Jeff R. Crandall

Curriculum Vitae

Biomechanics, Consulting and Research (Biocore, LLC)
1627 Quail Run
Charlottesville, Virginia 22911
(434) 825-4747
jcrandall@biocorellc.com
www.biocorellc.com

Education

Doctor of Philosophy, Department of Mechanical, Aerospace and Nuclear Engineering
University of Virginia, 1994
Dissertation – *The Preservation of Human Surrogates for Biomechanical Studies*

Master of Engineering, Department of Mechanical, Aerospace, and Nuclear Engineering
University of Virginia, 1991

Bachelor of Arts, Engineering Sciences
Dartmouth College, 1988

Work Experience

Biomechanics Consulting and Research, LC (Biocore), 2003- Present

Co-founder, CEO

University of Virginia

Emeritus Professor – 2019- Present

Nancy and Neal Wade Professor in Engineering and Applied Sciences, 2010 – 2019

Professor of Mechanical and Aerospace Engineering, 2007 – 2010

Professor of Biomedical Engineering, 2007 – 2019

Professor of Emergency Medicine, 2007 –2019

Director, UVA Center for Applied Biomechanics, 2002 –2019

Associate Prof. of Mechanical and Aerospace Engineering, 2001 – 2007

Associate Prof. of Biomedical Engineering, 2001 – 2007

Research Associate Prof. of Mechanical and Aerospace Engineering, 1999 – 2001

Director, Automobile Safety Laboratory, 1994 – 2002

Research Assistant Prof. of Mechanical and Aerospace Engineering, 1994 – 1999

Director of Research, Automobile Safety Laboratory, 1992 – 1994

Malaysian Institute of Road Safety Research

Research Fellow, 2012-2014

University of Navarra Visiting Professor, Spain, 2009-2011

Professional Organizations

Association	Activity	Dates
Society of Automotive Engineers	Associate Member	1989 – 2007
	Chairman, Pedestrian Dummy Task Group	2003 – 2017
	Human Biomechanics Safety and Simulation Steering Committee	2008 – 2017
	Fellow	2007 – Present
	Siegel Award Selection Committee	2012
Association for the Advancement of Automotive Medicine	Member, Fellow (2004)	1994 – Present
	President	1999 – 2000
	Board of Directors	1997
	Executive Committee	1998 – 2001
	Executive Committee	2002 – 2003
	Member, Scientific Program Committee	1996 – 1998
	Vice-Chairman, Scientific Program Committee	1997
	Chairman, Scientific Program Committee	1998
	Pedestrian Task Group	1996
	Member, Nominations and Awards Committee	1997 – 1998
	Chairman, Nominations and Awards Committee	2001
	Faculty, Biomechanics Courses	1997 – 2000
International Research Council on the Biomechanics of Impact	President	2010-2016
	Council Member	1997-2016
	Faculty, Impact Biomechanics Course	1997 – 2000
	Organizer, Impact Biomechanics Course	2003
International Standards Organization (ISO)	ISO/TC22/ SC12/WG5 – ATD	2006-2009
	ISO/TC22/ SC12/WG6 – Performance criteria expressed in biomechanical terms	2006-2009
	US Technical Advisory Group for ISO	2007-2017
American Society of Biomechanics	Member	1994-2004
	Impact Biomechanics Organizer, World Congress of Biomechanics (WCB)	2002
	Session Organizer, WCB	2006
American Society of Mechanical Engineers	Member	1999-2017
Transportation Research Board of the National Academies	Occupant Protection Committee	2000-2017

Transportation Research Board of the National Academies	Technical Expert Task Group, Data and Safety Monitoring SHRP 2 Safety Program,	2011 – 2012
International Association of Traffic and Safety Sciences	Overseas Member	2008-2014
International Union of Theoretical and Applied Mechanics	Scientific Committee for Special Symposia – Impact Biomechanics	2003-2005
Global Burden of Diseases, Injuries, and Risk Factors Study	Corresponding Member in the Injuries Expert Group	2007

Consultant and Advisor Positions

Organization	Position	Dates
BIOCORE, LLC	Member	2004-Present
Autoliv, ASP	Member, Corporate Scientific Advisory Board	2000 – 2018
U.S. DOT	Motor Vehicle Safety Research Advisory Committee – Crashworthiness Subcommittee	1996 – 1998
Google	Consultant	2013-2018
Hyundai Motor Co	Consultant	2007-2017
Honda R&D Co, LTD	Consultant	2001- 2017
Honda R&D Americas	Consultant	2009- 2017
Synthesis LLC	Consultant	2014
National Football League	Foot and Ankle Subcommittee, *ex-officio* member	2008-2015
	Head Neck and Spine Injury Engineering Subcommittee, chair	2014-2017
	Engineering Committee, chair	2017-Present
	Consultant	2008-Present
NASCAR	Head and Neck Restraint Committee	2014-Present
European Center for Injury Prevention	Advisory Board Member	2008-2011
NFL-GE-UA-NIST Head Health Challenge III	Judge	2015-2017

Journal Activities

Position	Journal	Publisher	Dates
Founding Editor, Co-Editor-in-Chief	Traffic Injury Prevention	Taylor and Francis	2002- 2005
Founding Editor and Associate Editor	Crash Prevention and Injury Control	Gordon and Breach	1997-2001
Associate Editor	Journal of the International Association of Traffic and Safety Sciences	International Association of Traffic and Safety Sciences	2008-2015
Reviewer	Accident Analysis and Prevention	Elsevier Science	1996- 2017
	Journal of Biomechanics	Elsevier Science	1997- 2017
	Journal of Biomechanical Engineering	ASME	1998- 2017
	Journal of Passenger Cars	SAE	2000- 2017
	Journal of Automobile Engineering	IMECH E	1999- 2017

Other Activities

- Motor Vehicle Safety Research Advisory Committee (US DOT)- Crashworthiness, 1996-1998
- Autoliv Inc. Technical Advisory Board, 1999- 2019
- International Editorial Board, Vehicle Safety UK, 1999-2002

Significant Honors

- UVA SEAS Distinguished Faculty Award, 2013
- Arnold W. Siegel International Transportation Safety Award (SAE) - 2012
- AAAM Award of Merit – 2010
- IRCOBI Bertil Aldman Award - 2009
- SAE Fellow - 2007
- United States Government Award for Engineering Excellence (DOT NHTSA) – 2005
- Elaine Wodzin Young Achievers Award (AAAM) – 2001
- AAAM Fellow – 2004
- Scientific Merit Award (System Safety Society) – 1997

Supervision of Students, Post-doctoral Researchers, and Visiting Scholars

1. Visitors and Post-doctoral Fellows Supervised

- Udi Dekel, M.S., Rafael Corporation, UVA visiting scholar, 1995-1997
- Meir Varon, M.S., Rafael Corporation, UVA visiting scholar, 1997-1998
- Miri Beram, B.S., Rafael Corporation, UVA visiting scholar, 1996-1997
- Dale Bass, PhD, UVA Post-doctoral Fellow, 1995-1996
- Dr. John McMaster, M.D., U. Nottingham Visiting Medical Fellow, 1998
- Dr. Timothy Micek, M.D., UVA Medical School, Orthopedic Research Fellow, 1996-1997
- Dr. Lisa Tourret, M.D., U. Nottingham Visiting Medical Fellow, 1999
- Dr. Conor MacMahon, M.D., U. Nottingham Visiting Medical Fellow, 1999-2000
- Dr. Richard King, M.D., U. Nottingham Visiting Medical Fellow, 2000
- Noah Shafry, B.S., Rafael Corporation, UVA visiting scholar, 2000
- Yanyan Zou, PhD, Visiting Professor, Jiangsu University of Science and Technology, 2000
- James R. Funk, PhD, UVA Research Associate, 2000-2002
- Dr. Sree Bala C. M. Srinivasan, M.D., U. Nottingham Visiting Medical Fellow, 2001
- Puneet Gupta, M.S., U. Texas Visiting Medical Student, 2001.
- Dr. Jane Madeley, M.D., U. Nottingham Visiting Medical Fellow, 2002
- Kavi Bhalla, PhD, UVA Research Associate, 2002-2004
- Johan Ivarsson, PhD, UVA Research Associate, 2002-2004
- Dr. Besam Henary, MD, MPH, UVA Medical Fellow, 2002-2004
- Dr. Steve Millington, MD, U. Nottingham Visiting Medical Fellow, 2003-2005
- J. van Dommelen, PhD, UVA Research Associate,2003-2005
- Dr. Abhijit Manaswi, MD, U. Nottingham Visiting Medical Fellow, 2005
- Yukou Takahashi, BS, Visiting Scholar, 2004-2005
- Dr. Moni Raut, MD, UVA Research Associate, 2004-2005
- Chang In Paek, BS, Visiting Scholar, 2005-2006
- Rodney Rudd, PhD, UVA Research Associate, 2005-2006
- Damien Subit, PhD, UVA Research Associate, 2005-2007
- Costin Unatroiu, PhD, UVA Research Associate, 2005-2007
- Sergey Purtsezov, PhD, UVA Research Associate, 2007-2008
- Dipan Bose, PhD, UVA, Research Associate, 2008-2010
- Taewung Kim, PhD, UVA Research Associate, 2011-2013

2. Graduate Students Supervised

Student	Degree	Date	Title
Michael Duch	MS	5/94	Evaluation of Thoracic Injury Criteria Using Chestband Instrumentation
Stephen M. Klisch	MS	8/94	The Measurement of Ankle Kinematics for Lower Extremity Injury Research
Kelly Kennett	MS	8/95	The development and Evaluation of an in-situ tibial load cell
Michael Lange	MS	5/97	Biofidelity of Dummy Lower Extremities
Philip Schreiber	MS	5/98	Static and Dynamic Bending Strength of the Leg
Gregory Hall	PhD	5/98	Biomechanical Characterization and Multi-body Modeling of the Human Lower Extremity
Erik Takhounts	PhD	5/98	Experimental Determination of Constitutive Equations for Human and Bovine Tissue
Joseph Pelletierre	PhD	1/99	A Dynamic Material Model for Bone
Brett Matthews	MS	1/99	The Effect of Cerebral Vascular Tissue on the Mechanical Properties of Brain Tissue
Susan George	MS	5/99	An Attempt to Experimentally Produce Severe Ankle Fractures in Axial Loading
Kurosh Darvish	PhD	1/00	Characterization of Nonlinear Viscoelastic Properties of Brain Tissue Using Forced Vibrations
Jon Butcher	MS	5/00	Simulation of Footwell Intrusion in the Automobile Test Sled Environment
Stefan Duma	PhD	8/00	Injury Criteria for the Small Female Upper Extremity
Jim Funk	PhD	8/00	The Effect of Active Muscle Tension on the Axial Impact Tolerance of the Human Foot/Ankle Complex
Peter Martin	PhD	8/00	Properties of Human Skin
Richard Kent	PhD	1/02	Dynamic Response of the Thorax: Restraint-specific Hard Tissue Injury Prediction
Fayun Luo	ME	5/02	Material Parameters and Modeling of the Knee Ligaments (ME Project)
Rodney Rudd	PhD	1/05	Injury Tolerance of the Human Ankle in Dynamic Dorsiflexion
Dipan Bose	MS/ PhD	8/04 5/08	Experimental Evaluation of the Human Knee Joint Response in Pre-impact State of an Occupant in Frontal Crashes
Drew Murphy	ME	8/05	Pedestrian Kinematics
Carlos Arregui[1]	PhD[1]	5/06	Rotational Acceleration as a Traumatic Brain Injury Mechanism in Pedestrian-Vehicle Collisions
Jason Kerrigan	PhD	1/08	Development of An Advanced Computationally Efficient Model of the Lower Limb
Mark Meissner	MS	8/07	Crash Reconstruction of Vehicle-to-Pedestrian Crash Events using Optimization Software
Chris Drinkwater	ME	12/06	
Check Kam	MS	12/06	Three-Dimensional Strain Assessment of Pedestrian Lower Extremities During a Vehicle Collision
Daniel Genovese	MS	5/07	Development of a Failure Criterion for the Human Femoral Shaft
Robert Kendall	MS	5/07	Parametric Evaluation of Dummy Response Using Rear Facing and Forward Facing Child Restraints

Student	Degree	Date	Title
Daniel Parent	MS	5/08	Scaling and Optimization of Thoracic Impact Response in Pediatric Subjects
John Droge[2]	PhD[2]	5/08	Characterization of the Biomechanics of the Low Back During a Simulated Frontal Automobile Impact
Patrick Foltz	ME	5/12	Rollover Buck Design
Joseph Ash	ME	5/18	
Rikard Fredriksson[4]	PhD	4/11	Priorities and Potential of Pedestrian Protection – Accdiental Data, Experimental Tests, and Numerical Simulations of Car-to-Pedestrian Impacts
Jeremy Seppi	MS	5/14	Repeatability Study of the Dynamic Rollover Test System (DRoTS)
Sourabh Bourah	PhD	12/16	Injury Assessment for the Human Foot/Leg Exposed to Axial Impact Loading
Lee Gabler	PhD	1/18	Development of Improved Metrics for Predicting Brain Strain in Diverse Impacts
Jack Lockerby	MS	1/14	Roof Deformation in Vehicle Rollover: The Case for Including an Energy Criterion in Vehicle Crashworthiness Evaluation
Varun Bollapragada	PhD	5/19	The Influence of Disabling Injuries on the Design of the Vehicle Front End for Pedestrian Safety
John J. Christopher	MS	8/15	Development of a lumped-mass model for the human pelvis under high-rate vertical loading and material optimization for injury mitigation
Anne Bailey	PhD	1/17	Injury Assessment for the Human Foot/Leg Exposed to Axial Impact Loading
Ye Xin	MS	8/15	Driver Lower Extremity Response and Injury with Knee Airbag Deployment
Jonathan Foster	MS	5/13	Cervical Spine Injuries in Rollover
Gwansik Park	PHD	5/17	Injury Risk Functions Based on Responses of Population-Based Finite Element Models: Application to Femurs under Dynamic Loading
Daniel Perez-Rapela	PHD	1/20	Methodology for the Evaluation of Human Response Variability to Intrinsic and Extrinsic Factors Including Uncertainties
TaoTao Wu[5]	PHD	5/19	Integration of Interspecies Data for Developing Tissue-Level Brain Injury Risk Functions.
Erin Rodenberger	MS	12/17	Evaluation of the efficacy of head and brain injury risk functions

[1] co-advisor, Universitat Politècnica de Catalunya,[2] co-advisor, University of Utah, [3] co-advisor, University of Navarra (Spain), [4] co-advisor, Karolinska Institute (Sweden), [5] co-advisor, UVA

3. Undergraduate Theses Supervised

Student	Grad. Date	Thesis Title
Erin Rodenberger	2015	Advanced Automatic Crash Notification
Christopher Martin	2009	Key Factors Influencing Ultra-Compact Vehicle Integration into the United States
Charles Scott	2009	Dynamic Pressure Using Fuji Prescale Film
Vivekram Bellur	2008	Characterization of Shaken Baby Syndrome
Gabriel McLain	2006	Interventions for Driver Inattentiveness
Robert Kendall	2005	Simulation of Pedestrian Head Injuries: Impacting Vehicle vs. Ground
Tim Robertson	2003	Bone densitometry: a comparison between the effectiveness and methodologies of DEXA and QCT
David Rauschberg	2002	Development of a 6 DOF Test Device
Jeff Marcello	2002	Evaluation of a 6 DOF Test Device
Brett Matthews	1997	Effects of constant strain rate loading on the stress relaxation of brain tissue using quasi-linear viscoelasticity
Rodney Rudd	1997	Brake pedal induced lower extremity injuries in car crashes: Development and evaluation of testing methods to simulate real-world injury mechanisms.
Nicole Grillo	1997	The Testing and Analysis of Simulated Airbag Impact of Human Upper Extremities
Stephanie Turner	1996	Gait analysis: comparing magnetohydrodynamic angular rate sensors to three-dimensional motion analysis.
J. P. Shebalin	1996	Bracing for impact: design of a muscle tensing simulator for dummies and cadavers in automobile crash testing.
C. M. Keener	1995	Developing a Test Procedure to Determine the Abrasive Characteristics of Airbags in Passenger Vehicles
Beth Weber	1995	Comparison of driver anthropometry and foot placement on an automobile brake.
Erik Krogh	1995	Correlation between driver anthropometry and foot placement on the brake pedal.
Christina Kollay	1995	Implementation of a Head Drop Device to Determine Head Injury Criteria with Varying Boundary Conditions and Head Coverings
Brian Alexander	1995	Evaluation of the ability of the hybrid III head to predict human head injury response using a head drop device and head injury criterion testing.
Kevin T. DiFazio	1995	Component level testing of automobile upper interior components using a free motion headform impactor.
David Kessmann	1995	Assembly, testing, and calibration of the free motion headform impactor.
Peter D. Small	1994	Design, Construction, and Implementation of a Head-drop Device for Injury Criteria and Skin Laceration Testing
Scott R. King	1994	Design and construction of a head drop device for Hybrid III head injury criterion testing and human impact response comparison.

Note: In addition to UVA undergrad thesis students, I typically supervise three UVA and non-UVA undergrads for summer research work at the UVA Center for Applied Biomechanics (CAB).

Academic Research Contracts (PI: Crandall unless otherwise specified), Total Funding >$60m

Years	Title	Sponsor
1995	Cost of Lower Extremity Injuries	Honda Motor Co.
1995	Calibration of Angular Rate Sensors	Ford Motor Co.
1995	Pendulum Impact Testing	Ford Motor Co.
1995	Sled Testing with Intrusion Buck and Ford Components	Ford Motor Co.
1995-1997	Experimental Determination of Constitutive Equations for Brain Tissue	AAMA
1995-1996	CVS/ATB Model for Hybrid III and ALEX Lower Extremities	Honda R&D N.A.
1996	Open Loop Chestband	Ford Motor Co.
1996	Experimental and Computational Studies of Brake Pedal Safety	Honda Motor Co.
1996-1997	Lower Extremity Studies	AAMA
1996-1997	SBIR – Helicopter Seat Study	TRDC
1997-1998	Component Evaluation of ALEX II	Honda Motor Co.
1997	Side Airbag Study	Honda Motor Co.
1997-1998	Child Dummy Modeling and Testing with Side Airbag	Honda Motor Co.
1997	Armament Development Authority (Co-PI Pilkey)	RAFAEL
1997	Eye Injury Study	Tufts U.
1998	Evaluation of Eye Injuries	Ford Motor Co.
1998	Crash-safe Wheelchair Seating for Children (Co-PI's Thacker and Shaw)	TRDC
1998-2000	Restraint System Effectiveness (Co-PI Pilkey)	NHTSA
1998-1999	Escape Systems Program Support (Co-PI's Pilkey and Thacker)	INS
1998-1999	Evaluation of Land Mines	U.S. Army
1999-2001	InCA Testing and Evaluation	Autoliv Inc.
1999-2000	Wrist and Elbow Joint Tolerances for Side Air Bags (Co-PI's Hurwitz and Duma)	Honda Motor Co.
1999-2001	Evaluation of Footwell Padding	Nissan Motor Co.
1999-2000	Passenger Airbag Impact and Injury Response	AAM
1999-2001	Development of Injury Criteria for the Human Head During Ballistic Loading Based on Hybrid III Dummy Head Response	Canadian Defense Research Establishment Valcartier (DREV)
2000	A Study of Helment Injuries During Ballistic Loading of Helmets (Co-PI's Bass and Pilkey)	U.S. Army

Years	Title	Sponsor
2000-2001	Talar Neck Fractures	UMAB
2000	Graduate Student Researchers Program	U.S. NASA
2000-2001	Engineering Support for Ford Inova Fairfax Hospital CIREN Center	INOVA Fairfax Hospital
2001-2002	Behind Armor Thorax Test Methodology (Co-PI's Bass and Pilkey)	U.S. Army – Natick
2001-2003	Restraint System Effectiveness (Co-PI Pilkey)	NHTSA
2001-2005	Engineering Support for Ford Inova Fairfax Hospital CIREN Center	INOVA Fairfax Hospital
2000-2003	Advanced Emergency Egress/Escape Concepts and Crashworthiness Testing (Co-PI's Kent and Pilkey)	U.S. Navy
2001-2005	Engineering Support for Children's National Medical Center - CIREN Center	Children's National Medical Center
2001	Viscoelastic Characterization of the Thorax (Co-PI Kent)	Revivant Corp.
2001	Patterns, Mechanisms, and Causes of Injuries to Pedestrians from Vehicle Impacts	Volvo Foundation
2001-2002	Viscoelastic Characterization of the Thorax (Co-PI Kent)	Nissan Corp.
2001	Crash Test Data Analysis	TNO Automotive
2001-2002	Child Restraint Misuse	Children's National Medical Center
2001-2002	Modeling of Real-world Pedestrian Crashes	Dynamic Science Inc.
2002	Age Dependent Injury Criteria for the Thorax (co-PI)	Toyota
2002-2003	Age-Dependent Structural Characterization of the Thorax (co-PI: Crandall, PI: R. Kent)	Toyota
2002-2003	Effect of Load Distribution on Throacic and Injury Response (co-PI: Crandall, PI: R. Kent)	Alliance
2002-2004	Effect of Load Distribution on Thoracic Impact and Injury Response (co-PI: Crandall, PI: R. Kent)	AAM
2002-2003	Pedestrian Lower Limb Biomechanics (co-PI's K. Bhalla and K. Darvish)	Honda R&D
2002-2003	Fundamental Studies for the Protection of Pediatric Pedestrians	Honda R&D
2002-2003	PCDS and MADYMO Investigation of Pediatric Injury	Honda Research of America
2002-2003	Thoracic Response of the Human Thorax to Two-Point and Four-point Belt Loading (co-PI: Crandall)	Autoliv

Years	Title	Sponsor
2003	NASS Studies from the Center for Applied Biomechanics – Project 2	IIHS
2002-2005	Brain Injury Study (PI: Darvish)	Southern Consortium (UAB)
2003-2005	NASS Studies from the Center for Applied Biomechanics – Project 3	IIHS
2002-2005	Development of a Full Body Pedestrian Finite Element Model for DYNA (co-PI's Darvish, Bhalla)	GM
2003-2006	Model of Pedestrian Crashes (CIREN)	Honda R&D
2003-2004	Leg Impact Study (co-PI's Bhalla)	JARI
2003-2005	Restraint System Effectiveness	NHTSA
2003-2004	Investigation of Torso Injuries Resulting from Pedestrian-Vehicle Crashes	Honda Research of America
2003-2005	Continued Studies on the Pediatric Pedestrian	Honda R&D
2003-2004	Lower Limb Response and Injury Research (co-PI Bhalla)	Honda R&D
2002-2003	Hip Injury Mechanisms(co-PI's Kent, Bass)	Nissan
2003	NASS Studies from the Center for Applied Biomechanics – Project 1	IIHS
2004-2005	Thoracic Pedestrian Response	Honda Research of America
2004-2005	Proposal to Develop a Polar II Upper Body Finite Element Model (PI Darvish)	Honda R&D
2004-2007	Child Restraint Studies (Co-PI's: Sherwood and Kent)	Center for Disease Control
2004-2005	Lower Limb Response in Pedestrian Impacts	Honda R&D
2004-2007	Engineering Support for Honda Inova Fairfax Hospital CIREN Center	CIREN Center at INOVA Fairfax
2005-2006	Pedestrian Dummy Response and Injury: Evaluation of New Dummy Lower Extremity Components	Honda R&D
2005-2006	Detailed investigation of pedestrian kinematics during impact by a sedan or sport utility vehicle	Honda R&D
2006	The Biomechanical Response of the Knee Joint in Pedestrian-Car Impacts	French National Institute for Transport and Safety Research

Years	Title	Sponsor
2006-2007	Full Scale Testing of Pedestrians	JARI
2006-2007	Crash Reconstruction of Vehicle to Child Pedestrian Cases Using Optimization Techniques	Honda R&D
2006-2008	Restraint System Effectiveness	NHTSA
2007	EFV Driver Simulation Plan	General Dynamics
2007-2008	Frontal Impact PMHS Sled Tests and Associated Tissue Characterization for FE Model Validation	JARI
2007-2008	Characterization of the Structural Thorax and Tissue Properties for Validation of a Human Finite Element Model	Honda R&D
2007-2008	The Response and Tolerance of the Pedestrian Pelvis in Lateral Impact to the Greater Trochanter and Ilium	Honda R&D
2007-2008	Evaluation of the thoracic injury potential of higher-force pretensioners using analytical and computational models	TRW
2008	Development of a 6 DOF Measurement Device	DTS
	Side Impact PMHS Sled Tests and Associated Tissue Characterization	JARI
2008-2010	Improvements in Medical Treatment and EMS Service through Real-time Injury Assessment of Occupants Involved in Crashes (PI- Trowbridge, Co-PI Crandall)	University of Alabama Birmingham
2008-2010	Padding Evaluation – Shock Tube	Duke University
2009-2010	Rib and Clavicle Characterization	JARI
2008-2011	Pelvis and Lower Limb Center of Expertise (PI – Crandall, Co-PI Untaroiu)	GHBMC
2009-2010	Patella Testing To Determine Transverse Fracture Tolerance (PI-Sochor, Co-PI Crandall)	Honda R&D
2009-2010	Identification of Target Population for Rollover Casualty Reductions Through Epidemiological and Computational Analyses (Co-PI Kerrigan)	Honda R&D
2009-2015	Biomechanics of Injury (Co-PIs: Kent, Untaroiu, Kerrigan)	NHTSA
2008-2010	Characterization of Brain Tissue Response (PI- Salzar, Co-PI: Crandall)	NAVAIR
2009-2012	Lisfranc and Turf Toe Injuries in Elite Athletes (PI – Kent, Co-PI Crandall)	BIOCORE, LLC
2010-2011	Side Impact Dummy and PMHS Sled Tests for CENIT ADAPTA (PI – Crandall)	UNAV
2010-2011	Viscoelastic Response of the Thorax Under Dynamic Belt Loading Elderly Driver Risk (PI – Crandall, Co-PI – Salzar)	JARI

Years	Title	Sponsor
2010-2011	Rib Evaluation for Planar and Combined Loading (PI – Crandall)	Honda R&D
2010-2011	Epidemiological and Computational Analyses to Identify Target Populations for Rollover Casualty Reductions and Injury Countermeasure Evaluation (PI – Crandall, Co-PIs – Kerrigan and Bose	Honda R&D
2010-2016	Crash Injury Research and Engineering Network (CIREN) (PI – Crandall, Co-PIs – Sochor and Rizzo)	DOT/NHTSA
2010-2011	Skull Bone Characterization and Analysis (PI – Salzar, Co-PI – Crandall)	US Navy (NAVAIR)
2011-2014	Investigation of Injuries to Armored Vehicle Personnel Subject to Blast: Preliminary Study with Emphasis on Lower Extremity Fractures (PI – Salzar, Co-PIs – Crandall and Kent)	US Army MRMC
2010-2012	Skull Bone Material Properties (PI- Salzar, Co-PI – Crandall)	DOD (Naval Air Warfare Center)
2011	Occupant Protection in Rollover Crashes (co-PI – Kerrigan)	Hyundai
2012	Occupant Protection in Rollover Crashes (co-PI – Kerrigan, Kim)	Hyundai
2010-2013	TBI Imaging using Focused Ultrasound (PI – Stone, Co-PIs - Salzar, Crandall)	University of Washington (USAMRAA)
2011-2013	JUMPSTART Effort towards the development of the WIAMan blast dummy (PI: Salzar, Co-PI: Crandall)	U.S. DOD-Army-AMRAA
2011-2012	Evaluation of Vehicle Kinematics and Occupant Response/Injury during Rollover Crashes (Co-PI: Bose, Kerrigan)	TEMA CSRC Toyota
2011-2014	Armored Vehicle and Lower Limb Injuries (PI: Salzar)	DOD-Army
2012	Rollover Injury Prevention (co-PI: Kerrigan)	Honda R&D Americas
2011-2013	Viscoelastic Response of the Thorax Under Dynamic Loading: Elderly Driver Risk (co-PI: Salzar, Subit)	JARI
2012	Controlled Laboratory Rollover Crash Tests (co-PI: Kerrigan, Kim)	Hyundai Motor Co.
2012-2016	Development of Injury Thresholds Pertaining to Under Body Blasts (WIAMAN) (PI: Salzar, co-PI: Crandall)	US Army Med Res
2012-2014	Development and Evaluation of Integrated Vehicular Transportation Safety System (PI- Crandall, Co-PI Smith, Bose)	University of Virginia
2012-2013	Hosting Agreement International Scholars	Institute of Intl.Education
2012	Rollover Crashworthiness (co-PI: Kerrigan)	Hyundai America Technical Ctr
2012	Controlled Rollover Crash Tests(co-PI: Kerrigan)	Hyundai Motor Company

