

JAMES R. FUNK, PHD, PE

EDUCATION

PhD	Biomedical Engineering, University of Virginia Charlottesville, Virginia	2000
MSE	Biomedical Engineering, University of Virginia Charlottesville, Virginia	1997
BSE	Biomedical Engineering, Duke University Durham, North Carolina	1995

PROFESSIONAL EXPERIENCE

Senior Consultant Biocore LLC Charlottesville, Virginia	2014 – Present
Laboratory and Research Specialist Center for Applied Biomechanics, University of Virginia Charlottesville, Virginia	2014 – 2016
Consultant Technical Director Biodynamic Research Corporation San Antonio, Texas	2006 – 2013 2002 – 2006
Research Scientist Automobile Safety Laboratory, University of Virginia Charlottesville, Virginia	2000 – 2002

Graduate Research Assistant Automobile Safety Laboratory, University of Virginia Charlottesville, Virginia	1997 – 2000
Graduate Research Assistant Orthopaedic Biomechanics Laboratory, University of Virginia Charlottesville, Virginia	1995 – 1997
Undergraduate Fellow National Science Foundation/Engineering Research Center Duke University Durham, North Carolina	1994 – 1995

PROFESSIONAL ACTIVITIES

Licensed Professional Engineer Texas P.E. #104623 Virginia P.E. #0402053704	2009 – Present 2014 – Present
Adjunct Faculty Member, Biomedical Engineering Adjunct Assistant Professor, Mechanical Engineering Virginia Tech – Wake Forest Center for Injury Biomechanics Virginia Polytechnic and State University, Blacksburg, Virginia	2010 – Present 2004 – 2010
Scientific Coordinator Head, Neck, and Spine Engineering Subcommittee Engineering Committee National Football League	2014 – 2017 2017 – Present
Visiting Research Scientist Department of Mechanical and Aerospace Engineering University of Virginia, Charlottesville, Virginia	2009 – Present
Clinical Faculty, Graduate Medical Education United States Air Force School of Aerospace Medicine	2008 – 2013
Scientific Program Committee Member Association for the Advancement of Automotive Medicine	2008 – 2013
Course Organizer, Biomechanics of Injury Association for the Advancement of Automotive Medicine	2007

Accredited Traffic Accident Reconstructionist (#1705) 2006 – 2021
Accreditation Commission for Traffic Accident Reconstruction

Affiliate Member, ASTM International 2005 – Present
Committee F24 on Amusement Rides and Devices

Reviewer

Accident Analysis & Prevention
American Journal of Emergency Medicine
American Journal of Sports Medicine
Annals of Biomedical Engineering
Association for the Advancement of Automotive Medicine
Clinical Anatomy
Journal of Applied Biomechanics
Journal of Biomechanics
Journal of Risk and Uncertainty in Engineering Systems
Society of Automotive Engineers
Sports Biomechanics
Traffic Injury Prevention

PROFESSIONAL SOCIETIES

Association for the Advancement of Automotive Medicine
Society of Automotive Engineers

HONORS AND AWARDS

Elaine Wodzin Young Achiever Award, AAAM	2009
SAE Excellence in Oral Presentation Award	2007
Best Scientific Paper Award, AAAM	2007
Biomedical Engineering Merit Award	2000
Dean's Fellowship	1995 – 1998
Leonardo Da Vinci Award	1995
Summa Cum Laude	1995
Phi Beta Kappa	1993
Tau Beta Pi	1993
Golden Key National Honor Society	1992
Phi Eta Sigma Freshman Honor Society	1992
Delta Phi Alpha German Honor Society	1992
Dean's List with Distinction	1991 – 1995
Presidential Scholar	1991
National Merit Finalist	1991
Eagle Scout	1989

