47th International Workshop on Human Subjects for Biomechanical Research

National Highway Traffic Safety Administration  
Rodney W. Rudd, Chair
Hyatt Regency San Antonio Riverwalk – San Antonio, TX  
Sunday, November 10, 2019

PROGRAM

7:30-8:55  REGISTRATION

8:55-9:00  OPENING REMARKS

9:00-10:15  SESSION I

Crashes and Injuries in 2020 to 2030: Development of a Crash Data Prediction Model
Ann Mallory¹, A. Kender¹, E. Hutter², K. Moorhouse²
¹ TRC Inc., ² National Highway Traffic Safety Administration

Importance of Advanced Crash Test Dummies
Michelle Murach¹, W. Millis², M. Craig², K. Moorhouse²
¹ TRC Inc., ² National Highway Traffic Safety Administration

Comparison of the THOR-50M IR-TRACC Measurement Device to an Alternative S-Track Measurement Device
Alena Hagedorn¹, M. Murach¹, W. Millis², J. McFadden², D. Parent²
¹ TRC Inc., ² National Highway Traffic Safety Administration

10:15-10:35  BREAK

10:35-11:50  SESSION II

Tensile Injuries of the Isolated Lumbar Spine in Oblique Bending
Frank Pintar¹,², J. Humm¹,², K. Driesslein¹, J. Avila¹,², D. Moorcroft³
¹ Medical College of Wisconsin, ² Marquette University, ³ Federal Aviation Administration

A Hierarchical Exploration of Pediatric Thoracic Response in Dynamic Frontal Impacts
Akshara Sreedhar, Y-S Kang, J. Bolte IV, M. Murach, R. Ramachandra, A. Agnew
Injury Biomechanics Research Center, The Ohio State University

Restraint Biomechanics of Reclined Occupants in Frontal Impact
Rachel Richardson¹, K. Chastain¹, J-P Donlon¹, B. Gepner¹, J. Forman¹, J. Kerrigan¹, M. Östling², K. Mroz², B. Pipkorn²
¹ Center for Applied Biomechanics, University of Virginia, ² Autoliv Research

11:50-1:20  LUNCH

1:20-3:00  SESSION III

Biofidelity of THOR 5th Female in Frontal Sled Tests
Jason Forman, J-P. Donlon, V. Bollapragada, J. Ash, M. Jayathirta, S. Acosta
Center for Applied Biomechanics, University of Virginia

Biofidelity of THOR-AV, a Modified Dummy for AV Crashworthiness
Jerry Wang, C. Shah
Humanetics Innovative Solutions, Inc.
THOR-AV (50M & 5F) Dummies’ FE Model Update
Fuchun Zhu, C. Shah, Z. Zhou
Humanetics Innovative Solutions, Inc.

High-Speed Pressure Imaging for Automotive Safety Applications
Timothy Gorjanc
XSENSOR Technology Corporation

3:00-3:20 BREAK

3:20-4:35 SESSION IV

Effect of Angular Acceleration on Brain Injury Metrics
Rohit Kelkar1, V. Hasija1, E. Takhounts2
1 Bowhead (Systems and Technology), 2 National Highway Traffic Safety Administration

Evaluation of Head and Cervical Spine Kinematics of a GHBMC M50 Occupant Subjected to a Moderate Rear Impact in a Production Seat and Investigation of Sensitivity of these Kinematics to Varying Seat Foam Stiffness
Vikram Pradhan, R. Ramachandra, Y-S Kang
Injury Biomechanics Research Center, The Ohio State University

Reconstruction of Crash Injury Research and Engineering Network Frontal Crashes Using a Simplified Vehicle Model
Casey Costa1, J. Gaewsky2, J. Stitzel1, F. Gayzik1, A Weaver1
1 Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, 2 Elemenace, LLC

4:35-4:45 CONCLUDING REMARKS

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