



Candidate for At-Large Member



Michael Samaan, PhD

University of Kentucky

I am an Associate Professor in the Dept. of Kinesiology & Health Promotion at the University of Kentucky. I served in the Presidential line for the SEACSM BIG from 2022 - 2025 and helped to establish industry-based sponsorships to support BIG student abstract awards. I also review abstracts and student awards for the SEACSM meetings. I have also moderated biomechanics-related podium sessions at the SEACSM meetings. I also serve as a National ACSM BIG co-chair (2025–2029). As a member at large for SEACSM, I will strive to expand my efforts in developing ways to support the SEACSM and to provide input and assistance in achieving the SEACSM Strategic Plan. I will also assist in finding ways to further integrate our regional chapter with the National ACSM.

MICHAEL A. SAMAAAN

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Lexington, KY 40506

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EDUCATION

Postdoc, Musculoskeletal Imaging, 08/2014 – 08/2018

University of California – San Francisco

Mentors: Richard Souza, PT, PhD/Sharmila Majumdar, PhD

Ph.D. Mechanical and Aerospace Engineering, 08/2014

Old Dominion University

Advisors: Stacie Ringleb, PhD/Sebastian Bawab, PhD

M.S. Biomedical Engineering, 12/2009

University of Texas at San Antonio

Advisor: Dawnlee Roberson, PhD

B.S. Biomedical Engineering (Minor: Mathematics), 05/2008

Rutgers University

POSITIONS

Associate Professor

07/2023 – Present

University of Kentucky

Department of Kinesiology & Health Promotion

Assistant Professor

08/2018 – 06/2023

University of Kentucky

Department of Kinesiology & Health Promotion

Faculty Affiliate

08/2018 - Present

Department of Biomedical Engineering

Department of Orthopaedic Surgery

Co-Director

08/2018 – Present

Biodynamics Laboratory

University of Kentucky

Post-Doctoral Fellow

08/2014 – 08/2018

Musculoskeletal Quantitative Imaging Research Group

Dept. of Radiology

University of California – San Francisco

Graduate Teaching Assistant

01/2010 – 05/2014

Dept. of Mechanical and Aerospace Engineering

Old Dominion University

RESEARCH FUNDING

Current Support

The Spastic Paraplegia Foundation, Inc.

01/31/2026 – 01/31/2028

Non-invasive Spinal Cord Neuromodulation to Enhance Motor Function in Individuals with Hereditary Spastic Paraplegia

Role: Co-I (PI: Sachdeva)

Amount: \$150,000

CDMRP, Peer Reviewed Orthopaedics Research Program, Women Health Research Award (HT-94252510406)

09/2025 – 08/2028

Rucking-Related Assessment of Muscular, Psychological and Biomechanical Contributors to Hip Pain and Cartilage Integrity in Females (RAMP)

Role: PI

Amount: \$1,442,152

National Institutes of Health (R01 AR077452)

5/2024 – 4/2026

Multi-Vendor Multi-Site Novel Accelerated MRI Relaxometry

Role: Site PI

Amount: \$38,506

National Institutes of Health (K01 AG073698)

7/2022 – 6/2027

Quantifying the Mechanism and Impact of Hip Extensor muscle Dysfunction During Aerobic Exercise in Hip Osteoarthritis

Role: PI

Award: \$638,415

Arthritis Foundation

01/2020 – 12/2026

The Arthritis Foundation OA Virtual Center of Excellence Clinical Trial Network Site

Role: Co-I (PI: Stone)

Award: \$450,396

Completed Support

American Orthopaedic Society for Sports Medicine (PI: Stone)

2022 – 2025

Role of Immunologically Induced Senescent Cell Activity on the Progression of Posttraumatic OsteoArthritis

The Marfan Foundation

2021 – 2024

Hip Joint Function and Health in Patients with Marfan Syndrome

Arthritis Foundation

2022 – 2024

Inflammatory Phenotyping after Meniscus injury to Identify those at Increased Risk of Rapid Posttraumatic Osteoarthritis Progression and Drugs that can be Repurposed

University of Kentucky Center for Clinical and Translational Science

2022 – 2024

The Inflammatory, Muscle and Biomechanical Interplay of End-Stage Knee OA

Congressionally Directed Medical Research Program

2021 – 2022

Biomechanics and Gait Testing of ONYX Exoskeleton

Southeast Center for Agricultural Health and Injury Prevention

2020 – 2022

Michael Samaan CV

Multi-Factorial Assessment of Hip Joint Degeneration in Farmers

University of Kentucky KL2 Award 2019 – 2021
Hip Joint Bone and Cartilage Health and Mechanics in Patients with FAIS

University of Kentucky CCTS Early Career Award 2019 – 2021
Associations of Hip Joint Stresses with Bone and Cartilage Health in Patients with FAIS

NIH-NIAMS F32 (AR069458) 2016 – 2018
Longitudinal Assessment of the Effects of Hip Arthroscopy on Articular Cartilage Biochemistry through a Novel Quantitative MRI-Based Approach

PUBLICATIONS (* indicates student/mentee)

1. Sharp, A.G.*, Roper, J.A., Jacobs, M.V., Clasey, J.L., Mangino, A.A., Sheppard, M.B., **Samaan, M.A.** “Joint Work Adaptations in Individuals with Marfan Syndrome During Walking” Medicine & Science in Sports & Exercise **In Review**
2. Wong, J., Adams, B., Wilcox, B.J., Mangino, A.A., **Samaan, M.A.**, Jochimsen, K.N. “Current Physical Activity, Not Pre-Pain Activity, Associates with Pain Self-Efficacy and Hip Kinematics in Chronic Hip-Related Groin Pain: A Cross Sectional Study” Journal of Orthopaedic & Sports Physical Therapy **In Review**
3. Stanze, H.M.*, Jochimsen, K.N., Mangino, A.A., Fain, A.D., Duncan, S.T., Gaffney, B.M.M., Bawab, S.Y., **Samaan, M.A.** “Magnetic Resonance Imaging-Based Finite Element Model of the Hip Joint” Journal of the Mechanical Behavior of Biomedical Materials **In Review**
4. Alkhamis, Z.*, Sciascia, A, **Samaan, M.A.**, Heebner, N., Lockhart, W., Kibler, W.B., Uhl, T. “Assessing the Reliability of Scapular Kinematic using Inertial Measurement Units in Asymptomatic Subjects” Journal of Shoulder and Elbow Surgery: Reviews, Reports and Techniques **In Review**
5. Harrison K., Campos-Vargas, S.E., Peoples, B.M., Guzman, K.S., Redden, D.T., Samaan, M.A., Roper, J.A. “Neighborhood Deprivation Associated with Impaired Sit-to-Stand Performance in Older Adults: A Cross-Sectional Analysis with Clinical Implications” Healthcare **Accepted**
6. Peoples, B.M., Harrison, K.D., **Samaan, M.A.**, Mobley, C.B., Redden, D.T., Roper, J.A. “Knee Health is a Major Determinant of Mobility Across the Healthspan” Journal of Functional Morphology and Kinesiology **Accepted**
7. Pol, J.M.*, McLouth, C., Gaffney, B.M.M, Jacobs, M., Sheppard, M., **Samaan, M.A.** (2025) “People with Marfan Syndrome Utilize an Ankle Dominant Strategy to Perform the Sit-to-Stand Task” Journal of Applied Biomechanics **In Press**
8. Naylor, T.R.*, Jacobs, M.V., **Samaan, M.A.**, Murphy, L.C., Schneider, D.J., Murphy, M.O., Huang, H., Bauer, J.A., Clasey, J.L. “A Comprehensive Evaluation of Thigh Mineral-Free Lean Mass Measures Using Dual Energy X-ray Absorptiometry (DXA) in Young Children” Journal of Imaging **Accepted**
9. Rubio, J.E., Tong, J., Sundaramurthy, A., Pant, A., Nagaraja, S., Owen, M., Samaan, M., Noehren, B., Reifman, J. (2025) “Effect of Walking with an Active Ankle Exoskeleton on the Biomechanical Responses of the Lumbar Spine” Frontiers in Bioengineering and Biotechnology (Biomechanics) **Accepted**