CONTINUING EDUCATION

ARC-CSI Crash Conference Las Vegas, Nevada	2010, 2013
ARAS360 Advanced 3D Computer Diagramming and Animation for Incident Reconstruction San Antonio, Texas	2011
Biomechanical Investigation of Human Injury Association for the Advancement of Automotive Medicine San Diego, California	2008
Biomechanics of Injury Association for the Advancement of Automotive Medicine Melbourne, Victoria, Australia	2007
Biomechanics of High-Impact Injury Association for the Advancement of Automotive Medicine and National Transportation Safety Board, Ashburn, Virginia	2007
Injury Biomechanics: Advanced Technologies and New Frontiers 5 th Annual Center for Injury Biomechanics Instructional Symposium Virginia Polytechnic and State University, Blacksburg, Virginia	2007
Automobile Safety and Injury Biomechanics 4 th Annual Center for Injury Biomechanics Instructional Symposium Virginia Polytechnic and State University, Blacksburg, Virginia	2005
Occupant and Vehicle Kinematics in Rollovers Society of Automotive Engineers Troy, Michigan	2004
The Basics of Crash Injury and Biomechanics Association for the Advancement of Automotive Medicine New Orleans, Louisiana	2003
Biomechanics of Impact Association for the Advancement of Automotive Medicine Tempe, Arizona	2002
Traffic Accident Reconstruction I & II Traffic Accident Investigation I Northwestern University Traffic Institute, Evanston, Illinois	2003 2002

PEER-REVIEWED JOURNAL PUBLICATIONS

Funk JR, Jadischke R, Bailey A, Crandall J, McCarthy J, Arbogast K, Myers B, “Laboratory Reconstructions of Concussive Helmet-to-Helmet Impacts in the National Football League,” *Annals of Biomedical Engineering*, 48(11):2652-2666, 2020.

Bailey AM, McMurry TL, Cormier JM, Funk JR, Crandall JR, Mack CD, Myers BS, Arbogast KB, “Comparison of Laboratory and On-Field Performance of American Football Helmets,” *Annals of Biomedical Engineering*, 48(11):2531-2541, 2020.

Bailey AM, Sanchez EJ, Park G, Gabler LF, Funk JR, Crandall JR, Wonnacott M, Withnall C, Myers BS, Arbogast KB, “Development and Evaluation of a Test Method for Assessing the Performance of American Football Helmets,” *Annals of Biomedical Engineering*, 48(11):2566-2579, 2020.

Bailey AM, Sherwood C, Funk JR, Crandall JR, Carter N, Beier S, Hessel D, Neale W, “Characterization of Concussive Events in Professional American Football using Videogrammetry,” *Annals of Biomedical Engineering*, 48(11):2678-2690, 2020.

Lessley DD, Kent RW, Cormier JM, Sherwood CP, Funk JR, Crandall JR, Myers BS, Arbogast KB, “Position-specific Circumstances of Concussions in the NFL: Toward the Development of Position-specific Helmets,” *Annals of Biomedical Engineering*, 48(11):2542-2554, 2020.

Reynier KA, Alshareef A, Sanchez EJ, Shedd DF, Walton SR, Erdman NK, Newman BT, Guidice S, Higgins MJ, Funk JR, Broshek DK, Druzgal TJ, Resch JE, Panzer MB, “The Effect of Muscle Activation on Head Kinematics During Non-Injurious Head Impacts in Human Subjects,” *Annals of Biomedical Engineering*, 48(12):2751-2762, 2020.

Kent R, Forman J, Bailey AM, Funk J, Sherwood C, Crandall J, Arbogast KB, Myers BS, “The biomechanics of concussive helmet-to-ground impacts in the National Football league,” *J Biomech*, 99:109551, 2020. doi: 10.1016/j.biomech.2019.109551.

Bailey A, Funk J, Lessley D, Sherwood C, Crandall J, Neale W, Rose N, “Validation of a Videogrammetry Technique for Analysing American Football Helmet Kinematics,” *Sports Biomechanics*, 19(5):678-700, 2020.

Joodaki H, Bailey A, Lessley D, Funk J, Sherwood C, Crandall J, “Relative Motion between the Helmet and Head in Football Impact Test,” *Journal of Biomechanical Engineering*, 2019. doi:10.1115/1.4043038.