Years	Title	Sponsor
2013-2014	Evaluation of Vehicle Kinematics and Occupant Response/Injury during Rollover Crashes (co-PI: Kerrigan)	TEMA CSRC Toyota
2012-2013	Pelvis and Lower Limb Center of Expertise (co-PI: Shin)	Global Human Body Modeling
2012-2013	WorldSID Dummy Model and GHBMC Human Body Model Simulations	Honda R&D Americas
2013-2015	Side Impact Investigations (co-PI: Kim)	Honda R&D Americas
2012-2014	Massive Projectile, Whole Body Displacement and Injury Model (PI: Salzar, Co-PI: Crandall)	ARA
2012-2014	Evaluation of Vehicle Kinematics and Occupant Response/Injury During Rollover (co-PI Kerrigan)	TEMA CSRC Toyota
2013	Submarining Risk Factors: Field Data Study	Hyundai Motor Company
2013	Submarining Risk Factors: Subject Procurement and Anthropometry Study	Hyundai Motor Company
2013	THOR METRIC ADVANCED DUMMY (co-PI Shaw)	Hyundai Motor Company
2013-2016	BIOCORE High Ankle Sprains (PI: Kent, co-PI: Crandall)	BIOCORE, LLC
2014	Pedestrian Modeling (co-PI: Kim and Panzer)	Google, Inc.
2014	Knee Airbag Project – A Study of Knee Airbag Performance (Co-PI: Panzer)	Autoliv ASP
2014	Investigation of Load Distribution and Energy Attenuation for Seatbelt Modifications	Synthesis, LLC
2013-2016	Simulation of Pedestrian-Vehicle Impact Using Anthropometrically Morphed THUMS Pedestrian FE Model (Co-PI: Panzer)	Toyota Technical Center, USA
2014-2015	Submarining Risk Factors (co-PI: Shaw, Kim, Forman)	Hyundai Motor Company
2014	Advanced Pedestrian Dummy Development and Vehicle Impact Tests (co-PI: Forman)	Google, Inc.
2014-2015	PMHS Pedestrian Impact With Generic Vehicle Buck (Co-PI Forman)	Honda R&D Co. Ltd
2015	Pedestrian Epidemiology (co-PI: Poplin)	Google, Inc
2015	Pedestrian Modeling (3) (co-PI: Kim)	Google Inc.
2015	HMC Pedestrian Surrogates (co-PI: Forman, Panzer)	Hyundai Motor Company
2015-2016	BRIC Brain Injury (PI: Panzer, co-PI: Crandall)	PDB
2015-2016	GHBMC PLEX Models (PI: Panzer, co-PI: Crandall)	GHBMC
2016	Pedestrian Modeling	Autoliv, ASP
2016	Pedestrian Whole Body Model	Google
2016	Evaluation Methods of Integrated Safety Performance	KATRI

Years	Title	Sponsor
2016-2019	Small Female/Older Occupant Thoracic Biofidelity	NHTSA
2016-2017	Assessing the Accuracy of Video-Reconstructed Helmet Kinematics	Biocore, LC
2016	Far-side Impact Investigations – Investigation on Protection of Far-side Occupants during Side Impact Crashes (Pre-Investigation)	Honda R&D Americas
2016-2018	Far-side Impact Investigations – Investigation on Protection of Far-side Occupants during Side Impact Crashes	Honda R&D Americas
2018-2019	Evaluating the Influence of Knee Airbags in Real-World Collisions on Lower Limb and Whole-Body Injury Using a NASS-CDS Analysis	Toyota Motor Corporation

Publications

A. Books and Book Chapters

A1. Salzar, RS, Crandall, JR, Bailey, A, Lievers, WB. (2014) Lower Extremity Biomechanics in Accidental Injury – Biomechanics and Prevention; Third Edition, Editors: Naraya Yoganandan, Alan Nahum, and John Melvin. Springer, New York, NY.

A2. Crandall, JR, Myers, BS, Meaney, DF, Zellers Schmidtke, S. (2013) Pediatric Injury Biomechanics. New York: Springer.

A3. Kent, RW, Crandall, JR, Bose, D. (2012) Injury Biomechanics, in Orthopaedic Biomechanics, B. Winkelstein (ed.) CRC Press; Boca Raton, FL

A4. Bose, D, Lessley, DJ, Crandall, JR, Arregui-Dalmases, C, Luzón Narro J. Biomecánica del impacto aplicada al accidente de tráfico (Injury Biomechanics applied to traffic injury) Book chapter 5. Pages 73-97. Fundamentos de Biomecánica en las lesiones por accidente de tráfico (biomechanics fundaments in traffic injury). Editorial ETRASA 2012. ISBN: 978-84-92625-40-6.

A5. Kerrigan, JR, Prat, S, Duart, J, Crandall, JR. (2011) 19 - Biomecanica de las extremidades inferiores y de la pelvis. Proteccion de peatones. Fundamentos de biomechanica en las lesiones por accidente de trafico. 2nd Edition. [Principles of Impact Biomechanics Applied to Motor Vehicle Injuries 2nd edition], ETRASA Madrid, 2010 ISBN: 978-84-92625-40-6

A6. Bose, D, Lessley, DJ, Crandall, JR, Arregui-Dalmases, C, Luzon-Narro J. (2010) Biomecánica del impacto aplicada al accidente de tráfico. in Arregui C, Luzón J, Lopez-Valdés FJ, Del Pozo de Dios E, Seguí-Gómez M,(Eds) Fundamentos de Biomecánica en las Lesiones por Accidente de Tráfico 2ª edición [Principles of Impact Biomechanics Applied to Motor Vehicle Injuries 2nd edition], ETRASA Madrid, 2010.

A7. Pilkey, WD, Balandin, DV, Bolotnik, NN, Crandall, JR, Purtsezov, S. (2010) Injury Biomechanics and Control: Optimal Protection from Impact, Wiley, John & Sons, Inc.

A8. Crandall, JR, Kent, RW, Viano, D, Bass, CR. (2003) The Biomechanics of Inflatable Restraints - Occupant Protection and Induced Injury, in Air Bag Development and Performance: New Perspectives from Industry, Government and Academia, R. Kent (ed.), PT-88, Society of Automotive Engineers, Warrendale, PA.

A9. Ivarsson, BJ, Crandall, JR, Hall, GW, Pilkey, WD. (2003) Biomechanics. In The CRC Handbook of Mechanical Engineering, 2nd edition. Edited by Kreith, F. and Goswami, Y, CRC Press, Boca Raton, FL.

A10. Kent, RW, Viano, D, Crandall, JR. (2003) Field Performance of Frontal Air bags, in Air Bag Development and Performance: New Perspectives from Industry, Government and Academia. Edited by R. Kent, RW, Strother, C, Crandall, JR, Mellander, H, Griswold, C, SAE.

A11. Kent, RW, Viano, D, Crandall, JR. (2003) The Field Performance of Frontal Air Bags in Air Bag Development and Performance: New Perspectives from Industry, Government and Academia, R. Kent (ed.), PT-88, Society of Automotive Engineers, Warrendale, PA.

A12. Crandall, JR, Funk, JR, Rudd, RW, Tourret, L. (2000) The Tibia Index: A Step in the Right Direction. in Human Biomechanics and Injury Prevention, edited by J. Kajzer, E. Tanaka, H. Yamada, Springer Verlag, Tokyo.

A13. Crandall, JR, Hall, GW, Pilkey, WD. (1998) Bioengineering. in Handbook of Mechanical Engineering, Tyler Hicks (ed.) CRC Press, Boca Raton, Fla.

B. Refereed Journals

B1. Elbin RJ, Zuckerman SL, Sills AK, Crandall JR, Lessley DJ , Solomon GS (2020), Sensitivity and specificity of on-field visible signs of concussion in the national football league, J Neurosurgery, doi: 10.1093/neuros/nyaa072. (IF 4.13)

B2. Perez-Rapela D, Forman JL, Huddleston S, Crandall J (2020), Methodology for vehicle safety development and assessment accounting for occupant response variability to human and non-human factors, Computer Methods in Biomechanics and Biomedical Engineering, https://doi.org/10.1080/10255842.2020.1830380, (IF 1.502).

B3. Funk JR, Jadischke R, Bailey A, Crandall J, McCarthy J, Arbogast K, Myers B (2020) Laboratory Reconstructions of Concussive Helmet-to-Helmet Impacts in American Football, Ann Biomed Eng 48, 2652–2666 (2020). https://doi.org/10.1007/s10439-020-02632-8 (IF 3.324)

B4. Bailey AM, Sherwood CP, Funk JR, Crandall JR, Carter N, Hessel D, Beier S, Neale W (2020) Characterization of Concussive Events in Professional American Football using Videogrammetry, Ann Biomed Eng 48, 2678–2690 (2020). https://doi.org/10.1007/s10439-020-02637-3 (IF 3.324).

B5. Bailey AM, Sanchez EJ, Park G, Gabler LF, Funk JR, Crandall JR, Wonnacott M, Withnall C, Myers BS, Arbogast KB (2020) Development and Evaluation of a Test Protocol for Assessing the Performance of American Football Helmets, https://doi.org/10.1080/10255842.2020.1830380 (IF 3.324).

B6. Bailey A, McMurry TL, Cormier JM, Funk JR, Crandall JR, Mack CD, Myers BS, Arbogast KB (2020) Comparison of Laboratory and On-Field Performance of American Football Helmets, Ann Biomed Eng 48, 2531–2541 (2020). https://doi.org/10.1007/s10439-020-02627-5, (IF 3.324).

B7. Gabler LF, Huddleston SH, Dau NZ, Lessley DJ, Arbogast KB, Thompson X, Resch JE, Crandall JR (2020) On-Field Performance of an Instrumented Mouthguard for Detecting Head Impacts in American Football, Ann Biomed Eng 48, 2599–2612 (2020). https://doi.org/10.1007/s10439-020-02654-2, (IF 3.324).

B8. Lessley D, Kent RW, Cormier JM, Sherwood CP, Funk JR, Crandall JR, Myers BS, Arbogast KB (2020) Position-specific Circumstances of Concussions in the National Football League: A Step Toward the Development of Position-Specific Helmets, Ann Biomed Eng 48, 2542–2554. https://doi.org/10.1007/s10439-020-02657-z (IF 3.324).

B9. Kent RW, Forman J, Bailey A, Cormier J, Park G, Crandall J, Arbogast KB, Myers B (2020) Surface contact features, impact obliquity, and preimpact rotational motion in concussive helmet-to-ground impacts: Assessment via a new impact test device, Ann Biom Eng, (IF 3.324) submitted.

B10. Perez-Rapela D, Donlon JP, Forman JL, Pipkorn B, Shurtz BK, Markusic C, Crandall J, Occupant Restraint in Far-Side Impacts: Cadaveric and WorldSID Responses to a Far-Side Airbag, Ann Biom Eng, Ann Biomed Eng, doi: 10.1007/s10439-020-02614-w (IF 3.324).

B11. Park G, Gabler LF, Bailey AM, Dau NZ, Sherwood C, Crandall JR, Arbogast KB, Head Shape Analysis of National Football League Players, Part P: Journal of Sports Engineering and Technology (IF 0.615) submitted.

B12. Kim T, Poplin G, Vollapragada V, Daniel T, Crandall J, (2020) Monte Carlo Method for Estimating Whole-body Injury Metrics from Pedestrian Impact Simulation Results, Accident Analyis and Prevention V147, https://doi.org/10.1016/j.aap.2020.105761. (IF 2.070)

B13. Zuckerman SL, Elbin RJ, Sills AK, Crandall JR, Lessley DJ, Moran CM, Moran CD, Solomon GS, (2020) Concussions in the National Football League: the evolution of video review for assessing the frequency and reliability of visible signs, p1-6, The Physician and Sports Medicine. https://doi.org/10.1080/00913847.2020.1731379 , (IF 1.874)

B14. Xiao S, Qie Y, Chen W, Yang J, Crandall JR (2020) Investigation of chest biomechanical response by variation of restraint loads in frontal impact, J Proc Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering (IF 0.645)

B15. Chen H, Crandall JR, Panzer M (2020) Evaluating pedestrian head Sub-System test procedure against full-scale vehicle-pedestrian impact, p1-23, Intl J Crashworthiness (IF 1.317)

B16. Kent R, Forman J, Bailey AM, Funk J, Sherwood C, Crandall J, Arbogast KB, Myers BS (2020), The Biomechanics of Concussive Helmet-to-Ground Impacts in the National Football League, J Biomech. 99, https://doi.org/10.1016/j.jbiomech.2019.109551 , (IF 2.576).

B17. McMurry T, Forman JL, Shaw G, Crandall JR, (2020) Evaluating the influence of knee airbags on lower limb and whole-body injury, 21 (72-77) Traffic Injury Prevention (IF 1.413)

B18. Joodaki H, Bailey A, Lessley D, Funk JR, Sherwood C, Crandall JR (2019) Relative Motion between the Helmet and Head in Football Impact Tests, J Biomech Eng doi: 10.1115/1.4043038. (IF 2.025).

B19. Perez-Rapela D, Donlon JP, Forman JL, Crandall JL, Pipkorn B, Shurtz BK, Markusic C, (2019) PMHS and WorldSID Kinematic and Injury Response in Far-Side Events in a Vehicle-Based Test Environment, Stapp Car Crash Journal, Vol. 63.

B1. Bailey AM, McMurry TL, Salzar RS, Crandall JR (2018) An Injury Risk Function for the Leg, Foot, and Ankle exposed to Axial Impact Loading Using Force and Impulse, J. Biomechanical Engineering, 141 (2) doi: 10.1115/1.4042012. (IF 1.196).

B2. Gabler LF, Joodaki H, Crandall JR, Panzer MB (2018) Development of a Second-Order System for Rapid Estimation of Maximum Brain Strain. Annals of Biomedical Engineering. Journal of biomechanical engineering 140 (3), 031002. (IF 1.196).

B3. Gabler LF, Crandall JR, Panzer MB (2018) Development of an Injury Metric for Predicting Brain Strain Responses from Diverse Impact Conditions. Annals of Biomedical Engineering. 46(7): 972-985. DOI: 10.1007/s10439-018-2015-9. (IF 3.221).

B4. Bailey A, Funk J, Lessley D, Sherwood C, Crandall J, Neale W, Rose N (2018) Validation of Videogrammetry Technique for Analysing American Football Head Kinematic Impacts, Sports Biomechanics 1-23 https://doi.org/10.1080/14763141.2018.1513059. (IF 1.154)

B5. Lessley D, Kent R, Funk J, Sherwood C, Cormier J, Crandall J, Arbogast KB, Myers BS (2018) Video Analysis of Reported Concussion Events in the National Football League During the 2015-2016 and 2016-2017 Seasons, A J Sports Medicine, 46 (14): 3502-3510. (IF 6.057)

B6. Gabler LF, Joodaki H, Crandall JR, Panzer MB (2018), Development of a Single-degree-of-freedom mechanical model for predicting strain-based brain injury responses, J. Biomechanical Engineering, 140(3)8788. 031002-031002-13. (IF 2.057)

B7. Gabler LF, Crandall JR, Panzer MB (2018) Development of a Metric for Predicting Brain Strain Responses Uses Head Kinematics, Annals Biomedical Eng, 1-14. (IF 3.221).

B8. Chen H, Poulard D, Forman J, Crandall J, Panzer MB (2018), Evaluation of geometrically personalized THUMS pedestrian model response against sedan-pedestrian PMHS impact test data, Traffic injury prevention, 19 (5), 542-548 (IF 1.413)

B9. Park G, Forman J, Kim T, Panzer M, Crandall J (2017) Injury Risk Functions Based on Population-Based Finite Element Model Responses: Application to Femurs Under Dynamic Three-point Bending, Traffic Injury Prevention 19 (sup1): S59-64. (IF 1.413)

B10. Chen H, Bollapragada V, Kim T, Nie B, Park G, Crandall JR, (2018) Improvement of lateral shoulder impact response of a multi-body pedestrian model, I J Crash 23(2):134-143 (IF 0.83)

B11. Sanchez EJ, Gabler LF, Good AB, Funk JR, Crandall JR, Panzer MB (2018), A reanalysis of football impact reconstructions for head kinematics and finite element modeling, Clinical Biomechanics, doi: 10.1016/j.clinbiomech.2018.02.019 (IF 1.874)

B12. Nie B, Ye X, Sathyanarayan D, Crandall J, Panzer M (2018) Active Muscle Response Contributes to Increased Injury Risk of Lower Extremity in Occupant-Knee Airbag Interaction, Traffic Injury Prevention 19 (sup1): S76-82 (IF 1.413)

B13. McMurry, Arbogast, Vaca F, Bull M, Crandall JR, Kent RW (2018). Rear-facing versus forward-facing child restraints: an updated assessment. Injury Prevention 24:55-59.

B14. Funk JR, Quesada RE, Miles AM, Crandall JR (2018), Inertial Properties of Football Helmets, J. Biomechanical Eng, 140:064501:1-7.

B15. Shaw G, Lessley D, Ash J, Acosta S, Heltzel S, Riley P, Kim T, Crandall J (2018). Pelvic Restraint Cushion Sled Test Evaluation of Pelvic Forward Motion, Traffic Injury Prevention (doi: 10.1080/15389588.2017.1326106) 19(3). (IF 1.290)

B16. Ivarsson J, Poplin G, McMurry T, Crandall J, Kerrigan J. (2017) Head injury in rollover crashes from interior contact and partial ejection. Head injury in rollover crashes from interior contact and partial ejection. Accident Analysis and Prevention. Under Review (2014 IF 2.070).

B17. Xiao S, Yang J, Crandall JR (2017) Investigation of chest injury mechanism caused by different seatbelt loads in frontal impact. Acta of Bioengineering & Biomechanics 19 (3).

B18. Kim T, Bose D, Foster J, Bollapragada V, Crandall J, Clauser M, Kerrigan J (2017) Identification of characteristics and frequent scenarios of single-vehicle rollover crashes during pre-ballistic phase; part 1–A descriptive study, Accident Analysis & Prevention 107: 31-39. (IF 2.865).

B19. Perez-Rapela D, Forman J, Jeon H, Crandall J (2017), External Biofidelity Evaluation of Leg-Form Impactors, SAE Intl. J. Transportation Safety, 5:2017-01-1450.

B20. Kim T, Funk J, Bollapragada V, Ye X, Crandall J (2017) Evaluation of biofidelity and repeatability of THOR-Lx metric under axial impact loading, Intl. J. of Precision Engineering and Manufacturing 8:7, 1027-1034. (IF 1.497).

B21. Sanchez EJ, Gabler LF, McGhee JS, Olszko AV, Chancey VC, Crandall JR, Panzer MB (2017), Evaluation of head and brain injury risk functions using sub-injurious human volunteer data, J. Neurotrauma, https://doi.org/10.1089/neu.2016.4681 (IF 4.295).

B22. Park G, Kim T, Forman J, Panzer MB, Crandall JR (2017): Prediction of the structural response of the femoral shaft under dynamic loading using subject-specific finite element models, Computer Methods in Biomechanics and Biomedical Engineering, DOI: 10.1080/10255842.2017.1340459 (IF 1.850)

B23. Wu T, Kim T, Bollapragada V, Poulard D, Chen H, Panzer MB, Forman JL, Crandall JR, Pipkorn B(2017) Evaluation of biofidelity of THUMS pedestrian model under a whole-body impact conditions with a generic sedan buck, Traffic Injury Prevention, 18:sup1, S148-S154, DOI: 10.1080/15389588.2017.1318435 (IF 1.413).

B24. Tierney GJ, Joodaki H, Krosshaug T, Forman JL, Crandall JR, Simms CK (2017), Assessment of model-based image-matching for future reconstruction of unhelmeted sport head impact kinematics, J Sports Biomechanics, p. 1-15 Published online: 28 Feb 2017. (IF 1.209)

B25. Kim, T, Bollapragada V, Kerrigan, JR, Crandall, JR, Clauser, M. (2017) Effects of types of vehicles and maneuvers on vehicle kinematics during steering-induced soil-tripped rollovers. Accident Analysis and Prevention. (in review).

B26. Poplin GS, McMurry TL, Forman JL, Ash J, Parent DP, Craig MJ, Song E, Kent R, Shaw G, Crandall J (2017). Development of thoracic injury risk functions for the THOR ATD. Accident Analysis and Prevention. 2017; 106: 122–130. (IF 2.865)

B27. Jastifer J, Kent R, Crandall J, Sherwood C, Lessley D, McCullough KA, Coughlin MJ, Anderson RB (2017) The athletic shoe in football: apparel or protective equipment? Sports Health, 9(2): 126-131.

B28. Xiao S, Yang J, Huang J, Crandall J (2017), Development of a Belted Occupant FE Model for Prediction of Chest Injury Risk Based on Stress and Strain Analysis, J. Mechanics in Medicine and Biology 17(3):1750060. (IF 0.468)

B29. Shaw G, Lessley D, Ash J, Poplin G, McMurry T, Sochor M, Crandall J (2017), Small female rib cage fracture in frontal sled tests, Traffic Injury Prevention, 18(1):77-82. http://dx.doi.org/10.1080/15389588.2016.1193599 (IF 1.290)

B30. Pramaduita, JA, Kamiya, S, Ujihashi, S, Choi, HY, Ito, M, Watanabe, R, Crandall, JR, Kent, RW. (2017) Estimation of Conditions Evoking Fracture in Finger Bones under Pinch Loading Based on Finite Element Analysis, Comput Meth Biomech Biomed Eng., 20(1):35-44 (2014 IF 1.850).

B31. Boruah S, Subit DL, Paskoff GR, Shender BS, Crandall JR, Salzar RS (2017), Influence of bone microstructure on the mechanical properties of skull cortical bone – A combined experimental and computational approach, J Mechanical Behavior Biomedical Materials 65:688-704. (2015 IF 2.876).

B32. Bose D, Crandall J, Forman J, Longhitano D, Arregui-Dalmases (2017) Epidemiology of Injuries Sustained by Rear-seat Passengers in Frontal Motor Vehicle Crashes, J. Transportation and Health, 4:132-139 http://dx.doi.org/10.1016/j.jth.2016.10.005 .

B33. Chen H, Bollapragada V, Kim T, Nie B, Park G, Crandall J (2016) Improvement of lateral shoulder impact response of a multi-body pedestrian model, Intl J Crashworthiness (2015 IF 0.680).

B34. McMurry TL, Poplin GS, Crandall J (2016) Functional Recovery Patterns in Seriously Injured Automotive Crash Victims, Traffic Injury Prevention, 17 (sup 1): 21-26.

B35. Shaw G, Lessley D, Ash J, Crandall J (2016) Small Female Ribcage Fracture in Frontal Sled Tests, Traffic Injury Prevention, DOI:10.1080/15389588.2016.1193599 (2014 IF 1.413).

B36. Lessley, DJ, Crandall JR, Frderick EC, Kent RW, Sherwood, C (2016) Quantifying the forefoot bending stiffness of cleated American football shoes using the Football American Shoe Tester (FAST), Footwear Science, DOI:10.1080/19424280.2016.1165742 (2014 IF 1.413).

B37. Seppi J, Toczyski J, Crandall JR, Kerrigan J (2016) Repeatability Study of Replicate Crash Tests: A Signal Analysis Approach, Traffic Injury Prevention, http://dx.doi.org/10.1080/15389588.2016.1204445 (2014 IF 1.413).

B38. Sánchez-Molina D, Arregui-Dalmases C, Velázquez-Ameijide J, Angelini M, Kerrigan J, Crandall J (2016) Traumatic brain injury in pedestrian–vehicle collisions: Convexity and suitability of some functionals used as injury metrics, Computer Methods and Programs in Biomedicine 136: 55-64. (IF 1.862)

B39. Nie B, Crandall JR, Panzer MB (2016): Computational investigation of the effects of knee airbag design on the interaction with occupant lower extremity in frontal and oblique impacts, Traffic Injury Prevention, http://dx.doi.org/10.1080/15389588.2016.1219728

B40. McMurry T, Bose D, Ridella SA, Eigen AM, Crandall JR, Kerrigan JR. (2016) Epidemiology of moderate-to-severe injury patterns observed in rollover crashes. Injury Prevention. Volume 17, Issue 6, August (2014 IF 1.413) http://dx.doi.org/10.1080/15389588.2016.1201202.

B41. Gabler LF, Crandall JR, Panzer MB (2016) Assessment of Kinematic Brain Injury Metrics for Predicting Strain Responses in Diverse Automotive Impact Conditions, Annals of Biomedical Engineering. 44(12) 3705-3718. (2015 IF 2.887)

B42. Gabler LF, Crandall JR, Panzer MB (2016) Investigating Brain Injury Tolerance in the Sagittal Plane Using a Finite Element Model of the Human Head, Intl J Automotive Engineering 7 (1), 37-43.

B43. Hartka T, Sochor M, Crandall J (2016). Use of three-dimensional, fat-enhanced rendering of CT after motor vehicle collision for localization of subcutaneous seat belt injury, J Trauma.

B44. Sanchez-Molina D, Arregui-Dalmases C, Valezquez-Ameijide J, Angelini M, Kerrigan J, Crandall J (2016), Traumatic Brain Injury in Pedestrian Vehicle Collision: Convexity and Suitability of some functionals used as Injury Metrics, Transportation Research Part B: Methodological (Q1, ISSN 0191-2615)

B45. Park, G., Kim, T., Panzer, M. B., & Crandall, J. R (2016) Validation of Shoulder Response of Human Body Finite-Element Model (GHBMC) Under Whole Body Lateral Impact Condition. Annals of biomedical engineering, 1-19. DOI: 10.1007/s10439-015-1546-6. (IF 3.195)

B46. Nie B, Kim T, Wang Y, Bollapragada V, Daniel T, Crandall J (2016) Comparison of two scaling approaches for the development of biomechanical multi-body human models, Multibody System Dynamics, 1-20. (IF 1.739)

B47. Seppi J, Tockzyski J, Crandall J, Kerrigan J (2016) Repeatability of a dynamic rollover test system, Traffic Injury Prevention, DOI:10.1080/15389588.2015.1136060 (IF 1.413)

B48. Lievers WB, Frimenko RE, McCullough KA, Crandall JR, Kent RW, Etiology and biomechanics of midfoot (Lisfranc) injuries in athletes (2015), Crit Rev Biomed Eng. 2015;43(2-3):213-38. doi: 10.1615/CritRevBiomedEng.v43.i2-3.60.

