

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

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Professor with Tenure, Biomedical Engineering and Mechanics, College of Engineering  
Faculty Fellow, Office of the VP for Research and Innovation  
Kevin P. Granata Faculty Fellow, Biomedical Engineering and Mechanics  
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

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

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<b><u>Education:</u></b>	<b><u>Institution</u></b>	<b><u>Date (Year)</u></b>
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**

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**

- 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
- 2018-pres. **Affiliate Member**, Department of Mechanical Engineering, Virginia Tech, Blacksburg, VA
- 2016-pres. **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**

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

This is a new role in the Office of the VP for Research and Innovation. This position works in 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**

2021	Fellow of the American Society of Biomechanics
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- 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

## AWARDS

- 2020 Orthopaedic Research Society Adele L. Boskey, PhD Award Recipient  
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**

2015 – 2017 **Chair** - ORS: Women’s Leadership Forum Committee  
2017 – 2020 **Chair** - ASB: Diversity Committee  
2018 – 2024 **Chair** - ACSM: Exhibits Advisory Committee Chair

2013 ACSM : Student Award Committee Biomechanics Interest Group  
2014 – 2015 ASB: Awards Committee (2015)  
2013 – 2017 ORS: Women’s Leadership Forum Committee  
2013 – 2022 ACSM: SHI: Youth Health and Sports Committee  
2014 – 2020 ACSM: Exhibits Advisory Committee  
2015 – 2017 ORS: Annual Meeting Committee  
2015 – 2019 ORS: Basic Science Committee  
2015 – 2019 AAOS: Women’s Health Advisory Board  
2017 – 2020 ASB: Executive Board (Diversity Chair)  
2018 ASB: Program Committee  
2017 – 2021 BMES: Ethics Subcommittee  
2019 – 2020 AAOS: Diversity Advisory Board  
2019 – 2020 ORS: Diversity and Inclusion Task Force  
2019 – 2021 ORS: Foot and Ankle Topic Chair  
2021 – 2024 ORS: Program Committee

**Manuscript Reviewer**

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

**Editorial Boards**

2012 – Present **Associate Editor:** Foot and Ankle International

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

**Grant Reviews**

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 – pres.                    **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**

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**

- 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 Research Societies Annual Meeting, Montreal, Canada June 2019
- 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**

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, 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**

2021-2022 Faculty Senate – Vice President  
2021-2022 Commission on Faculty Affairs: Chair  
2021-2022 University Council: Chair of the Commission on Faculty Affairs  
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**

- 2021-2024 COE Representative to the Virginia Tech Athletics Committee
- 2020 Search Committee Member: COE Associate Dean for Research and Graduate Studies
- 2019-pres. 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**

- 2019-2021 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)

**INCLUSION, DIVERSITY AND OUTREACH**

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

## **RESEARCH INTERESTS**

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. “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.
2. “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. “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
2. “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
3. “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
4. “Load-Based Functional Recovery following Total Ankle Arthroplasty” AMTI Symposium. International Foot and Ankle Biomechanics Annual Meeting, April 2021.
5. “Customer Applications in Foot and Ankle” Novel Electronics Symposium. International Foot and Ankle Biomechanics Annual Meeting, April 2021.
6. “Using Biofeedback to Improve Symmetry and Reduce Second ACL Injury Risk” Webinar on Exercise and Rehabilitation. Federal University of Pampa, Brazil, August 24, 2020.
7. “Using Biofeedback to Reduce Second ACL Injury Risk” The 9<sup>th</sup> Symposium on Motor Control in Biomechanics, Orlando, Florida, May 28<sup>th</sup> 2019, pre-conference for the 66<sup>th</sup> Annual Meeting of American College of Sports Medicine.
8. “Engineering Orthopaedics: Improving Patient Outcome and Preventing Future Injuries” - Visiting Professor, Department of Orthopaedic Surgery, University of Colorado Denver, November 2019.
9. “Using Gait Mechanics to Define Total Joint Arthroplasty Surgical Success” University of Florida, Department of Orthopaedic Surgery, March 2019.
10. “Lower Extremity Joint Symmetry during Human Movement” University of Florida, Department of Mechanical and Aerospace Engineering, March 2019.
11. “Teaching, Research and Outreach” University of Florida, Department of Mechanical and Aerospace

