Hi Megan L. Killian, PhD
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Education and Training

Education

9/2001-5/2005	BS, Biomedical Engineering, Michigan Technological University, Houghton, MI
9/2005-5/2007	MS, Health and Human Development, Montana State University, Bozeman, MT
6/2007-11/2010	PhD, Biomedical Engineering, Michigan Technological University, Houghton, MI

Academic, Administrative, and Clinical Appointments

Academic Appointments

9/2013-12/2013	Adjunct Faculty (Teaching instructor), Saint Louis University, Saint Louis, MO
1/2016-1/2020	Tenure-Track Assistant Professor, Department of Biomedical Engineering, University of Delaware, Newark, DE
2/2020-present	Instructional Track (Tenure track) Assistant Professor, Department of Orthopaedic Surgery, University of Michigan School of Medicine, Ann Arbor, MI
2/2020-present	Affiliate Faculty, Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI
1/2021-present	Affiliate Faculty, Department of Molecular and Integrative Physiology (MIP), PIBS, University of Michigan, Ann Arbor, MI

Research Positions

12/2010-12/2015	Post-doctoral Fellow, Department of Orthopaedic Surgery, Washington University School of Medicine, Saint Louis, MO

Research Interests

- My primary research area is on the tendon and its interface with bone (known as the enthesis), with a specific focus on how muscle loading and developmental and physiologic cues contribute to its growth, remodeling, and healing following injury. The vision of my lab is to develop research platforms that inform how biomechanical factors influence growth of complex joints (e.g., hip and shoulder) and define the pathways and mechanisms that guide growth and remodeling of tissue interfaces. Ultimately, I aim to: 1) establish the functional role of the enthesis in joint formation, health, and function in response to applied muscle loads; 2) develop informed therapeutic interventions, such as physical rehabilitation, to improve joint health following injury. In 2016, I established my independent research laboratory at the University of Delaware. In February 2020, I moved my research laboratory to the Department of Orthopaedic Surgery at Michigan Medicine. The core competencies of my lab include *in vivo* transgenic mouse lines (e.g., Cre-lox) and rodent injury models; biomechanical testing; histomorphometry; and advanced imaging (e.g., micro-computed tomography).

Grants

Present and active grants

8/2018-7/2021

Contributions of skeletal muscle loading during rotator cuff maturation and healing
NIH Small Research Grant Program (R03 HD094594-01A1)
Direct, $100,000 ($178,000 including indirect)
My role on this grant: PI
This grant supports research to apply optogenetic activation of skeletal muscle for therapeutic intervention following postnatal brachial plexus injuries.

5/2020-5/2025

CAREER: Remodeling and damage of the tendon attachment during growth
National Science Foundation CAREER 1944448
Direct (Total): $612,000
My role on this proposal: PI
In this CAREER, the PI will use this platform to measure structural, mechanical, and molecular changes induced by remodeling and damage of the tendon attachment that are driven by frequency-, magnitude-, and duration-dependent changes in muscle loading, both during postnatal growth (Objective 1) and in the mature and aging attachment (Objective 2). This work is transformative in nature because the proposed experiments merge together cross-disciplinary approaches using innovative techniques from neuroscience (optogenetics), chemistry (collagen like peptides), life sciences (laser capture microdissection), biomechanics (in vivo isometric joint torque), and the PI's expertise (mechanobiology of the tendon attachment). Findings from this CAREER will fill a knowledge gap in our basic understanding of attachment mechanobiology across the lifespan and reveal biomechanical adaptations associated with mechanically-induced remodeling and damage.

9/2020-8/2021

Stratified and mechanically tough biomaterial implant to improve tendon-to-bone enthesis regeneration
NIH R56
Direct: $37,326; Total cost: $382,265
My role on this proposal: Subaward, Co-I/Key Personnel (1 months effort)
PI: Brendan Harley (University of Illinois)
The overall goal of this project is to demonstrate a composite biomaterial that employs biomimetic and developmentally inspired motifs to enhance regenerative healing of the tendon-to-bone enthesis. Co-investigator Dr. Megan Killian is an expert in development, injury, and repair of the tendon-to-bone enthesis, including developing a partial-width, full-thickness injury model in the rat rotator cuff enthesis that allows unbiased analysis of regenerative healing. Here, we propose to leverage expertise in the development, injury and regeneration of the rotator cuff enthesis (Killian) to define the regenerative potential of the enthesis biomaterial platform being developed by the Harley Lab. Both material support (in vivo regeneration trials) as well as intellectual effort (hypothesis refinement; data analysis; manuscript preparation) are required for this effort.

Previous grants

7/2019-6/2020

Guided regeneration of the tendon-bone attachment using collagen-mimetic peptide delivery agents
Delaware Center for Translational Research, ACCEL Pilot Funding.
Direct, $80,000 (UD funding only)

My role on this grant: PI, transferred to April Kloxin, PhD

This grant supports a recently established collaboration from three independent research laboratories to apply bio-conjugated drug delivery materials for improving tendon healing following rotator cuff tears.

11/2018-3/2020

Improving Tendon Healing Using Designer Biomaterials

University of Delaware Research Foundation Strategic Initiatives, 19A00297

Direct, $45,000 (UD funding only)

My role on this grant: PI

This grant supports research (1 graduate student and supplies) for preclinical translation of polyethylene glycol hydrogels and collagen mimetic peptide nanovesicles for drug delivery during tendon healing

7/2017-7/2019

The effects of photobiomodulation therapy during tendon growth and healing

Delaware Biosciences Center for Advanced Technology Applied Research Collaborations (ARC) Grant

Direct, $75,000 with matching in-kind donation from industry sponsor, LiteCure, LLC

My role on this grant: PI

The goal of this project is assessing the effect of photobiomodulation on cellular processes (e.g., mitochondrial function) in tendon using preclinical mouse models of tendon development and injury. This grant supported dissertation work by a PhD student in the PI's laboratory and their first-authored manuscript, posted on bioRxiv.

1/2017- 6/2018

Interdisciplinary Rehab. Engineering Research Career Development Program (NIH K12 HD073945)

Direct, $187,500

My role on this grant: PI (*subaward*), completed

The goal of this grant is to support career development of the PI and establish preliminary data for the PI's research program. The IREK12 in Movement and Rehabilitation Sciences (MRS) recruits and trains scholars with engineering and other quantitative backgrounds to become successful rehabilitation scientists in basic, translational and/or clinical research. This grant supported work by PhD students and undergraduate researchers in the PI's laboratory and led to the publication of two original peer-reviewed research publications and two peer-reviewed scholarly reviews.

