# TABLE OF CONTENTS

## INJURY BIOMECHANICS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Tolerance of the Nasal Bone to Blunt Impact</td>
<td>3</td>
</tr>
<tr>
<td>Joseph Cormier, Sarah Manoogian, Jill Bisplinghoff, Steve Rowson,</td>
<td></td>
</tr>
<tr>
<td>Anthony Santiago, Craig McNally, Stefan Duma and John Bolte IV</td>
<td></td>
</tr>
<tr>
<td>Biomechanical Response of Human Liver in Tensile Loading</td>
<td>15</td>
</tr>
<tr>
<td>Andrew R. Kemper, Anthony C. Santago, Joel D. Stitzel, Jessica L. Sparks</td>
<td></td>
</tr>
<tr>
<td>and Stefan M. Duma</td>
<td></td>
</tr>
<tr>
<td>Response of the Human Torso to Lateral and Oblique Constant-Velocity Impacts</td>
<td>27</td>
</tr>
<tr>
<td>DamienSubmit, Sonia Duprey, Sabrina Lau, Herve Guillemot, David Lessley</td>
<td></td>
</tr>
<tr>
<td>and Richard Kent</td>
<td></td>
</tr>
<tr>
<td>Age Thresholds for Increased Mortality of Predominant Crash Induced Thoracic Injuries</td>
<td>41</td>
</tr>
<tr>
<td>Joel D. Stitzel, Patrick D. Kilgo, Ashley A. Weaver, R. Shayn Martin,</td>
<td></td>
</tr>
<tr>
<td>Kathryn L. Loftis and J. Wayne Meredith</td>
<td></td>
</tr>
<tr>
<td>Head Injury and Aging: The Importance of Bleeding Injuries</td>
<td>51</td>
</tr>
<tr>
<td>Ann Mallory and Rod Herriott</td>
<td></td>
</tr>
<tr>
<td>Analysis of Spinal Motion and Loads During Impacts. Comparison Between PMHS and ATD</td>
<td>61</td>
</tr>
<tr>
<td>Francisco J. Lopez-Valdes, Anthony Lau, John Lamp, Patrick Riley,</td>
<td></td>
</tr>
<tr>
<td>David J. Lessley, Andrew Damon, Matthew Kindig, Richard Kent,</td>
<td></td>
</tr>
<tr>
<td>Sriram Balasubramanian, Thomas Seacrist, Matthew Maltese,</td>
<td></td>
</tr>
<tr>
<td>Kristy Arbogast, Kazuo Higuchi and Hiro Tanji</td>
<td></td>
</tr>
<tr>
<td>Incorporation of CPR Data into ATD Chest Impact Response Requirements</td>
<td>79</td>
</tr>
<tr>
<td>Matthew R. Maltese, Kristy B. Arbogast, Vinay Nadkarni, Robert Berg,</td>
<td></td>
</tr>
<tr>
<td>Sriram Balasubramanian, Thomas Seacrist, Richard W. Kent, Daniel P. Parent, Matthew Craig and Stephen A. Ridella</td>
<td></td>
</tr>
<tr>
<td>Expansion and Evaluation of Data Characterizing the Pediatric Abdomen</td>
<td>89</td>
</tr>
<tr>
<td>John F. Lamp, Robert Salzar, Jason Kerrigan, Daniel Parent,</td>
<td></td>
</tr>
<tr>
<td>Francisco Lopez-Valdes, Sabrina Lau, David Lessley, Richard Kent,</td>
<td></td>
</tr>
<tr>
<td>Jason Luck, Andre Loyd and Cameron Bass</td>
<td></td>
</tr>
<tr>
<td>Kinematic Comparison of Pediatric Human Volunteers and the Hybrid III 6-Year-Old Anthropomorphic Test Device</td>
<td>97</td>
</tr>
<tr>
<td>Thomas Seacrist, Sriram Balasubramanian, J. Felipe Garcia-Espana,</td>
<td></td>
</tr>
<tr>
<td>Matthew R. Maltese, Kristy B. Arbogast, Francisco J. Lopez-Valdes,</td>
<td></td>
</tr>
<tr>
<td>Richard W. Kent, Hiromasa Tanji and Kazuo Higuchi</td>
<td></td>
</tr>
</tbody>
</table>
DESIGN AND PERFORMANCE OF VEHICLE SAFETY
SYSTEMS AND STRATEGIES
An Inflatable Belt System in the Rear Seat Occupant Environment:
Investigating Feasibility and Benefit in Frontal Impact Sled Tests
with a 50th Percentile Male ATD
Jason L. Forman, Francisco J. Lopez-Valdes, Nate Dennis,
Richard W. Kent, Hiromasa Tanji and Kazuo Higuchi

Real World Data Driven Evolution of Volvo Cars' Side Impact
Protection Systems and Their Effectiveness
Lotta Jakobsson, Magdalena Lindman, Bo Svanberg and Henrik Carlsson