10. Stanze, H.M.*, Wilcox, B.J., Mangino, A.A., **Samaan, M.A.**, Jochimsen, K.J. (2025) “Hip-Related Symptom Duration is Associated with Alterations in Hip Mechanics During a Single Leg Squat” Clinical Biomechanics **128**: 106630
11. Sharp, A.G.*, Jacobs, M.V., Mangino, A.A., Clasey, J.L., Sheppard, M.B., **Samaan, M.A.** (2025) “Alterations of the Hip Total Joint Moment Occur During Walking in Individuals with Marfan Syndrome” Clinical Biomechanics **127**: 106570.
12. Jacobs, M.V.*, Pol, J.M., McLouth, C., Clasey, J.L, Sheppard, M., **Samaan, M.A.** (2025) “Assessment of Hip Joint Mechanics During Walking in People with Marfan Syndrome” Gait and Posture **121**: 78 – 84.
13. Naylor, T.R.*, Jacobs, M.V., Elder, C.J., **Samaan, M.A.**, Clasey, J.L. (2025) “Reliability of Quadriceps and Hamstring Soft Tissue Measures Using Dual Energy X-ray Absorptiometry (DXA) Scans” Journal of Imaging **11**(5): 127.
14. Succi, P.J.* , Benitez, B., Kwak, M., Mitchinson, C.J., Butterfield, T.A, **Samaan, M.A.**, Clasey, J.L., Bergstrom, H.C. (2025) “Influence of Deception of Task Duration on the Sex-Specific Physiological Responses to RPE-Clamp Cycle Ergometry” European Journal of Applied Physiology **7**:1933 – 1947.
15. Naylor, T.R.*, Jacobs, M.V., Vogelaar, T.L., **Samaan, M.A.**, Clasey, J.L. (2024) “Peak Responses to Graded Exercise Protocols in Young Children” Exercise, Sport and Movement **3**(2): e00040.
16. Peoples, B.*, Renfrow, G., Bethea, D., Guzman, K.S., Harrison, K.D., Wilson, A.E., **Samaan, M.A.**, Roper, J. (2024) “Osteoarthritis and Neurological Disorder Diagnoses in Adults: A Meta-Analysis Examining Associations with Parkinson’s Disease, Multiple Sclerosis, and Alzheimer’s Disease” Cureus **16**(10): e71458
17. Jacobs, M.V.*, Jochimsen, K.N., Clasey, J.L., **Samaan, M.A.** (2025) “Exploratory Analysis of Gait Mechanics in Farmers” Journal of Occupational and Environmental Hygiene **22**(1): 1 – 7.
18. Nagaraja, S., Rubio, J.E., Tong, J., Sundaramurthy, A., Pant, A., Owen, M.K., **Samaan, M.A.**, Noehren, B., Reifman, J. (2025) “Effects of an Active Ankle Exoskeleton on the Walking Biomechanics of Healthy Men” Frontiers in Bioengineering and Biotechnology **13**: 1533001
19. Cochran, K.*, Steele, L., Fain, A.D., Gaffney, B.M.M., McLouth, C.J., Sheppard, M.B., **Samaan, M.A.** (2025) “Assessing Hip Joint-Related Structure and Patient Reported Outcomes in People with Marfan Syndrome” Skeletal Radiology **54**(3): 563 – 569.
20. Jochimsen, K.N., Kramer, E., Van Wyngaarden, J., Noehren, B., **Samaan, M.A.**, Duncan, S.T., Mattacola, C.G., Jacobs, C.A. (2024) “Preoperative temporal summation is associated with impaired recovery following hip arthroscopy for femoroacetabular impingement syndrome” Archives of Bone and Joint Surgery **12**(8): 580-586.
21. Ramirez, V.J.*, Bazrgari, B., Spencer, A., Gao, F., **Samaan, M.A.** (2024) “Influence of repetitions-to-failure deadlift on lumbo-pelvic coordination, with and without body armor” Journal of Strength and Conditioning Research. **38**(10): 1732 – 1738.
22. Adouni, M., Cherni, Y., Esrafilian, A., **Samaan, M.A.** (2024) “Editorial: Multi-Modal Approaches to Assess the Impact of Orthopaedic Disease on Lower Extremity Joint Function and Health” Frontiers in Sports and Active Living **6**: 1389519. <https://doi.org/10.3389/fspor.2024.1389519>

23. Ball, L.N.*, Jacobs, M.V., McLouth, C.J., Clasey, J., Francomano, C., Sheppard, M.B., **Samaan, M.A.** (2024) “Assessment of Gait Mechanics and Muscle Strength in Hypermobility Ehlers Danlos Syndrome” Clinical Biomechanics **113**: 106210
24. Kwak, M*, Succi, P.J., Benitez, B., Mitchinson, C., **Samaan, M.A., et al** (2024) “Force and neuromuscular responses during a handgrip hold to failure anchored to a moderate perceptual intensity in males” Journal of Musculoskeletal and Neuronal Interactions **24**(2): 107-119.
25. Kwak, M*, Succi, P.J., Benitez, B., **Samaan, M.A., et al** (2024) “Comparison of Force, Neuromuscular, and Metabolic Responses During Sustained, Isometric Handgrip Holds to Failure Anchored to Low and High Perceptual Intensities in Men” Journal of Strength and Conditioning Research **38**(8): 405 – 416.
26. Liao, T., Bird, A., **Samaan, M.A.**, Pedroia, V., *et al* (2023) “Persistent Underloading of Patellofemoral Joint following Hamstring Autograft ACL Reconstruction is Associated with Cartilage Health” Osteoarthritis & Cartilage **31**(9): 1265 – 1273.
27. Brightwell, B.D.*, Van Wyngaarden, J., **Samaan, M.A., et al** (2023) “Factors Associated with Long-Term Quadriceps Muscle Function After Surgical Fixation of Lower Extremity Fractures” Physical Therapy & Rehabilitation Journal **103**(10): pzad108
28. Brightwell, B.D.*, **Samaan, M.A.**, Johnson, D., Noehren, B., (2023) “Dynamic Knee Joint Stiffness during Bilateral Lower Extremity landing 6 Months after ACL Reconstruction” Knee **42**: 73 – 81.
29. Spencer, A.*, **Samaan, M.A.**, Noehren, B.W. (2023) “Monitoring Knee Contact Force with Force-Sensing Insoles” Sensors **23**(10): 4900.
30. Carpenter, R.S.*, **Samaan, M.A.**, Clasey, J.L., *et al.* (2022) “Association of Vastus Lateralis Diffusion Properties with *in vivo* Quadriceps Contractile Function in Premenopausal Women” Scandinavian Journal of Medicine and Science in Sports. **33**(3): 213 – 223.
31. **Samaan, M.A.**, Jochimsen, K. (2023) “Editorial for Age-related Changes in the Spatial Variation of Magnetic Susceptibility of Human Articular Cartilage” Journal of Magnetic Resonance Imaging Invited Editorial. **58**(1): 208 – 209.
32. Ramirez, V.J.*, Bazrgari, B., Gao, F., **Samaan, M.**, (2022) “Low Back biomechanics during repetitive deadlifts: A narrative review” IIEE Transactions on Occupational Ergonomics and Human Factors **10**(1): 34 – 46.
33. **Samaan, M.A.**, Pedroia, V., Tanaka, M., *et al* (2021) “Hip-Knee Joint Coordination Patterns are Associated with Patellofemoral Joint Cartilage Composition in Patients with Anterior Cruciate Ligament Reconstruction” Journal of Applied Biomechanics **38**(1): 20 – 28.
34. **Samaan, M.A.** (2020) “Editorial for Effectively Measuring Exercise-related Variations in T1ρ and T2 Relaxation Times of Healthy Articular Cartilage” Journal of Magnetic Resonance Imaging Invited Editorial **52**(6): 1765 – 1766.
35. Popovic, T.*, **Samaan, M.A.**, Link, T.M., *et al* (2020) “Patients with Symptomatic Hip Osteoarthritis have Altered Transverse Plane Kinematics during Stair Ambulation” Physical Medicine & Rehabilitation **13**(2): 128 – 136.