Lessley D, Kent R, Funk J, Sherwood C, Cormier J, Crandall J, Arbogast K, Myers BS, “Video Analysis of Reported Concussion Events in the National Football League During the 2015-2016 and 2016-2017 Seasons,” *Am J Sports Med*, 46(14):3502-10, 2018.

Funk JR, Quesada RE, Miles AM, Crandall JR, “Inertial Properties of Football Helmets,” *Journal of Biomechanical Engineering*, 140:064501-1-7, 2018.

Sanchez EJ, Gabler LF, Good AB, Funk JR, Crandall JR, Panzer MB, “A reanalysis of football impact reconstructions for head kinematics and finite element modeling,” *Clinical Biomechanics* , pii: S0268-0033(18)30173-6, 2018.

Kim T, Funk JR, Bollapragada V, Ye X, Crandall J, “Evaluation of biofidelity and repeatability of THOR-Lx metric under axial impact loading,” *International Journal of Precision Engineering and Manufacturing*, 18(7):1027-1034, 2017.

Ye X, Funk J, Forbes A, Hurwitz S, Shaw G, Crandall J, Freeth R, Michetti C, Rudd R, Scarboro M, “Case Series Analysis of Hindfoot Injuries Sustained by Drivers in Frontal Motor Vehicle Crashes,” *Forensic Science International*, 254:18-25, 2015.

Funk JR, Watson RA, Cormier JM, Guzman H, Bonugli E, “Kinematics and Kinetics of Vigorous Head Shaking,” *Journal of Applied Biomechanics*, 31(3):170-175, 2015.

Funk J, Bonugli E, Guzman H, Freund M, “Comparison of Quasistatic Bumper Testing to Dynamic Full Vehicle Testing for Reconstructing Low Speed Collisions,” *SAE International Journal of Passenger Cars – Mechanical Systems*, 7(3), 2014, doi:10.4271/2014-01-0481.

Kim T, Shin J, Ye X, Crandall J, Knospe C, Funk J, “Evaluation of Methods for the Development of Representative Responses and Corridors from Biomechanical Data using Mechanical Models,” *International Journal of Crashworthiness*, 18(6):633-646, 2013.

Funk JR, Cormier JM, Bain CE, Wirth JL, Bonugli EB, Watson RA, “Factors Affecting Ejection Risk in Rollover Crashes,” *Annals of Advances in Automotive Medicine*, 56:203-211, 2012.

Funk JR, Cormier JC, Manoogian SJ, “Comparison of Risk Factors for Cervical Spine, Head, Serious, and Fatal Injury in Rollover Crashes,” *Accident Analysis and Prevention*, 45:67-74, 2012.

Funk JR, Rowson S, Daniel RW, Duma SM, “Validation of Concussion Risk Curves for Collegiate Football Players Derived from HITS Data,” *Annals of Biomedical Engineering*, 40(1):79-89, 2012.

Funk JR, “Ankle Injury Mechanisms: Lessons Learned from Cadaveric Studies,” *Clinical Anatomy*, 24:350-361, 2011.

Funk JR, Cormier JM, Bain CE, Guzman H, Bonugli E, Manoogian SJ, “Head and Neck Loading in Everyday and Vigorous Activities,” *Annals of Biomedical Engineering*, 39(2):766-776, 2011.

Scott W, Bain C, Manoogian S, Cormier J, Funk J, “Simulation Model for Low-Speed Bumper-to-Bumper Crashes,” *SAE International Journal of Passenger Cars - Mechanical Systems*, 3(1):21-36, 2010.

Funk JR, Beauchamp G, Rose NA, Fenton SJ, Pierce J, “Occupant Ejection Trajectories in Rollover Crashes: Full-Scale Testing and Real World Cases,” *SAE International Journal of Passenger Cars - Mechanical Systems*, 1(1):43-54, 2008.

