



CURRICULUM VITAE
WADE A. BAKER

EDUCATION

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|------|----|-----------------------------------------------------------------------------------------------------------------------------------|
| 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

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| 2017 – DATE | VECTOR SCIENTIFIC, INC.
<i>Biomechanical Engineer</i> | <ul style="list-style-type: none">• Impact injury biomechanics, accident reconstruction, and computational modeling in automotive, sport/recreation, and industrial/occupational accidents |
| 2015 – 2017 | VIRGINIA TECH CENTER FOR INJURY BIOMECHANICS
<i>Graduate Research Assistant</i> | <ul style="list-style-type: none">• Collaborated with Army Research Laboratory and other project affiliates to develop a novel anthropomorphic test device (ATD) for use in under-body blast scenarios• Developed an advanced computational model of the ATD for use in under-body blast scenarios• Performed FEA using LS-DYNA to inform the concurrent design process• Identified potential failure modes using stress analysis and presented potential solutions• Disseminated work in peer reviewed journals and podium presentations at several academic and professional conferences |

PROFESSIONAL EXPERIENCE CONTINUED

2014 – 2015 VIRGINIA TECH CENTER FOR INJURY BIOMECHANICS

Undergraduate Researcher

- Worked on NHTSA sponsored project to develop improved brain injury criteria
- Segmented CT and MRI images to build a CAD model of a minipig brain
- Developed a novel finite element brain model to study mild Traumatic Brain Injuries (mTBI)

2013 JOHN HOPKINS UROLOGY ROBOTICS LAB

Intern

- Designed a novel mold device to produce gelatinous organ models containing embedded targets
- Fabricated device concepts using rapid prototyping technology

PUBLICATIONS

Baker WA, Untaroiu C, 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 C, Chowdhury MR. 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 on Model Response. *Traffic Injury Prevention*, In Review.

Baker WA, Untaroiu C, Chowdhury MR. A Finite Element Model of an Anthropomorphic Test Device Lower Limb to Assess Risk of Injuries During Vertical Accelerative Loading. *Medical Engineering and Physics*, In Review.

ORAL PRESENTATIONS

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

Baker WA, Untaroiu C, 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

ORAL PRESENTATIONS CONTINUED

Baker WA, Untaroiu C, 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 C, 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

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

BOLT (Battery Operated Land Transport) Electric Motorcycle
Virginia Tech Undergraduate Design Team, 2013 – 2015
Data Acquisition Sub-Team Leader, 2014 – 2015

VT Motorsports Formula SAE
Virginia Tech Undergraduate Design Team, 2012 – 2013