36. Shimizu, T.*, Markes, A., **Samaan, M.A.**, *et al* (2020) “Patients with Abnormal Limb Kinetics at Six Months After Anterior Cruciate Ligament Reconstruction Have an Increased Risk of Persistent Medial Meniscus Abnormality at Three Years” Orthopaedic Journal of Sports Medicine **8**(1): 1 – 9.
37. **Samaan, M.A.**, Grace, T., Zhang, A.L., *et al* (2020) “Short Term Outcomes of Hip Arthroscopy on Hip Joint Mechanics and Cartilage Health in Patients with Femoroacetabular Impingement Syndrome” Clinical Biomechanics **71**: 214 – 220.
38. Liao, TC, **Samaan, M.A.**, Popovic, T., *et al* (2019) “Abnormal Joint Loading during Gait in Persons with Hip Osteoarthritis is Associated with Symptoms and Cartilage Lesions” Journal of Orthopaedic and Sports Physical Therapy **49**(12): 917 – 924.
39. Shimizu, T.*, Cheng, Z., **Samaan, M.A.**, *et al* (2019) “Increases in Joint Laxity after Anterior Cruciate Ligament Reconstruction is Associated with Sagittal Biomechanical Asymmetry” Arthroscopy **35**(7): 2072 – 2079.
40. Mah, C., Sparks, A., **Samaan, M.A.**, *et al* (2019) “Sleep Restriction Impairs Maximal Jump Performance and Alters Lower Extremity Joint Coordination Variability in Elite Athletes” Journal of Sports Sciences **37**(17): 1981 – 1988.
41. **Samaan, M.A.**, Zhang, A.L., Popovic, T., *et al* (2019) “Hip Joint Muscle Forces during Gait in Patients with Femoroacetabular Impingement Syndrome are Associated with Patient Reported Outcomes and Cartilage Composition” Journal of Biomechanics **84**: 138 – 146.
42. Inamdar, G., Padoia, V., Rossi-Devries, J., **Samaan, M.A.**, *et al* (2019) “An MR Study of Longitudinal Variations in Proximal Femur 3D Morphological Shape and Associations with Cartilage Health in Hip Osteoarthritis” Journal of Orthopaedic Research **37**(1): 161 – 170.
43. Shimizu, T.*, **Samaan, M.A.**, Tanaka, M.S., *et al* (2019) “Abnormal biomechanics at six months are associated with cartilage degeneration at three years following anterior cruciate ligament reconstruction” Arthroscopy **35**(2): 511 – 520.
44. Neumann, J., Zhang, A.L., Schwaiger, B.J., **Samaan, M.A.**, *et al.* (2019) “Validation of Scoring Hip Osteoarthritis with MRI (SHOMRI) Scores using Hip Arthroscopy as a Standard Reference” European Radiology **29**(2): 578-587.
45. Bolcos, P.O., Mononen, M.E., Mohammadi, A., Ebrahimi, M., Tanaka, M.S., **Samaan, M.A.**, *et al.* (2018) “Comparison Between Kinetic and Kinetic-Kinematic Driven Knee Joint Finite Element Models” Scientific Reports **8**(1): 17351
46. Grace, T., Neumann, J., **Samaan, M.A.**, *et al.* (2018) “Using the Scoring Hip Osteoarthritis with Magnetic Resonance Imaging (SHOMRI) System for Assessment of Intra-articular Pathology in Femoroacetabular Impingement.” Journal of Orthopaedic Research **36**(11): 3064-3070.
47. Grace, T., **Samaan, M.A.**, Souza, R.B., *et al* (2018) “Correlation of Patient Symptoms with Labral and Articular Cartilage Damage in Femoroacetabular Impingement” Orthopaedic Journal of Sports Medicine **15**(6).
48. **Samaan, M.A.**, Ringleb, S.I., Bawab, S.Y., *et al* (2018) “Altered Lower Extremity Joint Mechanics During the Star Excursion Balance Test and Single Leg Hop after ACL-Reconstruction in a Collegiate Athlete” Computer Methods in Biomechanics and Biomedical Engineering **21**(4): 344-358

49. Rossi-deVries, J., Pedoia, V., **Samaan, M.A.**, *et al* (2018) “Using Multidimensional Topological Data Analysis to Identify Traits of Hip OA” Journal of Magnetic Resonance Imaging **48**(4): 1046-1058.
50. Adusumilli, G., Joseph, S., **Samaan, M.A.**, *et al* (2018) “Applicability and Validity of an iOS-Based Accelerometer App in Tracking Outcome Variables of the 30-second Chair Stand Test and Stair Climb Test” Journal of Medical Internet Research mHealth & uHealth **5**(10): e166.
51. **Samaan, M.A.**, Pedoia, V., Zhang, A.L., *et al.* (2018) “A Novel MR-based Method for Detection of Cartilage Delamination in Femoroacetabular Impingement Patients” Journal of Orthopaedic Research **36**(3): 971-978.
52. Pedoia, V., **Samaan, M.A.**, Inamdar, G.P., *et al* (2018) “Study of the Interactions Between Proximal Femur 3D Bone Shape, Cartilage Health and Biomechanics in Patients with Hip Osteoarthritis” Journal of Orthopaedic Research **36**(1): 330-341.
53. **Samaan, M.A.**, Facchetti, L., Pedoia, V., *et al* (2017) “Cyclops Lesions are Associated with Altered Gait Patterns and Medial Knee Joint Cartilage Degeneration at One Year after ACL-Reconstruction” Journal of Orthopaedic Research **35**(10): 2275-2281.
54. **Samaan, M.A.**, Schwaiger, B.J., Gallo, M.C., *et al* (2017) “Abnormal Joint Moment Distributions and Functional Performance During Sit-to-Stand in Femoroacetabular Impingement Patients” Physical Medicine & Rehabilitation **9**(6): 563-570.
55. **Samaan, M.A.**, Schwaiger, B.J., Gallo, M.C., *et al* (2017) “Sagittal Plane Joint Loading During Gait is Associated with Hip Joint Abnormalities in Femoroacetabular Impingement Patients” American Journal of Sports Medicine **45**(4): 810-818.
56. **Samaan, M.A.**, Zhang, A.L., Gallo, M.C., *et al* (2016) “Quantitative Magnetic Resonance Arthrography in Patients with Femoroacetabular Impingement” Journal of Magnetic Resonance Imaging **44**(6):1539-1545.
57. **Samaan, M.A.**, Weinhandl, J.T., Bawab, S.Y., *et al* (2016) “Determining Residual Reduction Algorithm Kinematic Tracking Weights For a Sidestep Cut via Numerical Optimization.” Computer Methods in Biomechanics and Biomedical Engineering **19**(16): 1721-1729.
58. **Samaan, M.A.**, Ringleb, S.I., Bawab, S.Y., *et al* (2016) “Anterior Cruciate Ligament (ACL) Loading in a Collegiate Athlete During Sidestep Cutting After ACL Reconstruction: A Case Study” The Knee **23**(4): 744-752.
59. Schwaiger, B.J., Gersing, A.S., Lee S., Nardo, L., **Samaan, M.A.**, *et al* (2016) “Longitudinal Assessment of MRI in Hip Osteoarthritis Using SHOMRI and Correlation with Clinical Progression.” Seminars in Arthritis and Rheumatism **45**(6): 648-655.
60. **Samaan, M.A.**, Weinhandl, J.T., Hans, S.A., *et al* (2016) “Predictive Neuromuscular Fatigue of the Lower Extremity Utilizing Computer Modeling.” Journal of Biomechanical Engineering. **138**(1): 011008.
61. **Samaan, M.A.**, Teng, H-L, Kumar, D., *et al* (2015) “Acetabular Cartilage Defects Cause Altered Hip and Knee Joint Coordination Variability During Gait.” Clinical Biomechanics. **30**(10): 1202 – 1209.

62. **Samaan, M.A.**, Greska, E.K., Hoch M.C. *et al.* (2015) “Dynamic Postural Control Two Years Following Anterior Cruciate Ligament Reconstruction in a Female Collegiate Soccer Player”. International Journal of Athletic Therapy and Training **20**(2): 24 – 29.
63. **Samaan, M.A.**, Hoch, M.C., Ringleb, S.I., *et al.* (2015) “Isolated Hamstrings Fatigue Alters Joint Coordination During a Cutting Maneuver”. Journal of Applied Biomechanics **31**(2): 102 – 110.
64. Choisne, J., Ringleb, S.I., **Samaan, M.A.**, *et al.* (2012) “Influence of Kinematic Analysis Methods on Detecting Ankle and Subtalar Joint Instability.” Journal of Biomechanics **45**(1): 46 – 52.