6/2016-5/2018

Identifying the role of chondrogenesis, driven by fibroblast growth factor 18, in tendon-to-bone attachment maturation and healing

University of Delaware Research Foundation (16A01396)

Direct, $35,000

My role on this grant: PI

The goal of this study is to demonstrate feasibility and to acquire preliminary data for an NIH grant on the role of Fgf18 in the development and maturation of the fibrocartilage tendon-bone attachment. The University of Delaware Research Foundation (UDRF) is a private corporation, chartered in 1955, to support UD research.

7/2016-6/2017

Identifying the Role of FGF18 and Muscle Load in Eminence and Joint Maturation

Centers of Biomedical Research Excellence (COBRE) Pilot Grant, Institutional Development Award (IDeA), National Institute of General Medical Sciences (NIH P30 GM103333)

Direct, $60,000

My role on this grant: Pilot Project PI (*subaward*), PI: Buchanan

The goal of this study was to acquire preliminary data for an NIH grant on the role of FGF signaling in tendon and muscle during postnatal growth.

6/2014-6/2015

The role of FGF-18 in tendon enthesis development and fracture healing

Musculoskeletal Research Center Just-in-Time Core Usage Funding (NIH P30 AR057235)

Direct: $3,000

My role on this grant: Co-I

5/2013-5/2016

The role of Scleraxis and mechanical loading on enthesis maturation

Ruth L. Kirschstein National Research Service Award (NIH NRSA F32 AR064652)

Total: $145,063

My role on this grant: PI

3/2013-2/2015

The role of Scleraxis and mechanical loading on enthesis maturation

Children's Discovery Institute Postdoctoral Fellowship: Center for Musculoskeletal and Metabolic Disorders.

Total: $60,000

My role on this grant: PI

1/2013-1/2014

The role of Scleraxis and mechanical loading on tendon-to-bone development

Institute for Clinical and Translational Sciences Just-in-Time Core Usage Funding (NIH UL1TR000448)

Total: $5,000

My role on this grant: Co-I

1/2011-1/2013

Recovery potential of degenerated muscle function following rotator cuff repair

National Skeletal Muscle Research Center, University of California San Diego (NIH R24 HD050837)

Total: $25,000

My role on this grant: Co-I

1/2009-12/2010

Michigan Space Grant Consortium Graduate Fellowships

Total: $10,000

My role on this grant: PI

Submitted grants

1/2021-12/2025

Using collagen-mimetic peptides to guide regeneration of the rotator cuff enthesis.

NIH R01AR077205-01, resubmitted to MTE in July 2020

Direct: $1,624,259; Estimated total cost: $2,567,264

My role on this proposal: PI

This proposal aims to apply novel, synthetic, injectable biomaterials for the local delivery of structurally-mimetic hydrogels and small molecule drugs to enhance rotator cuff repair

A1 was reviewed in Oct 2020, scored 54th percentile

1/2021-12/2025

Biomaterial template to enhance tendon-to-bone enthesis regeneration.

NIH R01 A1 resubmitted to SBSR in July 2019
Direct: $238,725; Estimated total cost: $367,373
My role on this proposal: Subaward, Co-I/Key Personnel (1 months effort)
PI: Brendan Harley (Univerity of Illinois)
The overall goal of this project is to demonstrate a composite biomaterial that employs biomimetic and developmentally inspired motifs to enhance regenerative healing of the tendon-to-bone enthesis. Co-investigator Dr. Megan Killian is an expert in development, injury, and repair of the tendon-to-bone enthesis, including developing a partial-width, full-thickness injury model in the rat rotator cuff enthesis that allows unbiased analysis of regenerative healing. Here, we propose to leverage expertise in the development, injury and regeneration of the rotator cuff enthesis (Killian) to define the regenerative potential of the enthesis biomaterial platform being developed by the Harley Lab. Both material support (in vivo regeneration trials) as well as intellectual effort (hypothesis refinement; data analysis; manuscript preparation) are required for this effort.
Resubmitted to BMBI, Scored 12th-percentile, pending council review

7/2021-6/2026
FGF signaling during growth and mechanical adaptation of tendon-bone interfaces
NIH R01AR079367, submitted in Oct 2020 as an Early Stage Investigator
Direct: $1,703,453; Total cost: $2,443,667
My role on this proposal: PI (3 months effort)
The goal of this project is to determine if and how FGF signaling is necessary and sufficient to develop an organized and functional tendon-bone interface.
A0 reviewed in Feb 2021, scored 15th percentile, pending council review

Honors and Awards

International

2011	Invited attendee: Women's International Research in Engineering Summit II, Orlando, FL
	Invited attendee: Intramuscular Fat Accumulation Conference, National Skeletal Muscle Research Center, La Jolla, CA
	Invited attendee: Muscle Physiology Workshop, NSMRC, La Jolla, CA
2014	New Investigator Recognition Award Winner, Orthopaedic Research Society
2014-17	US Bone and Joint Initiative Young Investigators Initiative
2014	Orthopaedic Research Society (ORS) Featured Investigator: Spotlight on New Investigators
2014-16	Biomedical Engineering Society Innovation & Career Development Award
2016	American Academy of Orthopaedic Surgeons/ORS Young Investigator Travel Award
2018	Journal of Orthopaedic Research Early Career Award

Institutional

2008-09	Proposal Incentive Award
2009	Marshall Family Fellowship
2010	Biotechnology Research Center Graduate Finishing Fellowship
	Dissertation Finishing Fellowship
	DeVlieg Graduate Fellowship

Membership in Professional Societies

2008-present	Member, American Society of Mechanical Engineers
2011-present	Member, Orthopaedic Research Society

2016-present Member, Tendon Section, Orthopaedic Research Society
2013-2020 Member, Biomedical Engineering Society
2013-2016 Member, American Society of Bone and Mineral Research
2005-2009 Member, American Society of Biomechanics

Editorial Positions, Boards, and Peer-Review Service

Journal Reviewer (average 12-15 per year)

2011-present Journal of Orthopaedic Research (ad hoc)
2011-present Arthritis and Rheumatism (ad hoc)
2011-present Journal of Shoulder and Elbow Surgery (ad hoc)
2011-present Journal of Biomechanical Engineering (ad hoc)
2011-present Connective Tissue Research (ad hoc)
2011-present Clinical Orthopaedics and Related Research (ad hoc)
2013-present Journal of Mechanical Behavior of Biomedical Materials (ad hoc)
2014-present Journal of the American Academy of Orthopaedic Surgeons (ad hoc)
2016-present Acta Biomaterialia (ad hoc)
2016-present PLoS ONE (ad hoc)
2019-present Science Advances (ad hoc)
2019-present Developmental Dynamics (ad hoc)
2019-present Clinical Anatomy (ad hoc)

Conference Proceedings/Abstract Review

2012-present Summer Bioengineering Conference/SB3C Annual Meeting
2015-present ORS Annual Meeting
2020-present ORS Annual Meeting Tendon Section Podium/Poster Award Judge

