



**Exponent**<sup>®</sup>  
Engineering & Scientific Consulting

## Juff George, P.E.

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### Professional Profile

Mr. George has over a decade years of experience in biomechanics and human injury analysis. He specializes in evaluating the biomechanics of injuries across a wide range of scenarios, including in slip, trip, and fall events, elevator and escalator incidents, interactions involving consumer products, occupational and industrial accidents including falling objects and falls from heights, and all modes of automotive collisions.

Mr. George has utilized his research experience in human gait to analyze individuals negotiating diverse environments including stairways, curbs, and level ground, with a particular emphasis on the role of footwear. As a certified English XL Tribometrist, he has assessed the slip resistance of numerous walkway surfaces and its role on overground walking. Mr. George has extensive experience in evaluating claims of injury during elevator and escalator stop events. During these evaluations, he has extensively utilized inertial measurement units (IMUs) to collect precise data of the motion of occupants, elevators, and escalators to aid in his analyses.

Mr. George has evaluated the safety of a wide variety of consumer products, including juvenile products, virtual reality products, playground equipment, sports equipment, and household appliances for potential hazards associated with the use and misuse of these products. As part of this work, he has designed and conducted numerous studies with volunteer participants to analyze their interactions with these products. Using large-scale incident and injury databases, such as the Consumer Product Safety Commission (CPSC)'s National Electronic Injury Surveillance System (NEISS), he has identified potential hazards and emerging hazard patterns. Mr. George has assessed various accidents to determine the risk of injury to multiple body regions, with extensive expertise in evaluating the injury mechanisms and kinematics of children interacting with juvenile products. His investigations span child restraint systems, toys, handheld carriers, soft infant carriers, slings, swings, bouncers, strollers, highchairs, bassinets, inclined sleepers, infant bedding, activity centers, floor seats, cribs, and beds. Additionally, he has provided expertise in addressing issues related to CPSC inquiries and product recalls.

Mr. George has also evaluated occupant kinematics and injury mechanisms in automobile collisions, including frontal, rear-end, lateral impacts, sideswipes, and rollovers. His work has involved full-scale vehicle to-vehicle crash testing with anthropomorphic test devices (ATDs). He has analyzed issues related to injury causation to determine whether an injury mechanism is present in a given event and has assessed how the forces experienced by the body during these incidents compare to those encountered in non-injurious everyday activities.

### Academic Credentials & Professional Honors

B.S., Biomedical Engineering, Drexel University, 2010

M.S., Biomedical Engineering, Drexel University, 2010

Engineering Management Certificate, Drexel University, 2010

Tau Beta Pi Honor Society

Kappa Theta Epsilon Honor Society

## Licenses and Certifications

Professional Engineer, New York, #101784

Professional Engineer Mechanical, North Carolina, #056784

Professional Engineer, Pennsylvania, #PE088877

Certified English XL Tribometrist (CXLT)

Certified Playground Safety Inspector (CPSI)

## Professional Affiliations

ASTM International, F-13 Pedestrian/Walkway Safety and Footwear (member)

ASTM International, F-15 Consumer Products (member)

American Society of Biomechanics (member)

Society of Automotive Engineers (member)

## Languages

Malayalam

## Publications

Isaacs J.L., George J., Campolettano E., Cutcliffe H., Miller B. "The role of three-point restraints for occupants in moderate severity frontal collisions." SAE Technical Paper 2022-01-0845.

Rapp van Roden E., George J., Milan L., Bove R. "Evaluation of injury patterns and accident modality in step ladder-related injuries." Applied Ergonomics 96, 2021.

George J., Davis M., Sharpe S., Olberding J., Imler S., Bove R. "Evaluation of occupant kinematics during low-to moderate-speed side impacts." SAE Technical Paper (2020-01-1222).

Bruno A., Toney-Bolger M., George J., Koller J., Filatov A., Olberding J. "Evaluation of occupant kinematics in low- to moderate-speed frontal and rear-end motor vehicle collisions." SAE Technical Paper (2019-01-1226).

George J., Heller M.F., Kuzel M.J. "Effect of shoe type on descending a curb." Work 2012; 41:3333-3338.

Heller M.F., George J., Kuzel M.J., Kwasniak A.M. "Effect of ascending and descending a curb on normal gait: A review of the literature." Proceedings, International Conference on Slips, Trips, and Falls 2011, Buxton, United Kingdom, 2011.

George J., Heller M.F., Fritton K.E., Kuzel M.J. "Effect of shoe type on level-ground walking in women." Proceedings, International Conference on Slips, Trips, and Falls 2011, Buxton, United Kingdom, 2011.

Heller M.F., George J., Yamaguchi G.T., McGowan J.C., Prange M.T. "Linear head accelerations resulting from short falls onto the occiput in children." Annual Meeting of the American Society of Biomechanics, University Park, PA, 2009.

### Additional Education & Training

Using the 3D Static Strength Prediction Program, The University of Michigan, Center for Occupational Health & Safety Engineering, Ann Arbor, MI, May 2-3, 2013