- Engineering, March 2019.
12. "Using Mechanics to Improve Orthopaedic Clinical Care." Invited Lecture. Center for Applied Biomechanics, University of Virginia, July 2018.
  13. "Using Gait Mechanics to Define Total Joint Arthroplasty Surgical Success." Visiting Professor, Department of Orthopaedic Surgery, University of Virginia, July 2018.
  14. "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
  15. "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
  16. "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
  17. "ACL Injury Risk, Rehabilitation, Return to Sport, and Prevention of Secondary Injuries" Rutgers Human Performance Conference, April 2017
  18. "Assessing Movement and Improving Outcomes using Motion Capture (MoCap)" Department of Orthopedic Surgery Resident Teaching: McMaster University, Toronto, Ontario, December 2015.
  19. "Walking Mechanics Review" Department of Orthopedic Surgery Resident Teaching: McMaster University, Toronto, Ontario, December 2015.
  20. "Optimizing Life Long Function Following Surgical Intervention" Department of Orthopedic Surgery Grand Rounds: McMaster University, Toronto, Ontario, December 2015.
  21. "The Impact of Injury on Movement Symmetry and Movement Quality" School of Physical Therapy Washington University, Spring 2015.
  22. "Life-Long Function Following Surgical Intervention" School of Kinesiology University of Michigan, Fall 2014.
  23. "Bridging the Gap: Engineering Research the Undergraduate Experience" College of Engineering Virginia Commonwealth University, Fall 2014.
  24. "Life-Long Function Following Surgical Intervention" Department of Kinesiology University of Tennessee Knoxville, Spring 2014.
  25. "Walking Mechanics and Functional Assessment: Applications in Orthopaedics" University of Arkansas Medical Sciences, November 2013.
  26. "Research Design and Statistics" University of Arkansas Medical Sciences, November 2013.
  27. "The Jump Height Recipe: Using Biomechanics and Clinical Measures to Predict Performance" Nike Global Research Symposium: Beaverton, OR, Summer 2012.
  28. "Effects of Ankle Taping on Fifth Metatarsal Loading in Selected Athletic Tasks" Nike Global Research Symposium: Beaverton, OR, Summer 2005.
  29. "The Effect of Soccer Shoe Type on Cutting Kinematics and Plantar Pressure Distributions" Nike Global Research Symposium: Beaverton, OR, Summer 2005.
  30. "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. "Early Career Panel on Mentorship" American Society of Biomechanics Virtual Annual Meeting, August 6, 2020.
2. "Faculty Panel and Poster Session: An ICTAS Initiative" HBCU/MSI Research Summit at Virginia Tech, October 13, 2019.
3. "Women in STEM panel." Women's Month Event hosted by the College of Engineering and the College

- of Science, March 20, 2018
4. "Interdisciplinary Teams, Tracing the Path." ICAT's Creativity and Innovation Day, April 30, 2018
  5. "Academic Search Committees: Behind the Scenes." Virginia Tech Graduate School Professional Development Session. Graduate Office of Recruitment, Diversity, & Inclusion. March 14, 2018

### **Publications:**

### **Refereed journals:**

The Undergraduates<sup>§</sup>, Graduate Students<sup>‡</sup>, and Medical Students/ Resident/Fellows\* were identified using the designated symbols for each manuscript.

1. <sup>§</sup>CL White, <sup>‡</sup>K Renner, **RM Queen**. *Effect of Achilles Tendon Assistive Taping on Physical Performance*. Journal of Sports Rehabilitation. (In Review- May 2021)
2. \*MM Cullen, A Zeininger, JL Weinert, CE Miller, **RM Queen**, D Schmitt. *Collision Reduction as an Efficient Gait Strategy in Patients with OA of the Hip, Knee, and Ankle*. Clinical Orthopaedics and Related Research (In Review – August 2021).
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*. Journal of Bone and Joint Surgery (In Review – August 2021).
4. D Schmitt, <sup>§</sup>TL Sparling, **RM Queen**. *The Effect of Total Ankle Arthroplasty on Mechanical Energy Exchange*. Journal of Biomechanics. (In August – July 2021).
5. <sup>§</sup>R Hatfield, <sup>§</sup>H Sheppard, <sup>‡</sup>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*. Journal of Biomechanics (In Review – July 2021).
6. <sup>‡</sup>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*. Computer Methods in Biomechanics and Biomedical Engineering (In Review – June 2021)
7. <sup>‡</sup>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*. Clinical Biomechanics (In Review – July 2021).
8. <sup>§</sup>L Kamareddine, <sup>‡</sup>A Peebles, <sup>‡</sup>K Renner, L Sands, **RM Queen**. *Sex and Activity Level Do Not Impact Hop Distance and Load Symmetry in Healthy Recreational Athletes: Implications for Return to Sport Decision Making*. Journal of Sport Rehabilitation (In Review - July 2021)
9. <sup>‡</sup>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*. American Journal of Sports Medicine (In Review – July 2021).
10. <sup>‡</sup>CN Hill, S Ross, **RM Queen**. *Discrete Projection and Similarity Analysis in Total Ankle Replacement*