Grant and Fellowship Reviewer

2016 National Science Foundation, BMMB
2018 National Science Foundation, BMMB
2019 Delaware Space Grant Consortium Doctoral Fellowships
2019 National Defense Science and Engineering Graduate (NDSEG) Fellowship Reviewer
2020 National Institutes of Health SBSR (Early Career Researcher invitation)
2021 National Science Foundation, Physiological Mechanisms and Biomechanics Program, Division of Integrative Organismal Systems

Guest Editor

2017 Guest Editor-in-Chief for Tissue Engineering Part A; "Strategic Directions in Musculoskeletal Tissue Engineering," 2 issues
2017 Guest Editor-in-Chief for Tissue Engineering Part B; "Strategic Directions in Musculoskeletal Tissue Engineering," 1 issue

Teaching

Instructor of Record:

2014 BME3200- Statics and Mechanics of Materials: Saint Louis University, Saint Louis, MO (1 semester; 2014 fall)

Responsible for: Course design, instruction; Primary curriculum for Biomedical Engineering undergraduates (2nd year). Textbook: Mechanics of Materials 9E Edition, R.C. Hibbeler

2016-18 HONR291- Failure (2 semesters, 2016 spring, 2018 spring)
Responsible for: Course design, instruction. Topics include: Engineering failures, socioeconomic failures, personal failures, ethics, diversity and inclusion, growth mindset. History-based course for UD Honor's Program; offered University-wide with primary sourced materials

2017-18 BMEG460/640- Structural Interfaces in Biology (3 semesters, 2017 spring, 2017 fall, 2018 fall)
Responsible for: Course design, instruction. Topics include: interfaces in biology/nature, applied mechanics, stress/strain transformations, mechanics of dissimilar materials. Technical elective for Biomedical Engineering/Mechanical Engineering undergraduates (4th year) and graduate students. Textbook: Structural Interfaces and Attachments in Biology, Ed. Thomopoulos, Genin, Birman (2013)

2018-19 BMEG301- Quantitative Cellular Physiology (2018 fall; 2019 fall)
Course co-instructor; course re-design. Primary curriculum for Biomedical Engineering students (2nd year). Textbook: Human Physiology: An Integrated Approach 8th Edition, by Dee Ungluab Silverthorn

July 2020 Resident education: Orthopaedic Surgery, "Bone development and mechanobiology"

Jan 2021 PIBS 503 Facilitator: Fraud, Fabrication, and Plagiarism

Graduate students

6/2016-12/2017 Michael Sonnenfelt, departed program for industry position with QPS Holdings, Inc.

1/2016-9/2020 Ryan Locke, PhD. University of Delaware, Biomedical Engineering. Recipient of the University Doctoral Fellowship Award. Current position: Postdoctoral Fellow at UPenn (Mauck Laboratory)

9/2016-present Connor Leek, current PhD candidate in Biomedical Engineering (University of Delaware)

1/2017-present Elahe Ganji, current PhD candidate in Mechanical Engineering. Recipient of the University Doctoral Fellowship Award (University of Delaware)

9/2017-12/2018 Geoffrey Ming (2017-2018), completed MS in Biomedical Engineering (University of Delaware)

1/2019-12/2020 Iman Bhattacharya, completed MS student in Bioinformatics and Computational Biology (University of Delaware)

9/2020-present Syeda Noor E. Lamia, current PhD student, Mechanical Engineering (University of Michigan)

Undergraduate researchers

Washington University in St Louis

9/2012-5/2015 Caleb Ford (BS, Biomedical Engineering; 2012-2015), currently a Medical Scientist Trainee at Vanderbilt University, MD/PhD in Biomedical Engineering. Awarded NIH NRSA F30 Fellowship.

University of Delaware

1/2016-12/2017 Patrick Canning (BS, BME), currently a bioengineer at Eurofins, West Point, PA

2/2016-12/2017 Adrianna Szostek (BS, Animal Biosciences), currently a DVM student at University of Georgia

5/2016-8/2016 Julia Paganucci (BS, Mechanical Engineering)

5/2016-8/2016 Lindsay Erndwein (BS, Materials Science and Engineering, Penn State), currently a graduate student in Plant and Soil Sciences at the University of Delaware

1/2016-5/2018 Nicholas Ruggiero (BS, BME), currently a research technician at Thomas Jefferson University, Philadelphia, PA

1/2016-5/2018 Beth (Elisabeth) Lemmon (BS, Animal Biosciences), currently a VMD/PhD dual degree student at University of Pennsylvania; received the INBRE Summer Scholar, Delaware Space Grant Consortium Summer Intern and Delaware Space Grant Consortium Tuition Fellowship

5/2016-1/2018 Bhavana Aitha (4th year majoring in Nursing at UD)

3/2016-5/2017 Emily Hudson (BS, Animal Biosciences); currently a research technician at Arkion Life Sciences, New Castle, DE

3/2016-8/2019 Kendra Wernle (BS, Animal Biosciences); currently employed at University of Zurich

1/2017-5/2018 Ellen Dudzinski (BS, Biomedical Engineering) Delaware Space Grant Consortium Fellow)- Currently employed at Globus Medical, King of Prussia, PA.

5/2017-8/2018 Megan Smith (3rd year majoring in Political Science and Biology, University of Pittsburgh); NIGMS Delaware INBRE Fellow

5/2017-present Jaclyn Soulas (4th year majoring in Animal Biosciences)

5/2018-5/2019 Keira Morgan (2nd year majoring in BME at UD; Newark Charter School)

5/2018-8/2018 Kacie Breeding (3rd year majoring in BME, Vanderbilt University; NINDS REU)

6/2018-5/2019 Kierstyn Hendricks (3rd year major in Biology, Delaware Tech Community College, NINDS REU)

12/2018-1/2020 William Duncan (Undergraduate, Biomedical Engineering)

12/2018-1/2020 Jordan Shuff (Undergraduate, Biomedical Engineering 2020)

12/2018-1/2020 Anna Lia Sullivan (Undergraduate, Animal Biosciences 2020)

12/2018-1/2020 Julianna Wayne (Undergraduate, Biomedical Engineering 2021); UD Summer Scholars 2019

12/2018-1/2020 Julia Zimmer (Undergraduate, Biomedical Engineering 2021)

6/2019-8/2019 Shaneaka Anderson (UNIDEL REU)

6/2019-8/2019 Emily Eichenlaub (Undergraduate, Biomedical Engineering, INBRE Summer Scholars)

6/2019-8/2019 Rachel Klink (CBER REU, Undergraduate from Taylor University 2020)

1/2019-9/2019 Joseph Korn (Undergraduate, Biomedical Engineering 2021)

1/2019-9/2019 Angela Livingston (Undergraduate, Biomedical Engineering 2021)

5/2019-8/2019 Madeline Tallman (SELI REU, Undergraduate from Tulane University 2020)

University of Michigan- Undergraduate Research Opportunity Program (UROP)