Funk JR, Cormier JM, Gabler HC, “Effect of Delta-V Errors in NASS on Frontal Crash Risk Calculations,” *Annals of Advances in Automotive Medicine*, 52: 155 – 164, 2008.

Funk JR, Luepke PA, “Trajectory Model of Occupants Ejected in Rollover Crashes,” *SAE Transactions – Journal of Materials and Manufacturing*, Paper 2007-01-0742, 2007.

Untaroiu C, Kerrigan J, Kam C, Crandall J, Yamazaki K, Fukuyama K, Kamiji K, Yasuki T, Funk J, “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*, Paper 2007-22-0018, 51: 433 – 466, 2007.

Funk JR, Rudd RW, Kerrigan JR, Crandall JR, “The Line of Action in the Tibia during Axial Compression of the Leg,” *Journal of Biomechanics*, 40: 2277 – 2282, 2007.

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

Funk JR, Srinivasan SCM, Crandall JR, “Snowboarder’s Talus Fractures Experimentally Produced by Eversion and Dorsiflexion,” *American Journal of Sports Medicine*, 31(6): 921 – 928, 2003.

Kent R, Funk J, Crandall J, “How Future Trends in Societal Aging, Airbag Availability, Belt Use, and Fleet Composition Will Affect Serious Injury Risk in the U.S.,” *Traffic Injury Prevention*, 4(1): 1 – 9, 2003.

Funk JR, Rudd RW, Srinivasan SCM, King RJ, Crandall JR, Petit P, “Methodology for Measuring Tibial and Fibular Loads in a Cadaver,” *SAE Transactions – Journal of Passenger Cars: Mechanical Systems*, Paper 2002-01-0682, pp. 960 – 969, 2002.

Funk JR, Srinivasan SCM, Crandall JR, Khaewpong N, Eppinger R, Jaffredo AS, Potier P, Petit P, “The Effects of Axial Preload and Dorsiflexion on the Tolerance of the Ankle/Subtalar Joint to Dynamic Inversion and Eversion,” *Stapp Car Crash Journal*, Paper 2002-22-0013, 46: 245 – 265, 2002.

Funk JR, Crandall JR, Tourret LJ, MacMahon CB, Bass CR, Patrie JT, Khaewpong N, Eppinger RH, “The Axial Injury Tolerance of the Human Foot/Ankle Complex and the Effect of Achilles Tension,” *ASME Journal of Biomechanical Engineering*, 124(6): 1 – 8, 2002.

Funk JR, Tourret LJ, George SE, Crandall JR, “The Role of Axial Loading in Malleolar Fractures,” *SAE Transactions – Journal of Passenger Cars: Mechanical Systems*, Paper 2000-01-0155, 109(6): 212 – 223, 2000.

Funk JR, Hall GW, Crandall JR, Pilkey WD, “Linear and Quasi-Linear Viscoelastic Characterization of Ankle Ligaments,” *ASME Journal of Biomechanical Engineering*, 122(1): 15 – 22, 2000.

Funk JR, Hale JE, Carmines D, Gooch HL, Hurwitz SR, “Biomechanical Evaluation of Early Fracture Healing in Normal and Diabetic Rats,” *Journal of Orthopaedic Research*, 18(1): 126 – 132, 2000.

PEER-REVIEWED CONFERENCE PUBLICATIONS

Cormier J, Funk J, Beauchamp G, Pentecost D, “Pycrash: An Open-Source Tool for Accident Reconstruction,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2021-01-0896, 2021.

Asay AF, Carter J, Funk J, Stephens G, “Rollover Testing of a Sport Utility Vehicle (SUV) with an Inertial Measurement Unit (IMU),” *Society of Automotive Engineers (SAE) World Congress*, Paper 2015-01-1475, 2015.

Funk J, Bonugli E, Guzman H, Freund M, “Comparison of Quasistatic Bumper Testing to Dynamic Full Vehicle Testing for Reconstructing Low Speed Collisions,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2014-01-0481, 2014.

