



Allen Yu

PhD EIT

Engineering Associate

contact

✉ allen.yu@meaforensic.com

📞 949.273.5107

📍 Los Angeles

expertise

Injury Biomechanics

Dr. Allen Yu is an Engineering Associate in our California office. He investigates events including automobile collisions, industrial accidents, slips trips and falls, and sports injuries. By comparing the forces applied to the body during an incident to the mechanics of a diagnosed injury, he assesses injury causation. “My goal is to find the unbiased, science-based conclusions that our clients expect, and to communicate these conclusions in a way that ensures a clear understanding.”

Allen holds a Bachelor of Science and a PhD in Biomedical Engineering from Duke University. There, he focused on brain injury, and conducted research on a wide range of neurotrauma disciplines, including military biomechanics, sport-related concussions, aging and neurodegeneration, vehicle safety, and protective equipment. He wrote his PhD dissertation on blast-induced neurotrauma and cavitation, the formation of vapor-filled cavities, in cerebrospinal fluid. By helping to determine how brain injury occurs due to traumatic forces, and to identify precise damage mechanisms, Allen hopes that his research will contribute to injury prevention strategies.

The freedom given to MEA Forensic’s staff to investigate science questions is what lead Allen to join MEA Forensic’s team in 2020. “Research is a high priority here, he explains. This is extremely valuable to me as a scientist, as I think it is for our clients. Conducting and publishing research in peer-reviewed journals forces us to stay critical of our work and the work of others, and to be up-to-date on the latest advancements. This gives us a clear advantage over other forensic firms.”

His area of expertise might make Allen more aware than most of the limitations of the human body, but that doesn’t deter him from exploring these limits while rock climbing and hiking. In 2019, he hiked 250 miles – over 400 km – on the John Muir Trail, through the High Sierras, in a high snow year. As he explains: “I can appreciate how fragile, but also how resilient the human body is.”

education

Doctor of Philosophy, Biomedical / Medical Engineering, Duke University, 2019.

Bachelor of Science, Biomedical / Medical Engineering, Duke University, 2010.

professional status

Engineer in Training, State of California, June 2021, License #174011.

professional associations

National Neurotrauma Society, since 2013.

Biomedical Engineering Society, since 2012.

professional experience

MEA Forensic engineers & Scientists

Engineering Associate, January 2020 to present

Conducts accident reconstruction and biomechanical analyses of a variety of events including automobile collisions, industrial accidents, slip/trip and fall, and sports injuries. Performs assessments of loads applied to the body, injury mechanics, and the relationship between the applied loads and the injury.

Self-Employed Contractor

Consultant, January 2013 to January 2020

Work with clients to establish or improve their laboratory experimental methodology by analyzing the biomechanics of the desired injury model. Design and construct test fixtures for client use. Provide on-site assistance for experimental procedures, setup, and live animal testing.

BeMo Academic Consulting

Academic Consultant/Scientist, September 2019 to February 2020

Reviewed and critiqued application documents and provided feedback to help students improve their applications to medical and graduate schools. Conducted mock interview and provided feedback to improve interview performance.

awards

Neurotrauma Symposium Travel Grant, 2018

National Football League Engineering Symposium Student Grant, 2016

Duke BME Department Retreat – Poster award, 2014

Outstanding Graduate Teaching Assistant Award Honorable Mention, 2013, 2014

publications

Primary blast wave protection in combat helmet design: A historical comparison between present day and World War I

Significant Head Accelerations Can Influence Immediate Neurological Impairments in a Murine Model of Blast-Induced Traumatic Brain Injury

lectures & presentations

August 2018 – Neuroprotective Effect of an ApoE Mimetic Peptide in a Gyrencephalic Blast Animal Model, Military Health System

Research Symposium, Orlando, FL.

October 2016 – Investigation of Cavitation as a Mechanism of Traumatic Brain Injury. Biomedical Engineering Society Annual Meeting, Minneapolis, MN.

September 2014 – In vs. Out: Controversies in Shock Tube Blast Experiments. Personal Armour Systems Symposium. Cambridge, UK.

September 2013 – A Novel Mouse Model of Blast Brain Injury: Blast Conditions Seen in Theater. Biomedical Engineering Society Annual Meeting, Seattle, WA.

October 2012 – Mouse Lethality Risk and Intracranial Pressure During Exposure to Blast. Biomedical Engineering Society Annual Meeting, Atlanta, GA.