5/2020-present Elijah Paparella (Mechanical Engineering 2021, RISE)

5/2020-7/2020 Aracely Marroquin (Molecular Biology, Grand Rapids Comm. College); Blue Ribbon presentation for UROP

High school students (4 to date)

5/2017-8-2017 Ashish Mahuli (University of Delaware K-12 Internship, currently an undergraduate at the University of Michigan)

5/2017-8/2018	Brandon Okeyo (currently an undergraduate student at the University of Delaware; former STEP UP, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) scholar
5/2017-8/2018	Keira Morgan (currently an undergraduate student at the University of Delaware; former STEP UP, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) scholar
5/2019-8/2019	Claudia Offutt (currently an undergraduate student at Drexel University)

Postdoctoral Research Fellows

1/2017-6/2017	Kumar Kautharapu, PhD

Dissertation committee member:

9/2016-present	Wade Stewart, UD Biomedical Engineering, PhD
9/2016-present	Rachel Gilbert, UD Biomedical Engineering, PhD
9/2016-10/2020	Jasmine Shirazi, UD Biomedical Engineering, PhD
10/2017-present	Lindsey Erndwein, UD Plant and Soil Sciences, PhD
10/2017-1/2020	Peyton Delgorio, UD Biomedical Engineering, PhD

Dissertation committee chair:

9/2017-9/2020	Ryan Locke, UD Biomedical Engineering, PhD
9/2018-present	Connor Leek, UD Biomedical Engineering, PhD
9/2018-present	Elahe Ganji, UD Mechanical Engineering, PhD
9/2020-present	Syeda Lamia, UMich Mechanical Engineering, PhD

Committee, Organizational, and Volunteer Service

Institutional (Washington University)

3/2013	Metabolic Skeletal Disorders T32 Training Seminar, Washington University School of Medicine, Departments of Orthopaedic Surgery and Bone and Mineral Diseases, Saint Louis, MO: "Mock NIH Roundtable Discussion for Fellowship applications."
7/2013	Musculoskeletal Research Center Summer Educational Series, Washington University School of Medicine, Departments of Orthopaedic Surgery and Bone and Mineral Diseases, Saint Louis, MO: "Using Musculoskeletal Tissues for Laser Capture Microdissection." Round-table discussion panelist.
2/2014	Biomechanics: Properties and Mechanical Behavior of Tissues Graduate Course, "Musculoskeletal Attachments: Development, Pathology, and Mechanics." Saint Louis University Guest Lecturer.
5/2014-6/2015	Washington University Teaching Center: WU-CIRTL Community member level
4/2014	Faculty Reach-Out Program Award: Washington University School of Medicine’
11/2014	Expert Panelist, Office of Postdoctoral Affairs. "Writing a successful fellowship application." Invited by Mary Bradley.
11/2014	Research Forum- Child Health. Presenting Investigator for pre-K01 support. Institute for Clinical and Translational Science, Children's Discovery Institute.

Institutional (University of Delaware)

1/2016-1/2020	Chemistry-Biology Interface Faculty Trainer (T32 program)
1/2016-1/2020	Department of Biomedical Engineering Communications Committee Member
1/2016-1/2020	University of Delaware Honors Program Faculty
6/2016	Women in Engineering Guest Speaker: University of Delaware
1/2016-1/2020	Society of Women Engineers Faculty Advisor: University of Delaware
6/2016-6/2017	K-12 Faculty Mentor: University of Delaware K-12 Engineering Program
8/2016-1/2020	UD LGBTQ+ Caucus Ally
8/2017	UD Honors Program Guest Panel
10/2017-1/2020	UD BME Departmental Social Media Liaison
10/2017-1/2020	UD BME Departmental Communications Committee- Seminar Co-Chair
2/2018	UD ADVANCE workshop organizer – Peer mentoring workshop
5/2018	Summer Institute on Teaching, University of Delaware- (Large Classes, High-Impact Practices; Getting Your Students to Read Everything (Including the Syllabus!); Hearing and Learning from UD Students; Managing Group Projects; Small Changes = Big Differences: Teaching Practices that Work in All Courses)
9/2018-1/2020	University of Delaware Write on Site Coordinator
9/2018-5/2019	Department of Biomedical Engineering Continuing Track Search Committee Member
9/2018-1/2020	Department of Biomedical Engineering Communications Committee Co-Chair
1/2019	Mentor for STEM Women Small Group- University of Delaware Faculty Achievement Program, Academic Year
5/2019-1/2020	College of Engineering Faculty Diversity Working Group

Institutional (University of Michigan)

02/2020-present	Department of Orthopaedic Surgery Diversity, Equity, and Inclusion Committee; Research co-chair
07/2020-present	Communications Director, Michigan Integrative Musculoskeletal Health Center
07/2020-present	BME Women Faculty UNITE (Underrepresented Needs in Technology and Engineering) discussion moderator
07/2020-present	Write-on-Site coordinator (Remote and in-person), Office of Faculty Affairs
08/2020-present	Michigan Center for Human Athletic Medicine and Performance (MCHAMP) Research Committee
10/2020-present	Department of Orthopaedic Surgery Research Advisory Council, member
10/2020-present	Faculty Development Program, Faculty Success small group coordinator

Regional and Volunteer

5/2008-8/2009	Lead Instructor: 2-week Summer Youth in Engineering Programs (Women in Engineering, Explorations in Engineering) for ~25 female and minority junior/senior high school students each year interested in Mechanical/Biomedical Engineering careers. Project focus in orthopedic biomechanics
8/2008-5/10	Graduate Advisor for Senior Design & Capstone Projects- Michigan Technological University, Department of Mechanical Engineering-Engineering Mechanics
5/2011, 5/2012	"Moving and Shaking": 4hr workshop for middle school children, Musculoskeletal

	biology focus. Organizers: Shelly Sakiyama-Elbert and Ruth Okamoto; Assistant to Stavros Thomopoulos and Spencer Lake, Gifted Resource Council, St Louis Area Middle School STEM Outreach, Engagement of ~12 middle school children each year.
6/2013	Enrichment Leader: Missouri Regional Science Bowl ("It's ALIVE! Or is it? Understanding the bones, muscles, and tendons in our bodies"), 2013. Engagement of ~100 elementary school children.
5/2015	Engineer Mentor: Perry Outreach Program, The Perry Initiative, hosted by Saint Louis University. Engagement of ~30 high school girls.
4/2018	Activity Leader: Engineering Your Tomorrow. Sussex County STEM Alliance for Middle School Girls. Engagement of ~60 middle school girls and their parents.
5/2018	Science Café: Presenter on "Learning from Failure." Deer Park Tavern, Newark, DE. Engagement of ~50 community members.
6/2018	Delaware Department of Education Math and Science Partnership: DISCovery presentation to high school teachers on ways to Teach students about failure. Engagement of ~35 high school teachers.
1/2020	Perry Initiative- volunteer (Beaumont)