Bonugli E, Wirth J, Funk J, Cormier J, Guzman H, Gwin L, Freund M, “Characterization of Force Deflection Properties for Vehicular Bumper-to-Bumper Interactions,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2014-01-1991, 2014.

Foster JB, Kerrigan JR, Nightingale RW, Funk JR, Cormier JM, Bose D, Sochor MR, Ridella SA, Ash JA, Crandall JR, “Analysis of Cervical Spine Injuries and Mechanisms for CIREN Rollover Crashes,” *Proceedings of the International Research Conference on the Biomechanics of Impact (IRCOBI)*, IRC-12-15-rev, pp. 61 – 75, 2012.

Funk J, Wirth J, Bonugli E, Watson R, Asay A, “An Integrated Model of Rolling and Sliding in Rollover Crashes,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2012-01-0605, 2012.

Funk JR, Rudd RW, King RJ, Srinivasan SC, Bailey AM, Crandall JR, “Injuries Caused by Brake Pedal Loading of the Midfoot,” *Proceedings of the 45th Annual Rocky Mountain Bioengineering Symposium*, in *Biomedical Sciences Instrumentation*, 48:134-140, 2012.

Funk JR, Watson RA, Cormier JM, Bain CE, Guzman H, Bonugli E, “Neck Muscle Strength Measured During Vigorous Head Shaking,” *Proceedings of the ASME 2011 Summer Bioengineering Conference*, SBC2011-53193, 2011.

Kerrigan JR, Jordan A, Parent D, Zhang Q, Funk J, Dennis NJ, Overby B, Bolton J, Crandall J, “Design of a Dynamic Rollover Test System,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2011-01-1116, 2011.

Scott WR, Bain C, Manoogian SJ, Cormier JM, Funk JR, “Simulation Model for Low-Speed Bumper-to-Bumper Crashes,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2010-01-0051, 2010.

Manoogian SJ, Funk JR, Cormier JM, Bain CE, Guzman H, Bonugli E, “Evaluation of Thoracic and Lumbar Accelerations of Volunteers in Vertical and Horizontal Loading Scenarios,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2010-01-0146, 2010.

Funk JR, Cormier JM, Bain CE, Guzman H, Bonugli E, “Validation and Application of a Methodology to Calculate Head Accelerations and Neck Loading in Soccer Ball Impacts,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2009-01-0251, 2009.

Funk JR, Cormier JM, Bain CE, Guzman H, Bonugli E, “Relationship Between Linear and Rotational Head Acceleration in Various Activities,” *Proceedings of the 45th Annual Rocky Mountain Bioengineering Symposium*, in *Biomedical Sciences Instrumentation*, 44: 207 – 212, 2008.

Funk JR, Beauchamp G, Rose NA, Fenton SJ, Pierce J, “Occupant Ejection Trajectories in Rollover Crashes: Full-Scale Testing and Real World Cases,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2008-01-0166, 2008.

Funk JR, Duma SM, Manoogian SJ, Rowson S, “Biomechanical Risk Estimates for Mild Traumatic Brain Injury,” *Annual Proceedings of the Association for the Advancement of Automotive Medicine (AAAM)*, pp. 343 – 361, 2007.

Funk JR, Cormier JM, Bain CE, Guzman H, Bonugli E, “An Evaluation of Various Neck Injury Criteria in Vigorous Activities,” *Proceedings of the International Research Conference on the Biomechanics of Impact (IRCOBI)*, pp. 233 – 248, 2007.

Funk JR, Luepke PA, “Trajectory Model of Occupants Ejected in Rollover Crashes,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2007-01-0742, 2007.

Funk JR, Duma SM, “Biomechanical Risk Estimates for Concussion in Collegiate Football Players,” *Proceedings of the 30th Annual Meeting of the American Society of Biomechanics (ASB)*, 2006.

Funk JR, Crandall JR, “Calculation of Tibial Loading Using Strain Gauges,” *Proceedings of the 43rd Annual Rocky Mountain Bioengineering Symposium*, in *Biomedical Sciences Instrumentation*, 42: 160 – 165, 2006.

