

Robin Marie Queen, PhD, FACSM, FIOR, FASB, FAIMBE

Professor with Tenure, Biomedical Engineering and Mechanics, College of Engineering
L. Preston Wade Professor of Engineering
Affiliate Professor, Mechanical Engineering, College of Engineering
Affiliate Professor, Faculty of Health Sciences, Fralin Biomedical Research Institute
Affiliate Member, Institute for Society, Culture, and the Environment
Director: Kevin P. Granata Biomechanics Laboratories
Virginia Tech
Blacksburg, VA 24061

Affiliate Professor, Orthopaedic Sports Medicine
Edward Via College of Osteopathic Medicine
Blacksburg, VA 24061

Professor, Orthopaedic Surgery, Virginia Tech Carilion School of Medicine
Virginia Tech
Roanoke, VA 24016

<u>Education:</u>	<u>Institution</u>	<u>Date (Year)</u>
Doctor of Philosophy	Department of Biomedical Engineering School of Medicine University of North Carolina at Chapel Hill	2004
Master of Science	Department of Biomedical Engineering School of Medicine University of North Carolina at Chapel Hill	2001
Bachelor of Science, Applied Science Minor: Physics	College of Arts and Sciences, University of North Carolina at Chapel Hill	2000

Consulting Appointments

2023 –	Expert Advisory Committee, National Basketball Association (NBA)
2014 – 2018	Medical and Scientific Advisory Board, Quest Diagnostics (Newark, NJ)
2010 – 2015	Project Consultant, HipKnee Arkansas (Little Rock, AR) August 2010 – 2015
2007	Technical Support and System Installation, Motion Analysis Corporation (Santa Rosa, CA)

Professional training and academic career

2023-pres.	L. Preston Wade Professor of Engineering , Virginia Tech, Blacksburg, VA
2022-pres.	Professor , Department of Orthopaedic Surgery, Virginia Tech Carilion School of Medicine, Roanoke, VA
2021-pres.	Professor , Department of Biomedical Engineering and Mechanics, Virginia Tech, Blacksburg, VA

- 2021-pres. **Adjunct Professor**, Orthopaedics and Sports Medicine, Edward Via College of Osteopathic Medicine, Blacksburg, VA
- 2020-2023 **Kevin P. Granata Faculty Fellow**, Department of Biomedical Engineering and Mechanics, Virginia Tech, Blacksburg, VA.
- 2018-pres. **Affiliate Member**, Department of Mechanical Engineering, Virginia Tech, Blacksburg, VA
- 2016-2022 **Associate Professor**, Department of Orthopaedic Surgery, Virginia Tech Carilion School of Medicine, Roanoke, VA
- 2016-pres. **Affiliate Member**, Faculty of Health Sciences (FHS), Fralin Biomedical Research Institute, Virginia Tech, Blacksburg, VA
- 2016-pre. **Affiliate Member**, Institute for Society, Culture and Environment, Virginia Tech, Blacksburg, VA
- 2015-pres. **Director: Kevin P. Granata Biomechanics Lab**, Department of Biomedical Engineering and Mechanics, Virginia Tech, Blacksburg, VA
- 2019-2022 **Faculty Fellow**, Office of the Vice President for Research and Innovation, Virginia Tech, Blacksburg, VA
- 2015-2021 **Adjunct Associate Professor**, Orthopaedics and Sports Medicine, Edward Via College of Osteopathic Medicine, Blacksburg, VA
- 2015-2021 **Associate Professor**, Department of Biomedical Engineering and Mechanics, Virginia Tech, Blacksburg, VA
- 2013-2015 **Assistant Professor**, Department of Orthopaedic Surgery, Duke University Medical Center, Durham, NC
- 2010-2015 **Director: Michael W. Krzyzewski Human Performance Lab**, Department of Orthopaedics Surgery, Duke University Medical Center, Durham, NC
- 2010-2013 **Medical Instructor**, Department of Orthopaedic Surgery, Duke University Medical Center, Durham, NC
- 2006-2010 **Medical Instructor**, Department of Surgery, Duke University Medical Center, Durham, NC
- 2005-2010 **Director: Michael W. Krzyzewski Human Performance Lab**, Department of Surgery, Duke University Medical Center, Durham, NC
- 2004-2006 **Research Associate**, Department of Surgery, Duke University Medical Center, Durham, NC
- 2004 **Graduate Teaching Assistant** (Human Anatomy), Department of Exercise and Sport Science, College of Arts and Sciences, University of North Carolina, Chapel Hill, NC
- 2002-2004 **Project Coordinator** (Jones' Fracture Project-Industry Funded), Division of Physical Therapy, University of North Carolina, Chapel Hill, NC
- 2002-2004 **Graduate Teaching Assistant** (Motion Analysis), Division of Physical Therapy, University of North Carolina, Chapel Hill, NC
- 2001-2002 **Project Coordinator** (Biomechanical Testing – NIH funded), General Clinical Research Center, University of North Carolina, Chapel Hill, NC

Professional Development

- 2020 HHMI Inclusive Learning Series (1.5hours/week for 8 weeks)
- 2020 Moving Forward with Problem Based Learning: Lessons Learned Through Implementation
- 2020 Summer Diversity Summit
- 2020 Project Based Learning Institute by WPI – 2 day workshop
- 2020 SIRC Investigator Series – Research Ethics: From Foundations to Practice
- 2019 Technology-enhanced Learning and Online Strategies Computer Refresh Program Completion – 8 hours of teaching continuing education
- 2019 CIMER Entering Mentoring Facilitator Training (October 2019)
- 2019 CIMER Entering Research Facilitator Training (April 2019)

2018-2019	HHMI Mentor Training through HHMI Gilliam Fellowship grant, total of 30 hours of training.
2018-2019	Virginia Tech Media Training
2017-pres.	Advancing Diversity Summit (January Annually)
2016	Technology-enhanced Learning and Online Strategies Computer Refresh Program Completion – 8 hours of teaching continuing education
2016 -pres.	Advance VT luncheons once a quarter to increase awareness of issues in Women’s Leadership

ACADEMIC ADMINISTRATION EXPERIENCE

Vice President Virginia Tech Faculty Senate 2021-2023

Task Force Chair: Virginia Tech Task Force on Freedom of Expression and Inquiry 2022-2023

The presidential task force on Freedom of Expression and Inquiry was charged with the development and writing of Virginia Tech’s official statement (<https://www.president.vt.edu/strategicinterests/academic-freedom-and-free-speech.html>) over the course during the Fall 2022 semester.

The 21-member group of Virginia Tech students, faculty, staff, and members of the Board of Visitors worked collaboratively to develop the statement and as the task force chair I had the opportunity to present the statement and recommendations for implementation to the Virginia Tech Board of Visitors in March 2023.

Faculty Fellow, Office of the Vice President for Research and Innovation, Virginia Tech, 2019-2022

This position was within Scholarly Integrity and Research Compliance with a focus on developing and launching the Secure Data Protections Program for Protected Health Information.

Management, Stewardship, and Budgeting

I developed and implemented plans and policies for the collection, storage and use of personally identifiable and protected health information including:

1. Defining different data types with different risk classifications
2. Advocacy for Virginia Tech Faculty who are working with personally identifiable and protected health information to ensure their needs were met
3. Collaborated with the Central Information Technology Office as well as the Office of Export and Secure Research Compliance to develop the processes and hardware infrastructure required for an enterprise wide solution
4. Engaged institutional compliance and risk to implement policies for research data that had not previously existed at Virginia Tech

ACADEMIC LEADERSHIP DEVELOPMENT

2019 - 2020 Executive Leadership in Academic Technology, Engineering and Science (ELATES) Fellow

2013 - 2014 Duke Science & Society SciComm Fellows Program (Inaugural Year):

Provides an opportunity for faculty to develop communication skills and put those skills into action. Fellows will: (1) Explore the empirical benefits of communicating science, (2) Develop speaking, writing, and storytelling practices for diverse audiences, (3) Learn to answer difficult, controversial, and critical questions from the media. (4) Tweet, blog, write op-eds and present their research to the public, (5) Prepare policy briefs, (6) Engage with policymakers and funders in Washington D.C.

2012 - 2013 LEADERS Program: The LEADER program is an interactive learning program designed to equip junior faculty researchers with the knowledge and professional competencies to effectively lead dynamic scientific research enterprises. Competitive application-based program.

HONORS

2023 Named L. Preston Wade Professor of Engineering (2023-present)
2022 Honorary Doctor of Science - Union College, Schenectady, NY
2022 Fellow of the American Institute for Medical and Biological Engineering (FAIMBE)
2021 Fellow of the American Society of Biomechanics (FASB)
2021 Named Kevin P. Granata Faculty Fellow in Biomedical Engineering and Mechanics (2021-2026)
2020 Virginia Tech College of Engineering Faculty Fellow (2020-2023)
2019 Fellow of International Orthopaedic Research (FIOR) from the International Combined Orthopaedic Research Society
2014 Fellow of the American College of Sports Medicine (FACSM)

AWARDS

2024 Best Presentation Award at the novel electronics® Expert Scientific Meeting.
2023 Jean Landa Pytel Award for Diversity Mentorship in Biomechanics
Recognizes the long-term impact of mentoring on both the careers of individual scientists, including women and individuals from other traditionally under-represented backgrounds in ASB, and the ultimate betterment of our society as a whole.
2020 Orthopaedic Research Society Adele L. Boskey, PhD Award
Recognize a mid-career member of the ORS for outstanding and sustained commitment to mentorship as well as a demonstrated track-record of an upward trajectory and impactful research program.
2017 AAOS Kappa Delta Young Investigator Award “Using Lower Extremity Biomechanics in Patients with Ankle Osteoarthritis and Ankle Arthroplasty to Direct Clinical Care”
2014 Featured in the Spotlight on Women for the Orthopaedic Research Society
2013 Resident Research Award (1st place) at 2013 North Carolina Orthopaedic Association Annual Meeting. Percent Body Fat More Associated with Perioperative Outcomes After Total Joint Arthroplasty than BMI. CK Ledford, RA Ruberte-Thiele, RJ Butler, JS Appleton, SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi.
2013 Semi-Finalist for the Roger Mann Award – Best Clinical Paper American Orthopaedic Foot and Ankle Society. *Early to Mid-Term Outcomes of Fixed-Bearing Total Ankle Arthroplasty Using a Modular Intramedullary Tibial Component*. Adams SB Jr., Demetracopoulos CA, **Queen RM**, Easley ME, DeOrio JK, Nunley JA
2013 SOA Presidents’ Resident Awards: *Does a Hindfoot Arthrodesis Affect the Results of Total Ankle Replacement?* J Lewis, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley.
2013 Best Foot and Ankle Poster 2013 Orthopaedic Research Society: *The Effect of Hindfoot Alignment on Frontal Plane Mechanics Following Total Ankle Replacement*. **RM Queen**, RJ Butler, SB Adams, ME Easley, JK DeOrio, JA Nunley
2011 Association of Bone and Joint Surgeons CORR Subspecialty Award: *Early Prospective Clinical Results of Total Ankle Arthroplasty with Two Modern Fixed-Bearing Prostheses Available in the United States*. ME Easley, SB Adams, NA Viens, JK DeOrio, **RM Queen**, JA Nunley.
2011 Goldner Award – Best Basic Science Paper 2011 American Orthopaedic Foot and Ankle Society: *Changes in Gait Mechanics Two Years Following Total Ankle Replacement*. **RM Queen**, J De Biasio, RJ Butler, JK DeOrio, ME Easley, JA Nunley.

2010 Aircast Award for Clinical Science - American Orthopaedic Society for Sports Medicine: “Subjective Outcomes, Isokinetic Strength, and Endurance Following Biceps Tenotomy versus Tenodesis” Jocelyn R. Wittstein, **RM Queen**, AN Abbey, Alison Toth, Claude Moorman.

PROFESSIONAL SERVICE

Professional Society Membership:

2015 - present	Biomedical Engineering Society (BMES)
2014 - present	American Orthopaedic Foot and Ankle Society (AOFAS)
2012 - present	Orthopaedic Research Society (ORS)
2010 - present	American Academy of Orthopaedic Surgeons (AAOS)
2005 - present	International Foot and Ankle Biomechanics Community (I-Fab)
2005 - present	International Society of Biomechanics (ISB)
2005 - present	Footwear Biomechanics Technical Group
2002 - present	American College of Sports Medicine (ACSM)
2004 - present	American Society of Biomechanics (ASB)
2001 - 2002	Biomedical Engineering Society (BMES)

Professional Society Committee Assignments

2023 – 2025	Executive Board - ASB: Program Chair-Elect/Program Chair
2025 – 2028	Board of Directors - ORS: Executive Committee
2024 – 2028	Board of Directors - ORS: Treasurer-elect/Treasurer
2022 – 2024	Co-Chair - ORS: Policy & Procedure Task Force
2022 – 2024	Board of Directors - ORS: Member-at-Large
2018 – 2024	Chair - ACSM: Exhibits Advisory Committee Chair
2017 – 2020	Executive Board - ASB: Diversity Chair
2017 – 2020	Chair - ASB: Diversity Committee
2015 – 2017	Chair - ORS: Women’s Leadership Forum Committee
2024 – 2027	BMES: Diversity Committee
2024 – 2027	ACSM: Health and Science Policy Committee
2024 – 2028	ORS: Finance Committee (Chair 2025 – 2028)
2023 – 2024	ORS: Volunteer Appointment Committee
2023 – present	ACSM: Task Force on Youth Fitness
2023 – 2025	ASB: Program Committee
2022 – 2023	ORS: Finance Committee
2021 – 2022	ORS: Program Committee
2019 – 2021	ORS: Foot and Ankle Topic Chair
2019 – 2020	ORS: Diversity and Inclusion Task Force
2019 – 2020	AAOS: Diversity Advisory Board
2017 – 2021	BMES: Ethics Subcommittee
2018	ASB: Program Committee
2015 – 2019	AAOS: Women’s Health Advisory Board
2015 – 2019	ORS: Basic Science Committee
2015 – 2017	ORS: Annual Meeting Committee
2014 – 2024	ACSM: Exhibits Advisory Committee
2013 – 2022	ACSM: SHI: Youth Health and Sports Committee
2013 – 2017	ORS: Women’s Leadership Forum Committee

2014 – 2015 ASB: Awards Committee (2015)
2013 ACSM: Student Award Committee Biomechanics Interest Group

Manuscript Reviewer

2017 – present Clinical Biomechanics
2016 – present Osteoarthritis and Cartilage
2015 – present Annals of Biomedical Engineering
2014 – present Clinical Orthopedics and Related Research
2014 – present Arthritis Care and Research
2014 – present European Journal of Sports Science
2014 – 2024 BMC Musculoskeletal Disorders
2012 – present American Journal of Sports Medicine
2010 – present Journal of Orthopaedic Research
2009 – present Sports Biomechanics
2009 – present Gait and Posture
2008 – 2024 International Journal of Sports Medicine
2007 – present Journal of Athletic Training
2006 – present Journal of Applied Biomechanics
2006 – 2023 Foot and Ankle International
2005 – present Journal of Orthopedic & Sports Physical Therapy
2004 – present Journal of Biomechanics
2004 – present Medicine and Science in Sports and Exercise

Editorial Boards

2018 - Present **Associate Editor:** Journal of Orthopaedic Research
2012 – 2022 **Associate Editor:** Foot and Ankle International
2015 – 2018 **Editorial Board** of Bone and Joint Research
2007 – 2012 **Assistant Editor:** Foot and Ankle International

Grant/Fellowship Reviews

October 2023 **Alternate Chair:** NIH - Musculoskeletal Rehabilitation Sciences
September 2023 **Member:** AIMBE Fellowship Review Subcommittee - Education
July 2023 **Panel Chair:** CDMRP – PRORP – Defense Health Program: DOD
June 2023 **Alternate Chair:** NIH - Musculoskeletal Rehabilitation Sciences
February 2023 **Alternate Chair:** NIH - Musculoskeletal Rehabilitation Sciences
July 2022 **Reviewer -** iTHRIV Young Investigator Grant Reviews
October 2022 **Alternate Chair:** NIH - Musculoskeletal Rehabilitation Sciences
2022-2026 **Standing Study Section Member:** NIH - Musculoskeletal Rehabilitation Sciences
February 2022 **Panel Member:** NIH - Musculoskeletal Rehabilitation Sciences (MRS)
2021-2022 **Ad Hoc Member:** NIH Center for Scientific Review (CSR) Advisory Council
Working Group on Fellowships
October 2021 **Panel Member:** NIH - NIAMS AMSC
June 2021 **Panel Co-Chair:** NIH - AMS Review Committee
April 2021 **Panel Member:** NSF CISE Panel
March 2021 **Panel Member:** NIH - NIAMS Resource-based Centers for Bone, Muscle and
Orthopaedic Research
January 2021 **Stage One Reviewer:** Howard Hughes Medical Institute – Gilliam Fellowship
November 2020 **Panel Member:** GEM Fellowship Application Panel

September 2020	Panel Member: iTHRIV Pilot Studies Grant Program
July 2020	Panel Member: NIH - AMS Review Committee (F10B Fellowship Study Section)
March 2020	Panel Member: NIH - AMS Review Committee (R13 & K-awards)
January 2020	Stage One Reviewer: Howard Hughes Medical Institute – Gilliam Fellowship
November 2019	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
November 2019	Panel Member: NIH: Special Emphasis Panel - Musculoskeletal, Oral and Skin Sciences IRG (MOSS)
March 2019	Panel Member: NIH Fellowship: Physiology and Pathobiology of Musculoskeletal, Oral, and Skin Systems Study Section
November 2018	Grant Reviewer: ORS – Stryker ORS Women’s Research Fellowship
November 2018	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
October 2018	Grant Reviewer: OREF Total Ankle Replacement
May 2018	Panel Member: US Army Medical Research and Materiel Command (MRMC): DOD
January 2018	Panel Member: ORS – Stryker ORS Women’s Research Fellowship
September 2017	Panel Member: NSF – DARE – CAREER Panel
November 2017	Panel Chair: CDMRP – PRORP – Defense Health Program: DOD
September 2017	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
February 2017	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
August 2016	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
February 2016	Panel Chair: CDMRP – PRORP – Defense Health Program: DOD
December 2015	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
December 2014	Panel Member: CDMRP - PRORP – Defense Health Program: DOD
July 2014 – 2021	Grant Reviewer: Orthopaedic Research and Education Foundation (Annual Review)
February 2011 – 2015	Grant Reviewer: Arthritis Foundation (Annual Review)
March 2005 – 2007	Grant Reviewer: Injury Prevention Research Center - University of North Carolina Chapel Hill
Fall 2016	OREF Grant Task Force – RFA development for Post-op Rehabilitation Grant Program (Member)

Conference Organizing

2025	ACSM Tutorial Lecture: Benefits and Pitfalls of Marker-less Motion Capture (Moderator/Organizer)
2024	Professional Development Roundtable: (Co-Host) American Society of Biomechanics Annual Meeting 2024
2024	Coaches Corner: Black Biomechanist Association mentoring event. (Mentor) American Society of Biomechanics Annual Meeting 2024
2024	Women in Science Event: Managing Professional Transitions (Organizer and Co-Host). American Society of Biomechanics Annual Meeting 2024
2024	Workshop Organizer and Presenter – Developing a networking strategy for YOU: A how-to-network workshop for maximizing value of the American Society of Biomechanics Annual Meeting, American Society of Biomechanics Annual Meeting 2024
2024	Expert Scientific Meeting (ESM 2024) Novel Electronics – Scientific Advisory Committee
2024	Presenter and Organizer – ORS OpenDoor, Long Beach, CA, January 2024
2023	Session Organizer – Diversity Event – The Likeability Trap, American Society of Biomechanics Annual Meeting 2023.
2023	Presenter and Organizer – ORS OpenDoor, Dallas, TX, February 2023
2022	Table Leader – ORS Session: Roundtable Networking on Innovation: Academia, Industry and Beyond during ORS Annual Meeting 2022

- 2021 Session Moderator - Computational Biomechanics, Biomedical Engineering Society Annual Meeting 2021
- 2020 Session Moderator - Assistive Devices, Biomedical Engineering Society Annual Meeting 2020
- 2020 Session Organizer and Presenter – Advancing Women in Science Event, American Society of Biomechanics Annual Meeting 2020
- 2020 Session Organizer – Diversity Lunch, American Society of Biomechanics Annual Meeting 2020
- 2020 Session Organizer and Presenter – Diversity Outreach Event, American Society of Biomechanics Annual Meeting 2020
- 2019 Session Moderator - Injury Biomechanics, Biomedical Engineering Society Annual Meeting 2019
- 2019 Session Organizer – Advancing Women in Biomechanics Event, International/American Society of Biomechanics Annual Meeting 2019
- 2019 Session Organizer – Diversity Breakfast, International/American Society of Biomechanics Annual Meeting 2019
- 2018-2019 International Scientific Advisory Board – International Society of Biomechanics for the 2019 Annual Meeting
- 2018 American Society of Biomechanics 2018 Program Committee Member
- 2018 International Foot and Ankle Biomechanics (I-Fab) 2018 Meeting Program Committee Member
- 2018 Session Organizer and Presenter – Women in Science Event, American Society of Biomechanics Annual Meeting 2018
- 2018 Session Organizer – Diversity Breakfast, American Society of Biomechanics Annual Meeting 2018
- 2018 Session Organizer and Presenter – Diversity Outreach Event, American Society of Biomechanics Annual Meeting 2018
- 2018 Session Moderator and Planner – Sports Biomechanics Can Revolutionize and Diversify STEM at the American Society of Biomechanics Meeting, August 2018.
- 2018 Session Planner and Presenter – Scientific Exhibit (The Knee: Sex-Based Differences throughout the Life Span) at the American Academy of Orthopaedic Surgeons Annual Meeting, San Diego, CA
- 2017 Session Organizer and Presenter – Women in Science Event, American Society of Biomechanics Annual Meeting 2017
- 2017 Session Organizer and Presenter – Diversity Event, American Society of Biomechanics Annual Meeting 2017
- 2017 Session Planner and Presenter – Scientific Exhibit (The Hip: Sex-Based Differences throughout the Life Span) at the American Academy of Orthopaedic Surgeons Annual Meeting, San Diego, CA
- 2017 Session Planner and Presenter– Professional Advancement Session (Negotiating for Success) at the Orthopaedic Research Society Annual Meeting, San Diego, CA.
- 2017 Session Moderator and Planner – Workshop (Osteoarthritis: From Bench to Bedside and Back) at the Orthopaedic Research Society Annual Meeting, San Diego, CA.
- 2017 Session Moderator and Planner – Professional Advancement Session (Having a high-impact NIH Biosketch) at the Orthopaedic Research Society Annual Meeting, San Diego, CA.
- 2017 Session Moderator and Planner – Professional Advancement Session (Commercialization in Orthopedics) at the Orthopaedic Research Society Annual Meeting, San Diego, CA.
- 2016 Webinar Organizer (ORS webinar series) – How to choose the right method to use for motion capture. September 2016
- 2016 Session Planner and Moderator– Professional Advancement Session (What does your CV/Resume say about you) at the Orthopaedic Research Society Annual Meeting

- 2016 Session Moderator and Session Planner– Workshop (Should we believe the hype? The influence of Vitamin D in musculoskeletal health and beyond) at the Orthopaedic Research Society Annual Meeting
- 2016 Session Planner– Professional Advancement Session (Pathways to Promotion: Clinical, Research and Industry) at the Orthopaedic Research Society Annual Meeting
- 2015 Session Moderator and Planner - Changing the Landscape of Injury Prevention at the American Society of Biomechanics Meeting, August 2015.
- 2015 Session Planner– Professional Advancement Session (Leadership Success in Academics for the Women’s Leadership Forum Committee) at the Orthopaedic Research Society Annual Meeting
- 2015 Session Moderator and Session Planner– Workshop (Trials, Tribulations and Triumphs of Conducting Prospective Clinical Research Studies: The How and Why for the Women’s Leadership Forum Committee) at the Orthopaedic Research Society Annual Meeting
- 2014 Session Moderator and Session Planner– Professional Advancement Session (Work-Life Balance for the Women’s Leadership Forum Committee) at the Orthopaedic Research Society Annual Meeting
- 2007 Organizing Committee Member: Human Movement Science Research Day. Local student conference hosted by Duke University and the University of North Carolina at Chapel Hill. University of North Carolina at Chapel Hill, Chapel Hill, NC. March 2, 2007
- 2007 Program Chair and Meeting Chair for the Southeast Biomechanics Conference (SEBC), regional meeting of the American Society of Biomechanics. Duke University, Durham, NC. April 19-21, 2007
- 2006 Organizing Committee Member: Human Movement Science Research Day. Local student conference hosted by Duke University and the University of North Carolina at Chapel Hill. University of North Carolina at Chapel Hill, Chapel Hill, NC. March 3, 2006

Conference Session Chair/Moderator

- 2025 Session Moderator: Spotlight - Improving Pre-operative Planning, ORS 2025, Phoenix, AZ.
- 2024 Session Chair: Biomechanics Track: Biomechanics of Rehabilitation/Injury, BMES 2024, Baltimore, MD
- 2024 Podium Session Chair (Expert Scientific Meeting 2024) - Performance & Monitoring with Force and Pressure Data
- 2024 Session Moderator Thematic Poster Session (ACSM 2024) - Biomechanical Considerations for ACL Injury Recovery & Rehabilitation
- 2023 Session Chair: Orthopaedics - Disc, Tendon, Ligament, BMES Annual Meeting 2023, Seattle, WA.
- 2023 Session Chair: Landing and ACL Injury Thematic Poster Session, ASB Annual Meeting 2023, Knoxville, TN.
- 2023 Session Chair: Clinical Research Methods 1 Session, ORS Annual Meeting 2023, Dallas, TX.
- 2022 Session Moderator: Orthopaedics and Rehabilitation Engineering Track: Spine/disc session, BMES 2022, San Antonio Texas
- 2022 Session Chair: Foot and Ankle - Imaging and Modeling Session, ORS Annual Meeting 2022, Tampa, FL.
- 2021 Session Chair: Biomechanics Section, BMES Annual Meeting 2021, Orlando, FL.
- 2020 Session Chair: New Investigator Research Award (NIRA) session, ORS Annual Meeting 2020, Phoenix, AZ.
- 2019 Session Moderator – Podium (Hip/Knee Arthroplasty 2): International Combined Orthopaedic