National

11/2014-11/2017	U.S. Bone and Joint Initiative's Young Investigators Initiative (YII) program
4/2014	Nominated Attendee, Roadmap Workshop: Texas A&M University ADVANCE Center
10/2014-present	Biomedical Engineering Society (BMES) 2014: Communication Committee, Vice-chair 2017-present: Public Affairs Committee, Member 2018: Session Co-Chair for Orthopedic and Rehabilitation Engineering, Spine, Intervertebral Disc
6/2010-present	American Society of Mechanical Engineers – 7 continuous years of service 6/2010-5/2011: Student Advisory Committee, Bioengineering Division, 2010-11 6/2010: Co-Chair: Summer Bioengineering Conference PhD-Level Student Paper Competition; Solids, Design & Rehabilitation Engineering 6/2012: Registration/On-site Assistant: Summer Bioengineering Conference 1/2013-present: Abstract reviewer 6/2016: Co-Chair: Summer Biomechanics, Biotransport, and Bioengineering (SB3C) Conference PhD-Level Student Paper Competition; Tissue Mechanics and Modeling 1/2019-6/2019: Communications Chair: SB3C 2019 Annual Meeting, Seven Springs, PA
1/2018	Training in Grantsmanship for Rehabilitation Research (TIGRR)-
3/2018	Webinar Speaker: Navigating Towards a Junior Faculty Position in STEM: A Woman's Perspective; Biomedical Engineering Society webinar - March 21, 2018 from 12:00-1:00pm Eastern

1/2019-present	New PI Slack Faculty Achievement Program- coordinator of small groups
1/2019-present	National Center for Faculty Development and Diversity Faculty Success Program
10/2020	Biomedical Engineering Society Annual meeting invited panelist on Gender Equity hosted by the BMES Diversity Committee
10/2020-6/2024	Summer Biomechanics, Bioengineering, and Biotransport Conference Student Paper Competition Committee
11/2020	Virtual Academic Workshop, panelist on "Successful Mentoring"; invited by Andrea M. Armani, Viterbi School of Engineering, University of Southern California

International

10/2010-present	Social media: personal Twitter account (@megankillian) has >4,200 followers; lab Twitter account (@killianlab) has >2,200 followers
8/2016	Gordon Research Seminar Co-chair: Musculoskeletal Biology and Bioengineering Conference, Proctor Academy
6/2018	World Congress of Biomechanics; Co-Chair: "Mechanics of Musculoskeletal Growth and Adaptation," World Congress of Biomechanics, Dublin, Ireland
8/2018	Gordon Research Conference Scientific coordinator: Musculoskeletal Biology and Bioengineering, Proctor Academy, NH
2/2020-present	Women's Leadership Forum (WLF), ORS; Committee member (2020), Co-Chair (2021)
6/2020-present	WLF/Diversity, Equity, and Inclusion joint taskforce on Health Disparities in Orthopaedic Research
8/2020	Gordon Research Conference Scientific coordinator: Scientific coordinator: Musculoskeletal Biology and Bioengineering, Proctor Academy, NH- *postponed to 2022*
2/2021	2021 ORS Annual Meeting, Exploring Funding Mechanisms Part 1: Beyond NIH; Invited Speaker and Session Organizer
2/2021	2021 ORS Annual Meeting, NIH Biosketch workshop, Career Development Session; Invited Panelist

Visiting Professorships, Seminars, and Extramural Invited Presentations

3/ 2014	University of Iowa, Department of Biomedical Engineering
5/ 2014	Purdue University, Department of Basic Medical Sciences
9/ 2014	Texas A&M University, Department of Biomedical Engineering
12/ 2014	Henry Ford Hospital, Department of Orthopaedic Surgery
1/ 2015	Tufts University, Department of Biomedical Engineering
1/ 2015	University of Delaware, Department of Biomedical Engineering
2/ 2015	Cornell University, Department of Mechanical and Aerospace Engineering
2/ 2015	Boise State University, Department of Mechanical and Biomedical Engineering
2/ 2015	University of Colorado, Colorado Springs, Department of Mechanical and Aerospace Engineering
3/ 2015	Texas A&M University, Department of Mechanical Engineering
3/ 2016	Brown University, Department of Ecology and Evolutionary Biology
1/ 2017	Mount Sinai, Department of Orthopaedic Surgery
10/ 2017	6th Annual Musculoskeletal Symposium, Albert Einstein College of Medicine
11/ 2017	Penn Center for Musculoskeletal Disorders Scientific Symposium

3/ 2018 Orthopaedic Research Society Annual Meeting, Professional Advancement Session- Social Media: Engagement and Outreach Tools for New Investigators; "Extending Your Professional Network."
1/ 2019 University of Virginia, Department of Biomedical Engineering
6/ 2019 Trinity Centre for Bioengineering, Trinity Biomedical Sciences Institute, Dublin, Ireland
7/ 2019 Orthopedics Research Club, University of Pennsylvania
9/ 2019 Hip Dysplasia Symposium, International Hip Dysplasia Institute, New York University
10/ 2019 Invited Speaker, Orthopaedic and Rehabilitation Engineering Track, BMES
11/ 2019 Seminar Series invitation, Department of Bioengineering, University of Utah
11/ 2019 Seminar Series invitation, Department of Orthopaedic Surgery, University of Maryland Baltimore
12/ 2020 Invited Spotlight Speaker at Tendon-Ligament Session at 2020 American College of Veterinary Surgeons Annual Meeting
1/2021 Seminar for Department of Biomedical Engineering, University of California Davis
3/2021 Seminar for Department of Biomedical Engineering, University of Iowa
3/2021 Seminar for Department of Physiology and Pharmacology, University of Western Ontario

