Sunday, May 17th

3:00 Networking bowling event | Sponsored by Nationwide Children’s Hospital
  • Shuttles will be available to and from The Blackwell

Sawmill Lanes
4825 Sawmill Road
Columbus, OH 43235

7:00 Welcome reception | Sponsored by The Injury Biomechanics Research Center
  • Within walking distance (one block north) of The Blackwell

Varsity Club
278 West Lane Avenue
Columbus, OH 43201
Monday, May 18th

**The Blackwell**
2110 Tuttle Park Place
Columbus, Ohio 43210

7:45  Registration and Continental Breakfast | Sponsored by Takata

8:30  Opening Remarks
John H. Bolte IV, PhD | The Ohio State University

8:40  Scientific Agenda
Yun-Seok Kang, PhD | The Ohio State University
Jason Stammen, PhD | NHTSA

8:45  Keynote Address
*Moving Towards Biomechanical Research Based on Current Traffic Accident Situations from the Perspective of Population Diversity of Road Users*
Dr. Koshiro Ono
Executive Research Advisor & Research Director
Japan Automobile Research Institute
POSTER SESSION I
Moderators - Amanda M. Agnew, PhD | The Ohio State University
Soroush Assari | Temple University

9:30 Oral Descriptions of Posters in Session I

Characterization of Cortical Bone Thickness Changes in the Human Ribs with Age and Sex
Sarah K. Lynch, Ashley A. Weaver, Samantha L. Schoell, Joel D. Stitzel
Wake Forest University

A Parametric Rib Cage Model Accounting for Morphological Variations Related to Age, Height, BMI, and Gender
Youlong Wang¹,², Zhonghao Bai¹, Libo Cao¹, Matthew P. Reed², Jingwen Hu²
¹State Key Laboratory of Advanced Design and Manufacturing for Vehicle Body, Hunan University, ²University of Michigan Transportation Research Institute

Bone Microdamage and Bone Quality
Logan K. Burgess¹, Hartmut Malluche², Constance Wood³, David Pienkowski⁴
¹University of Kentucky College of Medicine, ²Department of Medicine/Nephrology, University of Kentucky, ³Statistics Department, University of Kentucky, ⁴Department of Biomedical Engineering, University of Kentucky

Structural and Effective Material Properties of the Anterior, Lateral, and Posterior Human Rib Bone
Taylor Comte¹, Matthew W. Kindig², Anthony Lau¹
¹University of North Carolina, Chapel Hill, ²RR&D Center of Excellence for Limb Loss Prevention and Prosthetic Engineering, Puget Sound Health System, U.S. Department of Veteran Affairs

10:00 BREAK | Posters from Session I will be on display
ORAL SESSION I – Finite Element Model Development
Moderators - Ram Songade | Honda R&D Americas, Inc.
Hamed Joodaki | University of Virginia

10:30  Driver Injury Risk Variability in Finite Element Reconstruction of Crash Injury Research and Engineering Network (CIREN) Motor Vehicle Crashes
James P. Gaewsky, Ashley A. Weaver, Bharath Koya, Joel D. Stitzel
Wake Forest University

11:00  Development of the GHBMC 5th Percentile Female Finite Element Model
Matthew L. Davis, Bharath Koya, Joel D. Stitzel, F. Scott Gayzik
Wake Forest University

11:30  Development of a Small Rear Facing Child Restraint System Virtual Surrogate to Evaluate CRS-to-Vehicle Interaction and Fitment
Richard Steven Hanna\textsuperscript{1,2}, Aditya Belwadi\textsuperscript{1}
\textsuperscript{1}Center for Injury Research and Prevention, The Children’s Hospital of Pennsylvania, \textsuperscript{2}Drexel University

12:00  LUNCH | Sponsored by Takata

1:00  Guest Speaker
A Lifetime in Crash Safety Research: Experience Shared and Advice Sought
Dr. Bruce Donnelly
Retired | Chief Applied Biomechanics
NHTSA

