

# Kristof Kipp, PhD

Department of Physical Therapy – Program in Exercise Science  
Marquette University, Cramer Hall, 215D – Milwaukee, WI 53233

Email: [kristof.kipp@marquette.edu](mailto:kristof.kipp@marquette.edu); Phone: (414)288-6257; Twitter: @MUSportScience

## EDUCATION

- 2005-2009 Ph.D. **Oregon State University** – Corvallis, OR  
*Nutrition and Exercise Sciences, Biomechanics Emphasis*
- 2004-2005 M.S. **Boise State University** – Boise, ID  
*Exercise and Sport Studies, Biophysical Emphasis (Biomechanics & Exercise Physiology)*
- 2002-2003 B.S. **Boise State University** – Boise, ID  
*Kinesiology, Biomechanics Emphasis*
- 1999-2001 A.S. **North Idaho College** – Coeur d'Alene, ID  
*Engineering*

## PROFESSIONAL EXPERIENCE

- 2019-present ***Affiliated Faculty*** – Northwestern Mutual Data Science Institute  
Northwestern Mutual – Milwaukee, WI
- 2018-present ***Associate Professor*** – Department of Physical Therapy – Program in Exercise Science  
Marquette University – Milwaukee, WI
- 2015-present ***Adjunct Faculty*** – Orthopedic Research Engineering Center  
Marquette University – Milwaukee, WI
- 2011-2018 ***Assistant Professor*** – Department of Physical Therapy – Program in Exercise Science  
Marquette University – Milwaukee, WI
- 2009-2011 ***Post-Doctoral Research Fellow*** – Department of Physical Medicine & Rehabilitation  
University of Michigan Medical School – Ann Arbor, MI
- 2005-2009 ***Graduate Assistant*** – Department of Nutrition and Exercise Sciences  
Oregon State University – Corvallis, OR
- 2003-2005 ***Graduate Assistant*** – Center for Orthopaedic and Biomechanics Research  
Boise State University – Boise, ID

## TEACHING EXPERIENCE

### At Marquette University

#### ***Undergraduate Courses – Instructor of Record***

- EXPH 2190 – Scientific Principles of Strength & Conditioning
- EXPH 2931 – Advanced Elective: Advanced Applied Principles in Strength & Conditioning
- EXPH 2931 – Advanced Elective: Becoming Batman
- EXPH 2931 – Advanced Elective: Sport Science and Practice in Weightlifting
- EXPH 3030 – Introduction to Research in Biomechanics
- EXPH 2951 – Short-Term Study Abroad: International Perspectives in Sport Science
- EXPH 4192 – Advanced Exercise Physiology
- EXPH 4995 – Independent Study in Exercise Physiology

### ***Graduate Courses – Instructor of Record***

CTRH 6130 – Neuromechanical Control and Regulation of Coordinated Movement  
CTRH 6193 – Advanced Biomechanical Applications in Clinical and Orthopedic Research  
CTRH 6195 – Neuromechanical Basis for Human Movement  
CTRH 6600 – Project Design & Development in CTRH  
CTRH 6930 – Advanced Biomechanical Methods and Applications  
CTRH 6930 – Machine Learning Applications in Exercise Science  
CTRH 6930 – Wearable Technology Applications  
CTRH 6931 – MATLAB Programming for Biomechanics  
CTRH 6931 – Multi-scale Muscle Biomechanics  
CTRH 6958 – Readings and Research in Clinical and Translational Rehab/Health Science II  
EXPH 5192 – Advanced Exercise Physiology  
SPRT 6110 – Advanced Biomechanics and Sports Medicine in Injury Prevention  
SPRT 6190 – Advanced Strength and Conditioning: Data Analytics  
SPRT 6958 – Reading and Research in Sports and Exercise Analytics

### ***Graduate Courses – Adjunct Instructor***

CTRH 6958 – Readings and Research in Clinical and Translational Rehab/Health Science I

