



CURRICULUM VITAE
WADE A. BAKER

EDUCATION

- 2017 MS VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
VIRGINIA TECH – BLACKSBURG, VIRGINIA
Biomedical Engineering & Mechanics
- 2015 BS VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
VIRGINIA TECH – BLACKSBURG, VIRGINIA
Mechanical Engineering

PROFESSIONAL EXPERIENCE

- 2017 – DATE VECTOR SCIENTIFIC, INC.
Senior Engineer / Research Investigator
Accident Reconstruction and Injury Biomechanics
- 2015 – 2017 VIRGINIA TECH CENTER FOR INJURY BIOMECHANICS
Graduate Research Assistant
Collaborated with Army Research Laboratory and other project affiliates to develop a novel anthropomorphic test dummy (ATD) for use in under-body blast scenarios; developed an advanced computational model of the test dummy in LS-DYNA software for use in under-body blast scenarios; conducted biofidelity assessment of ATD responses to non-injurious human cadaveric experiments; worked with Global Human Body Model Consortium (GHBMC) model to simulate injurious impact scenarios
- 2014 – 2015 VIRGINIA TECH CENTER FOR INJURY BIOMECHANICS
Undergraduate Researcher
NHTSA sponsored project to develop improved brain injury criteria using segmented MRI and CT images of Gottingen minipig skull and brain; generated detailed anatomical FE model of brain structures for impact simulations and study of mTBI
- 2013 JOHN HOPKINS UNIVERSITY UROBOTICS LABORATORY
Assistant/Intern
Assisted with the development of MRI-safe robotic devices for image-guided intervention procedures and segmented images of three-dimensional organ models

CERTIFICATIONS

Accreditation Commission for Traffic Accident Reconstruction (ACTAR)
Fully Accredited Traffic Accident Reconstructionist #4298

FAA Remote Pilot
Small Unmanned Aircraft Systems #4472910

Bosch Crash Data Retrieval
CDR Technician Certification

Bosch Crash Data Retrieval
CDR Analyst and System Operator Certification

JOURNAL PUBLICATIONS AND CONFERENCE PROCEEDINGS

Clark JM, Baker WA, Wheeler JR, Wheeler JB. Rotational Head Acceleration in Rear-End Motor Vehicle Collisions and Associated Concussion Risk, Proceedings of the North American Congress on Biomechanics, Ottawa, Ontario, Canada, August 21-25, 2022.

Baker WA, Clark, JM, Wheeler JR, Wheeler, JB. Validation of Rotational Head Kinematics in IIHS Rear-end Impact Tests Determined by Video Analysis. 49th NHTSA Workshop on Human Subjects for Biomechanical Research, October 2021.

Baker WA, Chowdhury MR, Untaroiu CD. A finite element model of an anthropomorphic test device lower limb to assess risk of injuries during vertical accelerative loading. *Journal of Biomechanics* (81) 104-112, 2018.

Baker WA, Chowdhury MR, Untaroiu CD. Validation of a booted finite element model of the WIAMan ATD lower limb in component and whole-body vertical loading impacts with an assessment of the boot influence model on response. *Traffic Injury Prevention* (19.5) 549-554, 2018.

Baker WA, Untaroiu CD, Crawford DM, Chowdhury MR. Mechanical Characterization and Finite Element Implementation of the Soft Materials used in a Novel Anthropometric Test Device for Simulating Underbody Blast Loading. *Journal of the Mechanical Behavior of Biomedical Materials* (74) 358-364, 2017.

Baker WA, Untaroiu CD, Chowdhury MR. Development of a Finite Element Model of the WIAMan Lower Extremity to Investigate Under-body Blast Loads. LS-DYNA Annual User's Meeting, Detroit, MI, June 2016.

Baker WA, Untaroiu CD, Chowdhury MR. A Finite Element Model of a Dummy Lower Extremity for Investigating the Injury Risk of Vehicle Occupants during Underbody Explosion Events. Ohio State Injury Biomechanics Symposium, Columbus, OH, June 2016.

Baker WA, Untaroiu CD. Development of a Finite Element Model of the WIAMan Lower Extremity to Investigate Under-body Blast Loads. 15th Annual SBES Student Symposium, Winston Salem, NC, May 2016.

Baker WA, Fievisohn E, Vandevorde P, Untaroiu C, and Hardy W. Development of a Finite Element Model of the Gottingen Minipig Head to Investigate Complex Impact Scenarios (poster presentation). Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 2014.