- 2019 Research Societies Annual Meeting, Montreal, Canada June 2019
Session Moderator – Thematic Poster Session (Biomechanics after ACL Reconstruction):
American College of Sports Medicine Annual Meeting, Orlando, FL June 2019
- 2018 Session Moderator – JOB/COB Awards Session American Society of Biomechanics Annual
Meeting, Rochester, MN August 2018
- 2018 Session Moderator – Thematic Poster Session (Jumping and Landing) American College of
Sports Medicine Annual Meeting, Minneapolis, MN June 2018
- 2018 Session Moderator – Total Ankle Arthroplasty (special session) International Foot and Ankle
Biomechanics (I-FAB) 2018 Annual Meeting, New York, NY.
- 2017 Session Moderator – Thematic Poster Session (Neuromechanics of Ankle Instability) American
College of Sports Medicine Annual Meeting, Denver, CO June 2017
- 2016 Session Moderator – Thematic Poster Session (ACL) American Society of Biomechanics Annual
Meeting, Raleigh, NC August 2016
- 2016 Session Moderator – Thematic Poster Session (ACL) American College of Sports Medicine
Annual Meeting, Boston, MA June 2016
- 2016 Thematic Poster Session Moderator – American College of Sports Medicine Annual Meeting,
Boston, MA
- 2016 Via College of Osteopathic Medicine Annual Research Day – Best Poster Judge
- 2016 Podium Session Moderator: Lower Limb Biomechanics at the Orthopaedic Research Society
Annual Meeting
- 2014 Poster Awards Committee – ESM Annual Meeting, Boston, MA
- 2014 Podium Session Moderator – ESM Annual Meeting, Boston, MA
- 2014 Thematic Poster Session Moderator – American College of Sports Medicine Annual Meeting,
Orlando, FL
- 2014 Poster Walking Tour Leader – Foot and Ankle: Orthopaedic Research Society Annual Meeting
2014
- 2013 Podium Session Moderator – American College of Sports Medicine Annual Meeting,
Indianapolis, IN

Conference Reviewer

- 2025 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2025
- 2025 Abstract Reviewer: Clinical Research Topic Area – ORS Annual Meeting 2025
- 2024 Abstract Reviewer – Biomedical Engineering Society Annual Meeting 2024
- 2024 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2024
- 2024 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2024
- 2024 Abstract Reviewer: Foot and Ankle Topic Area – ORS Annual Meeting 2024
- 2023 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2023
- 2023 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2023
- 2023 Abstract Reviewer – Biomedical Engineering Society Annual Meeting 2023
- 2023 Abstract Reviewer: Clinical Research Topic Area – ORS Annual Meeting 2023
- 2022 Abstract Reviewer – North American Congress of Biomechanics Annual Meeting 2022
- 2022 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2022
- 2022 Abstract Reviewer: Clinical Research Topic Area – ORS Annual Meeting 2022
- 2021 Abstract Reviewer – Biomedical Engineering Society Annual Meeting 2021
- 2021 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2021
- 2021 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2021
- 2020 3MT (Three Minute Thesis Competition) Reviewer - American Society of Biomechanics Annual
Meeting 2020

- 2020 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2020
- 2020 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2020
- 2019 Abstract Reviewer – Biomedical Engineering Society Annual Meeting, October 2019
- 2019 Undergraduate Student Abstract Reviewer – Biomedical Engineering Society, October 2019
- 2019 Abstract Reviewer – International Society of Biomechanics, August 2019
- 2019 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2019
- 2019 Abstract Reviewer: Foot and Ankle Topic Committee – ORS Annual Meeting, February 2019
- 2018 Abstract Reviewer – International Foot and Ankle Biomechanics Annual Meeting 2018
- 2018 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2018
- 2018 Abstract Reviewer for the Ankle Topic Committee – ORS Annual Meeting 2018
- 2017 Abstract Reviewer – American College of Sports Medicine Annual Meeting 2017
- 2017 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2017
- 2017 Abstract Reviewer for the Ankle Topic Committee – Orthopaedic Research Society Annual Meeting 2017
- 2016 Abstract Reviewer – American Society of Biomechanics Annual Meeting 2016
- 2015 Abstract Reviewer for the Hip and Knee Arthroplasty Topic Committee – Orthopaedic Research Society Annual Meeting 2016
- 2015 American Society of Biomechanics – Abstract Reviewer 2015 Annual Meeting
- 2015 Abstract Reviewer for the Foot and Ankle Topic Committee – Orthopaedic Research Society Annual Meeting 2015
- 2014 Abstract Reviewer for the Hip Topic Committee – Orthopaedic Research Society Annual Meeting 2014

Virginia Tech Service

Service to the University

- 2025 Peer Reviewer for the Academic Program Review – Department of Statistics at Virginia Tech
- 2025 Tenure-track Women Faculty Advisory Committee – Faculty Affairs (Chair)
- 2024- VTCSOM: Strategic Growth Steering Committee (Faculty Academic Effort Working Group)
- 2024 Search Committee Member: Assistant Vice President and Director, Office of Sponsored Programs
- 2024-2028 Health Systems and Implementation Science Promotion and Tenure Committee (Member)
- 2024 Pew Scholars Program in the Biomedical Sciences – Internal Grant Review Panel
- 2023 Higher Education Summit on Free Speech and Intellectual Diversity, November 29, University of Virginia – Virginia Tech Faculty Representative
- 2023 Employees' Spouse and Dependent Scholarship – Review Committee
- 2023 Constructive Dialogue Institute Implementation Leadership Team
- 2022-2023 Sexual Violence Climate and Culture (SVCCC) Work Group
- 2022-2023 SVCC subgroup: Academic Partnerships
- 2022- Committee on Reconciliation – Interim Committee Chair
- 2022-2023 University Council Cabinet: Member
- 2022 Search Committee Member: Governance Specialist
- 2022 Search Committee Member: Fralin Biomedical Research Institute at VTC Biomaterials and Body-Device Interfaces
- 2022 Search Committee Member: Interdisciplinary Design Programs Administrator – Engineering Education
- 2022 Virginia Tech: Task Force on Freedom of Expression and Inquiry – Task Force Chair
- 2022 Academy of Faculty Leadership/Service Review Committee

2021-2023 Faculty Senate – Vice President
2021-2023 Commission on Faculty Affairs: Chair
2021-2023 University Council: Member
2021 5 year Review Committee for Michael Friedlander: VP for Health Sciences and Technology
2020 ICTAS 5-year Review Committee: Commission on Research Liaison
2020-2023 Commission on Research: Faculty Senate Representative
2019-2021 University Council: Faculty Senate Representative
2019 Search Committee Member: Director of Contracts & Agreements, Office of Sponsored Programs
2018-2019 Search Committee Member: Director of the Human Research Protection Program
2018 Search Committee Member: Institutional Review Board Administrative Specialist
2017-2020 Gender@VT Committee Member
2017-2020 Gender@VT Steering Committee Member
2016-2018 Commission on Equal Opportunity and Diversity – Member at large
2016-2018 Co-Vice Chair; VT Women’s Alliance
2016-2017 InclusiveVT Advisory Board (Member)

Service to the College of Engineering

2021-2027 COE Representative to the Virginia Tech Athletics Committee
2021-2024 Engineering Faculty Organization Executive Committee (Member)
2020 Search Committee Member: COE Associate Dean for Research and Graduate Studies
2019-2023 Development and Implementation of Advancing Faculty Involvement in Research Mentoring (AFRIM) program in collaboration with the College of Engineering Dean’s Office
2016-2017 Biomaterials-Body Device Interfaces Focus Area (Committee Member) Virginia Tech, Blacksburg, VA

Service to the Department of Biomedical Engineering and Mechanics

2024-2025 Department Graduate Student Recruitment Director
2022-2026 Departmental Promotion and Tenure Committee (Member)
2021-2022 Search Committee Member: Engineering Mechanics Tenure Track
2019-2024 Biomedical Engineering and Mechanics Memorial Lecture Committee
2019-2023 Faculty Senator: Biomedical Engineering and Mechanics Representative
2019 Search Committee Member: Biomedical Engineering and Mechanics Director of Operations
2016-2018 BEAM Diversity Committee (Committee Chair)

Service External to Virginia Tech

2017-Present VTCSOM Medical Student Project Reviewer (~5 reviews per year)
2011-2016 Member of the Duke University Medical Center Institutional Review Board (Board #3)

Faculty Formal Mentoring

2024-present Kinyata Cooper, Department of Physical Therapy, University of Florida
2023-present April McPherson, Department of Orthopaedic Surgery/SPARC, Emory University
2023-present Erica Bell, Department of Physical Medicine and Rehabilitation, Mayo Clinic
2020-present Brittany Taylor, Biomedical Engineering, University of Florida
2022-present Netta Guari, Biomedical Engineering and Mechanics, Virginia Tech
2023-present Monet Roberts, Biomedical Engineering and Mechanics, Virginia Tech
2017-present Sara Arena, Biomedical Engineering and Mechanics, Virginia Tech

INCLUSION, DIVERSITY AND OUTREACH

2024 – 2025	ASB Up and Comer Award – Mentor (Kinyata Cooper)
February 2024	ORS Open Door – Participant and Presenter
2023 – 2024	ASB Up and Comer Award – Mentor (Erica Bell)
2023 – 2024	ACSM Mentoring Women to Fellowship – Mentor
February 2023	ORS Open Door – Participant, Presenter and Organizer
February 2021	BEAM Breakfast Club: Allyship in STEM (Facilitated Conversation)
February 2021	Student Engineering Council Discussion on Race (Round Table)
July 2019	Virginia Tech Stemability Camp Presentation and Demonstration
June 2019	Center for Enhancing Engineering Diversity BOOST Camp Lab Tours
August 2018	Science of the Slam for ASB meeting, Rochester, MN
July 2018	Center for Enhancing Engineering Diversity Girls Tech Talk and Tour
April 2018	Science of the Slam for iFAB meeting, New York, NY
January 2018	Science of the Slam, Minneapolis, MN
2017 – pres.	HBCU/MSI Research Summit at Virginia Tech (October Annually)
2016, 2018, 2019	National Society of Black Engineers (NSBE) – Lab Demo
2016, 2018	Roanoke Middle School outreach – Lab Demo
2016 – pres.	Center for Enhancing Engineering Diversity Imagination Camp: Lab Tours (July Annually)
2016 – pres.	Center for Enhancing Engineering Diversity Successful Transition to Engineering Program Faculty Mentor Lunch (July Annually)
2016 – pres.	Center for Enhancing Engineering Diversity C-Tech ² – Multiple Lab Tours (June Annually)
2016 – pres.	Center for Enhancing Engineering Diversity C-Tech ² – Faculty Mentor Lunch (June Annually)
2016, 2017	NSF Teach Engagement Faculty Mentor
Summer 2016	NSF REU program Undergraduate Mentor
2016 – pres.	College of Engineering Open House Lab Tours (April Annually)
2016 – 2018	Organizing Committee and Participant for the ORS/Perry Initiative (Annually)
2016	Diversity Planning Summit - Aug 18th, Inn at Virginia Tech (Invite Only)
2014 – 2015	Perry Initiative Participant

RESEARCH INTERSTS

Develop theories of human movement using experimental approaches to quantify normal and abnormal movement mechanics with the goals of improving patient outcomes following injury and surgical procedure through therapeutic intervention.

- Recovery and restoration of movement dynamics following injury and/or surgical interventions through established and novel methods.
- Identification of movement and load asymmetries for the prevention of overuse and degenerative injuries of the lower extremity.
- Development and implementation of clinical trials to assess the feasibility and validity of therapeutic interventions to decrease injury risk and restore function in a variety of sports and clinical populations.

INVITED KEYNOTE, PANEL, AND OTHER INVITED PRESENTATIONS

Keynote Presentations

1. “Function First: Biomechanical Innovations in Rehabilitation & Recovery” Invited Lecture. Department of Bioengineering, University of Pittsburgh, March 2025.

2. “Engineered Health – Leading a Healthcare Revolution” Department of Biomedical Engineering and Mechanics, Virginia Tech, January 2025.
3. “Assessment and Rehabilitation of the World’s Most Complex Machine Across the Lifespan” Keynote Lecture HAS Motion User Group Meeting, November 2024
4. “Unleashing the Potential of Emerging Movement Assessment Technologies from the Lab to the “Field”” Research Keynote Lecture for AOFAS Annual Meeting, September 2024
5. “Biomechanics Focused Athlete Assessment and the Importance of Sex and Race” Keynote Lecture for the 2023 Wu Tsai Human Performance Alliance Symposium, May 2023
6. “Assessment, Rehabilitation and Optimization of the World’s Most Complex Machine.”, Keynote Lecture for the 2022 Pac-12 Student-Athlete Health Conference, May 2022.
7. “Engineering Orthopaedics to Improve Patient Outcome and Prevent Future Injuries”, Keynote Lecture for the Medical Student Research Symposium: Virginia Tech Carilion School of Medicine, March 2017.
8. “Using Lower Extremity Biomechanics in Patients with Ankle Osteoarthritis and Ankle Arthroplasty to Direct Clinical Care”, Kappa Delta Award Presentation: Orthopaedic Research Society Annual Meeting, March 2017.

Invited Presentations

1. “Unleashing the Potential of Emerging Movement Assessment Technologies from the Lab to the “Field”” Pedorthic Footcare Association Webinar, November 2024
2. “The Role of Biomechanics in Women’s Health” Obstetrics and Gynecology Grand Rounds, Carilion Clinics, Roanoke, VA, May 2024
3. “The Role of Sex and Race in Biomechanics and Injury Prevention” University of Virginia, Department of Mechanical and Aerospace Engineering, March 2024
4. “Assessment and Rehabilitation of the World’s Most Complex Machine Across the Lifespan” Emory University, Department of Orthopaedic Surgery, March 2024.
5. “Biomechanics Focused Athlete Assessment and the Importance of Sex and Race” Georgia Tech, Department of Applied Physiology, March 2024.
6. “When One Size Doesn’t Fit All” Emory University, SPARC, March 2024
7. “Using Biomechanics to Understand the World’s Most Complex Machine” Orthopaedic Research Society Open Door outreach event, Long Beach, CA, February 2024.
8. “Assessment and Rehabilitation of the World’s Most Complex Machine from the Lab to the Field” University of Oregon, Department of Human Physiology and Department of Bioengineering, May 2023.
9. “Using Biomechanics to Understand the World’s Most Complex Machine” Orthopaedic Research Society Open Door outreach event, Houston, TX, February 2023.
10. “Using Biomechanics to Optimize Lifelong Function” West Virginia University, Department of Chemical and Biomedical Engineering, January 2023.
11. “Using Biomechanics to Understand the World’s Most Complex Machine” Blacksburg High School Anatomy Lecture (two classes), January 2023.
12. “Engineered Health – Leading a Healthcare Revolution” University of Virginia, Department of Biomedical Engineering, August 2022.
13. “Using Biomechanics to Optimize Lifelong Function” University of Virginia, Department of Biomedical Engineering, August 2022.
14. “Winding Path to NIH R01 Funding.” Virginia Tech, OVPRI Research Development Series – NIH R01 Funding, February 23, 2022.
15. “Using Biomechanics to Optimizing Lifelong Function.” University of Virginia, Department of Kinesiology, January 2022.
16. “Engineered Health: Leading a Healthcare Revolution” Penn State University, Department of Biomedical Engineering, January 2022.

17. "Teamwork Makes the Dream Work: How can we build database repositories to share the load and expand our research opportunities?" Symposium at the American Society of Biomechanics Annual Meeting, August 2021
18. "Contemporary Management of Pediatric ACL Injuries: Individual Treatment by Patient Age and Gender". Symposium at the American College of Sports Medicine Annual Meeting, June 2021
19. "Using Biomechanics to Understand the World's Most Complex Machine" Invited Lecture, School of Engineering and Applied Sciences, Program in Biomedical Engineering, University of the District of Columbia, April 2021
20. "Load-Based Functional Recovery following Total Ankle Arthroplasty" AMTI Symposium. International Foot and Ankle Biomechanics Annual Meeting, April 2021.
21. "Customer Applications in Foot and Ankle" Novel Electronics Symposium. International Foot and Ankle Biomechanics Annual Meeting, April 2021.
22. "Using Biofeedback to Improve Symmetry and Reduce Second ACL Injury Risk" Webinar on Exercise and Rehabilitation. Federal University of Pampa, Brazil, August 24, 2020.
23. "Using Biofeedback to Reduce Second ACL Injury Risk" The 9th Symposium on Motor Control in Biomechanics, Orlando, Florida, May 28th 2019, pre-conference for the 66th Annual Meeting of American College of Sports Medicine.
24. "Engineering Orthopaedics: Improving Patient Outcome and Preventing Future Injuries" - Visiting Professor, Department of Orthopaedic Surgery, University of Colorado Denver, November 2019.
25. "Using Gait Mechanics to Define Total Joint Arthroplasty Surgical Success" University of Florida, Department of Orthopaedic Surgery, March 2019.
26. "Lower Extremity Joint Symmetry during Human Movement" University of Florida, Department of Mechanical and Aerospace Engineering, March 2019.
27. "Teaching, Research and Outreach" University of Florida, Department of Mechanical and Aerospace Engineering, March 2019.
28. "Using Mechanics to Improve Orthopaedic Clinical Care." Invited Lecture. Center for Applied Biomechanics, University of Virginia, July 2018.
29. "Using Gait Mechanics to Define Total Joint Arthroplasty Surgical Success." Visiting Professor, Department of Orthopaedic Surgery, University of Virginia, July 2018.
30. "Spring in your Step: Using Gait Mechanics to Define Total Ankle Arthroplasty Surgical Success" Diversity Exchange Lecture. North Carolina A&T University, Department of Biomedical Engineering, April 2018
31. "ACL Injury Risk, Rehabilitation, Return to Sport, and Prevention of Re-injury" Clara Boothe Luce Research Fellows Lecture. University of Dayton, Department of Mechanical and Aerospace Engineering, April 2018
32. "From Limping to Leaping: Using Gait Mechanics to Define Total Ankle Arthroplasty Surgical Success" Joint Seminar Series Invited Lecture. Rush University, Department of Orthopaedic Surgery, September 2017
33. "ACL Injury Risk, Rehabilitation, Return to Sport, and Prevention of Secondary Injuries" Rutgers Human Performance Conference, April 2017
34. "Assessing Movement and Improving Outcomes using Motion Capture (MoCap)" Department of Orthopedic Surgery Resident Teaching: McMaster University, Toronto, Ontario, December 2015.
35. "Walking Mechanics Review" Department of Orthopedic Surgery Resident Teaching: McMaster University, Toronto, Ontario, December 2015.
36. "Optimizing Life Long Function Following Surgical Intervention" Department of Orthopedic Surgery Grand Rounds: McMaster University, Toronto, Ontario, December 2015.
37. "The Impact of Injury on Movement Symmetry and Movement Quality" School of Physical Therapy Washington University, Spring 2015.

38. “Life-Long Function Following Surgical Intervention” School of Kinesiology University of Michigan, Fall 2014.
39. “Bridging the Gap: Engineering Research the Undergraduate Experience” College of Engineering Virginia Commonwealth University, Fall 2014.
40. “Life-Long Function Following Surgical Intervention” Department of Kinesiology University of Tennessee Knoxville, Spring 2014.
41. “Walking Mechanics and Functional Assessment: Applications in Orthopaedics” University of Arkansas Medical Sciences, November 2013.
42. “Research Design and Statistics” University of Arkansas Medical Sciences, November 2013.
43. “The Jump Height Recipe: Using Biomechanics and Clinical Measures to Predict Performance” Nike Global Research Symposium: Beaverton, OR, Summer 2012.
44. “Effects of Ankle Taping on Fifth Metatarsal Loading in Selected Athletic Tasks” Nike Global Research Symposium: Beaverton, OR, Summer 2005.
45. “The Effect of Soccer Shoe Type on Cutting Kinematics and Plantar Pressure Distributions” Nike Global Research Symposium: Beaverton, OR, Summer 2005.
46. “Effect of a Positive Posterior Heel Flare on Muscle Activation, Kinetics, and Kinematics during Running Gait” Nike Global Research Symposium: Beaverton, OR, Summer 2004.

Invited Panels

1. “BEAM WoMo Event: She Talks - Stories from Women in STEM” Virginia Tech Women’s Month, March 13, 2024.
2. “Deconstructing virtual communications.” Biomedical Engineering Society Annual Meeting, October 14, 2022.
3. “Early Career Panel on Mentorship” American Society of Biomechanics Virtual Annual Meeting, August 6, 2020.
4. “Faculty Panel and Poster Session: An ICTAS Initiative” HBCU/MSI Research Summit at Virginia Tech, October 13, 2019.
5. “Women in STEM panel.” Women’s Month Event hosted by the College of Engineering and the College of Science, March 20, 2018
6. “Interdisciplinary Teams, Tracing the Path.” ICAT's Creativity and Innovation Day, April 30, 2018
7. "Academic Search Committees: Behind the Scenes." Virginia Tech Graduate School Professional Development Session. Graduate Office of Recruitment, Diversity, & Inclusion. March 14, 2018

Publications:

Peer Reviewed Journals:

The Undergraduates[§], Graduate Students[‡], and Medical Students/ Resident/Fellows* were identified using the designated symbols for each manuscript. **H-index: 52** (updated 9/20/24)

1. J Mesisca, SL Arena, **RM Queen**. Differences in Movement and Loading Variability Between ACLR and Healthy Athletes During Unilateral and Bilateral Landings. (In Preparation)
2. ‡ME Teater, D Schmitt, **RM Queen**. *The Impact of Sex and Varying Horizontal Approach on Limb Stiffness and Limb Stiffness Asymmetry during Landing*. TBD (In Review – February 2025).
3. *MM Cullen, A Zeininger, JL Weinert, CE Miller, **RM Queen**, D Schmitt. *A Collisional Perspective on Gait and Energy Utilization after Total Ankle Arthroplasty*. CORR (In Review – February 2025).
4. *J Campbell, D Schmitt, **RM Queen**. The Effect of Total Ankle Replacement on Limb Joint Power Production. *Journal of Orthopaedic Research* (In Review – February 2025).
5. *J Campbell, D Schmitt, LP Sands, **RM Queen**. *Unilateral single joint osteoarthritis changes joint power in unaffected joints*. *Journal of Orthopaedic Research* (In Review – February 2025).
6. *MM Cullen, A Zeininger, JL Weinert, CE Miller, **RM Queen**, D Schmitt. *Collision Reduction as an Efficient Gait Strategy in Patients with Arthritis of the Hip, Knee, and Ankle*. *Clinical Biomechanics* (In Review - Resub January 2025).
7. ‡AS Bruce Leicht, ‡XD Thompson, **RM Queen**, J Rodu, MJ Higgins, KM Cross, BC Werner, JE Resch, JM Hart. *The Utilization of the Landing Error Scoring System in Patients Post-ACLR: An Exploratory Factor Analysis*. *Journal of Sports Rehabilitation* (In Review – May 2024).
8. ‡ME Teater, D Schmitt, DW Powell, **RM Queen**. *Asymmetry in Limb Stiffness, Joint Power, and Joint Work during Landing in Anterior Cruciate Ligament Reconstruction Patients*. *Sports Health* (In Press)
9. ‡TL Libera, ‡J Streamer, **RM Queen**. *Weight Acceptance Asymmetry and Peak Propulsion Force Asymmetry are Greater in Older Adults than Young Adults*. *Journal of Applied Biomechanics*. Doi: 10.1123/jab.2024-0027 (In Press).
10. **RM Queen**, L Arbeeva, DN Bracey, D Hales, C Hill, KF Huffman, TA Schwartz, KD Allen. *Physical Activity and Symmetry Following Total Knee Arthroplasty: Results of an Exploratory Trial*. *Osteoarthritis and Cartilage Open*. 6(4), 2024.
11. *M Barylak, SL Arena, *SH Carpentier, **RM Queen**. *Dynamic Stability During Gait Improves Following Unilateral Total Ankle Arthroplasty*. *Journal of Orthopaedic Research*. 43:388–395, 2025 doi: 10.1002/jor.25992
12. ‡JM Brisbane, **RM Queen**, MBA McCullough, C Baker, JS London. *Racial and Gender Differences in Research Engagement and Mistrust in a Gait Analysis Study*. *Translational Journal of the ACSM* 10(1):e000277, Winter 2025. | DOI: 10.1249/TJX.0000000000000277

13. ‡J Streamer, **RM Queen**. *Movement Variability and Limb Loading Symmetry During Simulated Daily Functional Tasks*. Human Movement Science. 2024, 98; 103289. doi: 10.1016/j.humov.2024.103289.
14. ‡AS Bruce Leicht, ‡XD Thompson, **RM Queen**, J Rodu, MJ Higgins, KM Cross, BC Werner, JE Resch, JM Hart. *Comparison of Limb Loading Characteristics and Subjective Functional Outcomes Between Sexes Following ACLR*. Journal of Athletic Training. 2024. doi: 10.4085/1062-6050-0534.23. Epub ahead of print. PMID: 38629487.
15. *K Kugach, ‡NE-P Stark, ‡HG Farah, ‡RM Hansen, SL Arena, **RM Queen**. *Total Ankle Arthroplasty Improves Discrete and Continuous Stance Phase Gait Symmetry*. Gait & Posture. 2024, 113; 272-279, doi: 10.1016/j.gaitpost.2024.06.022.
16. *S Hamlin, *M Barylak, SL Arena, **RM Queen**. *Gait Asymmetry Persists Following Unilateral and Bilateral Total Ankle Arthroplasty*. Journal of Orthopaedic Research. 2024 Nov; 42(11): 2545-2551. doi: 10.1002/jor.25932. PMID: 38963180.
17. ‡R Hansen, SL Arena, **RM Queen**. *Validation of Upper Extremity Kinematics in Typically Developing Children using Markerless Motion Capture*. Biomedical Engineering Advances, 2024; 7, doi: 10.1016/j.bea.2024.100128.
18. *M Barylak, SL Arena, *S Hamlin, **RM Queen**. *End-Stage Ankle Arthritis Alters Dynamic Stability during Gait as Measured by Margin of Stability Between Limbs and Compared to Healthy Controls*. Gait & Posture. 2024; 113: 13-17. doi: 10.1016/j.gaitpost.2024.05.021. PMID: 38820764.
19. ‡AS Bruce Leicht, ‡XD Thompson, **RM Queen**, J Rodu, MJ Higgins, KM Cross, BC Werner, JE Resch, JM Hart. *Analysis of Limb Loading and Lower Extremity Strength Recovery Across Time Following Anterior Cruciate Ligament Reconstruction*. Sports Health. doi: 10.1177/19417381241285859. Epub 2024 Oct 14. PMID: 39397655
20. ‡R Hansen, SL Arena, **RM Queen**. *Characterizing Upper Extremity Kinematics in Typically Developing Children during Box and Blocks Test*. Journal of Biomechanics. 2024 Jan:163. doi: 10.1016/j.jbiomech.2024.111946. Epub 2024 Jan 12. PMID: 38246009.
21. D Schmitt, §TL Sparling, **RM Queen**. *The Effect of Total Ankle Arthroplasty on Mechanical Energy Exchange*. Journal of Biomechanics. 2024 Feb; 164: 111941. doi: 10.1016/j.jbiomech.2024.111941. Epub 2024 Jan 9. PMID: 38325194.
22. ‡KS Biddle, LE Welfare, N Abaid, T Upthegrove, **RM Queen**. *An Exploration of Attunement in Counsellor Education via Group Drumming*. The Arts in Psychotherapy. 86, 2023.
23. ‡JM Brisbane, MBA McCullough, C Baker, JS London, **RM Queen**. *Impact of Race, Gait Speed and Arch Height on Plantar Loading*. Journal of Biomechanics. 2023 Jun;155:111648. doi: 10.1016/j.jbiomech.2023.111648. Epub 2023 May 20. PMID: 37247518.
24. §R Hatfield, §H Sheppard, ‡AT Peebles, KR Ford, JM Hart, **RM Queen**. *Using load sensing insoles to identify knee kinetic asymmetries during landing in patients with an ACL reconstruction*. Clinical Biomechanics. 2023 Apr;104:105941. Epub 2023 Mar 15. PMID: 36958202.