### ***Before Marquette University***

#### ***Undergraduate Courses – Instructor of Record***

EXSS 323 – Biomechanics of Sport & Exercise (OSU)  
EXSS 394 – Professional Activities: Resistance Training Program Design (OSU)  
EXSS 434 – Applied Muscle Physiology (OSU)  
HHS 243 – Lifetime Fitness Special Topics Lab: Resistance Training (OSU)  
PAC 287 – Weight Training I (OSU)  
PAC 288 – Weight Training II (OSU)

#### ***Undergraduate Courses – Teaching Assistant***

KINES 271 – Applied Kinesiology (BSU)

#### ***Graduate Courses – Teaching Assistant***

KINES 596 – Mechanical Analysis of Human Movement (BSU)

#### ***Post-Doctoral Short Course for College Teaching in Science and Engineering***

Center for Research on Learning and Teaching, University of Michigan – Ann Arbor, MI

### **PEER REVIEWED PUBLICATIONS**

#### ***Published***

1. **Kipp K**, Kim H. Force-length-velocity behavior and muscle-specific joint moment contributions during countermovement and squat jumps. *Computer Methods in Biomechanics and Biomedical Engineering*, (in press).
2. Wolf W, Kim H, **Kipp K**. Musculoskeletal modeling based estimates of load dependent relative muscular effort during resistance training exercises. *Sports Biomechanics*, (in press).
3. Harry J, Krzyszkowski J, Chowning LD, **Kipp K**. Phase-specific force and time predictors of standing long jump distance. *Journal of Applied Biomechanics*, (in press).
4. Haischer M, Roche S, Krzyszkowski J, **Kipp K**. Maximal strength in relation to force and velocity patterns during countermovement jumps. *International Journal of Sports Physiology and Performance*, (in press).
5. Malloy PJ, Neumann D, Leung A, **Kipp K**. Three-dimensional hip joint motion coordination during gait is altered before and 1-year after hip arthroscopic surgery for femoroacetabular impingement syndrome. *Frontiers in Orthopaedic Surgery*, (in press).