Bibliography

Peer-Reviewed Manuscripts

1. Zielinska, B., Killian, M., Kadmiel, M., Gupta, T., & Haut Donahue, T.L. Meniscal tissue explants response depends on level of dynamic compressive strain. Osteoarthritis and Cartilage, 2009, 17(6):754-760.
2. Killian, M.L., Isaac, D.I., Haut, R.C., Dejardin, L.M., Leetun, D., & Haut Donahue, T.L. Traumatic anterior cruciate ligament tear and its implications on meniscal degradation: A preliminary novel lapine osteoarthritis model. Journal of Surgical Research, 2010, 164(2):234-241.
3. Killian, M.L., Lepinski, N.M., Haut, R.C., & Haut Donahue, T.L. Regional and zonal histo-morphological characteristics of the lapine menisci. Anatomical Record, 2010, 293(12):1991-2000.
4. Killian, M.L., Zielinska, B., Gupta, T., & Haut Donahue, T.L. In vitro inhibition of compression-induced catabolic gene expression in meniscal explants following treatment with IL-1 receptor antagonist. Journal of Orthopaedic Science, 2011, 16(2):212-20.
5. Killian, M.L., Cavinatto, L., Galatz, L.M., & Thomopoulos, S. The role of mechanobiology in tendon healing. Journal of Shoulder and Elbow Surgery, 2012, 21(2):228-237. Review
6. Killian, M.L., Cavinatto, L., Galatz, L.M., & Thomopoulos, S. Recent advances in shoulder research. Arthritis Research and Therapy, 2012, 14(3):214, E-pub. Review
7. Killian, M.L.*, Lim, C.T.*, Thomopoulos, S., Charlton, N., Kim, H-M., & Galatz, L.M. The effect of unloading on gene expression of healthy and injured rotator cuffs. [* contributed equally] Journal of Orthopaedic Research, 2013, 31(8): 1240-1248.
8. Killian, M.L., Cavinatto, L., Shah, S.A., Sato, E.A., Ward, S.R., Havlioglu, N., Galatz, L.M., & Thomopoulos, S. The effect of chronic unloading on tendon-to-bone healing in a rat model of massive rotator cuff tears. Journal of Orthopaedic Research, 2014, 32(3):439-447.
9. Zelzer, E., Blitz, E., Killian, M.L., & Thomopoulos, S. Tendon-to-bone attachment: from development to maturity. Birth Defects Research Part C: Embryo Today, 2014, 102(1):101-112. Review
10. Sato, E.J., Killian, M.L., Choi, A.J., Lin, E., Esparza, M., Galatz, L.M., Thomopoulos, S., & Ward, S.R. Skeletal muscle fibrosis and stiffness increase after rotator cuff tendon injury and neuromuscular

compromise in a rat model. Journal of Orthopaedic Research, 2014, 32(9): 1111-1116.

11. Killian, M.L., Haut, R.C., & Haut Donahue, T.L. Acute Cell Viability and Nitric Oxide Release in Lateral Menisci Following Closed-Joint Knee Injury in a Lapine Model of Post-Traumatic Osteoarthritis. BMC Musculoskeletal Disorders, 2014, 15(1): 297.
12. Sato, E.J., Killian, M.L., Choi, A.J., Lin, E., Choo, A.D., Rodriguez-Soto, A.E., Lim, C.T., Galatz, L.M., Thomopoulos, S., & Ward, S.R. Architectural and biochemical adaptations in skeletal muscle and bone following rotator cuff injury in a rat model. Journal of Bone and Joint Surgery, 2015, 97(7): 565-573.
13. Killian, M.L., Cavinatto, L., Ward, S.R., Thomopoulos, S., & Galatz, L.M. Chronic degeneration leads to poor healing of repaired massive rotator cuff tears in rats. American Journal of Sports Medicine, 2015, 43(10): 2401-10.
14. Killian, ML, and Thomopoulos, S. Scleraxis is required for the development of a functional tendon enthesis. The FASEB Journal, 2016, 30(1): 301-311.
15. Ford, C.A., Nowlan, N.C., Thomopoulos, S., & Killian, M.L. Impaired muscular loading during post-natal growth leads to altered structure of the developing murine hip. Journal of Orthopaedic Research, 2017, 35(5): 1128-1136.
16. Bahney, C., Bruder, S., Cain, J., Keyak, J., Killian, M.L., Shapiro, I., & Jones, L. Accelerating the pace of discovery in orthopaedic research: a vision toward team science. Journal of Orthopaedic Research, 2016, 34(10): 1673-1679.
17. McKenzie, J.A., Buettmann, E., Abraham, A.C., Gardner, M.J., Silva, M.J. & Killian, M.L. Loss of scleraxis in mice leads to geometric and structural changes in cortical bone, as well as asymmetry in fracture healing. The FASEB Journal 2017 31:3, 882-892.
18. Locke, R.C., Abraham, A.C., & Killian, M.L. Orthopaedic interface repair strategies based on native structural and mechanical features of the multiscale enthesis. ACS Biomaterials Science & Engineering, 2017, 3(11): 2633-2643. Review
19. Shah, S.A., Kormpakis, I., Cavinatto, L., Killian, M.L., Thomopoulos, S., & Galatz, L.M. Rotator cuff muscle degeneration and tear severity correlate to myogenic, adipogenic, and atrophy genes in muscle. Journal of Orthopaedic Research, 2017, 35(12): 2808-2814.
20. Locke, R.C., Peloquin, J.M., Lemmon, E.A., Szostek, A., Elliott, D.M., & Killian, M.L. Strain distribution of intact rat rotator cuff tendon-to-bone attachments and attachments with defects. Journal of Biomechanical Engineering, 2017, 139(11):111007.
21. Lemmon, E.A., Locke, R.C., Szostek, A., Ganji, E., & Killian, M.L. Partial-width injuries of the rat rotator cuff heal with fibrosis. Connective Tissue Research, 2018, 59(5): 437-446. Selected as the Cover feature for special issue on Tendon Biology.
22. Killian, M.L., Locke, R.C., Atkins, P., James, M.G., Anderson, A.E., & Clohisy, J.C. Novel model for the induction of postnatal murine hip deformity. Journal of Orthopaedic Research, 2019, 37(1):151-160. Early Career Award.
23. Ganji, E., & Killian, M.L. Tendon healing in the context of complex fractures. Clinical Reviews in Bone and Mineral Metabolism, 2018, 16(4): 131-141. Review
24. McIlvain, G., Ganji, E., Cooper, C., Killian, M.L., Ogunnaike, B.A., & Johnson, C.L. Reliable Preparation of Agarose Phantoms for Use in Quantitative Magnetic Resonance Elastography. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 97: 65-73.
25. Alghamdi, N.H., Killian, M., Aitha, B., Pohlig, R.T., & Silbernagel, K.G. Quantifying the dimensions of Achilles tendon insertional area using ultrasound imaging- A validity and reliability study. Muscles, Tendons, and Ligaments, 2019, 9(4):544-551.

26. Erndwein, L., Ganji, E., Killian, M.L., & Sparks, E.E. Comparative biomechanical characterization of maize brace roots within and between plants. biorXiv.
27. Locke, R.C., Lemmon, E.A., Dudzinski, E., Kopa, S., Wayne, J., Soulas, J., De Taboada, L., & Killian, M.L. Photobiomodulation Does Not Influence Maturation and Mildly Improves Functional Healing of Mouse Achilles Tendons. Journal of Orthopaedic Research, 2020, 38(8): 1866-1875.
28. Leek, C.C., Soulas, J.M., Sullivan, A.L., & Killian, M.L. Using Tools in Mechanobiology to Repair Tendons. Current Tissue Microenvironment Reports, 2020, 1: 31-40.
29. Ganji, E., Chan, C.S., Ward, C.W., & Killian, M.L. Optogenetic activation of muscle contraction in vivo. Connective Tissue Research, online.
30. Locke, R.C., Ford, E., Silbernagel, K.G., Kloxin, A., & Killian, M.L. Success criteria and preclinical testing of multifunctional hydrogels for tendon regeneration. Tissue Engineering Part C, Methods. 2020, 26(10): 506-518.