25. ‡N Stark, ‡J Streamer, **RM Queen**. *Patients with Unilateral Ankle Arthritis Have Decreased Ankle and Limb Loading Symmetry Compared to Healthy Controls*. *Journal of Orthopaedic Research*. 41(9): 1953-1964, 2023.
26. ‡A Luftglass, D. Feeney, **RM Queen**. *The Effect of Upper Panel Stiffness on Biomechanical Performance in Athletic Footwear*. *Footwear Science*. 15(3): 193-202, 2023.
27. **RM Queen** and D Schmitt. *Reflections on Presurgical and Postsurgical Gait Mechanics After 50 Years of Total Ankle Arthroplasty and Perspectives on the Next Decade of Advancement*. *Foot and Ankle Clinics*. 28(1): 99-113, 2023.
28. ‡K Renner, §C Delaney, ‡C Hill, L Sands, **R Queen**. *Predicting Post-Operative Walking Speed Based on Pre-Operative Gait Mechanics*. *Journal of Orthopaedic Research*. 41(5): 1070-1075, 2023.
29. RJ Larsen, **RM Queen**, D Schmitt. *Adaptive locomotion: Foot strike pattern and limb mechanical stiffness while running over an obstacle*. *Journal of Biomechanics*. 143, 2022. PMID: 36113387.
30. ‡AT Peebles, TK Miller, J Savla, T Ollendick, SP Messier, **RM Queen**. *Reduction of Risk Factors for ACL Re-injuries using an Innovative Biofeedback Approach: A Randomized Clinical Trial*. *Physical Therapy in Sport*. 16(57): 78-88, 2022. PMID: 35940085.
31. ‡RA Brindle, CM Bleakley, JB Taylor, **RM Queen**, KR Ford. *Validity of estimating center of pressure during walking and running with plantar load from a 3-sensor wireless insole*. *Wearable Technologies*. 3, E8. doi:10.1017/wtc.2022.5.
32. ‡CN Hill, W Reed, D Schmitt, S. Arent, LP Sands, **RM Queen**. *Racial Differences in Running and Landing Measures Associated with Injury Risk Vary by Sex*. *Sports Biomechanics* 2022, 1-19. PMID: 35352977.
33. ‡K Renner, ‡AT Peebles, JJ Socha, **RM Queen**. *The Impact of Sampling Frequency on Kinetic Outcomes*. *Journal of Biomechanics*. 135:111034, 2022. PMID: 35288314
34. ‡CN Hill, S Ross, ‡AT Peebles, **RM Queen**. *Continuous Similarity Analysis in Patient Populations*. *Journal of Biomechanics*. 131:110916, 2022. PMID: 34952349
35. ‡CN Hughes-Oliver, W. Reed, D Schmitt, S. Arent, LP Sands, **RM Queen**. *Factors Contributing to Racial Differences in Gait Mechanics Differ by Gender*. *Gait and Posture*. 95: 277-283, 2022. PMID: 33658154.
36. ‡CN Hill, *M Romero, M Rogers, **RM Queen**, and PG Brolinson. *Effect of Osteopathic Manipulation on Gait Asymmetry*. *Journal of Osteopathic Medicine*. 122(2): 85-94, 2021. PMID: 34787381
37. §J Mesisca, ‡AT Peebles, and **RM Queen**. *Including Jump Height when Normalizing Single Hop Impact Kinetics Can Change the Directionality of Findings*. *Clinical Biomechanics*. 88, 2021. PMID: 34388652.
38. ‡M Liu, ‡C Hughes-Oliver, **RM Queen**, L Zuo. *A Lightweight Wearable Biomechanical Energy*

Harvester. Smart Materials and Structures. 2021, DOI 10.1088/1361-665X/ac03c3

39. ‡M. Liu, ‡C. Hughes-Oliver, **R. Queen**, L. Zuo. Comparison of negative-muscle-work energy harvesters from the human ankle: Different designs and trade-offs. *RENEWABLE ENERGY*, 170, 525-538, 2021.
40. §A. Luftglass, ‡AT Peebles, TK Miller, **RM Queen**. *The Impact of Standardized Footwear on Load and Load Symmetry*. *Clinical Biomechanics*. 88, 2021. PMID: 34246037.
41. ‡K Renner and **RM Queen**. *Change in Force-based Metrics during Outdoor 2- and 4-Mile Runs*. *Medicine and Science in Sports and Exercise*. 53(9), 1922-1927, 2021.
42. ‡AT Peebles, TK Miller, **RM Queen**. *Landing Biomechanics Deficits in Anterior Cruciate Ligament Reconstruction Patients Can be Assessed in a Non-laboratory Setting*. *Journal of Orthopaedic Research* 40(1), 150-158, 2021. PMID: 33738820
43. ‡L. Dickerson, **RM Queen**. *The Design and Validation of a Low-Cost Foot Measurement System*. *Journal of Biomechanical Engineering*. 143(8), 2021.
44. **RM Queen** and D Schmitt. *Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement*. *Innovations in Aging*. 5(2): 1-8, 2021. PMCID: [PMC8304153](https://pubmed.ncbi.nlm.nih.gov/34236927/)
45. ‡AT Peebles, DSB Williams, **RM Queen**. *Bilateral Squatting Mechanics are Associated with Landing Mechanics in Anterior Cruciate Ligament Reconstruction Patients*. *American Journal of Sports Medicine*. 49(10):2638–2644, 2021. PMID: 34236927.
46. ‡A Peebles, J Savla, T Ollendick, **RM Queen**. *Landing Asymmetry is Associated with Psychological Factors After ACL Reconstruction*. *Medicine and Science in Sports and Exercise*. 53(7):1446-1451, 2021
47. A Zeininger, D Schmitt, ‡C Hughes-Oliver, **RM Queen**. *The Effect of Ankle Osteoarthritis and Total Ankle Arthroplasty on Center of Pressure Position*. *Journal of Orthopaedic Research*. PMID: 32918492, 39(6): 1245-1252, 2021.
48. AE Sanders, AP Kraszewski, S Ellis, **RM Queen**, SI Backus, H Hillstrom, CA Demetracopoulos. *Differences in gait and stair ascent after total ankle arthroplasty and ankle arthrodesis*. *Foot and Ankle International*. 42(3):347-355, 2021.
49. RM Queen, AT Peebles, TK Miller, J Savla, T Ollendick, SP Messier, DB Williams III., *Reduction of Risk Factors for ACL Re-injuries using an Innovative Biofeedback Approach: Rationale and Design*. *Contemporary Clinical Trials Communications*. 22, 2021, PMC 8100073.
50. ‡L. Dickerson, **RM Queen**. *Effects of Ankle Bracing on Foot Posture and Plantar Loading*. *Journal of Athletic Training*. 56(5):461-472, 2021.
51. ‡K Renner and **RM Queen**. *Detection of Age and Gender Differences in Walking Using Mobile Wearable Sensors*. *Gait and Posture*. 87: 59-64, 2021. <https://doi.org/10.1016/j.gaitpost.2021.04.017>
52. JB Taylor, KR Ford, **RM Queen**, EC Owen, AS Gisselman. *Incorporating internal and external*

- training load measurements in clinical decision making for patients after ACL reconstruction. IJSM. 16(2):555-578, 2021. doi: 10.26603/001c.21152*
53. **R Queen**, C Hyer, JS Lewis Jr, JR Clements, MT Cooper. *Is the Solution to a Painful Ankle Fusion an Ankle Replacement? Vice Versa?* Foot Ankle Specialist. 14(1):64-67, 2021. PMID: 33605162 doi: 10.1177/1938640021992589.
54. ‡AT Peebles, §MM Carroll, JJ Socha, D Schmitt, **RM Queen**. *Validity of using automated two-dimensional video analysis to measure continuous sagittal plane running kinematics. Annals of Biomedical Engineering. 49, 455–468, 2021. PMID: 32705424 doi: 10.1007/s10439-020-02569-y.*
55. ‡AT Peebles, SL Arena, **RM Queen**. *A new method for assessing landing kinematics in non-laboratory settings. Physical Therapy in Sport. 49, 21-30, 2021.*
56. ‡LC Dickerson, ‡AT Peebles, JT Moskal, TK Miller, **RM Queen**. *Physical performance improves with time and a functional knee brace in ACL reconstructed athletes. Orthopaedic Journal of Sports Medicine. 12;8(8):2325967120944255, 2020. doi: 10.1177/2325967120944255. PMID: 32851108; PMCID: PMC7425272.*
57. ‡CN Hughes-Oliver, W Reed, D Schmitt, LP Sands, **RM Queen**. *Racial Differences in Gait Mechanics. Journal of Biomechanics. 112(9), November 2020, <https://doi.org/10.1016/j.jbiomech.2020.110070>*
58. ‡AT Peebles, ‡LC Dickerson, ‡KE Renner, **RM Queen**. *Sex-Based Differences in Landing Mechanics Vary between the Drop Vertical Jump and Stop Jump. Journal of Biomechanics. 105: 109818, 2020. <https://doi.org/10.1016/j.jbiomech.2020.109818>.*
59. T Alliston, K Foucher, CJ Hernandez, K Kozloff, K Lewis, S Liu, D Mercer, R Ochia, C Rimnac, M C H van der Meulen, **RM Queen**, B Frederick, J Iatridis, and JJ Westendorf. *The Importance of Diversity and Inclusion in the Orthopaedic Research Society. Journal of Orthopaedic Research. 38: 1661-1665, 2020.*
60. **RM Queen**, ‡LC Dickerson, S Ranganathan, D Schmitt. *A novel method for measuring asymmetry in kinematic and kinetic variables: The Normalized Symmetry Index. Journal of Biomechanics. 99: 109531, 2020. <https://doi.org/10.1016/j.jbiomech.2019.109531>.*
61. ‡CN Hughes-Oliver, KA Harrison, DSB Williams, **RM Queen**. *Statistical Parametric Mapping as a Measure of Differences between Limbs: Applications to Clinical Populations. Journal of Applied Biomechanics. 35: 377-387, 2019.*
62. ‡AT Peebles, KR Ford, JB Taylor, JM Hart, LP Sands, and **RM Queen**. *Using force sensing insoles to predict kinetic knee symmetry during a stop jump. Journal of Biomechanics. 95 (11): 109293, 2019. <https://doi.org/10.1016/j.jbiomech.2019.07.037>*
63. ‡AT Peebles, TK Miller, JT Moskal, **RM Queen**. *Hop testing symmetry improves with time and while wearing a functional knee brace in anterior cruciate ligament reconstructed athletes. Clinical Biomechanics. 70: 66-71, 2019.*
64. AC Severin, RP Gean, SG Barnes, **RM Queen**, RJ Butler, R Martin, CL Barnes, EM Mannen. *Effects of*

- a corrective heel lift with an orthopaedic walking boot on joint mechanics and symmetry during gait.* Gait and Posture. 73:233-238, 2019.
65. **RM Queen**, *JC Campbell, D Schmitt. *Gait Analysis Reveals that Total Hip Arthroplasty Increases Power Production in the Hip During Level Walking and Stair Climbing.* Clinical Orthopaedics and Related Research. 477(8):1839-1847, 2019.
66. S Shultz, ‡C Oliver-Hughes; D Wells; K Sheerin; PW Fink; GG Handsfield; K Hebert-Losier; J Clarke; **RM Queen**. *Can Research Align with Service? Lessons Learned from the Big Experiment and National Biomechanics Day.* Journal of Biomechanics. 87:202-205, 2019
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Books: (Indicate authors or editor.): None

Non-authored publications: (Faculty member formally acknowledged in the publication.)

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Selected abstracts

1. R Hansen, SL Arena, **RM Queen**. Shoulder and Wrist Intralimb Joint Coordination are Age and Trial Dependent. American Society of Biomechanics Annual Meeting 2025. (In Review)
2. S Weiss, T Ollendick, S Arena, K Ford, J Hart, **RM Queen**. Implications of Percent Stance Normalization During Bilateral Landings in Patients with ACLR Compared to Healthy Controls. American Society of Biomechanics Annual Meeting 2025. (In Review)
3. C Kyriacou, **RM Queen**, C Hill. Estimating Lower Extremity Joint Kinematics using 1D or 2D Ground Reaction Forces. American Society of Biomechanics Annual Meeting 2025. (In Review)
4. A Gioia, D Schmitt, **RM Queen**. Impact of Achilles Tendon Moment Arm on Foot Gearing. American Society of Biomechanics Annual Meeting 2025. (In Review)

5. V. Rathod, **R Queen**, S Rao. Runners With Midportion Achilles Tendinopathy Have Joint-Specific Work Deficits When Compared to Matched Controls. American College of Sports Medicine Annual Meeting 2025.
6. ZM Johnson, **RM Queen**, JJ Carmouche. Impact of direct lateral interbody fusion on short-term functional performance and patient-reported outcomes. Orthopaedic Research Society Annual Meeting 2025.
7. T Schalow, **RM Queen**. Joint Coordination Variability in Patients Following Total Ankle Arthroplasty. Orthopaedic Research Society Annual Meeting 2025.
8. **RM Queen**, S Arena. Margin of Stability During Single Limb Support Differs Based on the Lower Extremity Joint with End-stage Arthritis. Orthopaedic Research Society Annual Meeting 2025.
9. Tate, JJ, Wassinger, CA, Sabus, C, Powers, CM, Willy, RW, Willson, JD, Levangie, PK, Oatis, CA, Davis, IS, Ford, KR, Heiderscheid, BC, **Queen, R**, Knudson, D, Thomas, S, Hewett, TE, Shanley, E, Biomechanics Core Competencies in Physical Therapist Education: A Modified Delphi Study, American Physical Therapy Combined Sections Meeting 2025.
10. **RM Queen**, L Arbeeva, DN Bracey, D Hales, C Hill, KF Huffman, TA Schwartz, KD Allen. Physical Activity and Symmetry Following Total Knee Arthroplasty: Results of an Exploratory Trial. ACR Convergence Meeting 2024.
11. RM Hansen, SL Arena, **RM Queen**. Shoulder and Wrist Kinematic Variability is Different Between Box and Block Test Trials. Biomedical Engineering Society Annual Meeting 2024.
12. S Weiss, A Gioia, KR Ford, J Hart, AW Kiefer, **RM Queen**. Accurate Markerless Motion Capture Kinematic Comparison During Unilateral and Bilateral Landings. Biomedical Engineering Society Annual Meeting 2024.
13. V Rebholz, J Hart, K Ford, **RM Queen**. Patients Returning to Sport after Anterior Cruciate Ligament Reconstruction have Greater Push-off Force Asymmetry During Hop Testing. Expert Scientific Meeting – novel Electronics 2024.
14. S Weiss, J Hart, K Ford, **RM Queen**. Sex-Specific Differences in Peak Force and Impulse Symmetry during Running and Walking Following ACLR. Expert Scientific Meeting – novel Electronics 2024.
15. S Weiss, SL Arena, **RM Queen**. Impact of Testing Environment on Symmetry During Sit-to-Stand Assessment. American Society of Biomechanics 2024.
16. A Henry, **RM Queen**, SL Arena. Load Symmetry During Different Child Carrying Conditions in Postpartum Women. American Society of Biomechanics 2024.
17. A Gioia, A Luftglass, D Schmitt, **R Queen**. Variable Gearing Improves Efficiency in Agility Tasks. American Society of Biomechanics 2024.
18. C Hill, L Gidley, D Schmitt, **RM Queen**. Joint Coordination During Gait Differs by Race and Sex.

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19. AB Leicht, X Thompson, **RM Queen**, J Rodu, M Higgins, K Cross, B Werner, J Resch, J Hart. Limb Loading and Quadriceps Strength Recovery After ACL Reconstruction. National Athletics Training Association 2024.
20. A Gioia, A Luftglass, D Schmitt, **R Queen**, FACSM. Variable Foot Gearing in Jumping. American College of Sports Medicine 2024.
21. J Streamer, T Schalow, WG Burks, **RM Queen**. Limb Loading Asymmetry During Simulated Daily Functional Tasks. American College of Sports Medicine 2024.
22. AB Leicht, X Thompson, **RM Queen**, J Rodu, M Higgins, K Cross, B Werner, J Resch, J Hart. Prognostic Value of Limb Loading During Early Functional Assessment for Predicting Later Jump Landing Performance Following ACLR. American College of Sports Medicine 2024.
23. Z Johnson, G Morrison, **RM Queen**, J Carmouche. Evaluating short-term functional performance following direct lateral interbody fusion. Virginia Orthopaedic Association Annual Meeting 2024
24. J Basso, N Tasnim, M Aychman, D English, **RM Queen**, MA Bell. Examining the clinical utility of dance to support social connection - Explorations at the level of the brain, heart, and body. Association for Clinical and Translational Science Annual Meeting 2024.
25. J Ackerman, SSF Assi, C Chlebek, SW Clayton, RE de la Vega, JF Drazan, H Giambini, PA Hernandez, RM Irwin, AK Loya, JC Marvin, ME McGee-Lawrence, D Pacicca, CJ Panebianco, L Pferdehirt, **RM Queen**, LJ Varden, BL Walton, HD Welhaven. Fostering Interest in STEM Careers and MSK Research: Pre- and Post-Program Survey Outcomes From Middle and High School Participants of the 2023 ORS Open Door Event. Orthopaedic Research Society Annual Meeting 2024.
26. **RM Queen**, SL Arena. Gait Stability Differences During Single Limb Support between Patient Ankle Arthritis and Health Participants. Orthopaedic Research Society Annual Meeting 2024.
27. RM Hansen, SL Arena, **RM Queen**. Markerless and Marker-based Motion Capture Show Comparable Results for Upper Extremity Kinematics in Typically Developing Children during the Box and Blocks Test. Biomedical Engineering Society Annual Meeting 2023.
28. J Qualter, WG Burks, **RM Queen**. Weak Correlation between the Normalized Symmetry Index and Other Symmetry Measures in Patients following an Anterior Cruciate Ligament Reconstruction. Biomedical Engineering Society Annual Meeting 2023.
29. T Libera, KD Allen, **RM Queen**. Knee Kinematics Asymmetry during Sit-to-Stand in Total Knee Arthroplasty Patients. Biomedical Engineering Society Annual Meeting 2023.
30. BN Vasquez, MA Teater, SL Arena, **RM Queen**. The Impact of Biofeedback on Limb Stiffness and Knee Joint Power in ACLR Patients. American Society of Biomechanics Annual Meeting 2023.
31. DK Kelly, AW Kiefer, **RM Queen**, GM DelBiondo, JM Hart. Clinical Use of Markerless Motion Capture in Patients Recovering from ACLR. American Society of Biomechanics Annual Meeting 2023.

32. MA Teater, D Schmitt, **RM Queen**. The Impact of Sex and Varying Horizontal Approach on Limb Stiffness and Limb Stiffness Asymmetry During Landing. American Society of Biomechanics Annual Meeting 2023.
33. J Wilson, KD Allen, SL Arena, **RM Queen**. Load Symmetry During Gait following Total Knee Arthroplasty Compared to Controls. American Society of Biomechanics Annual Meeting 2023.
34. T Scott, KD Allen, SL Arena, **RM Queen**. Differences in Load Symmetry between Healthy Older Adults and Total Knee Arthroplasty Patients. American Society of Biomechanics Annual Meeting 2023.
35. JK Mesisca, SL Arena, **RM Queen**. Kinetic Variability Differences During a Single Hop between ACLR and Healthy Control Cohorts. American Society of Biomechanics Annual Meeting 2023.
36. JK Mesisca, SL Arena, **RM Queen**. Load Variability during a Stop Jump is Higher in Female Patients with an ACLR. American Society of Biomechanics Annual Meeting 2023.
37. SL Arena, **RM Queen**. Statistical Parameter Mapping for Time-Varying Differences in Margin of Stability in Patients with End-Stage Ankle Arthritis. Gait and Clinical Movement Analysis Society Annual Meeting 2023.
38. T Libera, J Streamer, KD Allen, **RM Queen**. Kinematic Knee Asymmetry after Total Knee Arthroplasty Compared to Controls. Gait and Clinical Movement Analysis Society Annual Meeting 2023.
39. **RM Queen**, S Arena. Surgical Limb Margin of Stability Is Different Based On The Affected Lower Limb Joint. American College of Sports Medicine Annual Meeting 2023.
40. M Barylak, S Arena, S Hamlin, **RM Queen**. Assessing Fall Risk During Gait Using Margin of Stability in Patients with End-Stage Ankle Arthritis. Association of Academic Physiatrists Annual Meeting 2023.
41. M Barylak, S Arena, S Hamlin, **RM Queen**. Assessing The Effect of Unilateral Total Ankle Arthroplasty on Fall Risk During Gait Using Margin of Stability. Orthopaedic Research Society Annual Meeting 2023.
42. J Mckendrick, M Dooley, SL Arena, **RM Queen**. Toe Clearance and Swing Time Improve with Total Ankle Arthroplasty but Still Differ Between Limbs. Orthopaedic Research Society Annual Meeting 2023.
43. S Hamlin, M Barylak, **R Queen**. Gait Symmetry in Patients with Unilateral and Bilateral End-Stage Ankle Arthritis. Orthopaedic Research Society Annual Meeting 2023.
44. S Elnahas, G Shi, J Black, Y Zhu, S Arena, **RM Queen**. Validation of a Fiber Optic-based Curvature Sensor in Upper Limb Joint Motion Monitoring. Biomedical Engineering Society Annual Meeting 2022.
45. RM Hansen, HG Farah, SL Arena, **RM Queen**. Total Ankle Arthroplasty Shows Improvement in Ankle Symmetry During Gait. Biomedical Engineering Society Annual Meeting 2022.
46. T Libera, J Streamer, **RM Queen**. Peak Impact Force Asymmetry is Greater in Healthy Older Adults.

Biomedical Engineering Society Annual Meeting 2022.