6. Kim H, Palmieri-Smith R, **Kipp K**. Peak forces and force generating capacities of lower extremity muscles during dynamic tasks in people with and without chronic ankle instability. *Sports Biomechanics*, (in press).
7. **Kipp K**, Wolf W, Kim H. Muscle-specific contributions to lower-extremity net joints moments while squatting with different external loads. *Journal of Strength and Conditioning Research*, (in press).
8. **Kipp K**, Cunanan A, Warmenhoven J. Bivariate functional principal component analysis of barbell trajectories during the snatch. *Sports Biomechanics*, (in press).
9. **Kipp K**, Kim H, Wolf W. Muscle forces during the squat, split-squat, and step-up across a range of external loads in college aged-men. *Journal of Strength and Conditioning Research*, (in press).
10. Soriano M, **Kipp K**, Suchomel TJ, Lake J, Marín PJ, Sainz de Baranda P, Comfort P. Mechanical power production assessment during weightlifting exercises. A systematic review. *Sports Biomechanics*, (in press).
11. **Kipp K**. Relative importance of lower extremity net joint moments in relation to bar velocity and acceleration in weightlifting. *Sports Biomechanics*, (in press).
12. **Kipp K**, Comfort P, Suchomel T. 2021. Comparing biomechanical time series data during the hang-power clean and jump shrug. *Journal of Strength and Conditioning Research*, 35:2389-2396.
13. **Kipp K**, Heeneman J, Krzyszkowski J. 2021. Hip moment and knee power eccentric utilisation ratios determine lower-extremity stretch-shortening cycle performance. *Sports Biomechanics*, 20:532-542.
14. **Kipp K**, Krzyszkowski J, Smith T, Geiser CF, Kim H. 2021. Comparison of countermovement and preferred-style jump biomechanics in male basketball players. *Applied Sciences*, 11:6092.
15. Kim H, Palmieri-Smith R, **Kipp K**. 2021. Force contributions to ankle joint contact forces during an unanticipated cutting task in people with chronic ankle instability. *Journal of Biomechanics*, 124:110556.
16. Ahn N, Kim H, Krzyszkowski J, Roche S, **Kipp K**. 2021. Influence of bar position on joint-level biomechanics during the isometric pulling exercises. *Journal of Strength and Conditioning Research*, 35:1484-1490.
17. Krzyszkowski J, **Kipp K**. 2021. Prediction of throwing distances in the men's and women's javelin final at the 2017 IAAF World Championships. *Journal of Sports Sciences*, 39:1055-1059.
18. Haischer M, Krzyszkowski J, Roche S, **Kipp K**. 2021. The impulse-based dynamic strength index: considering time-dependent force expression. *Journal of Strength and Conditioning Research*, 35:1177-1181.
19. **Kipp K**, Kiely MT, Geiser CF. 2021. Competition volume and changes in countermovement jump biomechanics and motor signatures in female collegiate volleyball players. *Journal of Strength and Conditioning Research*, 35:970-975.
20. Balsalobre-Fernández C, **Kipp K**. 2021. Use of machine-learning and load-velocity profiling to estimate 1-repetition maximums for two variations of the bench-press exercise. *Sports*, 9:39.
21. Suchomel T, Giordanelli MD, Geiser CF, **Kipp K**. 2021. Comparison of joint work during load absorption between weightlifting derivatives. *Journal of Strength and Conditioning Research*, 35:127-135.
22. **Kipp K**, Kim H. 2020. Relative contributions and capacities of lower extremity muscles to accelerate the body's center of mass during countermovement jumps. *Computer Methods in Biomechanics and Biomedical Engineering*, 23:914-921.
23. Howenstein J, **Kipp K**, Sabick MB. 2020. Peak horizontal ground reaction forces and impulse correlate with segmental energy flow in youth baseball pitchers. *Journal of Biomechanics*, 108:109909.
24. Aljohani M, **Kipp K**. 2020. Use of self-organizing maps to study sex- and speed-dependent changes in running biomechanics. *Human Movement Science*, 72:102649.
25. Krzyszkowski J, **Kipp K**. 2020. Load-dependent mechanical demands of the lower extremity during the back and front squat. *Journal of Sports Sciences*, 38:2005-2012.
26. Kim H, Palmieri-Smith R, **Kipp K**. 2020. Time-frequency analysis of muscle activation patterns in people with chronic ankle instability during landing and cutting tasks. *Gait and Posture*, 82:203-208.