A Reexamination of the Small Offset Frontal Crash
Paul Scullion, Richard M. Morgan, Pradeep Mohan, Cing-Dao Kan,
Kurt Shanks, Wook Jin and Ravi Tangirala

Reduced Protection for Belted Occupants in Rear Seats Relative to
Front Seats of New Model Year Vehicles
Elham Sahraei, Kennerly Digges and Dhafer Marzougui

Thoracic Injury Risk as a Function of Crash Severity — Car-to-Car Side Impact
Tests with WorldSID Compared to Real-life Crashes
Cecilia Sunnevang, Erik Rosen, Ola Bostrom and Ulf Lechelt

CHILD CRASH PROTECTION
Effect of Booster Seat Design on Children's Choice of Seating Positions
During Naturalistic Riding
Marianne Andersson, Katarina Bohman, Anna-Lisa Osvalder

How Do Children Really Behave in Restraint Systems While Travelling in Cars?
Judith Charlton, Sjaanie Koppel, Chelvi Kopinathan and David Taranto

The Association of Weight Percentile and Motor Vehicle Crash Injury Among
3 to 8 Year Old Children
Mark R. Zonfrillo, Kyle A. Nelson, Dennis R. Durbin and Michael J. Kalian

CRASH AND INJURY RISKS
Potential Occupant Injury Reduction in Pre-Crash System Equipped Vehicles in the
Striking Vehicle of Rear-End Crashes
Kristofer D. Kusano and Hampton C. Gabler

The Effect of Driver Age on the Incidence and Severity of Upper Extremity
Injuries Due to Second Generation Front Air Bag Deployment
Mary Pat McKay, Rafeal Marshall and Katherine Hunting

Secondary Collisions Following a Traffic Barrier Impact: Frequency, Factors, and Occupant Risk
Douglas J. Gabauer

The AIS-2005 Revision in Severe Traumatic Brain Injury: Mission Accomplished or
Problems for Future Research?
Christopher P. Carroll, Joseph A. Cochran, Janet P. Price, Clare E. Guse
and Marjorie C. Wang
ACCIDENT INVESTIGATION AND RECONSTRUCTION
Evaluation of the Accuracy of NASS/CDS Delta-V Estimates from the Enhanced Winsmash Algorithm
Carolyn E. Hampton and Hampton C. Gabler .................................................................241

Are Driving and Overtaking on Right Curves More Dangerous than on Left Curves?
Sarbaz Othman, Robert Thomson and Gunnar Lanner .......................................................253

VULNERABLE ROAD USERS
Cyclist Injuries Treated in Emergency Department (ED):
Consequences and Costs in Southeastern Finland in an Area of 100,000 Inhabitants
Noora Airaksinen, Peter Luthje and Ilona Nurmi-Luthje ...................................................267

Naturalistic Cycling Study: Identifying Risk Factors for On-Road Commuter Cyclists
Marilyn Johnson, Judith Charlton, Jennifer Oxley and Stuart Newstead ................................275

NOVICE DRIVERS
Factors Associated with Speeding Penalties in Novice Drivers
Diva Eensoo, Marika Paaver, Jaanus Harro ........................................................................287

Assessing the Residual Teen Crash Risk Factors after Graduated Drivers License Implementation
Craig P. Thor and Hampton C. Gabler ................................................................................295

Association between Supervisory Driver Offences and Novice Driver Crashes
Post-Licensure
Teresa Senserrick, Soufiane Boufous, Rebecca Ivers, Mark Stevenson, Robyn Norton and Anne Williamson .................................................................309

HUMAN FACTORS
Perception and Biodynamics of Unalerted Precrash Response
Daniel V. McGehee and Oliver M.J. Carsten .....................................................................315

Predicting Visual Distraction Using Driving Performance Data
Katja Kircher and Christer Ahlstrom ................................................................................333

Is More Better? - Night Vision Enhancement System's Pedestrian Warning Modes and Older Drivers
Timothy Brown, Yefei He, Cheryl Roe, Thomas Schnell ................................................343

Pursuit of Licensure by Senior Drivers Referred by Police to a State Licensing Agency's Medical Advisory Board
Carl A. Soderstrom, Mary Anne Scottino, Cynthia A. Burch, Shiu M. Ho,
Timothy J. Kerns, John J. Joyce ..................................................................................351

Self-Reported Health Indicators in the Year Following a Motor Vehicle Crash: A Comparison of Younger vs. Older Subjects
Daniel Andersen, Gabriel Ryb, Patricia Dischinger, Joseph Kufera, Kathleen Read .............359
Metabolic Demand of Driving Among Adults with Type 1 Diabetes Mellitus (T1DM)
Daniel J. Cox, Harsimran Singh, William L. Clarke, Stacey M. Anderson,
Boris P. Kovatchev, Linda A. Gonder-Frederick

ALCOHOL
An Evaluation of Three Intensive Supervision Programs for Serious DWI Offenders
James C. Fell, Connie H. Wiliszowski, A. Scott McKnight, A Scott Tippetts,
J. DeCarlo Ciccoel