B49. Kim T, Shaw G, Lessley D, Park G, Crandall J, Svendsen A, Whitcomb B, Murthy APM, Markusic C, (2016) Biofidelity evaluation of WorldSID and ES-2re under side impact conditions with and without airbag, Accident Analysis and Prevention, 90:140-151. DOI:10.1016/j.aap.2016.02.010, (IF 2.070)

B50. Forman JL, Joodaki H, Forghani A, Riley P, Bollapragada V, Lessley DJ, Overby B, Heltzel S, Yarboro S, Weiss DB, Kerrigan JR, Crandall JR (2015), Whole-body response for pedestrian impact with a generic sedan buck, J. Stapp Car Crash Conference.

B51. Ivarsson J, Poplin G, McMurry T, Crandall J, Kerrigan J. (2015) Occupant injury in rollover crashes – contribution of planar impacts with objects and other vehicles. Accident Analysis and Prevention85:111-117. (2014 IF 2.070).

B52. Kent R, Forman J, Crandall J, Lessley D (2015),The mechanical interactions between an American football cleat and playing surfaces in-situ at loads and rates generated by elite athletes: a comparison of playing surfaces, Sports Biomechanics, DOI:10.1080/14763141.2015.1024277 (IF 0.867).

B53. Kent R, Forman JL, Lessley D, Crandall J (2015) The Mechanics of American football Cleats on Natural Grass and Infill-type Artificial Playing Surfaces with Loads Relevant to Elite Athletes, Sports Biomechanics, DOI: 10.1080/14763141.2015.1052749 (IF 0.867).

B54. Arregui-Dalmases, C, Kerrigan, JR, Sanchez-Molina, D, Velazquez-Amijide J, Crandall, JR. (2015), A Review of Pelvic Fractures in Adult Pedestrians: Experimental Studies Involving PMHS used to Determine Injury Criteria for Pedestrians Dummies and Component Test Procedures, Traffic Inj Prev. 2015;16(1):62-9. doi: 10.1080/15389588.2014.898841 (IF 1.290) .

B55. Forman JL, Lopez-Valdes FJ, Duprey S, Bose D, Del Pozo de Dios E, Subit D, Gillispie T, Crandall JR, Segui-Gomez M (2015) The tolerance of the human body to automobile collision impact – a systematic review of injury biomechanics research, 1990–2009, Accident; analysis and prevention 04/2015; 80:7-17. DOI:10.1016/j.aap.2015.03.004 (IF 1.65)

B56. Crandall J, Frederick EC, Kent R, Lessley D, Sherwood C (2015). Apparatus for Measuring the Forefoot Bending Stiffness of Cleated American Football Shoes. DOI:10.1080/19424280.2015.1036942 , Footwear Science, Vol. 7 Issue S1 p S23-S25, 2015.

B57. Crandall J, Frederick EC, Kent R, Lessley DJ, Sherwood C (2015) Forefoot bending stiffness of cleated American football shoes, DOI:10.1080/19424280.2015.1058427, Footwear Science. 7(3) 199-148.

B58. Bailey AM, McMurry TL, Poplin GS, Salzar RS, Crandall JR (2015) Improved Survival Model for Foot and Leg High Rate Axial Impact Injury Data. Traffic Injury Prevention, 16 (sup2), S96-102. (IF 1.413)

B59. McMurry TL, Sherwod C, Poplin G, Segui-Gomez M, Crandall J (2015), Implications of Functional Capacity Loss and Fatality for Vehicle Safety Prioritization, Traffic Injury Prevention, 16 (sup2), S140-S145 (IF 1.413)

B60. Ye X, Funk J Forbes A, Bose D, Hurwitz S, Shaw CG, Crandall J, Freeth R, Michetti C, Rudd R, Scarboro M. (2015) Case Series Analysis of Hind-foot Injuries Sustained by Drivers in Frontal Motor Vehicle Crashes. Forensic Sci Intl., 254: 18-25 (IF 2.408).

B61. Poplin GS, McMurry TL, Forman J, Hartka T, Park G, Shaw G, Shin J, Crandall J (2015), Nature and etiology of hollow-organ abdominal injuries in frontal crashes, Accid Anal and Prevention,7851-57. 78C:51-57. DOI: 10.1016/j.aap.2015.02.015 (IF 2.571).

B62. Ye X, Bose D, Crandall J, Forbes AL, Hurwitz S, Poplin GS. (2015) Analysis of Crash Parameters and Driver Characteristics Associated with Lower Limb Injury, Accident Analysis and Prevention, 83:37-46 ((IF 1.894).

B63. Boruah S, Paskoff G, Shender B, Subit DL, Salzar RS, Crandall JR, (2015) Variation of bone thickness and histology in the adult male human calvarium. Journal of Bone 04/2015; DOI:10.1016/j.bone.2015.04.031 · (IF 4.46)

B64. Subit D, Glacet A, Hamzah M, Crandall J (2015), Orientation of the intercostal muscle fibers in the human rib cage, Computer Methods in Biomechanics and Biomedical Engineering 08/2015; DOI:10.1080/10255842.2015.1069624 (IF 1.770)

B65. Boruah, S, Salzar, RS, Crandall, JR. (2014) Assessment of the bio-fidelity of a test manikin for ejection seat evaluation through matched pair testing, Aviation, Space, and Environmental Medicine, 85(3) (IF 0.782).

B66. Crandall, JR. (2014), Simulating the road forward: the role of computational modelling in realising future opportunities in traffic safety, Int. J. Vehicle Safety, International Journal of Vehicle Safety, 7(3), 296-326.

B67. Crandall, JR, Lessley, DJ, Shaw, CG, Ash, JH. (2014) Displacement response of the spine in restrained PMHS during frontal impacts. International Journal of Automotive Engineering, 5(2): 59-64.

B68. Kent, RW, Lievers, WB, Riley, PO, Frimenko, RE, Crandall, JR. (2014). Etiology and Biomechanics of Tarsometatarsal Injuries in Professional Football Players A Video Analysis. Orthopaedic Journal of Sports Medicine, 2(3), 2325967114525347

B69. Lessley, DJ, Shaw, CG, Ash, JH, Crandall, JR. (2014) A Methodology for Assessing Intrasegmental Kinematics of the Whole Human Spine during Impacts, Intl. J. Automotive Engineering, 5(14), pp. 1-6.

B70. Lessley, DJ, Riley, PO, Zhang, Q, Foltz, P, Overby, B, Heltzel, S, Sochor, MR, Crandall, JR, Kerrigan, JR. (2014) Occupant Kinematics in Laboratory Rollover Tests: PMHS Response. Stapp Car Crash Journal, 58: 251-316.

B71. Shaw, CG, Lessley, DJ, Ash, JH, Sochor, MR, Crandall, JR, Luzon-Narro, J, Arregui-Dalmases, C. (2014) Side impact PMHS thoracic response with large-volume air bag. Traffic Injury Prevention, 15(1): 40-47.

B72. Shaw, CG, Lessley, DJ, Ash, JH, Crandall, JR. (2014) Development of an alternative frontal impact condition to assess thoracic response using THOR mod kit dummy. JSAE International Journal of Automotive Engineering, 5: 39-46.

B73. Zhang, Q, Lessley, DJ, Riley, PO, Toczyski, J, Lockerby, J, Foltz, P, Overby, B, Seppi, J, Crandall, JR, Kerrigan, JR. (2014) Occupant Kinematics in Laboratory Rollover Tests: ATD Response and Biofidelity. Stapp Car Crash Journal, 58: 317-360.

B74. Zhang, Q, Kindig, MW, Li Z, Crandall, JR, Kerrigan, JR (2014) Development of structural and material clavicle response corridors under axial compression and three point bending loading for clavicle: Finite Element model validation, Journal of Biomechanics, 47(11), 2563-2570, (IF 2.716).

B75. Ash, JH, Shaw, CG, Lessley, DJ, Crandall, JR. (2013) PMHS Restraint and Support Surface Forces in Simulated Frontal Crashes, Int. J. Automotive Engineering, 4(2): 41-46.

B76. Bose, D; Arregui-Dalmases, C; Sanchez-Molina, D; Velazquez-Ameijide, J; Crandall, JR. (2013) Increased risk of driver fatality due to unrestrained rear-seat passengers in severe frontal crashes, Accident; analysis and prevention 53: 100-104. (IF 2.367).

B77. Frimenko, RE; Lievers, WB; Riley, PO; Park, JS; Hogan, MV; Crandall, JR; Kent, RW; (2013) Development of an Injury Risk Function for First Metatarsophalangeal Joint Sprains. Medicine and Science in Sports and Exercise, 45(11): 2144-2150. (IF 4.431)

B78. Kerrigan, JR; Sanchez-Molina, D; Neggers, J; Arregui-Dalmases, C; Velazquez-Ameijide, J; Crandall, JR. (2014) Indentation Response of Human Patella with Elastic Modulus Correlation to Localized Fractal Dimension and Bone Mineral Density. Journal of the Mechanical Behavior of Biomedical Materials, 33: 99-108(IF 3.297)

B79. Kim, T, Shin, J, Ye, X, Crandall, JR, Knospe, C, Funk, JR. (2013) Evaluation of Methods for Development of Representative Response and Corridors of Biomechanical Data using Mass-Spring-Damper Models. International Journal of Crashworthiness, 18(6): 633-646 (IF 0.6221).

B80. Li, Z; Kindig, MW; Kerrigan, JR; Kent, RW; Crandall, JR; (2013) Development and Validation of a Subject-Specific Finite Element Model of a Human Clavicle. Computer Methods in Biomechanics and Biomedical Engineering, 16(8): 819-829.

B81. Riley, PO; Kent, RW; Dierks TA; Lievers, WB; Frimenko, RE; Crandall JR; (2013) Foot Kinematics and Loading of Professional Athletes in American Football-Specific Tasks. Gait and Posture, 38(4): 563-569.

B82. Sanchez-Molina, D, Velazquez-Ameijide, J, Arregui-Dalmases, C, Rodrigues, D, Quintana V, Shafieian, M, Crandall, JR. (2013) A Microcontinuum Model for Mechanical Properties of Esophageal Tissue: Experimental Methodology and Constitutive Analysis, Annals of Biomedical Engineering (IF 2.575). DOI: 10.1007/s10439-013-0897-0.

B83. Salzar, RS, Lau, SH, Lessley, DJ, Sochor, MR, Shaw CG, Kent, RW, Crandall, JR. (2013) Thoracic Response to Shoulder-Belt Loading: Comparison of Table-Top and Frontal Sled Tests with PMHS, Traffic Injury Prevention, 14(2): 159-167 (IF 1.401). DOI:10.1080/15389588.2012.692223.

B84. Frimenko, RE; Lievers, WB; Coughlin, MJ; Anderson, RB; Crandall, JR; Kent, RW; (2012) Etiology and Biomechanics of First Metatarsophalangeal Joint Sprains (Turf Toe) in Athletes. Critical Reviews in Biomedical Engineering, 40(1): 43-61.

B85. Funk, JR; Rudd RW; King RJ; Srinivasan SC; Bailey AM; Crandall, JR; (2012) Injuries Caused By Brake Pedal Loading of the Midfoot. Biomedical Sciences Instrumentation, 48: 134-140.

B86. Lievers, WB, Frimenko, RE, Crandall, JR, Kent, RW, Park, JS. (2012), Age, Sex, Causal and injury patterns in tarsometatarsal dislocations: A literature review of over 2000 cases, Foot, 22(3): 117-24.

B87. Kerrigan, JR, Arregui-Dalmases, C, Crandall, JR. (2012) Assessment of pedestrian head impact dynamics in small sedan and large SUV collisions. International Journal of Crashworthiness. 17:3, 243-258, DOI:10.1080/13588265.2011.648517. (IF: 0.607)

B88. Kent, RW, Crandall, JR, Forman, JL, Lessley, DJ, Lau, A, Garson, C. (2012) Development and assessment of a device and method for studying the mechanical interactions between shoes and playing surfaces in-situ at loads and rates generated by elite athletes. Journal of Sports Biomechanics. 11:3: 414-429. DOI:10.1080/14763141.2011.650188 (IF 0.763).

B89. Subit, D, del Pozo, E, Velazquez-Ameijide, J, Arregui-Dalmases, C, Crandall, JR. (2012) Tensile material properties of human rib cortical bone under quasi-static and dynamic failure loading and in uence of the bone microstucture on failure characteristics. Biological Physics,

B90. Sanchez-Molina, D; Velazquez-Ameijide, J; Quintana, V; Arregui-Dalmases, C; Crandall, JR; Subit, D; Kerrigan, JR; (2012) Fractal Dimension and Mechanical Properties of Human Cortical Bone. Medical Engineering and Physics, 35(5): 576-582. (IF 2.019).

B91. Sanchez-Molina, D; Velazquez-Ameijide, J; Arregui-Dalmases, C; Crandall, JR; Untaroiu, CD. (2012) Minimization of Analytical Injury Metrics for Head Impact Injuries. Traffic Injury Prevention, 13(3): 278-285. (IF 1.401)

B92. Arregui-Dalmases, CA, Teijeira R, Rebollo Soria MC, Kerrigan, JR, Crandall, JR. (2011). La biomecánica del impacto: una herramienta para la medicina legal y forense en la investigación del accidente de tráfico. Rev Esp Med Legal. 37(3): 97-104

B93. Bose, D, Kerrigan, JR, Foster, JB, Crandall, JR, Tobaru, S. (2011) Planar impacts in rollover crashes: significance, distribution, and injury epidemiology. Annals of Advances in Automotive Medicine. 55: 243-252

B94. Bose, D, Segui-Gomez, M, Crandall, JR. (2011). Vulnerability of female drivers involved in motor vehicle crashes: An analysis of U.S. population at risk. American Journal of Public Health. 101 (12): 2368-73 (IF: 4.4).

B95. Bose, D, Crandall, JR, McGwin, G, Goldman, J, Foster, J, Fine, PR. (2011) Computational methodology to predict injury risk for motor vehicle crash victims: A framework for improving Advanced Automatic Crash Notification systems. Transportation Research Part C: Emerging Technologies. 19 (6) 1048–1059. (IF: 1.7)

B96. Crandall, JR, Bose, D, Forman, JL, Untaroiu, CD, Arregui-Dalmases, C, Shaw, CG, Kerrigan, JR. (2011) Human surrogates for injury biomechanics research. Clinical Anatomy, 24(3): 362-371. (IF 1.084)

B97. del Pozo de Dios, E, Kindig, MW, Arregui-Dalmases, C, Crandall, JR, Takayama, S, Ejima, S, Kamiji, K, Yasuiki, T. (2011) Structural Response and Strain Patterns of Isolated Ribs under Lateral Loading, International Journal of Crashworthiness, 16(2): 169-180. (IF 0.553)

B98. Kerrigan, JR, Dennis, NJ, Parent, DP, Pursezov, S, Ash, JH, Crandall, JR, Stein, D. (2011) Test system, vehicle and occupant response repeatability evaluation in rollover crash tests: the deceleration rollover sled test. International Journal of Crashworthiness 16 (6): 583-605. (IF 0.553).

B99. Kerrigan, JR, Jordan, A, Parent, DP, Zhang, Q, Funk JR, Dennis NJ, Overby BE, Bolton JR, Crandall, JR. (2011) Design of a dynamic rollover test system. SAE International Journal of Passenger Cars – Mechanical Systems 4(1): 870-903. June 2011. Based on SAE Paper 2011-01-1116. DOI: 10.4271/2011-01-1116

B100. Kerrigan, JR, Jordan, A, Parent, DP, Zhang, Q, Funk JR, Dennis NJ, Overby BE, Bolton JR, Crandall, JR. (2011) Design of a dynamic rollover test system. SAE International Journal Of Passenger Cars – Mechanical Systems 4(1): 870-903. June 2011. Based on SAE Paper 2011-01-1116. DOI: 10.4271/2011-01-1116

B101. Lessley, DJ, Shaw, CG, Riley, PO, Forman, JL, Crandall, JR. (2011) Assessment and Validation of a Methodology for Measuring Anatomical Kinematics of Restrained Occupants During Motor Vehicle Collisions. J Biosens Bioelectron S1:002. doi: 10.4172/2155-6210.S1-002 (IF 5.361).

B102. Parent, DP, Kerrigan, JR, Crandall, JR. (2011) Comprehensive computational rollover sensitivity study part 1: influence or vehicle pre-crash parameters on crash kinematics and roof crush. International Journal of Crashworthiness. 16(6): 633-644. (IF 0.553)

B103. Parent, DP, Shaw, CG, Lessley, DJ, Bolton, JR, Arregui-Dalmases, C, Purtsezov, S, Riley, PO, Crandall, JR, Takayama, S, Ono, K, Kamiji, K, Yasuki, T. (2011) External Biofidelity in Lateral Impact: Measurement of Global and Local Forces. International Journal of Crashworthiness. 16(6): 677-689. (IF 0.6221)

B104. Riley, PO, Arregui-Dalmases, C, Purtserov, S, Parent, D, Lessley, DJ, Shaw, CG, Crandall, JR, Takayama, S, Ono K, Kamiji K, Yasuki T. (2011). Kinematics of the unrestrained vehicle occupants in side-impact crashes. Traffic Injury Prevention. Traffic Injury and Prevention, 13 (2): 163-171. (IF 1.401)

B105. Salzar, RS, Lievers, WB, Frimenko, RE, Seamon, JB, Keller, TC, Subit, D, Gochenour, TH, Sochor, MR, Crandall, JR. (2011): Fracture tolerance of the patellofemoral joint in frontal knee impacts of 75 and 35 year-old males, International Journal of Crashworthiness, 16:4, 397-409 (IF 0.6221).

B106. Subit, D, Shaw, CG, Ogam, E, Ejima, S, Crandall, JR. (2010) Wavelet Analysis of Piezoelectric Transducer Signals to Detect Rib Fractures During Impact Tests. International Journal of Crashworthiness, 18(3): 251-263.

B107. Arregui-Dalmases, C, Ash, JH, del Pozo, E, Kerrigan, JR, Crandall, JR. (2010) Characterization of the transverse and spinous vertebral processes: fracture forces under quasi-static and dynamic loading. Biomedical Sciences Instrumentation, 46: 154-159.

B108. Arregui-Dalmases, C, Ash, JH, del Pozo, E, Kerrigan, JR, Crandall, JR. (2010) Failure of the lumbar pedicles under bending loading. Biomedical Sciences Instrumentation, 46: 148-153.

B109. Ash, JH, Kerrigan, JR, Arregui-Dalmases, C, del Pozo, E, Crandall, JR. (2010) Endplate indentation of the fourth lumbar vertebra. Biomedical Sciences Instrumentation, 46: 160-165.

B110. Bass, CR, Salzar, RS, Lucas, SR, Rafaels, KA, Damon, AM, Crandall, JR. (2010) Re-evaluating the neck injury index (NII) using experimental PMHS tests. Traffic Injury Prevention, 11(2): 194-201.

B111. Bose, D, Crandall. JR, Untaroiu, CD, Maslen, EH. (2010) Influence of pre-collision occupant parameters on injury outcome in a frontal collision. Accident Analysis and Prevention, 42(4): 1398-1407 (IF 1.647).

B112. Lessley, DJ, Shaw, CG, Parent, DP, Arregui-Dalmases, C, Kindig, MW, Riley, PO, Purtsezov, S, Sochor, MR, Gochenour, T, Bolton, JR, Subit, D, Crandall, JR, Takayama, S, Ono, K, Kamiji, K, Yasuki, T. (2010) Whole-body response to pure lateral impact. Stapp Car Crash Journal, 53, 289-336.

B113. Parent, DP, Crandall, JR, Bolton, JR, Bass, CR, Ouyang, J, Lau, SH. (2010) Comparison of Hybrid III child test dummies to pediatric PMHS in blunt thoracic impact response. Traffic Injury Prevention, 11(4): 399-410.

B114. Untaroiu, CD; Crandall, JR; Takahashi Y; Okamoto M; Ito O; Fredriksson R. (2010) Analysis of running child pedestrians impacted by a vehicle using rigid-body models and optimization techniques, Safety Science, 48(2): 259-267. (IF 1.220)

B115. Untaroiu, CD, Shin, J, Crandall, JR, Fredriksson, R, Bostrom, O, Takahashi, Y, Akiyama, A, Okamoto, M, Kikuchi, Y. (2010) Development and Validation of Pedestrian Sedan Bucks using Finite Element Simulations; a Numerical Investigation of the Influence of Vehicle Automatic Braking on the Kinematics of the Pedestrian involved in Vehicle Collisions. International Journal of Crashworthiness, 15(5): 491-503.

B116. Kerrigan, JR, Bose, D, Li Z, Arregui-Dalmases, C, Del Pozo E, Ash, JH, Crandall, JR. (2010) Response of the sternum under dynamic 3-point bending. Biomedical Sciences Instrumentation, 46: 440-5.

B117. Ash, JH, Kerrigan, J, Arregui-Dalmases, C, Del Pozo E, Crandall, JR. (2010) Endplate indentation of the fourth lumbar vertebra. Biomedical Sciences Instrumentation, 46: 160-5.

B118. Li, Z, Kindig, MW, Kerrigan, JR, Untaroiu, CD, Subit, D, Crandall, JR, Kent, RW. (2010) Rib Fractures under Anterior-posterior Dynamic Loads: Experimental and Finite Element Study. Journal of Biomechanics, (IF 2.897) 43(2):228-234.

B119. Lessley, DJ, Salzar, RS, Crandall, JR, Kent, RW, Bass, CR, Guillemot, H, Forman, JL. (2010) Kinematics of the Thorax under Dynamic Belt Loading. International Journal of Crashworthiness, 15(2): 175-190. (IF 0.412)

B120. Duprey, S, Kerrigan, JR, Kindig, MW, Cundari, A, Zama, Y, Ejima, S, Kamiji, K, Yasuki, K, Crandall, JR. (2009) Biomechanical response of the clavicle under bending. Computer Methods in Biomechanics and Biomedical Engineering, (IF 1.033) 12(1) Suppl. 1:107-108.

B121. Ivarsson, BJ, Genovese D, Crandall JR, Bolton JR, Untaroiu CD, Bose D. (2009) The Tolerance of the Femoral Shaft in Combined Axial Compression and Bending Loading. Stapp Car Crash Journal, 53: 251-290.

B122. Kerrigan, JR, Parent, DP, Untaroiu, CD, Crandall, JR, Deng, B. (2009) A New Approach to Multibody Model Development: Pedestrian Lower Extremity. Traffic Injury Prevention, 10:386-397.

B123. Lucas, SR, Bass, CR, Crandall, JR, Kent, RW, Shen, F, Salzar, RS. (2009) Viscoelastic and failure properties of spine ligament collagen fascicles. Biomechanics and Modeling in Mechanobiology (IF 2.604) 8: 487-498.

B124. Salzar, RS, Genovese, D, Bass, CR, Bolton, JR, Guillemot, H, Damon, AM, Crandall, JR. (2009) Load path distribution within the pelvic structure under lateral loading. International Journal of Crashworthiness, (IF 0.412) 14(1): 99-110.

B125. Salzar, RS, Bolton, JR, Crandall, JR. (2009) Ejection Injury to the Spine in Small Aviators: Sled Tests of Manikins vs. Postmortem Specimens. Aviation, Space, and Environmental Medicine, 80(7):621-628.

B126. Salzar, RS, Bass, CR, Lessley, DJ, Crandall, JR, Kent, RW, Bolton, JR. (2009) Viscoelastic response of the thorax under dynamic belt loading. Traffic Injury Prevention, 10(3): 290-296.

B127. Shaw, CG, Parent, DP, Purtsezov, S, Lessley, DJ, Crandall, JR, Kent, RW, Guillemot, H, Ridella, SA, Takhounts, E, Martin, P. (2009) Impact Response of Restrained PMHS in Frontal Sled Tests:Skeletal Deformation Patterns Under Seat Belt Loading. Stapp Car Crash Journal, 53, 1-48.

B128. Untaroiu, CD, Duprey, S, Kerrigan, JR, Li, Z, Bose, D, Crandall, JR. (2009) Experimental and computational investigation of human clavicle response in anterior-posterior bending loading. Biomedical Sciences Instrumentation, 45:6-11.

B129. Untaroiu, CD, Meissner, M, Crandall, JR, Takahashi, Y, Okamoto, M, Ito, O. (2009) Crash Reconstruction of Pedestrian Accidents using Optimization Techniques. International Journal of Impact Engineering, (IF 0.873) 36(2):210-219.

B130. Bose, D, Crandall, JR. (2008) Influence of Active Muscle Contribution on the Injury Response of Restrained Car Occupants. Annals of Advances in Automotive Medicine (AAAM), 52: 61-72.

B131. Bose, D, Bhalla, KS, Untaroiu, CD, Ivarsson, BJ, Crandall, JR, Hurwitz, S. (2008) Injury Tolerance and Moment Response of the Knee Joint to Combined Valgus Bending and Shear Loading. Journal of Biomechanical Engineering, (IF 2.013) 130(3).

B132. Ito, O, Okamoto, M, Takahashi, Y, Mori, F, Meissner, MU, Untaroiu, CD, Crandall, JR. (2008) Validation of a human FE lower limb model for a child pedestrian against accident data. JSAE Transaction, 39(1):21-26.

B133. Ivarsson, BJ, Manaswi, A, Genovese, D, Crandall, JR, Hurwitz, SR, Burke, C, Fakhry, S. (2008) Site, type, and local mechanism of tibial shaft fracture in drivers in frontal automobile crashes. Forensic Science International, (IF 1.616) 175(2-3):186-192.

B134. Kendall, RG, Sherwood, CP, Crandall, JR. (2008) A Computational Study of Rear-Facing and Forward-Facing Child Restraints. SAE Transactions: Journal of Passenger Cars, 938-970. Based on SAE Paper 2008-01-1233.

B135. Kerrigan, JR, Rudd, RW, Subit, D, Untaroiu, CD, Crandall, JR. (2008) Pedestrian Lower Extremity Response and Injury: Small Sedan vs. Large SUV. SAE Transactions: Journal of Passenger Cars, 1(1): 985-1002. Based on SAE Paper 2008-01-1245.

B136. Kerrigan, JR, Crandall, JR, Deng, B. (2008) A Comparative Analysis of the Pedestrian Injury Risk Predicted by Mechanical Impactors and Post Mortem Human Surrogates. Stapp Car Crash Journal, 52: 527-567.

B137. Shin, J, Untaroiu, CD, Kerrigan, JR, Forman, JL, Crandall, JR. (2008) Kinematic analyses of instrumentation cubes in vehicle impact experiments. Biomedical Sciences Instrumentation, 44:76-81.

B138. Untaroiu, CD, Shin, J, Ivarsson, BJ, Crandall, JR, Subit, D, Takahashi, Y, Akiyama, A, Kikuchi, Y. (2008) A study of the pedestrian impact kinematics using finite element dummy models: the corridors and dimensional analysis scaling of upper-body trajectories. International Journal of Crashworthiness, (IF 0.412) 13(5): 469-478.

B139. Untaroiu, CD, Ivarsson, BJ, Genovese, D, Bose, D, Crandall, JR. (2008) Biomechanical Injury Response of Leg Subjected to Dynamic Combined Axial and Bending Loading. Biomedical Sciences Instrumentation, 44:141-146.

B140. Balandin, DV, Bolotnik, NN, Crandall, JR, Pilkey, WD, Purtsezov SV. (2007) Optimal impact isolation for injury prevention evaluated by the head injury criterion. Shock and Vibration, (IF 0.465) 14(5): 355-370.

B141. Funk, JR, Rudd, RW, Kerrigan, JR, Crandall, JR. (2007) The Line of Action in the Tibia During Axial Compression of the Leg. Journal of Biomechanics, (IF 2.897) 40(10): 2277-2282.

