

Personal Information

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Summary

I am a mechanical engineer with over four years of experience in biomechanics research. Specifically, I am interested in understanding the mechanisms of human locomotion and the function of healthy muscles in the musculoskeletal system. My research interests also extend to sport and injury biomechanics.

Research Activity

GRASL research project, Mayo Clinic, October 2019 to present.

This study aims to quantify the active and passive mechanical properties of the human gracilis muscle by collecting *in vivo* data intraoperatively. Responsibilities include recruiting potential patients, designing and simulating engineering solutions for experimental implementation, calibration of research equipment, maintenance and troubleshooting of research devices, developing custom research software, modifying the intraoperative experimental protocol, collecting and analyzing experimental data, communicate findings to all stakeholders via reports and presentations and publication of peer-reviewed manuscripts in collaboration with other members of a research team.

Technical skills

MATLAB, LabVIEW, Python, OpenSim, Vicon nexus, Fusion360, SOLIDWORKS, Adobe photoshop, Adobe after effects and Adobe premiere.

Present Position

Research Fellow, Department of Orthopedic Surgery, Mayo Clinic, Rochester, MN.

Education

Ph.D. Biomechanics Research

2012-2016

Imperial College London, South Kensington, London, England.

Research topic: "Musculoskeletal modelling of the shoulder during cricket bowling"

M.Sc. Advanced Mechanical Engineering

2010-2011

Imperial College London, South Kensington, London, England.

Research component: "Testing the Torsional Stability of Artificial Knee Joints"

B.Sc. Mechanical and Manufacturing Engineering

2006-2009

University of the West Indies, St. Augustine, Trinidad.

Thesis: "Construction of a Contact Pressure Sensor"

Honors/Awards

Scholarship for outstanding achievement

2010-2016

Awarding body: Trinidad & Tobago government.

Dean's Honor Roll

University of the West Indies, Trinidad.

2009

Teaching activities

University of Trinidad and Tobago
O'Meara campus, Trinidad.

2017-2018

Assisted with teaching the following courses: Medical physics for Biomedical Equipment technicians (Diploma), Biomechanics (B.A.Sc.), Medical Physics (B.A.Sc.) and Equations for Biomedical Engineers (B.A.Sc.).

Presentations at National and International Meetings

1. Persad LS, Binder-Markey BI, Shin AY, Lieber RL, Kaufman KR. Measuring and modeling in vivo human gracilis passive force. (2022, August 21-25). In: Proceedings of the North American Congress on Biomechanics.
2. Persad LS, Binder-Markey BI, Shin AY, Lieber RL, Kaufman KR. Measuring and modelling in vivo human gracilis passive force-length property. (2021, July 25-29). In: Proceedings of the 28th congress of the International Society of Biomechanics.
3. Persad LS, Binder-Markey BI, Shin AY, Kaufman KR, Lieber RL. Sarcomere strain rather than whole muscle strain predicts passive muscle tension. (2021, August 10-13). In: Proceedings of the 45th meeting of the American Society of Biomechanics.
4. Persad LS, Ates F, Shin AY, Liber RL, & Kaufman KR. In Vivo measurement of gracilis muscle-tendon characteristics. (2020, August 4-7). In: Proceedings of the 44th meeting of the American Society of Biomechanics.
5. Eftaxiopoulou T, Persad LS, & Bull AM. Dynamic tracking of the scapula during slow circumduction. (2014, July 6-11). In: Proceedings of the 7th World Congress of Biomechanics, Boston.

Publications

1. **Persad LS**, Ates F, Evertz LQ, Litchy WJ, Lieber RL, Kaufman KR, Shin AY. Procedures for obtaining Muscle Physiology Parameters during a Gracilis Free-Functioning Muscle Transfer in Adult Patients with Brachial Plexus Injury. Sci. Rep. (in press).
2. **Persad LS**, Binder-Markey BI, Shin AY, Kaufman KR, Lieber RL. In vivo human gracilis whole-muscle passive stress-sarcomere strain relationship. J Exp Biol. 2021 Sep 1;224(17): jeb242722. doi: 10.1242/jeb.242722.
3. **Persad LS**, Ates F, Shin AY, Lieber RL, Kaufman KR. Measuring and modeling in vivo human gracilis muscle-tendon unit length. J Biomech. 2021 Aug 26;125:110592. doi: 10.1016/j.jbiomech.2021.110592.
4. Eftaxiopoulou T, **Persad L**, Bull AM. Assessment of performance parameters of a series of five 'historical' cricket bat designs. Proc. Inst. Mech. Eng. P: J. Sports Eng. Technol. 2017;231(1):57-62. doi:10.1177/1754337116638970.

Volunteer work/Interests

- Former vice President and currently a Hindu priest of a non-profit Hindu organization- SWAHA International (<http://www.swahainternational.org/>).
- Former member of Imperial College London Men's 1st cricket team in the British Universities & Colleges Sports league for 3 years (2011-2014).
- Former member of Spartan Cricket Club in Senior Division East Zone, Trinidad (2015-2019).