**Thursday, August 14 – Education and Industry Day**

7:30 Registration opens

7:30-9:00 *Breakfast Buffet (Ambassador II)*

**Welcome and Opening Remarks (Ambassador I)**

9:00-9:15 Farshad Fotouhi, PhD, Dean of College of Engineering, Wayne State University

9:15-9:30 Juri Gelovani, MD, PhD, Chair of Biomedical Engineering, Wayne State University

**Plenary Lecture 1**

9:30-10:30 *The History of Biomechanics Research at Wayne State University*
Albert I. King, PhD, Distinguished Professor, Wayne State University

10:30-11:00 *Refreshment Break*

**Panel Presentation and Discussion (Ambassador I)**

11:00-12:30 *Automotive Safety – Where is it going, what are the new challenges?*
Moderator: King-Hay Yang, PhD
John Combest, Nissan
Rainer Hoffmann, Carhs.de
Guy Nusholtz, Chrysler
Palani Palaniappan, Toyota
Stephen Rouhana, Ford Motor
David Zuby, Insurance Institute for Highway Safety

12:30-1:30 *Lunch (Ambassador II)*

**Educational Session (Ambassador I)**

1:30-4:30 *Topics*: Sports Injuries, Biomaterials, Tissue Engineering, Genetics

**Biomechanics of Soft / Hard Tissue**

Co-Chairs: Therese Bou-Akl, Richard Genik

1:30-2:00 *Sports Medicine Injury Prevention: An Engineering Approach*
Eric Meyer, PhD, Assistant Professor and Director of Biomechanics Laboratory, Department of Biomedical Engineering, Lawrence Technological University
Thursday, August 14 – Education and Industry Day (cont’d)

TREATMENT – THERAPY, MONITORING AND PROSTHETICS

2:00-2:30  New Methods and Techniques in Musculoskeletal Trauma Management  
Sam Nasser, MD, PhD, Professor of Orthopaedics, Wayne State University School of Medicine

2:30-2:45  Refreshment Break

TREATMENT – THERAPY, MONITORING AND PROSTHETICS

Co-Chairs: Richard Genik, Zhifeng Kou

2:45-3:15  Development of a Biomimetic Scaffold for Ligament Tissue Engineering  
Yawen Li, PhD, Assistant Professor of Biomedical Engineering, Lawrence Technological University

GENETICS BACKGROUND

3:15-4:00  Genetic Analysis Technology  
Susan Land, PhD, Director, Applied Genomics Technology Center, Wayne State University

INDUSTRY EXHIBITS AND STUDENT POSTERS (AMBASSADOR II)

4:00-6:00  Industry Exhibits

4:00-6:00  Student Poster Session  
(All posters will be up for all three days)

6:00-8:30  Welcome Reception (Ambassador Foyer)
Friday, August 15 - Scientific Program

Track I (Ambassador I): Biomechanics and Prevention of Motor Vehicle Trauma, Civilian & Military
Track II (Ambassador III): Traumatic Brain Injury: Mechanisms, Diagnosis and Treatment

7:30 Registration opens
7:30-8:30 Breakfast Buffet (Ambassador II)

Plenary Lecture 2 (Ambassador I)
8:30-9:30 Saving Lives – The Evolution of Safer Cars
David Zuby, Insurance Institute for Highway Safety

Morning Scientific Sessions:

Session 1: Motor Vehicle Safety Injury Biomechanics (Ambassador I)
Moderators: John Cavanaugh, Stephen Rouhana
10:20-10:40 Andre Eggers, BASt, Kinematics and Chest Deflections of Hybrid III, THOR and PMHS under Three-point and Four-Point Belt Loading
10:40-11:00 Refreshment Break (Ambassador Foyer)
11:00-11:20 Jennifer Yaek, WSU, Exponent, Biofidelic Evaluation of the 6-Year-Old ATDs in Lateral Impacts
11:20-11:40 Ming Shen, WSU, Finite Element Modeling of the Growth Plates at Lower Limbs for Child Pedestrian Impact Study
11:40-12:00 Kelly Bosch, TARDEC, Blast Mitigation Seat Analysis – Drop Tower Data Review