B142. Henary, BY, Sherwood, CP, Crandall, JR, Kent, RW, Vaca, FE, Arbogast, KB, Bull, MJ. (2007) Car safety seats for children: rear facing for best protection. Injury Prevention, (IF 1.844) 13:398-402. (retracted)

B143. Kerrigan, JR, Crandall, JR, Deng B. (2007) Pedestrian kinematic response to mid-sized vehicle impact. International Journal of Vehicle Safety, 2(3): 221-240.

B144. Michetti, CP, Hanna, R, Crandall, JR, Fakhry, SM. (2007) Contemporary Analysis of Thoracic Aortic Injury: Importance of Screening Based On Crash Characteristics. Journal of Trauma, (IF 1.653) 63(1): 18-24.

B145. Millington, SA, Grabner, M, Wozelka, R, Anderson, DD, Hurwitz, SR, Crandall, JR. (2007) Quantification of ankle articular cartilage topography and thickness using a high resolution stereophotography system. Osteoarthritis and Cartilage. (IF 4.082) 15(2):205-211.

B146. Millington, SA, Li, B, Tang, J, Tratting, S, Crandall, JR, Hurwitz, S, Acton, S. (2007) Quantitative and topographical evaluation of ankle articular cartilage using high resolution MRI. Journal of Orthopedic Research, (IF 3.574) 25(2):143-151.

B147. Sherwood, CP, Crandall, JR. (2007) Frontal sled tests comparing rear and forward facing child restraints with 1-3 year old dummies. Annual Proceedings/Association for the Advancement of Automotive Medicine 51:169-180.

B148. Shin, J, Untaroiu, CD, Kerrigan, JR, Crandall, JR, Subit, D, Takahashi, Y, Akiyama, A, Kikuchi, Y, Longhitano, D. (2007) Investigating Pedestrian Kinematics with the Polar-II Finite Element Model. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 116(7): 655-667. Based on SAE Paper 2007-01-0756.

B149. Untaroiu, CD, Kerrigan, JR, Kam, CY, Crandall, JR, Yamazaki, K, Fukuyama, K, Kamiji, K, Yasukis T, Funk, JR. (2007) Correlation of strain and loads measured in the long bones with observed kinematics of the lower limb during vehicle-pedestrian impacts. Stapp Car Crash Journal, 51:433-466.

B150. Untaroiu, CD, Shin, J, Crandall, JR. (2007) A Design Optimization Approach of Vehicle Hood for Pedestrian Protection. International Journal of Crashworthiness, (IF 0.412) 12(6): 581-589.

B151. Crandall, JR, Lessley, DJ, Kerrigan, JR, Ivarsson, BJ. (2006) Thoracic Deformation Response of Pedestrians Resulting from Vehicle Impact. International Journal of Crashworthiness, (IF 0.412) 11(6): 529-539.

B152. Funk, JR, Crandall, JR. (2006) Calculation of Tibial Loading Using Strain Gauges. Biomedical Sciences Instrumentation, 42: 160-165.

B153. Henary BY, Ivarsson, BJ, Crandall, JR. (2006) The Influence of Age on the Morbidity and Mortality of Pedestrian Victims. Traffic Injury Prevention, 7(2): 182-190.

B154. Ivarsson, BJ, Crandall, JR, Okamoto, M. (2006) Influence of Age-Related Stature on the Frequency of Body Region Injury and Overall Injury Severity in Child Pedestrian Casualties. Traffic Injury Prevention, 7:290-298.

B155. Kent, RW, Crandall, JR. (2006) A hybrid technique for determining optimal restraint system characteristics. International Journal of Crashworthiness, (IF 0.412) 11(4):379-385.

B156. Millington, SA, Grabner, M, Wozelka, R, Hurwitz, S, Crandall, JR. (2007) A Stereophotographic study of ankle joint contact area and joint contact distribution. Journal of Orthopaedic Research, (IF 3.574) 25(11): 1465-1473.

B157. Sherwood, CP, Abdelilah, Y, Crandall, JR. (2006) Quantifying the Relationship Between Vehicle Interior Geometry and Child Restraint Systems. Annual Proceedings/Association for the Advancement of Automotive Medicine, 50: 381-396.

B158. Sherwood, CP, Kent, RW, Crandall, JR. (2006) Booster Seats and the Transition from Child Restraints to Adult Seat Belts. Topics in Emergency Medicine, 28(1): 21-29.

B159. Tang, J, Millington, SA, Acton, S, Crandall, JR, Hurwitz, S. (2006) Surface Extraction and Thickness Measurement of the Articular Cartilage from MR Images using Direction Gradient Vector Flow Snakes. IEEE Transactions on Biomedical Engineering, 53(5): 896-907.

B160. Untaroiu, CD, Kerrigan, JR, Crandall, JR. (2006) Material Identification using Successive Response Surface Methodology, with Application to a Human Femur subjected to Three-Point Bending Loading. SAE Transactions: Journal of Passenger Cars-Mechanical System, 115(6): 26-35. Based on SAE Paper 2006-01-0063.

B161. van Dommelen, J, Minary Jolandan, M, Ivarsson, BJ, Millington, SA, Raut, M, Kerrigan, JR, Crandall, JR, Diduch, D. (2006) Nonlinear viscoelastic behavior of human knee ligaments subjected to complex loading histories. Annals of Biomedical Engineering, (IF 2.605) 34(6): 1008-1018.

B162. Bhalla, KS, Takahashi, Y, Shin, J, Kam, CY, Murphy, DB, Drinkwater, DC, Crandall, JR. (2005) Experimental Investigation of the Response of the Human Lower Limb to the Pedestrian Impact Loading Environment. SAE Transactions: Journal of Passenger Cars, 114: 459-472. Based on SAE Paper 2005-01-1877.

B163. Ivarsson, BJ, Kerrigan, JR, Lessley, DJ, Drinkwater, DC, Kam, CY, Murphy, DB, Crandall, JR, Kent, RW. (2005) Dynamic Response Corridors of the Human Thigh and Leg in Non-Midpoint Three-Point Bending. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): 193-204. Based on SAE Paper 2005-01-0305.

B164. Ivarsson, BJ, Longhitano, D, Henary, BY, Crandall, JR. (2005) Significance of adult pedestrian torso injury. Annual Proceedings/Association for the Advancement of Automotive Medicine, 49: 263-277.

B165. Kam, CY, Kerrigan, JR, Meissner, MU, Drinkwater, C, Murphy, DB, Bolton, JR, Arregui-Dalmases, C, Kendall, R, Ivarsson, BJ, Crandall, JR, Deng, B, Wang, JT, Kerkeling, C, Hahn, W. (2005) Design of a full-scale impact system for analysis of vehicle pedestrian collisions. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): 2268-2282. Based on SAE Paper 2005-01-1875.

B166. Kent, RW, Viano, D, Crandall, JR. (2005) The Field Performance of Frontal Air Bags: A Review of the Literature. Traffic Injury Prevention, 6(1): 1-23.

B167. Longhitano, D, Henary, BY, Bhalla, KS, Ivarsson, BJ, Crandall, JR. (2005) Influence of Vehicle Body Type on Pedestrian Injury Distribution. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): 2283-2288. Based on SAE Paper 2005-01-1876.

B168. Rath, A, Manoogian, S, Duma, SM, Bolton, B, Crandall, JR. (2005) An Evaluation of a Fiber Optic Based Sensor for Measuring Chest and Abdominal Deflection. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): Based on SAE Paper 2005-01-0745.

B169. Shaw, CG, Lessley, DJ, Crandall, JR, Kent, RW, Kitis, L. (2005) Elimination of Thoracic Muscle Tensing Effects for Frontal Crash Dummies. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): 205-219. Based on SAE Paper 2005-01-0307.

B170. Sherwood, CP, Crandall, JR, Stevens, S, Saggese, J, Eichelberger, M. (2005) Sled Tests and CIREN data illustrating the benefits of booster seats. International. Journal of Crashworthiness, (IF 0.412) 10(4): 351-357.

B171. Sherwood, CP, Gopalan, S, Abdelilah, Y, Marshall, R, Crandall, JR. (2005) Vehicle Interior Interactions and Kinematics of Rear Facing Child Restraints in Frontal Crashes. Annual Proceedings/Association for the Advancement of Automotive Medicine, 49: 215-228.

B172. Untaroiu, CD, Darvish, KK, Crandall, JR, Deng, B, Wang, JT. (2005) A Finite Element Model of the Lower Limb for Simulating Pedestrian Impacts. Stapp Car Crash Journal, 49: 157-181.

B173. van Dommelen, J, Ivarsson, BJ, Minary Jolandan, M, Millington, SA, Raut, M, Kerrigan, JR, Crandall, JR, Diduch, D. (2005) Characterization of the Rate-Dependent Mechanical Properties and Failure of Human Knee Ligaments. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 114(6): 80-90. Based on SAE Paper 2005-01-0293.

B174. van Dommelen, J, Minary Jolandan, M, Ivarsson, BJ, Millington, SA, Raut, M, Kerrigan, JR, Crandall, JR, Diduch, D. (2005) Pedestrian Injuries: viscoelastic properties of human knee ligaments at high loading rates. Traffic Injury Prevention, 6:278-287.

B175. Cheng, ZQ, Crandall, JR, Darvish, KK, Pilkey, WD. (2004) Limiting performance analysis of toepan padding for mitigating lower limb injuries. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 218(D): 619-628.

B176. Funk, JR, Kerrigan, JR, Crandall, JR. (2004) Dynamic Bending Tolerance and elastic-plastic material properties of the human femur. Annual Proceedings/Association for the Advancement of Automotive Medicine, 48: 212-233.

B177. Funk, JR, Rudd, RW, Kerrigan, JR, Crandall, JR. (2004) The Effect of Tibial Curvature and Fibular Loading on the Tibia Index. Traffic Injury Prevention, 5(2):164-172.

B178. Kerrigan, JR, Drinkwater, DC, Kam, CY, Murphy, DB, Ivarsson, BJ, Crandall, JR. (2004) Tolerance of the Human Leg and Thigh in Dynamic Lateral-Medial 3-Point Bending. International Journal of Crashworthiness, (IF 0.412) 9(6): 607-623.

B179. Madeley, NJ, Srinivasan, CM, Crandall, JR, Hurwitz, S, Funk JR. (2004) Retrospective analysis of malleolar fractures in an impact environment. Annual Proceedings/Association for the Advancement of Automotive Medicine, 48: 235-248.

B180. Miller, T, Zaloshnja, E, Lawrence, B, Crandall, JR, Ivarsson, BJ, Finkelstein, A, Corso, S. (2004) Pedestrian and Pedalcyclist Injury Costs in the United States by Age and Injury Severity. Annual Proceedings/Association for the Advancement of Automotive Medicine, 48: 265-284.

B181. Roudsari, B, Mock, C, Kaufman, R, Grossman, D, Henary, BY, Crandall, JR. (2004) Pedestrian crashes: higher injury severity and mortality rate for light truck vehicles compared with passenger vehicles. Injury Prevention, 10(3): 154-158.

B182. Rudd, RW, Crandall, JR, Millington, SA, Hurwitz, S, Hoglund, N. (2004) Injury Tolerance and Response of the Ankle Joint in Dynamic Dorsiflexion. Stapp Car Crash Journal, 48:1-26.

B183. Rudd, RW, Kitagawa, Y, Crandall, JR, Poteau, F. (2004) Evaluation of Energy-Absorbing Materials as a Means to Reduce Foot/Ankle Axial Load Injury Risk. Journal of Automobile Engineering. Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 218(D3):279-293.

B184. Sanghavi, P, Bose, D, Kerrigan, JR, Madeley, NJ, Crandall, JR. (2004) Non-contact strain measurement of biological tissue. Biomedical Sciences Instrumentation, 40:51-6.

B185. Sherwood, CP, Abdelilah, Y, Crandall, JR, Stevens, S, Saggese, J, Eichelberger, M. (2004) The Performance of Various Rear Facing Child Restraint Systems in a Frontal Crash. Annual Proceedings/Association for the Advancement of Automotive Medicine, 48: 303-321.

B186. Duma, SM, Boggess, B, Bass, CR, Crandall, JR. (2003) Injury Risk Functions for the 5th Percentile Female Upper Extremity. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 112(6): 124-132. Based on SAE Paper 2003-01-0166.

B187. Duma, SM, Boggess, B, Crandall, JR, Hurwitz, S, Seki, K, Aoki, T. (2003) Upper extremity interaction with a deploying side airbag: a characterization of elbow joint loading. Accident Analysis and Prevention, (IF 1.587) 35(3): 417-425.

B188. Duma, SM, Crandall, JR, Pilkey, WD, Seki, K, Aoki, T. (2003) Fifth percentile female dummy upper extremity interaction with a deploying side air bag. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 217(D2): 79-86.

B189. Duma, SM, Crandall, JR, Rudd, RW, Kent, RW. (2003) Small female head and neck interaction with a deploying side air bag. Accident Analysis and Prevention, (IF 1.587) 35(5): 811-816.

B190. Duma, SM, Boggess, B, Crandall, JR, MacMahon, C. (2003) Injury risk function for the small female wrist in axial loading. Accident Analysis & Prevention, (IF 1.587) 35(6):869-75.

B191. Funk, JR, Srinivasan, S, Crandall, JR. (2003) Snowboarder's talus fractures experimentally produced by eversion and dorsiflexion. American Journal of Sports Medicine, (IF 3.646) 31(6):921-928.

B192. Henary, BY, Crandall, JR, Bhalla, KS, Mock, C, Roudsari, B. (2003) Child and Adult Pedestrian Impacts: The Influence of Vehicle Type on Injury Severity. Annual Proceedings/Association for the Advancement of Automotive Medicine, 47: 105-126.

B193. Kent, RW, Crandall, JR. (2003) International harmonization of side impact standards: vehicle design and thoracic injury criteria trends. International Journal of Vehicle Design, (IF 0.264) 31(1/2): 158-172.

B194. Kent, RW, Funk, JR, Crandall, JR. (2003) How future trends in societal aging, airbag availability, belt use, and fleet composition will affect serious injury risk in the United States. Traffic Injury Prevention, 4(1): 24-32.

B195. Kent, RW, Lessley, DJ, Shaw, CG, Crandall, JR. (2003) The utility of Hybrid III and THOR chest deflection for discriminating between standard and force-limiting belt systems. Stapp Car Crash Journal, 47:267-297.

B196. Kent, RW, Shaw, CG, Lessley, DJ, Crandall, JR, Kallieris, D, Svensson, M. (2003) Comparison of belted Hybrid III, THOR, and cadaver thoracic responses in oblique frontal and full frontal sled tests. SAE Transactions, 112(6): 71-84. Based on SAE Paper 2003-01-0160.

B197. Rudd, RW, Crandall, JR, Shaw, CG. (2003) Response of the Thor-Lx and Hybrid III Lower Extremities in Frontal Sled Tests. SAE Transactions: Journal of Passenger Cars, 112(6): 85-96. Based on SAE Paper 2003-01-0161.

B198. Sherwood, CP, Crandall, JR, Ferguson, S. (2003) Factors Leading to Crash Fatalities to Children Placed in Child Restraints. Annual Proceedings/Association for the Advancement of Automotive Medicine, 47: 343-359.

B199. Sherwood, CP, Shaw, CG, van Rooij, L, Kent, RW, Gupta, P, Crandall, JR, Orzechowski, K, Eichelberger, M, Kallieris, D. (2003) Prediction of cervical spine injury risk for the 6-year-old child in frontal crashes. Traffic Injury Prevention, 4(3): 206-213.

B200. Takhounts, E, Crandall, JR, Darvish, KK. (2003) On the Importance of Nonlinearity of Brain Tissue Under Large Deformations. Stapp Car Crash Journal, 47: 85-102.

B201. van Rooij, L, van Hoof, J, Crandall, JR, Bass, CR. (2003) The development, validation and application of a finite element upper extremity model subjected to air bag loading. Stapp Car Crash Journal, 47: 55-78.

B202. van Rooij, L, Sherwood, CP, Crandall, JR, Orzechowski, K, Eichelberger, M. (2003) The Effects of Vehicle Seat Belt Parameters on the Injury Risk for Children in Booster Seats. SAE Transactions: Journal of Passenger Cars 113(6): 470-482. Based on SAE Paper 2003-01-0500.

B203. Bass, CR, Duma, SM, Crandall, JR, George, S, Kuppa, S, Khaewpong, N, Sun, E, Eppinger, R. (2002) Comparison of upper extremity test devices for the evaluation of frontal air bags. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 216(D):795-803.

B204. Crandall, JR, Bhalla, KS, Madeley, NJ. (2002) Designing road vehicles for pedestrian safety. British Medical Journal, (IF 13.471) 324: 1145-1148.

B205. Duma, SM, Boggess, B, Crandall, JR, MacMahon, C. (2002) Fracture Tolerance of the Small Female Elbow Joint in Compression: The Effect of Load Angle Relative to the Long Axis of the Forearm. Stapp Car Crash Journal, 46: 195-210. Based on SAE Paper 2002-22-0010.

B206. Duma, SM, Schreiber, P, McMaster, J, Crandall, JR, Bass, CR. (2002) Fracture Tolerance of the Male Forearm: the effect of Pronation versus Supination. Journal of Automobile

Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 216(D):649-654.

B207. Duma, SM, Stitzel, J, Ryan, L, Crandall, JR. (2002) Determination of Bone Mineral Content in Cadaveric Test Specimens. Journal of the Southern Orthopedic Association, 11(2): 80-87.

B208. Funk, JR, Crandall, JR, Tourret, L, MacMahon, C, Bass, CR, Khaewpong, K, Eppinger, R. (2002) The Axial Injury Tolerance of the Human Foot/Ankle Complex and the Effect of Achilles Tension. Journal of Biomechanical Engineering, (IF 2.013) 124: 750-757.

B209. Funk, JR, Rudd, RW, Srinivasan, S, King, R, Crandall, JR, Petit, P. (2002) Methodology for Measuring Tibial and Fibular Loads in a Cadaver. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 111(6): 960-969. Based on SAE Paper 2002-01-0682.

B210. Funk, JR, Srinivasan, S, Crandall, JR, Khaewpong, N, Eppinger, R, Jaffredo, A, Potier, P, Petit, P. (2002) The Effects of Axial Preload and Dorsiflexion on the Tolerance of the Ankle/Subtalar Joint to Dynamic Inversion and Eversion. Stapp Car Crash Journal, 46:245-266. Based on SAE Paper 2002-22-0013.

B211. Kent, RW, Crandall, JR, Patrie, J, Fertile, J. (2002) Radiographic detection of rib fractures: a restraint-based study of occupants in car crashes. Traffic Injury Prevention, 3(1): 49-57.

B212. Kent, RW, Crandall, JR, Rudd, RW, Lessley, DJ. (2002) Load Distribution-Specific Viscoelastic Characterization of the Hybrid III Chest. SAE Transactions: Journal of Passenger Cars - Mechanical Systems, 111(6): 199-210. Based on SAE Paper 2002-01-0024.

B213. Kent, RW, Funk, JR, Crandall, JR. (2002) U.S. injury trends projected to 2012: the influence of an aging population. Annual Proceedings/Association for the Advancement of Automotive Medicine; 46:157-75.

B214. Shaw, CG, Rudd, RW, Crandall, JR, Luo, F. (2002) Comparative Evaluation of Dummy Response with Thor-Lx/Hillr and Hybrid III Lower Extremities. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 111(6): 175-186. Based on SAE Paper 2002-01-0016.

B215. Shaw, CG, Crandall, JR, Butcher, J. (2002) Comparative Evaluation of the THOR Advanced Frontal Crash Test Dummy. International Journal of Crashworthiness, (IF 0.412) 7(3): 239-253.

B216. Sherwood, CP, Shaw, CG, van Rooij, L, Kent, RW, Gupta, P, Crandall, JR, Orzechowski, K, Eichelberger, M, Kallieris, D. (2002) Prediction of cervical spine injury risk for the 6-year-old child in frontal crashes. Annual Proceedings/Association for the Advancement of Automotive Medicine, 46: 231-247.

B217. Stitzel, J, Duma, SM, Boggess, B, Bass, CR, Crandall, JR. (2002) Frequency Content Analysis and Filter Class Selection for the Small Female Instrumented Upper Extremity. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 111(6) (2002): 1202-1216. Based on SAE Paper 2002-01-0806.

B218. Bass, CR, Darvish, KK, Bush, B, Crandall, JR, Srinivasan, S, Tribble, C, Tourret, L, Evans, J, Patrie, J, Wang, C. (2001) Material Properties for Modeling Traumatic Aortic Rupture. Stapp Car Crash Journal, 45: 143-160.

B219. Butcher, J, Shaw, CG, Bass, CR, Kent, RW, Crandall, JR. (2001) Displacement Measurements in the Hybrid III Chest. SAE Transactions: Journal of Passenger Cars, 110(6): 26-31. Based on SAE Paper 2001-01-0118.

B220. Cheng, ZQ, Pilkey, WD, Balandin, DV, Bolotnik, NN, Crandall, JR, Shaw, CG. (2001) Optimal Control of Helicopter Seat Cushions for the Reduction of Spinal Injuries. International Journal of Crashworthiness, (IF 0.412) 6(3): 321-338.

B221. Darvish, KK, Crandall, JR. (2001) Nonlinear Viscoelastic Effects in Oscillatory Shear Deformation of Brain Tissue. Medical Engineering and Physics, (IF 1.471) 23: 633-645.

B222. Kent, RW, Crandall, JR, Bolton, JR, Prasad, P, Nusholtz, G, Mertz, H. (2001) The Influence of Superficial Soft Tissues and Restraint Condition on Thoracic Skeletal Injury Prediction. Stapp Car Crash Journal, 45: 183-203.

B223. Kent, RW, Crandall, JR, Bolton, JR, Duma, SM. (2001) Comparison and evaluation of contemporary restraint systems in the driver and front-passenger environments. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 215(D): 1-13.

B224. Kent, RW, Crandall, JR, Butcher, J, Morris, RA. (2001) Sled System Requirements for the Analysis of Side Impact Thoracic Injury and Occupant Protection. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 110(6): 805-813. Based on SAE Paper 2001-01-0721.

B225. Martin, PG, Crandall, JR. (2001) Constitutive Modeling of Polymers Subjected to High Strain Rates. SAE Transactions: Journal of Materials and Manufacturing, 110(5): 549-558. Based on SAE Paper 2001-01-0472.

B226. Sieveka, EM, Kent, RW, Crandall, JR. (2001) Comparison of seat belt force-limiting methods using the MADYMO multi-body/finite element program. Annual Proceedings/ Association for the Advancement of Automotive Medicine; 45:11-21.

B227. Srinivasan, S, Sherwood, CP, Funk, JR, Crandall, JR. (2001) Retrospective Assessment of Malleolar Fracture Mechanism in Impact Environment. Annual Proceedings/Association for the Advancement of Automotive Medicine, 45: 405-407.

B228. Bass, CR, Wang, C, Crandall, JR. (2000) Error Analysis of Curvature-Based Contour Measurement Devices. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 109(6): 19-35. Based on SAE Paper 2000-01-0054.

B229. Crandall, JR, Cheng, ZQ, Pilkey, WD. (2000) Limiting Performance of Seat Belt System for the Prevention of Thoracic Injuries. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 214(D2): 127-139.

B230. Crandall, JR, Kent, RW, Patrie, J, Fertile, J, Martin, PG. (2000) Rib fracture patterns and radiologic detection - a restraint-based comparison. Annual Proceedings/Association for the Advancement of Automotive Medicine; 44:235-59.

B231. Duma, SM, Crandall, JR, Hurwitz, S, Pilkey, WD. (2000) Small Female Upper Extremity Interaction with a Deploying Side Airbag. Journal of Crash Prevention and Injury Control, 2(1): 45-61.

B232. Duma, SM, Crandall, JR. (2000) Eye Injuries from Air Bags with Seamless Module Covers. Journal of Trauma, (IF 1.653) 48(4): 786-789.

B233. Duma, SM, Crandall, JR, Seki, K. (2000) Comparison of the Q3 and Hybrid III 3 Year Old Dummy Head and Neck Response During Side Air Bag Loading. Journal of Automobile

Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 214(4): 675-684.

B234. Funk, JR, Hall, GW, Crandall, JR, Pilkey, WD. (2000) Linear and Quasi-Linear Viscoelastic Characterization of Ankle Ligaments. Journal of Biomechanical Engineering, (IF 2.013) 122(1): 15-22.

B235. Funk, JR, Tourret, L, George, S, Crandall, JR. (2000) The Role of Axial Loading in Malleolar Fractures. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 109(6): 212-223. Based on SAE Paper 2000-01-0155.

B236. Kent, RW, Crandall, JR. (2000) Structural Stiffness, Elastic Recovery, and Occupant Inertial Effects on Measured Door Response in a Laterally Struck Vehicle. International Journal of Crashworthiness, (IF 0.412) 5(3): 235-248.

B237. Kent, RW, Crandall, JR, Bolton, JR, Duma, SM. (2000) Driver and right-front passenger restraint system interaction, injury potential, and thoracic injury prediction. Annual Proceedings/Association for the Advancement of Automotive Medicine; 44: 261-82.

B238. Martin, PG, Crandall, JR, Pilkey, WD, Miller, T. (2000) Injury trends of passenger car drivers in frontal crashes in the USA. Accident Analysis and Prevention, (IF 1.587) 32(4): 541-557.

B239. Rudd, RW, Crandall, JR, Butcher, J. (2000) Biofidelity Evaluation of Dynamic and Static Response Characteristics of the THOR Lx Dummy Lower Extremity. International Journal of Crashworthiness, (IF 0.412) 5(2): 127-140.

B240. Bai, C, Morris, RA, Sieveka, EM, Crandall, JR, Cheng, ZQ, Pilkey, WD. (1999) A Study of Standards for Child Restraint Systems for Impact Tests. International Journal of Crashworthiness, (IF 0.412) 4(1): 59-70.

B241. Bass, CR, Crandall, JR, Bolton, JR, Pilkey, WD. (1999) Deployment of Air Bags into the Thorax of an Out-of-Position Dummy. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 108(6): 1468-1482. Based on SAE Paper 1999-01-0764.

B242. Cheng, ZQ, Pilkey, WD, Crandall, JR, Bass, CR, Darvish, KK. (1999) Limiting performance of helmets for the prevention of head injury. Shock and Vibration, (IF 0.465) 6: 299-320.

B243. Crandall, JR, Duma, SM, Bass, CR, Pilkey, WD, Kuppa, S, Khaewpong, N, Eppinger, R. (1999) Thoracic Response and Trauma in Air Bag Deployment Tests with Out-of-Position Small Female Surrogates. Journal of Crash Prevention and Injury Control, 1(2): 101-112.

B244. Darvish, KK, Takhounts, E, Mathews, B, Crandall, JR. (1999) A Nonlinear Viscoelastic Model for Polyurethane Foams. SAE Transactions: Journal of Materials and Manufacturing, 108(5): 209-215, 1999. Based on SAE Paper 1999-01-0299.

B245. Duma, SM, Crandall, JR, Pilkey, WD, Seki, K, Aoki, T. (1999) Dynamic Response of the Hybrid III 3 Year Old Dummy Head and Neck during Side Airbag Loading. Journal of Automobile Engineering, Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 213(D): 471-480.

B246. Duma, SM, Crandall, JR, Rudd, RW. (1999) A Protocol System for Testing Biohazardous Materials in an Automotive Research Facility. American Industrial Hygiene Association Journal, 60(5): 629-634.