ORAL SESSION II – Neck Injury & Rollover
Moderators - Kevin Moorhouse, PhD | NHTSA
Caitlin Weaver | Wake Forest University

1:45  Comparison of Human Body Model and PMHS Occupant Kinematic Response in Laboratory Rollover Tests
Jack R. Cochran, Qi Zhang, Jason R. Kerrigan
Center for Applied Biomechanics, University of Virginia
2:15  
*Development and Validation of a Multi-Body Dynamics Model of the Pro-Neck-Tor Helmet*  
Vanessa Thomson and Peter Cripton  
Department of Mechanical Engineering, University of British Columbia

POSTER SESSION II  
Moderators - Kevin Moorhouse, PhD | NHTSA  
Caitlin Weaver | Wake Forest University

2:45  
Oral Descriptions of Posters in Session II

*Development of Improved Spinal Canal Occlusion Transducer*  
Bart Scicchitano¹,², Angela Melnyk², Peter Cripton¹,²  
¹Department of Mechanical Engineering, The University of British Columbia, ²Department of Orthopaedics, Blusson Spinal Cord Centre, The University of British Columbia

*Comparison of Structure-based Scaling and Mass-Based Scaling Methods Applied to Long Bone Mid-Shaft Bending Tests*  
Taotao Wu, Taewung Kim, Bingbing Nie, Jeff R. Crandall  
Center for Applied Biomechanics, University of Virginia

*The Effects of Various Parameters on Dynamic Loads at the Top Tether Anchor*  
Jordan Majstorovic¹, Rakshit Ramachandra¹, Aditya Belwadi², Matt Maltese², John Bolte¹, Yun Seok Kang¹  
¹Injury Biomechanics Research Center, The Ohio State University, ²Children’s Hospital of Philadelphia

*Effect of BMI on the Risk of AIS 3+ Injury Outcome in Frontal Impact Crashes With/Without Belt*  
Haonan Fan, Xin Jin, King H. Yang  
Biomedical Engineering Department, Wayne State University

3:15  
BREAK | Posters from Session II will be on display
ORAL SESSION III – Blast Injury
Moderators - Kerry Danelson | Wake Forest University
               Michelle Schafman | The Ohio State University

3:45  
**Quantifying the Effect of Ankle Posture on the Positions of Bones of the Foot/Ankle Complex**
Chris Smolen, Cheryl E. Quenneville
Department of Mechanical Engineering, McMaster University

4:15  
**Characterization of Brain Material Properties following Brain Blast Injury**
Ahmed A. Alshareef¹, Lee F. Gabler², James R. Stone³, Matthew B. Panzer²
¹Center for Applied Biomechanics, Department of Biomedical Engineering, University of Virginia,
²Center for Applied Biomechanics, Department of Mechanical and Aerospace Engineering, University of Virginia,
³Department of Radiology and Medical Imaging, University of Virginia

4:45  
**Steroid-Loaded Hemostatic Nanoparticles Alleviate Injury Progression after Blast Trauma**
W. Brad Hubbard¹, Margaret Lashof-Sullivan², C. Shaylen Hall¹, Erin Lavik²,
Pamela J. VandeVord¹,³
¹School of Biomedical Engineering and Sciences, Virginia Tech University,
²Department of Biomedical Engineering, Case Western Reserve University,
³Research Services, Salem VAMC

5:15  
**Closing Remarks**
John H. Bolte IV, PhD | The Ohio State University
BANQUET | Sponsored by Diversified Technical Systems

Faculty Club
181 South Oval Dr.
Columbus, OH 43210

5:45  Walking tour of Ohio State Campus leaves the Blackwell for the Faculty Club
     • Shuttles will be available in case of inclement weather

6:00  Hors d'oeuvres and Drinks

7:30  Dinner

8:30  Team Trivia Event
     • Prizes for the top teams

9:00  Shuttles will be available to return participants to the Blackwell beginning around 9:00 PM, but will continue late into the night
Tuesday, May 19th