27. Kim H, **Kipp K**. 2020. Simulated anterior translation and medial rotation of the talus affect ankle joint contact forces during vertical hopping. *Computer Methods in Biomechanics and Biomedical Engineering*, 23:484-490.
28. Moon S, Ahmadnezhad P, Song HJ, Thompson J, **Kipp K**, Akinwuntan AE, Devos H. 2020. Artificial neural networks in neurorehabilitation: A scoping review. *NeuroRehabilitation*, 46:259-269.
29. **Kipp K**, Kiely MT, Giordanelli MD, Malloy PJ, Geiser CF. 2020. Joint- and subject-specific strategies in male basketball players across a range of countermovement jump heights. *Journal of Sports Sciences*, 38:652-657.
30. Balsalobre-Fernández C, Geiser G, Krzyszkowski J, **Kipp K**. 2020. Measurement of barbell biomechanics during the snatch with a computer vision-based smartphone app. *Journal of Sports Sciences*, 38:710-716.
31. **Kipp K**, Krzyszkowski J, Kant-Hull D. 2020. Use of machine learning to model volume load effects on changes in jump performance. *International Journal of Sports Physiology and Performance*, 15:285-287.
32. Fritz JM, Schaefer E, **Kipp K**, Cross J, Harris G, Vetter C. 2019. A principal component analysis investigation of drop landings for defining anterior cruciate ligament (ACL) injury risk factors. *Biomedical Sciences Instrumentation*, 56:284-291.
33. Malloy PJ, Neumann D, **Kipp K**. 2019. Alterations in hip joint biomechanics in people with femoroacetabular impingement syndrome are influenced by the joint control demand of squat tasks. *Journal of Orthopedic and Sports Physical Therapy*, 49:908-916.
34. Kim H, **Kipp K**. 2019. Number of segments within musculoskeletal foot model influences ankle ligament and muscle lengths. *Journal of Orthopedic Research*, 37:2231-2240.
35. **Kipp K**, Suchomel T, Comfort P. 2019. Correlational analysis between joint-level kinetics of countermovement jumps and weightlifting derivatives. *Journal of Sports Science and Medicine*, 18:663-668.
36. Howenstein J, **Kipp K**, Sabick MB. 2019. Energy flow analysis to investigate youth pitching velocity and efficiency. *Medicine and Science in Sport and Exercise*, 51:523-531.
37. **Kipp K**, Giordanelli MD, Geiser CF. 2018. Predicting net joint moments during a weightlifting exercise with a neural network model. *Journal of Biomechanics*, 74:225-229.
38. **Kipp K**, Malloy PJ, Smith J, Giordanelli MD, Kiely MT, Geiser CF, Suchomel T. 2018. Mechanical demands of the hang-power clean and jump shrug: a joint-level perspective. *Journal of Strength and Conditioning Research*, 32:466-474.
39. **Kipp K**, Kiely MT, Giordanelli MD, Malloy PJ, Geiser CF. 2018. Biomechanical Determinants of the reactive strength index during drop jumps. *International Journal of Sports Physiology and Performance*, 13:44-49.
40. **Kipp K**, Harris C. 2017. Muscle-specific effective mechanical advantage and joint impulse in weightlifting. *Journal of Strength and Conditioning Research*, 31:1905-1910.
41. **Kipp K**, Meinerz CM. 2017. A biomechanical comparison of successful and unsuccessful power clean attempts. *Sports Biomechanics*, 16:272-282.
42. **Kipp K**, Kiely MT, Geiser CF. 2016. The reactive strength index modified is a valid measure of lower-body explosiveness in female collegiate volleyball players. *Journal of Strength and Conditioning Research*, 30:1341-1347.
43. Malloy PJ, Geiser CF, Morgan A, Meinerz CM, **Kipp K**. 2016. Hip external rotator strength is associated with better dynamic control of the lower extremity during landing tasks. *Journal of Strength and Conditioning Research*, 30:282-291.
44. Johnson ST, **Kipp K**, Norcross M, Hoffman MA. 2015. Spinal and supraspinal motor control contributions to rate of torque development. *Scandinavian Journal of Science and Medicine in Sports*, 25:623-629.
45. **Kipp K**, Harris C. 2015. Patterns of barbell acceleration of the snatch and clean during weightlifting competition. *Journal of Sports Sciences*, 33:1467-1471.