47. HG M Farah, **RM Queen**, Stephanie DeLuca. Understanding How Children with Hemiplegic Cerebral Palsy Anticipate Gait. American Academy of Cerebral Palsy and Developmental Medicine (AACPD) Annual Meeting 2022.
48. **RM Queen** and SL Arena. Margin of Stability Increases in the Surgical Limb of Arthritis Patients Depending on the Afflicted Joint. International Combined Orthopaedic Research Societies 2022 Meeting.
49. AR Luftglass, DF Feeney, **RM Queen**. The Effect of Upper Panel Stiffness on Biomechanical Performance in Athletic Footwear. North American Congress on Biomechanics Meeting 2022.
50. K Renner, C Delaney, C Hill, L Sands, **RM Queen**. Predicting Post-operative Walking Speed Based on Pre-operative Gait Mechanics. North American Congress on Biomechanics Meeting 2022.
51. SL Arena and **RM Queen**. Arthritis Patients Differentially Increase Surgical Limb Margin of Stability Depending on the Affected Joint. North American Congress on Biomechanics Meeting 2022.
52. N Tasnim, R Hansen, S Weiss, SL Arena, and **RM Queen**. Improvements in Bilateral Balance after Unilateral Total Ankle Arthroplasty. North American Congress on Biomechanics Meeting 2022.
53. **R Queen**, M Peyer, B Dickson, D Schmitt. Gait-related Factors That Explain Power Production in Patients Before and After Total Ankle Arthroplasty. American College of Sports Medicine Annual Meeting 2022.
54. A Atwood, H Farah, M Treater, J Brisbane, **R Queen**, S DeLuca. Evaluating the accuracy and precision of commercially available activity trackers in school-aged children. Southeast American College of Sports Medicine Annual Meeting 2022.
55. SL Arena, AT Peebles, and **RM Queen**. A Novel Biofeedback Intervention Can Improve and Retain Loading Symmetry During Squatting in ACLR Patients. Orthopaedic Research Society Annual Meeting 2022.
56. CN Hill, D Schmitt, M McCullough, **RM Queen**. Sex and Race Differences in Center of Pressure Trajectories During Shod Gait. American Society of Biomechanics Annual Meeting 2021.
57. ME Teater, DO Schmitt, DW Powell, **RM Queen**. Symmetry Differences in Stop Jump Landing Mechanics after Anterior Cruciate Ligament Reconstruction. American Society of Biomechanics Annual Meeting 2021.
58. NE Stark, D Schmitt, **RM Queen**. No Differences in Gait Symmetry Between Age Groups in Healthy Adults that Maintain Gait Speed. American Society of Biomechanics Annual Meeting 2021.
59. K Renner, A Peebles, **R Queen**. The Impact of Sampling Frequency on Kinetic Outcomes. American Society of Biomechanics Annual Meeting 2021.
60. CN Hill, D Schmitt, W Reed, L Sands, S Arent, **RM Queen**. Racial Differences in Running and

- Landing Mechanics. Gait and Clinical Movement Analysis Society Annual Meeting 2021.
61. CN Hill, D Schmitt, W Reed, L Sands, S Arent, **RM Queen**. Racial Differences in Gait Biomechanics. Gait and Clinical Movement Analysis Society Annual Meeting 2021.
 62. J Brisbane, J London, R Queen. Assessing Interdisciplinary and Design Thinking in an Interdisciplinary Design Course. Biomedical Engineering Society Annual Meeting 2021.
 63. TP Trentadue, **RM Queen**, D Schmitt. Fourier Analysis of Vertical Ground Reaction Forces Distinguishes Gait Patterns in Hip, Knee, and Ankle Osteoarthritis. Osteoarthritis Research Society International (OARSI) Annual Meeting 2021.
 64. NE Stark, HG Farah, **RM Queen**. Biomechanical Limb Symmetry Improves Following TAA and is Not Restored to the Level of Healthy Participants. Orthopaedic Research Society Annual Meeting 2021.
 65. CN Hughes-Oliver, S Ross, **RM Queen**. Discrete Projection and Similarity Analysis in Ankle Osteoarthritis Patients. Orthopaedic Research Society Annual Meeting 2021.
 66. S Elnahhas, N Stark, **RM Queen**, SL Arena. Dominance-Based Asymmetry in Postural Control Within and Across Quiet Standing Tasks. Biomedical Engineering Society Annual Meeting 2020.
 67. S Elnahhas, N Stark, **RM Queen**, SL Arena. Preliminary Investigation of Limb Load Symmetry During Quiet Stance & Sit-to-Stand. American Society of Biomechanics Annual Meeting 2020.
 68. N Stark, CN Hughes-Oliver, **RM Queen**. Ankle Osteoarthritis Effects on Gait Symmetry Compared to Healthy Population. American Society of Biomechanics Annual Meeting 2020.
 69. CN Hughes-Oliver, S Ross, **RM Queen**. Discrete Projection and Similarity Analysis in Total Ankle Replacement Patients. American Society of Biomechanics Annual Meeting 2020.
 70. CN Hughes-Oliver, W Reed, D Schmitt, L Sands, S Arent, **RM Queen**. Racial Differences in Running and Landing Measures Associated with Injury Risk Vary by Gender. American Society of Biomechanics Annual Meeting 2020.
 71. CN Hughes-Oliver, W Reed, D Schmitt, L Sands, S Arent, **RM Queen**. Spatial Step and Joint Angular Kinematics Differ between Racial Groups. American Society of Biomechanics Annual Meeting 2020.
 72. AT Peebles, SL Arena, and **RM Queen**. Automated two-dimensional video analysis is valid and repeatable for assessing frontal and sagittal plane landing kinematics. American Society of Biomechanics Annual Meeting 2020.
 73. AT Peebles, TK Miller, and **RM Queen**. Risk factors for second anterior cruciate ligament injury can be objectively measured in a clinical setting. American Society of Biomechanics Annual Meeting 2020.
 74. AR Luftglass, AT Peebles, TK Miller, and **RM Queen**. The Impact of Standardized Footwear on Load and Load Symmetry. American Society of Biomechanics Annual Meeting 2020.
 75. **RM Queen**, AT Peebles, and DSB Williams. Kinetic Asymmetry During Squatting and Landing are

- Associated in Anterior Cruciate Ligament Reconstructed Patients. American College of Sports Medicine Annual Meeting 2020.
76. S Everest, JT Moskal, **RM Queen**. Balance Deficits Remain More than One Year Following Total Hip Arthroplasty. Orthopaedic Research Society Annual Meeting 2020.
77. **RM Queen**, AT Peebles, KR Ford, JM Hart. Using load-sensing insoles to identify knee kinetic asymmetries during landing in patients with an ACL reconstruction. Orthopaedic Research Society Annual Meeting 2020.
78. LC Dickerson and **RM Queen**. The Validity and Between-Day Repeatability of an Instrumented Knee Brace at Different Speeds. Biomedical Engineering Society Annual Meeting 2019.
79. C Hughes-Oliver, M McCullough, and **RM Queen**. Feasibility of Collecting Gait Data in Non-Research Environments: BMES Annual Meeting 2018. Biomedical Engineering Society Annual Meeting 2019.
80. AT Peebles, MM Carroll, **RM Queen**. Validation of Sagittal Plane Running Kinematics Using 2D Video and Automated Marker Tracking. Biomedical Engineering Society Annual Meeting 2019.
81. L Bejarano-Pineda, **RM Queen**, F Gergoudis, MJ Pellegrini, ME Easley. Outcomes and Gait Mechanics after Ankle Arthrodesis Take Down with Total Ankle Arthroplasty or Subtalar Fusion in Patients with Previous Tibiotalar Arthrodesis: A comparative study. American Orthopaedic Foot and Ankle Society Annual Meeting 2019.
82. **RM Queen**, AT Peebles, J Savla, T Ollendick. Association between Kinematic and Kinetic Asymmetry and Psychological Readiness for Sport in ACL patients. International Society of Biomechanics Annual Meeting 2019.
83. AT Peebles, MM Carroll, **RM Queen**. An automated 2D marker tracking algorithm for kinematic assessment. International Society of Biomechanics Annual Meeting 2019.
84. AT Peebles, **RM Queen**. Normalizing single hop impact kinetics to body weight and jump height can change the directionality of findings. International Society of Biomechanics Annual Meeting 2019.
85. CN Hughes-Oliver, **RM Queen**. Measuring Stance Time with Ankle-Mounted IMeasureU Sensors. International Society of Biomechanics Annual Meeting 2019.
86. **RM Queen**, J Campbell, D Schmitt. The effect of ankle OA and Total Ankle Arthroplasty on Joint Power During Walking. International Combined Meeting of Orthopaedic Research Societies 2019
87. A Peebles, S Ross, **RM Queen**. Effect of Sex on Linear and Nonlinear Kinematic Variability during a Stop Jump. ACSM Annual Meeting 2019.
88. **RM Queen**, K Renner, A Peebles. Landing Mechanics Differences between the Drop Vertical Jump and Stop Jump. ACSM Annual Meeting 2019.
89. WE Garrett, AL Schmitt, **RM Queen**. Functional Brace Wear does not Decrease Sports Performance Following ACL Reconstruction. ACSM Annual Meeting 2019.

90. RP Gean, AC Severin, **RM Queen**, RJ Butler, CL Barnes, EM Mannen. The effect of a corrective heel lift on lower body symmetry during gait with an orthopaedic walking boot. Orthopaedic Research Society Annual Meeting 2019.
91. AD Heilmann, L Maguire, K Renner, A Peebles, **RM Queen**. Jumping Task and Sex Alter Lower Extremity Landing Mechanics. Orthopaedic Research Society Annual Meeting 2019.
92. LA Maguire, K Renner, A Peebles, TK Miller, **RM Queen**. The Impact of Activity Level on Loading Symmetry during Return to Sport Hop Testing in Healthy Participants. Orthopaedic Research Society Annual Meeting 2019.
93. **RM Queen**, LA Maguire, K Renner, A Peebles, TK Miller. Sex-Specific Differences in Loading Symmetry in ACL Return to Sport Testing. Orthopaedic Research Society Annual Meeting 2019.
94. A Sanders, S Ellis, G Saito, C Demetracopoulos, A Kraszewski, **R Queen**, H Hillstrom. Differences in gait and stair ascent after ankle arthrodesis and total ankle arthroplasty. AOFAS Specialty Day 2019. (In Review)
95. C Hughes Oliver and **R Queen**. Landing Differences between Surgical and Non-Surgical Limbs with Brace Wear after ACL Reconstruction. Biomedical Engineering Society Annual Meeting 2018.
96. A. Peebles and **R Queen**. Using the loadsol to Predict Knee Extension Moment Asymmetry during a Stop Jump. Biomedical Engineering Society Annual Meeting 2018.
97. **R Queen**, K Renner, S Ranganathan and D Srinivasan. Predicting Measures of Physical Performance from Gait Mechanics in Patients with Ankle Osteoarthritis. American Society of Biomechanics Annual Meeting 2018.
98. S Ulman, **RM Queen**, D Srinivasan. Gait Variability to Predict Motor Learning of a Novel Motor Task. American Society of Biomechanics Annual Meeting 2018.
99. A Peebles, K Renner, TK Miller, **RM Queen**. Hop Distance and Loading Symmetry in ACL Reconstructed Athletes During Return to Sport Testing. American Society of Biomechanics Annual Meeting 2018.
100. **RM Queen**, K Renner, J Zhu, L Sands. Association of Walking Speed with Gait Mechanics Following Total Ankle Arthroplasty. American Society of Biomechanics Annual Meeting 2018.
101. C Hughes-Oliver, D Srinivasan, M McCullough, **R Queen**. Correlation Between Gait Asymmetry and Motor Variability. American Society of Biomechanics Annual Meeting 2018.
102. A Peebles, K Renner, **RM Queen**. The loadsol is a Valid and Reliable Device for Evaluating Force During Landing Tasks. World Congress on Biomechanics 2018.
103. S Shultz, K Sheerin, G Handsfield, D Wells, K Hebert-Losier, P Fink, J Clarke, M Bussey, **RM Queen**. Finding the balance between education outreach and research goals. World Congress on Biomechanics 2018.

104. JF Drazan, A Loya, B Horne, JE Bechtold, **RM Queen**. Using Sports to Engage Youth in Science, Technology, Engineering and Math (STEM) Outreach. World Congress on Biomechanics 2018.
105. A Kraszewski, G Saito, H Hillstrom, **R Queen**, S Ellis, C Demetracopoulos. Differences in mechanics during stair ascent after ankle arthrodesis and total ankle arthroplasty. International Foot and Ankle Biomechanics Meeting 2018.
106. GH Saito, AP Kraszewski, SI Backus, **RM Queen**, SJ Ellis, HJ Hillstrom, CA Demetracopoulos. Differences in gait mechanics after total ankle arthroplasty and ankle arthrodesis. International Foot and Ankle Biomechanics Meeting 2018.
107. D Schmitt, C Hughes-Oliver, A Zeininger, **RM Queen**. The effect of ankle arthritis and total ankle arthroplasty on COP position at toe-off. International Foot and Ankle Biomechanics Meeting 2018.
108. JF Drazan, A Loya, B Horne, J Bechtold, **RM Queen**. Low Cost Sports Biomechanics Lab for Accessible STEM Outreach. International Foot and Ankle Biomechanics Meeting 2018.
109. **RM Queen**, A Peebles, K Renner, TK Miller. Functional Knee Bracing Improves Loading Symmetry Following ACL Reconstruction. American College of Sports Medicine Annual Meeting 2018.
110. K Renner, A Peebles, TK Miller, **RM Queen**. Correlation of Hop Distance and Loading Symmetry during Return to Sport Testing in Healthy Subjects. American College of Sports Medicine Annual Meeting 2018.
111. S Ulman, **RM Queen**, D Srinivasan. Changes in Anticipatory Postural Adjustments Preceding Gait Initiation during Learning of a Novel Motor Task. Orthopaedic Research Society Annual Meeting 2018.
112. **RM Queen**, C Hughes-Oliver, S Ranganathan, D Srinivasan. Ankle Arthritis Alters Joint Moment Contributions During Locomotion. Orthopaedic Research Society Annual Meeting 2018.
113. C Hughes-Oliver, D Srinivasan, **RM Queen**. Sex-Specific Differences of Temporal Gait Patterns in Ankle Osteoarthritis Patients. Biomedical Engineering Society Annual Meeting 2017.
114. K Renner, E McConnell, A Black, L Young, **RM Queen**. Effect of Achilles Taping on Joint Contributions to Work and Power. Biomedical Engineering Society Annual Meeting 2017.
115. TP Trentadue, **RM Queen**, D Schmitt. Fourier Analysis of the Vertical Ground Reaction Forces Distinguishes Gait Patterns within Habitually Unshod Persons in Madagascar. American Society of Biomechanics Annual Meeting 2017.
116. JR Gladish, DW Powell, **RM Queen**. Simplified Center of Mass Tracking in Ankle Osteoarthritis Patients. American Society of Biomechanics Annual Meeting 2017.
117. E McConnell, TK Miller, JR Gladish, **RM Queen**. Effects of Functional Knee Brace on Symmetry During Landings in ACL-R Patients. American Society of Biomechanics Annual Meeting 2017.
118. C Hughes-Oliver, D Schmitt, **RM Queen**. Quantifying Limp Using Temporal Gait Variables. American

Society of Biomechanics Annual Meeting 2017

119. **RM Queen**, D. Schmitt, S Ranganathan. Assessing Movement Asymmetry Using the Normalized Symmetry Index in ACL Patients. American Society of Biomechanics Annual Meeting 2017.
120. K Renner and **RM Queen**. Changes in Limb Symmetry during a Two Mile Outdoor Run. American Society of Biomechanics Annual Meeting 2017.
121. DW Powell, LE Allison, **RM Queen**. Recovery of Center of Pressure Variability Following Total Ankle Arthroplasty. American College of Sports Medicine Annual Meeting 2017.
122. E McConnell, P Hernandez, **RM Queen**. Effects of Achilles Tendon Taping on Joint Energetics in Jumping and Landing. American College of Sports Medicine Annual Meeting 2017.
123. **RM Queen** and TK Miller. Limb Asymmetry During Anterior Cruciate Ligament Reconstruction Recovery. American College of Sports Medicine Annual Meeting 2017.
124. K Renner, B Thakkar, DSB Williams, **RM Queen**. Validation of Single Sensor Wireless In-shoe Force Insoles during Running. American College of Sports Medicine Annual Meeting 2017.
125. LE Allison, E McConnell, **RM Queen**, DW Powell. Changes in Center of Pressure Excursion Velocities During Recovery from Total Ankle Arthroplasty. American College of Sports Medicine Annual Meeting 2017.
126. A Fitzsimons, MC Granatosky, **RM Queen**, P Lemelin, A Zeininger, H Chapman, D Schmitt. Gait asymmetry in humans and other animals: How much is normal and why does it exist? American Association of Physical Anthropology Annual Meeting 2017.
127. DR Sturnick, JR Baxter, CA Demetropoulos, **RM Queen**, SJ Ellis, JT Deland. Effects of replacing versus fusion the ankle on hindfoot kinematics during simulated gait. Orthopaedic Research Society Annual Meeting 2017
128. B Thakkar, DSB Williams, **RM Queen**. Gait Symmetry Metrics Provide Different Outcomes in Patients with Ankle Osteoarthritis. Orthopaedic Research Society Annual Meeting 2017
129. **RM Queen**, CT Franck, SB Adams. Implant Selection for Total Ankle Arthroplasty Does Not Substantially Alter Post-operative Walking Mechanics. Orthopaedic Research Society Annual Meeting 2017
130. **RM Queen** and CT Franck. Side-to-Side Asymmetry During Recovery Following Anterior Cruciate Ligament Reconstruction. Orthopaedic Research Society Annual Meeting 2017
131. E McConnell, D Schmitt, **RM Queen**. Impact of Tibiotalar Alignment on COP Trajectory in Patients with Severe Ankle Arthritis. Biomedical Engineering Society Annual Meeting 2016.
132. M Wenrick, **RM Queen**. Changes in Side-to-side Symmetry During a 2 Mile Run. Biomedical Engineering Society Annual Meeting 2016.

133. **RM Queen**, D Schmitt. Power Variation at the Hip and Ankle Associated with Severe Hip Osteoarthritis. Biomedical Engineering Society Annual Meeting 2016.
134. S Wellman and **RM Queen**. A Prospective, Randomized Comparison of Single-Radius and J-Curve Total Knee Implant Designs. Eastern Orthopedic Society Annual Meeting 2016
135. S Wellman and **RM Queen**. A Prospective, Randomized Comparison of Single-Radius and J-Curve Total Knee Implant Designs. International Society for Technology in Arthroplasty Annual Meeting 2016.
136. DW Powell, and **RM Queen**. Recovery of Balance Following Total Ankle Arthroplasty. American Society of Biomechanics Annual Meeting 2016.
137. B Thakkar, DSB Williams, K Harrison, J Morgan, **RM Queen**. Vertical Ground Reaction Force Asymmetry During Uphill, Level and Downhill Running. American Society of Biomechanics Annual Meeting 2016.
138. K Harrison, B Thakkar, J Morgan, DSB Williams, **RM Queen**. Intralimb Co-ordination in Level vs. Uphill Running. American Society of Biomechanics Annual Meeting 2016.
139. J Morgan, B Thakkar, K Harrison, **RM Queen** and DSB Williams. Lower Extremity Stiffness During Uphill and Level Running. American Society of Biomechanics Annual Meeting 2016.
140. RJ Larsen, **RM. Queen**, and D Schmitt. Foot Strike Potentially Mediates Limb Stiffness During a Drop Step While Running. American Society of Biomechanics Annual Meeting 2016.
141. E McConnell, DSB Williams, **RM Queen**. The use if a Limb Symmetry Index to Compare Landing Mechanics in ACL- Reconstructed Patients in Braced and Non-Braced Conditions. American Society of Biomechanics Annual Meeting 2016.
142. DW Powell, E McConnell, **RM Queen**. Unique Joint Contributions to Jumping and Landing in ACL Reconstructed Compared to Healthy Athletes. American Society of Biomechanics Annual Meeting 2016.
143. **RM Queen**, E McConnell, DW Powell. Differences in Joint Work and Power During jumping and Landing in ACL reconstructed patients and healthy controls. American Society of Biomechanics Annual Meeting 2016.
144. DS Williams, **RM Queen**. Quantifying Knee Movement Symmetry During Functional Tasks. American Society of Biomechanics Annual Meeting 2016.
145. DW Powell, JL Easley, MA Mize, RN Plummer, BA Windsor, **RM Queen**, DS Williams. Absolute and Relative Joint Contributions to Landing in High- Compared to Low-Arched Athletes. American College of Sports Medicine Annual Meeting 2016.
146. BA Windsor, JL Easley, MA Mize, RN Plummer, **RM Queen**, DS Williams, DW Powell. High-arched Athletes Exhibit Greater Vertical Stiffness than Low-arched athletes During Landing. American College of Sports Medicine Annual Meeting 2016.

147. E McConnell, **RM Queen**. Movement and Loading Symmetry Changes when Wearing a Functional Knee Brace Following ACL Reconstruction. American College of Sports Medicine Annual Meeting 2016.
148. **RM Queen**, S Lage, DW Powell. Unique Center of Pressure Profiles in Unilateral Compared to Bilateral End-Stage Ankle Arthritis Patients. American College of Sports Medicine Annual Meeting 2016.
149. **RM Queen**, D Schmitt. Increased Ankle Power Compensates For Loss of Hip Power in Patients with Advanced Hip Osteoarthritis. Orthopaedic Research Society Annual Meeting 2016.
150. **RM Queen**, D Schmitt. Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement. Orthopaedic Research Society Annual Meeting 2016.
151. **RM Queen**, AC Schmitt, SB Adams. Revision Total Ankle Arthroplasty Results in Similar Outcomes to Primary Total Ankle Arthroplasty. Orthopaedic Research Society Annual Meeting 2016.
152. **RM Queen**, E Merenda, D Powell, and DS Williams. Using Sample Entropy on Continuous and Discontinuous Data to Assess Jumping and Landing. American Society of Biomechanics 2015
153. SR Raman, BG Hammill, **RM Queen**, LH Curtis. Linking Orthopedic Registry Data to Medicare Claims Data. NC TraCS/RTI/DCRI - Comparative Effectiveness Symposium 2015
154. AL Carpenter, JD Smith, **RM Queen**. Assessing Postural Control in Individuals with Severe Ankle Osteoarthritis. American College of Sports Medicine Annual Meeting 2015.
155. RJ Butler, G Bullock, T Arnold, PJ Plisky, **RM Queen**. Competition level differences on the Lower Quarter Y Balance Test in Baseball Players. American College of Sports Medicine Annual Meeting 2015.
156. E Menninger, AL Carpenter, D Schmitt, **RM Queen**. Center of Pressure Symmetry in Individuals with Severe Ankle Osteoarthritis. American College of Sports Medicine Annual Meeting 2015.
157. EP Merenda, DS Williams, AL Carpenter, **RM Queen**. Movement Repeatability During Landing Following Anterior Cruciate Ligament Reconstruction. American College of Sports Medicine Annual Meeting 2015.
158. **RM Queen**, AL Carpenter, RJ Butler. Gait Asymmetries as Predictors of Walking Speed Five Years Following Total Ankle Arthroplasty. American College of Sports Medicine Annual Meeting 2015.
159. **RM Queen**, AL Carpenter, RJ Butler, SB Adams. Gait and Functional Outcomes 5 years After Total Ankle Replacement. Orthopaedic Research Society Annual Meeting 2015
160. **RM Queen**, AJ Grier, RJ Butler, SS Wellman, MP Bolognesi, DE Attarian. Differences Between Observed and Patient-Reported Functional Status Following Primary Total Joint Arthroplasty. Orthopaedic Research Society Annual Meeting 2015

161. **RM Queen**, TL Sparling, AL Carpenter, D Schmitt. Changes in Energy Recovery Following Total Ankle Replacement. Orthopaedic Research Society Annual Meeting 2015
162. A Bell, S Cole, J Holskey, S Morris, D Overcash, **RM Queen**, RJ Butler. Rotational Hip Mobility Does Not Alter Sagittal Plane Landing Mechanics. APTA Combined Sections Meeting 2015.
163. RJ Butler, AL Carpenter, K D'Amelio, **RM Queen**. Lower Extremity Loading Across Different Postures: Implications for Stress Fracture Rehabilitation. APTA Combined Sections Meeting 2015
164. H Myers, **RM Queen**, AL Carpenter, RJ Butler. Relationship between the Lower Quarter Y-Balance Test Scores and Isokinetic Strength Testing in Patients status post ACL Reconstruction. APTA Combined Sections Meeting 2015.
165. **RM Queen**, RJ Butler, EA Heim, M Bushmiaer, CL Barnes. Outcome Improvements Following Total Knee Arthroplasty When Using Liposomal Bupivacaine Instead of an Epidural. Knee Society Closed Meeting 2015
166. M Pellegrini, A Schiff, SB Adams, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Tibiotalar arthrodesis takedown with Total Ankle Arthroplasty. American Academy of Orthopaedic Surgeons Annual Meeting 2015.
167. MJ Boyle; RJ Butler; **RM Queen**. Functional Movement Recovery After Anterior Cruciate Ligament Reconstruction in Adolescent Patients. American Academy of Orthopaedic Surgeons Annual Meeting 2015.
168. JM Roth, MJ Boyle; RJ Butler; K Stabile, **RM Queen**. Functional Movement Deficits in Secondary Anterior Cruciate Ligament Tears. Society of Military Orthopaedic Surgeons Annual Meeting 2014.
169. **RM Queen**, RJ Butler, EA Heim, M Bushmiaer, CL Barnes. Improvements in Outcomes Following Total Knee Arthroplasty When Using Liposomal Bupivacaine Instead of an Epidural. International Society for Technology in Arthroplasty Annual Meeting 2014.
170. RJ Butler, **RM Queen**, A Dooley, P Edwards, M Bushmiaer, CL Barnes. Comparison of Gait Mechanics in a Young Total Hip Arthroplasty Group Compared to Older Patients and Healthy Controls: A Case Control Study. International Society for Technology in Arthroplasty Annual Meeting 2014.
171. **RM Queen**, AL Carpenter, WE Garrett, RJ Butler. Plantar Loading Differences Between Genders During an Unanticipated Side-cut. ESM Annual Meeting 2014.
172. M Pellegrini, A Schiff, SB Adams, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Tibiotalar arthrodesis takedown with Total Ankle Arthroplasty. American Orthopaedic Foot and Ankle Society Annual Meeting 2014.
173. **RM Queen**, AL Carpenter, SB Adams, ME Easley, JA Nunley, JK DeOrio, RJ Butler. Differences in Walking Mechanics Between Ankle Disarthrodesis and Primary Total Ankle Replacement. American Orthopaedic Foot and Ankle Society Annual Meeting 2014.
174. **RM Queen**, TL Sparling, AL Carpenter, RJ Butler, D Schmitt. The Effect of Total Ankle Replacement

- on Energy Recovery During Walking. Southern Orthopaedic Association Annual Meeting 2014.
175. EA Heim, M Bushmiaer, **RM Queen**, RJ Butler, GW Byram, CL Barnes. Potential Benefits of Using Liposomal Bupivacaine Instead of Epidurals in Total Knee Arthroplasty. Southern Orthopaedic Association Annual Meeting 2014.
176. AJ Grier, RJ Butler, SS Wellman, DE Attarian, MP Bolognesi, **RM Queen**. Differences Between Observed and Patient-Reported Functional Status Following Primary Total Joint Arthroplasty. Southern Orthopaedic Association Annual Meeting 2014.
177. SW Mayer, EM Okafor, RJ Butler, **RM Queen**, WE Garrett. Comparison of Clinical Testing and Functional Movement Testing in Patients Following Anterior Cruciate Ligament Reconstruction: Improving Return To Sport Guidelines. Southern Orthopaedic Association Annual Meeting 2014.
178. PK Edwards, **RM Queen**, RJ Butler, MP Bolognesi, CL Barnes. Are the Range of Motion Measurements Needed when Calculating the Harris Hip Score? Southern Orthopaedic Association Annual Meeting 2014.
179. RJ Butler, L Laver, WE Garrett, CT Moorman, D Taylor, **RM Queen**. Effect of Meniscal Injury on Functional Performance Testing following ACL Rehabilitation. American College of Sports Medicine Annual Meeting 2014.
180. TL Sparling, RJ Butler, D Schmitt, **RM Queen**. Energy Recovery is Decreased During Walking in Patients with End-stage Hip, Knee, and Ankle Arthritis. American College of Sports Medicine Annual Meeting 2014.
181. **RM Queen**, L Plaman, K Campbell, C Holt, K Howenstine, J Shaughnessy, RJ Butler. The influence of static balance on walking mechanics in patients with end-stage ankle osteoarthritis. American College of Sports Medicine Annual Meeting 2014
182. **RM Queen**, TL Sparling, RJ Butler, DO Schmitt. Energy Recovery During Walking is Decreased in Patients with End-stage Arthritis. Orthopaedic Research Society 2014.
183. **RM Queen**, RJ Butler, AL Carpenter, B Dai, WE Garrett. Changes in Landing Mechanics between 6 and 12 months following ACL Reconstruction When Using a Functional Knee Brace. Orthopaedic Research Society 2014.
184. J Lewis, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley. Does a Hindfoot Arthrodesis Affect the Results of Total Ankle Replacement? American Academy of Orthopaedic Surgery Annual Meeting 2014.
185. **RM Queen**, RJ Butler, SB Adams, ME Easley, JA. Nunley, JK DeOrio. Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement? American Academy of Orthopaedic Surgery Annual Meeting 2014.
186. **RM Queen**, RJ Butler, SB Adams, ME Easley, JA. Nunley, JK DeOrio. Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement? Orthopaedic Research Society (AAOS Exchange Poster) Annual Meeting 2014.