RESEARCH PRODUCTS

Residual Reduction Algorithm MATLAB Graphical User Interface (SimTK)	2017
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INVITED SEMINARS/LECTURES/PANELS

Invited Guest Speaker, Gluck Equine Research Center, University of Kentucky	2024
American Society of Biomechanics, Student Roundtable Discussion Host, Scholarships & Fellowships	2024
Invited Guest Speaker, School of Kinesiology, Auburn University	2024
Ignite, Insight & Innovation Series, UK College of Education	2024
“Dip Your Toes in Our Academic Water”, Southeast ACSM, Moderator	2023
Research Seminar, UK Board of Trustees	2022
Early Career Faculty Success, UK VPR Lunch & Learn Series, Speaker & Moderator	2022
KL2 Visiting Scholar Seminar, Indiana University Purdue University of Indianapolis	2021
American Society of Biomechanics, Near Peer Presentation	2021
UK College of Education, New Faculty Discussion Panel	2021
KL2 Visiting Scholar Seminar, The Ohio State University	2021
UK CCTS Spring Conference, Virtual Poster Mentor	2021
UK CCTS Spring Conference, Oral Session Moderator	2021
UK Research Resumption Panel, UK Vice President of Research	2021
Biomedical Engineering Seminar Series, UK Dept. of Biomedical Engineering	2020
Getting Your Grant Proposal Funded, UK College of Education	2019
Program in Advanced Musculoskeletal Imaging, Cleveland Clinic Foundation	2019
University of Kentucky Exercise Science Seminar Series	2018
UCSF Radiology Retreat	2018
Bay Area Biomedical Device Conference (San Jose State University)	2018
Use of MSK Imaging in Biomechanical Analyses (UCSF, MSBI240)	2017
Introduction to Radiography (UCSF, PT210)	2017
Introduction to Gait Biomechanics (UCSF, PT706)	2016
Radiological Imaging and Biomechanics (UCSF, PT210)	2016
Introduction to Radiography (UCSF, PT210)	2015
Clinical Applications of Musculoskeletal Modeling (UCSF, PT419)	2015
Kinesiology and Biomechanics (Santa Clara University, BIO103)	2015

TEACHING EXPERIENCE

Mathematical Computing in Exercise Science (KHP695)	2021 – Present
Biomechanics of Fundamental Movements (KHP615)	2020 – Present
Musculoskeletal Modeling in Human Movement (KHP781)	2019 – 2020
Biomechanics of Human Movement (KHP415)	2018 – Present
Radiology for Physical Therapists (PT 210)	2015 – 2018
Exploring Engineering Technology (ENGN 110)	2013 – 2014
Project Management II (MAE 435)	2012 – 2014
Solid Mechanics Laboratory (MAE 225)	2010 – 2014
Michael Samaan CV	8

AWARDS/HONORS

UK Center for Clinical and Translational Sciences Mentor Award	2024
Travel Award, NIH PURPOSE Conference	2024
Southeastern Conference Faculty Travel Award	2023
Excellent Undergraduate Research Mentor Award Nominee, University of Kentucky	2022
Research Scholars Program, UK Vice President for Research	2021
University of Kentucky Confucius Institute Virtual Speaker Funding Award	2020
Faculty Undergraduate Mentor of the Week, University of Kentucky	2019
KL2 Award, University of Kentucky Center for Clinical & Translational Sciences	2019
New Investigator Recognition Award (NIRA) Finalist, Orthopaedic Research Society	2019
U.S. Bone & Joint Initiative Young Investigator Initiative Program	2018
Orthopaedic Research Society Travel Grant, Force & Motion Foundation	2017
Ruth Kirschstein National Research Service Award (F32 Fellowship), NIH	2016
Outstanding Graduate Student Award, Old Dominion University	2014
OpenSim Workshop Travel Award	2013
Tiwari Endowed Graduate Scholarship, Old Dominion University	2013
Graduate Student Travel Award, Old Dominion University	2010
James Dickson Carr Scholarship, Rutgers University	2004

CERTIFICATES/PROFESSIONAL DEVELOPMENT

Mentor Training Program, UK Center for Clinical & Translational Science	2025
Team Science Training, University of Kentucky	2021
Scientific Leadership and Management	2016
Preparing Future Faculty	2013

DEPARTMENTAL AND UNIVERSITY SERVICE

UK Dept. of Physical Therapy, Faculty Search Committee	2025
UK, Collaborative Grants Services Working Group (Post-Award)	2025
UK, CCTS Spring Conference Poster Mentor	2024
UK, Lyman T. Johnson Review Committee	2024 – Present
UK Dept. of Kinesiology & Health Promotion, Faculty Performance Evaluation Committee	2023 – 2026
UK Dept. of Kinesiology & Health Promotion, Graduate Affairs Committee	2023
UK Dept. of Kinesiology & Health Promotion, Awards Committee	2022 – 2025
College of Health Sciences, UK, Equipment Grant Reviewer	2022
Oswald Competition, Physical & Engineering Sciences, Reviewer, University of Kentucky	2022
UK Dept. of Physical Therapy, Faculty Search Committee	2022
UK CCTS/University of Cincinnati CTSA Pilot Project Review Panel	2022
Dept. of Kinesiology & Health Promotion Awards Committee	2022 – 2025
Research Title Series Faculty Search, Dept. of Rehabilitation Sciences, University of Kentucky	2022
Research Parking Task Force, Dept. of Kinesiology & Health Promotion, University of Kentucky	2022
KL2 Grant Reviewer, University of Kentucky	2022
TL1 Grant Reviewer, University of Kentucky	2019

SCIENTIFIC APPOINTMENTS

Associate Editor, Journal of Applied Biomechanics	2026 – 2029
Scientific Reviewer, NSF Division of Chemical, Bioengineering, Environmental & Transport Systems	2026
Scientific Reviewer, NSF Biomechanics and Mechanobiology	2025
Scientific Reviewer, Military Operational Medicine Clinical Trial, U.S. Army Medical Research	2025

American College of Sports Medicine Research Awards Committee & Research Review Committee	2024 - 2027
Scientific Reviewer, Military Operational Medicine Clinical Trial, U.S. Army Medical Research Imaging Guided Interventions and Surgery Study Section, NIH (ad hoc reviewer)	2024 2024

PROFESSIONAL SERVICE

Brain Sciences (Reviewer)	2026
Abstract Reviewer, American College of Sports Medicine Meeting	2025
Abstract Reviewer, Southeast American College of Sports Medicine Meeting	2025
World Scientific Annual Review of Biomechanics (Reviewer)	2025
Abstract Reviewer, Orthopaedic Research Society Annual Meeting	2025
Session Moderator, American Society of Biomechanics Meeting	2025
IEEE Transactions on Neural Systems and Rehabilitation Engineering (Reviewer)	2025
Co-Chair, Biomechanics Interest Group for the American College of Sports Medicine	2025 – 2029
Physiotherapy Theory & Practice (Reviewer)	2025
Part C: Journal of Mechanical Engineering Science (Reviewer)	2025
Diagnostics (Reviewer)	2025
Symmetry (Reviewer)	2025
Abstract Reviewer, American Society of Biomechanics Annual Meeting	2025
Journal of Clinical Ultrasound: Sonography and other Imaging Techniques (Reviewer)	2024
International Journal of Sports Medicine (Reviewer)	2024
Abstract Reviewer, Southeast American College of Sports Medicine Annual Meeting	2024
BMJ Open Sport & Exercise Medicine (Reviewer)	2024
Osteoarthritis and Cartilage (Reviewer)	2024
IEEE Access (Reviewer)	2024
MSK Quantitative Imaging Biomarker Committee	2024
Session Chair, American Society of Biomechanics Annual Meeting	2024
Abstract Reviewer, American Society of Biomechanics Annual Meeting	2024
Abstract Reviewer, Orthopaedic Research Society Annual Meeting	2024
Journal of Functional Morphology and Kinesiology (Reviewer)	2024
Leadership and Diversity Training Program, Southeast ACSM (mentor)	2024
Magnetic Resonance Imaging (Reviewer)	2024
Session Moderator, Southeast American College of Sports Medicine Annual Meeting	2024
Therapeutic Advances in Musculoskeletal Disease (Reviewer)	2023
Scientific Reviewer, Congressionally Directed Medical Research Programs, Dept. of Defense	2023
Session Chair, Hip Mechanics, Dysplasia & Pain, American Society of Biomechanics Conference	2023
American Society of Biomechanics, Annual Conference Abstract Reviewer	2023
Abstract Reviewer, Southeast American College of Sports Medicine Annual Meeting	2023
La Radiologia Medica (Reviewer)	2023
National Strength and Conditioning Association, Grant Reviewer	2023
President, Biomechanics Interest Group, Southeast American College of Sports Medicine	2023
Wearable Technologies (Reviewer)	2023
Motor Control (Reviewer)	2023
Orthopaedic Research Society, Hip and Knee Arthroplasty Topic Co-Chair	2023 – 2025
Student Abstract Award Reviewer, Southeast American College of Sports Medicine Annual Meeting	2022
Abstract Reviewer, Southeast American College of Sports Medicine Annual Meeting	2022
Frontiers in Sports and Active Living, Multi-Modal Approaches to Assess the Impact of Orthopaedic Disease on Lower Extremity Joint Function and Health, Guest Editor	2022
<i>Healthcare: New Trends in the Lower Extremity and Sports Biomechanics</i> , Guest Editor	2022
Graduate Student Mentor, North American Congress on Biomechanics Meeting	2022
Royal Society Open Science	2022 – Present
Michael Samaan CV	10