46. Malloy P, Meinerz CM, Geiser C, **Kipp K**. 2015. The Association of dorsiflexion flexibility on knee kinematics and kinetics during a drop vertical jump in healthy female athletes. *Knee Surgery, Sports Traumatology, and Arthroscopy*, 23:3550-3555.
47. Meinerz CM, Malloy P, Geiser C, **Kipp K**. 2015. Anticipatory effects on lower extremity neuromechanics during a cutting task. *Journal of Athletic Training*, 50:905-913.
48. **Kipp K**, Pfeiffer RP, Sabick MB, Harris C, Sutter J, Kuhlman S, Shea KG. 2014. Muscle synergies during a single-leg drop-landing in boys and girls. *Journal of Applied Biomechanics*, 30:262-268.
49. Wood C, **Kipp K**. 2014. Audio biofeedback as a method of gait retraining to reduce tibial acceleration on foot strike. *Journal of Biomechanics*, 47:1739-1741.
50. **Kipp K**, Brown TN, McLean SG, Palmieri-Smith RM. 2013. Decision-making and experience level influence frontal plane knee joint biomechanics during a cutting maneuver. *Journal of Applied Biomechanics*, 29:756-762.
51. **Kipp K**, Palmieri-Smith RM. 2013. Differences in kinematic control of ankle joint motions in people with chronic ankle instability. *Clinical Biomechanics*, 28:562-567.
52. **Kipp K**, Harris C, Sabick MB. 2013. Correlations between internal and external power outputs during weightlifting exercise. *Journal of Strength and Conditioning Research*, 27:1025-1030.
53. **Kipp K**, Redden J, Harris C, Sabick MB. 2012. Kinematic and kinetic synergies of the lower extremities during the pull in olympic weightlifting. *Journal of Applied Biomechanics*, 28:271-278.
54. Johnson ST, **Kipp K**, Yun J, Hoffman MA. 2012. Spinal control differences between the sexes. *European Journal of Applied Physiology*, 112:3859-3864.
55. **Kipp K**, Johnson ST, Hoffman MA. 2012. Spectral properties of H-reflex recordings after an acute bout of whole-body vibration. *Journal of Strength and Conditioning Research*, 26:1915-1919.
56. **Kipp K**, Redden J, Harris C, Sabick MB. 2012. Weightlifting performance is related to kinematic and kinetic patterns of the hip and knee joints. *Journal of Strength and Conditioning Research*, 26:1838-1844.
57. **Kipp K**, Palmieri-Smith RM. 2012. Principal component based analysis of biomechanical inter-trial variability in individuals with chronic ankle instability. *Clinical Biomechanics*, 27:706-710.
58. **Kipp K**, Johnson ST, Hoffman MA. 2012. Effects of homosynaptic depression on spectral properties of H-reflex recordings. *Somatosensory and Motor Research*, 29:38-43.
59. **Kipp K**, McLean SG, Palmieri-Smith RM. 2011. Patterns of hip flexion motion predict frontal and transverse plane knee torques during a single-leg land-and-cut maneuver. *Clinical Biomechanics*, 26:504-508.
60. **Kipp K**, Harris C, Sabick M. 2011. Lower extremity biomechanics during weightlifting exercise vary across joint and load. *Journal of Strength and Conditioning Research*, 25:1229-1234.
61. **Kipp K**, Johnson ST, Hoffman MA. 2011. Functional data analysis of H-reflex recruitment curves. *Journal of Neuroscience Methods*, 197: 270-273.
62. **Kipp K**, Johnson ST, Doeringer J, Hoffman MA. 2011. Spinal reflex excitability and homosynaptic depression after a bout of whole-body vibration. *Muscle and Nerve*, 43:259-262.
63. Hong J, **Kipp K**, Maddalozzo G, Hoffman MA. 2010. Acute effects of whole body vibration on rate of force development and electromechanical delay. *Journal of Sports Therapy*, 3:3-9.
64. Hong J, **Kipp K**, Johnson ST, Hoffman MA. 2010. Effects of 4 weeks whole body vibration training on neuromuscular performance and presynaptic inhibition. *International Journal of Physiotherapy and Rehabilitation*, 1:30-40.

## **CONFERENCE ABSTRACTS**

1. Ahn A, Haischer MH, Kim H, Jacobson E, **Kipp K**. Interlimb asymmetries in ground reaction force time-series during bi-lateral countermovement jumps. *International Society of Biomechanics in Sports*. Canberra, Australia. 2021.

