Specialties
Practice Areas
Professional Experience
Military Experience
Formal Education
Continuing Education
Certifications
Patents
Associations & Memberships
Grants
Publications
White Papers

CURRICULUM VITAE OF

JOSEPH F. MOON

Evidence Solutions, Inc. • **ClientServices@EvidenceSolutions.com**

SPECIALTIES

Expert Witness in Human Factors, Accident Reconstruction, Biomechanics, and Product Safety and Development.

PRACTICE AREAS

- Biomechanics and human factors engineering
- Accident investigation & reconstruction
- CAD design and mechanical fabrication
- 3D laser scanning, motion capture, and drone imaging
- EMG/Accelerometer systems
- Metabolic measurement systems
- Advanced data analysis
- Protocol development and user experience testing
- Forensic scene analysis and injury mechanism evaluation
- VO2max testing, postural analysis, and movement science

PROFESSIONAL EXPERIENCE

Forensic Biomechanical Engineer **Sep 2026 – Present**
Evidence Solutions, Inc.
- Expert in forensic biomechanical engineering and accident reconstruction services to legal teams, including injury mechanism analysis and scene reconstructions.
- Authored comprehensive expert reports and presented findings in federal and local court testimony.
- Collaborate with attorneys to develop litigation strategies based on biomechanics and human factors evidence.

Forensic Biomechanical Engineer **Nov 2019 – Present**
Owner, Moon Forensic Consulting,
- Delivered expert forensic biomechanical engineering and accident reconstruction services to legal teams, including injury mechanism analysis and scene reconstructions.
- Utilized 3D laser scanning and drone imaging for precise reconstructions.
- Authored comprehensive expert reports and presented findings in federal and local court testimony.
- Collaborated with attorneys to develop litigation strategies based on biomechanics and human factors evidence.
- Applied CAD design and fabrication expertise to create testing rigs and models for biomechanical analysis.

Director of Sport & Human Research **Oct 2021 – Feb 2025**
Black Lab Sports,
- Led SBIR Phase I projects in collaboration with the DoD, managing budgets, study protocols, and technical reporting.
- Designed and implemented protocols for VO2max testing, postural assessments, and movement analysis.
- Conducted user experience (UX) validation studies for emerging sports technologies and fitness products.
- Specialized in human factors engineering, protocol development, and ergonomic research.
- Integrated motion tracking systems (Vicon, Qualisys) to enhance research precision.
- Collaborated with industry partners and stakeholders to advance human performance R&D solutions.

Not Retained

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PROFESSIONAL EXPERIENCE cont.

Forensic Biomechanical Reconstructionist **Jan 2019 – Feb 2020**
VA Forensics
- Completed over 100 biomechanical analysis cases and conducted 30+ vehicle and scene inspections.
- Reviewed medical records and supporting documentation to analyze injury mechanisms and accident dynamics.
- Authored expert opinions and reports utilized in litigation, with proven impact in case outcomes.
- Provided onsite accident investigations using advanced forensic tools and technologies.

Course Instructor **Feb 2023 – Feb 2024**
Weston Distance Learning
- Anatomy & Physiology

Course Instructor **Jan 2019 – May 2019**
University of Saint Katherine
- BIO 310: Anatomy & Physiology

Course Instructor **Jul 2018 – May 2019**
California State University San Marcos
- KINE 301: Motor Control & Learning Laboratory
- KINE 305: Movement Anatomy with Laboratory
- KINE 311: Movement Pedagogy with Laboratory

Biomechanical Research Engineer **Jul 2016 – May 2017**
Sony Electronics
- Collected, processed, and analyzed motion capture data to inform user experience design.
- Utilized motion tracking systems (Vicon, Qualisys) to develop kinematic models and joint rotational acceleration profiles.
- Contributed to the UXTC team by integrating research findings into intuitive and accessible design solutions.
- Conducted research impacting ergonomics and usability in consumer electronics.

Physical Therapy Aide **Jan 2016 – Feb 2017**
b Project
- Assisted physical therapists with supervising patient exercises and adherence to protocols.
- Managed daily schedules and facilitated seamless coordination between patients and therapists.
- Ensured clinic readiness and cleanliness to support efficient patient care.

Research Assistant **May 2014 – May 2016**
California State University San Marcos
- Designed and conducted quantitative research studies in biomechanics and human performance.
- Set up laboratory protocols, recruited participants, and performed data collection and analysis.
- Leveraged motion tracking systems (Vicon, Qualisys) to analyze human movement and kinematics.
- Collaborated with faculty on peer-reviewed publications and conference presentations.

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MILITARY EXPERIENCE

Security Watch Commander **Mar 2005 – Mar 2010**
United States Navy
- Ensured the overall safety of crew members and implemented security measures for the USS Ronald Reagan in both domestic and foreign conditions.
- Supervised pier control/access and provided security for foreign and domestic dignitaries.
- Developed and implemented standardized training curriculum's for security personnel, including advanced and basic security protocols.

FORMAL EDUCATION

Master of Science in Kinesiology (Biomechanics emphasis) May 2018
California State University San Marcos

- Thesis: Effects of Garment Compression on Lower-Extremity Motion, Muscle Activation, and Landing Forces During Simulated Surfing Movements.

Bachelor of Science in Kinesiology May 2016
California State University San Marcos

CONTINUING EDUCATION

- Accident Investigation and Reconstruction Specialists; Advanced Auto Pedestrian Collision Reconstruction (IV) May 28, 2021
- Institute of Police Technology and Management; Crash Data Retrieval Tool Technician Training(Online) February 15, 2019

CERTIFICATIONS

- FAA Part 107 Drone Pilot License
- Registered Emergency Medical Technician (NREMT, expired June 2012)

PATENTS

U.S. Patent No. 11,222,428 B2: Issued January 11, 2022
Determining Golf Swing Characteristics

ASSOCIATIONS & MEMBERSHIPS

- National Strength & Conditioning Association (NSCA)
- American College of Sports Medicine (ACSM)
- American Society of Biomechanics (ASB)
- Society of Automotive Engineers (SAE)
- California Association of Accident Reconstruction Specialists (CA2RS)
- Southwestern Association of Technical Accident Investigators

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GRANTS

SBIR Phase I Grant: A234-005 Holistic Health and Fitness Readiness Kit
U.S. Army Small Business Innovation Research Program

- Designed a proof-of-concept solution for full-scale prototype implementation to support H2Fprogramming.

PUBLICATIONS

Crocker, G.H., **Moon, J.F.,** Nessler, J.A., & Newcomer, S.C. (2018). Energetics of Swimming With Hand Paddles of Different Surface Areas. *Journal of Strength and Conditioning Research.*

LaLanne, C.L., Cannady, M.S., **Moon, J.F.,** et al. (2017). Characterization of Activity and Cardiovascular Responses During Surfing in Recreational Male Surfers. *Journal of Aging and Physical Activity.*

WHITE PAPERS

Moon, J., Clark, E. (2022). Physiological Differences in Recreational Athletes Performing Moderate and Maximal Exercise on a Climbing Ergometer Versus a Rowing Ergometer: A Feasibility, Acceptability, and Preliminary Efficacy Study. Department of Sports and Human Research, Black Lab Sports, Boulder, CO.

Moon, J. (2023). Effects of Barefoot-Style Shoes on Vertical Jump Performance and Biomechanics in Healthy Adults. Department of Sports and Human Research, Black Lab Sports, Boulder, CO.

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