- Patients*. Journal of Biomechanics (In Review – Resubmission June 2021).
11. ‡CN Hughes-Oliver, D Srinivasan, **RM Queen**. *Correlation between Gait Asymmetry and Motor Variability*. Gait and Posture (In Review – August 2020).
  12. §J Mesisca, ‡AT Peebles, and **RM Queen**. *Including Jump Height when Normalizing Single Hop Impact Kinetics Can Change the Directionality of Findings*. Clinical Biomechanics (In Press).
  13. ‡M Liu, ‡C Hughes-Oliver, **RM Queen**, L Zuo. *A Lightweight Wearable Biomechanical Energy Harvester*. Smart Materials and Structures (In Press-epub).
  14. ‡L. Dickerson, **RM Queen**. *The Design and Validation of a Low-Cost Foot Measurement System*. Journal of Biomechanical Engineering. <https://doi.org/10.1115/1.4050751> (In Press-epub)
  15. ‡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 PMID: 33738820. DOI: 10.1002/jor.25039. (In Press-epub)
  16. ‡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. PMID: 33658154. DOI: 10.1016/j.gaitpost.2021.02.024 (In Press - epub).
  17. ‡K Renner and **RM Queen**. *Change in Force-based Metrics during Outdoor Two- and Four- Mile Runs*. Medicine and Science in Sports and Exercise. doi: 10.1249/MSS.0000000000002653 (In Press - epub)
  18. ‡M Liu, ‡C Hughes-Oliver, **RM Queen**, L Zuo. *Energy Harvesting from Human Walking: Generating Electricity by Harvesting Negative Muscle Work*. Renewable Energy (In Press).
  19. §A. Luftglass, ‡AT Peebles, TK Miller, **RM Queen**. *The Impact of Standardized Footwear on Load and Load Symmetry*. Clinical Biomechanics. 88: , 2021. PMID: 34246037.
  20. **RM Queen** and D Schmitt. *Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement*. Innovations in Aging. 5(2): 1-8, 2021. PMID: PMC8304153
  21. ‡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.
  22. ‡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
  23. 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.
  24. 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.
25. 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.
  26. ‡L. Dickerson, **RM Queen**. *Effects of Ankle Bracing on Foot Posture and Plantar Loading*. Journal of Athletic Training. 56(5):461-472, 2021.
  27. ‡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>
  28. 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
  29. **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.
  30. ‡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.
  31. ‡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.
  32. ‡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.
  33. ‡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>
  34. ‡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>.
  35. 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.
  36. **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>.

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38. ‡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>
39. ‡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.
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43. ‡SM Ulman, **RM Queen**, D Srinivasan. *Using gait variability to predict inter-individual differences in learning rate of a novel obstacle course*. *Archives of Biomedical Engineering*. 47(5):1191-1202, 2019.
44. ‡AT Peebles, ‡KE Renner, TK Miller, JT Moskal, **RM Queen**. *Associations between Distance and Loading Symmetry during Return to Sport Hop Testing* *Medicine and Science in Sports and Exercise*. 51(4):624-629, 2019
45. ‡KE Renner, DSB Williams, **RM Queen**. *The Reliability and Validity of the loadsol® Under Various Walking and Running Conditions*. *Sensors*. 19(2): E265, 2019.
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47. ‡JR Gladish, DW Powell, **RM Queen**. *The Effects of Total Ankle Arthroplasty on Postural Stability and Loading Symmetry in Quiet Stance*. *Journal of Biomechanics*. 83: 110-116, 2019.
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49. ‡CN Hughes-Oliver, D Srinivasan, D Schmitt, and **RM Queen**. *Gender and limb differences in temporal gait parameters and gait variability in ankle osteoarthritis*. *Gait and Posture*. 65: 228-233, 2018.
50. SR Raman, BG Hammill, **RM Queen**, SB Adams, LH Curtis. *Linking a Total Ankle Arthroplasty*



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51. ‡K Renner, CT Franck, TK Miller, **RM Queen.** *Limb Asymmetry During Recovery from Anterior Cruciate Ligament Reconstruction.* Journal of Orthopaedic Research. 36(7): 1887-1893, 2018
52. ‡J Gladish, DW Powell, ‡LE Allison, **RM Queen.** *Center of Pressure Profiles in Unilateral Compared to Bilateral End-Stage Ankle Osteoarthritis Patients.* Journal of Orthopaedic Research. 35(12): 2749-2754, 2017.
53. ‡ED Merritt, CN Brown, **RM Queen,** KJ Simpson, JD Schmidt. *Concussion History and Time Since Concussion Do Not Influence Static and Dynamic Balance in Collegiate Athletes.* Journal of Sports Rehabilitation. 26(6): 518-523, 2017.
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56. **RM Queen.** *Infographic: ACL injury reconstruction and recovery.* Bone Joint Res. 6(11): 621-622, 2017.
57. **RM Queen.** *Directing Clinical Care Using Lower Extremity Biomechanics in Patients with Ankle Osteoarthritis and Ankle Arthroplasty.* Journal of Orthopaedic Research. 35(11): 2345-2355, 2017.
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60. ‡E McConnell, **RM Queen.** *Correlation of Physical Performance and Patient-Reported Outcomes Following Total Ankle Arthroplasty.* Foot and Ankle International. 38(2):115-123, 2017.
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62. RJ Butler, ‡B Dai, N Huffman, WE Garrett, **RM Queen.** *Lower Extremity Movement Differences Persist After Anterior Cruciate Ligament Reconstruction and When Returning to Sports.* Clinical Journal of Sports Medicine 26(5): 411-416, 2016.
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**Non-authored publications:** (Faculty member formally acknowledged in the publication.)