B247. Duma, SM, Schreiber, P, McMaster, J, Crandall, JR, Bass, CR, Pilkey, WD. (1999) Dynamic Injury Tolerances for Long Bones of the Female Upper Extremity. Journal of Anatomy, (IF 2.063) 194(3): 463-471.

B248. Hall, GW, Klopp, GS, Crandall, JR, Carmines, D, Hale, J. (1999) Rate-independent characteristics of an arthroscopically implantable force probe in the human achilles tendon. Journal of Biomechanics, (IF 2.897) 32:203-207.

B249. Morris, RA, Crandall, JR, Pilkey, WD. (1999) Multibody modelling of a side impact test apparatus. International Journal of Crashworthiness, (IF 0.412) 4(1): 17-30.

B250. Sieveka, EM, Crandall, JR, Duma, SM, Pilkey, WD. (1999) Three Year Old Child and Side Airbag Interaction Study Using the CVS/ATB Multi-body Simulation Program. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 108(6): 1416-1423. Based on SAE Paper 1999-01-0756.

B251. Vinger, P, Duma, SM, Crandall, JR. (1999) Baseball Hardness as a Risk Factor for Eye Injuries. Archives of Ophthalmology, (IF 3.242) 117(3): 354-358.

B252. Bass, CR, Crandall, JR, Wang, C, Pilkey, WD. (1998) Open-Loop Chestbands for Dynamic Deformation Measurements. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 107(6):1380-1387. Based on SAE Paper 980857.

B253. Cheng, ZQ, Crandall, JR, Pilkey, WD. (1998) Wave Dispersion and Attenuation in Viscoelastic Split Hopkinson Pressure Bar. Shock and Vibration, (IF 0.465) 5(5/6): 307-315.

B254. Crandall, JR, Bass, CR, Duma, SM, Kuppa, S, Khaewpong, N, Eppinger, R. (1998) Evaluation of 5th Percentile Female Hybrid III Biofidelity and Injury Criteria Measurement Methods During Out of Position Occupant Tests with a Driver Airbag. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 107(6): 1154-1161. Based on SAE Paper 980636.

B255. Crandall, JR, Kuppa, S, Klopp, GS, Hall, GW, Pilkey, WD, Hurwitz, SR. (1998) Injury Mechanisms and Criteria for the Human Foot and Ankle Under Axial Impacts to the Foot. International Journal of Crashworthiness, (IF 0.412) 3(2): 147-162.

B256. Crandall, JR, Martin, PG, Sieveka, EM, Pilkey, WD, Dischinger, P, Burgess, A, O'Quinn, T, Schmidhauser, C. (1998) Lower Limb Response and Injury in Frontal Crashes. Accident Analysis and Prevention, (IF 1.587) 30(5): 667-677.

B257. Duma, SM, Rudd, RW, Crandall, JR. (1998) The Automotive Airbag System. Professional Safety: Journal of the American Society of Safety Engineers, 43(10): 24-27.

B258. Duma, SM, Crandall, JR, Hurwitz, S, Pilkey, WD. (1998) Small Female Upper Extremity Interaction with a Deploying Side Airbag. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 107(6): 2695. Based on SAE Paper 983148.

B259. Martin, PG, Hall, GW, Crandall, JR, Pilkey, WD. (1998) Measuring the acceleration of a rigid body. Shock and Vibration, (IF 0.465) 5: 211-224.

B260. Rudd, RW, Crandall, JR, Bass, CR, Lynn, S, Keller, J. (1998) Lower Extremity and Brake Pedal Interaction in Frontal Collisions: Sled Tests. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 107(6): 853-860. Based on SAE Paper 980359.

B261. Rudd, RW, Sieveka, EM, Crandall, JR, Pellettiere, JA, Lynn, S, Keller, J. (1998) Lower Extremity and Brake Pedal Interaction in Frontal Collisions: Computer Simulation. SAE Transactions: Journal of Passenger Cars, 107(6): 822-828. Based on SAE Paper 980364.

B262. Schreiber, P, Crandall, JR, Hurwitz, S, Nusholtz, GS. (1998) Static and Dynamic Bending Strength of the Leg. International Journal of Crashworthiness, (IF 0.412) 3(3): 295-308.

B263. Sieveka, EM, Pellettiere, JA, Crandall, JR, Pilkey, WD, Tanahashi, M, Weisenfeld, G, Okuhara, H, Takahashi, Y, Okamoto, Y. (1998) A New CVS/ATB Hybrid III Model for Lower Extremity Studies: Development and Validation. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 107(6): 803. Based on SAE Paper 980357.

B264. Thacker, J, Reagan, S, Pellettiere, JA, Pilkey, WD, Crandall, JR, Sieveka, EM. (1998) Experiences during Development of a Dynamic Crash Response Automobile Model. Journal of Finite Element Analysis and Design, (IF 0.989) 30: 279-296.

B265. Bass, CR, Crandall, JR, Dekel, E, Jordan, A, Pilkey, WD. (1997) A System for Simulating Structural Intrusion in Automobile Full-Frontal and Frontal Offset Crashes in the Laboratory Sled Test Environment. Journal of Automobile Engineering. Proceedings of the Institution of Mechanical Engineers, (IF 0.224) 211(D): 325-336.

B266. Bass, CR, Dekel, E, Crandall, JR, Lange, M, Pilkey, WD. (1997) Experimental Devices to Simulate Toepan And Floorpan Intrusion. SAE Transactions: Journal of Passenger Cars, 106(6): 970-982. Based on SAE Paper 970574.

B267. Bass, CR, Duma, SM, Crandall, JR, Morris, RA, Martin, PG, Pilkey, WD, Hurwitz, S, Khaewpong N, Eppinger, R, Sun, E. (1997) The Interaction of Air Bags with Upper Extremities. SAE Transactions: Journal of Passenger Cars, 107(6): 3644-3665. Based on SAE Paper 973324.

B268. Crandall, JR, Bass, CR, Pikey, WD, Miller, HJ, Sikorski, J, Wilkins, M. (1997) Thoracic Response and Injury with Belt, Driver Side Airbag, and Force Limited Belt Restraint Systems. International Journal of Crashworthiness, (IF 0.412) 2(1): 119-132.

B269. Duma, SM, Bass, CR, Klopp, GS, Grillo, N, Micek, T, Crandall, JR, Pilkey, WD. (1997) A technique for Using Strain Gauges to Evaluate Airbag Interaction with Cadaveric Upper Extremities. Biomedical Sciences Instrumentation, 33: 47-52.

B270. Hall, GW, Crandall, JR, Klopp, GS, Pilkey, WD. (1997) Angular Rate Sensor Joint Kinematics Applications. Shock and Vibration, (IF 0.465) 4(4): 223-229.

B271. Martin, PG, Crandall, JR, Pilkey, WD, Chou, C, Fileta, B. (1997) Measurement Techniques for Angular Velocity and Acceleration in an Impact Environment. SAE Transactions: Journal of Passenger Cars, 106(6): 985-991. Based on SAE Paper 970575.

B272. Mathis, J, Evans, A, DeNardo, A, Kennett, K, Crandall, JR, Jensen, M, Dion, J. (1997) Hydrophilic Coatings Diminish Glue Catheter Adhesion: An in-vitro Simulation of NBCA Embolization. American Journal of Neuroradiology, (IF 2.745) 18: 1087-1091.

B273. Sieveka, EM, Duma, SM, Crandall, JR, Bass, CR, Pilkey, WD. (1997) Multi-Body Model of Upper Extremity Interaction with Deploying Airbag. SAE Transactions: Journal of Passenger Cars-Mechanical Systems, 106(6): 613-620. Based on SAE Paper 970398.

B274. Crandall, JR, Portier, L, Petit, P, Hall, GW, Bass, CR, Klopp, GS, Hurwitz, S, Pilkey, WD, Trosseille, X, Tarriere, C, Lassau, JP. (1996) Biomechanical response and physical properties of the leg, foot, and ankle. SAE Transactions: Journal of Passenger Cars, 105(6): 1853-1872. Based on SAE Paper 962424.

B275. Crandall, JR, Pilkey, WD, Kang, W, Bass, CR. (1996) Sensitivity of Occupant Response Subject to Prescribed Corridors for Impact Testing. Shock and Vibration, (IF 0.465) 3(6): 435-450.

B276. Hall, GW, Crandall, JR, Klisch, S, Klopp, GS, Pilkey, WD. (1996) Measurement of Dynamic Rotary Motion using Magnetohydrodynamic Angular Rate Sensors. Shock and Vibration Digest, 28(5): 12-17.

B277. Crandall, JR, Kuhlmann, T, Pilkey, WD. (1995) Air Bag and knee bolster restraint system: laboratory sled tests with human cadavers and the Hybrid III dummy. Journal of Trauma, (IF 1.653) 38(4): 517-520.

C. Conferences

C1. Park G, Forman J, Kim T, Panzer M, Crandall J (2017) Injury Risk Functions Based on Population-Based Finite Element Model Responses: Application to Femurs Under Dynamic Three-point Bending, AAAM Conference, Las Vegas, NV, Oct 2017.

C2. Nie B, Ye X, Sathyanarayan D, Crandall J, Panzer M (2017) Active Muscle Response Contributes to Increased Injury Risk of Lower Extremity in Occupant-Knee Airbag Interaction, AAAM Conference, Las Vegas, NV, Oct 2017.

C3. Mroz K, Pipkorn B, Kim HJ, Crandall J, Investigation of Pelvic Kinematics for Various Lab Belt Positions and an Inflatable Pelvis Restraint Cushion Using a Human Body Model of a Female Occupant, Paper Number 17-0350, 25th International Technical Conference on the Enhanced Safety of Vehicles, Detroit, MI June 2017.

C4. Xiao S, Yang J, Forman J, Panzer M, Xiao Z, Crandall J (2016) Effect of Contact Friction between Seatbelt and Human Body Model on Simulation of Rib Fracture in Frontal Impact, 8th International Conference on Measuring Technology and Mechatronics Automation (ICMTMA), Macau, China, March 2016.

C5. Bollapragada V, Kim T, Clauser M, Crandall J, Kerrigan J (2016) Influence of Driver Input on the Touchdown Conditions and Risk of Rollover in Case of Steering Induced Soil-Trip Rollover Crashes, SAE World Congress, 2016-01-1514, Detroit MI, April 2016.

C6. Park G, Kim T, Forman J, Panzer M, Crandall J (2016) Prediction of the Structural Response of the Femoral Shaft under Dynamic Bending Loading using Geometric Subject-Specific Finite Element Models, Ohio State Injury Biomechanics Symposium, Columbus, OH, June 2016.

C7. Rodenberger E, Shaia B, Crandall J, Bhalla K (2016) , The effectiveness of uncertified motorcycle helmets in low- and middle-income countries, Ohio State Injury Biomechanics Symposium, Columbus, OH, June 2016.

C8. Gabler LF, Joodaki H, Crandall JR, Panzer MB (2016) Toward Development of a Single-Degree-of-Freedom Mechanical Model for Predicting Brain Injury, IRCOBI Asia, Seoul Korea, May 2016.

C9. Park G, Kim T, Forman J, Panzer MB, Crandall JR (2016) Prediction of Structural Response of Femoral Shaft under the Dynamic Combined Loading Condition using Subject-Specific Finite Element Models, IRCOBI Asia, Seoul Korea, May 2016.

C10. Wang Y, Kim T, Li Y, Crandall J (2016) Structural Modelling and Validation of Typical Sedan Used for Pedestrian Injury Analysis in Accidents, IRCOBI Asia, Seoul Korea, May 2016.

C11. Bollapragada V, Kim T, Crandall J, Daniel T, Gupta A (2016) Development of a Multibody Human Leg Model based on Beam Approximation, IRCOBI Asia, Seoul Korea, May 2016.

C12. Kim T, Poplin G, Bollapragada V, Crandall JR, Larner D, Daniel T (2016) Framework on Injury Outcome Estimation using Pedestrian Impact Simulation and Field Data, IRCOBI Asia, Seoul Korea, May 2016.

C13. Poulard D, Chen H, Crandall J, Dziewoński T, Pędzisz M, Panzer M (2015),Component-level Biofidelity Assessment of Morphed Pedestrian Finite Element Models Proc. IRCOBI Conference, Lyon France, Sept 2015.

C14. Forman J, Joodaki H, Forghani A, Riley P, Bollapragada V, Lessley D, Overby B, Heltzel S, Crandall J (2015), Biofidelity corridors for whole-body pedestrian impact with a generic buck Proc. IRCOBI Conference, Lyon France, Sept 2015.

C15. Rawska K, Kim T, Bollapragada V, Nie B, Crandall J, Daniel T (2015). Evaluation of the Biofidelity of Multibody Pediatric Pedestrian Human Models under Component, Blunt Impacts, and Sled Test Conditions. Proc. IRCOBI Conference, Lyon France, Sept 2015.

C16. Joodaki, Forman J, Forghani A, Overby B, Kent R, Crandall J, Beahlen B, Beebe M, Bostrom O (2015) Comparison of Kinematic and Dynamic Behavior of an Obese Dummy and Obese PMHS in Frontal Sled Tests, Proc. IRCOBI Conference, Lyon France, Sept 2015.

C17. Chen H, Poulard D, Crandall J, Panzer M (2015) Pedestrian Response with Different Initial Positions during Simulated Impact with a Mid-Sized Sedan, 24th ESV Conference, Paper No.15-0391-O, Goteborg, Sweden, June 2015.

C18. Kim T, Park G, Montesinos S, Subit D, Bolton J, Overby B, Forman J, Crandall J (2015) Abdominal Characterization Test under Lap Belt Loading Paper No.15-0312-O, 24th ESV Conference, Paper No.15-0391-O, Goteborg, Sweden, June 2015.

C19. Toczyski J, Zhang Q, Foltz P, Overby B, Bolton J, White J, Moors J, Cochran J, Roberts C, Crandall J, Kerrigan J (2015) Dynamic Validation of Rollover Buck Roof Structure Paper No.15-0336-O, 24th ESV Conference, Paper No.15-0391-O, Goteborg, Sweden, June 2015.

C20. Beahlen B, Beebe M, Forman J, Crandall J, Joodaki H, First Generation Obese ATD (FGOA) Paper No.15-0325-W, 24th ESV Conference, Paper No.15-0391-O, Goteborg, Sweden, June 2015.

C21. Wang Y, Kim T, Li Y, Crandall JR (2015) Neck Validation of Multibody Human Model under Frontal and Lateral Impacts using an Optimization Technique, Paper 2015-01-1469, SAE Winter Congress, Detroit, MI April 2015.

C22. Gabler L, Panzer MB, Crandall JR (2014), On the Application of BrIC to the Biomechanics of Various Automotive Impact Scenarios, 42nd International Workshop on Human Subjects for Biomechanical Research, San Diego, CA, Nov 2014.

C23. Boruah, S, Subit, D, Crandall, JR, Salzar R, Shender B, Paskoff G (2014) A lumped-mass model to simulate through-the-thickness transmission of vibration in the adult human skull. Proceedings of the International Research Council on the Biomechanics of Impact (IRCOBI), Berlin, Germany.

C24. Ye, X, Panzer M, Shaw, CG, Crandall, JR. (2014) Driver Lower Extremity Response to Out of Position Knee Airbag Deployment. Proceedings of the International Research Council on the Biomechanics of Impact (IRCOBI), Berlin, Germany.

C25. Park, G, Kim, T, Subit, D, Donlon J, Crandall, JR, Svenderson A, Saunders N, Markusic C (2014) Assessment of GHBMC shoulder biofidelity in lateral shoulder impact condition using PMHS response. Proceedings of the International Research Council on the Biomechanics of Impact (IRCOBI), Berlin, Germany.

C26. Bollapragada, V, Kim, T, Kerrigan, J R, Crandall, JR, Clauser M. (2014). Influence of Driving Attributes on the Risk of Rollover and the Touchdown Conditions of a Sedan in Case of Corrective Maneuvers. IRCOBI Conference, Berlin, Germany, Sept 2014.

C27. Ye, X, Crandall, JR, Forbes AA, Bose, D, Hurwitz, Funk J, Shaw, CG, Sochor, MR, Poplin G, Freeth R, Rizzo R, Rudd R, Scarboro M (2014), Case Series Analysis of Hind-foot Injuries Sustained by Drivers in Frontal Motor Vehicle Crashes, ICRASH Conference, Kuching, Malaysia, August 2014.

C28. Chen, H, Bollapragada V, Kim, T, Nie B, Wang Y, Park G, Crandall, JR. (2014), Improvement of Lateral Shoulder Impact Response of a Multi-body Human Body Model, ICRASH Conference, Kuching, Malaysia, August 2014.

C29. Park G, Kim T, Crandall J, Svendsen A, Saunders N, Markusic C (2014) "Comparison of GHBMC 50th percentile model response between FBM v3.5 and FBM v4.2 under lateral impact sled test condition," International Crashworthiness Conference, 2014

C30. Kim, T, Shaw, CG, Lessley, DJ, Park, G, Crandall, JR, Markusic, C, Svendsen, A, Saunders, N, Sunnevang C (2014), Evaluation of Biofidelity of WorldSID and ES-2re under side impact conditions with and without an airbag, ICRASH Conference, Kuching, Malaysia, August 2014.

C31. Nie, B, Kim, T, Crandall, JR, Wang Y, Bollapragada V (2014), A Structure-based scaling approach for the development of pediatric multi-body human model, ICRASH Conference, Kuching, Malaysia, August 2014.

C32. Kim, T, Kerrigan, JR, Bollapragada V, Crandall, JR, Tangirala R, Guerrero M. (2014) Rollover Initation Simulations for Designing Rollover Initiation Test System (RITS). Paper 2014-01-0530, Society of Automotive Engineering (SAE).

C33. Park, G, Kim, T, Crandall, JR, Svendsen, A, Suanders, N, Markusic, C. (2014) Evaluation of Biofidelity of Side Impact Computational Surrogates (ES-2re, WorldSID, GHBMC). Paper 2014-01-0541, Society of Automotive Engineers (SAE).

C34. Boruah, S, Subit, DL, Crandall, JR, Salzar, RS, Shender BS, Paskoff GR (2014) Development of a material model to simulate through-the-thickness transmission of vibration in the adult human skull, 10th Annual Injury Biomechanics Symposium, Columbus, Ohio; May 2014.

C35. Gabler, L, Stone J, Mourad P, Crandall, JR, Salzar R (2013) Region Specific Viscoelastic Properties of the Adult Rat Brain under Indentation following Traumatic Brain Injury. IRCOBI Conference on the Biomechanics of Impact, Goteborg, Sweden.

C36. Hamzah, M, Subit, D, Boruah, S, Forman, JL, Crandall, JR, Ito, D, Ejima, S, Kamiji, K, Yasuki, T (2013) An Inverse Finite Element Approach for Estimating the Fiber Orientations in Intercostal Muscles. IRCOBI Conference on the Biomechanics of Impact. Gothenburg, Sweden.

C37. Kim, T, Bollapragada V, Kerrigan, JR, Crandall, JR, Tangirala R, Guerrero M (2013) Effects of an ESC algorithm on mitigating rollover crashes and touchdown conditions during steering-induced soil-tripped maneuvers, 2013 KSAE, Il-san, South Korea, Nov. 2013.

C38. Kim, T, Bollapragada, V, Kerrigan, JR, Crandall, JR, Clauser, M. (2013) Effects of Types of Vehicles and Maneuvers on Vehicle Kinematics During Steering-Induced Soil-Trip Rollovers. Paper 13-0050, International Technical Conference on the Enhanced Safety of Vehicles (ESV), 23.

C39. Lessley, DJ, Riley, P, Zhang, Q, Foltz ,P, Lockerby J, Seppi J, Overby B, Sochor, MR, Crandall, JR, Kerrigan, JR (2013) Whole-Body Kinematics in Dynamic Rollover Tests: A Comparison of PMHS Responses for Leading-Side and Trailing-Side Front-Row Seating Positions. International Workshop on Human Subjects for Biomechanical Research, 41, National Highway Traffic Safety Administration, US DOT.

C40. Lockerby, J, Kerrigan, JR, Seppi, J, Crandall, JR. (2013) Optical Measurement of High-Rate Dynamic Vehicle Roof Deformation during Rollover. Paper 2013-01-0470, Society of Automotive Engineers (SAE).

C41. Park, G, Kim, T, Crandall, JR, Arregui-Dalmases, C, Luzon-Narro J (2013) Comparison of Kinematics of GHBMC to PMHS on the Side Impact Condition. IRCOBI Conference on the Biomechanics of Impact. Gothenburg, Sweden.

C42. Perz, R, Toczyski J, Kindig, MW, Ito D, Ejima S, Kamiji K, Yasuki T, Crandall, JR, Subit, D (2013) Evaluation of the Geometrical Properties Distribution Along the Human Ribs Using Different X-Ray Imaging Methods. IRCOBI Conference on the Biomechanics of Impact. Gothenburg, Sweden.

C43. Shaw, CG, Lessley, DJ, Ash, JH, Crandall, JR, Parent, DP. (2013) Response Comparison for the Hybrid III, THOR Mod Kit with SD-3 Shoulder, and PMHS in a Simulated Frontal Crash. Paper 13-0130, International Technical Conference on the Enhanced Safety of Vehicles (ESV), 23.

C44. Subit, D, Arregui C, Salzar, RS, Crandall, JR. (2013) Pediatric, Adult and Elderly Bone Material Properties. IRCOBI Conference on the Biomechanics of Impact. Gothenburg, Sweden.

C45. Subit, D, Boruah, S, Forman, JL, Salzar, RS, Crandall, JR.(2013) Strain distribution in the human ribs during antero-posterior loading. JSAE Annual Congress, Yokohama, Japan. May 23, 2013.

C46. Toczyski, J, Kerrigan, JR, Mohan, P, Crandall, JR. (2013) Design of a Deformable Vehicle Roof Structure for Rollover Crash Testing with a Test Buck. Paper 13-0203, International Technical Conference on the Enhanced Safety of Vehicles (ESV), 23.

C47. Yue, N, Shin J, Panzer M, Crandall, JR, Parent, D, Updates of the Lower Extremity of the THOR-NT 50th Finite Element Dummy to Mod-Kit Specifications, 23rd International Conference on the Enhanced Safety of Vehicles. Seoul Korea, May 2013.

C48. Zhang, Q, Kerrigan, J, Lessley, DJ, Seppi J, Riley, P, Foltz ,P, Lockerby J, Overby B, Sowers C, Crandall, JR. (2013) Whole-body Kinematics: Response Comparison of the Hybrid III and Hybrid III Pedestrian ATD in DRoTS Rollover Tests. IRCOBI Conference on the Biomechanics of Impact. Gothenburg, Sweden.

C49. Zhang, Q, Kerrigan, JR, Kindig, MW, Crandall, JR. (2013) Axial injury tolerance of the clavicle and the effect of age, gender and boundary conditions. Proceedings of the Injury Biomechanics Symposium at the Ohio State University, 9.

C50. Ash, JH, Lessley, DJ, Forman, JL, Zhang, Q, Shaw, CG, Crandall, JR. (2012) Whole-Body Kinematics: Response Corridors for Restrained PMHS in Frontal Impacts. IRCOBI Conference on the Biomechanics of Impact.

C51. Ash, JH, Shaw, CG, Lessley, DJ, Crandall, JR. (2012) PMHS Restraint and Support Surface Forces in Simulated Frontal Crashes. Paper 20125221, JSAE Annual Congress, Yokohama, Japan, May 16-18.

C52. Crandall, JR, Lessley, DJ, Shaw, CG, Ash, JH. (2012) Displacement response of the spine in restrained PMHS during frontal impacts. Paper 20125182, JSAE Annual Congress, Yokohama, Japan, May 16-18.

C53. Foster, J, Kerrigan, JR, Nightingale, R, Funk, JR, Cormier, J, Bose, D, Sochor, MR, Ridella, S, Ash, JH, Crandall, JR. (2012) Analysis of Cervical Spine Injuries and Mechanisms for CIREN Rollover Crashes. IRCOBI Conference on the Biomechanics of Impact.

C54. Frimenko, RE, Lievers, W, Riley, PO, Crandall, JR, Kent, RW. (2012) A Method to Induce Navicular-Cuneiform/Cuneiform-First Metatarsal Sprain in Athletes. IRCOBI Conference on the Biomechanics of Impact.

C55. Kerrigan, JR, Arregui-Dalmases, C, Foster, J, Crandall, JR, Rizzo, A. (2012) Pedestrian Injury Analysis: Field Data vs. Laboratory Experiments. IRCOBI Conference on the Biomechanics of Impact.

C56. Kim, T, Shin, J, Ye X, Crandall, JR, Knospe, C, Funk, J (2012) Evaluation of Methods for Development of Representative Response and Corridors of Biomechanical Data using Mass-Spring-Damper Models, ICRASH Conference, Milan Italy, July 18-20.

C57. Lessley, DJ, Shaw, CG, Ash, JH, Crandall, JR. (2012) A methodology for assessing intrasegmental kinematics of the whole human spine during impacts. Paper 20125179, JSAE Annual Congress, Yokohama, Japan, May 16-18.

C58. Parent, DP, Lessley, DJ, Shaw, CG, Crandall, JR. (2012) Identification of anatomical landmarks for whole-body kinematic measurement in the THOR Mod Kit frontal impact ATD. Paper 20125177, JSAE Annual Congress.

C59. Shafieian, M, Laksari, K, Darvish, KK, Crandall, JR. (2012) Development of a Constitutive Model for Brain Tissue under Multiaxial Loading. IRCOBI Conference on the Biomechanics of Impact.

C60. Shaw, CG, Lessley, DJ, Ash, JH, Crandall, JR. (2012) Development of an Alternative Frontal Impact Condition to Assess Thoracic Response Using the THOR Mod Kit Dummy. Paper 20125216, JSAE Annual Congress, Yokohama, Japan, May 16-18.

C61. Zhang, Q, Kerrigan, JR, Kindig, MW, Crandall, JR. (2012) A New Corridor Development Method for Clavicle Finite Element Model Validation. Proceedings of the Injury Biomechanics Symposium at the Ohio State University.

C62. del Pozo, ED, Arregui-Dalmases, C, Kindig, MW, Crandall, JR. (2011) Rib stiffness under lateral loading-the effect of subject-specific geometry and material properties. Annals of Advances in Automotive Medicine (AAAM) 55, Student Research Symposium.

C63. Foltz, P, Kim, T, Kerrigan, JR, Crandall, JR. (2011) Vehicle greenhouse shape analysis for design of a parametric test buck for dynamic rollover testing. Paper Number 11-0271. Proceedings of the 22nd International Conference on the Enhanced Safety of Vehicles (ESV).

C64. Kent, RW, Forman, JL, Lessley, DJ, Crandall, JR. (2011) Characterization of Athletic Shoe-Surface Mechanics in situ at Loads and Rates Relevant to Game Situations. IRCOBI Conference on the Biomechanics of Impact.

C65. Kerrigan, JR, Jordan, A, Parent, DP, Zhang, Q, Funk, JR, Dennis, NJ, Overby, B, Bolton, JR, Crandall, JR. (2011) Design of a dynamic rollover test system. Paper, 2011-01-1116, Society of Automotive Engineers (SAE).

C66. Parent, DP, Kerrigan, JR, Crandall, JR. (2011) Comprehensive computational rollover sensitivity study part 2: influence of vehicle, crash, and occupant parameters on head, neck and thorax response. Paper 2011-01-1115, Society of Automotive Engineers (SAE).

C67. Salzar, RS, Lessley, DJ, Sochor, MR, Shaw, CG, Kent, RW, Crandall, JR. (2011) Thoracic Response to Shoulder-Belt Loading: Comparison of Table-Top and Frontal Sled Tests with PMHS. IRCOBI Conference on the Biomechanics of Impact.