Session 2: Cellular and Molecular Mechanisms of Traumatic Brain Injury (Ambassador III)
Moderators: Juri Gelovani, Michael Chopp
9:30-10:20 Michael Chopp, Henry Ford Hospital, Stimulating Plasticity and Enhancing Neurological Recovery Post Stroke and Traumatic Brain Injury
10:20-10:40 Juri Gelovani, WSU, The Role of Heat-Shock Proteins In Traumatic Brain Injury: Diagnostic and Therapeutic Implications
10:40-11:00 Refreshment Break (Ambassador Foyer)
11:00-11:20 Jinsheng Zhang, WSU, Blast-Induced Tinnitus and Its Related Traumatic Brain Injury: Mechanisms and Treatment
11:20-11:40 Srinivasu, Kallakuri, Blast Overpressure Induced Axonal and Cellular Injury in the Rat Brainstem and Spinal Cord
11:40-12:00 Robin Bonomi, WSU, Development of Novel Histone Deacetylase Class Ila-specific Substrate Radiotracers for PET Imaging
Friday, August 15 - Scientific Program (cont;d)

12:00-1:00 Lunch (Ambassador II)

Plenary Lecture 3 (Ambassador I)
1:00-2:00 Regenerative Medicine Strategies after Spinal Cord Injury
Molly Shoichet, PhD, University Toronto

Afternoon Scientific Sessions:

Session 3: Motor Vehicle Safety Injury Prevention Technology (Ambassador I)
Moderators: King Yang, Ranier Hoffmann
2:00-2:40 Rainer Hoffmann, Carhs.de, Concepts of the Euro NCAP Program and its Way Forward
3:10-3:30 Refreshment Break (Ambassador Foyer)
3:30-3:50 Jingwen Hu, UMTRI, Parametric Human Modeling to Predict Injuries for Various Vulnerable Populations
3:50-4:10 Chaoyang Chen, WSU, Characterization of Neck Muscle Response to Vehicle Collision Using a Driving Simulator
4:10-4:30 Sean Seaman, WSU, Using the Detection Response Task and Neuroscience Methods to Understand Driver Distraction

Session 4: Diagnosis and Treatment of Traumatic Brain Injury (Ambassador III)
Moderators: E. Mark Haacke, Yulin Ge
2:00-2:35 E. Mark Haacke, WSU, The Role of Susceptibility Imaging and Mapping in TBI
2:35-3:10 Yulin Ge, New York University, Mild Traumatic Brain Injury: Thalamic Hypothesis
3:10-3:30 Refreshment Break (Ambassador Foyer)
3:30-3:50 Gabriela Trifan, Center for Neurological Studies, Relative Sensitivities of CT, FLAIR and SWI in TBI with Patients with Persistent Symptoms
3:50-4:10 Srinivasu Kallakuri, WSU, Improving Traumatic Brain Injury-Induced Cerebral Blood Flow Changes in Rats: An Approach to Mitigate Secondary Injury Changes
4:10-4:30 J Sadler, U Windsor, Development of a Difference-Based Transcranial Blood Flow Imaging Technique
4:30-6:00 General Poster Session (Ambassador II)
(All posters will be up for all three days)

600-9:00 Symposium Banquet (in 42 Degrees North)
Refreshments at 6:00 PM. Dinner at 6:30 PM
Saturday, August 16 – Scientific Program

Track I (Ambassador I): Biomechanics and Prevention of Military and Sports Injuries
Track II (Ambassador III): Injury Diagnosis, Treatment and Regeneration

7:30 Registration opens
7:30-8:30 Breakfast Buffet (Ambassador II)

Plenary Lecture 4 (Ambassador I)
8:30-9:30 Federal Coordination for Traumatic Brain Injury Research: The National Research Action Plan
Stuart Hoffman, PhD, Veterans Administration

Morning Scientific Sessions:

Session 5: Biomechanics, Diagnosis and Prevention of Blast Trauma in the Military (Ambassador I)
Moderators: Albert I. King, Arul Ramasamy
9:30-10:20 Arul Ramasamy, Imperial College, London, From the Battlefield to the Laboratory: Clinical Drivers to Blast Injury Mitigation
10:20-10:40 Liying Zhang, WSU, Modeling of Brain Responses in Traumatic Blast Exposure
10:40-11:00 Refreshment Break (Ambassador Foyer)
11:00-11:20 Domenico L. Gatti, WSU, Building a Finite Element Model of Axonal Microscopic Structures
11:20-11:40 John Cavanaugh, WSU, Relationship between Incident Pressure, Brain Response and Brain Injury in a Free-Field Blast Study
11:40-12:00 Ramtilak Gattu, WSU, Vascular and White-Matter Alterations in Blast and Trauma-induced Balance and Gait Problems Revealed by Susceptibility-Weighted and Diffusion-Tensor Imaging