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#### **Selected abstracts**

1. 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.
2. 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.
  3. 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.
  4. K Renner, A Peebles, **R Queen**. The Impact of Sampling Frequency on Kinetic Outcomes. American Society of Biomechanics Annual Meeting 2021.
  5. 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.
  6. 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.
  7. 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.
  8. 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.
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  11. 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.
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  20. S Everest, JT Moskal, **RM Queen**. Balance Deficits Remain More than One Year Following Total Hip Arthroplasty. Orthopaedic Research Society Annual Meeting 2020.
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31. A Peebles, S Ross, **RM Queen**. Effect of Sex on Linear and Nonlinear Kinematic Variability during a Stop Jump. ACSM Annual Meeting 2019.
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  33. WE Garrett, AL Schmitt, **RM Queen**. Functional Brace Wear does not Decrease Sports Performance Following ACL Reconstruction. ACSM Annual Meeting 2019.
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  38. 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)
  39. 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.
  40. A. Peebles and **R Queen**. Using the loadsol to Predict Knee Extension Moment Asymmetry during a Stop Jump. Biomedical Engineering Society Annual Meeting 2018.
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47. 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.
48. 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.
49. 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.
50. 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.
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53. **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.
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57. C Hughes-Oliver, D Srinivasan, **RM Queen**. Sex-Specific Differences of Temporal Gait Patterns in Ankle Osteoarthritis Patients. Biomedical Engineering Society Annual Meeting 2017.
58. 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.
59. TP Trentadue, **RM Queen**, D Schmitt. Fourier Analysis of the Vertical Ground Reaction Forces

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60. JR Gladish, DW Powell, **RM Queen**. Simplified Center of Mass Tracking in Ankle Osteoarthritis Patients. American Society of Biomechanics Annual Meeting 2017.
  61. 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.
  62. C Hughes-Oliver, D Schmitt, **RM Queen**. Quantifying Limp Using Temporal Gait Variables. American Society of Biomechanics Annual Meeting 2017
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  64. K Renner and **RM Queen**. Changes in Limb Symmetry during a Two Mile Outdoor Run. American Society of Biomechanics Annual Meeting 2017.
  65. DW Powell, LE Allison, **RM Queen**. Recovery of Center of Pressure Variability Following Total Ankle Arthroplasty. American College of Sports Medicine Annual Meeting 2017.
  66. 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.
  67. **RM Queen** and TK Miller. Limb Asymmetry During Anterior Cruciate Ligament Reconstruction Recovery. American College of Sports Medicine Annual Meeting 2017.
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  69. 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.
  70. 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.
  71. DR Sturnick, JR Baxter, CA Demetracopoulos, **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
  72. B Thakkar, DSB Williams, **RM Queen**. Gait Symmetry Metrics Provide Different Outcomes in Patients with Ankle Osteoarthritis. Orthopaedic Research Society Annual Meeting 2017
  73. **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

74. **RM Queen** and CT Franck. Side-to-Side Asymmetry During Recovery Following Anterior Cruciate Ligament Reconstruction. Orthopaedic Research Society Annual Meeting 2017
75. 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.
76. M Wenrick, **RM Queen**. Changes in Side-to-side Symmetry During a 2 Mile Run. Biomedical Engineering Society Annual Meeting 2016.
77. **RM Queen**, D Schmitt. Power Variation at the Hip and Ankle Associated with Severe Hip Osteoarthritis. Biomedical Engineering Society Annual Meeting 2016.
78. 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
79. 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.
80. DW Powell, and **RM Queen**. Recovery of Balance Following Total Ankle Arthroplasty. American Society of Biomechanics Annual Meeting 2016.
81. 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.
82. 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.
83. 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.
84. 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.
85. E McConnell, DSB Williams, **RM Queen**. The use of 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.
86. 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.
87. **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.

88. DS Williams, **RM Queen**. Quantifying Knee Movement Symmetry During Functional Tasks. American Society of Biomechanics Annual Meeting 2016.
89. 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.
90. 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.
91. 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.
92. **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.
93. **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.
94. **RM Queen**, D Schmitt. Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement. Orthopaedic Research Society Annual Meeting 2016.
95. **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.
96. **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
97. SR Raman, BG Hammill, **RM Queen**, LH Curtis. Linking Orthopedic Registry Data to Medicare Claims Data. NC TraCS/RTI/DCRI - Comparative Effectiveness Symposium 2015
98. AL Carpenter, JD Smith, **RM Queen**. Assessing Postural Control in Individuals with Severe Ankle Osteoarthritis. American College of Sports Medicine Annual Meeting 2015.
99. 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.
100. 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.
101. 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.

102. **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.
103. **RM Queen**, AL Carpenter, RJ Butler, SB Adams. Gait and Functional Outcomes 5 years After Total Ankle Replacement. Orthopaedic Research Society Annual Meeting 2015
104. **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
105. **RM Queen**, TL Sparling, AL Carpenter, D Schmitt. Changes in Energy Recovery Following Total Ankle Replacement. Orthopaedic Research Society Annual Meeting 2015
106. 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.
107. 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
108. 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.
109. **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
110. 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.
111. 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.
112. 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.
113. **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.
114. 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.
115. **RM Queen**, AL Carpenter, WE Garrett, RJ Butler. Plantar Loading Differences Between Genders During an Unanticipated Side-cut. ESM Annual Meeting 2014.