ORAL PRESENTATIONS

Baker WA. Motor Vehicle Accidents: Early Evidence Preservation and Case Evaluation. Flood & Peterson 25th Annual Symposium, October 2022.

Baker WA, Storvik SG, Clark JM, Sreedhar A. Accident Reconstruction and Injury Biomechanics in Low-Speed Motor Vehicle Collisions. CLE Accredited Seminar in Colorado, 2022

Baker WA. Early Evidence Preservation, Accident Reconstruction, And Injury Biomechanics in Low-Speed Motor Vehicle Collisions. United Fire Group Spring Claims Conference, April 2022.

Wheeler JB, Weimer Z, Storvik SG, Baker WA, Clark JM. Accident Reconstruction and Injury Biomechanics in Low-Speed Motor Vehicle Collisions. CLE Accredited Seminars in Arizona, California, Colorado, 2021-22.

Baker WA, Clark, JM, Wheeler JR, Wheeler, JB. Validation of Rotational Head Kinematics in IIHS Rear-end Impact Tests Determined by Video Analysis. 49th NHTSA Workshop on Human Subjects for Biomechanical Research, October 2021.

Baker WA, Untaroiu CD, Chowdhury MR. Development of a Booted Dummy Lower Limb Finite Element Model. 16th Annual SBES Student Symposium, Blacksburg, VA, May 2017.

Baker WA, Untaroiu CD, Chowdhury MR. Development of a Finite Element Model of the WIAMan Lower Extremity to Investigate Under-body Blast Loads. LS-DYNA Annual User's Meeting, Detroit, MI, June 2016.

Baker WA, Untaroiu CD, Chowdhury MR. Development of A Finite Element Model of the WIAMan Lower Extremity with a Comparison to the Hybrid-III and PMHS test data. Ohio State Injury Biomechanics Symposium, Columbus, OH, June 2016.

Baker WA, Untaroiu CD, Boyle M, Magee T, Chowdhury MR, Coates R. Preliminary development of a finite element model of the Wiaman lower extremity, sensitivity analysis to impact loading conditions. Second Workshop on Numerical Analysis of Human and Surrogate Response to Accelerative Loading, Aberdeen, MD, January 2016.

CONFERENCES, SEMINARS, AND SHORT COURSES

- 2023 World Reconstruction Exposition (WREX) 2023, Orlando, FL
- 2022 50th NHTSA Workshop on Human Subjects for Biomechanical Research, Denver, CO
- 2022 Bosch Crash Data Retrieval (CDR) – Analyst Course, Westminster, CO
- 2022 17th Injury Biomechanics Symposium, Ohio State University
- 2021 49th NHTSA Workshop on Human Subjects for Biomechanical Research
- 2021 GHBM (Global Human Body Models Consortium) Users' Workshop
- 2021 SAE World Congress Digital Summit
- 2021 Traffic Crash Reconstruction, Institute of Police Technology and Management
- 2021 Advanced Traffic Crash Investigation, Institute of Police Technology and Management
- 2021 Child Safety: The New Decade and Beyond, Association for the Advancement of Automotive Medicine
- 2021 At-Scene Traffic Crash/Traffic Homicide Investigation, Institute of Police Technology and Management
- 2021 FAA Part 107 Full Course, RemotePilot101
- 2020 Association for the Advancement of Automotive Medicine (AAAM) 64th Annual Scientific Conference
- 2020 SAE World Congress Digital Summit
- 2020 Comparison of European and US Crash Testing Programmes, AAAM
- 2019 Capturing Crash Scene Details Best Practices, FARO Technologies
- 2019 Utilizing 3D Technology in the Courtroom, FARO Technologies
- 2018 Maximizing 3D Technologies for Forensic Investigations, FARO Technologies
- 2017 Bosch Crash Data Retrieval – CDR Technician Course, Golden, CO

MEMBERSHIPS AND ACTIVITIES

- 2023 – Present The National Association of Professional Accident Reconstructionists (NAPARS)
- 2023 – Present The Society of Accident Reconstructionists (SOAR)
- 2019 – Present Association for the Advancement of Automotive Medicine (AAAM)
- 2018 – Present Society of Automotive Engineers (SAE)
- 2017 ASME International Design Engineering Technical Conference - Computers and Information in Engineering Conference (IDETC-CIE), Peer Reviewer
- 2012 – 2015 Society of Automotive Engineers (SAE), Student Member
- 2012 Pi Tau Sigma Engineering Honor Society