STAPP 2013 TECHNICAL PROGRAM

MONDAY, November 11
9:20  WELCOME AND OPENING REMARKS
      Stephen W. Rouhana, Ford Motor Company

9:30  JOHN PAUL STAPP MEMORIAL LECTURE
      Minimizing the Injury Potential of Deploying Airbag Interactions with Car Occupants
      Dainius J. Dalmotas

    OCCUPANT RERAINT PERFORMANCE

10:00  Driver Kinematic and Muscle Responses in Braking Events with Standard and Reversible
       Pre-tensioned Restraints: Validation Data for Human Models
       Jonas Östh, Jóna Marín Ólafsdóttir, Johan Davidsson, Karin Brolin,
       Chalmers University of Technology

10:30  Effects of Driver Characteristics on Seat Belt Fit
       Matthew P. Reed, Sheila M. Ebert, University of Michigan Transportation Research Institute;
       Jason J. Hallman, Toyota Technical Center USA

11:00  REFRESHMENT BREAK

11:30  In Vivo Analysis of Thoracic Mechanical Response Variability under Belt Loading: Specific
       Behavior and Relationship to Age, Gender and BMI
       David Poulard, François Bermond, Karine Bruyère, Université de Lyon; IFSTTAR,
       LBMC/Université Lyon 1

12:00  Biomechanical Considerations for Assessing Interactions of Children and Small Occupants
       with Inflatable Seat Belts
       Stephen W. Rouhana, Srinivasan Sundararajan, Derek Board, Priya Prasad, Ford Motor
       Company; Jonathan Rupp, Carl Miller, Thomas Jeffreys, Lawrence W. Schneider, University
       of Michigan Transportation Research Institute

12:30-2:30  LUNCH

    PEDESTRIAN SAFETY

2:30  Effect of Vehicle Front End Profiles Leading to Pedestrian Secondary Head Impact to
       Ground
       Vishal Gupta and King Yang, Wayne State University

3:00  Observations on Pedestrian Pre-Crash Reactions during Simulated Accidents
       Anurag Soni, Thomas Robert, Université de Lyon, F-69622, Lyon, France/IFSTTAR,
       UMR_T9406, LBMC, Université Lyon 1; Frédéric Rongiéras, Université de Lyon, F-69622, Lyon,
       France/IFSTTAR, UMR_T9406, LBMC, Université Lyon 1/Chirurgie orthopédique et
       traumatologique, Hôpital d'instruction des armées Desgenettes, 69003 Lyon, France ; Philippe
       Beillas, Université de Lyon, F-69622, Lyon, France/IFSTTAR, UMR_T9406, LBMC, Université
       Lyon 1

3 :30  REFRESHMENT BREAK

4 :00  Relationship Between Pedestrian Headform Tests and Injury and Fatality Rates in Vehicle-
       to-Pedestrian Crashes in the United States
       Becky Mueller, Charles Farmer, Jessica Jermakian, and David Zuby, Insurance Institute for
       Highway Safety, Vehicle Research Center

4:30  Risks of Pedestrian Serious Injuries and Fatalities Associated with Impact Velocities of Cars
       in Car-versus-Pedestrian Accidents in Japan
       Yasuhiro Matsui, Shoko Oikawa, and Kenichi Ando, National Traffic Safety and
       Environment Laboratory, Japan

5:00  ANNOUNCEMENTS
TUESDAY, November 12

INJURY BIOMECHANICS

9:30  The Roles of Mechanical Compression and Chemical Irritation in Regulating Spinal Neuronal Signaling in Painful Cervical Nerve Root Injury
Sijia Zhang, Kristen J. Nicholson, Jenell R. Smith, Peter P. Syrè, Taylor M. Gilliland and Beth A. Winkelstein, University of Pennsylvania

10:00 Development of Brain Injury Criteria (BrIC)

10:30 REFRESHMENT BREAK

11:00 The Quantification of Liver Anatomical Changes and Assessment of Occupant Liver Injury Patterns
Chantal S. Parenteau, Peter Ehrlich, Linda Ma, Grace L. Su, Sven Holcombe, Stewart C. Wang, International Center for Automotive Medicine, University of Michigan, USA

11:30 Statistical Modeling of Human Liver Incorporating the Variations in Shape, Size, and Material Properties
Yuan-Chiao Lu, Andrew R. Kemper, Scott Gayzik, Costin D. Untaroiu, Virginia Tech – Wake Forest University, Center for Injury Biomechanics; Philippe Beillas, Université de Lyon; IFSTTAR, LBMC, UMR; Université Lyon 1, France

12:00-2:00 LUNCH


Invitation and Call for Papers, John W. Melvin, Tandelta Inc., General Chair, 58th Stapp Car Crash Conference, Catamaran Resort and Spa, November 10-12, San Diego, California

LATERAL OCCUPANT DYNAMICS AND SIDE IMPACT BIOMECHANICS

2:15 Volunteer Kinematics and Reaction in Lateral Emergency Maneuver Tests
L. van Rooij, H. Elrofai, M.M.G.M. Philippens, H.A.M. Daanen, TNO

2:45 Occupant Kinematics and Shoulder Belt Retention in Far-Side Lateral and Oblique Collisions: A Parametric Study
Jason L. Forman, Francisco Lopez-Valdes, David J. Lessley, Patrick Riley, Mark Sochor, Sara Heltzel, Joseph Ash, Rafal Perz, University of Virginia Center for Applied Biomechanics; Thomas Seacrist, Kristy B. Arbogast, Children’s Hospital of Philadelphia; Hiromasa Tanji, Kazuo Higuchi, Takata Corporation; Richard W. Kent, University of Virginia Center for Applied Biomechanics

3:15 REFRESHMENT BREAK

3:45 PMHS Impact Response in 3 m/s and 8 m/s Nearside Impacts with Abdomen Offset
Carl S. Miller, Nathaniel H. Madura, Lawrence W. Schneider, Kathleen D. Klinich, Matthew P. Reed, Jonathan D. Rupp University of Michigan Transportation Research Institute (UMTRI)

4:15 Oblique Lateral Impact Biofidelity Deflection Corridors from Post-Mortem Human Surrogates
Narayan Yoganandan, John R. Humm, Mike W. J. Arun, Frank A. Pintar, Department of Neurosurgery, Medical College of Wisconsin; Rodney W. Rudd, Matthew Craig, U.S. Department of Transportation, National Highway Traffic Safety Administration

4:45 ANNOUNCEMENTS
WEDNESDAY, November 13

Crash Data Analysis and Biofidelity Assessment

9:30  Opportunities for Injury Reduction in US Frontal Crashes: An Overview by Structural Engagement, Vehicle Class and Occupant Age
      Randa Radwan Samaha, Lilly Nix, NCAC, George Washington University;
      Priya Prasad, Prasad Engineering, LLC

10:00 Assessing Biofidelity of the Test Device for Human Occupant Restraint (THOR) Against Historic Human Volunteer Data
      Nathaniel Newby, Jeffrey T. Somers, Erin E. Caldwell, Wyle Science, Technology & Engineering Group;
      Chris Perry, Wright Patterson Air Force Base; Justin Littell, NASA Langley Research Center; Michael Gernhardt, NASA Johnson Space Center

10:30 Stapp Student Awards
      Presentation by Stephen W. Rouhana

10:45 ADJOURNMENT
      Stephen W Rouhana, 2013 General Chair