116. 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.
117. **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.
118. **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.
119. 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.
120. 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.
121. 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.
122. 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.
123. 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.
124. 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.
125. **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
126. **RM Queen**, TL Sparling, RJ Butler, DO Schmitt. Energy Recovery During Walking is Decreased in Patients with End-stage Arthritis. Orthopaedic Research Society 2014.
127. **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.
128. 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.

129. **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.
130. **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.
131. 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.
132. 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.
133. 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.
134. 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.
135. 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.
136. 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.
137. 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.
138. 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
139. 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.
140. 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.
141. **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.
  142. 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.
  143. 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.
  144. 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.
  145. **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.
  146. 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.
  147. 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)
  148. 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.
  149. 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.
  150. 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.
  151. **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.
  152. **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.

153. **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.
154. 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.
155. 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.
156. **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.
157. 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.
158. **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.
159. **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.
160. **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.
161. 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.
162. **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.
163. **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.
164. **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.

165. 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.
166. 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.
167. 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.
168. **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.
169. 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.
170. **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.
171. **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
172. **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
173. **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
174. **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.
175. **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.
176. 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.
177. **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

178. **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
179. 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
180. 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
181. 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.
182. 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.
183. **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.
184. 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.
185. 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.
186. 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.
187. 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.
188. 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.
189. 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.

190. 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.
191. RJ Butler, **RM Queen**, KB Kiesel, PJ Plisky. Field Testing Dynamic Balance in Rwanda. APTA Combined Sections Meeting, Chicago, IL, 2012.
192. 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.
193. 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.
194. 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.
195. 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.
196. **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.
197. 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.
198. 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
199. **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
200. **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
201. **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
202. **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.
203. **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
204. **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
205. **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.
206. 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.
207. 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.
208. 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.
209. KA Taylor; ME Terry, GM Utturkar; CE Spritzer; **RM Queen**; LA Irribarra, WE Garrett; LE DeFrate. Measurement of In Vivo ACL Elongation During Dynamic Jump Landing. Orthopaedic Research Society, Long Beach, CA, 2011
210. **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.
211. 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.
212. 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.
213. 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
214. **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.



215. **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
216. **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.
217. **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.
218. 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.
219. 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.
220. 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.
221. 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.
222. **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.
223. **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.
224. **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.
225. 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.
226. 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
227. **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

228. 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
229. **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.
230. **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.
231. **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.
232. **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.
233. 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
234. 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.
235. **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
236. **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
237. 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
238. 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
239. **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.
240. **RM Queen**, BL Charnock, WE Garrett, Jr. Hip Kinematics During Three Soccer Kicking Tasks. North American Congress on Biomechanics, Ann Arbor, MI, 2008.

241. **RM Queen**, AN Abbey, B Chuckpaiwong, JA Nunley. Plantar Loading Comparison between Men and Women and Women with a Previous 2<sup>nd</sup> or 3<sup>rd</sup> Metatarsal Stress Fracture. American Orthopaedic Foot and Ankle Society, Denver, CO, 2008
242. **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
243. B Chuckpaiwong, JA Nunley, **RM Queen**. Correlation between Static Foot Type Measurements and Clinical Assessment. American Orthopaedic Foot and Ankle Society, Denver, CO, 2008
244. **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
245. **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.**
246. 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.**
247. 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
248. 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
249. 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.
250. **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.
251. B Chuckpaiwong, **RM Queen**, JA Nunley. Jones and Proximal Diaphyseal Fractures of the 5<sup>th</sup> Metatarsal. American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON, 2007.
252. **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.
253. 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.**
254. 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.**

255. **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.**
256. 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.
257. **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.
258. 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.
259. 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.
260. 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.
261. 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.
262. 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**
263. **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**
264. 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
265. 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
266. **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**

267. **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.
268. **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.
269. B Yu, **RM Queen**, and LA Schrodtt. 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.
270. **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.
271. **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. 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. *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.
2. *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
3. *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
4. *Landing Mechanics Differences between the Drop Vertical Jump and Stop Jump.* (Thematic Poster) ACSM Annual Meeting, Orlando, FL, 2019.
5. *Sex-Specific Differences in Loading Symmetry in ACL Return to Sport Testing.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Austin, TX, 2019.
6. *Predicting Measures of Physical Performance from Gait Mechanics in Patients with Ankle Osteoarthritis.*

