Kimberly E. Balogh, MSBE

Biomechanical Engineer

Investigates and analyzes biomechanical and biomedical injuries, injury causation.

Injury Assessment: Applying physics, anatomy and physiology, assesses injuries involving:

- Traumatic brain injuries and skull fractures
- Neck, back and spinal cord injuries
- Orthopedic and neurologic injuries
- Vascular ruptures
- Abdominal injuries
- Heart, lungs, skin (including burns) and other organs
- Musculo-skeletal injuries including joints (i.e., shoulders, knees, ankles and elbows), soft tissues (i.e., rotator cuff, tendons and ligaments), and fracture patterns (torso, long bone, hand, foot or skull)

Cause Determination: Applying engineering principles to determine:

- The manner in which tissue failed: the type, direction and magnitude or size of the load that caused the injury
- If injury patterns are causally related or consistent with the hazardous condition or circumstances claimed
- Whether there was sufficient force in the right direction to cause an injury
- The presence of pre-existing conditions and how they affect the injury
- The who and/or what action contributed to the injuries
- What could have been done to prevent the injuries

Typical Personal Injury Cases Involve:

- Motor Vehicle Collisions
- Pedestrian Accidents
- Slips, trips and falls
- Occupational and workplace injuries
- Sports and recreational injuries
- Fights and assaults

PROFESSIONAL EXPERIENCE

Exigent Group Limited (2022 – Present)
Biomechanical Engineer
Work in a collaborative environment as a subject matter expert aimed at providing biomechanical and biomedical investigations, analysis, reports and testimony toward the resolution of civil and criminal litigation.

BiCoastal Forensics, LLC (2013, 2014 - Present)
Biomechanical Engineer Consultant
Provide technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving the biomechanical analysis of human injury, specializing in computational, impact injury and orthopedic biomechanics.

Robson Forensic, Inc. (2014)
Associate
Provided scientific and analytical evaluation of injuries to determine causation.

Collision and Injury Dynamics (2010 – 2013)
Biomechanical Engineer Consultant
Crash reconstruction and injury biomechanics research, analysis, and consulting.

University of Illinois at Chicago (2006 to 2008)
Research Engineer, Biomechanics Research Laboratory (2007 – 2008)
Researched and developed innovative solution to conceptualize finger biomechanics for clinical application using advanced computational modeling.
Research Engineer, Clinical Gait and Movement Analysis Laboratory (2006 – 2007)
Collaborated on projects focused on clinical intervention development for improvement of neuromuscular defense mechanisms against fall-related injuries.

Safe, Inc. (2005 – 2006)
Mechanical Engineer
Position in R & D, engineering and technology development based on Department of Defense Small Business Innovation Research awards primarily geared towards safety/survivability technology. A primary project included a shock-resistant mission module support system, energy absorbing and crashworthy seats for helicopters, and a lumbar load tolerance study. Assisted in redefining the recommended lumbar load tolerances for improving the crashworthiness of seating in naval helicopters.

Machine Solutions, Inc. (2003)
Mechanical Engineer Intern
Engineering internship in product development and testing of medical manufacturing machine products.

EDUCATION

Master of Science, Bioengineering, University of Illinois at Chicago
Bachelor of Science, Mechanical Engineering, Northern Arizona University

CONTINUING EDUCATION

AAAM 64th Annual Scientific Conference, 2020
AAAM 61st Annual Scientific Conference, 2017
Team USA Safe Sport Refresher Training, 2017
Team USA Safe Sport Training, 2015, 2017
CDC Heads Up Concussion Training, 2015, 2018
Human Gross Anatomy Course, Wexner Medical Center, Injury for Biomechanics Research Center, Ohio State University, Columbus, Ohio 2014
Injury Biomechanics Symposium, Ohio State University, Columbus, Ohio 2014
SAE – Driver Distraction from Electronic Devices: Insights and Implications Webinar, 2012
Society of Automotive Engineers 2012 World Congress, 2012
55th STAPP Car Crash Conference, 2011
MEA Forensic Engineers & Scientists – PC Crash Training Workshop, 2011

Certified XL Tribometrist Certification Program, EXCEL Tribometers, LLC, 2011
AAAM 54th Annual Scientific Conference, 2010
Society of Automotive Engineers, 2010 World Congress, 2010
Leica Geosystems – High-Definition Laser Scanning & Modeling Course, 2010
American Helicopter Society, 62nd Annual Forum Proceedings, 2006
International Society of Biomechanics Conference, 2005

INVITED LECTURES

"The Analysis of Injury Causation," *Ohio Association of Civil Trial Attorneys (OACTA), Dublin, OH, April 2014*
"Using Biomechanics to Understand the True Value of the Injuries, *360 Advocacy, Las Vegas, NV March 2014*

PROFESSIONAL MEMBERSHIPS and AFFILIATIONS

American Society of Testing and Materials, Member, (2011- 2013)
Society of Automotive Engineers, Member (2010 – Present)
Association for the Advancement of Automotive Medicine, Member, (2010-Present)
International Society of Biomechanics, Member, (2008 – Present)
2nd American Conference on Human Vibration, Special Events Coordinator, (2008)
2nd American Conference on Human Vibration, Session Co-Chairman, (2008

EXTRA-CURRICULAR ACTIVITIES

USA Judo Black Belt Rank (4th Degree)
Former USA Judo National/International Competitor (Elite)
USJI, USJF, USA Judo National Member
USA Judo Certified Coach (Level – National)
USJF, USA Judo Regional Referee Certification

PUBLICATIONS

Balogh, K.E.: Experimental Investigation and Modeling of the FDS/FDP Pulley System in Finger Pathology. Master's Thesis, University of Illinois at Chicago, Chicago, 2009.