

# JARED RIFKIN

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University of Virginia, Center for Applied Biomechanics  
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## EDUCATION

- 2020 – present** *Ph.D., Department of Mechanical and Aerospace Engineering (GPA: 4.0)*  
University of Virginia, Center for Applied Biomechanics  
Expected Graduation Date: 2024
- 2016 – 2019** *B.S.E, M.S.E, Department of Bioengineering (GPA: 3.89, 3.91)*  
University of Pennsylvania
- 2015 – 2016** *B.E., Department of Biomedical Engineering (GPA: 4.000)*  
*(transferred)*  
Stony Brook University

## HONORS & AWARDS

- 2022 – present** University of Virginia: Raven Society Member
- 2022** National Neurotrauma Society: Trainee Travel Award
- 2022** University of Virginia: Engineering-in-Medicine Seed Grant
- 2021** University of Virginia: UVA Engineering is Beautiful Dean's Research Art Contest, 1st Place, Graduate Student Category
- 2021** National Science Foundation: Graduate Research Fellowship Program Honorable Mention
- 2019** University of Pennsylvania: Graduated *summa cum laude*
- 2016 – 2019** University of Pennsylvania: Dean's List
- 2015 – 2016** Stony Brook University: Dean's List
- 2015** Stony Brook University: Presidential Scholarship
- 2015** Stony Brook University: Honor's College

## RESEARCH ACTIVITIES

- 2023 – present** *Multiscale computational model of cerebrovascular injury*  
Modeling mechanical response of brain vasculature at multiple spatial resolutions from global to single vessel.
- 2022 – present** *Brain deformation characterization under dynamic loading*  
Recording *in situ* brain tissue response to linear and rotational loading.
- 2021 – present** *Neuro-endovascular surgery simulator*  
Developing computational finite element model for rapid simulation of catheters in neuro-endovascular surgery.
- 2021 – 2023** *Pediatric skull surgical screw characterization*  
Determining the strength of surgical screw integration in pediatric skull samples.
- 2022** *Differential brain network response to simulated lesion*  
Lesioning brain networks according to strain distributions from computationally simulated impacts.
- 2019 – 2022** *Brain network architecture typing*  
Identifying distinct patterns of structural connectivity networks and simulated neural dynamics within a population of brains.
- 2020 – 2021** *Risk function development of skin response to blunt impact*  
Characterizing skins response to blunt impact over a parametric sweep of impactor shape, size, and speed.

## WORK EXPERIENCE

- 2020 – present** *University of Virginia, Center for Applied Biomechanics*  
Position: Graduate Research Assistant  
Mentor: Matthew B. Panzer, Ph.D.
- 2019 – 2020** *University of Pennsylvania, Meaney Lab*  
Position: Research Specialist
- 2017 – 2019** *University of Pennsylvania, Department of Bioengineering*  
Position: Undergraduate Research Specialist  
Mentor: David F. Meaney, Ph.D.

## TEACHING & MENTORSHIP

- 2021 - present *University of Virginia, Mechanical and Aerospace Engineering Department*  
Position: Graduate Teaching Assistant  
Class: Finite Element Analysis, Professor: Matthew Panzer, Ph.D.  
Class: Constitutive Modeling of Biosystems, Professor: Jason Kerrigan, Ph.D.
- 2021 *University of Virginia, School of Engineering*  
Position: Engineering Graduate School Mentor
- 2019 - 2020 *University of Pennsylvania, Department of Bioengineering*  
Position: Teaching Assistant  
Class: Bioengineering Senior Design, Instructor: Seville Mannickarottu

## SERVICE & LEADERSHIP

- 2022 - present *University of Virginia, Mechanical and Aerospace Engineering Department*  
Position: Graduate Student Board Social Chair  
Position: Graduate Student Board Website Designer, Webmaster
- 2021 - present *University of Virginia, Center for Applied Biomechanics*  
Position: Lab Social Media Communications Manager

## PUBLICATIONS & PRESENTATIONS

### Journal Publications

Taotao Wu, **Jared A. Rifkin**, Adam C. Rayfield, Erin D. Anderson, Matthew B. Panzer, David F. Meaney. **Concussion Prone Scenarios: A Multi-Dimensional Exploration in Impact Directions, Brain Morphology, and Network Architectures Using Computational Models.** (2022). ABME

**Jared A. Rifkin**, Taotao Wu, Adam C. Rayfield, Erin D. Anderson, Matthew B. Panzer, David F. Meaney. **Brain architecture-based vulnerability to traumatic injury.** (2022). Frontiers in Bioengineering

Taotao Wu, **Jared A. Rifkin**, Adam Rayfield, Matthew B. Panzer, David F. Meaney. **An Interdisciplinary Computational Model for Predicting Traumatic Brain Injury: Linking Biomechanics and Functional Neural Networks.** (2022). NeuroImage

Daniel F. Shedd, Parker R. Berthelson, **Jared A. Rifkin**, Justin McMahon, J. Sebastian Giudice, Jason L. Forman, Matthew B. Panzer. **The Risk of Skin Injury Caused by High-Rate Blunt Impacts to the Human Thorax.** (2022). Hum Factors Mech Eng Def Saf

Parker R. Berthelson, Daniel F. Shedd, **Jared A. Rifkin**, Justin McMahon, J. Sebastian Giudice, Jason L. Forman, Matthew B. Panzer. **Evaluation of an In Situ Ovine Model as a Surrogate for Human Skin Injury Caused by High-Rate Blunt Impact.** (2022). Hum Factors Mech Eng Def Saf

David Gabrieli, Nick Vigilante, Rich Scheinfeld, **Jared A. Rifkin**, Samantha Schumm, Taotao Wu, Lee F. Gabler, Matthew B. Panzer, David F. Meaney. **A multibody model for predicting spatial distribution of human brain deformation following impact loading.** (2020). JBME

### Conference Publications

**Jared A. Rifkin**, Samantha L. Kirby, Kiersten N. Wark, Kristen A. Reynier, Jason L. Forman, Matthew B. Panzer. **Comparison of Metrics used to Predict Mid-Sized Male and Small-Sized Female Occupant Brain Injury in Automotive Collisions.** (2023). National Capital Area TBI Research Symposium, College Park, MD

Samantha L. Kirby, Kiersten N. Wark, **Jared A. Rifkin**, Ahmed Alshareef, Matthew B. Panzer. **Sensitivity Study of Postmortem Brain Tissue Deterioration Using Sonomicrometry.** (2023). National Capital Area TBI Research Symposium, College Park, MD

**Jared A. Rifkin**, Taotao Wu, Adam C. Rayfield, David F. Meaney, Matthew B. Panzer. **Brain architecture types experience differential response to structural lesions from simulated impacts.** (2022). National Neurotrauma Society Symposium, Atlanta, GA

Taotao Wu, Kevin D. Browne, Adam C. Rayfield, **Jared A. Rifkin**, D. Kacy Cullen, David Issadore, David F. Meaney. **Altered white matter structure in pig brain revealed by *ex vivo* diffusion MRI after closed-head traumatic brain injury.** (2022). National Neurotrauma Society Symposium, Atlanta, GA

Adam C. Rayfield, Taotao Wu, **Jared A. Rifkin**, Erin D. Anderson, David F. Meaney. **Disconnecting brain regions integral to structural paths from the hippocampus alters simulated functional connections for an *in silico* mouse brain network model.** (2022). National Neurotrauma Society Symposium, Atlanta, GA

### Artistic Publications

**Network Neuroscientist Jr.: Brain architecture-based vulnerability to traumatic injury.** Written and illustrated by **Jared A. Rifkin**. Self-published (2022).