187. CK Ledford, RA Ruberte-Thiele, RJ Butler, JS Appleton, SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi. Percent Body Fat More Associated with Perioperative Outcomes After Total Joint Arthroplasty than BMI. American Academy of Orthopaedic Surgery Annual Meeting 2014.
188. CK Ledford, RA Ruberte-Thiele, RJ Butler, JS Appleton, SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi. Percent Body Fat More Associated with Perioperative Outcomes After Total Knee Arthroplasty than BMI. Knee Society Closed Meeting 2014.
189. RJ Butler, EG Cook, N Wald, M Reiman, RC Mather, WE Garrett, **RM Queen**. Combining Dry Needling and Functional Exercises to resolve FAI attributed pain in a Professional Soccer Player. APTA Combined Sections Meeting 2014.
190. RJ Butler, S Myers, D Taylor, CT Moorman, A Toth, WE Garrett, **RM Queen**. Functional testing differences in ACL reconstruction patients cleared vs. not cleared to return to sports on using clinical impairment measures. APTA Combined Sections Meeting 2014.
191. B. Buzzell, E. Strube, C. Mansfield, G. Wilmoth, D. Beltramo, T. Sparling, **R. Queen**, R.J. Butler. Association of ankle range of motion on functional testing and landing mechanics. North Carolina Physical Therapy Association Fall meeting & Duke University School of Medicine Clinical Research Day 2013.
192. CK Ledford, RA Ruberte-Thiele, RJ Butler, JS Appleton, SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi. Percent Body Fat More Associated with Perioperative Outcomes After Total Joint Arthroplasty than BMI. American Association of Hip and Knee Surgery Annual Meeting 2013.
193. CK Ledford, RA Ruberte-Thiele, RJ Butler, JS Appleton, SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi. Percent Body Fat More Associated with Perioperative Outcomes After Total Joint Arthroplasty than BMI. North Carolina Orthopaedic Association Annual Meeting 2013.
194. J Lewis, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley. Does a Hindfoot Arthrodesis Affect the Results of Total Ankle Replacement? Eastern Orthopaedic Association Annual Meeting 2013
195. RA Ruberte-Thiele, CK Ledford, RJ Butler, JS Appleton, Jr., SS Wellman, DE Attarian, **RM Queen**, MP Bolognesi. Percent Body Fat Is More Discriminatory than BMI for Perioperative Outcomes After Total Joint Arthroplasty. Eastern Orthopaedic Association Annual Meeting 2013.
196. B Dai, WE Garrett, MT Gross, DA Padua, **RM Queen**, B Yu. The Effects of Performance Demands on ACL Loading During a Stop-Jump Task. American Society of Biomechanics Annual Meeting, 2013.
197. **RM Queen**, WE Garrett, Jr., DC Taylor, RJ Butler. Early detection of movement related risk factors for second knee injuries in ACL reconstruction patients. Southern Orthopaedic Association Annual Meeting 2013.
198. RJ Butler, WE Garrett, Jr., DC Taylor, **RM Queen**. Functional deficits remain from 6 to 12 months following ACL surgery. Southern Orthopaedic Association Annual Meeting 2013.
199. RJ Butler, M Lehr, KB Kiesel, **RM Queen**, WE Garrett, PJ Plisky. An economical model for in the field

- ACL injury screening in college athletes. Southern Orthopaedic Association Annual Meeting 2013.
200. RJ Butler, MP Bolognesi, S Wellman, CL Barnes, **RM Queen**, DE Attarian. Static balance differences one year following a single joint arthroplasty compared to patients following multiple joint arthroplasties. Southern Orthopaedic Association Annual Meeting 2013.
201. **RM Queen**, S Wellman, DE Attarian, MP Bolognesi, RJ Butler. Dynamic balance differences between isolated TKA patients and patients with multiple arthroplasties one year following TKA. Southern Orthopaedic Association Annual Meeting 2013.
202. Adams SB Jr., Demetracopoulos CA, **Queen RM**, Easley ME, DeOrio JK, Nunley JA Early to Mid-Term Outcomes of Fixed-Bearing Total Ankle Arthroplasty Using a Modular Intramedullary Tibial Component. Southern Orthopaedic Association Annual Meeting 2013.
203. J Lewis, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley. Does a Hindfoot Arthrodesis Affect the Results of Total Ankle Replacement? Southern Orthopaedic Association Annual Meeting 2013. (SOA Presidents' Resident Award Winner 2013)
204. Adams SB Jr., Demetracopoulos CA, **Queen RM**, Easley ME, DeOrio JK, Nunley JA Early to Mid-Term Outcomes of Fixed-Bearing Total Ankle Arthroplasty Using a Modular Intramedullary Tibial Component. American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
205. J Lewis, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley. Does a Hindfoot Arthrodesis Affect the Results of Total Ankle Replacement? American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
206. CA Demetracopoulos, SB Adams Jr., **RM Queen**, JK DeOrio, JA Nunley, ME Easley. Influence of Age on Outcome in Total Ankle Arthroplasty. American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
207. **RM Queen**, RJ Butler, SB Adams, ME Easley, JA Nunley, JK DeOrio. Does a Concomitant Gastrocnemius Recession Improve Ankle Mechanics in Total Ankle Replacement Patients? American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
208. **RM Queen**, SB Adams, ME Easley, JK DeOrio, JA Nunley, RJ Butler. Total Ankle Replacement Does Not Alter Lower Extremity Kinematics During Sit-to-Stand Movement. American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
209. **RM Queen**, C Anghong, K Siorpaes, JA Nunley. A Full-length Rigid Insert Does Not Reduce Loading Beneath the Metatarsals in Midfoot Arthritis Patients. American Orthopaedic Foot and Ankle Society Annual Meeting 2013.
210. RJ Butler, B Dai, WE Garrett, **RM Queen**. Changes in lower extremity mechanics during a stop jump from 6 to 12 months following ACL reconstruction. American College of Sports Medicine Annual Meeting 2013.
211. ME Russell, RJ Butler, T Sparling, **RM Queen**. Is there a single set of biomechanical variables that predicts jump performance? American College of Sports Medicine Annual Meeting 2013.

212. **RM Queen**, T Sparling, ME Easley, JK DeOrio, JA Nunley, RJ Butler. Pre-operative gait speed as an indicator of subjective and functional recovery following total ankle replacement. American College of Sports Medicine Annual Meeting 2013.
213. B Dai, WE Garrett, MT Gross, DA Padua, **RM Queen**, B Yu. ACL Loading And Jump Performance Are Decreased With Increased Knee Flexion Landing And Soft Landing. American College of Sports Medicine Annual Meeting 2013.
214. **RM Queen**, RJ Butler, SB Adams, ME Easley, JK DeOrio, JA Nunley. The Influence of Gender on Walking Mechanics Following Total Ankle Replacement Orthopaedic Research Society Annual Meeting 2013.
215. **RM Queen**, RJ Butler, SB Adams, ME Easley, JK DeOrio, JA Nunley. The Effect of Hindfoot Alignment on Frontal Plane Mechanics Following Total Ankle Replacement. (Best Foot and Ankle Poster – Also presented at AAOS 2013) Orthopaedic Research Society Annual Meeting 2013.
216. **RM Queen**, SB Adams, ME Easley, JK DeOrio, JA Nunley, RJ Butler. Understanding Changes in Hip and Knee Mechanics following Total Ankle Replacement. Orthopaedic Research Society Annual Meeting 2013.
217. RJ Butler, DE Attarian, MP Bolognesi, CL Barnes, JA Nunley, **RM Queen**. Is unilateral balance symmetrical following total joint arthroplasty? Mid-American Orthopaedic Association Annual Meeting 2013.
218. **RM Queen**, MP Bolognesi, S Wellman, RJ Butler, DE Attarian, CL Barnes. Do Multiple Joint Arthroplasties Affect Unilateral Balance Ability Six Months Following Surgery in Total Hip and Total Knee Arthroplasty Patients? Mid-American Orthopaedic Association Annual Meeting 2013.
219. **RM Queen**, RJ Butler, SB Adams, JK DeOrio, ME Easley, JA Nunley. Patient Reported Outcomes, Function, and Gait Mechanics After Fixed and Mobile-Bearing Total Ankle Replacement. American Academy of Orthopaedic Surgeons Annual Meeting 2013.
220. **RM Queen**, RJ Butler, SB Adams, JK DeOrio, ME Easley, JA Nunley. Bilateral differences in gait mechanics following Total Ankle Replacement: a two year longitudinal study. American Academy of Orthopaedic Surgeons Annual Meeting 2013.
221. J Shutt, **RM Queen**, KB Kiesel, PJ Plisky, G Rose, RJ Butler. Relationship between Upper Quarter Function and Golf Kinematics. Sports Section of the Combined Sections Meeting of the American Physical Therapy Association 2013.
222. RJ Butler, V Salinas, **RM Queen**, WE Garrett, Phillip J. Plisky. Hypermobility and dynamic balance in junior soccer players from Spain. Sports Section of the Combined Sections Meeting of the American Physical Therapy Association 2013.
223. TT Eckel, JA Nunley, **RM Queen**. The Effects Of Gender And Bodyweight On Ankle Mechanics And Spatial Temporal Gait Mechanics In Healthy Controls. Society of Military Orthopaedic Surgeons Annual Meeting. Naples, FL, 2012.

224. **RM Queen**, SB Adams, ME Easley, JK DeOrio, JA Nunley. Radiographic Analysis of Subsidence in Total Ankle Replacement: 2-year Follow-up. Society of Military Orthopaedic Surgeons Annual Meeting. Naples, FL, 2012.
225. ET Newman, RJ Butler, PH Horne, S Wellman, DE Attarian, MP Bolognesi, **RM Queen**. The Y-Balance Test and WOMAC scores: assessment of a novel functional testing protocol in postoperative arthroplasty patients. North Carolina Orthopaedic Association Meeting. Pinehurst, NC 2012.
226. **RM Queen**, RJ Butler, JK DeOrio, ME Easley, JA Nunley. Changes in Patient Balance and Function 2 years Following Total Ankle Replacement. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012.
227. **RM Queen**, JE Carter, SB Adams, ME Easley, JK DeOrio, JA Nunley. Radiographic Analysis of Subsidence in Total Ankle Replacement: 2-year Follow-up. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012
228. **RM Queen**, RJ Butler, SB Adams, JK Friend, JK DeOrio, ME Easley, JA Nunley. Differences in Gait Mechanics and Clinical Outcomes between Fixed and Mobile-Bearing Total Ankle Replacements. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012
229. **RM Queen**, RJ Butler, SB Adams, JK DeOrio, ME Easley, JA Nunley. Gait Symmetry Changes following Total Ankle Replacement. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012
230. **RM Queen**, MP Bolognesi, CL Barnes, JA Nunley, RJ Butler. Unilateral balance in Total Joint Patients One year following Surgery. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012.
231. **RM Queen**, RJ Butler, John M. Stephenson, Becky Wilson, CL Barnes. Does an extension constraint brace reduce knee motion? Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012.
232. RJ Butler, WE Garrett, B Dai, **RM Queen**. Do lower extremity mechanics correlate between a jump landing and a deep squat? Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012.
233. **RM Queen**, RJ Butler, JK DeOrio, ME Easley, JA Nunley. Changes in Patient Balance and Function 2 years Following Total Ankle Replacement. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
234. **RM Queen**, RJ Butler, S Wellman, MP Bolognesi, ET Newman, DE Attarian. Assessing unilateral function following Total Joint Replacement: a novel testing protocol. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
235. RJ Butler, DE Attarian, MP Bolognesi, CL Barnes, JA Nunley, **RM Queen**. Unilateral balance in Total Joint Patients One year following Surgery. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
236. RJ Butler, **RM Queen**, JM Stephenson, Becky Wilson, CL Barnes. Effect of extension constraint knee braces on dynamic balance. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012

237. RJ Butler, WE Garrett, D Taylor, B Dai, **RM Queen**. Functional testing following ACL rehabilitation: Are our patients “normal” at discharge? Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012.
238. GE Garrigues, PP Gorman, PJ Plisky, KB Kiesel, H Myers, D Black, **RM Queen**, RJ Butler. Differences on the Upper Quarter Y Balance test between high school and college baseball players. American College of Sports Medicine, San Francisco, CA 2012.
239. **RM Queen**, RJ Butler, ME Russell, MP Bolognesi, JA Nunley. Differences in Walking Mechanics between End-stage Ankle and Hip Osteoarthritis. American College of Sports Medicine, San Francisco, CA 2012.
240. C Irwin, RJ Butler, CT Moorman, WE Garrett, **RM Queen**. Gender Differences in Plantar Loading during an Unanticipated Side-cut on FieldTurf. American College of Sports Medicine, San Francisco, CA 2012.
241. ME Russell, B Dai, RJ Butler, **RM Queen**. Changes in Plantar Loading During the Lower Quarter Y Balance Test. American College of Sports Medicine, San Francisco, CA 2012.
242. DE Fowler, RJ Butler, W Oslesby, CT Moorman, WE Garrett, **RM Queen**. Gender Differences in Lower Extremity Kinematics during an Unanticipated Side-cut. American College of Sports Medicine, San Francisco, CA 2012.
243. RJ Butler, B Dai, MP Reiman, WE Garrett, **RM Queen**. Are Fundamental Movement Patterns Meaningful In Identifying Patients At Risk For Sustaining A Second ACL Tear? American College of Sports Medicine, San Francisco, CA 2012.
244. RJ Butler, B Dai, WE Garrett, **RM Queen**. Asymmetry in Stop Jump Mechanics Correlates to Asymmetry in Deep Squat Mechanics in Patients 6 Months Following ACL Reconstruction. American College of Sports Medicine, San Francisco, CA 2012.
245. B Dai, RJ Butler, WE Garrett, and **RM Queen**. Using ground reaction forces to predict knee kinetic asymmetries in adolescent patients post ACL reconstructions. ACL Research Retreat VI. Greensboro, NC 2012.
246. D Brown; K Taylor; G Utturkar; C Spritzer; **RM Queen**; WE Garrett; L DeFrate. Modification of In Vivo ACL Strain Patterns during Jump Landing Through Verbal Instruction. ORS, San Francisco, California, 2012.
247. RJ Butler, **RM Queen**, KB Kiesel, PJ Plisky. Field Testing Dynamic Balance in Rwanda. APTA Combined Sections Meeting, Chicago, IL, 2012.
248. A Spontelli; A Arundale; L Ballengee; E Richardson; M Yanik; JA Nunley; RJ Butler; **RM Queen**. The influence of increased BMI on sagittal plane gait mechanics between genders. APTA Combined Sections Meeting, Chicago, IL, 2012.
249. RJ Butler, H Myers, D Black, **RM Queen**, PP Gorman, KB Kiesel, PJ Plisky. Bilateral differences on

- the Upper Quarter Y Balance Test in throwing athletes. APTA Combined Sections Meeting, Chicago, IL, 2012.
250. WC Hembree, JR Wittstein, EN Vinson, **RM Queen**, CR LaRose, K Singh, ME Easley. Clinical and Magnetic Resonance Imaging Features of Osteochondral Lesions of the Talus. American Academy of Orthopaedic Surgeons, San Francisco, CA 2012.
251. KM Schweitzer , SB Adams, Jr., NA Veins, **RM Queen**, ME Easley, JK DeOrio, JA Nunley, II. Early Prospective Clinical Results of a Modern Fixed-Bearing Total Ankle Replacement. American Academy of Orthopaedic Surgeons, San Francisco, CA 2012.
252. **RM Queen**, J De Biasio, RJ Butler, JK DeOrio, ME Easley, JA Nunley. Changes in Pain, Function, and Gait Mechanics Two Years Following Total Ankle Replacement. American Academy of Orthopaedic Surgeons, San Francisco, CA 2012.
253. RJ Butler, JD Wilson, DE Fowler III, **RM Queen**. Gender differences in landing mechanics vary depending on the type of landing. *99th Annual Meeting of the Clinical Orthopaedic Society*, Charleston, SC. September 2011.
254. B Dai, RJ Butler, WE Garrett, **RM Queen**. Limb Asymmetries During a Side-cutting Task in Adolescent Patients 6-12 months Following ACL Reconstruction. American Society of Biomechanics, Long Beach, CA 2011
255. **RM Queen**, AN Abbey, TP Vail, MP Bolognesi. Hip Joint Mechanics during Stair Ascending and Descending following Total Hip Replacement and Hip Replacement Arthroplasty. Southern Orthopaedic Association. Big Island, HI 2011
256. **RM Queen**, ME Russell, RJ Butler, SS Kelley, DE Attarian, MP Bolognesi. Effect of Surgical Approach on Gait Mechanics following Total Hip Arthroplasty. Southern Orthopaedic Association. Big Island, HI 2011
257. **RM Queen**, ME Russell, RJ Butler, SS Kelley, DE Attarian, MP Bolognesi. Stair Climbing Symmetry Following Total Hip Arthroplasty Based on Surgical Approach. Southern Orthopaedic Association. Big Island, HI 2011
258. **RM Queen**, J De Biasio, RJ Butler, JK DeOrio, ME Easley, JA Nunley. Changes in Gait Mechanics Two Years Following Total Ankle Replacement. Southern Orthopaedic Association. Big Island, HI 2011.
259. **RM Queen**, AN Abbey, RJ Butler, JA Nunley. Does increased weight alter ankle mechanics and spatial temporal gait mechanics in healthy controls? American Orthopaedic Foot and Ankle Society Annual Meeting. Keystone, CO 2011
260. **RM Queen**, J De Biasio, RJ Butler, JK DeOrio, ME Easley, JA Nunley. Changes in Gait Mechanics Two Years Following Total Ankle Replacement. American Orthopaedic Foot and Ankle Society Annual Meeting. Keystone, CO 2011
261. **RM Queen**, RJ Butler, B Dai, WE Garrett. Functional Bracing and Limb Symmetry Following ACL

- Reconstruction in Adolescent Patients. American College of Sports Medicine Annual Meeting. Denver, CO 2011.
262. AN Abbey, JA Nunley, RJ Butler, **RM Queen**. Does increased weight alter frontal plane mechanics in healthy controls? American College of Sports Medicine Annual Meeting. Denver, CO 2011.
263. ME Russell, RJ Butler, JA Nunley, **RM Queen**. Effect of Shoe Type and Gender on Loading During a Jump Landing Task. American College of Sports Medicine Annual Meeting. Denver, CO 2011.
264. KA Taylor; HC Cutcliffe, **RM Queen**, ME Terry, GM Utturkar; CE Spritzer, WE Garrett; LE DeFrate. Measurement of In Vivo ACL Elongation During Gait. Orthopaedic Research Society, Long Beach, CA, 2011.
265. KA Taylor; ME Terry, GM Utturkar; CE Spritzer; **RM Queen**; LA Iribarra, WE Garrett; LE DeFrate. Measurement of In Vivo ACL Elongation During Dynamic Jump Landing. Orthopaedic Research Society, Long Beach, CA, 2011
266. **RM Queen**, SB Adams, Jr, JK Friend, ME Easley, JK DeOrio, and JA Nunley. Total Ankle Replacement in Extreme Varus or Valgus Tibiotalar Alignment. American Academy of Orthopaedic Surgeons, San Diego, CA, 2011.
267. SB Adams, Jr, NA Viens, JK DeOrio, ME Easley, **RM Queen**, JA Nunley. Comparison of Intramedullary and Extramedullary Alignment Techniques for Tibial Component Placement in Total Ankle Arthroplasty. American Academy of Orthopaedic Surgeons, San Diego, CA, 2011.
268. SB Adams, Jr, NA Viens, JK DeOrio, ME Easley, JA Nunley, **RM Queen**. Correlation of Component Position with Gait and Clinical Outcomes After Total Ankle Arthroplasty. American Academy of Orthopaedic Surgeons, San Diego, CA, 2011.
269. RJ Butler, M Elpers, **RM Queen**. Acute changes in frontal plane gait mechanics during pregnancy as simulated by the Empathy Belly. APTA Combined Sections Meeting, New Orleans, LA, 2011
270. **RM Queen**, TS Watters, ME Terry, SS Kelley, DE Attarian, MP Bolognesi. The Effect of Total Hip Arthroplasty Surgical Approach on Post-operative Gait Mechanics. American Association of Hip and Knee Surgery Annual Meeting, Dallas, TX, 2010.
271. **RM Queen**, ME Terry, SS Kelley, DE Attarian, MP Bolognesi. Effect of Surgical Approach on Gait Event Timing Symmetry 6 Weeks After Total Hip Arthroplasty. 2010 Summer Meeting of The Hip Society, HSS, New York, New York, 2010
272. **RM Queen**, TS Watters, ME Terry, SS Kelley, DE Attarian, MP Bolognesi. Gait Symmetry Following Total Hip Arthroplasty Based on Surgical Approach. Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico 2010.
273. **RM Queen**, TS Watters, ME Terry, SS Kelley, DE Attarian, MP Bolognesi. The Effect of Total Hip Arthroplasty Surgical Approach on Post-operative Gait Mechanics. Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico 2010.

274. SB Adams, Jr, NA Viens, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Early Clinical Results of the Salto® Talaris Total Ankle Replacement Prosthesis. Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico 2010.
275. SB Adams, Jr, NA Viens, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Early Clinical Results of the INBONE™ Total Ankle Replacement Prosthesis. Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico 2010.
276. SB Adams, Jr, NA Viens, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Early Clinical Results of the Salto® Talaris Total Ankle Replacement Prosthesis. American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
277. SB Adams, Jr, NA Viens, **RM Queen**, JK DeOrio, ME Easley, JA Nunley. Early Clinical Results of the INBONE™ Total Ankle Replacement Prosthesis. American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
278. **RM Queen**, JI Wiegerinck, JC Yoder, AN Abbey, ME Terry, JA Nunley. Should we train in racing flats or cushioning training shoes. American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
279. **RM Queen**, C Cook, JK DeOrio, ME Easley, JA Nunley. Physical Performance Changes at Year One for Patients Who Receive a Total Ankle Replacement. American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
280. **RM Queen**, C Cook, JK DeOrio, ME Easley, JA Nunley. Validity of Four Measures for Severe Ankle Arthritis. American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
281. JR Wittstein, **RM Queen**, AN Abbey, AP Toth, CT Moorman. Subjective outcomes, isokinetic strength, and endurance following biceps tenotomy versus tenodesis. American Orthopaedic Society for Sports Medicine, Providence, RI 2010.
282. AN Abbey, JA Nunley, **RM Queen**. Effect of Carbon Graphite Foot Plate on Loading During Different Cutting Tasks. American College of Sports Medicine, Baltimore, MD, 2010
283. **RM Queen**, AN Abbey, JA Nunley. Effect of Carbon Graphite Foot Plate on Loading During Jumping and Landing. American College of Sports Medicine, Baltimore, MD, 2010
284. RJ Butler, M Elpers, **RM Queen**. Acute Effects of Gait Change During Simulated Pregnancy using the Empathy Belly. American College of Sports Medicine, Baltimore, MD, 2010
285. **RM Queen**, C Cook, JK DeOrio, ME Easley, JA Nunley. Does Coronal Plane Hindfoot Alignment Adversely Affect Gait Mechanics and Functional Assessment in Patients with End Stage Ankle Arthritis. Orthopaedic Research Society Annual Meeting, New Orleans, LA, 2010.
286. **RM Queen**, K Siorpaes, ME Terry, JA Nunley. Effect of Rigid Inserts on Plantar Loading During Level Walking. Orthopaedic Research Society Annual Meeting, New Orleans, LA, 2010.