The Blackwell
2110 Tuttle Park Place
Columbus, Ohio 43210

8:00  Continental Breakfast | Sponsored by Humanetics

8:45  Guest Speaker
A Brief History of Crash Testing
Dr. Ken Digges
Research Professor | Department of Civil & Environmental Engineering
The George Washington University

POSTER SESSION III
Moderators - Eric Dahle | Evenflo
Chris Smolen | McMaster University

9:30  Oral Descriptions of Posters in Session III

Investigation of Distal Radius Fracture due to Fall on Out-Stretched Hand and Evaluation of Protection with Wrist Guards
Pooyan Abbasi¹, Christina Gutowski², Christopher Jones³, Asif Ilyas³, Kurosh Darvish¹

¹Department of Mechanical Engineering, Temple University, ²Department of Orthopaedic Surgery, Thomas Jefferson University Hospital, ³Rothman Institute Orthopaedics
A Multi-Stage Inverse Finite Element Method for Determining the Constitutive Model for Human Heel Pad under High Rate Axial Loading
Jean Sebastian Giudice, Lee Gabler, Matthew B. Panzer
Center for Applied Biomechanics, Department of Mechanical and Aerospace Engineering, University of Virginia

Pelvic Response of a Total Human Body Finite Element (FE) Model During Simulated Under Body Blast (UBB) Impacts
Caitlin M. Weaver¹,², Andrew C. Merkle³, Joel D. Stitzel¹
¹School of Biomedical Engineering and Sciences, Wake Forest University, ²Soldier Protection Sciences Branch, US Army Research Laboratory, RDLR-WMP-B, ³Biomechanics and Injury Mitigation Systems Program, Johns Hopkins University Applied Physics Lab

Development of Finite Element Mouse Model for Primary Blast Simulations
Rasheed Alhadi, Brian Bigler, Garrett Wood, Cameron R. Bass
Injury Biomechanics Laboratory, Biomedical Engineering, Duke University

10:00 BREAK | Posters from Session III will be on display

ORAL SESSION IV – ATD Biofidelity
Moderators - Peter Cripton, PhD | University of British Columbia
Taylor Comte | UNC Chapel Hill

10:30 Comparison of Kinematic and Dynamic Behavior of an Obese Dummy and Obese PMHS in Frontal Sled Tests
Hamed Joodaki¹, Jason Forman¹, Ali Forghani¹, Brian Overby¹, Richard Kent¹, Jeff Crandall¹, Breanna Beahlen², Mike Beebe², Ola Bostrom³
¹Center for Applied Biomechanics, University of Virginia, ²Humanetics Innovative Solutions Incorporation, ³Autoliv Research
11:00  **Comparison of Upper Neck Loads of the Large Omni-Directional Child ATD to Pediatric Volunteers in Low-Speed Sled Tests**
Gretchen Baker¹,², Jason Stammen³, Brian Suntay⁴ Kristy Arbogast¹,⁵, Thomas Seacrist¹
¹Center for Injury Research and Prevention, Children’s Hospital of Philadelphia, ²Department of Mechanical Engineering, University of Kansas, ³Vehicle Research and Testing, National Highway Traffic Safety Administration, ⁴Transportation Research Center, Inc., ⁵Perelman School of Medicine, University of Pennsylvania

11:30  **Geometric Properties of Human Ribs as Predictors of Structural Properties**
Michelle Murach¹, Michelle Schafman¹, Yun-Seok Kang¹, Kevin Moorhouse², Amanda M. Agnew¹
¹Injury Biomechanics Research Center, The Ohio State University, ²National Highway Traffic Safety Administration, Vehicle Research and Test Center

12:00  **LUNCH** | Sponsored by Humanetics

1:00  **Workshop**
Yun-Seok Kang, PhD | The Ohio State University
Jason Stammen, PhD | NHTSA

3:00  **Hines Awards Presented by TRC**

3:15  **Closing Remarks**
John H. Bolte IV, PhD | The Ohio State University