- (Rapid Podium) American Society of Biomechanics Annual Meeting Rochester, MN, 2018.
7. *Association of Walking Speed with Gait Mechanics Following Total Ankle Arthroplasty.* (Podium) American Society of Biomechanics Annual Meeting, Rochester, MN, 2018.
  8. *The loadsol is a Valid and Reliable Device for Evaluating Force During Landing Tasks.* (Podium Presentation) World Congress on Biomechanics, Dublin, Ireland, 2018.
  9. *Using Sports to Engage Youth in Science, Technology, Engineering and Math (STEM) Outreach.* (Podium Presentation) World Congress on Biomechanics, Dublin, Ireland, 2018.
  10. *Functional Knee Bracing Improves Loading Symmetry Following ACL Reconstruction.* (Thematic Poster) American College of Sports Medicine Annual Meeting, Minneapolis, MN, 2018.
  11. *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.
  12. *Low Cost Sports Biomechanics Lab for Accessible STEM Outreach.* (Podium Presentation) International Foot and Ankle Biomechanics Meeting, New York, NY, 2018.
  13. *Biomechanics Can Revolutionize and Diversify STEM (Symposium).* American Society of Biomechanics Annual Meeting, Rochester, MN, 2018
  14. *Ankle Arthritis Alters Joint Moment Contributions During Locomotion.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, New Orleans, LA, 2018.
  15. *Simplified Center of Mass Tracking in Ankle Osteoarthritis Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
  16. *Effects of Functional Knee Brace on Symmetry During Landings in ACL-R Patients.* (Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
  17. *Assessing Movement Asymmetry Using the Normalized Symmetry Index in ACL Patients.* (Thematic Poster Presentation) American Society of Biomechanics Annual Meeting 2017.
  18. *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.
  19. *Limb Asymmetry During Anterior Cruciate Ligament Reconstruction Recovery.* (Podium Presentation) American College of Sports Medicine Annual Meeting, Denver, CO, 2017.
  20. *Gait Symmetry Metrics Provide Different Outcomes in Patients with Ankle Osteoarthritis.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, San Diego, CA, 2017.
  21. *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.

22. *Side-to-Side Asymmetry During Recovery Following Anterior Cruciate Ligament Reconstruction.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, San Diego, CA, 2017.
23. *Power Variation at the Hip and Ankle Associated with Severe Hip Osteoarthritis.* (Oral Presentation) Biomedical Engineering Society Annual Meeting, St. Paul, MN, 2016.
24. *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.
25. *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.
26. *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.
27. *Sex-Specific Difference in Dynamic Balance Following Total Hip Replacement.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Orlando, FL, 2016.
28. *Revision Total Ankle Arthroplasty Results in Similar Outcomes to Primary Total Ankle Arthroplasty.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Orlando, FL, 2016.
29. *Using Sample Entropy on Continuous and Discontinuous Data to Assess Jumping and Landing.* (Podium Presentation) American Society of Biomechanics, Columbus, OH, 2015
30. *Changing the Landscape of Injury Prevention* (Symposium). American Society of Biomechanics Annual Meeting, Columbus, OH, 2015
31. *Movement Repeatability During Landing Following Anterior Cruciate Ligament Reconstruction.* (Thematic Poster Presentation) American College of Sports Medicine Annual Meeting, San Diego, CA, 2015.
32. *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.
33. *Gait and Functional Outcomes 5 years After Total Ankle Replacement.* (Podium Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015
34. *Differences Between Observed and Patient-Reported Functional Status Following Primary Total Joint Arthroplasty.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015.
35. *Changes in Energy Recovery Following Total Ankle Replacement.* (Poster Presentation) Orthopaedic Research Society Annual Meeting, Las Vegas, NV, 2015.
36. *Plantar Loading Differences Between Genders During an Unanticipated Side-cut.* (Podium Presentation) ESM Annual Meeting, Boston, MA, 2014.
37. *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.
38. *The Effect of Total Ankle Replacement on Energy Recovery During Walking.* (Podium Presentation) Southern Orthopaedic Association Annual Meeting, Beaver Creek, CO, 2014.
39. *Effect of Meniscal Injury on Functional Performance Testing following ACL Rehabilitation.* (Poster Presentation) American College of Sports Medicine Annual Meeting Orlando, FL, 2014.
40. *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.
41. *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
42. *Energy Recovery During Walking is Decreased in Patients with End-stage Arthritis* (Poster Presentation). Orthopaedic Research Society. New Orleans, LA, 2014.
43. *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.
44. *Does Achilles Tendon Lengthening Improve the Results in Total Ankle Replacement?* Poster Presentation. Orthopaedic Research Society (AAOS Exchange) Annual Meeting, New Orleans, LA, 2014.
45. *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.
46. *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.
47. *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.
48. *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.
49. *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.
50. *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.
51. *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.

52. *Is there a single set of biomechanical variables that predicts jump performance?* Poster Presentation. American College of Sports Medicine Annual Meeting, Indianapolis, IN, 2013.
53. *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.
54. *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.
55. *The Influence of Gender on Walking Mechanics Following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
56. *The Effect of Hindfoot Alignment on Frontal Plane Mechanics Following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
57. *Understanding Changes in Hip and Knee Mechanics following Total Ankle Replacement.* Poster Presentation. Orthopaedic Research Society Annual Meeting, San Antonio, TX, 2013.
58. *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.
59. *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.
60. *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.
61. *Assessing unilateral function following Total Joint Replacement: a novel testing protocol.* Poster Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
62. *Does an extension constraint brace reduce knee motion?* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012.
63. *Changes in Patient Balance and Function 2 years Following Total Ankle Replacement.* Podium Presentation. Southern Orthopaedic Association Annual Meeting, Greenbrier, WV 2012
64. *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
65. *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.
66. *Gait Symmetry Changes following Total Ankle Replacement.* Poster Presentation. American Orthopaedic