C68. Arregui-Dalmases, C, Ash, JH, del Pozo, E, Kerrigan, JR, Crandall, JR. (2010) Characterization of the transverse and spinous vertebral processes: fracture forces under quasi-static and dynamic loading. Proceedings of the 46th Annual Rocky Mountain Bioengineering Symposium.

C69. Arregui-Dalmases, C, Ash, JH, del Pozo, E, Kerrigan, JR, Crandall, JR. (2010) Failure of the lumbar pedicles under bending loading. Proceedings of the 46th Annual Rocky Mountain Bioengineering Symposium.

C70. Ash, JH, Kerrigan, JR, Arregui-Dalmases, C, del Pozo, E, Crandall, JR. (2010) Endplate indentation of the fourth lumbar vertebra. Proceedings of the 46th Annual Rocky Mountain Bioengineering Symposium.

C71. Bose, D, Crandall, JR, Trowbridge, MJ, McGwin, G, Foster, J, Goldman, J, Fine, R. (2010) Predicting Occupant Injury Risk: A Framework for Automatic Injury Notification Systems. Proceedings of the Joint Symposium titled "What is the best way to implement an Automatic Crash Notification System in Japan?" organized by the JAST (Japanese Association for the Surgery of Trauma) JSAE (Japan Society of Automotive Engineers) JARI (Japan Automobile Research Institute) ITARDA (Institute for Traffic Accident Research and Data Analysis) and GIAJ (General Insurance of Association of Japan) Tokyo, Japan. The 24th Annual Meeting of the Japanese Association for the Surgery of Trauma.

C72. Bose, D, Crandall, JR, Pipkorn, B, Song, E, Li, Z, Lessley, DJ, Kent, RW. (2010) Evaluation of Deflection-based Predictors for Estimating Thoracic Injury Risk. Proceedings of 38th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C73. Kerrigan, JR, Ash, JH, Bose, M, Sochor, MR, Crandall, JR, Funk, JR, Cormier, J, Manoogian, S, Ridella, X, Scarboro, M, Summers, S. (2010) Thoracic Injury Mechanisms in Rollover Crashes. Proceedings of 38th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C74. Kerrigan, JR, Bose, D, Li, Z, Arregui-Dalmases, C, del Pozo, E, Ash, JH, Crandall, JR. (2010) Response of the sternum under dynamic 3-point bending. Proceedings of the 46th Annual Rocky Mountain Bioengineering Symposium.

C75. Kerrigan, JR, Dennis, NJ, Parent, DP, Purtsezov, S, Ash, JH, Crandall, JR, Stein, D. (2010) Test system, vehicle and occupant response repeatability evaluation in rollover crash tests: the deceleration rollover sled test. Paper 2010-092, Proceedings of the International Crashworthiness Conference, Washington, DC.

C76. Parent, DP, Kerrigan, JR, Crandall, JR. (2010) Comprehensive computational rollover sensitivity study part 1: influence or vehicle pre-crash parameters on crash kinematics and roof crush. Paper 2010-010, Proceedings of the International Crashworthiness Conference, Washington, DC.

C77. Parent, DP, Shaw, CG, Lessley, DJ, Bolton, JR, Arregui-Dalmases, C, Purtsezov, S, Riley, PO, Crandall, JR, Takayama, S, Ono, K, Kamiji, K, Yasuki, T. (2010) External Biofidelity in Lateral Impact: Measurement of Global and Local Forces. Proceedings of the International Crashworthiness Conference, Washington, DC.

C78. Shaw, CG, Bolton, JR, Lessley, DJ, Parent, DP, Riley, PO, Crandall, JR. (2010) Improved Method to Record the Response of Seated Live Human Surrogates in a Simulated Side Impact. Paper 455-20105080, JSAE Annual Congress.

C79. Shaw, CG, Parent, DP, Purtsezov, S, Lessley, DJ, Crandall, JR, Tornvall, F. (2010) Torso deformation in frontal sled tests: comparisons between THOR NT, THOR NT with Chalmers SD-1 shoulder, and PMHS. IRCOBI Conference on the Biomechanics of Impact.

C80. Subit, D, Shaw, CG, Ogam, E, Ejima, S, Crandall, JR. (2010) Wavelet analysis of piezoelectric transducer signals to detect rib fracture during impact tests. Paper 2010-089, Proceedings of the International Crashworthiness Conference, Washington, DC.

C81. Untaroiu, CD, Zhang, Q, Damon, AM, Crandall, JR, Darvish, KK, Paskoff, G, Shender, BS (2010) Identification of Material Properties of Human Brain under Large Shear Deformation: Analytical versus Finite Element Approach, 26th Southern Biomedical Engineering Conference SBEC 2010, April 30 - May 2, 2010, College Park, Maryland, USA.

C82. Untaroiu, CD, Zhang, Q, Damon, AM, Crandall, JR, Darvish, KK, Paskoff, G, Shender, BS. (2010) Identification of viscoelastic properties of brain under large shear deformation using

quasi-linear elasticity formulation. Paper SBC2010-19155, ASME Summer Bioengineering Conference.

C83. Ash, JH, Abdelilah, Y, Sherwood, CP, Crandall, JR, Parent, DP, Kallieris D. (2009) Comparison of Anthropomorphic Test Dummies with a Pediatric Cadaver Restrained by a Three-point Belt in Frontal Sled Tests. Paper 09-0362, Proceedings of the 21st International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C84. Ash, JH, Sherwood, CP, Crandall, JR, Parent, DP. (2009) Reconstruction of a Real World Crash Involving a Child Using Hybrid III 10-year old and 5th percentile Adult Female ATDs. Paper 09-0365, Proceedings of the 21st International Conference on the Enhanced Safety of Vehicles (ESV).

C85. Bose, D, Pipkorn, B, Crandall, JR, Lessley, DJ, Trowbridge, MJ. (2009) Multi-point Thoracic Deflection Measurement as a Predictor of Rib Injury in Frontal Collisions. Proceedings of 37th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C86. Crandall, JR. (2009) Simulating the road forward: the role of computational modeling in realizing future opportunities in traffic safety. IRCOBI Conference on the Biomechanics of Impact.

C87. Kerrigan, JR, Arregui-Dalmases, C, Crandall, JR. (2009) Pedestrian head impact dynamics: comparison of dummy and PMHS in small sedan and large SUV impacts. Paper 09-0127, Proceedings of the 21st International Conference on the Enhanced Safety of Vehicles (ESV).

C88. Lessley, DJ, Kent, RW, Crandall, JR, Salzar, RS, Shaw, CG. (2009) Internal vs. External Chest Deformation Response to Shoulder Belt Loading, Part 1: Table-Top Tests. Paper 2009-01-0393, Society of Automotive Engineers (SAE).

C89. Lessley, DJ, Purtsezov, SV, Shaw, CG, Parent, DP, Riley, PO, Kent, RW, Crandall, JR. (2009) Assessment and Validation of a Methodology for Measuring Anatomical Kinematics During Impact Loading. Proceedings of 37th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C90. Segui-Gomez, M, Lopez-Valdes, FJ, Crandall, JR. (2009) Characterizing the distribution of injury and injury severity for belted front-seat occupants involved in frontal crashes. Proceedings of the International Research Council on the Biomechanics of Impact (IRCOBI).

C91. Shaw, CG, Parent, DP, Purtsezov, S, Lessley, DJ, Kerrigan, JR, Shin, J, Crandall, JR, Zama, Y, Ejima, S, Kamiji, K, Yasuki, T. (2009) Frontal Impact PMHS Sled Tests for FE TORSO Model Development. IRCOBI Conference on the Biomechanics of Impact.

C92. Shin, J, Untaroiu, CD, Lessley, DJ, Crandall, JR. (2009) Thoracic Response to Shoulder Belt Loading: Investigation of Chest Stiffness and Longitudinal Strain Pattern of Ribs. Paper 2009-01-0384, SAE World Congress & Exhibition.

C93. Untaroiu, CD, Duprey, S, Kerrigan, JR, Li, Z, Bose, D, Crandall, JR. (2009) Experimental and computational investigation of human clavicle response in anterior-posterior bending loading. Proceedings of the 45th Rocky Mountain Bioengineering Symposium.

C94. Untaroiu, CD, Lim, JY, Shin, J, Crandall, JR, Malone, DP, Tannous, RE. (2009) Evaluation of a Finite Element Model of the THOR-NT Dummy in Frontal Crash Environment. Paper 09-0272, Proceedings of the 21st International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C95. Untaroiu, CD, Shin, J, Crandall, JR, Fredriksson, R, Bostrom, O, Takahashi, Y, Akiyama, A, Okamoto, M, Kikuchi, Y. (2009) Development and Validation of Pedestrian Sedan Bucks Using Finite Element Simulations: Application in Study the Influence of Vehicle Automatic

Braking on the Kinematics of the Pedestrian Involved in Vehicle Collisions. Paper 09-0485, Proceedings of the 21st International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C96. Ash, JH, Sherwood, CP, Abdelilah, Y, Crandall, JR, Parent, DP, Kallieris, D. (2008) Comparison of Anthropomorphic Test Dummies with a Pediatric Cadaver Restrained by a Three-point Belt in Frontal Sled Tests. Proceedings of the 4th Injury Biomechanics Symposium at the Ohio State University.

C97. Bass, CR, Crandall, JR, Salzar, RS, Rafaels, KA, Damon, AM, Lucas, SR. (2008) Assessing the Neck Injury Index (NII) Using Experimental Cadaver Tests. IRCOBI Conference on the Biomechanics of Impact.

C98. Bose, D, Crandall, JR, Untaroiu, CD, Maslen, EH. (2008) Influence of pre-collision occupant properties on the injury response during frontal collision. IRCOBI Conference on the Biomechanics of Impact.

C99. Forbes, PA, van Rooij, L, Rodaruis, C, Crandall, JR. (2008) Child Human Model Development: A Hybrid Validation Approach. Proceedings of the International Crashworthiness Conference, Kyoto, Japan.

C100. Kendall, RG, Sherwood, CP, Crandall, JR. (2008) A Computational Study of Rear-Facing and Forward-Facing Child Restraints. Paper 2008-01-1233, Society of Automotive Engineers (SAE).

C101. Kerrigan, JR, Parent, DP, Untaroiu, CD, Crandall, JR, Deng, B. (2008) A New Detailed Multi-Body Model of the Pedestrian Lower Extremity: Development and Preliminary Validation. IRCOBI Conference on the Biomechanics of Impact.

C102. Kerrigan, JR, Rudd, RW, Subit, D, Untaroiu, CD, Crandall, JR. (2008) Pedestrian Lower Extremity Response and Injury: Small Sedan vs. Large SUV. Paper 2008-01-1245, Society of Automotive Engineers (SAE).

C103. Lessley, DJ, Salzar, RS, Crandall, JR, Kent, RW, Bolton, JR, Bass, CR, Forman, JL. (2008) Kinematics of the Thorax under Dynamic Belt Loading Conditions. Proceedings of the International Crashworthiness Conference, Kyoto, Japan.

C104. Parent, DP, Crandall, JR. (2008) Scaling and Optimization of Thoracic Impact Response in Pediatric Subjects. Proceedings of the International Crashworthiness Conference, Kyoto, Japan.

C105. Salzar, RS, Bass, CR, Lessley, DJ, Crandall, JR, Kent, RW, Bolton, JR. (2008) Viscoelastic Response of the Thorax under Dynamic Belt Loading. IRCOBI Conference on the Biomechanics of Impact.

C106. Salzar, RS, Genovese, D, Bass, CR, Bolton, JR, Guillemot, H, Damon, AM, Crandall, JR. (2008) Load path distribution within the pelvic structure under lateral loading. Proceedings of the International Crashworthiness Conference, Kyoto, Japan.

C107. Shin, J, Untaroiu, CD, Crandall, JR. (2008) Pelvic Response Investigation of Lateral Loading Conditions using Finite Element Models. 10th International LS-DYNA Users Conference, Detroit, MI.

C108. Shin, J, Untaroiu, CD, Kerrigan, JR, Forman, JL, Crandall, JR. (2008) Kinematic analyses of instrumentation cubes in vehicle impact experiments. Proceedings of the 44th Rocky Mountain Bioengineering Symposium.

C109. Subit, D, Kerrigan, JR, Crandall, JR, Fukuyama, K, Yamazaki, K, Kamiji, K, Yasuki, T. (2008) Pedestrian-vehicle interaction: kinematics and injury analysis of four full scale tests. IRCOBI Conference on the Biomechanics of Impact.

C110. Untaroiu, CD, Genovese, D, Ivarsson, BJ, Crandall, JR. (2008) A Finite Element Analysis of Mid-Shaft Femoral Tolerance under Combined Axial-Bending Loading. 10th International LS-DYNA Users Conference, Detroit, MI.

C111. Untaroiu, CD, Ivarsson, BJ, Genovese, D, Bose, D, Crandall, JR. (2008) Biomechanical Injury Response of Leg Subjected to Dynamic Combined Axial and Bending Loading. Proceedings of the 44th Annual Rocky Mountain Bioengineering Symposium.

C112. Untaroiu, CD, Salzar, RS, Guillemot, H, Crandall, JR. (2008) Pelvic response under lateral impact loading: the force transmission path and the strain distribution of pubic rami. Southeastern Meeting of the American Society of Biomechanics.

C113. Untaroiu, CD, Salzar, RS, Guillemot, H, Crandall, JR. (2008) The Strain Distribution and Force Transmission Path through Pubic Rami during Lateral Pelvic Impacts. ASME International Mechanical Engineering Congress and RD&D Congress, IMECE2008-67791.

C114. Untaroiu, CD, Shin, J, Shaw, CG, Lessley, DJ, Crandall, JR. (2008) Thoracic response under dynamic mid-sternal compressive loading: finite element investigation of thoracic stiffness. Southeastern Meeting of the American Society of Biomechanics.

C115. Bose, D, Subit, D, Ivarsson, BJ, Crandall, JR, Takahashi, Y, Kikuchi, Y, Akiyama, A. (2007) Biofidelity Improvements to the Polar-II Pedestrian Dummy Lower Extremity. Paper 2007-01-0757, Society of Automotive Engineers (SAE).

C116. Ito, O, Okamoto, M, Takahashi, Y, Mori, F, Meissner, MU, Untaroiu, CD, Crandall, JR. (2007) Validation of a human FE lower limb model for a child pedestrian against accident data. IRCOBI Conference on the Biomechanics of Impact.

C117. Ito, O, Okamoto, M, Takahashi, Y, Mori, F, Meissner, MU, Untaroiu, CD, Crandall, JR. (2007) Validation of a human FE model for child pedestrian. Paper 20075374, JSAE Annual Congress (in Japanese).

C118. Ivarsson, BJ, Crandall, JR, Fredriksson, F, Burke, C, Stadter, G, Fakhry, S. (2007) Pedestrian head impact - what determines the likelihood and location? Paper 07-0373. Proceedings of the 20th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C119. Shaw, CG, Lessley, DJ, Evans, J, Crandall, JR, Shin, J, Portier, P, Paoloni, G. (2007) Quasi-static and dynamic thoracic loading tests: cadaveric torsos. IRCOBI Conference on the Biomechanics of Impact.

C120. Sherwood, CP, Marshall, R, Crandall, JR. (2007) The development of an injury cost function for child passenger safety. Paper 07-0127, Proceedings of the 20th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C121. Shin, J, Untaroiu, CD, Kerrigan, JR, Crandall, JR, Subit, D, Takahashi, Y, Akiyama, A, Kikuchi, Y, Longhitano, D. (2007) Investigating Pedestrian Kinematics with the Polar-II Finite Element Model. Paper 2007-01-0756, Society of Automotive Engineers (SAE).

C122. Untaroiu, CD, Shin, J, Ivarsson, BJ, Crandall, JR, Takahashi, Y, Akiyama, A, Kikuchi, Y. (2007) Pedestrian kinematics investigation with finite element dummy models based on Anthropometry scaling method. Paper 07-0328, Proceedings of the 20th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C123. Crandall, JR, Lessley, DJ, Kerrigan, JR, Ivarsson, BJ. (2006) Thoracic Deformation Response of Pedestrians Resulting from Vehicle Impact. Proceedings of the International Crashworthiness Conference, Athens, Greece.

C124. Funk, JR, Crandall, JR. (2006) Calculation of Tibial Loading using Strain Gauges. Proceedings of the 42nd Annual Rocky Mountain Biomengineering Symposium.

C125. Kendall, R, Meissner, MU, Crandall, JR. (2006) The Causes of Head Injury in Vehicle-Pedestrian Impacts: Comparing the Relative Danger of Vehicle and Road Surface. Paper 2006-01-0462, Society of Automotive Engineers (SAE).

C126. Paek, CI, Shaw, CG, Crandall, JR, Baek, YH, Ko, OS. (2006) Responses of Hybrid III 50th and THOR-NT 50th in Sled Tests with Different Seat Belt Pretensioner Configurations. ASME - Summer Bioengineering Conference (BED), Amelia Island, FL.

C127. Rudd, RW, Kerrigan, JR, Crandall, JR, Arregui-Dalmases, C. (2006) Kinematic Analysis of Head/Neck Motion in Pedestrian-Vehicle Collisions Using 6-Degree-of-Freedom Instrumentation Cubes. Paper 2006-01-0681, Society of Automotive Engineers (SAE).

C128. Shafieian, M, Darvish, KK, Crandall, JR, Stone, J, Okonkwo, D. (2006) In Vivo and In Situ Material Properties of Brain Tissue. ASME - International Mechanical Engineering Conference (IMECE), 157378.

C129. Shafieian, M, Darvish, KK, Crandall, JR, Stone, J, Okonkwo, D. (2006) In Vivo and In Situ Material Properties of Brain Tissue. Proceedings of the ASME Summer Bioengineering Conference.

C130. Shin, J, Lee, SH, Kerrigan, JR, Darvish KK, Crandall, JR, Akiyama A, Takahashi Y, Okamoto M, Kikuchi, Y. (2006) Development and Validation of a Finite Element Model for the Polar-II Upper Body. Paper 2006-01-0684, Society of Automotive Engineers (SAE).

C131. Subit, D, Bose, D, Ivarsson, BJ, Untaroiu, CD, Crandall, JR. (2006) Analytical and Computational Methods to Evaluate the Effect of Bone Geometry in Tibial Loading Response. Proceedings of the 5th World Congress of Biomechanics, Munich, Germany, abstract in J. Biomech. 39(1): S543.

C132. Subit, D, Ivarsson, BJ, Kikuchi, Y, Takahashi, Y, Crandall, JR. (2006) The influence of pelvis design on the lateral pelvic impact response of the Polar-II pedestrian dummy. Paper 2006-01-0682, Society of Automotive Engineers (SAE).

C133. Untaroiu, CD, Crandall, JR. (2006) Parameter Identification and Sensitivity Analysis of Cortical Bone Material Models using Finite Element Optimization Techniques. ASME - Summer Bioengineering Conference (BED), Amelia Island, FL., 157615.

C134. Untaroiu, CD, Kam, CY, Crandall, JR. (2006) Experimental and Finite Element Evaluation of Bending Loadings in a Lower Limb Bone using Strain Data. Proceedings of the 5th World Congress of Biomechanics, Munich, Germany, abstract in J. Biomech. 39(1): S161.

C135. Untaroiu, CD, Kerrigan, JR, Crandall, JR. (2006) Material identification using successive response methodology with application to a human femur subjected to three point bending loading. Paper 2006-01-0063, Society of Automotive Engineers (SAE).

C136. Untaroiu, CD, Shin, J, Crandall, JR, Crino, S. (2006) Development and validation of a headform impactor finite element model with application to vehicle hood design for pedestrian protection. 9th International LS-DYNA Users Conference, Detroit, MI.

C137. Abdelilah, Y, Sherwood, CP, Marshall, R, Crandall, JR. (2005) Response of the Hybrid III 3 year old Dummy in FFCRS and RFCRS in Simulated Frontal Impacts. Proceedings of the 1st Injury Biomechanics Symposium at the Ohio State University.

C138. Abdelilah, Y, Sherwood, CP, Marshall, R, Gopalan, S, Crandall, JR. (2005) The Effects of Head Padding in Rear Facing Child Restraints. Paper 2005-01-1839, Society of Automotive Engineers (SAE).

C139. Bhalla, KS, Takahashi, Y, Shin, J, Kam, CY, Murphy, DB, Drinkwater, DC, Crandall, JR. (2005) Experimental Investigation of the Response of the Human Lower Limb to the Pedestrian Impact Loading Environment. Paper 2005-01-1877, Society of Automotive Engineers (SAE).

C140. Crandall, JR, Akiyama, A, Longhitano, D, Wiley, K. (2005) Development of Performance Specifications for a Pedestrian Research Dummy. Paper 05-0389, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C141. Forman, JL, Kent, RW, Ali, T, Crandall, JR, Bostrom, O, Haland, Y. (2005) Biomechanical Considerations for the Optimization of an Advanced Restraint System: Assessing the Benefit of a Second Shoulder Belt. IRCOBI Conference on the Biomechanics of Impact.

C142. Ivarsson, BJ, Kerrigan, JR, Lessley, DJ, Drinkwater, DC, Kam, CY, Murphy, DB, Crandall, JR, Kent, RW. (2005) Dynamic Response Corridors of the Human Thigh and Leg in Non-Midpoint Three-Point Bending. Paper 2005-01-0305, Society of Automotive Engineers (SAE).

C143. Kam, CY, Kerrigan, JR, Meissner, MU, Drinkwater, DC, Murphy, DB, Bolton, JR, Arregui-Dalmases, C, Kendall, R, Ivarsson, BJ, Crandall, JR, Deng, B, Wang, JT, Kerkeling, C, Hahn, W. (2005) Design of a full-scale impact system for analysis of vehicle pedestrian collisions. Paper 2005-01-1875, Society of Automotive Engineers (SAE).

C144. Kerrigan, JR, Drinkwater, DC, Murphy, DB, Kam, CY, Crandall, JR. (2005) Comparison of Full Scale Pedestrian Impact Tests with PMHS and a Pedestrian Dummy. Proceedings of the 1st Injury Biomechanics Symposium at the Ohio State University.

C145. Kerrigan, JR, Kam, CY, Drinkwater, DC, Murphy, DB, Bose, D, Ivarsson, BJ, Crandall, JR. (2005) Kinematic comparison of the Polar-II and PMHS in pedestrian impact tests with a sport-utility vehicle. IRCOBI Conference on the Biomechanics of Impact.

C146. Kerrigan, JR, Murphy, DB, Drinkwater, DC, Kam, CY, Bose, D, Crandall, JR. (2005) Kinematic Corridors for PMHS Tested in Full-Scale Pedestrian Impact Tests. Paper 05-0394, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C147. Longhitano, D, Burke, C, Bean, J, Watts, D, Fakhry, S, Meissner, MU, Ivarsson, BJ, Sherwood, CP, Crandall, JR, Takahashi, Y, Kadotani, Y, Hitchcock, R, Kinoshita, Y. (2005) Application of the CIREN Methodology to the Study of Pedestrian Crash Injuries. Paper 05-0404, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C148. Longhitano, D, Henary, BY, Bhalla, KS, Ivarsson, BJ, Crandall, JR. (2005) Influence of Vehicle Body Type on Pedestrian Injury Distribution. Paper 2005-01-1876, Society of Automotive Engineers (SAE).

C149. Longhitano, D, Ivarsson, BJ, Henary, BY, Crandall, JR. (2005) Torso Injury Trends for Pedestrians Struck by Cars and LTV's. Paper 05-0411, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C150. Millington, SA, Grabner, M, Hurwitz, SR, Crandall, JR. (2005) Quantitation of Ankle Joint Surface Topography and Cartilage Thickness Mapping using a High Resolution Stereophotogrammetric Technique. Transactions of the 51st Meeting of the Orthopedic Research Society, Washington, DC.

C151. Millington, SA, Tang, J, Hurwitz, SR, Crandall, JR, Acton ST. (2005) Quantitative MRI Study of Human Ankle Articular Cartilage: A Comparison of an Isotropic and Non Isotropic Technique. Transactions of the 51st Meeting of the Orthopedic Research Society, Washington, DC.

C152. Minary Jolandan, M, van Dommelen, J, Ivarsson, BJ, Darvish, KK, Crandall, JR. (2005) The influence of age on the tensile properties of the porcine collateral knee ligaments. Proceedings of the ASME Summer Bioengineering Conference.

C153. Rath, A, Manoogian, S, Duma, SM, Bolton, B, Crandall, JR. (2005) An Evaluation of a Fiber Optic Based Sensor for Measuring Chest and Abdominal Deflection. Paper 2005-01-0745, Society of Automotive Engineers (SAE).

C154. Shaw, CG, Lessley, DJ, Bolton, JR, Crandall, JR, Belford, L, Hunter, J. (2005) Sled Test Trials of 3-D Point Tracking System. Proceedings of the 33rd International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C155. Shaw, CG, Lessley, DJ, Crandall, JR, Kent, RW, Kitis, L. (2005) Elimination of Thoracic Muscle Tensing Effects for Frontal Crash Dummies. Paper 2005-01-0307, Society of Automotive Engineers (SAE).

C156. Shaw, CG, Lessley, DJ, Kent, RW, Crandall, JR. (2005) Dummy Torso Response to Anterior Quasi-Static Loading. Paper 05-0371, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C157. Sherwood, CP, Abdelilah, Y, Crandall, JR. (2005) The Effect of Swedish Tethers on the Performance of Rear Facing Child Restraints in Frontal Crashes. Paper 05-0346, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C158. Takahashi, Y, Kikuchi, Y, Okamoto, M, Akiyama, A, Ivarsson, BJ, Bose, D, Subit, D, Shin, J, Crandall, JR. (2005) Biofidelity Evaluation for the Knee and Leg of the Polar Pedestrian Dummy. Paper 05-0280, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C159. Untaroiu, CD, Darvish, KK, Crandall, JR, Deng, B, Wang, JT. (2005) Characterization of the Lower Limb Soft Tissues in Pedestrian Finite Element Models. Paper 05-0250, Proceedings of the 19th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C160. Untaroiu, CD, Darvish, KK, Crandall, JR, Deng, B, Wang, JT. (2005) Identification of Viscoelastic Properties of Human Medial Collateral Ligament using Finite Element Optimization. 20th Congress of the International Society of Biomechanics.

C161. Untaroiu, CD, Darvish, KK, Crandall, JR, Deng, B, Wang, JT. (2005) Validation of a Finite Element Model of the Human Lower Limb in Dynamic Lateral Bending. ASME Summer Bioengineering Conference.

C162. Untaroiu, CD, Darvish, KK, Lee, SH, Shin, J, Crandall, JR, Deng, B, Wang, JT. (2005) Validation of the Material Properties of Human Lower Limb Muscle and Fat in Lateral Impact Tests. ASME Summer Bioengineering Conference.

C163. van Dommelen, J, Ivarsson, BJ, Minary Jolandan, M, Millington, SA, Raut, M, Kerrigan, JR, Crandall, JR, Diduch, D. (2005) Characterization of the Rate-Dependent Mechanical Properties and Failure of Human Knee Ligaments. Paper 2005-01-0293, Society of Automotive Engineers (SAE).

C164. Bose, D, Bhalla, KS, van Rooij, L, Millington, SA, Studley, A, Crandall, JR. (2004) Response of the Knee Joint to the Pedestrian Impact Loading Environment. Paper 2004-01-1608, Society of Automotive Engineers (SAE).

C165. Funk, JR, Crandall, JR. (2004) Calculation of Long Bone Loading Using Strain Gauges. Proceedings of the 32nd International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C166. Ivarsson, BJ, Crandall, JR, Longhitano, D, Okamoto, M. (2004) Lateral injury criteria for the 6-year-old pedestrian - Part I. Criteria for the head, neck, thorax, abdomen and pelvis. Paper 2004-01-0323, Society of Automotive Engineers (SAE).