287. **RM Queen**, AN Abbey, V Sabesan, D Covington, TP Vail, MP Bolognesi. Gait Symmetry: Hip Resurfacing vs. Total Hip Arthroplasty. American Association of Orthopaedic Surgeons Annual Meeting, New Orleans, LA, 2010.
288. **RM Queen**, AN Abbey, V Sabesan, D Covington, TP Vail, MP Bolognesi. Gait Symmetry: Hip Resurfacing vs. Total Hip Arthroplasty. American Association of Hip and Knee Surgery Annual Meeting, Dallas, TX, 2009.
289. V Sabesan, **RM Queen**, AN Abbey, DB Covington, MP Bolognesi. Gait Analysis of Patients with Hip Resurfacing Arthroplasty compared to Large Head Total Hip Arthroplasty. American Orthopaedic Association Annual Meeting, Bonita Springs, FL, 2009
290. V Sabesan, **RM Queen**, AN Abbey, TS Watters, DB Covington, MP Bolognesi. Gait Analysis of Patients with Hip Resurfacing Arthroplasty Compared to Large Head Metal on Metal Total Hip Arthroplasty at 1-2 years Postoperative. Southern Orthopaedic Association. Amelia Island, FL, 2009.
291. **RM Queen**, AN Abbey, ME Easley, JK DeOrio, JA Nunley. Improvement in Ankle Kinetics and Kinematics after Total Ankle Replacement in Patients with Hindfoot Deformity. American Orthopaedic Foot and Ankle Society Annual Meeting, Vancouver, BC, 2009
292. **RM Queen**, AN Abbey, JI Wiegerinck, JC Yoder, JA Nunley. Plantar Pressure Differences Between Genders When Comparing Racing Flats and Traditional Training Shoes. American College of Sports Medicine, Seattle, WA, 2009
293. AN Abbey, RJ Butler, **RM Queen**. Effect of Footwear on Lower Extremity Secondary Plane Movements During a Soccer Specific Jumping. American College of Sports Medicine, Seattle, WA, 2009
294. WE Garrett, CT Moorman, **RM Queen**, DE Fowler, B Yu. Hamstring Kinematics During Sprinting: a Possible Injury Mechanism. Annual Meeting of the Herodicus Society, Isle of Palms, SC. 2009
295. **RM Queen**, JC Yoder, JI Wiegerinck, J Boyd, AN Abbey, JA Nunley. Plantar Loading differences between Racing Flats and Training Shoes at a Self-Selected Running Speed. North American Congress on Biomechanics, Ann Arbor, MI, 2008.
296. **RM Queen**, BL Charnock, WE Garrett, Jr. Hip Kinematics During Three Soccer Kicking Tasks. North American Congress on Biomechanics, Ann Arbor, MI, 2008.
297. **RM Queen**, AN Abbey, B Chuckpaiwong, JA Nunley. Plantar Loading Comparison between Men and Women and Women with a Previous 2nd or 3rd Metatarsal Stress Fracture. American Orthopaedic Foot and Ankle Society, Denver, CO, 2008
298. **RM Queen**, B Chuckpaiwong, JA Nunley. A Comparison of Ankle Mechanics and Ground Reaction Forces in Women with a Metatarsal Stress Fracture and Matched Controls. American Orthopaedic Foot and Ankle Society, Denver, CO, 2008
299. B Chuckpaiwong, JA Nunley, **RM Queen**. Correlation between Static Foot Type Measurements and Clinical Assessment. American Orthopaedic Foot and Ankle Society, Denver, CO, 2008

300. **RM Queen**, JA Nunley, JK Richardson. Pre-operative versus Post-operative Comparison of Gait in STAR Patients American Orthopaedic Foot and Ankle Society, Denver, CO, 2008
301. **RM Queen**, GG Fedorcik, AN Abbey, CT Moorman, III, DS Ruch. Differences in Wrist Kinematics between Low and High Handicap Golfers. *Medicine and Science in Sports and Exercise*. **Volume 40 (S5): 2008.**
302. BL Charnock, CL Lewis, WE Garrett, Jr., **RM Queen**. Adductor Longus Vulnerability in the Maximal Effort Soccer Kick. *Medicine and Science in Sports and Exercise*. **Volume 40 (S5): 2008.**
303. M Malinzak, RF Kay, EL Sims, and **RM Queen**. Characterization of primate head accelerations during locomotion: a novel application of 3D motion analysis with comparative implications. American Association of Physical Anthropology Annual Meeting, Columbus, OH, 2008
304. RJ Butler and **RM Queen**. The Effect of Footwear on Landing Mechanics During a Soccer Specific Jumping Task. APTA Combined Sections Annual Meeting (Sports Section), Nashville, TN, 2008
305. B Chuckpaiwong, JA Nunley, NA Mall, **RM Queen**. The Effect of Foot Type on Plantar Pressure in Four Sport Specific Tasks. Swiss National Meeting, 2007.
306. **RM Queen**, B Chuckpaiwong, NA Mall, JA Nunley. The Effect of Foot Type on Plantar Pressure in Four Sport Specific Tasks. American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON, 2007.
307. B Chuckpaiwong, **RM Queen**, JA Nunley. Jones and Proximal Diaphyseal Fractures of the 5th Metatarsal. American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON, 2007.
308. **RM Queen**, JA Nunley, JK Richardson. The Effect of Footwear on Pre-operative Gait Mechanics in a Clinical Population. American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON, 2007.
309. B Chuckpaiwong, JA Nunley, NA Mall, **RM Queen**. The Effect of Foot Type on In-shoe Plantar Pressure During Walking and Running. *Medicine and Science in Sports and Exercise*. **Volume 39 (S5): 2007.**
310. BL Charnock, M Williams, EL Sims, WE Garrett, **RM Queen**. Proprio 5000: A New Method for Assessing Dynamic Balance. *Medicine and Science in Sports and Exercise*. **Volume 39 (S5): 2007.**
311. **RM Queen**, Y Makihara, CT Moorman, DE Fowler, WE Garrett. Kinematic Analysis of the Lower Extremity During Sprinting at Maximum and Sub-maximum Speeds. *Medicine and Science in Sports and Exercise*. **Volume 39 (S5): 2007.**
312. Y Makihara, **RM Queen**, CT Moorman III, DE Fowler III, WE Garrett Jr. Kinematic Analysis of Hamstring Strain Injuries during Sprinting at Maximum and Sub-maximum Speeds. The 53rd Annual Meeting of the Orthopaedic Research Society, La Jolla, CA, 2006.

313. **RM Queen**, EL Sims, BB Haynes, WE Garrett, Jr. Differences in Forefoot Loading During Three Athletic Tasks on FieldTurf. American Society of Biomechanics Annual Meeting, Blacksburg, VA, 2006.
314. NA Mall, WM Hardaker, **RM Queen**, JA Nunley, II. Gender Differences and Dominant/Non-Dominant Asymmetry in Measurements of the Foot and Medial Longitudinal Arch. American Orthopaedic Foot & Ankle Society, La Jolla, CA, 2006.
315. NA Mall, CT Moorman, JA Nunley, II, **RM Queen**. Who's Right? The Differences in Clinical Assessment of Arch Height within and Across Health Care Provider Specialties. American Orthopaedic Foot & Ankle Society, La Jolla, CA, 2006.
316. NA Mall, **RM Queen**, RR Glisson, JA Nunley, II. A Biomechanical Study of Failure Using Intramedullary Screw Fixation of Jones Fractures. American Orthopaedic Foot & Ankle Society, La Jolla, CA, 2006.
317. NA Mall, CT Moorman, JA Nunley, II, **RM Queen**. The Reliability of Measuring the Medial Longitudinal Arch: The Need for a Standardized Method. American Orthopaedic Foot & Ankle Society, La Jolla, CA, 2006.
318. WE Garrett, Jr, CT Moorman, III, WM Hardaker, **RM Queen**. Plantar Pressure Differences between Cleat Plate Configurations During a Side-Cut Task on FieldTurf. Medicine and Science in Sports and Exercise. **Volume 38 (S5): 2006**
319. **RM Queen**, WM Hardaker, WE Garrett, CT Moorman. The Effect of Cleat Plate Configuration on Lower Extremity Kinematics and Performance on Field Turf. Medicine and Science in Sports and Exercise. **Volume 38 (S5): 2006**
320. NA Mall, **RM Queen**, RR Glisson, JA Nunley, II. Compression of Fully Threaded Tapered and Partially Threaded Lag Screws in Fifth Metatarsal Fixation. American Academy of Orthopaedic Surgeons National Meeting. Chicago, IL, 2006
321. NA Mall, WM Hardaker, JA Nunley, and **RM Queen**. The Reliability And Reproducibility Of Foot Measurements Using a Mirrored Foot Photo Box Compared To Caliper Measurements. Presented at the American Society of Biomechanics National Meeting. Cleveland, OH, 2005
322. **RM Queen**, MT Gross, and H Liu. Reliability of Lower Extremity Kinetics and Kinematics for Constrained and Self-Selected Running Speeds. Medicine and Science in Sports and Exercise. **Volume 37(S5): S,2005**
323. **RM Queen**, MT Gross, and B Yu. Effect of Positive Posterior Heel Flare on Lower Extremity Kinematics During Running Gait. Presented at the American Society of Biomechanics National Meeting. Portland, OR, September 10, 2004.
324. **RM Queen**, MT Gross, and B Yu. Effect of Positive Posterior Heel Flare on Kinetics and Tibialis Anterior Muscle Activation During Running Gait. Presented at the American Society of Biomechanics National Meeting. Portland, OR, September 9, 2004.

325. B Yu, **RM Queen**, and LA Schrodt. Effect of Marker Sets on Between-day Reproducibility of Knee Kinematics and Kinetics in Stair Climbing and Level Walking. Presented at the American Society of Biomechanics National Meeting. Toledo, OH, September 25, 2003.
326. **RM Harrell**, PS Weinhold, B Yu, DT Kirkendall. Modeling the Impact of Heading: Influence of inflation pressure, contact mass, ball size and velocity. *Medicine and Science in Sports and Exercise*. 34(S1): S185, 2002.
327. **RM Harrell**, J Tong, PS Weinhold, LE Dahners. A Comparison Study of the Mechanical Properties of Different Surgical Fixation Materials. *Annals Biomed. Engr.* 29(S1):S35, 2001.

c: Editorials, position, and background papers

1. Snyder-Mackler L, **Queen RM**. ACL special issue, editors. *Journal of Orthopaedic Research*. 2022 Jan;40(1):7-9. doi: 10.1002/jor.25220. PMID: 34811792.
2. RA Vander Griend, ASE Younger, K Buedts, CP Chiodo, C Coetzee, WR Ledoux, MS Pinzur, KSRK Prasad, **RM Queen**, CL Saltzman, DB Thordarson. Total Ankle Arthroplasty: Minimum Follow-up Policy for Reporting Results and Guidelines for Reporting Problems and Complications Resulting in Reoperation. *Foot and Ankle International*. 38 (7): 703-704, 2017.

Professional Presentations

1. Joint Coordination Variability in Patients Following Total Ankle Arthroplasty. (Poster Presentation) Orthopaedic Research Society 2025, Phoenix AZ.
2. Margin of Stability During Single Limb Support Differs Based on the Lower Extremity Joint with End-stage Arthritis. (Podium Presentation) Orthopaedic Research Society 2025, Phoenix, AZ.
3. Variable Gearing Improves Efficiency in Agility Tasks. (Poster Presentation) American Society of Biomechanics 2024, Madison, WI.
4. Patients Returning to Sport after Anterior Cruciate Ligament Reconstruction have Greater Push-off Force Asymmetry During Hop Testing. (Podium Presentation) Expert Scientific Meeting – novel Electronics 2024, Bavaria, Germany.
5. Sex-Specific Differences in Peak Force and Impulse Symmetry during Running and Walking Following ACLR. (Podium Presentation) Expert Scientific Meeting – novel Electronics 2024, Bavaria, Germany.
6. Variable Foot Gearing in Jumping (Poster Presentation). American College of Sports Medicine 2024, Boston, MA.
7. Limb Loading Asymmetry During Simulated Daily Functional Tasks. (Poster Presentation). American College of Sports Medicine 2024, Boston, MA.
8. *Gait Stability Differences During Single Limb Support between Patient Ankle Arthritis and Health Participants*. (Poster Presentation). Orthopaedic Research Society Annual Meeting 2024, Long Beach, CA.

9. *The Impact of Biofeedback on Limb Stiffness and Knee Joint Power in ACLR Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2023, Knoxville, TN.
10. *Load Symmetry During Gait following Total Knee Arthroplasty Compared to Controls.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2023, Knoxville, TN.
11. *Differences in Load Symmetry between Healthy Older Adults and Total Knee Arthroplasty Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2023, Knoxville, TN.
12. *Kinetic Variability Differences During a Single Hop between ACLR and Healthy Control Cohorts.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2023, Knoxville, TN.
13. *Load Variability during a Stop Jump is Higher in Female Patients with an ACLR.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2023, Knoxville, TN.
14. *Surgical Limb Margin of Stability Is Different Based On The Affected Lower Limb Joint.* (Thematic Poster) American College of Sports Medicine Annual Meeting 2023, Denver, CO.
15. *Gait-related Factors That Explain Power Production in Patients Before and After Total Ankle Arthroplasty.* (Poster Presentation) American College of Sports Medicine Annual Meeting 2022, San Diego, CA.
16. *A Novel Biofeedback Intervention Can Improve and Retain Loading Symmetry During Squatting in ACLR Patients.* (Podium Presentation) Orthopaedic Research Society Annual Meeting 2022, Tampa, FL.
17. *Kinetic Asymmetry During Squatting and Landing are Associated in Anterior Cruciate Ligament Reconstructed Patients.* (Thematic Poster) American College of Sports Medicine Annual Meeting, San Francisco, CA 2020.
18. *Using load-sensing insoles to identify knee kinetic asymmetries during landing in patients with an ACL reconstruction.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Phoenix, AZ, 2020
19. *The effect of ankle OA and Total Ankle Arthroplasty on Joint Power During Walking.* (Podium Presentation) International Combined Meeting of Orthopaedic Research Societies, Montreal, Canada, 2019
20. *Landing Mechanics Differences between the Drop Vertical Jump and Stop Jump.* (Thematic Poster) ACSM Annual Meeting, Orlando, FL, 2019.
21. *Sex-Specific Differences in Loading Symmetry in ACL Return to Sport Testing.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Austin, TX, 2019.
22. *Predicting Measures of Physical Performance from Gait Mechanics in Patients with Ankle Osteoarthritis.* (Rapid Podium) American Society of Biomechanics Annual Meeting Rochester, MN, 2018.
23. *Association of Walking Speed with Gait Mechanics Following Total Ankle Arthroplasty.* (Podium) American Society of Biomechanics Annual Meeting, Rochester, MN, 2018.

24. *The loadsol is a Valid and Reliable Device for Evaluating Force During Landing Tasks.* (Podium Presentation) World Congress on Biomechanics, Dublin, Ireland, 2018.
25. *Using Sports to Engage Youth in Science, Technology, Engineering and Math (STEM) Outreach.* (Podium Presentation) World Congress on Biomechanics, Dublin, Ireland, 2018.
26. *Functional Knee Bracing Improves Loading Symmetry Following ACL Reconstruction.* (Thematic Poster) American College of Sports Medicine Annual Meeting, Minneapolis, MN, 2018.
27. *The effect of ankle arthritis and total ankle arthroplasty on COP position at toe-off.* (Podium Presentation) International Foot and Ankle Biomechanics Meeting, New York, NY, 2018.
28. *Low Cost Sports Biomechanics Lab for Accessible STEM Outreach.* (Podium Presentation) International Foot and Ankle Biomechanics Meeting, New York, NY, 2018.
29. *Biomechanics Can Revolutionize and Diversify STEM (Symposium).* American Society of Biomechanics Annual Meeting, Rochester, MN, 2018
30. *Ankle Arthritis Alters Joint Moment Contributions During Locomotion.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, New Orleans, LA, 2018.
31. *Simplified Center of Mass Tracking in Ankle Osteoarthritis Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
32. *Effects of Functional Knee Brace on Symmetry During Landings in ACL-R Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
33. *Assessing Movement Asymmetry Using the Normalized Symmetry Index in ACL Patients.* (Thematic Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
34. *Effects of Achilles Tendon Taping on Joint Energetics in Jumping and Landing.* (Thematic Poster Presentation) American College of Sports Medicine Annual Meeting, Denver, CO, 2017.
35. *Limb Asymmetry During Anterior Cruciate Ligament Reconstruction Recovery.* (Podium Presentation) American College of Sports Medicine Annual Meeting, Denver, CO, 2017.
36. *Gait Symmetry Metrics Provide Different Outcomes in Patients with Ankle Osteoarthritis.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, San Diego, CA, 2017.
37. *Implant Selection for Total Ankle Arthroplasty Does Not Substantially Alter Post-operative Walking Mechanics.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, San Diego, CA, 2017.
38. *Side-to-Side Asymmetry During Recovery Following Anterior Cruciate Ligament Reconstruction.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, San Diego, CA, 2017.
39. *Power Variation at the Hip and Ankle Associated with Severe Hip Osteoarthritis.* (Oral Presentation) Biomedical Engineering Society Annual Meeting, St. Paul, MN, 2016.

40. *Differences in Joint Work and Power During jumping and Landing in ACL reconstructed patients and healthy controls.* (Poster Presentation) American Society of Biomechanics Annual Meeting, Raleigh, NC, 2016.
41. *Unique Center of Pressure Profiles in Unilateral Compared to Bilateral End-Stage Ankle Arthritis Patients.* (Poster Presentation) American College of Sports Medicine Annual Meeting, Boston, MA, 2016.
42. *Increased Ankle Power Compensates For Loss of Hip Power in Patients with Advanced Hip Osteoarthritis.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Orlando, FL, 2016.
43. *Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Orlando, FL, 2016.
44. *Revision Total Ankle Arthroplasty Results in Similar Outcomes to Primary Total Ankle Arthroplasty.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Orlando, FL, 2016.
45. *Using Sample Entropy on Continuous and Discontinuous Data to Assess Jumping and Landing.* (Podium Presentation) American Society of Biomechanics, Columbus, OH, 2015
46. *Changing the Landscape of Injury Prevention* (Symposium). American Society of Biomechanics Annual Meeting, Columbus, OH, 2015
47. *Movement Repeatability During Landing Following Anterior Cruciate Ligament Reconstruction.* (Thematic Poster Presentation) American College of Sports Medicine Annual Meeting, San Diego, CA, 2015.
48. *Gait Asymmetries as a Predictors of Walking Speed Five Years Following Total Ankle Arthroplasty.* (Poster Presentation) American College of Sports Medicine Annual Meeting, San Diego, CA, 2015.
49. *Gait and Functional Outcomes 5 years After Total Ankle Replacement.* (Podium Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015
50. *Differences Between Observed and Patient-Reported Functional Status Following Primary Total Joint Arthroplasty.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015.
51. *Changes in Energy Recovery Following Total Ankle Replacement.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015.
52. *Plantar Loading Differences Between Genders During an Unanticipated Side-cut.* (Podium Presentation) ESM Annual Meeting, Boston, MA, 2014.
53. *Differences in Walking Mechanics Between Ankle Disarthrodesis and Primary Total Ankle Replacement.* (Poster Presentation) American Orthopaedic Foot and Ankle Society Annual Meeting, Chicago, IL, 2014.
54. *The Effect of Total Ankle Replacement on Energy Recovery During Walking.* (Podium Presentation) Southern Orthopaedic Association Annual Meeting, Beaver Creek, CO, 2014.

55. *Effect of Meniscal Injury on Functional Performance Testing following ACL Rehabilitation.* (Poster Presentation) American College of Sports Medicine Annual Meeting Orlando, FL, 2014.
56. *Energy Recovery is Decreased During Walking in Patients with End-stage Hip, Knee, and Ankle Arthritis.* (Poster Presentation) American College of Sports Medicine Annual Meeting Orlando, FL, 2014.
57. *The influence of static balance on walking mechanics in patients with end-stage ankle osteoarthritis.* (Poster Presentation) American College of Sports Medicine Annual Meeting, Orlando, FL, 2014
58. *Energy Recovery During Walking is Decreased in Patients with End-stage Arthritis* (Poster Presentation). Orthopaedic Research Society. New Orleans, LA, 2014.
59. *Changes in Landing Mechanics between 6 and 12 months following ACL Reconstruction When Using a Functional Knee Brace* (Poster Presentation). Orthopaedic Research Society. New Orleans, LA, 2014.
60. *Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement?* Poster Presentation. Orthopaedic Research Society (AAOS Exchange) Annual Meeting, New Orleans, LA, 2014.
61. *Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement?* Poster Presentation (Alternate Podium). American Academy of Orthopaedic Surgery Annual Meeting, New Orleans, LA, 2014.
62. *Early detection of movement related risk factors for second knee injuries in ACL reconstruction patients.* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Palm Beach, FL, 2013.
63. *Dynamic balance differences between isolated TKA patients and patients with multiple arthroplasties one year following TKA.* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Palm Beach, FL, 2013.
64. *Early to Mid-Term Outcomes of Fixed-Bearing Total Ankle Arthroplasty Using a Modular Intramedullary Tibial Component.* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Palm Beach, FL, 2013.
65. *Does a Concomitant Gastrocnemius Recession Improve Ankle Mechanics in Total Ankle Replacement Patients?* Podium Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting, Hollywood, FL 2013.
66. *Total Ankle Replacement Does Not Alter Lower Extremity Kinematics During Sit-to-Stand Movement.* Poster Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting, Hollywood, FL 2013.
67. *A Full-length Rigid Insert Does Not Reduce Loading Beneath the Metatarsals in Midfoot Arthritis Patients.* Poster Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting, Hollywood, FL 2013.
68. *Is there a single set of biomechanical variables that predicts jump performance?* Poster Presentation. American College of Sports Medicine Annual Meeting, Indianapolis, IN, 2013.

69. *Changes in lower extremity mechanics during a stop jump from 6 to 12 months following ACL reconstruction.* Podium Presentation. American College of Sports Medicine Annual Meeting 2013.
70. *Pre-operative gait speed as an indicator of subjective and functional recovery following total ankle replacement.* Poster Presentation. American College of Sports Medicine Annual Meeting, Indianapolis, IN, 2013.
71. *The Influence of Gender on Walking Mechanics Following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
72. *The Effect of Hindfoot Alignment on Frontal Plane Mechanics Following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
73. *Understanding Changes in Hip and Knee Mechanics following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
74. *Patient Reported Outcomes, Function, and Gait Mechanics After Fixed and Mobile-Bearing Total Ankle Replacement.* Podium Presentation. American Academy of Orthopaedic Surgeons Annual Meeting, Chicago, IL 2013.
75. *The Effect of Hindfoot Alignment on Frontal Plane Mechanics Following Total Ankle Replacement.* Poster Presentation. American Academy of Orthopaedic Surgeons Annual Meeting, Chicago, IL 2013.
76. *Bilateral differences in gait mechanics following Total Ankle Replacement: a two year longitudinal study.* Poster Presentation – Alternate Podium. American Academy of Orthopaedic Surgeons Annual Meeting Chicago, IL 2013.
77. *Assessing unilateral function following Total Joint Replacement: a novel testing protocol.* Poster Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
78. *Does an extension constraint brace reduce knee motion?* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012.
79. *Changes in Patient Balance and Function 2 years Following Total Ankle Replacement.* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
80. *Differences in Gait Mechanics and Clinical Outcomes between Fixed and Mobile-Bearing Total Ankle Replacements.* Podium Presentation. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012
81. *Changes in Patient Balance and Function 2 years Following Total Ankle Replacement.* Poster Presentation. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012.
82. *Gait Symmetry Changes following Total Ankle Replacement.* Poster Presentation. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012
83. *Unilateral balance in Total Joint Patients One year following Surgery.* Poster Presentation. American Orthopaedic Foot and Ankle Society Meeting. San Diego, CA 2012.

84. *Differences on the Upper Quarter Y Balance test between high school and college baseball players.* Poster Presentation. American College of Sports Medicine, San Francisco, CA 2012.
85. *Differences in Walking Mechanics between End-stage Ankle and Hip Osteoarthritis.* Podium Presentation. American College of Sports Medicine, San Francisco, CA 2012.
86. *Gender Differences in Plantar Loading during an Unanticipated Side-cut on FieldTurf.* Poster Presentation. American College of Sports Medicine, San Francisco, CA 2012.
87. *Changes in Plantar Loading During the Lower Quarter Y Balance Test.* Poster Presentation. American College of Sports Medicine, San Francisco, CA 2012.
88. *Changes in Pain, Function, and Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. American Academy of Orthopaedic Surgeons, San Francisco, CA 2012.
89. *Does increased weight alter ankle mechanics and spatial temporal gait mechanics in healthy controls?* Podium Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting. Keystone, CO 2011.
90. *Changes in Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting. Keystone, CO 2011.
91. *Hip Joint Mechanics during Stair Ascending and Descending following Total Hip Replacement and Hip Replacement Arthroplasty.* Poster Presentation. Southern Orthopaedic Association. Big Island, HI 2011
92. *Effect of Surgical Approach on Gait Mechanics following Total Hip Arthroplasty.* Poster Presentation. Southern Orthopaedic Association. Big Island, HI 2011
93. *Stair Climbing Symmetry Following Total Hip Arthroplasty Based on Surgical Approach.* Poster Presentation. Southern Orthopaedic Association. Big Island, HI 2011
94. *Changes in Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. Southern Orthopaedic Association. Big Island, HI 2011.
95. *Functional Bracing and Limb Symmetry Following ACL Reconstruction in Adolescent Patients.* Poster Presentation. American College of Sports Medicine Annual Meeting. Denver, CO 2011.
96. *Total Ankle Replacement in Extreme Varus or Valgus Tibiotalar Alignment.* Podium Presentation. American Academy of Orthopaedic Surgeons, San Diego, CA, 2011.
97. *Should we train in racing flats or cushioning training shoes.* Poster Presentation at the American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.
98. *Physical Performance Changes at Year One for Patients Who Receive a Total Ankle Replacement.* Poster Presentation at the American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD 2010.