Foot and Ankle Society Meeting, San Diego, CA 2012

67. *Unilateral balance in Total Joint Patients One year following Surgery.* Poster Presentation. American Orthopaedic Foot and Ankle Society Meeting, San Diego, CA 2012.
68. *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.
69. *Differences in Walking Mechanics between End-stage Ankle and Hip Osteoarthritis.* Podium Presentation. American College of Sports Medicine, San Francisco, CA 2012.
70. *Gender Differences in Plantar Loading during an Unanticipated Side-cut on FieldTurf.* Poster Presentation. American College of Sports Medicine, San Francisco, CA 2012.
71. *Changes in Plantar Loading During the Lower Quarter Y Balance Test.* Poster Presentation. American College of Sports Medicine, San Francisco, CA 2012.
72. *Changes in Pain, Function, and Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. American Academy of Orthopaedic Surgeons, San Francisco, CA 2012.
73. *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.
74. *Changes in Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. American Orthopaedic Foot and Ankle Society Annual Meeting. Keystone, CO 2011.
75. *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
76. *Effect of Surgical Approach on Gait Mechanics following Total Hip Arthroplasty.* Poster Presentation. Southern Orthopaedic Association. Big Island, HI 2011
77. *Stair Climbing Symmetry Following Total Hip Arthroplasty Based on Surgical Approach.* Poster Presentation. Southern Orthopaedic Association. Big Island, HI 2011
78. *Changes in Gait Mechanics Two Years Following Total Ankle Replacement.* Podium Presentation. Southern Orthopaedic Association. Big Island, HI 2011.
79. *Functional Bracing and Limb Symmetry Following ACL Reconstruction in Adolescent Patients.* Poster Presentation. American College of Sports Medicine Annual Meeting. Denver, CO 2011.
80. *Total Ankle Replacement in Extreme Varus or Valgus Tibiotalar Alignment.* Podium Presentation. American Academy of Orthopaedic Surgeons, San Diego, CA, 2011.
81. *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.

82. *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.
83. *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.
84. *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.
85. *Gait Symmetry Following Total Hip Arthroplasty Based on Surgical Approach.* Podium Presentation at the Southern Orthopaedic Association Annual Meeting, Fajardo, Puerto Rico, June 2010.
86. *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
87. *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
88. *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.
89. *Effect of Rigid Inserts on Plantar Loading During Level Walking.* Poster Presentation at the Orthopaedic Research Society Annual Meeting, New Orleans, LA, March 2010.
90. *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
91. *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
92. *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.
93. *Hip Kinematics During Three Soccer Kicking Tasks.* Poster Presentation at the North American Congress on Biomechanics, Ann Arbor, MI, August 2008.
94. *Plantar Loading Comparison between Men and Women and Women with a Previous 2<sup>nd</sup> or 3<sup>rd</sup> Metatarsal Stress Fracture.* Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008
95. *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
96. *Correlation between Static Foot Type Measurements and Clinical Assessment.* Poster Presentation at the American Orthopaedic Foot and Ankle Society, Denver, CO, June 2008

97. *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
98. *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.
99. *Adductor Longus Vulnerability in the Maximal Effort Soccer Kick*. Poster Presentation at the American College of Sports Medicine Annual Meeting, Indianapolis, IN, May 2008.
100. *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.
101. *Jones and Proximal Diaphyseal Fractures of the 5<sup>th</sup> Metatarsal*. Poster Presentation at American Orthopaedic Foot & Ankle Society Annual Meeting, Toronto, ON
102. *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
103. *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.
104. *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.
105. *Differences in Forefoot Loading During Three Athletic Tasks on FieldTurf*. Poster Presentation, American Society of Biomechanics Annual Meeting, Blacksburg, VA, September 7, 2006
106. *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
107. *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
108. *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
109. *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.
110. *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.

111. *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.
112. *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.
113. *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.
114. *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.
115. *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.
116. *Modeling the Impact of Heading: Influence of inflation pressure, contact mass, ball size and velocity.* Poster Presentation: American College of Sport Medicine 2002.
117. *A Comparison Study of the Mechanical Properties of Different Surgical Fixation Materials.* Poster Presentation: Biomedical Engineering National Meeting. Durham, NC, 2001

## TEACHING

### Graduate Teaching

#### **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 Human Movement** (BMES 6194), Spring Semester 2017, 2019

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 implication for various health applications.

### **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) Annually starting with the 2020 graduating class

Senior Design is a 3-semester course sequence, which translates to a required 10 hours of work per student per week outside of the classroom. Students will meet weekly with their faculty advisor and graduate teaching assistant (GTA), guiding them in the engineering design process.