Funk JR, Kerrigan JR, Crandall JR, “Dynamic Bending Tolerance of the Human Femur,” *Annual Proceedings of the Association for the Advancement of Automotive Medicine (AAAM)*, 48: 215 – 233, 2004.

Madeley NJ, Srinivasan CMS, Crandall JR, Hurwitz S, Funk JR, “Retrospective Analysis of Malleolar Fractures in an Impact Environment,” *Annual Proceedings of the Association for the Advancement of Automotive Medicine (AAAM)*, 48: 235 – 248, 2004.

Funk JR, Cormier JM, Bain CE, “Analytical Model for Investigating Low-Speed Sideswipe Collisions,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2004-01-1185, 2004.

Lessley D, Crandall JR, Shaw CG, Kent RW, Funk JR, “A Normalization Technique for Developing Corridors for Individual Subject Force-Deflection Responses,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2004-01-0288, 2004.

Kent RW, Funk JR, “Data Censoring and Parametric Distribution Assignment in the Development of Injury Risk Functions from Biomechanical Data,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2004-01-0317, 2004.

Funk JR, Rudd RW, Kerrigan JR, Crandall JR, “Analysis of Tibial Curvature, Fibular Loading, and the Tibia Index,” *Proceedings of the International Research Conference on the Biomechanics of Impact (IRCOBI)*, pp. 135-147, 2003.

McConnell WE, Guzman HM, Krenrich SW, Bomar JB, Harding RM, Raddin JH, Funk JR, Smith DA, “Human Kinematics During Non-Collinear Low Velocity Rear End Collisions,” *Annual Proceedings of the Association for the Advancement of Automotive Medicine (AAAM)*, 47: 467 – 492, 2003.

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

Kent R, Funk J, Crandall J, “U.S. Injury Trends Projected to 2012: The Influence of an Aging Population,” *Proceedings of the 46th Annual Conference for the Association for the Advancement of Automotive Medicine (AAAM)*, pp. 157-178, 2002.

Paskoff G, Lakner M, Funk J, Kerrigan J, Crandall J, “Effect of Thigh Gap on Femur Impact during Ejection of Large Aviators,” *Proceedings of the 40th Annual Safety and Flight Equipment (SAFE) Conference*, 2002.

Srinivasan SCM, Funk JR, Huang C, Crandall JR, “Lateral Process of Talus (Snowboarder’s) Fracture - Mechanism of Injury,” *European Society of Sports traumatology, Knee surgery, and Arthroscopy (ESSKA) Conference*, 2002.

Funk JR, Rudd RW, Srinivasan SCM, King RJ, Crandall JR, Petit P, “Methodology for Measuring Tibial and Fibular Loads in a Cadaver,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2002-01-0682, 2002.

Funk JR, Tourret LJ, Crandall JR, “Experimentally Produced Tibial Plateau Fractures,” *Proceedings of the International Research Conference on the Biomechanics of Impact (IRCOBI)*, pp. 171-182, 2000.

Funk JR, Tourret LJ, Crandall JR, “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 (ASB)*, pp. 239-240, 2000.

Funk JR, Tourret LJ, George SE, Crandall JR, “The Role of Axial Loading in Malleolar Fractures,” *Society of Automotive Engineers (SAE) World Congress*, Paper 2000-01-0155, 2000.

Crandall JR, Funk JR, Rudd RW, Tourret LJ, “The Tibia Index: A Step in the Right Direction,” *Proceedings of the Toyota International Symposium on Human Life Support Biomechanics*, 1999.

Funk JR, Hall GW, Crandall JR, Pilkey WD, “Quasi-Linear Viscoelasticity of Ankle Ligaments,” *Proceedings of the 23rd Annual Meeting of the American Society of Biomechanics (ASB)*, pp. 174-175, 1999.

Duma SM, Crandall JR, Rudd RW, Funk JR, Pilkey WD, “Small Female Head and Neck Interaction With a Deploying Side Air Bag,” *Proceedings of the International Research Conference on the Biomechanics of Impact (IRCOBI)*, pp. 191-200, 1999.