Acta Radiologica (Reviewer)	2022 – Present
Osteoarthritis and Cartilage Open (Reviewer)	2022 – Present
President Elect, Biomechanics Interest Group, Southeast American College of Sports Medicine	2022
North American Congress of Biomechanics Abstract Reviewer	2022
Archives of Rehabilitation Research & Clinical Translation	2022 – Present
BioMed Research International (Reviewer)	2021 – Present
Journal of Radiation Research and Applied Sciences (Reviewer)	2021 – Present
Journal of the International Society of Arthroscopy, Knee Surgery & Orthopaedic Sports Medicine (Reviewer)	2021 – Present
Journal of the Mechanical Behavior of Biomedical Materials (Reviewer)	2021 – Present
Chinese Medical Journal (Reviewer)	2021 – Present
Computer Methods and Programs in Biomedicine (Reviewer)	2021 – Present
Frontiers in Sports and Active Living (Reviewer)	2021 – Present
Medicine & Science in Sports & Exercise (Reviewer)	2021 – Present
Frontiers Surgery (Reviewer)	2021 – Present
Orthopaedic Research Society, Harris Award (Reviewer)	2020 – Present
Frontiers Physiology (Reviewer)	2020 – Present
Journal of Science and Medicine in Sport (Reviewer)	2020 – Present
Journal of Strength and Conditioning Research (Reviewer)	2019 – Present
Orthopaedic Research Society, Hip Topic Session Moderator	2019
Orthopaedic Research Society, Hip Topic (Reviewer)	2019 – Present
Quantitative Imaging in Medicine and Surgery (Reviewer)	2019 – Present
Physical Therapy in Sport (Reviewer)	2018 – Present
IEEE Transactions on Human-Machine Systems (Reviewer)	2018 – Present
Journal of Orthopaedic Research (Reviewer)	2018 – Present
Clinical Biomechanics (Reviewer)	2018 – Present
American Society of Biomechanics Awards Reviewer	2017
American Society of Biomechanics Abstract Reviewer	2017
Journal of Biomechanics (Reviewer)	2017 – Present
Journal of Applied Biomechanics (Reviewer)	2017 – Present
Gait & Posture (Reviewer)	2017 – Present
Journal of Orthopaedic & Sports Physical Therapy (Reviewer)	2017 – Present
PeerJ (Reviewer)	2017 – Present
Journal of Sport and Health Science (Reviewer)	2016 – Present
Journal of Magnetic Resonance Imaging (Reviewer)	2016 – Present
Bone (Reviewer)	2016 – Present
Annals of Sports Medicine and Research (Reviewer)	2016 – Present
Scandinavian Journal of Science and Medicine in Sports (Reviewer)	2016 – Present
Computer Methods in Biomechanics and Biomedical Engineering (Reviewer)	2015 – Present

COMMUNITY SERVICE

Pathways through Kinesiology & Health Promotion, Jessamine County Technical Center	2023
Soccer Official of the Year, Kentucky High School Athletics Association	2020
Aubrey Cashman Memorial Referee of the Year, Central KY Soccer Officials Association	2020
Mentor, Kentucky Soccer Referee Association	2020 – Present
Mentoring Committee Co-Chair, American Society of Biomechanics Affinity Group	2019 – Present
Volunteer at UCSF Physical Therapy Applicant Tours/Interviews	2014 – 2018
Volunteer at Bay Area Science Festival	2014 – 2016

PROFESSIONAL MEMBERSHIPS

American College of Sports Medicine	2022 – Present
Southeast American College of Sports Medicine	2021 – Present
Osteoarthritis Alliance of Kentucky	2020 – Present
Osteoarthritis Research Society International	2016 – Present
Orthopaedic Research Society	2015 – Present
American Society of Biomechanics	2010 – Present

CONFERENCE PRESENTATIONS (* indicates student/mentee)

1. Sharp, A.G.*, Roper, J.A, Jacobs, M.V., Mangino, A.A., Sheppard, M.B., **Samaan, M.A.** “Individuals with Marfan Syndrome Ambulate with Altered Joint Work” American College of Sports Medicine, Salt Lake City, Utah. May 2026. **Poster**
2. Zhang, Z., Jian, X., Kim, J., Lartey, R., Yeh, P.Y., Li, M., Obuchowski, N., Winalski, C.S., Soher, B.J., Kraus, V.B., Peng, C., Jones, M., Smith, S., Kogan, F., Liu, J., Link, T., Thedens, D.R., Anderson, D.D., **Samaan, M.A., et al** “Repeatability and Reproducibility of Knee Cartilage T1rho and T2 Imaging: A Multi-Site Multi-Vendor Study by the Musculoskeletal Committee of QMIC” ISMRM Annual Meeting, Cape Town, South Africa, May 2026. **Podium**
3. Jian, X., Zhang, Z., Kim, J., Liu, R., Chakrabarty, K., Lartey, R., Winalski, C.S., Yang, M., Peng, Q., **Samaan, M.A., et al** “Multi-Vendor Multi-Site Prospective Evaluation of SuperMAP Deep-Learning Reconstruction for Accelerated T1rho and T2 Mappings” ISMRM Annual Meeting, Cape Town, South Africa, May 2026. **Power Pitch**
4. Sharp, A.G.*, Roper, J.A, Jacobs, M.V., Mangino, A.A., Sheppard, M.B., **Samaan, M.A.** “Individuals with Marfan Syndrome Ambulate with Altered Joint Work” Southeast American College of Sports Medicine, Greenville, SC. February 2026. **Podium**
5. Stanze, H., Wilcox, B., Mangino, A., Jochimsen, K., **Samaan, M.A.** “Effect of Hip Symptom Duration on Joint Power During a Single Limb Squat in Individuals with Hip Related Pain” Southeast American College of Sports Medicine, Greenville, SC. February 2026. **Podium**
6. Jacobs, M.V.*, Sharp, A.G., Malek, S., Selby, J., Duncan, S.T., Fry, C.S., Samaan, M.A. “Assessing Knee Total Joint Moment in Knee Osteoarthritis Phenotypes in Aging Adults” Southeast American College of Sports Medicine, Greenville, SC. February 2026. **Poster**
7. Sharp, A.G.*, Jochimsen, K.N., Fain, A.D., Mangino, A.A., Duncan, S.T., Roper, J.A., **Samaan, M.A.** “Aging Adults with Hip Osteoarthritis Ambulate with Altered Joint Power” American Society of Biomechanics, Pittsburgh, PA. August 2025. **Podium**
8. Stanze, H.*, Wilcox, B.J., Mangino, A.A., Jochimsen, K.N., **Samaan, M.A.** “Effect of Hip Symptom Duration on Total Support Moment During Unilateral Squat in Individuals with Hip-Related Pain” American Society of Biomechanics, Pittsburgh, PA. August 2025. **Poster**
9. Jacobs, M.V.*, Malek, S., Duncan, S.T., Selby, J.B., Fry, C.S., **Samaan, M.A.** “Assessing Knee Joint Mechanics in Knee Joint Phenotypes in Aging Adults” American Society of Biomechanics, Pittsburgh, PA. August 2025. **Poster**
10. Mangino, A.A., Kim, C., **Samaan, M.A.**, Jochimsen, K. “Techniques in Team Science: The Preponderance of Evidence for Good Decision-making with Applications in Biomechanics” Joint Statistical Meetings, Nashville, KY. August 2025. **Podium**

