RICHARD ALTON WATSON, PHD, MS, BSME

CURRICULUM VITAE

EDUCATION

PhD	Biomedical Engineering UT Health Science Center San Antonio/ University of Texas at San Antonio	2020
MS	Biomedical Engineering UT Health Science Center San Antonio/ University of Texas at San Antonio	2014
BS	Mechanical Engineering University of Texas at San Antonio	2005

POST GRADUATE STUDIES

LSDYNA Training, Livermore, CA.	2010
EDC Simulations Training Course, Northridge, CA	2007
Traffic Accident Reconstruction I & II Northwestern University Traffic Institute, Evanston, IL	2006
MADYMO Advanced Training Course, Detroit, MI	2006
MADYMO 6.1 Training Course, Detroit, MI	2005

PROFESSIONAL EXPERIENCE

Research Director Biodynamic Research Corporation San Antonio, TX	2021-Present
Technical Director Biodynamic Research Corporation San Antonio, TX	2010-2021

Engineer Biodynamic Research Corporation San Antonio, TX	2005-2010
Engineering Intern Biodynamic Research Corporation San Antonio, TX	2003-2005
Aircraft Mechanic Able Engineering Phoenix, AZ	1998-2000
Flight Engineer United States Army Ft. Campbell, KY	1994-1998

PROFESSIONAL REGISTRATIONS

Accredited Traffic Accident Reconstructionist (#2188) Accreditation Commission for Traffic Accident Reconstruction	2009-Present

PROFESSIONAL AFFILIATIONS

The International Society of Air Safety Investigators	2007-Present
Society of Automotive Engineers	2002-Present
Association for the Advancement of Automotive Medicine	2018-Present

ACADEMIC AFFILIATIONS

Guest Instructor, USAF Residency in Aerospace Medicine – San Antonio, Texas	2010-Present
Lecturer, Department of Biomedical Engineering University of Texas San Antonio, Texas	2019-Present

COURSES/SEMINARS

Bosch © CDR Tool Technician Training — February 2021
Institute of Police Technology and Management
University of North Florida
Jacksonville, Florida

Advanced Crash Reconstruction Utilizing — May 2019
Human Factors Research
Northwestern University Center for Public Safety
Evanston, Illinois

CTH Shock Physics Training — August 2012
Sandia National Labs
Albuquerque, New Mexico

ARAS360 — December 2011
Advanced 3D Computer Diagramming and
Animation for Incident Reconstruction
San Antonio, Texas

COURSES TAUGHT

BME 2203 Biomechanics I
University of Texas at San Antonio, College of Engineering, Department of Biomedical Engineering

BME 4293 Impact Biomechanics
University of Texas at San Antonio, College of Engineering, Department of Biomedical Engineering

BME 6893 Impact Biomechanics
University of Texas at San Antonio, College of Engineering, Department of Biomedical Engineering

PEER-REVIEWED JOURNAL PUBLICATIONS

Santos, E. M., Watson, R.A., Dixon, A.E., Whang, P.G. "A Comprehensive Review of Injury Causation Analysis Methodology for the Assessment of Workers' Compensation and Motor Vehicle Collision Injuries." *JAAOS-Journal of the American Academy of Orthopaedic Surgeons* 33.5 (2025): 212-220.

Watson, R.A., Bonugli, E., Greenston, M., Santos, E. et al., "Event Data Recorder Trigger Probability in the Crash Investigation Sampling System Database," SAE Technical Paper 2024-01-5027, 2024, doi:10.4271/2024-01-5027.

Gall, J., Martinez, J., Watson, R., & Gwin, L. P. (2024). Frontal Crash Testing of a Class V Lift Truck. *ASME Open Journal of Engineering*, *3*.

Martinez, J., Germane, A., Watson, R., & Gwin, L. (2022, October). Exit Time Differences Between Gated and Open Operator Compartments in Stand-Up End-Controlled Lift Trucks With an Examination of Injury Potential in Tip-Over and Off-Dock Incidents. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 86717, p. V009T14A005). American Society of Mechanical Engineers.

Watson R; Cormier J; Bonguli E; and Greenston M. *Comparison of Rear Impact Crash Reconstructions to Event Data Recorders in the Crash Investigation Sampling System Database. SAE Technical Paper.* SAE # 2022-01- 5069. September 2022.

Banks RD; Somers JT; Chelette TL; Wood RL & Watson RA. Human Response to acceleration. Davis JR; Stepanek J; Johnson R & Fogarty JA, eds: IN: *Fundamentals of Aerospace Medicine*, 5th edition. Philadelphia: Wolters Kluwer; 2022; pp. 350-378.

Bonugli, E., Watson, R., Freund, M., and Wirth, J., "Expanded Characterization of Force-Deflection Properties of Vehicle-to-Vehicle Systems," SAE Technical Paper 2017-01-1417, 2017, doi: 10.4271/2017-01-1417.

Van Arsdell, W., Weber, P., Stankewich, C., Larson, B. et al., "Load-Limiters Effect on Occupant Restraint System Performance," SAE Technical Paper 2016-01-1505, 2016, doi: 10.4271/2016-01-1505.

Watson R, Gray W, Sponsel WE, et al. Simulations of porcine eye exposure to primary blast insult. 2015; 4(4):8, doi:10.1167/tvst.4.4.8.

Funk JR; Watson RA; Cormier JM; Guzman H, and Bonugli E. "Kinematics and Kinetics of Vigorous Head Shaking." *Journal of Applied Biomechanics* 31.3 (2015): 170-175.

Sherwood D; Sponsel WE; Lund BJ; Gray W; Watson R; Groth SL; Thoe K; Glickman RD, and Reilly MA. Anatomical manifestations of primary blast ocular trauma observed in a postmortem porcine model. *Invest Ophthalmol Vis Sci*. 2014; In Press.

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

PEER-REVIEWED CONFERENCE PUBLICATIONS

Watson, R.A., Bonugli, E., and Greenston, M., "Frontal Crash Reconstruction Compared to Event Data Recorders in the Crash Investigation Sampling System Database and the Effect on Injury Risk Models,"SAE Technical Paper 2023-01-5043, 2023, doi:10.4271/2023-01-5043.

Funk JR, Wirth JL, Bonugli EB, Watson RA, and 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, Watson RA, Cormier JM, Bain CE, Guzman HM, and Bonugli EB. "Neck Muscle Strength Measured During Vigorous Head Shaking," *Proceedings of the ASME 2011 Summer Bioengineering Conference*, SBC2011-53193, 2011.

SCIENTIFIC PRESENTATIONS

Banks, R.D.; Watson, R.A. Analysis of Complex Crash Events in Air and Space, FAA CAMI Injury Workshop, Oklahoma City, OK, November 3-5, 2015.