Funk JR, Hale JE, Carmines D, Gooch HL, Hurwitz SR, “Biomechanical Evaluation of Fracture Healing in Normal and Diabetic Rats,” *Proceedings of the 21st Annual Meeting of the American Society of Biomechanics (ASB)*, pp. 103-104, 1997.

Gooch HL, Hurwitz SR, Funk J, Hale JE, Carmines D, Thakur RK, Anderson P, Balian G, “Alteration of cartilage expression in fracture healing in experimental diabetes,” *Transactions of the Orthopaedic Research Society (ORS)*, 43: 605, 1997.

OTHER PUBLICATIONS

Brooks CN, Funk JR, Melhorn M, Talmage JB, Brigham CR, “Do Rear-End Collisions Cause Rotator Cuff Tears?” *AMA Guides Newsletter*, pp. 3-7, January/February 2014.

Funk JR, Cormier JM, Zaleski S, “Epidemiology of Cervical Spine Injuries in Rollover Crashes,” poster presentation at the *54th Annual Meeting of the Association for the Advancement of Automotive Medicine (AAAM)*, 2010.

Kerrigan JR, Ash JH, Bose D, Sochor MR, Crandall J, Funk JR, Cormier JM, Manoogian SJ, Ridella S, Scarboro M, Summers, S, “Thoracic Injury Mechanisms in Rollover Crashes,” *Proceedings of the 38th International Workshop on Human Subjects for Biomechanical Research*, 2010.

Funk JR, Duma SM, Manoogian SJ, Rowson S, “Development of a Concussion Risk Curve Using Biomechanical Data from Collegiate Football Players,” poster presentation at the *2010 Annual Fall Meeting of the Biomedical Engineering Society (BMES)*, 2010.

Funk JR, Duma SM, Manoogian SJ, Rowson S, “Development of Concussion Risk Curves Based on Head Impact Data from Collegiate Football Players,” *Proceedings of the 34th International Workshop on Human Subjects for Biomechanical Research*, 2006.

Funk JR, Crandall JR, “Estimation of Long Bone Bending Using Strain Gauges,” *Proceedings of the 32nd International Workshop on Human Subjects for Biomechanical Research*, 2004.

Lessley D, Crandall J, Kent R, Shaw G, Funk J, “A Normalization Technique for Developing Corridors for Individual Subject Force-Deflection Responses,” *Proceedings of the 31st International Workshop on Human Subjects for Biomechanical Research*, 2003.

Funk J, Raddin J, “Aerospace Medicine in a Non-traditional Setting: The Physiology and Safety of Amusement Rides: A Review of the Physics,” *74th Annual Meeting of the Aerospace Medical Association (AsMA)*, May, 2003.

Funk JR, Kerrigan J, Madeley NJ, Crandall JR, “Posterior-Anterior Bending Tolerance of the Femur in Large Males,” Final Report, Naval Air System Contract N00421-00-D-0675, May, 2002.

Funk JR, King R, Srinivasan SCM, Huang C, Crandall JR, “The Effect of Axial Load and Dorsiflexion on the Dynamic Inversion/Eversion Tolerance of the Ankle/Subtalar Joint,” Final Report to the National Highway Traffic Safety Administration (NHTSA), Contract No. DTNH22-01-H-07292, May, 2002.

Funk JR, Crandall JR, Tourret LJ, MacMahon CB, Bass CR, Khaewpong N, Eppinger RH, “The Effect of Active Muscle Tension on the Axial Injury Tolerance of the Human Foot/Ankle Complex,” Paper 237, *Proceedings of the 17th International Technical Conference on the Enhanced Safety of Vehicles (ESV)*, 2001.

Funk JR, Crandall JR, Tourret LJ, MacMahon CB, Bass CR, Patrie J, “Development of an Injury Criterion for Axial Loading of the Foot/Ankle Complex,” Final Report to the National Highway Traffic Safety Administration (NHTSA), Contract No. DTNH22-93-07028, October, 2001.