11. Malek, S., Marini, F., **Samaan, M.A.** “Exercise Induced Mid-Infrared Spectral Variations in Serum Samples of Patients with Hip Pain and Without Hip Osteoarthritis” Osteoarthritis Research Society International, Seoul, South Korea. April 2025. **Poster**
12. Zhang, Z., Kim, J., Liu, R., Lately, R., Winalski, C.S., Yang, M., Liu, J., Link, T., Peng, Q., **Samaan, M.A.**, Hardy, P., Ying, L., Li, X “Accelerated T1rho and T2 High Resolution Imaging: A Multi-vendor Multi-site Study” The International Society for Magnetic Resonance in Medicine. Honolulu, Hawaii. May 2025. **Podium**
13. Stanze, H.*, Wilcox, B., Zgoda, M., **Samaan, M.A.**, Jochimsen, K.N. “Total Support Moment During Unilateral Squat in Individuals with Hip-Related Pain” Southeast American College of Sports Medicine Annual Meeting. Greenville, SC. February 2025. **Poster**
14. Jacobs, M.V.*, Clasey, J.L., Naylor, T.R., Roper, J., **Samaan, M.A.** “Aging Adults Ambulate with Higher Hip Abduction Similar to Adults with Hip OA” Southeast American College of Sports Medicine Annual Meeting. Greenville, SC. February 2025. **Poster**
15. Sharp, A.G.*, Jochimsen, K.N, **Samaan, M.A.** “Assessment of Sagittal Plane Hip Power in Aging Adults with Radiographic Hip Osteoarthritis” Southeast American College of Sports Medicine Annual Meeting. Greenville, SC. February 2025. **Poster**
16. Rendos NK, Wilburn CM, Adlou B, Turner AJ, Griffith A, Jacobs MV, **Samaan MA.** You Just Graduated. Now What? A Glimpse at Careers in Industry. Southeast American College of Sports Medicine Annual Meeting. Greenville, SC. February 2025. **Refereed Symposia and Tutorial Presentation**
17. Naylor, T.R.*, Jacobs, M.V., Leggett, J.A., **Samaan, M.A.**, Clasey, J.L. “Comparison of Total Body and Thigh Mineral-Free Lean Measures Using DXA in Young Children” Southeast American College of Sports Medicine Annual Meeting. Greenville, SC. February 2025. **Poster**
18. Brightwell, B.*, **Samaan, M.**, Matuszewski, P., Jacobs, C., Noehren, B. “Lower Extremity Biomechanics Associated with Improved Timed up-and-Go Times after Surgically Repaired Ankle Fracture” APTA CSM, 2025, **Poster**
19. Brightwell, B.*, **Samaan, M.**, Matuszewski, P., Jacobs, C., Noehren, B. “Identifying Impaired Ankle Biomechanics during Step Navigation 6-Months after Surgically Repaired Rotational Ankle Fractures” APTA CSM, 2025, **Poster**
20. Nagaraja, S., Rubio, J.E., Tong, J., Sundaramurthy, A., Pant, A., Owen, M.K., **Samaan, M.A.**, Noehren, B., Reifman, J. “Impact of an Active Exoskeleton on the Biomechanics of Healthy Men during Prolonged Walking” Biomedical Engineering Society, 2024, **Poster**
21. Kwak, M.*, Succi, P.J., Benitez, B., Mitchinson, C., **Samaan, M.A.**, Abel, M.G., Bergstrom, H.C. “Comparison of Force Responses during Continuous Handgrip Holds Anchored to Low and High Perceptual Intensities” American College of Sports Medicine Meeting, 2024, **Poster**
22. Sharp, A.G.*, Jacobs, M.V., McLouth, C., Sheppard, M.B., **Samaan, M.A.** “Altered Total Joint Moment of the Hip During Walking In People with Marfan Syndrome” Southeast American College of Sports Medicine Meeting, 2024, **Poster** *Biomechanics Interest Group M.S. student award winner

23. De Vecchi Machado, L.*, **Samaan, M.A.** “Investigation of the Lumbo-Pelvic Rhythm in People with Hip Pain” Southeast American College of Sports Medicine Meeting, 2024, **Poster**
24. Jacobs, M.V.*, Pol, J.M., Clasey, J.L., McLouth, C., Sheppard, M.B., **Samaan, M.A.** “People with Marfan Syndrome Ambulate with Altered Joint Mechanics” Southeast American College of Sports Medicine Meeting, 2024, **Thematic Poster** *SEACSM M.S. student award finalist
25. Kwak, M.*, Succi, P.J., Benitez, B., **Samaan, M.A.**, Abel, M.G., Bergstrom, H.C. “Force and Neuromuscular Responses During Continuous Handgrip Holds Anchored to a Rating of Perceived Exertion” Southeast American College of Sports Medicine Meeting, 2024, **Accepted**
26. Jacobs, M.V.*, Cochran, K., Pol, J., Clasey, J.L., **Samaan, M.A.** “Effects of Constant Load Exercise on Knee Mechanics in At-Risk Weight Individuals” American Society of Biomechanics Annual Conference, 2023, **Poster**
27. Steele, L.*, Fain, A., Duncan, S., Sheppard, M., **Samaan, M.A.** “Assessment of Hip Joint Structural and Clinical Outcomes in People with Marfan Syndrome” CCTS Spring Conference, 2023, **Podium**
28. Ramirez, V.J.*, Ghezelbash, F., **Samaan, M.**, *et al* “Lumbar Spine Loads in Repetition-to-Failure Deadlifts with and without Body Armor” 4th International Workshop on Spine Loading and Deformation, 2023, **Poster**
29. Steele, L.*, Fain, A., Duncan, S., Sheppard, M., **Samaan, M.A.** “Assessment of Hip Joint Structural and Clinical Outcomes in People with Marfan Syndrome” Osteoarthritis Research Society International, 2023, **Poster**
30. Owen, M.K.*, Jacobs, M.V., Heebner, N., Lattermann, C., Stone, A., Conley, C., Jacobs, C., **Samaan, M.A.**, Noehren, B., “Dynamic Knee Joint Stiffness During Running is Associated with Cartilage T1rho Relaxation Times 12-months Post Anterior Cruciate Ligament Reconstruction” Osteoarthritis Research Society International, 2023, **Poster**
31. Pol, J.*, Jacobs, M., McLouth, C., Gaffney, B.M.M., Sheppard, M., **Samaan, M.A.** “People with Marfan Syndrome Utilize an Ankle-Dominant Strategy During the Sit-to-Stand Task” American College of Sports Medicine, 2023, **Poster**
32. Ball, L.*, Jacobs, M., Duncan, S., Sheppard, M., **Samaan, M.A.** “Lower Extremity Joint Mechanics and Strength is Altered in People with Hypermobility Ehlers Danlos Syndrome (EDS)” American College of Sports Medicine, 2023, **Poster**
33. Jacobs, M.*, Pol, J., Naylor, T., Fry, C., Clasey, J.L., **Samaan, M.A.** “Aerobic Exercise Impacts Gait Mechanics and is Associated with Body Composition” American College of Sports Medicine, 2023, **Poster**
34. Kramer, EM, Murro, M., **Samaan, M.A.**, *et al* “Sagittal Plane Single Leg Squat Kinematics and Kinesiophobia in Individuals with Hip-Related Pain” National Athletic Trainers Association Annual Meeting, 2023, **Podium**
35. Ball, L.*, Duncan, S., Sheppard, M., **Samaan, M.** “Gait Mechanics in People with Clinically Diagnosed Hypermobility Ehlers Danlos Syndrome” Southeast American College of Sports Medicine, 2023, **Poster**
36. Jacobs, M.*, Naylor, T., Pol, J., **Samaan, M.**, Clasey, J. “Healthy and Obese Classifications: Influence on Constant Load Treadmill Bouts Result” Southeast American College of Sports Medicine, 2023, **Poster**