Book Chapters

1. Gleghorn, J.P., and Killian, M.L. Mechanobiology and Mechanics of Development. Mechanobiology in Health and Disease. Book editor: Stefaan W. Verbruggen. Publisher: Elsevier, Academic Press (2018) doi: 10.1016/C2016-0-04529-1

Conference Proceedings (abbreviated)*

*In this list, I have excluded the majority of <u>poster</u> presentations for brevity. Presenting author is highlighted in bold. However, I have included the poster presentations that were given by trainees in my laboratory/under my mentorship and have noted their level of student status (undergraduate; graduate; etc.).

<u>Orthopaedic Research Society:</u>

1. Killian, M.L., Cavinatto, L., Shah, S.A., Galatz, L.M., & Thomopoulos, S. The effect of chronic unloading on tendon-to-bone healing in a rat model of massive rotator cuff tears. 59th Annual Orthopaedic Research Society Meeting, San Antonio, TX, <u>Podium</u> Session, 2013.
2. Killian, M.L., Thomopoulos, S. Deletion of Scleraxis impairs supraspinatus enthesis development. 59th Annual Orthopaedic Research Society Meeting, San Antonio, TX, Podium session, <u>New Investigator Recognition Award</u> Winner, 2013.
3. Killian, M.L., Cavinatto, L., Ward, S.R., Thomopoulos, S., & Galatz, L.M. The role of rotator cuff degeneration on the healing capacity of massive rotator cuff tears. 60th Annual Orthopaedic Research Society Meeting, New Orleans, LA, <u>Podium</u> Session, Shoulder & Elbow Kinematics and Disease, 2014.
4. Ford, C.A., Thomopoulos, S., & Killian, M.L. The effect of muscular unloading on hip joint maturation. 60th Annual Orthopaedic Research Society Meeting, New Orleans, LA, <u>Podium</u> Session, Hip Disease and Morphology, 2014. Presented by undergraduate student, Caleb Ford.
5. Killian, M.L., James, M.G., Thomopoulos, S., & Clohisy, J.C. A novel model for the induction of hip dysplasia in the developing murine hip. 61st Annual Orthopaedic Research Society Meeting, Las Vegas, NV, <u>Podium</u> Session, Hip Disease, Kinematics, FAI, 2015.
6. Lemmon, E.A., Locke, R.C., Szostek, A., & Killian, M.L. Biomechanical strength and stiffness are impaired following acute partial-width, full-thickness tendon-bone injury in a rat rotator cuff defect model. 63rd Annual Orthopaedic Research Society Meeting, San Diego, CA, <u>Poster</u>, 2017.
7. Sonnenfelt, M.A., Wernlé, K.K., Karuppaiah, K., Ornitz, D.M., and Killian, M.L. Targeted loss of

fibroblast growth factor receptors 1 and 2 regulates bone shape and structure. 63rd Annual Orthopaedic Research Society Meeting, San Diego, CA, Poster, 2017.

8. Sonnenfelt, M.A., Wernlé, K.K., Karuppaiah, K., Ornitz, D.M., and Killian, M.L. Loss of Fibroblast growth factor receptor signaling in Connective Tissues Leads to Knee Joint Contractures and Decreased Tibiofemoral Spacing in the Murine Hindlimb. 64th Annual Orthopaedic Research Society Meeting, New Orleans, LA. Podium presentation, March, 2018.
9. Lemmon, E.A., Locke, R.C., Szostek, A., Ganji, E., & Killian, M.L. Partial-width injury of the tendon-bone attachment leads to spontaneous healing and diminished structural quality in the rat rotator cuff. 64th Annual Orthopaedic Research Society Meeting, New Orleans, LA. March, 2018.
10. Locke, R.C., Peloquin, J., Lemmon, E.A., Szostek, A., Elliott, D.M., & Killian, M.L. Localized strain and biomechanics of the disrupted tendon-bone attachment. 64th Annual Orthopaedic Research Society Meeting, New Orleans, LA. March, 2018.
11. Ganji, E., Breeding, K., Ornitz, D.M., Hudson, M.B., & Killian, M.L. Role of FGF signaling in muscle function and force generation. ORS Annual meeting, Austin, TX. February, 2019.
12. Locke, R.C., Lemmon, E.A., Dudzinski, E., Kopa;, S.C., Newman, H.R., Ganji, E., & Killian, M.L. Mitochondria Function and Histomechanical Outcomes after Exposure to Near-Infrared Light during Tendon Maturation and Adult Healing. ORS Annual meeting, Austin, TX. Presented as a podium by PhD student, Ryan Locke, February, 2019.
13. Leek, C., Locke, R.C., Bhattacharya, I., Ornitz, D.M., & Killian, M.L. Global Knockout of Fgf9 Results in Enlarged Bone Ridges and Differential Gene Expression In Muscle But Not Bone. Moderated Poster. ORS 2020 Annual Meeting, Phoenix, AZ, 2020.
14. Ganji, E., Soulas, J.M., Chan, C.S., Hudson, M.B., Ward, C.W., & Killian, M.L. Use of Optogenetics For Light-mediated Muscle Contraction And Tendon Loading. Moderated Poster. ORS 2020 Annual Meeting, Phoenix, AZ, 2020.
15. Klink, R.K., Locke, R.C., Sullivan, A.L., & Killian, M.L. Mechanical Consequences of Critical Defect Size in The Rat Rotator Cuff Attachment. Poster. ORS 2020 Annual Meeting, Phoenix, AZ, 2020.
16. Soulas, J.M., Ganji, E., Locke, R.C., Ornitz, D.M., & Killian, M.L. The Role of Muscle-specific Fibroblast Growth Factor 9 (Fgf9) in Innervation and Bone Shape. Podium. ORS 2020 Annual Meeting, Phoenix, AZ, 2020.
17. Sullivan, A.L., Locke, R.C., & Killian, M.L. Differential Healing of Small and Large Partial-width Defects In The Tendon Attachment Of The Rat Rotator Cuff. Poster. ORS 2020 Annual Meeting, Phoenix, AZ, 2020.
18. Ganji, E., Duncan., W., Livingston, A., White, N., Stepanovich, M., & Killian, M.L. Unilateral, Daily Bouts of Muscle Loading Lead to Adaptation of the Immature, But Not Mature, Achilles Enthesis in Mice. ORS 2021 Annual Meeting, Long Beach, CA (online due to COVID pandemic). Late Breaking Poster.