C167. Ivarsson, BJ, Crandall, JR, Longhitano, D, Okamoto, M. (2004) Lateral injury criteria for the 6-year-old pedestrian - Part II. Criteria for the upper and lower extremities. Paper 2004-01-1755, Society of Automotive Engineers (SAE).

C168. Ivarsson, BJ, Lessley, DJ, Kerrigan, JR, Bhalla, KS, Bose, D, Crandall, JR, Kent, RW. (2004) Dynamic Response Corridors and Injury Thresholds of the Pedestrian Lower Extremities. IRCOBI Conference on the Biomechanics of Impact.

C169. Kerrigan, JR, Drinkwater, DC, Kam, CY, Murphy, DB, Ivarsson, BJ, Crandall, JR. (2004) Tolerance of the Human Leg and Thigh in Dynamic Lateral-Medial 3-Point Bending. Paper 2004-49, Proceedings of the International Crashworthiness Conference, San Francisco.

C170. Kerrigan, JR, Kam, CY, Drinkwater, DC, Murphy, DB, Arregui-Dalmases, C, Millington, SA, Teresinski, G, Bolton, JR, Crandall, JR, Deng, B, Wang, JT, Kerkeling, C, Hahn, W. (2004) Full Scale Pedestrian Impact Testing with PMHS: a pilot study. Proceedings of the 32nd International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C171. Lessley, DJ, Crandall, JR, Shaw, CG, Kent, RW, Funk, JR. (2004) A normalization technique for developing corridors from individual subject responses. Paper 2004-01-0288, Society of Automotive Engineers (SAE).

C172. Meissner, MU, van Rooij, L, Bhalla, KS, Crandall, JR, Longhitano, D, Takahashi, Y, Dokko, Y, Kikuchi, Y. (2004) A Multi-Body Computational Study of the Kinematic and Injury Response of a Pedestrian with Variable Stance upon Impact with a Vehicle. Paper 2004-01-1607, Society of Automotive Engineers (SAE).

C173. Murakami, D, Kitagawa, Y, Kobayashi, S, Kent, RW, Crandall, JR. (2004) Development and Validation of a Finite Element Model of a Vehicle Occupant. Paper 2004-01-0325, Society of Automotive Engineers International Congress and Exposition, Detroit Michigan.

C174. Sanghavi, P, Bose, D, Kerrigan, JR, Madeley, NJ, Crandall, JR. (2004) Non-Contact Strain Measurement of Biological Tissue. Proceedings of the 40th Annual Rocky Mountain Bioengineering Symposium.

C175. Shaw, CG, Lessley, DJ, Bolton, JR, Crandall, JR. (2004) Assessment of the THOR and Hybrid III Crash Dummies: Steering Wheel Rim Impacts to the Upper Abdomen. Paper 2004-01-0310, Society of Automotive Engineers (SAE).

C176. Sherwood, CP, Crandall, JR, Stevens, S, Saggese, J, Eichelberger, M. (2004) Sled tests and CIREN data illustrating the benefits of booster seats. Proceedings of the International Crashworthiness Conference, San Francisco.

C177. Untaroiu, CD, Darvish, KK, Crandall, JR, Deng, B, Wang, JT. (2004) Development and Validation of a Finite Element Model of the Lower Limb. Paper 2004-61583, ASME International Mechanical Engineering Congress and RD&D Conference and Exposition, Transportation 2004: Transportation and Environment, p. 53-62.

C178. van Rooij, L, Meissner, MU, Bhalla, KS, Crandall, JR, Longhitano, D, Takahashi, Y, Dokko, Y, Kikuchi, Y. (2004) A comparative evaluation of pedestrian kinematics and injury prediction for adults and children upon impact with a passenger car. Paper 2004-01-1606, Society of Automotive Engineers (SAE).

C179. Bhalla, KS, Bose, D, Madeley, NJ, Kerrigan, JR, Crandall, JR, Longhitano, D, Takahashi, Y. (2003) Evaluation of the response of mechanical pedestrian knee joint impactors to bending and shear loading. Paper 429, Proceedings of the 18th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C180. Bose, D, Kerrigan, JR, Ivarsson, BJ, Madeley, NJ, Millington, SA, Bhalla, KS, Crandall, JR. (2003) Non-Contact Area Measurement Techniques for Cross Sectional Properties of Soft

Tissues. Paper IMECE2003-43488. 2003 ASME International Mechanical Engineering Congress and Exposition.

C181. Duma, SM, Boggess, B, Bass, CR, Crandall, JR. (2003) Injury Risk Functions for the 5th Percentile Female Upper Extremity. Paper 2003-01-0166, Society of Automotive Engineers (SAE).

C182. Funk, JR, Rudd, RW, Kerrigan, JR, Crandall, JR. (2003) Analysis of Tibial Curvature, Fibular Loading, and the Tibia Index. IRCOBI Conference on the Biomechanics of Impact.

C183. Kent, RW, Shaw, CG, Lessley, DJ, Crandall, JR, Kallieris, D, Svensson, M. (2003) Comparison of belted Hybrid III, THOR, and cadaver thoracic responses in oblique frontal and full frontal sled tests. Paper 2003-01-0160, Society of Automotive Engineers (SAE).

C184. Kent, RW, Viano, D, Crandall, JR. (2003) The Field Performance of Frontal Air Bags in Air Bag Development and Performance: New Perspectives from Industry, Government and Academia, R. Kent (ed.) PT-88, Society of Automotive Engineers (SAE).

C185. Kerrigan, JR, Bhalla, KS, Madeley, NJ, Crandall, JR, Deng, B. (2003) Response Corridors for the Human Leg in 3-Point Lateral Bending. The 7th US National Congress on Computational Mechanics.

C186. Kerrigan, JR, Bhalla, KS, Madeley, NJ, Funk, JR, Bose, D, Crandall, JR. (2003) Experiments for Establishing Pedestrian - Impact Lower Limb Injury Criteria. Paper 2003-01-0895, Society of Automotive Engineers (SAE).

C187. Kerrigan, JR, Ivarsson, BJ, Bose, D, Madeley, NJ, Millington, SA, Bhalla, KS, Crandall, JR. (2003) Rate sensitive constitutive and failure properties of human knee collateral ligaments. IRCOBI Conference on the Biomechanics of Impact.

C188. Lessley, DJ, Crandall, JR, Kent, RW, Shaw, CG. (2003) Normalization technique for developing corridors for individual subject force-deflection responses. Proceedings of the 31st International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C189. Okamoto, M, Takahashi, Y, Mori, F, Hitosugi, M, Madeley, NJ, Ivarsson, BJ, Crandall, JR. (2003) Development of Finite Element Model for Child Pedestrian Protection. Paper 151, Proceedings of the 18th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C190. Rudd, RW, Crandall, JR, Shaw, CG. (2003) Response of the Thor-Lx and Hybrid III Lower Extremities in Frontal Sled Tests. Paper 2003-01-0161, Society of Automotive Engineers (SAE).

C191. Rudd, RW, Shaw, CG, Crandall, JR. (2003) Fifth Percentile Female Hybrid III and Thor-FLx Performance in Sled Tests with Toepan Intrusion. Paper 491, Proceedings of the 18th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C192. Takhounts, E, Crandall, JR, Darvish, KK. (2003) On the Importance of Nonlinearity of Brain Tissue Under Large Deformations. Paper 2003-22-0005, Society of Automotive Engineers (SAE).

C193. van Rooij, L; Bhalla K; Meissner M; Ivarsson J; Crandall, J; Longhitano D; Takahashi Y; Dokko Y; Kikuchi Y; (2003) Pedestrian Crash Reconstruction Using Multi-Body Modeling With Geometrically Detailed, Validated Vehicle Models and Advanced Pedestrian Injury Criteria. International Technical Conference on the Enhanced Safety of Vehicles (ESV), 18.

C194. van Rooij, L, Meissner, MU, Bhalla, KS, Crandall, JR. (2003) The Evaluation of the Kinematics of the MADYMO Human Pedestrian Model Against Experimental Tests and the Influence of a More Biofidelic Knee Joint. TNO MADYMO 5th Users' Meeting of the Americas.

C195. van Rooij, L, Sherwood, CP, Crandall, JR, Orzechowski, K, Eichelberger, M. (2003) The Effects of Vehicle Seat Belt Parameters on the Injury Risk for Children in Booster Seats. Paper 2003-01-0500, Society of Automotive Engineers (SAE).

C196. van Rooij, L, Sherwood, CP, Crandall, JR. (2003) A Comparison of the Injury Risk for 12-Month-Old Children in Forward and Rearward Facing Seats and the Effect of a Front-row Seat. TNO MADYMO 5th Users' Meeting of the Americas.

C197. van Rooij, L, van Hoof, J, Crandall, JR, Bass, CR. (2003) The development, validation and application of a finite element upper extremity model subjected to air bag loading. Paper 2003-22-0004, Society of Automotive Engineers (SAE).

C198. Woods, WA, Sherwood, CP, Ivarsson, BJ, Crandall, JR, Orzechowski, K, Eichelberger, M. (2003) A Review of Pediatric Pedestrian Injuries at a Level I Trauma Center. Proceedings of the 18th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C199. Bhalla, KS, Montazemi, P, Crandall, JR, Yang, J, Liu, X, Dokko, Y, Takahashi, Y, Kikuchi, Y, Longhitano, D. (2002) Vehicle impact velocity prediction from pedestrian throw distance: Trade-offs between throw formulae, crash simulators, and detailed multi-body modeling. IRCOBI Conference on the Biomechanics of Impact.

C200. Bose, D, Sanghavi, P, Kerrigan, JR, Madeley, NJ, Bhalla, KS, Crandall, JR. (2002) Material Characterization of Ligaments using Non-Contact Strain Measurement and Digitization. International Workshop on Human Subjects for Biomechanical Research, 30, National Highway Traffic Safety Administration, US DOT.

C201. Choi, H, Lee, I, Darvish, KK, Crandall, JR, Haug, E. (2002) Hydrodynamic Simulation of Aortic Rupture. JSAE Annual Congress, Yokohama, Japan.

C202. Darvish, KK, Crandall, JR. (2002) A Parametric Study on the Effect of the Peripheral Cerebrospinal Fluid on Finite Element Model of Brain Injury. Biomedical Engineering Recent Developments: Proceedings of the Twenty First Southern Biomedical Engineering Conference.

C203. Darvish, KK, Crandall, JR. (2002) Influence of Brain Material Properties and Boundary Conditions on Brain Response during Dynamic Loading. IRCOBI Conference on the Biomechanics of Impact.

C204. Darvish, KK, Overby, B, Crandall, JR. (2002) Dynamic Material Property Characterization of Human Aorta. in Biomedical Engineering Recent Developments, J. Vossoughi (ed.) Proceedings of the 21st Southern Biomedical Engineering Conference.

C205. Darvish, KK, Stone, J, Crandall, JR. (2002) The Effect of Axonal Injury on the Material Properties of Brain Tissue. Proceedings of the 4th World Congress of Biomechanics, Calgary, Canada.

C206. Duma, SM, Boggess, B, Crandall, JR, MacMahon, C. (2002) Fracture Tolerance of the Small Female Elbow Joint in Compression: The Effect of Load Angle Relative to the Long Axis of the Forearm. Paper 2002-22-0010, Society of Automotive Engineers (SAE).

C207. Duma, SM, Boggess, B, Crandall, JR, MacMahon, C. (2002) Injury risk function for the small female wrist. Proceedings of the 4th World Congress of Biomechanics, Calgary, Canada.

C208. Funk, JR, Rudd, RW, Srinivasan, S, King, R, Crandall, JR, Petit, P. (2002) Methodology for Measuring Tibial and Fibular Loads in a Cadaver. Paper 2002-01-0682, Society of Automotive Engineers (SAE).

C209. Funk, JR, Srinivasan, S, Crandall, JR, Khaewpong, N, Eppinger, R, Jaffredo, A, Potier, P, Petit, P. (2002) The Effects of Axial Preload and Dorsiflexion on the Tolerance of the

Ankle/Subtalar Joint to Dynamic Inversion and Eversion. Paper 2002-22-0013, Society of Automotive Engineers (SAE).

C210. Kent, RW, Bass, CR, Woods, WA, Sherwood, CP, Madeley, NJ, Salzar, RS, Crandall, JR. (2002) The Use of a Postmortem Porcine Model to Study the Effect of Muscle Tetanus on Thoracic Force-Deflection Response. International Workshop on Human Subjects for Biomechanical Research, 30, National Highway Traffic Safety Administration, US DOT.

C211. Kent, RW, Crandall, JR, Rudd, RW, Lessley, DJ. (2002) Load Distribution-Specific Viscoelastic Characterization of the Hybrid III Chest. Paper 2002-01-0024, Society of Automotive Engineers (SAE).

C212. Paskoff, G, Lakner, M, Funk, JR, Kerrigan, JR, Crandall, JR. (2002) Effect of Thigh Gap on Femur Impact during Ejection of Large Aviators. 40th Annual Safety and Flight Equipment (SAFE) Conference, Jacksonville, FL.

C213. Shaw, CG, Rudd, RW, Crandall, JR, Luo, F. (2002) Comparative Evaluation of Dummy Response with Thor-Lx/Hillr and Hybrid III Lower Extremities. Paper 2002-01-0016, Society of Automotive Engineers (SAE).

C214. Srinivasan, S, Funk, JR, Crandall, JR. (2002) Lateral process of Talus (Snowboarder's Fracture) – Mechanism of Injury. Orthopaedic Proceedings: British Orthopaedic Association, Cardiff. (abstract in Journal of Bone and Joint Surgery 85-B Supp. II)

C215. Stitzel, J, Duma, SM, Boggess, B, Bass, CR, Crandall, JR. (2002) Frequency Content Analysis and Filter Class Selection for the Small Female Instrumented Upper Extremity. Paper 2002-01-0806, Society of Automotive Engineers (SAE).

C216. van Hoof, J, van Rooij, L, Crandall, JR. (2002) A Numerical Model Predicting Upper Extremity Fractures due to Airbag Deployment. Proceedings of the 4th World Congress of Biomechanics, Calgary, Canada.

C217. Bass, CR, Darvish, KK, Bush, B, Crandall, JR, Srinivasan, S, Tribble, C, Tourret, L, Evans, J, Patrie, J, Wang, C. (2001) Material Properties for Modeling Traumatic Aortic Rupture. Paper 2001-22-0006, Society of Automotive Engineers (SAE).

C218. Boggess, B, Sieveka, EM, Crandall, JR, Pilkey, WD, Duma, SM. (2001) Interaction of the Hand and Wrist with a Door Grip During Side Air Bag Deployment: Simulation Study using the CVS/ATB Multi-Body Program. Paper 2001-01B-191, Society of Automotive Engine

C219. Butcher, J, Shaw, CG, Bass, CR, Kent, RW, Crandall, JR. (2001) Displacement Measurements in the Hybrid III Chest. Paper 2001-01-0118, Society of Automotive Engineers (SAE).

C220. Cheng, ZQ, Pilkey, WD, Darvish, KK, Crandall, JR. (2001) Correlation Analysis of Automobile Crash Responses using Wavelets. Proceedings of the 19th International Modal Analysis Conference, Florida.

C221. Darvish, KK, Crandall, JR. (2001) Strain Conditioning in the Dynamic Viscoelastic Response of Brain Tissue. ASME Bioengineering Conference, BED 50.

C222. Duma, SM, Boggess, B, Crandall, JR, Hurwitz, S. (2001) Analysis of Upper Extremity Response Under Side Air Bag Loading. Paper 195, Proceedings of the 17th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C223. Duma, SM, Boggess, B, Crandall, JR, MacMahon, C, Hurwitz, S. (2001) Axial Loading Injury Tolerance for the Small Female Wrist. Proceedings of the 29th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C224. Funk, JR, Tourret, L, Crandall, JR, Pilkey, WD, McMaster, J, Khaewpong, N, Eppinger, R. (2001) The Effect of Active Muscle Tension on the Axial Injury Tolerance of the Lower Extremity. Paper 237, Proceedings of the 17th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C225. Kent, RW, Bolton, JR, Crandall, JR, Prasad, P, Nusholtz, G, Mertz, H, Kallieris, D. (2001) Restrained Hybrid III dummy-based criteria for thoracic hard tissue injury prediction. IRCOBI Conference on the Biomechanics of Impact.

C226. Kent, RW, Crandall, JR, Butcher, J, Morris, RA. (2001) Sled System Requirements for the Analysis of Side Impact Thoracic Injury and Occupant Protection. Paper 2001-01-0721, Society of Automotive Engineers (SAE).

C227. Kent, RW, Crandall, JR. (2001) A restraint-specific, viscoelastic structural model of the human thorax. Proceedings of the 29th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C228. Kent, RW, Crandall, JR. (2001) Boundary condition effects on thoracic deformation response to anterior impact loading. ASME Bioengineering Conference, BED-Vol. 50.

C229. Kent, RW, Crandall, JR. (2001) Spinal injury risk assessment for female and small male pilots during ejection loading. Research Conference, Virginia Space Grant Consortium, NASA Langley, Hampton, Virginia.

C230. Kent, RW, Sieveka, EM, Crandall, JR. (2001) Parametric study of side impact thoracic injury criteria using the MADYMO human body model. Paper 144, Proceedings of the 17th International Technical Conference on Enhanced Safety of Vehicles (ESV).

C231. Martin, PG, Crandall, JR. (2001) Constitutive Modeling of Polymers Subjected to High Strain Rates. Paper 2001-01-0472, Society of Automotive Engineers (SAE).

C232. Rudd, RW, Crandall, JR, Hjerpe, E, Haland, Y. (2001) Evaluation of Lower Limb Injury Mitigation from Inflatable Carpet in Sled Tests with Intrusion using the Thor Lx. Paper 149, Proceedings of the 17th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C233. Shaw, CG, Kent, RW, Sieveka, EM, Crandall, JR. (2001) Spinal kinematics of restrained occupants in frontal impacts. IRCOBI Conference on the Biomechanics of Impact.

C234. Bass, CR, Wang, C, Crandall, JR. (2000) Error Analysis of Curvature-Based Contour Measurement Devices. Paper 2000-01-0054, Society of Automotive Engineers (SAE).

C235. Crandall, JR, Bryant, RG, Harris, RM, Griffin, LV, Rountree, MS, Sanderson, E. (2000) Evaluation of Protective Footwear for Landmine Loading. 5th World Conference on Injury Prevention and Control, New Delhi, India.

C236. Darvish, KK, Crandall, JR. (2000) A Quasilinear Viscoelastic Model for Brain Tissue. Proceedings of the 24th Annual Meeting of the American Society of Biomechanics, Chicago.

C237. Darvish, KK, Crandall, JR. (2000) Comparison between a Quasilinear and a Nonlinear Viscoelastic Model for Brain Tissue. Advances in Bioengineering, ASME, BED 48.

C238. Darvish, KK, Crandall, JR. (2000) Nonlinear Viscoelastic Behavior of Brain Tissue in Oscillatory Shear Deformation. Proceedings of the 28th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C239. Duma, SM, Boggess, B, Sieveka, EM, Crandall, JR. (2000) The Effect of Shoulder Translation and Forearm Pronation on Upper Extremity Loading during Side Airbag

Deployment. Proceedings of the 24th Annual Meeting of the American Society of Biomechanics.

C240. Funk, JR, Bass, CR, Rudd, RW, Crandall, JR, Tourret, L, McMahon, C. (2000) Dynamic Crack Detection in the Human Tibia Using Acoustic Emission. Proceedings of the 28th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C241. Funk, JR, Tourret, L, Crandall, JR. (2000) Estimation of Fibula Load-Sharing During Dynamic Axial Loading of the Lower Extremity. Proceedings of the 24th Annual Meeting of the American Society of Biomechanics.

C242. Funk, JR, Tourret, L, Crandall, JR. (2000) Experimentally Produced Tibial Plateau Fractures. IRCOBI Conference on the Biomechanics of Impact.

C243. Funk, JR, Tourret, L, George, S, Crandall, JR. (2000) The Role of Axial Loading in Malleolar Fractures. Paper 2000-01-0155, Society of Automotive Engineers (SAE).

C244. Shaw, CG, Crandall, JR, Butcher, J. (2000) Biofidelity Evaluation of the THOR Advanced Frontal Crash Test Dummy. IRCOBI Conference on the Biomechanics of Impact.

C245. Bass, CR, Crandall, JR, Bolton, JR, Pilkey, WD. (1999) Deployment of Air Bags into the Thorax of an Out-of-Position Dummy. Paper 1999-01-0764, Society of Automotive Engineers (SAE).

C246. Cheng, ZQ, Pilkey, WD, Crandall, JR. (1999) Limiting Performance of Helmets Under Impact. ASME - Advances in Bioengineering (BED), Nashville, TN, 42: 711-712.

C247. Crandall, JR, Funk, JR, Rudd, RW, Tourret, L. (1999) The Tibia Index: A Step in the Right Direction. Proceedings of the Toyota International Symposium on Human Life Support Biomechanics.

C248. Crandall, JR, Matthews, B, Bass, CR, Bolton, JR. (1999) Viscoelastic characterization of the hybrid III three-year-olds and Q3 dummy necks. Joint AAAM- IRCOBI Conference Session on Child Occupant Protection.

C249. Darvish, KK, Crandall, JR. (1999) Investigating Nonlinear Viscoelastic Properties of Brain Tissue Using the Forced Vibration Method. Proceedings of the 23rd Annual Meeting of the American Society of Biomechanics, Pittsburgh.

C250. Darvish, KK, Takhounts, E, Mathews, B, Crandall, JR. (1999) A Nonlinear Viscoelastic Model for Polyurethane Foams. Paper 1999-01-0299, Society of Automotive Engineers (SAE).

C251. Dubbeldam, RN, Nilson, G, Pal, B, Eriksson, N, Owen, C, Roberts, A, Crandall, JR, Hall, GW, Manning, P, Wallace, A. (1999) A MADYMO Model of the Foot and Leg for Local Impacts. Paper 99SC12, Stapp Car Crash Conference Proceedings, 43.

C252. Duma, SM, Boggess, B, Crandall, JR. (1999) Evaluation of Upper Extremity Injuries from Lateral Air Bag Deployment. Proceedings of Inflatable Restraints in Aviation Conference, Huntsville, AL.

C253. Duma, SM, Crandall, JR, Pilkey, WD. (1999) Comparison of the Q3 and Hybrid III 3 Year Old Dummy Head and Neck Response During Side Air Bag Loading. Joint AAAM-IRCOBI Conference Session on Child Occupant Protection.

C254. Duma, SM, Crandall, JR, Rudd, RW, Funk, JR, Pilkey, WD. (1999) Small Female Head and Neck Interaction with a Deploying Side Air Bag. IRCOBI Conference on the Biomechanics of Impact.

C255. Duma, SM, Crandall, JR, Rudd, RW, Pilkey, WD. (1999) Eye Injuries from Air Bags with Seamless Module Covers. Annual Proceedings/Association for the Advancement of Automotive Medicine, 42: 425-434.

C256. Duma, SM, Schreiber, P, McMaster, J, Crandall, JR, Bass, CR, Pilkey, WD. (1999) Fracture Tolerance of the Male Forearm: The Effect of Pronation versus Supination. Proceedings of the 24th Annual Meeting of the American Society of Biomechanics, Pittsburgh.

C257. Funk, JR, Hall, GW, Crandall, JR, Pilkey, WD. (1999) Quasi-linear Viscoelasticity of Ankle Ligaments. ASB Annual Conference.

C258. Kato, M, Nishimura, H, Shimogo, T, Purtsezov, S, Pilkey, WD, Crandall, JR. (1999) Injury Protection of Occupant Legs by Active Knee Bolster Optimal Design of the Contact Force Reference. Proceedings of the 50th Japan Joint Automatic Control Conference.

C259. Rudd, RW, Crandall, JR, Butcher, J. (1999) Biofidelity Evaluation of Dynamic and Static Response Characteristics of the Thor Lx Dummy Lower Extremity. IRCOBI Conference on the Biomechanics of Impact.

C260. Shaw, CG, Wang C, Bolton, JR, Bass, CR, Crandall, JR, Butcher, J, Nguyen, T. (1999) Performance Assessment of the External Peripheral Instrument for Deformation Measurement Using Static Tests. International Workshop on Human Subjects for Biomechanical Research, 27, National Highway Traffic Safety Administration, US DOT.

C261. Sieveka, EM, Crandall, JR, Duma, SM, Pilkey, WD. (1999) Three Year Old Child and Side Airbag Interaction Study Using the CVS/ATB Multi-body Simulation Program. Paper 1999-01-0756, Society of Automotive Engineers (SAE).

C262. Takhounts, E, Crandall, JR, Matthews, B. (1999) Shear Properties of Brain Tissue Using Non-linear Green-Rivlin Viscoelastic Constitutive Equation. International Workshop on Human Subjects for Biomechanical Research, 27, National Highway Traffic Safety Administration, US DOT.

C263. Bai, C, Morris, RA, Sieveka, EM, Crandall, JR, Cheng, ZQ, Pilkey, WD. (1998) A Study of Standards for Child Restraint Systems for Impact Tests. Proceedings of the International Crashworthiness Conference.

C264. Bass, CR, Crandall, JR, Wang, C, Pilkey, WD. (1998) Open-Loop Chestbands for Dynamic Deformation Measurements. Paper 980857, Society of Automotive Engineers (SAE).

C265. Bass, CR, Duma, SM, Crandall, JR, Morris, RA, George, S, Kuppa, S, Khaewpong, N, Sun, E, Eppinger, R. (1998) The Interaction of Airbags with Upper Extremity Test Devices. Paper 98-S7-O-12. Proceedings of the 16th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C266. Crandall, JR, Bass, CR, Duma, SM, Kuppa, S, Khaewpong, N, Eppinger, R. (1998) Evaluation of 5th Percentile Female Hybrid III Biofidelity and Injury Criteria Measurement Methods During Out of Position Occupant Tests with a Driver Airbag. Paper 980636, Society of Automotive Engineers (SAE).

C267. Crandall, JR, Klopp, GS. (1998) Response and Injury of the Foot and Ankle During Impact Loading. Proceedings of the 3rd World Congress of Biomechanics, Sapporo, Japan, Aug. 1998.

C268. Darvish, KK, Takhounts, E, Crandall, JR. (1998) A Dynamic Method to Develop Nonlinear Viscoelastic Model of Brain Tissue. Advances in Bioengineering, ASME, BED 39.

C269. Duma, SM, Crandall, JR, Hurwitz, S, Pilkey, WD. (1998) Small Female Upper Extremity Interaction with a Deploying Side Airbag. Paper 983148, Society of Automotive Engineers (SAE).

C270. Duma, SM, Crandall, JR, Pilkey, WD, Seki, K, Aoki, T. (1998) Dynamic Response of the Hybrid III 3 Year Old Dummy Head and Neck during Side Airbag Loading. Annual Proceedings/Association for the Advancement of Automotive Medicine, 42: 193-208.

C271. Duma, SM, Crandall, JR, Seki, K, Aoki, T. (1998) 5th% Female Dummy Upper Extremity Interaction with a Deploying Side Air Bag. Paper 98-S5-W-20, Proceedings of the 16th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C272. Duma, SM, Ryan, LP, Crandall, JR. (1998) Determination of Bone Mineral Content in Cadaveric Test Specimens. International Workshop on Human Subjects for Biomechanical Research, 26, National Highway Traffic Safety Administration, US DOT.