37. Pol, J.*, McLouth, C, Jacobs, M., Sheppard, M., **Samaan, M.** “Lower Extremity Joint Loading is Altered in People with Marfan Syndrome During a Sit-to-Stand Task” Southeast American College of Sports Medicine, 2023, **Poster**
38. Pol, J.*, Sheppard, M., **Samaan, M.A.** “Marfan Syndrome is Associated With Altered Knee Joint Mechanics During Gait” 11th International Research Symposium on Marfan, Loeys-Dietz, and Related Conditions, 2022. **Poster**
39. **Samaan, M.A.**, Link, T.M., Majumdar, S., Souza, R.B. “Sex-Based Differences In Hip Joint Muscle and Contact Forces During Walking in People with Hip Cartilage Degeneration” North American Congress on Biomechanics, 2022, **Podium**.
40. Carpenter, R.S.* , **Samaan, M.A.**, Bollinger, L. “Quadriceps Post-Activation Potential (PAP) Greater in Women who are Obese vs. Those Who are Lean at Baseline But Not After Fatiguing Exercise”. National Strength and Conditioning Association, 2021, **ePoster**.
41. MacDonald, M.* , Jacobs, C., Noehren, B., Duncan, S., **Samaan, M.A.** “Hip and Knee Strength are Associated with Patient Reported Outcomes in Patients with Femoroacetabular Impingement Syndrome” American Medical Association, 2020, **Virtual Poster**
42. **Samaan, M.A.**, MacDonald, M., Fain, A., *et al* “Hip Joint Muscle and Contact Forces During Sit-to-Stand and Stand-to-Sit Tasks in Patients with Femoroacetabular Impingement Syndrome”, American Society of Biomechanics, 2020, **Virtual Podium**
43. Erickson, L.N., Davis, K.A., **Samaan, M.A.**, Noehren, B. “Lower Extremity Kinetics During Running in Females With and Without Patellofemoral Pain”, Combined Sections Meeting, 2020, **Podium**
44. Roach, K., Pedroia, V., Lee, J., Popovic, T., **Samaan, M.A.**, *et al* “Multivariate Functional Principal Component Analysis Identified Key Waveform Features of Gait Connected with Femoroacetabular Impingement”, Combined Sections Meeting, 2020, **Poster**
45. **Samaan, M.A.**, Grace, T., Zhang, A.L., *et al* “Post Hip Arthroscopy Gait Mechanics are Associated with Changes in Cartilage Composition in Patients with FAIS” International Society of Biomechanics Meeting, 2019, **Poster**
46. **Samaan, M.A.**, Zhang, A.L., Popovic, T. *et al*. “Abnormal Muscle Forces During Gait are Associated with Hip Joint Symptoms and Cartilage Composition in Femoroacetabular Impingement Patients” Orthopaedic Research Society, New Investigator Recognition Award Finalist, 2019, **Podium**
47. Beqaj, H.* , **Samaan, M.A.**, Neumann, J., *et al*. “Relationship between Hip Muscle Strength and Cartilage Health in Hip Osteoarthritis” Orthopaedic Research Society, 2019, **Poster**
48. **Samaan, M.A.**, Zhang, A.L., Popovic, T. *et al*. “Hip Joint Muscle Forces during Gait are Associated with Hip Joint Symptoms and Cartilage Health in Patients with FAIS” Combined Sections Meeting of the American Physical Therapy Association, 2019, **Podium**
49. Noginova, J.M, Bennett, H.J., **Samaan, M.A.**, Ringleb, S.I. “The Effects of Subtalar Axis Orientation on Kinematics and Kinetics During Dynamic Motion” American Society of Biomechanics, 2018, **Rapid Podium**

50. Noginova, J., Bennett, H.J., **Samaan, M.A.**, Ringleb, S.I. “The effects of subtalar axis orientation on kinematics and kinetics during walking and running” International Foot and Ankle Biomechanics Conference, New York, NY, 2018. **Podium**
51. Rossi-deVries, J., Pedroia, V., **Samaan, M.A.**, *et al* “Using Multidimensional Data Analysis to Identify Traits of Hip OA” International Society of Magnetic Resonance in Medicine, Paris, France, 2018. **Podium**
52. Shimizu, T.* , **Samaan, M.A.**, Tanaka, M.S., *et al.* “Limb Asymmetry at 6 Months can Predict Cartilage Degeneration at 3 Years Following ACL Injury and Reconstruction” American Academy of Orthopaedic Surgeons, New Orleans, LA, 2018. **Podium**
53. Shimizu, T.* , **Samaan, M.A.**, Tanaka, M.S., *et al.* “Abnormal Limb Kinematics at 6 Months May Predict Cartilage Degeneration at 3 Years Following ACL Injury and Reconstruction” Orthopaedic Research Society, New Orleans, LA, 2018. **Poster**
54. Shimizu, T.* , Cheng, Z., **Samaan, M.A.**, *et al* “Can Sagittal Biomechanical Differences Lead to Joint Laxity after Anterior Cruciate Ligament Reconstruction?” Orthopaedic Research Society, New Orleans, LA, 2018. **Poster**
55. Popovic, T.* , **Samaan M.A.** Neumann, J., *et al.* “Altered Transverse Plane Kinematics in Patients with Symptomatic Hip Osteoarthritis During Stair Ambulation” Orthopaedic Research Society, New Orleans, LA, 2018. **Poster**
56. Inamdar, A., **Samaan, M.A.**, Zhang, A.L., *et al.* “Altered Lower Extremity Kinetics in Femoroacetabular Impingement Patients” Orthopaedic Research Society, New Orleans, LA, 2018. **Poster**
57. **Samaan, M.A.**, Zhang, A.L., Neumann, J., *et al* “Abnormal Muscle Forces During Gait are Related to Cartilage Health after Hip Arthroscopy in Femoroacetabular Impingement Patients” UCSF Radiology Symposium, San Francisco, CA, 2017. **Podium**
58. **Samaan, M.A.**, Zhang, A.L., Neumann, J., *et al* “Abnormal Muscle Forces During Gait are Related to Cartilage Health after Hip Arthroscopy in Femoroacetabular Impingement Patients” American Society of Biomechanics Annual Meeting, Boulder, CO, 2017. **Podium**
59. Bolcos, P.O., Mononen, M.E., Mohammadi, A., Tanaka, M., **Samaan, M.**, *et al* “Comparison between Kinetic and Kinetic-Kinematic Driven Knee Joint Models” European Society of Biomechanics, Sevilla, Spain, 2017. **Podium**
60. **Samaan, M.A.**, Zhang, A.L., Gallo, M.C., *et al* “Early Effects of Hip Arthroscopy on Articular Cartilage Composition in Femoroacetabular Impingement Patients” Osteoarthritis Research Society International. Las Vegas, NV, 2017 **Poster**
61. **Samaan, M.A.**, Pedroia, V., Zhang, A.L., *et al* “T_{1ρ} Radial Heterogeneity is a Distinctive Feature of Cartilage Delamination in Femoroacetabular Impingement Patients” Osteoarthritis Research Society International. Las Vegas, NV, 2017 **Poster**
62. **Samaan, M.A.**, Pedroia, V., Zhang, A.L., *et al* “A Novel Approach to Detection of Acetabular Cartilage Delamination in Patients with Femoroacetabular Impingement” Orthopaedic Research Society. San Diego, CA, 2017 **Poster**

63. **Samaan, M.A.**, Zhang, A.L., Gallo, M.C., *et al* “Analysis of Gait Mechanics during Walking and T2 Relaxation Times in Femoroacetabular Impingement Patients after Hip Arthroscopy” Orthopaedic Research Society. San Diego, CA, 2017 **Poster**
64. Leung, L.J.*, **Samaan, M.A.**, Tanaka, M.S., *et al* “Gait Mechanics 1 Year After ACL Reconstruction are Associated with Longitudinal Knee Cartilage Degeneration” Orthopaedic Research Society. San Diego, CA, 2017 **Poster**
65. Sawyer, K.*, **Samaan, M.A.**, Majumdar, S., *et al* “Altered Joint Kinetics in Patellofemoral Joint Osteoarthritis Progression During Sit-to-Stand” Combined Sections Meeting. APTA. San Antonio, TX, 2017 **Poster**
66. **Samaan, M.A.**, Schwaiger, B.J., Gallo, M.C., *et al* “Altered Joint Loading During Gait is Associated with Hip Joint Abnormalities in FAI Patients”. International Society of Hip Arthroscopy, San Francisco, CA, 2016 **Podium**
67. **Samaan, M.A.**, Weinhandl, J.T., Hans, S.A., *et al* “Estimation of Anterior Cruciate Ligament Loading Under Various Levels of Neuromuscular Fatigue Using Musculoskeletal Simulations”. American Society of Biomechanics Annual Meeting, Raleigh, NC, 2016 **Thematic Poster**
68. **Samaan, M.A.**, Schwaiger, B.J., Gallo, M.C., *et al* “Sagittal Plane Joint Loading During Gait is Associated with Hip Joint Abnormalities in Femoroacetabular Impingement Patients”. American Society of Biomechanics Annual Meeting, Raleigh, NC, 2016 **Podium**
69. **Samaan, M.A.**, Facchetti, L., Tanaka, M.S., *et al* “Altered Lower Extremity Coordination Variability During a Sidestep Cut in ACL-Reconstructed Patients as an Effect of Surgical Reconstruction and Knee Osteoarthritis Progression”. Osteoarthritis Research Society International, Amsterdam 2016. **Poster**
70. **Samaan, M.A.**, Kumar, D., Schwaiger, B.J., *et al* “Patients with Hip Osteoarthritis Progression Demonstrate Altered Sensory Perception and Lower Extremity Kinematics”. Osteoarthritis Research Society International, Amsterdam 2016. **Poster**
71. **Samaan, M.A.**, Gallo, M., Link, T.M., *et al*. “Baseline Hip Joint Kinematics During Walking are Associated with Hip Osteoarthritis Progression”. Annual Radiology Symposium, UC-San Francisco, 2015. **Poster**
72. **Samaan, M.A.**, Weinhandl, J.T., Hans, S.A., *et al*. "Analytical Models Used to Predict Fatigue in OpenSim". World Congress of Biomechanics, Boston, MA, 2014. **Poster**
73. **Samaan, M.A.**, Cortes, N., Hoch, M., *et al*. “The Effects of Neuromuscular Fatigue on Coordination Variation”. American Society of Biomechanics Annual Meeting, Gainesville, FL, 2012 **Poster**
74. Osmanzada, H., Ringleb, S.I., **Samaan, M.A.**, *et al*. “Kinematic Analysis of Gesture in Aphasia”. American Society of Biomechanics Annual Meeting, Gainesville, FL, 2012 **Poster**
75. Greska, E., Cortes, N., Ringleb, S., **Samaan, M.**, *et al*. “The Effects of Leg Dominance, Neuromuscular Training, and Fatigue on Bilateral Lower Extremity Kinematics”. American Society of Biomechanics Annual Meeting, Gainesville, FL., 2012 **Poster**
76. Greska, E., Cortes, N., **Samaan, M.**, *et al*. “The Effects of Fatigue and Leg Dominance on Hip and Knee Neuromechanics”. VI ACL Research Retreat, Greensboro, NC, 2012. **Poster**