2. **Kipp K.** Identifying joint-specific limitations and targets for improving weightlifting performance. *International Society of Biomechanics in Sports*. Canberra, Australia. 2021.
3. Haischer MH, Ahn A, Kim H, Jacobson E, **Kipp K.** Joint- and load-specific asymmetries during three lower extremity resistance training exercises. *International Society of Biomechanics in Sports*. Canberra, Australia. 2021.
4. Julian J, Ahn N, **Kipp K.** Lower extremity net joint moment and force contributions in relation to drop jump performance. *American Society of Biomechanics*. Virtual Online Conference. 2021.
5. **Kipp K,** Howenstein J, Sabick MB. Repeated measures correlation between elbow valgus moments and torso angles in youth pitchers. *American Society of Biomechanics*. Virtual Online Conference. 2021.
6. Haischer MH, Smith T, Smith M, **Kipp K.** Classification of Countermovement Jump Effort from Ground Reaction Force Time-Series Data. *American Society of Biomechanics*. Virtual Online Conference. 2021.
7. Ahn N, **Kipp K.** Joint-specific contributions to horizontal ground reaction forces during a jumping task. *American Society of Biomechanics*. Virtual Online Conference. 2021.
8. Haischer M, Krzyszkowski J, Roche S, **Kipp K.** Correlations between force- and various impulse-based dynamic indices. *NSCA National Conference*. Orlando, FL. 2021.
9. Haischer M, Howenstein J, Sabick MB, **Kipp K.** Movement patterns of the torso predict upper extremity joint loading in little league pitchers. *American Society of Biomechanics*. Atlanta, GA. 2020.
10. **Kipp K,** Cunanan A, Warmenhoven J. Bivariate functional principal component analysis of bar trajectories during the snatch. *American Society of Biomechanics*. Atlanta, GA. 2020.
11. Kim H, **Kipp K.** Muscle forces of the lower extremity during dynamic tasks in people with and without chronic ankle instability. *American Society of Biomechanics*. Atlanta, GA. 2020.
12. Navandar A, **Kipp K,** Navarro E. Principal component analysis of kicking in male and female soccer players. *International Society of Biomechanics in Sports*. Liverpool, England. 2020.
13. Geiser C, Kim H, **Kipp K.** Individuals with generalized joint hypermobility demonstrate similar lower extremity muscle forces during a dynamic cutting task. *International Society of Biomechanics in Sports*. Liverpool, England. 2020.
14. **Kipp K,** Kim H. Capacity of muscles to accelerate the center of mass during countermovement jumps. *International Society of Biomechanics in Sports*. Liverpool, England. 2020.
15. Haischer MH, Krzyszkowski J, Roche S, **Kipp K.** Effects of maximal strength on ground reaction force patterns during countermovement jumps. *International Society of Biomechanics in Sports*. Liverpool, England. 2020.
16. Ahn N, Kim H, Krzyszkowski J, Roche S, **Kipp K.** Peak lower extremity net joint moments and joint angles during isometric mid-thigh pulls vary with bar position. *International Society of Biomechanics in Sports*. Liverpool, England. 2020.
17. Haischer M, Ahn N, Jacobson E, **Kipp K.** Lower extremity net joint moments differ between hexagonal deadlift and romanian deadlift. *National Strength & Conditioning Association – Wisconsin*. Waukesha, WI. 2020.
18. Malloy PJ, Neumann D, **Kipp K.** Movement pattern features at the hip during walking differ in people with femoroacetabular impingement syndrome. *Combined Sections Meeting*. Denver, CO. 2020.
19. Malloy PJ, Neumann D, **Kipp K.** Biomechanical waveform features during gait can discriminate people with femoroacetabular impingement syndrome from matched controls. *Combined Sections Meeting*. Denver, CO. 2020.
20. Moon S, Ahmadnezhad P, Song HJ, Thompson J, **Kipp K,** Akinwuntan AE, Devos H. Scoping review on artificial neural networks in neurorehabilitation: current status and future avenues. *American Congress on Rehabilitation Medicine*, Chicago, IL. 2019.
21. Kim H, **Kipp K.** Wavelet-based analysis of plantar flexor muscle recruitment strategies while hopping at different frequencies. *Society for Neuroscience*. Chicago, IL. 2019.

