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 Mallory[1], A. Kender[1], E. Hutter[2], K. Moorhouse[2]
[1] TRC Inc., [2] National Highway Traffic Safety Administration

Importance of Advanced Crash Test Dummies
Michelle Murach[1], W. Millis[2], M. Craig[2], K. Moorhouse[2]
[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 Hagedorn[1], M. Murach[1], W. Millis[2], J. McFadden[2], D. Parent[2]
[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 Pintar[1,2], J. Humm[1,2], K. Driesslein[1], J. Avila[1,2], D. Moorcroft[3]
[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 Richardson[1], K. Chastain[1], J-P Donlon[1], B. Gepner[1], J. Forman[1], J. Kerrigan[1], M. Östling[2], K. Mroz[2], B. Pipkorn[2]
[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 Kelkar[1], V. Hasija[1], E. Takhounts[2]
[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 Costa[1], J. Gaewsky[2], J. Stitzel[1], F. Gayzik[1], A Weaver[1]
[1] Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, [2] Elemance, LLC

4:35-4:45 **CONCLUDING REMARKS**

nhtsabioworkshop@dot.gov