77. Choisne, J., Ringleb, S.I., **Samaan, M.**, *et al.* "Understanding the Effects of Lateral Ligament Sectioning on the Stability of the Ankle and Subtalar Joint Using Euler Angles and the Rotation about a Helical Axis". American Society of Biomechanics Annual Meeting, Providence, RI, 2010. **Poster**
78. **Samaan, M.**, Ringleb, S.I., Choisne, J. *et al.* "Examining the Kinematics of the Knee During a Side Step Cutting Task Using the Helical Axis Method". American Society of Biomechanics Annual Meeting, Providence, RI, 2010. **Poster**
79. **Samaan, M.**, Roberson, D.L., Rogers, W., *et al.* "Development of a Three Dimensional Kinematic Speech Model". Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, 2009. **Poster**

STUDENT/TRAINEE MENTORSHIP

PhD Students:

1. Emma Schultz Ballenger (KHP; Dissertation Chair)
2. Amit Gohil, (KHP; Dissertation Committee Member)
3. Qiang Guo (KHP; Dissertation Committee Member)
4. Amara Sharp (KHP; Dissertation Chair)
5. Tatiana Djafar (RHB; Dissertation Committee Member)
6. Clara Mitchinson (KHP; Dissertation Committee Member)
7. Minyoung Kwak (KHP; Dissertation Committee Member)
8. Ziad Alkhamis (RHB; Dissertation Committee Member)
9. Mariana Jacobs (KHP; Dissertation Chair)
10. Megan Graham (KHP; Dissertation Committee Member; Graduated August 2025; Faculty at University of Kentucky)
11. Justin Pol (BME; Dissertation Chair; Graduated May 2023; Faculty at Southern Illinois University)
12. Benjamin Brightwell (KHP; Dissertation Committee Member; Faculty at UT Southwestern University)
13. Andrew Anderson (KHP; Dissertation Chair; Graduated August 2023; Faculty at University of Kentucky)
14. Roya Hoveizavi (KHP; Dissertation Committee Member; Graduated August 2023; Faculty at CSU-Sacramento State)
15. Pasquale Succi (KHP; Dissertation Committee Member; Graduated May 2024)
16. Nicholas Thomas (Rehabilitation Sciences; Dissertation Committee Member)
17. Brian Benitez (KHP; Dissertation Committee Member, Graduated August 2025; Assistant Professor at Stetson University)
18. Vanessa Ramirez (KHP; Dissertation Chair, Graduated May 2021; Researcher at U.S. Army Research Institute of Environmental Medicine)
19. Lauren Erickson (Rehabilitation Sciences; Dissertation Committee Member, Graduated August 2021, Research Assistant Professor at University of Kentucky)

M.S. Students:

1. Grace Tortorice (KHP; Thesis Chair)
2. Holly Stanze (KHP; Thesis Chair; Graduated May 2025; Research Engineer at University of Kentucky)
3. Amara Sharp (KHP; Thesis Chair; PhD Student University of Kentucky)
4. Shengxiong Zhou (KHP; MS Project Committee; Graduated August 2023)
5. Mariana Jacobs (KHP; Graduated May 2023, Committee Member, PhD Student University of Kentucky)
6. Minyoung Kwak (KHP, Graduated May 2023, Committee Member, PhD Student University of Kentucky)
7. Brandon Phillips (KHP; Thesis Chair, Graduated August 2022)
8. Sebastian Masterton (KHP; Project Chair, Graduated May 2022)
9. Blake Chapman (KHP; Thesis Committee, Graduated December 2021)
10. Major McGraw (KHP; Project Chair, Graduated December 2021)
11. Walter Menke (KHP; Thesis Chair, Graduated August 2021; PhD Student University of Tennessee-Knoxville)

12. Dean Summers (KHP; Project Chair, Graduated August 2020, Sports Scientist)
13. Maeve McDonald (BME; Committee Member, Graduated August 2020)
14. Alexander Spencer (KHP; Committee Member, Graduated May 2020, Data Scientist at Density)
15. Riley Pashak, (KHP; Thesis Chair, Graduated December 2019, Consultant at Noom)
16. Ashley Wimsett (KHP; Committee Member, Graduated August 2019)

Undergraduate Students:

1. Holly Stanze (BME) January 2023 – August 2023
2. Lauren Geenen (KHP) Fall 2022 – Spring 2023
3. Taliah Carlson (KHP, Lewis Honors College; M.S. University of Tennessee-Knoxville), 2021 - 2022
4. Marlee Scholten (BME; Chellgren Fellows Program), Spring 2021 – Spring 2023
5. Cambria Dotson (KHP; Lewis Honors College, Medical Device Rep at Arthrex), Fall 2019 – Spring 2021
6. Andrea Martin (Agriculture and Biotechnology Capstone Project; University of Connecticut Law School), 2019 – 2021
7. Margaret Stull (KHP; University of Kentucky Medical School), 2019 – 2020
8. Mariana Jacobs (KHP, M.S. Student at University of Kentucky), Summer 2019 – Fall 2020
9. Margaret Tuckey (KHP; Honors Capstone, D.O. student at Marian University of Osteopathic Medicine), Fall 2018 – Spring 2019
10. Walter Menke (KHP, M.S. student at University of Kentucky), Fall 2018 – Spring 2019
11. Rachel Rivera (KHP; DPT student Nova Southeastern University), Fall 2018 – Fall 2019

Medical Students:

1. Grayson Shuck, Summer 2025 – Present
2. Kylie Cochran, Fall 2022 – Present (Professional Student Mentored Research Fellowship; UK Dept. of Family & Community Medicine Student Research Scholar)
3. Lucas Steele, Fall 2021 – Spring 2023
4. Matthew Frank, (Professional Student Mentored Research Fellowship) 2021 – 2022
5. Mia MacDonald, (Professional Student Mentored Research Fellowship), 2018 – 2020

External Dissertation Examiner:

1. Evy Meinders (LaTrobe University, Graduated December 2022)
2. Alexa Johnson (Rehabilitation Sciences, University of Kentucky, Graduated December 2019)
3. Matthew King (LaTrobe University, Graduated August 2020)
4. Chelsea Roe (Rehabilitation Sciences, University of Kentucky, Graduated August 2020)
5. Autumn Whitson (Rehabilitation Sciences, University of Kentucky, Graduated August 2021)
6. Katherine Bain (Rehabilitation Sciences, University of Kentucky, Graduated December 2021)

Research Fellows/Postdocs/Scholars:

1. Brecca Gaffney, Ph.D., University of Colorado-Denver, Dept. of Mechanical Engineering (2023 – Present), K01 mentor
2. Meredith Owen, Ph.D., University of Kentucky, Dept. of Physical Therapy (2021 – Present), F32 mentor
3. Tomohiro Shimizu, M.D., Hokkaido University Dept. of Orthopaedic Surgery Visiting Scholar, *Longitudinal Effects of ACL Reconstruction on Knee Joint Mechanics and Health* (2016 – 2018)
4. Trevor Grace, M.D., UC San Francisco Dept. of Orthopaedic Surgery Resident, *Effects of Hip Arthroscopy on Hip Joint Mechanics and Cartilage Health* (2016-2018)
5. Gautam Adusumilli, Washington University School of Medicine in St. Louis, *Development and Validation of a Mobile-Based Application for the Chair-Rise Test* (2017)
6. Lawrence Leung, University of Vermont Medical School, *Gait Mechanics at One Year after ACL-reconstruction are Associated with Longitudinal Patellar Cartilage Degeneration* (2016)