2011-2012

Graduate Seminar Series

The Department of
Mechanical Engineering – Engineering Mechanics

Proudly Presents

Stephen W. Rouhana, PhD, FSAE, FAIMBE

Senior Technical Leader for Safety

Ford Motor Company

In 2008, Dr. Stephen W. Rouhana was featured in television ads for Ford Motor Company.
He obtained a PhD and MS in Physics from Rensselaer Polytechnic Institute. He received three simultaneous BS degrees in Physics, Mathematics, and Religious Studies (*magna cum laude)* from Manhattan College.
After 17 years with the General Motors Research Laboratories, he joined Ford Motor Company. He is their Senior Technical Leader for Safety in Research & Advanced Engineering Department. He heads the Biomechanics and Occupant Protection Group in the Passive Safety Research & Advanced Engineering Department and serves as Chairman of the Occupant Safety Research Partnership; a consortium formed in 1992 by Ford, General Motors and Chrysler for research on advanced crash test dummies. His areas of interest are impact biomechanics, the development of crash test dummies, injury assessment strategies and advanced safety concepts.
As a SAE Fellow, he Chairs the SAE Impulse Noise Task Force of the Inflatable Restraints Standards Committee and the SAE Dummy Abdomen-Pelvis Round Robin Task Force. Dr. Rouhana is a member of the Stapp Car Crash Conference Advisory Committee and is on the Editorial Board of the Stapp Car Crash Journal. He serves on the Industrial Advisory Board of the Center for Child Injury Prevention Studies (C-ChIPS) at the Children's Hospital of Philadelphia and on the External Advisory Board for the University of Michigan Transportation Research Institute. He is a member of Phi Beta Kappa, the Association for the Advancement of Automotive Medicine (AAAM), the American Society of Biomechanics, and Sigma Xi (the National Research Honor Society).
In 2003, he was awarded the US Government Award for Safety Engineering Excellence, "In recognition of and appreciation for exceptional scientific contributions in the field of motor vehicle safety engineering and for distinguished service to the motoring public". In 2011, he received the Award of Merit (the highest technical award) from the Association for the Advancement of Automotive Medicine. In 2012 he became a Fellow in AIMBE. He is a two time recipient of the John Paul Stapp Award and the SAE Arnold W. Siegel Awards. Additional awards include the SAE Ralph H. Isbrandt Automotive Safety Engineering Award, the SAE Arch T. Colwell Merit Award, the General Motors Research Laboratories Charles L. McCuen Special Achievement Award and General Motors' highest technical honor, the Charles F. Kettering Award.
He has 7 patents with another 3 pending.

Thursday, Apr. 5, 2012 4:00 – 5:00 p.m. Room 112, ME-EM Bldg.

Engineering Considerations in Automotive Safety - A Case Study in Ford's Inflatable Seat Belts

Automotive manufacturers consider numerous factors when designing their vehicles. Among these factors, biomechanical considerations are an integral part of the development of new safety systems. The process of developing a new safety system includes identifying a potential real-world safety enhancement, obtaining basic biomechanical knowledge, developing a design concept, building prototypes of the concept, testing the prototypes, and assessing potentially adverse effects. That process will be the focus of this discussion, using the development of the world's first production automotive inflatable safety belt system as an example. This talk will also touch on the current state of automotive safety and some of the emerging trends for future consideration by vehicle safety researchers.

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and the Department of Mechanical Engineering – Engineering Mechanics www.me.mtu.edu/seminar