welding, vocational training at *The Crucible*, 2003.

"Occupant and Vehicle Kinematics in Rollovers," *SAE Professional Development Program*, 2004, 1.30 CEU (IACET), 16 hours.

"Current Issues in Using Crash Injury Data," *SAE Professional Development Program*, 2005, 0.65 CEU (IACET), 8 hours.

"Fire Investigation 1A and 1B," *California State Fire Marshal's Office*, 2006, 80 hours.

Selected Publications and Presentations

"Simulation of BioSID Head-Neck Motions," *Safety Technology*, Warrendale, Pennsylvania: Society of Automotive Engineers, Paper #940909, 1994 (with J. G. Paver and T. P. Khatua).

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

"Analytical Study of the Biomechanics of Lower Leg Injury in Snowboarding During a Forward Fall," 16th International Symposium on Ski Trauma and Skiing Safety, Niigata, Japan, April 2005.

"Experimental Measurement of Selected Snowboard Mechanical Properties," *Journal of ASTM International*, Volume 3, Issue 8, September 2006 (with C. Lund and E. Rossetter). This paper was also presented at the 16th International Symposium on Ski Trauma and Skiing Safety, Niigata, Japan, April 2005.

"Ball Mill Maintenance," *International Cement Review*, Tradeship Publications Ltd., Surrey, U.K., May 2008, pp. 120-122.

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