Session 6: Diagnosis and Treatment of Traumatic Brain Injury (Ambassador III)
Moderators: Zhifeng Kou, David Wright
9:30-10:20 David Wright, Emory University, Multi Model Assessment of Concussion on a Single Integrated Platform: iDETECT
10:20-10:40 Zhifeng Kou, WSU, Advanced Neuroimaging of Traumatic Brain Injury
10:40-11:00 Refreshment Break (Ambassador Foyer)
11:00-11:20 Adrian Wydra, U Windsor, Ultrasound Imaging Phantoms for Traumatic Brain Injuries
11:20-11:40 Anthony Cacace, WSU, Voxel-Based Morphometry in Individuals with Blast/TBI-Related Balance Dysfunction
11:40-12:00 Armin Iraji, WSU, Connectome-scale Assessments of Structural and Functional Connectivity in Mild Traumatic Brain Injury at the Acute Stage
Saturday, August 16 – Scientific Program (cont’d)

12:00-1:00 Lunch (Ambassador II)

Plenary Lecture 5 (Ambassador I)
1:00-2:00  Ligand-Directed Therapy and Molecular Imaging Based on In Vivo Phage Display Technology
          Renata Pasqualini, PhD, University of New Mexico
          With introduction by Juri Gelovani, MD, PhD, Wayne State University

Afternoon Scientific Sessions:

Session 7: Traumatic Brain Injury and TBI Biomechanics (Ambassador I)
Moderators: Brian O’Neil, Liying Zhang
2:00-2:50  Brian O’Neil, WSU Emergency Medicine, Comparison of Quantitative EEG with Current Clinical Decision Rules for Head CT Utilization in Acute Mild Traumatic Brain Injury in the Emergency Department
2:50-3:10  Natalie Wiseman, WSU, Chronic Perfusion Deficits in Moderate to Severe Traumatic Brain Injury Patients
3:10-3:30  Refreshment Break (Ambassador Foyer)
3:30-3:50  Albert King, WSU, On the Accuracy of the Head Impact Telemetry (HIT) System Used in Football Helmets
3:50-4:10  Liying Zhang, WSU, Biomarker Levels Correlate with Biomechanical Response and Axonal Injury in Closed Head Impact Traumatic Brain Injury
4:10-4:30  Runzhou Zhou, WSU, Finite Element Analysis of Traumatic Axonal Injury in a Closed Head Impact Model

Session 8: Regenerative Medicine and Tissue Engineering (Ambassador III)
Moderators: Mai Lam, Harini Sundararaghavan
2:00-2:20  Harini Sundararaghavan, WSU, Tailored Material Cues to Direct Spinal Cord Repair
2:20-2:40  Jean Peduzzi-Nelson, WSU, Novel Strategies for Repairing the Central Nervous System
2:40-3:00  Nedic Andrej, WSU, Regenerative Peripheral Nerve Interface Signaling During Voluntary Movement
3:00-3:20  Chaoyang Chen, WSU, Neurophysiologic Assessments of Carbon Nanotube Multi-Electrode Array for Peripheral Neural Interface
3:20-3:30  Refreshment Break (Ambassador Foyer)
3:30-3:50  Karin Przyklenk, WSU, Myocardial Ischemia, Infarction and Remodeling: Can Regenerative Strategies Mend Broken Hearts?
3:50-4:10  Mai Lam, WSU, Using Mechanics to Develop Novel Approaches for Regenerative Medicine.
4:10-4:30  Quiyun Xu, WSU, Evaluating Mesenchymal Stem Cells as a Potential Cell Source for Liver Tissue Engineering

4:30 – 4:45  Best student paper awards – John Cavanaugh (Ambassador I)

4:45 – 5:00  Concluding Remarks and Adjournment – Juri Gelovani (Ambassador I)