99. *Validity of Four Measures for Severe Ankle Arthritis*. Podium presentation at the American Orthopaedic Foot and Ankle Society Annual Meeting, National Harbor, MD July 2010.
100. *The Effect of Total Hip Arthroplasty Surgical Approach on Post-operative Gait Mechanics*. Poster Presentation at the Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico June 2010.
101. *Gait Symmetry Following Total Hip Arthroplasty Based on Surgical Approach*. Podium Presentation at the Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico, June 2010.
102. *Effect of Carbon Graphite Foot Plate on Loading During Different Cutting Tasks*. Poster Presentation at the American College of Sports Medicine, Baltimore, MD, June 2010
103. *Effect of Carbon Graphite Foot Plate on Loading During Jumping and Landing*. Poster Presentation at the American College of Sports Medicine, Baltimore, MD, June 2010
104. *Does Coronal Plane Hindfoot Alignment Adversely Affect Gait Mechanics and Functional Assessment in Patients with End Stage Ankle Arthritis*. Poster Presentation at the Orthopaedic Research Society Annual Meeting, New Orleans, LA, March 2010.
105. *Effect of Rigid Inserts on Plantar Loading During Level Walking*. Poster Presentation at the Orthopaedic Research Society Annual Meeting, New Orleans, LA, March 2010.
106. *Plantar Pressure Differences Between Genders When Comparing Racing Flats and Traditional Training Shoes*. Podium Presentation at the American College of Sports Medicine, Seattle, WA, May 2009
107. *Effect of Footwear on Lower Extremity Secondary Plane Movements During a Soccer Specific Jumping*. Poster Presentation at the American College of Sports Medicine, Seattle, WA, May 2009
108. *Plantar Loading differences between Racing Flats and Training Shoes at a Self-Selected Running Speed*. Poster Presentation at the North American Congress on Biomechanics, Ann Arbor, MI, August 2008.
109. *Hip Kinematics During Three Soccer Kicking Tasks*. Poster Presentation at the North American Congress on Biomechanics, Ann Arbor, MI, August 2008.
110. *Plantar Loading Comparison between Men and Women and Women with a Previous 2nd or 3rd Metatarsal Stress Fracture*. Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008
111. *A Comparison of Ankle Mechanics and Ground Reaction Forces in Women with a Metatarsal Stress Fracture and Matched Controls*. Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008
112. *Correlation between Static Foot Type Measurements and Clinical Assessment*. Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008
113. *Pre-operative versus Post-operative Comparison of Gait in STAR Patients*. Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008

114. *Differences in Wrist Kinematics between Low and High Handicap Golfers*. Poster Presentation at the American College of Sports Medicine Annual Meeting, Indianapolis, IN, May 2008.
115. *Adductor Longus Vulnerability in the Maximal Effort Soccer Kick*. Poster Presentation at the American College of Sports Medicine Annual Meeting, Indianapolis, IN, May 2008.
116. *The Effect of Foot Type on Plantar Pressure in Four Sport Specific Tasks*. Poster Presentation at American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON.
117. *Jones and Proximal Diaphyseal Fractures of the 5th Metatarsal*. Poster Presentation at American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON
118. *The Effect of Footwear on Pre-operative Gait Mechanics in a Clinical Population*. Poster Presentation at American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON
119. *The Effect of Foot Type on In-shoe Plantar Pressure During Walking and Running*. Podium Presentation at the American College of Sports Medicine Annual Meeting, New Orleans, LA, May 2007.
120. *Kinematic Analysis of the Lower Extremity During Sprinting at Maximum and Sub-maximum Speeds*. Poster Presentation at the American College of Sports Medicine Annual Meeting, New Orleans, LA, May 2007.
121. *Differences in Forefoot Loading During Three Athletic Tasks on FieldTurf*. Poster Presentation, American Society of Biomechanics Annual Meeting, Blacksburg, VA, September 7, 2006
122. *Gender Differences and Dominant/Non-Dominant Asymmetry in Measurements of the Foot and Medial Longitudinal Arch*. Poster Presentation, American Orthopaedic Foot & Ankle Society, La Jolla, CA, July 12-15, 2006
123. *Who's Right? The Differences in Clinical Assessment of Arch Height within and Across Health Care Provider Specialties*. Poster Presentation, American Orthopaedic Foot & Ankle Society, La Jolla, CA, July 12-15, 2006
124. *The Reliability of Measuring the Medial Longitudinal Arch: The Need for a Standardized Method*. Poster Presentation, American Orthopaedic Foot & Ankle Society, La Jolla, CA, July 12-15, 2006
125. *Plantar Pressure Differences between Cleat Plate Configurations During a Side-Cut Task on FieldTurf*. Podium Presentation at the American College of Sports Medicine National Meeting. Denver, CO, June 3, 2006.
126. *The Effect of Cleat Plate Configuration on Lower Extremity Kinematics and Performance on FieldTurf*. Medicine and Science in Sports and Exercise. Podium Presentation at the American College of Sports Medicine National Meeting. Denver, CO, May 31, 2006.
127. *The Reliability And Reproducibility Of Foot Measurements Using a Mirrored Foot Photo Box Compared To Caliper Measurements*. Poster Presentation at the American Society of Biomechanics National Meeting. Cleveland, OH.

128. *Reliability of Lower Extremity Kinetics and Kinematics for Constrained and Self-Selected Running Speeds*. Podium Presentation: American College of Sports Medicine National Meeting. Nashville, TN, June 3, 2005.
129. *Effect of Positive Posterior Heel Flare on Lower Extremity Kinematics During Running Gait*. Poster Presentation: American Society of Biomechanics National Meeting. Portland, OR, September 10, 2004.
130. *Effect of Positive Posterior Heel Flare on Kinetics and Tibialis Anterior Muscle Activation During Running Gait*. Poster Presentation: American Society of Biomechanics National Meeting. Portland, OR, September 9, 2004.
131. *Effect of Marker Sets on Between-day Reproducibility of Knee Kinematics and Kinetics in Stair Climbing and Level Walking*. Poster Presentation: American Society of Biomechanics National Meeting. Toledo, OH, September 25, 2003.
132. *Modeling the Impact of Heading: Influence of inflation pressure, contact mass, ball size and velocity*. Poster Presentation: American College of Sport Medicine 2002.
133. *A Comparison Study of the Mechanical Properties of Different Surgical Fixation Materials*. Poster Presentation: Biomedical Engineering National Meeting. Durham, NC, 2001

TEACHING

Graduate Teaching

Art of Grant Writing (BMES 5984) 2024

The goal of the Art of Grant Writing course is to familiarize you with the process of grant writing, specifically focused on human health (taught from the perspective of writing for the National Institutes of Health). Through this course, you will be better prepared to design research studies and write grants with an increased potential for success. The main goal of this course is to learn the steps for writing a clear and concise fellowship (F30/F31/F99-K00/K99-R00) grant proposal for submission.

Learning Objectives

1. Evaluate articles published in the academic literature to assess gaps in knowledge;
2. Compose clear research aims and formulate testable hypotheses;
3. Prepare a grant budget and justify the budget request;
4. Assemble an NIH Biosketch using SciENcv; and
5. Evaluate and choose the appropriate funding mechanism and institute based on the proposed research questions

Advanced Musculoskeletal Biomechanics (ESM 5224/BMES 5124) 2015 - 2018

Skeletal anatomy and mechanics. Muscle anatomy and mechanics. Theory and application of electromyography. Motion and force measuring equipment and techniques. Inverse dynamics modeling of the human body. Current topics in musculoskeletal biomechanics research. The course combines lecture, seminar, discussion, and research and will focus on the broad issues in the field of orthopaedic musculoskeletal biomechanics. We will learn how to collect and process motion and force data. In addition, this course will explore the use of inverse dynamic models to calculate joint angles, moments, and power. Finally, we will spend time reviewing current research topics and literature in the area of musculoskeletal biomechanics.

Learning Objectives

1. Explain the biomechanics of walking and running and understand the muscle activation patterns that are required to accomplish these movements in healthy individuals.
2. Describe the major pieces of equipment used in musculoskeletal biomechanics research and explain their usefulness.
3. Calculate lower extremity joint position, velocity and acceleration from two-dimensional and three-dimensional motion capture data
4. Describe the limitations of current technology in musculoskeletal biomechanics research.

Advanced Movement Assessment (BMES 6194), Spring Semester 2017, 2019, 2022, Fall Semester 2024

This course will expand on previous course work and provide a detailed understanding of the methods used to collect human movement data, how to process data and interpretation of data output for the assessment of human movement. This course will also evaluate current literature in the area of human biomechanics and the application of these techniques in research and clinical settings.

Learning Objectives

1. Analyze the benefits and limitations of various techniques, methods of data collection including software and hardware used in the assessment of human movement.
2. Employ multiple techniques to assemble human movement data
3. Assess human movement symmetry and variability
4. Evaluate the impact of movement variability and movement symmetry on injury risk and recovery
5. Construct inverse dynamics biomechanical models and reports in Visual 3D (Biomechanics Software)

Exercise Testing: Physiology and Biomechanics (BMES 5984) – Spring 2019

This course was recently developed and was initially taught as a special studies course. This course is a cross-college (College of Engineering and College of Agriculture and Life Science) in which we seek to combine the principles of biomechanics and exercise physiology. Principles of exercise testing and prescription based on concepts and current practices in physiology, biomechanics, and rehabilitation. Assessment of aerobic capacity, body composition, muscular strength, power, endurance, fatigue, and flexibility. Physiologic and biochemical response to fatigue. Application of laboratory and field-based tests.

Learning Objectives:

1. Examine mechanisms for acute and chronic physiological adaptations to exercise and muscle contraction;
2. Undertake pre-participation screening and assess risk classification for exercise testing;
3. Examine the principles of exercise testing, factors that affect test results and criteria to terminate tests;
4. Conduct various exercise tests specific to an individual's fitness and training goals (eg. aerobic, anaerobic, body composition, and muscular strength, power, endurance and flexibility);
5. Interpret and rate the results of exercise tests and report findings to the individual tested;
6. Discuss the safety considerations of exercise testing and training.

Human Exercise Testing (HNFE 5474) – Fall 2020

This course was initially taught as BMES 5984 in the spring of 2019. This course is a cross-college (College of Engineering and College of Agriculture and Life Science) in which we seek to combine the principles of biomechanics and exercise physiology through a problem-based learning approach. Principles of exercise testing and prescription based on concepts and current practices in physiology, biomechanics, and rehabilitation. Mechanisms for acute and chronic physiological adaptations to exercise and muscle contraction. Interactions between physiology and biomechanics as it pertains to research outcomes. Principles of exercise and biomechanics testing for research purposes, safety considerations, factors that affect test results, and criteria to

terminate tests. Research study design and methodology for specific research goals. Pre-participation screening and risk classification for exercise and biomechanics testing. Assessment of body composition, endurance, strength, power, fatigue, and flexibility. Interpretation of exercise tests.

Learning Objectives:

1. Incorporate mechanisms of physiological adaptations to exercise and muscle contraction for the determination of exercise physiology and biomechanics research outcomes.
2. Evaluate the interactions between biomechanics and physiology on research outcomes and the need to consider how they interact and impact the other when designing research protocols.
3. Discuss the principles of exercise testing for research purposes and settings, safety considerations, factors that affect test results, and criteria to terminate tests for both physiological and biomechanical testing.
4. Apply appropriate research study design and methodology to address specific research goals in biomechanics and exercise physiology research.
5. Justify (in detail) selection of specific research study design and methodology to address specific research goals.
6. Conduct pre-participation screening and assess risk classification for exercise testing from both the biomechanical and physiologic perspective.
7. Conduct various laboratory and field-based exercise tests specific to research goals (eg. body composition, endurance, strength, power, fatigue, movement analysis and flexibility).
8. Interpret the results of various exercise tests and the implications for various health applications.

Rehabilitation Engineering (BMES 5984/4984) – Spring 2023

This course explores the basics of Rehabilitation Engineering from a broad, non-technical perspective focusing on engineering applications and needs in clinical populations. The course focuses mostly on the lower extremity with some exploration of the upper extremity based on student interest. This course focuses on the primary questions and issues in rehabilitation of musculoskeletal and neuromuscular injury and pathology. We will explore the fundamentals of typical and atypical movement patterns and current and emerging methods of aiding in rehabilitation and recovery from an engineering perspective. This will be a fast-paced course in which students will be expected to utilize knowledge from prior courses as well as the lectures within this course and explore the academic literature to complete case studies and be prepared for class discussions.

Learning Objectives:

1. Examine healthy human movement and locomotion
2. Explore the current ADA laws related to disability
3. Discuss the neuromechanical principles related to the control systems underlying healthy and impaired movement
4. Discuss some of the engineering tools used for rehabilitation (e.g., rehabilitation robotics, prosthetics and orthotics, engineering treatment systems, etc.)
5. Explore the ethical implications related to rehabilitation tool/device development.

Undergraduate Teaching

Musculoskeletal Biomechanics (ESM 4204) Fall Semester 2015 - 2017

The course combines lecture, seminar, discussion, and laboratory-based research. The focus of this will be on the broad issues in the field of orthopaedic musculoskeletal biomechanics. We will learn how to collect and process motion, force, and electromyography data (muscle activation). In addition, we will spend time reviewing current research topics in the area of musculoskeletal biomechanics.

Learning Objectives:

1. Describe major pieces of equipment used in musculoskeletal biomechanics research and explain their uses.
2. Quantify balance in a healthy individual using data collected from a force platform.
3. Describe the limitations of current technology in musculoskeletal biomechanics research.
4. A basic understanding of lower extremity anatomy.

Undergraduate Research (SBES 4994) Every Semester 2016-present (1-2 students per semester)

Undergraduate independent study students are members of the research team who are required to spend 12 hours per week working on a research project that we have collaboratively designed for them to be able to complete over the course of one or two semesters depending on the student's interest and project selection.

Senior Design (ESM 3114) 2019-2020, (BMES/ISE/ME/ECE4984) 2020-2021, (ME 4015/4016) 2021-2022, (BMES 4105/4016) 2022-2023, 2024-2025.

Senior Design Team Mentor. Met with students as their faculty advisor at least one hour per week throughout the fall and spring semester guiding them in the engineering design process. ESM 3114 – 1 design team, BMES/ISE/ME/ECE4984 - 3 teams 2020-2021, ME 4015/4016 - 1 team 2021-2022, BMES 4015/4016 - 1 team 2022-2023, 2 teams - 2024-2025 (proposed).

Interdisciplinary Design (BMES/ISE/ME/ECE4984) – Fall 2020/Spring 2021 and Fall 2021/Spring 2022

Developed and taught the inaugural interdisciplinary capstone senior design course in the college of engineering that brought together students from Biomedical, Industrial and Systems, Mechanical, and Electrical and Computer Engineering in a single course. This inaugural course consisted of four interdisciplinary teams with students from at least 3 of the 4 majors involved in the course. Senior Design is a 2-semester course sequence (3 credit hours per semester), which requires 10 hours of work per student per week outside of the classroom. Students meet weekly with their faculty advisor (I supervised 3 of the 4 teams) and graduate teaching assistant (GTA) as well as external stakeholders/end-users, guiding them in the engineering design process.

Medical Students (VTCSOM)

2016 Medical Student Journal Club Discussion Facilitator
2016 – pres. Research Project Reviewer (Multiple Review Sessions Annually)

Faculty Development

January 2020 Advancing Faculty Involvement in Research Mentoring (AFIRM) Pilot Program – Session 1
April 2020 Advancing Faculty Involvement in Research Mentoring (AFIRM) Pilot Program – Session 2
May 2020 Advancing Faculty Involvement in Research Mentoring (AFIRM) Pilot Program – Session 3

Invited Course Lectures

1. “Using Mechanics to Rehabilitate the World’s Most Complex Machine.” March 31, 2021 (College of Engineering Open House)
2. Building Teams Across Difference: A Transdisciplinary Approach- Guest Lecture March 2, 2021 (HNFE 5204)
3. CEED Professional Development Workshop: Master Your Future. “Unwritten Rules of Graduate School (College of Engineering, October 15, 2020)
4. Galileo Seminar: “From Engineering to Orthopedics and Back Again” – Guest Lecture (College of Engineering, Fall 2020)
5. Hypatia Seminar: “From Engineering to Orthopedics and Back Again” – Guest Lecture (College of Engineering, Fall 2019)
6. Galileo Seminar: “From Engineering to Orthopedics and Back Again” – Guest Lecture (College of

- Engineering, Fall 2019)
7. Engineering Freshman Seminar: “From Engineering to Orthopaedics and Back Again” – Guest Lecture (College of Engineering, Fall 2019)
 8. Engineering Freshman Seminar: “From Engineering to Orthopaedics and Back Again” – Guest Lecture (College of Engineering, Fall 2018)
 9. “Using Mechanics to Rehabilitate the World’s Most Complex Machine.” Student Transition Engineering Program (STEP), July 2018.
 10. “Using Mechanics to Improve Orthopaedic Clinical Care.” Invited Lecture. Center for Applied Biomechanics, University of Virginia, July 2018.
 11. Galapatia Seminars: “Engineering Orthopaedics” – Guest Lecture (College of Engineering, Fall 2017)
 12. “Using Biomechanics to Understand the World's Most Complex Machine.” Student Transition Engineering Program (STEP), July 2017
 13. “Engineering Orthopaedics to Improve Patient Outcome and Prevent Future Injuries”, Keynote Lecture for the Medical Student Research Symposium: Virginia Tech Carilion School of Medicine, March 2017.
 14. Engineering Freshman Seminar: “From Engineering to Orthopaedics and Back Again” – Guest Lecture (College of Engineering, Fall 2016)
 15. Hypatia Seminars: “Biomechanics of Human Movement” – Guest Lecture (College of Engineering, Fall 2016)
 16. “Using Biomechanics to Understand the World's Most Complex Machine.” Student Transition Engineering Program (STEP), July 2016
 17. “Human Biomechanics: Understanding the World’s Most Complex Machine” Research Experience for Undergraduates Program, June 2016
 18. “Gait and Functional Outcomes Following Total Ankle Arthroplasty” Foot and Ankle Grand Rounds Carilion Orthopedics, February 2016
 19. Virginia Tech Interdisciplinary Research Honor Society's Speaker Spotlight Series: “Engineering Orthopaedics: Building Teams in the Most Unlikely Places” (Fall 2015)
 20. ESM 2014: “From Engineering to Orthopedics and Back Again” – Guest Lecture for Instructor: Pat Artis (Engineering Science and Mechanics, Fall 2015)
 21. Terrestrial Locomotion: “Impact of Pathology on Movement Symmetry and Movement Quality” – Guest Lecture for Instructor Dr. Socha (Engineering Science and Mechanics, Fall 2015)
 22. Engineering Freshman Seminar: “Biomechanics of Human Movement” – Guest Lecture (College of Engineering, Fall 2015)
 23. Hypatia Seminars: “Biomechanics of Human Movement” – Guest Lecture (College of Engineering, Fall 2015)
 24. “Engineering: The Coolest Job Ever!” Perry Initiative Duke University, Fall 2014
 25. “Total Ankle Replacement: Changes in Gait, Function, and Patient Reported Measures Over Two Years” (Duke Foot and Ankle Society Annual Meeting – May 2013)
 26. “Gait and Functional Assessment in Foot and Ankle Research” (Foot and Ankle Grand Rounds Duke University- March 2013)
 27. “Total Ankle Replacement: What Have We Learned and Where Are We Going” (Grand Rounds Duke University- December 2012)
 28. “Gait and Functional Assessments in Adult Reconstruction: What Can We Learn” (Total Joint Replacement Grand Rounds Duke University- September 2012)
 29. “Gait and Functional Assessments: What Can We Learn” (Total Joint Replacement Grand Rounds Duke University- September 2011)
 30. “Gait and Functional Outcomes in Foot and Ankle Patients” (Foot and Ankle Grand Rounds Duke University- January 2012)
 31. “Gait and Functional Assessments: What Can We Learn” (Foot and Ankle Grand Rounds Duke

- University- July 2011)
32. “Lower Extremity Gait Assessment: What Can We Learn” (Total Joint Replacement Grand Rounds Duke University- September 2010)
 33. “Metatarsal Stress Fractures: Plantar Pressure Distribution Patterns and the Implications for Injury Reduction” (Foot and Ankle Grand Rounds Duke University- Feb 2007)
 34. “Food for Thought” Department of Biological Anatomy and Anthropology, Duke University, Durham, NC
 35. “Stress Fractures: Current Issues in Research and Treatment” (Primary Care Sports Medicine – Journal Club)
 36. “Anatomy of the Lower Extremity” Department of Biological Anatomy and Anthropology, Duke University, Durham, NC
 37. “Biomechanics: What Happens in the K-Lab” (Sports Medicine Research Conference Duke University- April 2005)

Trainees

PhD Advisor - Current Graduate Students

2024-2028	Ali Stibler, SBES, Virginia Tech
2024-2028	Taylor Yu, SBES, Virginia Tech
2024-2027	Alex Gioia, ME, Virginia Tech
2023-2026	Robyn Hansen, SBES, Virginia Tech

MS Advisor – Current Graduate Students

2024-2025	Victoria Rebholz, SBES, Virginia Tech
2023-2025	Sam Weiss, SBES, Virginia Tech

Post-doc Advisor – Current Post-docs

2024-2027	Renoa Choudhury, Biomedical Engineering, Virginia Tech
2024-2027	Vaibhavi Rathod, Biomedical Engineering, Virginia Tech

Current Doctoral Committees

2024-2026	Arian Sohrabi, SBES, Wake Forest University (Member)
2024-2028	Susie Green, Interdisciplinary Doctoral Studies, Virginia Tech (Member)
2022-2025	Hailey Fong, Physiology and Neuromechanics, The University of Memphis (Member)
2022-2025	Noor Tasnim, Translational Medicine Biology and Health, Virginia Tech (Member)
2022-2026	Melody Modarressi, Biology, Georgia Institute of Technology (Member)

Current Master’s Committees

Current Undergraduate Students

2024-2025	Katrina Peralta, Mechanical Engineering (2025)
2024-2025	Kartik Chokkavarapu, Biomedical Engineering, Virginia Tech (2025)
2025-	John Linehan, Mechanical Engineering, Virginia Tech
2025-	Jack Genesi, Mechanical Engineering, Virginia Tech
2025-	Georgia Berg, Human Nutrition Food and Exercise, Virginia Tech
2025-	Brandon Matheus Codera, Biomedical Engineering, Virginia Tech

Current Medical Students/Residents

2022-2026 Kelly Gordon, VT Carilion School of Medicine (2026)
2022-2026 Zach Johnson, VT Carilion School of Medicine (2026)

Current International Examiner

Previous PhD/MS Students Advised

2020-2024 Theresa Libera, SBES, Virginia Tech (Chair))
2023-2024 Alison Henry, SBES, Virginia Tech
2019-2023 Hassan Farah, (PhD) TBMH, Virginia Tech (Chair)
2021-2023 Tyana Scott (MS), SBES, Virginia Tech (Chair)
2021-2023 Jorjie Wilson (MS), SBES, Virginia Tech (Chair)
2022-2023 Bryana Vasquez (MS), SBES, Virginia Tech (Chair)
2022-2023 Jenna Mesisca (MS), SBES, Virginia Tech (Chair)
2022-2023 Robyn Hansen (MS), SBES, Virginia Tech (Chair)
2020-2023 Michael Teater (PhD), SBES, Virginia Tech (Chair)
2021-2022 Sara Elnahhas (MS), SBES, Virginia Tech (Co-Chair)
2021-2022 Jill Streamer (MS), SBES, Virginia Tech (Chair)
2020-2022 Julia Brisbane (MS), SBES, Virginia Tech (Chair)
2021-2022 Adam Luftglass (MS), SBES, Virginia Tech (Chair)
2019-2021 Nicole Stark (PhD), SBES, Virginia Tech (Chair)
2019-2021 Percie Lyons (MS), Engineering Mechanics, Virginia Tech (Chair)
2016-2020 Mingyi Liu (PhD), ME, Virginia Tech (Co-Chair)
2016-2020 Cherice Hughes-Oliver (PhD), SBES, Virginia Tech (Chair)
2017-2020 Alex Peebles (PhD), SBES, Virginia Tech (Chair)
2018-2020 Laura Dickerson (MS), ME, Virginia Tech (Chair)
2016-2019 Kristen Renner (PhD), SBES, Virginia Tech (Chair)
2015-2017 Evan McConnell (MS), SBES, Virginia Tech (Chair)
2016-2017 Jonathan Gladish (MS), SBES, Virginia Tech (Chair)
2009-2012 Boyi Dai (PhD), Dept. Human Movement Science, UNC-Chapel Hill (Co-Chair)

Previous International Examiner

2020-2021 Ivana Hanzlikova (PhD), Health, Engineering, Computing and Science, University of Waikato, New Zealand (Examiner)

Previous Doctoral Committees

2021-2023 Amelia Bruce Leicht, Kinesiology, University of Virginia (Member)
2015-2022 Michelle Graham, Engineering Mechanics, Virginia Tech (Member)
2016-2021 Athulya Simon, Dept. Mechanical Engineering, Virginia Tech (Member)
2017-2019 Leigh Allin, SBES, Virginia Tech (Member)
2016-2019 Sophia Ulman, Dept. Industrial and Systems Engineering, Virginia Tech (Member)
2016-2019 Mehdi Alemi, Dept. Mechanical Engineering, Virginia Tech (Member)
2017-2018 Katherine Biddle, Counselor Education, Virginia Tech (Member)
2015-2018 Bhushan Thakkar, Dept Physical Therapy, VCU (Member)
2015-2016 Peter Fino, PhD, Mechanical Engineering, Virginia Tech (Member)
2007-2009 Mike Malinzak, MD, PhD, Biological Anthropology and Anatomy (Member)
2005-2006 Yukiko Makihara, PhD, Dept. Human Movement Science, Univ North Carolina-CH (Member)

Previous Master's Committees

2021-2023 Jimmy Lane (MEng Student), ME, Virginia Tech (Member)
2019-2021 Chance Bisquera (MS Student), ME, Virginia Tech (Member)
2018-2019 Evan Wood, Mechanical Engineering, Virginia Tech (Member)
2016-2017 Sarah Beauchamp, Mechanical Engineering, Virginia Tech (Member)
2015-2017 Yue Yuan (MS Student), Mechanical Engineering, Virginia Tech (Member)
2013-2015 Eric Merritt, MS, Dept. Exercise Science, Univ. Georgia (Member)

Previous Graduate Student Research Rotations

2021 Noor Tasnim, Translational Biology Medicine & Health, Virginia Tech
2010 Laura Paulsen, Dept. Biomedical Engineering, Duke Univ.
2010 Molly Glauber, Dept. Biomedical Engineering, Duke Univ.
2008 Mathew Tenan, Dept. Human Movement Science, Univ North Carolina-CH

Previous Post-doc

2022-2024 William Garret Burks, Biomedical Engineering, Virginia Tech
2014-2016 Roxanne Larsen, Evolutionary Anthropology, Duke Univ.
2007-2010 Ershela Sims, Orthopaedic Surgery, Duke Univ.

