



# 2019 GHBMC USERS' WORKSHOP

Location: Double Tree Suites by Hilton

Date: April 8, 2019

Time: 8:00 am – 5:30 pm

## Agenda Items

- 8:00-8:50 am**      **Breakfast and Registration**
- 8:50-9:15 am**      **Welcome and Opening Remarks**
- 9:15-10:15 am**      **Session I – HEAD & NECK INJURY**  
Chair: TBD
- Brain Strain Analysis During Football-Related Impacts**  
*Kewei Bian and Haojie Mao – Western University (London, ON Canada)*
- Validation of the Strain Response in the Brain: Recent Update of the GHBMC M50 Head Model**  
*Runzhou Zhou, Shabnam Rahimnezhad, Kunal Dave, Ding Lyu, Akshay Mistri, Liying Zhang – Wayne State University (Detroit, MI, USA)*
- Investigation of Head and Cervical Spine Kinematics of GHBMC Subjected to Rear Impact in Production Seat**  
*Rakshit Ramchandra, Vikram Pradhan, Yun-Seok Kang – The Ohio State University (Columbus, OH USA)*
- 10:15-10:35 am**      **Break (20 minutes, Snacks Provided)**
- 10:35-11:55 am**      **Session II – APPLICATIONS FOR AUTOMOTIVE OCCUPANT SAFETY**  
Chair: TBD
- Application of GHBMC Human Models in Full Vehicle Crash and Occupant Safety Simulations**  
*Velayudham Ganesan, Mahendran Paramasuwom – EDAG Inc. (Troy, MI, USA)*
- Investigation of Pedestrian Kinematics and Injury Responses with Respect to Various Pre-Impact Conditions Corresponding to Traffic Accidents**  
*Wansoo Pak, Costin D. Untaroiu – Virginia Tech (Blacksburg, VA, USA)*
- Exploring Motorized Belts Performance with the GHBM**  
*Ramachandra Rao, Ryan Gellner, Jiri Kral – General Motors Technical Center (India, USA)*
- Far Side Impact Using the GHBMC M50-O and The World SID 50<sup>th</sup> ATD**  
*Chin-Hsu Lin, Ashish Nayak – General Motors, General Motors Technical Center (USA, India)*
- 12:00-1:30 pm**      **Lunch Break** (Sponsored by the GHBMC)



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1:30-2:30 pm

## Session III – PRE-CRASH POSITIONING

Chair: TBD

**Development and Preliminary Validation of an Active Muscle Simplified Human Body Model, M50-OS+Active**  
*Karan Devane, Dale Johnson, Bharath Koya, F. Scott Gayzik – Wake Forest University (Winston-Salem, NC, USA)*

**A Repositioning Methodology to Achieve Targeted Bone Positions in Detailed Human Body Models, Applied to the GHBMC Small Stature Female**  
*Miguel Corrales, Duane S. Cronin – University of Waterloo (Waterloo, ON, Canada)*

**The Investigation of Pre-Crash Reclined Occupant Using GHBMC Human Body Model**  
*Sagar Umale, Prashant Khandelwal, John Humm, Narayan Yoganandan, Frank Pintar – Medical College of Wisconsin (Milwaukee, WI, USA)*

2:30-2:50 pm

**Break (20 minutes, Snacks Provided)**

2:50-3:50 pm

## Session IV – INJURY & RISK ASSESSMENT IMPROVEMENTS

Chair: TBD

**Methodology for Occupant Injury Risk Assessment with GHBMC Human Body Models**  
*Jay Zhao, Maika Katagiri, Sungwoo Lee – Joyson Safety Systems, North America (Auburn Hills, MI, USA)*

**Cortical Bone Failure and Fracture Pattern Prediction using an Anisotropic and Asymmetric Constitutive Model**  
*Fiona Khor, Duane S. Cronin, Skye Malcolm – University of Waterloo (Waterloo, ON, Canada), Honda R&D Americas, Inc (Ohio, USA)*

**Modeling Costal Cartilage Calcification in GHBMC Human Body Models**  
*Yuan Huang, Sven A. Holcombe, Stewart C. Wang, Qing Zhou, Bingbing Nie – Tsinghua University (Beijing, China), University of Michigan (Ann Arbor, MI, USA)*

3:50-4:00 pm

**Closing Remarks**

*Thank you* to our sponsor



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