JENNA MESISCA, BSBE

PROFESSIONAL BIOGRAPHICAL OUTLINE

BACKGROUND

Ms. Mesisca earned a Master of Science and Bachelor of Science in Biomedical Engineering and Mechanics from Virginia Polytechnic Institute and State University. At Virginia Polytechnic Institute and State University, her research focused on movement and loading differences between athletes who have suffered an anterior cruciate ligament tear with reconstruction (ACLR) and healthy athletes. This research looked at kinematic and kinetic differences during sport like movements with the goal of reducing the risk of secondary ACL injuries particularly in females. She also researched the effect of normalization choices on data results during hopping tasks of an ACL athlete population.

AREAS OF EXPERTISE

- Sports Biomechanics
- Injury Causation Biomechanics
- Human Injury Mechanisms and Tolerance Thresholds

EDUCATION

- Master of Science (M.S.) in Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, College of Engineering, 2023
- Bachelor of Science (B.S.) in Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, College of Engineering, 2022
    - Center for Enhancement of Engineering Diversity (CEED) Mentor Program, Society of Women Engineers (SWE) Member, Delta Delta Delta Sorority Philanthropy Committee
    - Achieved Deans List in Spring 2020, Fall 2020, Spring 2021, Fall 2021, and Spring 2022

PROFESSIONAL EXPERIENCE

June 2023 – Present | ARCCA, LLC | Coordinating Engineer

- Evaluates injury causation and mechanisms for injury using biomechanical analysis
- Performs and conducts research involving human volunteers and anthropometric test devices to understand human responses to an event, injury mechanism, and human tolerance
- Utilizes and reviews medical records, computer analysis, laboratory testing, and knowledge of human injury tolerance to determine whether a claimed injury is consistent with a specific set of actions or exposure to a specific incident environment

June 2023 – Present | Epic Sports Biomechanics, LLC | Consulting Technician

- Design and implement physical and sport specific skill assessment protocols focused on identifying movement quality, power, flexibility, mobility, and overall athleticisms
- Evaluate the biomechanics of an injury risk assessment test to determine an athlete's ability to successfully participate in their sport and implement training programs accordingly
- Utilize advanced biomechanical technologies such as motion capture systems, inertial measurement units, high-speed cameras, and pressure mats, to analyze skill-specific performance

Summer 2022 | Stryker Joint Replacement | Clinical Research Intern

- Analyzed clinical data outcomes and created visualization tools used for publication opportunities
- Author of abstract on complex case total knee arthroplasty chosen for ORS podium presentation
- Validated an advanced knee simulator model through protocol creation and data analysis to show reproducibility and repeatability for future innovation training
- Chosen member of Stryker Emerging Professionals (SEP) Intern Council

Jan 2022 – May 2023 | Virginia Tech | Teaching Assistant

- BME Global Societal Ethics and Problem Solving in BME
- Supported students in learning about engineering solutions in low-income countries
- Supervised computer lab class sessions and helped students troubleshoot various coding programs

Jan 2020 – May 2023 | Kevin P. Granata Biomechanics Lab at Virginia Tech | Research Assistant

- Master's thesis focused on ACL reconstruction and healthy control movement and loading differences
- Author of manuscript published in Clinical Biomechanics comparing normalization choices for ACL and control group asymmetries
- Utilize force-sensing shoe insoles and visual 3D video to analyze jump-landing kinematics to better understand limb differences following lower extremity injuries
- Track and modify new incoming data trials utilizing a series of computer software technology

August 2021 – May 2022 | Biofidelic Brain Model Project | Senior Design Capstone

- Created, tested, and analyzed a human brain model to better understand the effects of traumatic blast injuries in soldiers
- Developed project management skills and experienced real-world product development challenges

ACTIVITIES

Women's Club Lacrosse

Treasurer and Risk Management Officer (RMO) Sept 2020 – May 2022

RMO and Fundraising Co-Chair Sept 2018 – May 2020

- Representative leader in the event of a medical emergency to ensure player safety is adhered to through monthly meetings and randomized equipment checks
- Managed operating budget including travel expenses and member dues while spearheading t-shirt sales and youth clinic fundraisers, leading to a 30% increase in team profits

BEAM Ambassador Program

Biomedical Engineering and Mechanics Student Ambassador Sept 2019-May 2022

- Acted as a liaison between the BEAM department and potential students to educate on opportunities available within the major

PROFESSIONAL SKILLS

- Visual3D
- Cortex
- Power BI
- Microsoft Office
- MATLAB
- SolidWorks
- Technical Writing
- QTM Systems
- Python
- R Studio