Undergraduate Independent Study Students

2022-2024 Alex Gioia, Mechanical Engineering, Virginia Tech (2024)
2023-2024 Victoria Rebholz, Biomedical Engineering, Virginia Tech (2024)
2023-2024 Tyler Schalow, Biomedical Engineering, Virginia Tech (2024)
2023-2024 Ethan Camacho, Biomedical Engineering, Virginia Tech (2025)
2023 Hannah Orens, Biomedical Engineering, Virginia Tech (2024)
2023 James McKendrick, Mechanical Engineering, Virginia Tech
2023 John Linehan, Mechanical Engineering, Virginia Tech
2021 Reilly Hatfield, Biologic Systems Engineering, Virginia Tech
2021 John Paul Williams, Mechanical Engineering, Virginia Tech
2021 Katelynn Loss, Material Science Engineering, Virginia Tech
2019-2020 Adam Luftglass, Material Science and Engineering, Virginia Tech
2019-2020 Caitlyn Overbay, Engineering Science and Mechanics, Virginia Tech
2018-2019 Karthik Dikshithar, Engineering Science and Mechanics, Virginia Tech
2018-2019 Madeline (Maddy) Carroll, Biologic Systems Engineering, Virginia Tech
2018-2019 Christopher White, Mechanical Engineering, Virginia Tech
2017-2019 Leila Kamareddin, Biologic Systems Engineering, Virginia Tech
2018-2019 Seth Oliveira, Biologic Systems Engineering, Virginia Tech
2017-2018 Alison Mihailovich, Animal and Poultry Science, Virginia Tech
2016-2017 Melanie Kangelaris, Mechanical Engineering, Virginia Tech
2014 Caitlin Gallagher, Exercise Science, Appalachian State University
2014 Morgan Pillsbury, Exercise and Sports Science, Elon Univ.
2014-2015 Eddie Merenda, Biomedical Engineering, Duke University
2014-2015 Erinn Menninger, Biomedical Engineering, Duke University
2012-2013 Lucas Johnston, Mechanical and Biomedical Engineering, Duke Univ
2009 Romin Ghassemi-nia, Exercise Physiology, East Carolina Univ.
2009-2010 Marian Dickinson, Dept. of Biomedical Engineering, Duke Univ
2011-2012 Tawnee Sparling, Evolutionary Anthropology, Duke Univ.
2011-2014 Shikha Sachdeva, Evolutionary Anthropology, Duke Univ.

2007 Mya Shackelford, Exercise Physiology/Psychology, Univ North Carolina-CH
2007-2008 Jordan Yoder, Dept. of Biomedical Engineering, Duke Univ.
2007-2010 Tradelle Ward, Biological Anthropology and Anatomy, Duke Univ.
2008-2009 Winston Lynk, Dept. of Biomedical Engineering, Duke Univ.
2008-2011 Justin De Biasio, Dept Chemistry, Duke Univ.

Undergraduates Supervised

2025- John Linehan, Mechanical Engineering, Virginia Tech
2025- Jack Genesi, Mechanical Engineering, Virginia Tech
2025- Georgia Berg, Human Nutrition Food and Exercise, Virginia Tech
2025- Brandon Matheus Codera, Biomedical Engineering, Virginia Tech
2024 McKay Beasley, Biomedical Engineering, Virginia Tech
2024 Katie Mastrean, Biomedical Engineering, Virginia Tech
2024 Peyton LaRosa, Biological Sciences, Virginia Tech
2024- Kartik Chokkavarapu, Biomedical Engineering, Virginia Tech
2024-2025 Katrina Peralta, Mechanical Engineering, Virginia Tech
2021-2024 Alexandra Murias, Biomedical Engineering, Virginia Tech
2022-2024 James McKendrick, Mechanical Engineering, Virginia Tech
2022-2024 John Linehan, Mechanical Engineering, Virginia Tech
2022-2023 Hannah Orens, Biomedical Engineering, Virginia Tech
2021-2023 Allison Henry, Biomedical Engineering, Virginia Tech
2019-2022 Jenna Mesisca, Biomedical Engineering, Virginia Tech
2020-2022 Katelynn Loss, Material Science Engineering, Virginia Tech
2020-2022 Bryana Vasquez, Biomedical Engineering, Virginia Tech
2020-2021 Reilly Hatfield, Biologic Systems Engineering, Virginia Tech
2021-2022 Robyn Hansen, Mechanical Engineering, Virginia Tech
2021 Jessica Geiger, Mechanical Engineering, Virginia Tech
2021 Taylor Geiman, Biomedical Engineering, Virginia Tech
2020-2021 John Paul Williams, Mechanical Engineering, Virginia Tech
2020-2021 Laith Al-Jaouni, Biomedical Engineering, Virginia Tech
2019-2021 Adam Luftglass, Material Science Engineering, Virginia Tech
2019-2021 Sara Elnahas, Mechanical Engineering, Virginia Tech
2020-2021 Jill Streamer, Mechanical Engineering, Virginia Tech
2019-2020 Abby Daily, Biomedical Engineering, Virginia Tech
2019-2020 Hannah Sheppard, Mechanical Engineering, Virginia Tech
2017-2020 Caitlyn Overbay, Engineering Science and Mechanics, Virginia Tech
2019-2020 Om Shah, Mechanical Engineering, Virginia Tech
2019 John Hill, Human Nutrition, Food, and Exercise, Virginia Tech
2018 Amanda Lugo, Mechanical Engineering, Virginia Tech
2018-2019 Christopher White, Mechanical Engineering, Virginia Tech
2018-2019 Karthik Dikshithar, ESM, Virginia Tech
2018 Sindy Hou, ESM, Virginia Tech
2017-2019 Leila Kamareddin, Mechanical Engineering, Virginia Tech
2017-2020 Caitlyn Overbay, ESM, Virginia Tech
2017-2018 Alison Mihailovich, Animal and Poultry Sciences, Virginia Tech
2017 Vincent Caittei, Mechanical Engineering, Virginia Tech
2016-2017 Melanie Kangelaris, Mechanical Engineering, Virginia Tech
2015-2017 Nicole Orndorff, Mechanical Engineering, Virginia Tech

2016-2017 Catherine Lyle, Engineering Science and Mechanics, Virginia Tech
2016 Rick Cantania, Mechanical Engineering, Virginia Tech
2016 Stephen Heinichen, Mechanical Engineering, Virginia Tech
2016 Sean Wilkins, Mechanical Engineering, Virginia Tech
Summer 2016 Mackenzie Wenrick, Summer REU through the NSF
2014-2015 Steven Heer, Biology, Duke Univ.
2014-2015 Eddie Merenda, Biomedical Engineering, Duke University
2014-2015 Erinn Menninger, Biomedical Engineering, Duke University
2014 Morgan Pillsbury, Exercise and Sports Science, Elon Univ.
2014 Caitlin Gallagher, Exercise Science, Appalachian State University
2014 Rajan Khanna, Neuorscience, Duke University
2013-2014 David Huang, Dept. Biomedical Engineering, Duke Univ.
2013-2014 Michelle Roberts, Undecided, Duke Univ.
2012-2013 Lucas Johnston, Mechanical and Biomedical Engineering, Duke Univ
2012-2013 Teron Nezwek, Evolutionary Anthropology, Duke Univ
2012-2013 Jordyn Silverstein, Dept. Biology, Duke Univ.
2012-2013 Thomas Hennessy, Undecided, Duke Univ.
2012-2013 Shaun Thompson, Dept. Biophysics, Duke Univ.
2012-2013 Camden Spade, Dept. Biology, Emory Univ.
2011-2014 Shikha Sachdeva, Evolutionary Anthropology, Duke Univ.
2011-2012 Tawnee Sparling, Evolutionary Anthropology, Duke Univ.
2011-2012 Emily Bhutiani, Dept. Biology, Duke Univ
2011-2012 Eric Merritt, Dept. Kinesiology, Penn State Univ.
2011 Neha Bakhai, Global Health, Duke Univ.
2011 Maxwell Horowitz, Dept. Psychology, Duke University
2011 Conor Irwin, Dept. Evolutionary Anthropology & Anatomy, Duke Univ.
2011 Thomas Thorne, Dept. Biomedical/Medical Engineering, North Carolina State Univ.
2011 Debbie Chi, Dept. Mechanical Engineering, Duke Univ.
2011 Amos Dai, Dept. Global Health, Duke Univ.
2010-2011 Joe Hoerner, Dept. Biomedical Engineering, Duke Univ.
2010 Lauren DeRuyter, Dept. Biology, Duke Univ.
2010 Alison Damon, Dept. Biology, Duke Univ.
2010 Brad Peters, Exercise Science, Univ. Nebraska at Kearney
2009-2010 Marian Dickinson, Dept. of Biomedical Engineering, Duke Univ
2009-2010 Elyse Glover, Mechanical Engineering, Duke Univ.
2009-2010 Jenna McNeill, Evolutionary Anthropology, Duke Univ.
2009 Romin Ghassemi-nia, Exercise Physiology, East Carolina Univ.
2009 Tesa Gross, Depts. Biology and Evolutionary Anthropology, Duke Univ.
2009 Michelle Jablons, Dept. Biology, Duke Univ.
2009 Nissar Ahmed, Dept. Biomedical Engineering & Chemistry, Duke Univ.
2009 John Yanik, Biomedical Engineering, North Carolina State Univ.
2009 Irfan Husain, Dept. Biology, Duke Univ.
2008-2011 Justin De Biasio, Dept Chemistry, Duke Univ.
2008-2009 Winston Lynk, Dept. of Biomedical Engineering, Duke Univ.
2008 Slater Hurst, Dept. History, Duke Univ.
2008 Taylor Tappe, Dept Physics, Univ North Carolina-CH
2008 Wesley Ogelsby, Biological Anthropology & Anatomy, Duke Univ.
2007-2010 Tradelle Ward, Biological Anthropology and Anatomy, Duke Univ.

2007-2008 Jordan Yoder, Dept. of Biomedical Engineering, Duke Univ.
2007-2008 Alicia Eubank, Global Health, Duke Univ
2007 Mya Shackelford, Exercise Physiology/Psychology, Univ North Carolina-CH
2007 Jennifer Boyd, Dept. Biomedical Engineering, North Carolina State Univ.
2006-2007 Emily Boecking, Dept. of Biomedical Engineering, Duke Univ.
2006 Alicia Abbey, Athletic Training, Mercyhurst College
2006 Brian Yeh, Dept. of Biomedical Engineering, Duke Univ
2006 Travis Nelson, Dept. Biology, Duke Univ.
2006 Andrew Juer, Viterbi School of Engineering at the Univ. of Southern California
2005-2008 Benjamin Haynes, Dept. of Biomedical Engineering, Duke Univ.
2004-2005 W. Mack Hardaker, Evolutionary Anthropology, Duke Univ.
2005 Daniel Southam, BSE, Dept. of Biomedical Engineering, Duke Univ.

Previous Medical Students

2021-2024 Stephanie Hamlin, VT Carilion School of Medicine (2024)
2021-2024 Martin Barylak, VT Carilion School of Medicine (2024)
2019-2023 William Morrison (MD Student), VT Carilion School of Medicine
2018-2022 Alex Atwood (MD Student), VT Carilion School of Medicine
2016-2020 Soleille Everest (MD Student), VT Carilion School of Medicine
2017-2019 Alex Paulini (DO Student), VCOM
2017-2019 Travis Nelson, MD (Family Medicine Resident), Carilion Clinic-VTC
2015-2019 Adam Heilmann (MD Student), VT Carilion School of Medicine
2015-2019 Lindsay Maguire (MD Student), VT Carilion School of Medicine
2016-2018 Dan Park ((MD Student), VT Carilion School of Medicine
2012-2015 Cameron Ledford, Orthopaedic Resident, Duke Univ.
2012-2015 Alex Vap, Orthopaedic Resident, Duke Univ.
2013-2015 A. Jordan Grier, Medical Student, Duke Univ.
2013-2014 Manuel Pellegrini Pucci, Foot and Ankle Fellow, Dept. of Ortho Surgery, Duke Univ.
2013-2014 Lior Laver, Sports Medicine Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2013-2014 Jonathan Roth, Sports Medicine Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2013-2014 Matthew Boyle, Sports Medicine Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2012-2013 Cher Wei Liang (Eric), Medical Student, National Univ of Singapore (Singapore)
2012-2013 Paul Maloof, Foot and Ankle Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2012-2013 Constantine Demetracopoulos, Foot & Ankle Fellow, Dept. Ortho Surg, Duke Univ.
2011-2013 Jordan Schaeffer, Orthopaedic Resident, Duke Univ.
2011-2012 Chad Hembree, Orthopaedic Resident, Duke Univ.
2011-2013 Eric Newman, Medical Student, Duke Univ.
2011-2013 Karl Schweitzer, Orthopaedic Resident, Duke Univ.
2011-2013 Nicholas Viens, Orthopaedic Resident, Duke Univ.
2011-2012 Tobin Eckel, Foot and Ankle Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2011-2012 Stephen Appleton, Adult Recon Fellow, Dept. of Orthopaedic Surgery, Duke Univ.
2011-2013 Phillip Horne, Orthopaedic Resident, Duke Univ.
2011 Kevin Hug, Medical Student, Duke Univ.
2010-2013 Ravi Verma, Medical Student, University of Medicine and Dentistry of New Jersey
2010-2014 Donald Fowler, Orthopaedic Resident, Duke Univ.
2010-2012 Jessica “Jace” Carter, Medical Student, Duke Univ.
2010-2014 Stephanie Mayer, Orthopaedic Resident, Duke Univ.
2010 Sami Mardam-Bey, Medical Student, Duke Univ.

2009 Kristina Siorpaes, Medical Student, University of Salzburg, Austria
2008-2010 Johanna Bischof, Medical Student, Duke Univ.
2007-2009 Jocelyn Wittstein, Orthopaedic Resident, Duke Univ.
2007-2009 Mike Malinzak, Medical Student, Duke Univ.
2008 Bill Kaufman, Medical Student, Medical College of Virginia
2007 Johannes Wiegerinck, Medical Student, University of Amsterdam
2006-2009 Vani Sebesan, Orthopaedic Resident, Duke Univ.
2006-2008 Jason Hurst, MD, Orthopaedic Resident, Duke Univ.
2005 Donald Fowler, III, Medical Student, University of Virginia
2004-2005 Nathan A. Mall, MSIII, Medical Student, Duke University Medical Center

Visiting Professors (hosted Sabbaticals)

2012-2013 Chayanin Anghong, MD, Siriraj Hospital, Mahidol University (Bangkok, Thailand)
2006-2007 Bavornrit Chuckpaiwong, MD, Siriraj Hospital (Bangkok, Thailand)

External support - gifts, grants, and contracts:

<u>Pending:</u>	<u>% Effort</u>	<u>Title</u>	<u>Amount</u>	<u>Funding Period</u>
Hardwig (PI) Queen (Co-I)	20%	Fighting Monkey: Emerging Research & Methods at the Intersection of Dance, Neuroscience and Biomechanics	\$4,993	01/24-12/24
Basso (PI) Queen (Mentor)	30%	AHA - Second Century Early Faculty Independence Award Heart to heart: Examining the cardiac and neural correlates of social connection	\$1,927,289	05/24-04/29
Basso (PI) Queen (Co-I)	30%	NIH R01 - Neural and somatic synchrony as a mechanism for dance-induced improvements in social skills	\$1,927,289	03/24-02/29
Queen (Co-PI) (VT-PI)	100%	Limb stiffness asymmetry as an adaptive solution to complex terrain in primates	\$365,675	01/24-12/25
<u>Present:</u>				
Queen (PI)	100%	NIH R01 – Diversity Supplement Predicting second injuries after primary ACL reconstruction	\$413,761	05/24-6/27
Wunderlich (PI) Queen (Co-I)	100%	4VA Grant - The role of the intrinsic foot muscles in modulating foot shape on uneven surfaces: a collaborative proposal integrating biology and engineering to address clinical questions	\$10,650	07/24-06/25
Queen (VT PI)	85%	NIH R01 – Mechanistic Ancillary Predicting second injuries after primary ACL reconstruction using clinically accessible videography	\$867,682	01/24-12/27
Queen (PI)	90%	ICTAS – EFO Preliminary investigation of adaptive training in recreational runners to improve psychological readiness, joint coordination, and movement variability.	\$10,000	10/23-09/25

Waller (PI) Queen (Co-I)	30%	Genentech Innovation Fund: HBCU Partnerships	\$749,634	09/23-08/26
Queen (PI)	85%	NIH – R01 Clinically Assessed Risk Factors for a Second ACL Injury Using an Innovative Wearable Sensor	\$3,447,241	07/21-06/27
Blemker (PI) Queen (Co-I)	100%	NIH-R01 (subaward) A quantitative framework to examine sex differences in musculoskeletal scaling and function Total Budget: \$3,094,538	\$351,690	07/21-06/26
<u>Past:</u>				
Rikakis (PI) Queen (Co-PI)	10%	NSF Smart and Connected Health: Smart Rehabilitation in the Home: Connecting the Pieces	\$1,199,999	07/20-06/24
Arena, S (PI) Queen (Co-I)	40%	ICTAS – EFO Preliminary Investigations in Load Symmetry in Postpartum Women During Activities of Daily Living and Differing Child-Care Related Loading Conditions	\$10, 000	10/22-09/23
Allen (PI) Queen (Co-PI)	50%	NIH – AR074149 R21 Pilot Clinical Trial Improving Physical Activity and Gait Symmetry after Total Knee Arthroplasty	\$629,789	04/19-03/23
Arena, S (PI) Queen (Co-I)	40%	VT Engineering Faculty Organization-Opportunity (EFO-O) Seed Investment Validation of Joint Kinematics using Markerless Motion Capture Methods in Pediatric Patients with Cerebral Palsy	\$10, 000	10/21-6/22
Queen (PI)	100%	Center for Excellence in Teaching and Learning Instructional Grant: High Impact Grant for Interdisciplinary Design Course Expansion	\$16,000	08/21-07/22
Queen (PI)	100%	College of Engineering SCHEV Equipment Grant Qualisys-Theia Motion Markerless Motion Capture	\$49,903	04/21-06/21

Farrah (PI) Queen (Co-Mentor)	0%	Understanding How Children with Hemiparetic Cerebral Palsy Anticipate Gait	\$131,997	09/20-12/22
Queen (PI)	100%	ICTAS Diversity Grant-Virginia Tech Foot Biomechanics and Health Disparities	\$20,000	11/20-10/22
Allen (PI) Queen (Co-PI)	100%	NIH – AR074149 Research Supplements to Promote Diversity in Health-Related Research Improving Physical Activity and Gait Symmetry after Total Knee Arthroplasty	\$199,167	04/19-12/21
Queen (PI)	100%	NIH – AR069865 R21 Pilot Clinical Trial Reduction of Risk Factors for ACL Re-injuries using an Innovative Biofeedback Approach	\$600,333	12/16-11/21
Queen (PI)	100%	ICAT Mini Grant – Virginia Tech Characterizing Upper Extremity Motion using a Fiber Optic Sensor	\$3,000	10/20-9/21
Queen (PI) Stark (Co-PI)	100%	Research! America BOLD: Biomechanics Online Learning Destination	\$2,000	01/21-05/21
Queen (PI)	100%	Center for Excellence in Teaching and Learning Instructional Grant: High Impact Grant for Interdisciplinary Senior Design Pilot Course	\$16,000	08/20-07/21
Sarlo (PI) Queen (Senior Personnel)	10%	IIHCC – Virginia Tech A Clinical and Social Adoption Study of Frailty Diagnosis through Passive, In-Situ Gait Monitoring	\$50,000	06/20-09/21
Lei (PI) Queen (Co-I)	20%	DOD - US Office of Naval Research Energy harvesting backpack with high specific power and broadband using a dual mass-inerter and mechanical motion rectification	\$528,314	03/18-02/21
Queen (PI)	100%	ICTAS Diversity Grant Noninvasive Health Assessment and Tracking	\$10,000	12/19-07/20

Queen (PI)	100%	Howard Hughes Medical Institute Graduate Student Diversity Fellowship	\$150,000	09/18 – 08/20
Queen (PI)	100%	ISCE Funding- VT The Effect of Race, Anthropometry, Strength, and Health Status on Balance and Gait Mechanics	\$7,439	08/18 – 05/20
Queen (PI)	100%	Don Joy, Ortho The Effects of brace wear on sports performance following Anterior Cruciate ligament reconstruction	\$141,747	07/15-06/20
Queen (PI)	100%	ICTAS Diversity Grant Noninvasive Health Assessment and Tracking	\$10,000	12/18-07/19
Queen (PI)	100%	DonJoy, Ortho Gender Differences in the Performance Response to Brace Wear Following ACL Reconstruction	\$101,662	03/16-09/19
Queen (PI) (Asbeck: Co-PI)	80%	NSF – MRI MRI: Acquisition of a Force-measuring treadmill for fundamental research to advance injury prevention, rehabilitation and exoskeleton development.	\$231,149	08/16-08/18
Queen (PI)	100%	ICTAS Diversity Grant Noninvasive Health Assessment and Tracking	\$10,000	10/17-09/18
Ogle (PI)	15%	ICAT Catalyst Grant Program Embodied Virtual Reality for Training and Performance	\$25,000	08/17-06/18
Queen (PI)	100%	REAP VCOM The Ability of Osteopathic Structural Evaluation to Assess Gait Asymmetry	\$50,450	10/16-12/17
Collins (Co-Mentor)	100%	NIH F32 Biomechanical Markers of Knee Osteoarthritis and In Vivo Cartilage Loading	\$167,346	09/14-8/17
Queen (PI)	100%	OREF: Assessment of Physical	\$100,000	07/14-10/16

		Performance, Walking Mechanics, and the Cost-effectiveness of Revision Total Ankle Replacement, and Outcomes Following Total Ankle Replacement		
Defrate (PI) (Queen: Co-I)	40%	1RO1-AR065527-01 In Vivo Knee Motion and ACL Biomechanics During Dynamic Activities	\$1,787,513	05/14-04/19
Queen (PI)	100%	Stryker Clinical and Functional Outcomes following Total Knee Replacement using Two Different Implants	\$300,856	09/12-01/16
Allen (PI) (Queen: Co –I)	50%	VA Grant - O1033-P Functional movement retraining after hip arthroplasty in veterans: pilot study	\$200,000	10/13-09/15
Ledford (Queen: PI)	100%	Piedmont Research Foundation The Effect of Body Composition on Functional Outcomes after Total Joint Replacement	\$7,000	9/14-8/15
Roth-Fellow (Queen: PI)	100%	Piedmont Research Foundation The Functional Recovery After Arthroscopic Partial Meniscectomy	\$7,000	9/14-8/15
Queen (PI)	100%	Don Joy, Ortho Knee Extension Constraint Brace Compliance following ACL Reconstruction	\$523,706	09/12-10/14
Queen (PI)	100%	Piedmont Foundation Equipment Grant Examining Plantar Loading in various clinical populations	\$20,000	03/11-02/13
Fowler Ortho Resident (Queen – PI)	100%	Piedmont Foundation Loading symmetry in patients following ACL reconstruction	\$5,000	05/11-04/13
Horne Ortho Resident (Queen: PI)	100%	Piedmont Foundation Differences in Clinical and Functional Outcomes following THA and TKA.	\$10,000	05/11-04/13
Queen (PI)	100%	Nike, Inc The Implications of flexibility, strength and morphology on single and 2 leg	\$33,000	4/12 – 11/12

		jumping performance in elite basketball players.		
Bolognesi (PI) (Queen: Co-PI)	90%	OREF Effect of Surgical Approach on Gait Mechanics and Physical Function Following Total Hip Replacement.	\$85,000	07/10-06/12
Queen (PI)	100%	Don Joy, Ortho Effects of Knee Extension Constraint Bracing on Lower Extremity Motion Patterns in Post-ACL Reconstruction Patients	\$233,529	08/09-01/12
Mayer Ortho Resident (Queen: PI)	100%	Piedmont Foundation Short Term Results Following Anterior Cruciate Ligament Reconstruction: Improving Post-Operative Evaluations and Safety for Return to Sport	\$3,000	03/11-02/12
Defrate (PI) (Queen: Co-I)	40%	PAR06-383 (NIH-R03): The In Vivo Biomechanics of Lateral Ankle Ligament Injury and Reconstruction	\$234,000	12/08-11/11
Allen (PI) (Queen: Co-I)	50%	Pepper Center Pilot Study of Strength and Gait Training for Older Adults with Knee Osteoarthritis and Varus Malalignment	\$53,100	07/08-06/10
Sabesan Ortho Resident (Queen: PI)	100%	OREF Resident Award A Prospective Clinical Gait Comparison of Total Hip Replacements versus Hip Resurfacing	\$20,000	07/08-06/09
Queen (PI)	100%	Piedmont Research Foundation Examine the differences in lower extremity kinetics and kinematics during 3 tasks between patients with Total Hip Replacement, Hip Resurfacing and Normal Controls.	\$5,000	10/06-09/07
Queen (PI)	100%	AOFAS Grant: To determine the kinetic, kinematic, and pressure differences between women with a previous history of 2 nd and 3 rd metatarsal stress fractures and women without a history of stress fractures and men without a previous history of stress fractures.	\$10,000	04/06-02/07

Boling (PI: Queen)	100%	Robertson Scholars Program Foster research Collaboration between UNC - Chapel Hill and Duke University	\$ 950	06/06-05/07
Queen (PI)	100%	Piedmont Research Foundation To determine the differences between a Nordic hamstring curl and traditional hamstring curls in terms of eccentric and concentric strength	\$5,000	01/06-06/06
Herman (PI: Queen)	100%	Robertson Scholars Program Foster research Collaboration between UNC - Chapel Hill and Duke University	\$ 1,000	09/05-09/06
Queen (PI)	100%	Nike, Inc The Effect of Four Different Cleat Plate Configurations on Lower Extremity Kinematics and In-Shoe Pressure on FieldTurf	\$51,529	01/05-09/05
Queen (PI)	100%	Injury Prevention Research Center The Effect of a Positive Posterior Heel Flare on Lower Extremity Kinetics, Kinematics, and Muscle Activation During Running	\$5,000	05/03-05/04