Funk JR, Martin PG, Crandall JR, “A Method for Approximating High Rate Viscoelastic Properties of Soft Tissues from Low Rate Tests,” poster presentation at the *2001 Annual Fall Meeting of the Biomedical Engineering Society (BMES)*, 2001.

Srinivasan SCM, Funk JR, Sherwood CP, Crandall JR, “Retrospective Assessment of Malleolar Fracture Mechanism in an Impact Environment,” poster presentation at the *45th Annual Meeting of the Association for the Advancement of Automotive Medicine (AAAM)* (cancelled), pp. 405-407, 2001.

Funk JR, Rudd RW, King RJ, Srinivasan SCM, Crandall JR, “Talar Neck Fractures and Other Injuries Caused by Brake Pedal Loading of the Midfoot and Forefoot,” Final Report to the National Highway Traffic Safety Administration (NHTSA), Contract No. DTNH22-96-H-07283, August, 2001.

Funk JR, Bass CR, Rudd R, Crandall JR, Tourret L, MacMahon C, “Dynamic Crack Detection in the Human Tibia Using Acoustic Emission,” *Proceedings of the 28th International Workshop on Biomechanics Research: Experimental and Computational*, 2000.

Funk JR, Tourret LJ, George SE, Crandall JR, “Axial Loading as an Injury Mechanism for Malleolar Fractures,” *Proceedings of the Second Conference on the Development of Technology in Medicine in Virginia*, p. C-1, 1999.

INVITED PRESENTATIONS

Funk J, “The Role of Helmets in Concussion Mitigation and Helmet Assessment in the Laboratory,” National Football League HeadHealthTech Symposium, Washington, DC, November 10, 2016.

Funk J, Bonugli E, Guzman H, Freund M, “Comparison of Quasistatic Bumper Testing to Dynamic Full Vehicle Testing for Reconstructing Low Speed Collisions,” Paper 2014-01-0481, *2014 Society of Automotive Engineers (SAE) World Congress*, Detroit, MI, April 9, 2014.

Funk JR, “Slips, Trips, and Falls,” American Academy of Disability Evaluating Physicians, *27th Annual Scientific Session with Advanced Clinical Skills*, San Antonio, TX, January 9, 2014.

Funk JR, “Biomechanics of Lower Extremity Injuries,” American Academy of Disability Evaluating Physicians, *27th Annual Scientific Session with Advanced Clinical Skills*, San Antonio, TX, January 9, 2014.

Funk JR, “Injury Causation: A Biomechanical Perspective,” American Academy of Orthopaedic Surgeons, *13th Annual AAOS Occupational Orthopaedics and Workers’ Compensation: A Multidisciplinary Perspective*, San Antonio, TX, November 3, 2012.

Funk JR, Cormier JM, Bain CE, Wirth JL, Bonugli EB, Watson RA, “Factors Affecting Ejection Risk in Rollover Crashes,” *56th Annual Meeting of the Association for the Advancement of Automotive Medicine (AAAM)*, Seattle, WA, October 16, 2012.

Funk J, Wirth J, Bonugli E, Watson R, Asay A, “An Integrated Model of Rolling and Sliding in Rollover Crashes,” Paper 2012-01-0605, *Society of Automotive Engineers (SAE) World Congress*, Detroit, MI, April 25, 2012.

Funk JR, Watson RA, Cormier JM, Bain CE, Guzman H, Bonugli E, “Neck Muscle Strength Measured During Vigorous Head Shaking,” *ASME 2011 Summer Bioengineering Conference*, SBC2011-53193, Farmington, PA, June 23, 2011.

Funk JR, “Head Injury Biomechanics,” *Biomechanics SLG Presentation*, Defense Research Institute, New Orleans, LA, April 6, 2011.

Funk JR, “Occupant Ejection in Rollover Crashes,” *Distinguished Lecturer Series*, Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, Blacksburg, VA, November 23, 2010.

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