



CBE Consultants, Inc.
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Robert S. Cargill II, Ph.D., P.E.
Licensed in AL, NJ, and PA

ROBERT S. CARGILL II, PH.D., P.E.

PROFESSIONAL EXPERIENCE RELATED TO AMUSEMENT RIDES AND DEVICES

Dr. Robert S. Cargill II is the President of CBE Consultants, Inc. Dr. Cargill applies his expertise in the principles of bioengineering to a wide range of engineering projects emphasizing the interaction between physical environment and the human biological system. He addresses issues involving the biomechanics of human injury in the areas of human tolerance, human kinematics, and rigid body dynamics. Dr. Cargill successfully uses his knowledge in evaluating issues related to injury causation and product liability in a broad range of areas, including Amusement Rides and Attractions.

Dr. Cargill has conducted analyses of amusement rides to examine the rider kinematics and the potential for injuries associated with the ride, and compared forces experienced on rides with activities of daily living. He has experience obtaining, analyzing, and evaluating ride acceleration profiles; obtaining and analyzing patron head accelerations; and evaluating restraint performance. Dr. Cargill has consulted for amusement ride manufacturers in the design and certification of their products. He has consulted for amusement ride operators on rider eligibility and ride accessibility and performed biodynamic analysis on an existing ride.

Dr. Cargill has been an active member of the ASTM International F24 Committee on Amusement Rides and Devices since 2008. He is currently a member of the F24 Acceleration Task Group. He is participating as a technical expert in the ISO Technical Committee 254 "Safety of amusement rides and amusement devices" Working Group 01 "Biomechanical effects" as a representative of IAAPA.

In addition to the amusement-related experience presented above, Dr. Cargill has relevant and complementary experience in a number of other fields and activities. These include high angle rope rescue training; research and development experience in military, medical, and firefighting applications; and experience with the analysis of accidents occurring in other people-motive devices such as elevators, escalators, conveyors, and automobiles, for example. Dr. Cargill has performed research into human dynamics in the context of everyday activities and on the effect of anthropometry on restrained occupant position and clearance.

Finally, Dr. Cargill has extensive experience reviewing medical records for the purpose of evaluating the extent, distribution, and severity of injuries; the health and biomechanical status of the individual; and the past medical history as it relates to the biomechanical analysis and claims. He also has experience reviewing medical imaging films/modalities such as CT, MRI, and plain films that illustrate the distribution and extent of injuries in the context of the anatomy.

Academic Credentials

Ph.D. and M.S.E. in Bioengineering, University of Pennsylvania
B.S. in Biomedical Engineering, Rensselaer Polytechnic Institute, with minor in biology and pre-medical certificate