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

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

2020-2024	Theresa Libera, SBES, Virginia Tech
2020-2024	Michael Teaster, SBES, Virginia Tech
2019-2023	Nicole Stark, SBES, Virginia Tech
2019-2023	Hassan Farah, TBMH, Virginia Tech

### MS Advisor – Current Graduate Students

2020-2022	Julia Brisbane, SBES, Virginia Tech
2019-2021	Percie Lyons, Engineering Mechanics, Virginia Tech
2021-2022	Adam Luftglass, SBES, Virginia Tech
2021-2022	Sara Elnahhas, SBES, Virginia Tech
2021-2022	Jill Streamer, SBES, Virginia Tech
2022-2023	Bryana Vasquez, SBES, Virginia Tech
2022-2023	Jenna Mesisca, SBES, Virginia Tech

### Current Undergraduate Students

2019-2022	Jenna Mesisca, Biomedical Engineering, Virginia Tech (2022)
2020-2022	John Paul Williams, Mechanical Engineering, Virginia Tech (2022)
2020-2022	Katelynn Loss, Material Science Engineering, Virginia Tech (2022)
2020-	Laith Al-Jaouni, Biomedical Engineering, Virginia Tech
2020-2022	Bryana Vasquez, Biomedical Engineering, Virginia Tech (2022)
2020-2022	Reilly Hatfield, Biologic Systems Engineering, Virginia Tech (2022)
2021-	Robyn Hansen, Mechanical Engineering, Virginia Tech (2022)
2021-	Jessica Geiger, Mechanical Engineering, Virginia Tech (2023)
2021-	Taylor Geiman, Biomedical Engineering, Virginia Tech (2023)

### Current Medical Students/Residents

2021-2025	Stephanie Hamlin, VT Carilion School of Medicine (2025)
2021-2025	Martin Barylak, VT Carilion School of Medicine (2025)
2019-2023	William Morrison, VT Carilion School of Medicine (2023)
2018-2022	Alex Atwood, VT Carilion School of Medicine (2022)

### Current International Examiner

### Previous PhD/MS Students Advised

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)

Current Doctoral Committees

2016-2021 Athulya Simon, Dept. Mechanical Engineering, Virginia Tech (Member)  
2015-2021 Michelle Graham, Engineering Mechanics, Virginia Tech (Member)

Previous International Examiner

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

Previous Doctoral Committees

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)

Current Master's Committees

2019-2021 Chance Bisquera (MS Student), ME, Virginia Tech (Member)  
2021-2023 Jimmy Lane (MEng Student), ME, Virginia Tech (Member)

Previous Master's Committees

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

2010 Laura Paulsen, Dept. Biomedical Engineering, Duke Univ.  
2010 Molly Glauberman, Dept. Biomedical Engineering, Duke Univ.  
2008 Mathew Tenan, Dept. Human Movement Science, Univ North Carolina-CH

Previous Post-doc

2014-2016 Roxanne Larsen, Evolutionary Anthropology, Duke Univ.  
2007-2010 Ershela Sims, Orthopaedic Surgery, Duke Univ.

Previous Medical Students

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	Johanes 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)

#### Undergraduate Independent Study Students

2021	Reilly Hatfield, Biologic Systems Engineering, Virginia Tech
2021-2022	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

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.

**External support - gifts, grants, and contracts:**

	<u>% Effort</u>	<u>Title</u>	<u>Amount</u>	<u>Funding Period</u>
<b><u>Pending:</u></b>				
Arena (PI) Queen (Co-I)	10%	NIH – R25 Transdisciplinary Biomedical Team Training: Advancing Healthcare Solutions Through Engineering, Design, and Business	\$216,000	04/22-03/27
Queen (PI)	75%	NSF-DARE Characterizing Upper Extremity Motion using a Fiber Optic Sensor to Improve Quality of Life in Children with Cerebral Palsy	\$551,054	In Prep
Kolanksy (PI) Queen (Co-I)	33%	Data and Decisions DA Gait Analysis in Smart Infrastructures	\$20,000	07/21-06/22
<b><u>Present:</u></b>				
Queen (PI)	85%	NIH – R01 Clinically Assessed Risk Factors for a Second ACL Injury Using an Innovative Wearable Sensor	\$3,447,241	07/21 - 06/26
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
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
Queen (PI) Stark (Co-PI)	100%	Research! America BOLD: Biomechanics Online	\$2,000	01/21-05/21

		Learning Destination		
Hassan-Galaydh (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
Queen (PI)	100%	ICAT Mini Grant – Virginia Tech Characterizing Upper Extremity Motion using a Fiber Optic Sensor	\$3,000	10/20-9/21
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
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
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	04/19-03/22
Allen (PI) Queen (Co-PI)	50%	NIH – AR074149 R21 Pilot Clinical Trial Improving Physical Activity and Gait Symmetry after Total Knee Arthroplasty	\$629,789	04/19-03/22
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
<b>Past:</b> Lei (PI) Queen (Co-I)	20%	DOD - US Office of Naval Research Energy harvesting backpack with	\$528,314	03/18-02/21



		high specific power and broadband using a dual mass-inerter and mechanical motion rectification		
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)	50%	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)	30%	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 Performance, Walking Mechanics, and the Cost-effectiveness of Revision Total Ankle Replacement, and Outcomes Following Total Ankle Replacement	\$100,000	07/14-10/16
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 jumping performance in elite basketball players.	\$33,000	4/12 – 11/12
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 <sup>nd</sup> and 3 <sup>rd</sup> 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