C273. Duma, SM, Schreiber, P, McMaster, J, Crandall, JR, Bass, CR, Pilkey, WD. (1998) Dynamic Injury Tolerances for Long Bones of the Female Upper Extremity. IRCOBI Conference on the Biomechanics of Impact.

C274. Hall, GW, Crandall, JR, Pilkey, WD, Thunnissen, J. (1998) Development of a Dynamic Multibody Model to Analyze Human Lower Extremity Impact Response and Injury. IRCOBI Conference on the Biomechanics of Impact.

C275. Hall, GW, Crandall, JR, Sieveka, EM, Pilkey, WD. (1998) Sensitivity of Impact Response to Model Parameters: A Multibody Modeling Study of the Human Leg. Proceedings of the ASME Winter Annual Meeting, Anaheim, CA.

C276. Kuppa, S, Klopp, GS, Crandall, JR, Hall, GW, Yoganandan, N, Pintar, F, Eppinger, R, Khaewpong, N, Kleinberger, M. (1998) Axial Impact Characteristics of Dummy and Cadaver Lower Limbs. Paper 98-S7-O-10, Proceedings of the 16th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C277. Morris, RA, Crandall, JR, Pilkey, WD. (1998) Multibody modelling of a side impact test apparatus. Proceedings of the International Crashworthiness Conference.

C278. Morris, RA, Duma, SM, Bass, D, Sieveka, J, Pellettiere, JA, Crandall, JR, Pilkey, WD. (1998) Analysis of humerus orientation in upper extremity experiments with a deploying airbag. Paper 980639, Society of Automotive Engineers (SAE).

C279. Pellettiere, JA, Crandall, JR, Pilkey, WD. (1998) Material Model for Bone Under Impact Loading. North American Congress on Biomechanics. Waterloo, Canada.

C280. Pellettiere, JA, Duma, SM, Bass, CR, Crandall, JR. (1998) Strength of the Female Upper Extremity. Proceedings NATO/RTO Specialist's Meeting: Models for Aircrew Safety Assessment: Uses, Limitations, Requirements, Dayton, OH, October.

C281. Pellettiere, JA, Sieveka, EM, Crandall, JR, Pilkey, WD, Tanahashi, M, Weisenfeld, G, Okuhara, H, Takahashi, Y, Okamoto, Y. (1998) Experimental Testing of the Hybrid III Lower Extremity for Computational Model Development. Paper 980363, Society of Automotive Engineers (SAE).

C282. Rudd, RW, Crandall, JR, Bass, CR, Lynn, S, Keller, J. (1998) Lower Extremity and Brake Pedal Interaction in Frontal Collisions: Sled Tests. Paper 980359, Society of Automotive Engineers (SAE).

C283. Rudd, RW, Sieveka, EM, Crandall, JR, Pellettiere, JA, Lynn, S, Keller, J. (1998) Lower Extremity and Brake Pedal Interaction in Frontal Collisions: Computer Simulation. Paper 980364, Society of Automotive Engineers (SAE).

C284. Sieveka, EM, Crandall, JR, Duma, SM, Pilkey, WD. (1998) Development and Application of a Side Airbag Computer Model Using a Multi-body Dynamics Program. Paper 98-S9-O-05, Proceedings of the 16th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C285. Sieveka, EM, Pellettiere, JA, Crandall, JR, Pilkey, WD, Tanahashi, M, Weisenfeld, G, Okuhara, H, Takahashi, Y, Okamoto, Y. (1998) A New CVS/ATB Hybrid III Model for Lower Extremity Studies: Development and Validation. Paper 980357, Society of Automotive Engineers (SAE).

C286. Takahashi, Y, Okamoto, Y, Kikuchi, Y, Sieveka, EM, Crandall, JR, Pellettiere, JA, Pilkey, WD. (1998) Development of Computer Simulation Model for Hybrid III Lower Extremity. JSAE Paper 9822775, Honda R&D Technical Review, 10: 189-196.

C287. Bass, CR, Dekel, E, Crandall, JR, Lange, M, Pilkey, WD. (1997) Experimental Devices to Simulate Toepan And Floorpan Intrusion. Paper 970574, Society of Automotive Engineers (SAE).

C288. Bass, CR, Duma, SM, Crandall, JR, Morris, RA, Martin, PG, Pilkey, WD, Hurwitz, S, Khaewpong N, Eppinger, R, Sun, E. (1997) The Interaction of Air Bags with Upper Extremities. Paper 973324, Stapp Car Crash Conference Proceedings, 41.

C289. Crandall, JR, Bass, CR, Wang, C, Bolton, JR, Pilkey, WD. (1997) Comparison of Hybrid III and Cadaver Response Using Force Limited Belts Systems. Proceedings of the 25th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C290. Crandall, JR, Duma, SM, Bass, CR, Pilkey, WD, Kuppa, S, Khaewpong, N, Eppinger, R. (1997) Thoracic Response and Trauma of Out-of-Position Drivers Resulting from Air Bag Deployment. Annual Proceedings/Association for the Advancement of Automotive Medicine, 41: 387-404.

C291. Crandall, JR, Martin, PG. (1997) Lower Limb Injuries Sustained in Crashes and Corresponding Biomechanical Research. Proceedings International Symposium on Real World Crash Injury Research, Leicestershire, UK.

C292. Duma, SM, Bass, CR, Crandall, JR, Sieveka, EM, Pilkey, WD. (1997) Examination of Airbag-Induced Upper Extremity Injuries. Proceedings 15th International System Safety Conference.

C293. Duma, SM, Bass, CR, Klopp, GS, Grillo, N, Micek, T, Crandall, JR, Pilkey, WD. (1997) A technique for Using Strain Gauges to Evaluate Airbag Interaction with Cadaveric Upper Extremities. Proceedings of the 33rd Annual Rocky Mountain Bioengineering Symposium.

C294. Duma, SM, Crandall, JR, Rudd, RW, Pilkey, WD. (1997) A Discussion of the Automotive Airbag System and the Changes in its Federal Regulations. Proceedings 15th International System Safety Conference.

C295. Duma, SM, Crandall, JR, Rudd, RW, Pilkey, WD. (1997) A Review of the Proposed Changes in the Federal Automotive Airbag Design Standard. Proceedings of the 15th International System Safety Conference.

C296. Duma, SM, Crandall, JR, Turner, S, Pilkey, WD, Simmons, R. (1997) A Protocol System for the Handling of Biohazardous Materials in a Research Facility. Proceedings of the 15th International System Safety Conference, Washington, DC.

C297. Hall, GW, Klopp, GS, Crandall, JR, Carmines, D, Hale, J. (1997) Rate Independent Characteristics of an Arthroscopically Implantable Force Probe in the Achilles Tendon. Proceedings of the 21st Annual Meeting of the American Society of Biomechanics.

C298. Klopp, GS, Crandall, JR, Hall, GW, Hurwitz, S, Pilkey, WD, Eppinger, R, Khaewpong, N, Kuppa, S. (1997) Mechanisms of injury and injury criteria for the human foot and ankle in dynamic axial impacts to the foot. IRCOBI Conference on the Biomechanics of Impact.

C299. Kuppa, S, Klopp, GS, Crandall, JR, Eppinger, R. (1997) Single Degree of Freedom Representation of the Hybrid III Dummy and Cadaver Lower Limb. Proceedings of the 25th

International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C300. Martin, PG, Crandall, JR, Pilkey, WD, Chou, CC, Fileta, BB. (1997) Measurement Techniques for Angular Velocity and Acceleration in an impact Environment. Paper 970575, Society of Automotive Engineers (SAE).

C301. Martin, PG, Crandall, JR, Pilkey, WD, Miller, T. (1997) Passenger Car Drivers: annual Injury Incidence and Costs Projected to 2005. Annual Proceedings/Association for the Advancement of Automotive Medicine, 41: 249-263.

C302. Rudd, RW, Crandall, JR, Duma, SM, Pilkey, WD. (1997) A Discussion of Lower Extremity Injuries in Automobile Crashes. Proceedings of the 15th International System Safety Conference.

C303. Schreiber, P, Crandall, JR, Micek, T, Hurwitz, S. (1997) Static and Dynamic Bending Strength of the Leg. IRCOBI Conference on the Biomechanics of Impact.

C304. Sieveka, EM, Duma, SM, Crandall, JR, Bass, CR, Pilkey, WD. (1997) Multi-Body Model of Upper Extremity Interaction with Deploying Airbag. Paper 970398, Society of Automotive Engineers (SAE).

C305. Takhounts, E, Crandall, JR, Matthews, B. (1997) Experimental Determination of Constitutive Equations for Brain Tissue. Proceedings of the 21st Annual Meeting of the American Society of Biomechanics.

C306. Bass, CR, Duma, SM, Crandall, JR, Martin, PG, Pilkey, WD. (1996) Airbag Interaction with Cadaveric Upper Extremities. Proceedings of the 24th International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C307. Bass, CR, Hall, GW, Crandall, JR, Pilkey, WD. (1996) The Influence of Padding and Shoes on the Dynamic Response of Dummy Lower Extremities. Paper 961042, Society of Automotive Engineers (SAE).

C308. Crandall, JR, Bass, CR, Klopp, GS, Pilkey, WD, Morgan, R, Eppinger, R. (1996) Sled Tests with Toepan Intrusion using Post-Mortem Human Surrogates and the Hybrid III Dummy. IRCOBI Conference on the Biomechanics of Impact.

C309. Crandall, JR, Bass, CR, Pilkey, WD, Morgan, R, Eppinger, R, Miller, H, Sikorski, J. (1996) An Evaluation of Thoracic Response and Injury with Belt, Airbag, and Constant Force Retractor Restraints'. NATO Conference on Crashworthiness in Transportation Systems: Structural Impact and Occupant Protection, Troia, Portugal.

C310. Crandall, JR, Martin, PG, Bass, CR, Pilkey, WD, Dischinger, P, Burgess, A, O'Quinn, T, Schmidhauser, C. (1996) Foot and Ankle Injury: The Roles of Driver Anthropometry, Footwear and Pedal Controls. Annual Proceedings/Association for the Advancement of Automotive Medicine, 40: 1-18.

C311. Crandall, JR, Martin, PG, Pilkey, WD. (1996) Variability of the Head Injury Criteria with the Hybrid III Dummy. Paper 960094, Society of Automotive Engineers (SAE).

C312. Crandall, JR, Portier, L, Petit, P, Hall, GW, Bass, CR, Klopp, GS, Hurwitz, S, Pilkey, WD, Trosseille, X, Tarriere, C, Lassau, JP. (1996) Biomechanical response and physical properties of the leg, foot, and ankle. Paper 962424, Stapp Car Crash Conference Proceedings, 40.

C313. Hall, GW, Crandall, JR, Klopp, GS, Klisch, S, Pilkey, WD. (1996) Joint Kinematics with Angular Rate Sensors. Proceedings of the 69th Shock and Vibration Symposium.

C314. Kennett, K, Crandall, JR, Bass, CR, Klopp, G. (1996) In Situ Measurement of Loads in the Tibia. International Workshop on Human Subjects for Biomechanical Research, 24, National Highway Traffic Safety Administration, US DOT.

C315. Crandall, JR, Jordan, A, Bass, CR, Klopp, GS, Pilkey, WD, Sieveka, EM. (1995) Reproducing the structural intrusion frontal offset crashes in the laboratory sled test environment. Paper 950643, Society of Automotive Engineers (SAE).

C316. Crandall, JR, Martin, PG, Kuhlmann, T, Klopp, GS, Sieveka, EM, Pilkey, WD, Dischinger, P, Burgess, A, O'Quinn, T. (1995) The Influence of Footwell Intrusion on Lower Extremity Response and Injury in Frontal Crashes. Annual Proceedings/Association for the Advancement of Automotive Medicine, 39: 269-286.

C317. Klopp, GS, Crandall, JR, Hurwitz, SR, Pilkey, WD, Morgan, RM, Eppinger, RH, Kuppa, SM. (1995) Risk of Injury to the Human Ankle for Longitudinal Impacts to the Foot. International Conference on Pelvic and Lower Extremity Injuries.

C318. Klopp, GS, Crandall, JR, Sieveka, EM, Pilkey, WD. (1995) Simulation of Muscle Tensing in Pre-Impact Bracing. IRCOBI Conference on the Biomechanics of Impact.

C319. Klopp, GS, Hall, GW, Crandall, JR, Pilkey, WD. (1995) Measurement of Rotational Kinematics using Magnetohydrodynamic Angular Rate Sensors. International Workshop on Human Subjects for Biomechanical Research, 23, National Highway Traffic Safety Administration, US DOT.

C320. Miller, T, Martin, PG, Crandall, JR. (1995) Cost of Lower Limb Injuries in Highway Crashes. Proceedings of the International Conference on Pelvic and Lower Extremity Injuries, Washington, D. C.

C321. Schreiber, P, Crandall, JR, Dekel, E, Hall, GW, Pilkey, WD. (1995) The Effects of Lower Extremity Boundary Conditions on Ankle Response during Joint Rotation Tests. Proceedings of the 23rd International Workshop on Human Subjects for Biomechanical Research, National Highway Traffic Safety Administration, U.S. D.O.T.

C322. Sieveka, EM, Crandall, JR, Pilkey, WD. (1995) Evaluation of Toepan Padding and Lower Extremity Impact Loading Using Computer Simulation of Occupant Kinetics. International Conference on Pelvic and Lower Extremity Injuries, 309, 316

C323. Crandall, JR, Klopp, GS, Klisch, S, Kennett, K, Morgan, R, Eppinger, R. (1994) Instrumentation Package for the Lower Extremities. International Workshop on Human Subjects for Biomechanical Research, 22, National Highway Traffic Safety Administration, US DOT.

C324. Crandall, JR, Klopp, GS, Klisch, S, Sieveka, S, Pilkey, WD, Martin, PG. (1994) Research Program to Investigate Lower Extremity Injuries. Paper 940711, Society of Automotive Engineers (SAE).

C325. Crandall, JR, Kuhlmann, T, Martin, P, Pilkey, WD, Neeman, T. (1994) Differing Patterns of Head and Facial Injury With Air Bag And/Or Belt Restrained Drivers in Frontal Collisions. Proceedings of the Association For the Advancement of Automotive Medicine (AAAM), 38.

C326. Crandall, JR, Pilkey, WD, Klopp, GS, Pilkey, B, Morgan, R, Eppinger, R, Kuppa, S, Sharpless, C. (1994) A Comparison of Two and Three Point Restraint Systems. Advances in Occupant Restraint Technologies: Joint AAAM and IRCOBI Special Session.

C327. Crandall, JR, Pilkey, WD, Sturgill, B. (1994) Evaluation of Preservation Methods for Cadavers: Hard Tissue Investigation. International Workshop on Human Subjects for Biomechanical Research, 22, National Highway Traffic Safety Administration, US DOT.

C328. Crandall, JR, Pilkey, WD. (1994) Material Properties of Preserved Biomechanical Test Specimens. 12th U.S. National Congress of Biomechanics.

C329. Crandall, JR, Pilkey, WD. (1994) The Preservation of Human Surrogates for Impact Studies. Proceedings of the 13th Southern Biomedical Engineering Conference, Engineering Research Center, University of DC, Washington, DC, 582-585.

C330. Dischinger, P, Burgess, A, Cushing, B, Pilkey, WD, Crandall, JR, Sieveka, EM, Klopp, G. (1994) Lower Extremity Trauma in Vehicular Front-Seat Occupants. Proceedings of the 4th Injury Prevention through Biomechanics Symposium, Centers for Disease Control.

C331. Kennett, K, Crandall, JR, Pilkey, WD. (1994) Warming of Cadaveric Specimens. International Workshop on Human Subjects for Biomechanical Research, 22, National Highway Traffic Safety Administration, US DOT.

C332. McKinney, R, Myers, D, Moody, D, McKinney, B, Martin, PG, Crandall, JR. (1994) A New Laceration Prediction System. International Workshop on Human Subjects for Biomechanical Research, 22, National Highway Traffic Safety Administration, US DOT.

C333. Morgan, R, Eppinger, R, Haffner, M, Yoganandan, N, Pintar, F, Sauces, A, Crandall, JR, Pilkey, WD, Klopp, GS, Kallieris, D, Miltner, E, Mattern, R, Kuppa, S, Sharpless, C. (1994) Thoracic trauma assessment formulations for restrained drivers in simulated frontal impacts. Paper 942206, Stapp Car Crash Conference Proceedings, 38.

C334. Pilkey, WD, Sieveka, EM, Crandall, JR, Klopp, G. (1994) The Influence of Foot Placement and Vehicular Intrusion on Occupant Lower Limb Injury in Full-Frontal and Frontal-Offset Crashes. Paper 94-S4-W31, Proceedings of the 14th International Technical Conference on the Enhanced Safety of Vehicles (ESV).

C335. Crandall, JR, Sieveka, EM, Pilkey, WD. (1993) The Influence of Muscle Tension on Lower Extremity Response. International Workshop on Human Subjects for Biomechanical Research, 21, National Highway Traffic Safety Administration, US DOT.

C336. Kuhlmann, T, Crandall, JR, Sieveka, EM, Pilkey, WD. (1993) Simulation of Seat Belt Slack, Airbags, and Head Injury Criteria. Proceedings of the Society for Academic Emergency Medicine.

C337. Kuhlmann, T, Crandall, JR, Sieveka, EM, Pilkey, WD. (1993) The Effects of Heavy Clothing on Occupant Response. Proceedings of the Society of Academic Emergency Medicine.

C338. Crandall, JR, Pilkey, WD, Sturgill, B. (1992) Radiologic Analysis of Cadaver Impact Injuries. International Workshop on Human Subjects for Biomechanical Research, 20, National Highway Traffic Safety Administration, US DOT.

C339. Pilkey, WD, Duch, M, Crandall, JR, Klopp, GS, Zuck, J. (1992) Dynamic Deformation Measurements for Human Surrogates Testing. Proceedings of the 63rd Shock and Vibration Symposium.

C340. Crandall, JR, Pilkey, WD, Sturgill, B. (1991) Investigation to Characterize the Influence of Fixation Methods upon the Biomechanical Properties of Cadavers in an Impact Environment. International Workshop on Human Subjects for Biomechanical Research, 19, National Highway Traffic Safety Administration, US DOT.

D. Abstracts, Short Communications, and Posters

D1. Gabler L, Bailey A, Funk J, Crandall J, Arbogast KB, Myers B, Development of a Metric for Ranking the Performance of Football Helmets, BMES, Philadelphia, PA, October 2019.

D2. Schneider A, Ewald C, Roth F, Labenski V, Sherwood C, Crandall J, (2019) Development of a combined Injury Criteria for the comparative Evaluation of Long-term Injury Outcome and Mortality Risk assessed in Car-to-Pedestrian Accidents, IRCOBI Conference, Florence IT, Sept 2019.

D3. Perez-Rapela D, Markusic C, Whitcomb B, Pipkorn B, Forman J, Crandall J (2019) Comparison of the simplified GHBMC to PMHS kinematics in far-side impact, IRCOBI Conference, Florence IT, Sept 2019.

D4. Gabler LF, Crandall JR, Panzer MB, Praxl N, Wernicke P (2017), Development of Improved Brain Injury Predictors for Diverse Impacts, Stapp Crash Conference, Charleston SC.

D5. Perez-Rapela D, Markusic C, Forman J, Montesinos Acosta S, Kim T, Crandall J (2017), Comparison of WorldSID to PMHS Kinematics in far-side impact, IRCOBI Conference, Antwerp, Belgium, Sept 2017.

D6. Perez-Rapela D, Markusic C, Forman J, Montesinos Acosta S, Kim T, Crandall J (2017), ITRACC and RibEye performance comparison in far-side test configurations, Antwerp, Belgium, Sept 2017.

D7. Gabler G, Rodenberger E, Crandall J, Panzer M (2016) Predicting Brain Injury Using Head Kinematics, J Neurotrauma, 33(12) A30-A31.

D8. Kim T, Poplin G, Bollapragada V, Park G, Crandall J (2016) Framework on Injury Outcome Estimation using Pedestrian Impact Simulation and Field Data, IRCOBI Asia Conference, Seoul, Korea, May 2016.

D9. Park G, Kim T, Forman J, Panzer MB, Crandall JR (2016), Prediction of Structural Response of Femoral Shaft under Dynamic Combined Loading Condition using Subject-Specific Finite Element Model, IRCOBI Asia Conference, Seoul, Korea, May 2016.

D10. Bollapragada T, Kim T, Crandall J (2016) Development of a Multibody Human Leg Model based on Beam Approximation, IRCOBI Asia Conference, Seoul, Korea, May 2016.

D11. Perez-Rapela D, Forman JL, Jeon H, Crandall JR (2016) External Biofidelity of FLEX-PLI compared to the THUMS Pedestrian Model, IRCOBI Conference, Malaga Spain, Sept 2016.

D12. Gabler L, Panzer M, Crandall J (2016) Toward Development of a Single-Degree-of-Freedom Mechanical Model for Predicting Brain Injury, IRCOBI Asia Conference, Seoul, Korea, May 2016.

D13. Tierney G, Joodaki H, Crandall J, Forman J, Krosshaug T, Simms C (2016), Assessment of Model Based Image Matching for the Reconstruction of Head Kinematics in Contact Sport collisions, Bioengineering in Ireland, Galway, Ireland. January 25-26, 2016.

D14. Nie B, Ye X, Riley P, Crandall J, Panzer M (2015), Investigation of Active Muscle Response on the Occupant-Knee Airbag Interaction in Frontal Impacts, Proc. IRCOBI Conference, Lyon France, June 2015.

D15. Subit D, Glaceta A, Hamzah M, Crandall J (2015) Orientation of the intercostal muscle fibers in the human ribcage, 40ème Congrès de la Société de Biomécanique, Paris, France.

D16. Riley, PO, Kent, RW, Dierks, T, Lievers, WB, Frimenko, RE, Crandall, JR. (2014) Short communication: Stiffness of the First MTP Joint in Athletic Activities. Proceedings of the International Research Council on the Biomechanics of Impact (IRCOBI), Berlin, Germany.

D17. Kerrigan JR, Foster JB, Sochor M, Forman JL, Toczyski J, Roberts CW, Crandall JR. (2014) Axial compression injury tolerance of the cervical spine: initial results. Short Communications from AAAM's 58th Annual Scientific Conference, Traffic Injury Prevention, 15:sup1, S265-S269, DOI: 10.1080/15389588.2014.956646 (2014 IF 1.286).

D18. Nguyen, A, Melmer, M, Hartka, T, Crandall, J, Sochor, M. (2014) Significance of footwear in Severity of Lower Extremity Injuries in Frontal Motor Vehicle Collisions. 13th Annual Medical Student Research Symposium, University of Virginia School of Medicine. November 2014

D19. Melmer, M, Nguyen, A, Hartka, T, Crandall, J, Sochor, M. (2014) AIS Coding Methodology for Rib Fractures Sustained in Motor Vehicle Collisions. 13th Annual Medical Student Research Symposium, University of Virginia School of Medicine. November 2014

D20. Gabler, L, Crandall, JR, Salzar, RS. (2013) Mechanical response of the human sub-calcaneal heel pad under high rate compression. Proceedings of the Injury Biomechanics Symposium at the Ohio State University, 9.

D21. Panzer, MB, Salzar, RS, Crandall, JR. (2013) Finite Element Modeling of Lower Extremity Fractures in Occupant Subject to Under-Vehicle Blasts, U.S. National Congress on Computational Mechanics, Raleigh, NC. July 2013.

D22. Park, G, Kim, T, Ash, JH, Lessley, DJ, Shaw, CG, Crandall, JR. (2013) Evaluation of ES-2re dummy FE model under side impact sled tests with side airbag condition. Proceedings of the Injury Biomechanics Symposium at the Ohio State University, 9.

D23. Perz, R, Toczyski, J, Crandall, JR, Subit, D. (2013) A method to extrapolate the geometrical properties of human ribs using micro-CT and clinical-CT images. Proceedings of the Injury Biomechanics Symposium at the Ohio State University, 9.

D24. Ye, X, Bose, D, Crandall, JR. (2013), Longitudinal Trend and Patterns in Lower Extremity Injuries Sustained in Frontal Motor Vehicle CrashesProceedings of the Injury Biomechanics Symposium at the Ohio State University, 9.

D25. Bose, D, Crandall, JR. (2011). Potential benefits of an automatic injury notification system in reducing motor vehicle crash fatalities. Poster presentation at the 139th American Public Health Association Annual Meeting. Washington, DC. October 2011.

D26. Ridella, SA, Eigen, AM, Kerrigan, JR, Crandall, JR. (2009) An Analysis of Injury Type and Distribution of Belted, Non-Ejected Occupants Involved In Rollover Crashes. Annual Proceedings/Association for the Advancement of Automotive Medicine, 53.

D27. Trowbridge, MJ, Subit, D, Crandall, JR. (2009) Characteristics of child pedestrian crashes in the United States. Annals of Advances in Automotive Medicine (AAAM) 53.

D28. Bose, D, Untaroiu, CD, Crandall, JR. (2007) Influence of Pre-Crash Bracing on Impact Energy Distribution in a Car Occupant. Poster presented at the Proceedings of the 3rd Injury Biomechanics Symposium at the Ohio State University.

D29. Millington, SA, Grabner, M, Hurwitz, S, Crandall, JR. (2004) Cartilage thickness mapping and surface topography of the ankle joint using high resolution stereophotography. British

Orthopaedic Foot Surgery Society (BOFSS) Annual Meeting, Cheshire, UK. (abstract in Journal of Bone & Joint Surgery, 87-B Supplement III)

D30. Millington, SA, Tang, J, Acton, S, Hurwitz, S, Crandall, JR. (2004) A Stereophotographic Study of Ankle Cartilage Thickness: Distribution and Surface Topography. Osteoarthritis Research Society International 9th World Congress, Chicago.

D31. Millington, SA, Tang, J, Hurwitz, S, Acton, S, Crandall, JR. (2004) Quantitative Measurement of Ankle Cartilage Using an Isotropic MRI Sequence and a Directional Gradient Vector Flow Snake. Osteoarthritis Research Society International 9th World Congress, Chicago.

D32. Crandall, JR, Bass, CR, Duma, SM. (1998) Cadaver and Hybrid III Out-of-Position Testing using Driver Airbags. Proceedings of the 3rd World Congress of Biomechanics, Sapporo, Japan. (abstract)

Paper Author Legend
Underline – student author
Double underline – post-doc author

E. PATENTS and INVENTIONS

E1. Dau N, Crandall J, Rydin R, (2017) Instrumented Intra-oral Appliance Computationally Designed for Optimized Fitting and Functionality, April 11, 2019. U.S. Patent 20190105842

E2. Dau N, Crandall J, Rydin R, Electronic Containment System for Storing and Charging an Instrumented Intra-oral Appliance and Transmitting Data Therefrom (2017), April 18, 2019. U.S. Patent 20190110746

E3. Bose, D., Crandall, J. Maslen, E., Untaroiu, C. (2009) "System and Method for Minimizing Passenger Injury during Vehicle Crash Events". International Patent No. WO 2009137582 20091112, Filed May 6, 2009. U.S. Patent No. 9,953,969 on January 10, 2017.

E2. Kerrigan, J., Crandall, J., Bolton, J., Overby, B, , U.S. Provisional Patent Application Serial No. 61/287,728, Title: Rollover Test System Combination Roll Drive/Brake and Related Method, Filed on December 18, 2009

E3. Kerrigan, J., Crandall, J., Bolton, J., Overby, B, , U.S. Provisional Patent Application Serial No. 61/287,726, Title: Vehicle Rollover Test Fixture Vertical Brake System and Related Method , Filed on December 18, 2009