BMES:

19. Killian, M.L., Thomopoulos, S. Deletion of Scleraxis impairs supraspinatus enthesis development. Biomedical Engineering Society Annual Meeting, Seattle, WA, Podium Session, Musculoskeletal Tissue Engineering II - Scaffolds and ECM, 2013
20. Ford, C.A., Thomopoulos, S., & Killian, M.L. Impaired muscular loading during post-natal growth leads to altered structure of the developing murine hip. Biomedical Engineering Society Annual Meeting, San Antonio, Texas, Podium Session, Orthopaedic and Rehabilitation Engineering, 2014.
21. Locke, R.C., Peloquin, J., Lemmon, E.A., Szostek, A., Elliott, D.M., and Killian, M.L. Localized strain

and biomechanics of the disrupted tendon-bone attachment. Biomedical Engineering Society Annual Meeting, Podium presentation, Phoenix, AZ, October, 2017.

22. Leek, C., Ornitz, D.M., & Killian, M.L. Fibroblast Growth Factor 9 Regulates the Size of the Deltoid Tuberosity. BMES Annual meeting, Philadelphia, PA. October, 2019.
23. Shuff, J., Ganji, E., Locke, R.C., & Killian, M.L. Age-Dependent Morphometric Changes of the Murine Deltoid Tuberosity. BMES Annual meeting, Philadelphia, PA. October, 2019.
24. Ganji, E., Ornitz, D.M., & Killian, M.L. Knockout of FGF9 in Scx-lineage Cells Leads to Impairments in Enthesis Structure. BMES Annual meeting, Philadelphia, PA. October, 2019.
25. Wernlé, K.K., Sonnenfelt, M., Leek, C., Locke, R.C., Guzy, R., Ornitz, D.M., Killian, M.L.. Regulating enthesis and bone structure/function by Fibroblast Growth Factor signaling. BMES Annual meeting, Philadelphia, PA. Invited Oral Presentation, October, 2019.
26. Wayne, J., Locke, R.C., & Killian, M.L. Variability Analysis of Bilateral Achilles Tendons using Uniaxial Tensile Testing with 3D-Printed Fixture. BMES Annual meeting, Philadelphia, PA. October, 2019.
27. Klink, R., Sullivan, A.L., Locke, R.C., and Killian, M.L. Mechanics of Small and Large Partial-Width Defects of the Rat Rotator Cuff Tendon-to-Bone Attachment. BMES Annual meeting, Philadelphia, PA. October, 2019.
28. Locke, R.C., Dudzinski, E., Lemmon, E.A., Kopa, S., Wayne, J., & Killian, M.L. Photobiomodulation During Mouse Achilles Tendon Maturation and Healing. BMES Annual meeting, Philadelphia, PA. October, 2019.

SB3C/ASME:

29. Killian, M.L., Zielinska, B., & Haut Donahue, T.L. Role of IL-1 on aggrecanase and COX-2 gene expression of meniscal explants following dynamic compression. Proceedings of ASME (SBC). Naples, FL. Podium Session, Mechanical Properties of Musculoskeletal Soft Tissues, 2010.
30. Killian, M.L., Haut, R.C., & Haut Donahue, T.L. Closed joint traumatic impaction and its influence on meniscal cell viability. Proceedings of ASME (SBC). Farmington, PA. Podium Session, Biomechanics of Injury, 2011.
31. Killian, M.L. & Thomopoulos, S. The role of scleraxis in supraspinatus enthesis. Proceedings of ASME (SBC), Fajardo, Puerto Rico. Podium Session, 2012.
32. Leek, C. et al. Role of FGF9 in Bone Shape and Attachment Cell Morphology During Embryonic Growth, SB3C 2020 virtual meeting.
33. Ganji, E. et al. Knockout of FGF9 in Scx-Lineage Cells Leads to Impairments in Enthesis Structure, SB3C 2020 virtual meeting.
34. Ganji E. et al. Use of Optogenetics for Light-Mediated Muscle Contraction and Tendon Loading, SB3C 2020 virtual meeting.
35. Sullivan, A.L. et al. Differential Mechanics and Healing Outcomes of Small and Large Partial-Width Defects in the Tendon Attachment of the Rat Rotator Cuff, BS Student Paper Competition, SB3C 2020 virtual meeting.
36. Locke, R.C. et al. Mitochondrial Genes Are Differentially Expressed in Mouse Achilles Tendons During Postnatal Growth and Following Injury, SB3C 2020 virtual meeting.

International conference proceedings:

37. Killian, M.L., Nagashima, C.I., Hahn, M.E. The effect of downhill running on impact shock and asymmetry. Podium session, Northwest Biomechanics Symposium, Vancouver, BC, Canada, 2006. My first conference proceeding and presentation, given as a MS student at Montana State University.

38. Killian, M.L., Abraham, AC, McKenzie, JA, Buettmann, EG, Gardner, MJ, & Silva, MJ. Scleraxis modulates cortical morphology and fracture healing. Podium Session, Musculoskeletal Development, and poster presentation. EMBO Workshop, Integrative Perspectives on Musculoskeletal Development, Ein Gedi, Israel. 2015.
39. Killian, M.L., James, M.G., Thomopoulos, S., & Clohisy, J.C. A novel model for the induction of hip dysplasia in the developing murine hip. Musculoskeletal Research Center Winter Symposium Invited Talk, 2015.
40. Sonnenfelt, M.A., Wernlé, K.K., Ganji, E., Leek, C.C., Karuppaiah, K., Ornitz, D.M., & Killian, M.L. Fibroblast growth factor signaling regulates eminence size, bone shape, and remodeling during postnatal growth. 8th World Congress of Biomechanics, Dublin, Ireland. Podium presentation, July, 2018.
41. Ganji, E., Wernlé, K.K., Hudson, E., Ornitz, D.M., & Killian, M.L. Fibroblast Growth Factor 9 (FGF9) regulates postnatal skeletal movement and muscle loading. 8th World Congress of Biomechanics, Dublin, Ireland. Podium presentation, July, 2018.

Regional/national conference proceedings:

1. Killian, M.L., & Thomopoulos, S. The role of Scleraxis and mechanical loading on tendon healing and enthesis maturation. Gordon Research Seminar: Musculoskeletal Biology and Bioengineering, Diagnostic and Therapeutic Approaches to Musculoskeletal Disorders, Podium Session, Proctor Academy, Andover, NH, August 2-3, 2014.
2. Wernlé, K.K., Sonnenfelt, M.A., Karuppaiah, K., Ornitz, D.M., and Killian, M.L. Targeted loss of fibroblast growth factor receptors 1 and 2 regulates bone shape and structure. Musculoskeletal Regenerative Medicine and Biology Meeting, Podium presentation, Saint Louis, Missouri. May, 2017.
3. Ganji, E., Breeding, K., Ornitz, D.M., Hudson, M.B., & Killian, M.L. Role of FGF signaling in muscle function and force generation. ORS Tendon Section meeting, Portland, OR. November, 2018.