22. Geiser C, Kim H, **Kipp K**. Female athletes with generalized joint hypermobility control ACL strain during a single leg land and cut. *International Society of Biomechanics / American Society of Biomechanics*. Calgary, Canada. 2019.
23. Kim H, **Kipp K**. Anterior translation and medial rotation of the talus can affect the ankle joint contact forces during hopping. *International Society of Biomechanics / American Society of Biomechanics*. Calgary, Canada. 2019.
24. Miller AC, Kim H, Aljohani M, **Kipp K**. Neural network method to predicting stance-phase ground reaction force in distance runners. *International Society of Biomechanics in Sports*. Oxford, OH. 2019.
25. Aljohani M, **Kipp K**. Use of self-organizing maps to study sex- and speed-dependent changes in running biomechanics. *International Society of Biomechanics in Sports*. Oxford, OH. 2019.
26. Krzyszkowski J, **Kipp K**. Prediction of throwing distances in the men's javelin at the 2017 IAAF World Championships. *International Society of Biomechanics in Sports*. Oxford, OH. 2019.
27. **Kipp K**, Kim H, Cross J, Geiser C. Muscle force contributions to ground reaction force profiles during basketball related tasks. *International Society of Biomechanics in Sports*. Oxford, OH. 2019.
28. Amene JN, Schaefer E, Fritz JM, **Kipp K**, Cross J, Vetter C, Tarima S, Harris GF. Principal component analysis investigation of drop landings to define anterior cruciate ligament injury risk factors. *American Academy of Physical Medicine & Rehabilitation*. San Antonio, TX. 2019.
29. Malloy PJ, Neumann D, **Kipp K**. People with femoroacetabular impingement syndrome demonstrate alterations in pelvic and thigh kinematics during a single leg squat task when compared to people without pelvic hip pain. *Combined Sections Meeting*. Washington, DC. 2019.
30. Aljohani M, Miller AC, Kim H, Starsky A, **Kipp K**. Females experience greater speed-dependent increases in loading rate than males during treadmill running. *Combined Sections Meeting*. Washington, DC. 2019.
31. Kost C, Howenstein J, Sabick MB, **Kipp K**. A principal components analysis of torso movement patterns in relation to shoulder loading in little league pitchers. *Combined Sections Meeting*. Washington, DC. 2019.
32. Legler L, Howenstein J, Sabick MB, **Kipp K**. Predicting elbow joint loading in youth baseball pitchers using slot angle kinematics. *Combined Sections Meeting*. Washington, DC. 2019.
33. **Kipp K**, Giordanelli MD. Control and regulation of ground reaction forces during the pull-phase of the snatch and clean. *International Society of Biomechanics in Sports*. Auckland, New Zealand. 2018.
34. **Kipp K**, Giordanelli MD. Predicting net joint moments during a hang-power clean from ground reaction forces with a neural network. *International Society of Biomechanics in Sports*. Auckland, New Zealand. 2018.
35. Kim H, Aljohani M, Wolf WI, **Kipp K**. Ankle kinematics vary with the number of segments in multi-segment foot models. *American Society of Biomechanics*. Rochester, MN. 2018.
36. Fritz JM, Ford N, Meinerz CM, **Kipp K**, Vetter C, Harris GF. Knee dynamics and running cadence: a controlled case study. *American Society of Biomechanics*. Rochester, MN. 2018.
37. Malloy PJ, Neumann D, Heinrich JT, **Kipp K**. Effects of arthroscopic surgery on the kinematic control strategy of hip joint motions in people with femoroacetabular impingement syndrome. *American Society of Biomechanics*. Rochester, MN. 2018.
38. Aljohani M, Miller AC, Kim H, **Kipp K**. Hip and knee movement patterns predict kinetic risk factors associated with running related injuries. *American Society of Biomechanics*. Rochester, MN. 2018.
39. Miller AC, Aljohani M, Kim H, **Kipp K**. Predicting vertical ground reaction forces with accelerometers and artificial neural networks. *American Society of Biomechanics*. Rochester, MN. 2018.
40. Krzyszkowski J, Dahling S, Heeneman J, **Kipp K**. Load-dependent relative muscular effort of the knee extensor muscles during back and front squats. *American College of Sports Medicine*. Minneapolis, MN. 2018.

41. Heeneman J, Krzyszkowski J, **Kipp K**. Knee joint-specific eccentric utilization ratio determines lower-extremity stretch-shortening cycle function during countermovement jumps. *American College of Sports Medicine*. Minneapolis, MN. 2018.
42. Dahling S, Krzyszkowski J, Smith M, **Kipp K**. Associations between off-season player-tracking data and changes in vertical jump parameters in female basketball players. *American College of Sports Medicine*. Minneapolis, MN. 2018.
43. Oliver A, Howenstein J, **Kipp K**, Sabick MB. Timing of major pitching motion events in youth baseball players in relation to elbow and shoulder moment. *Biomedical Engineering Society*. Phoenix, AZ. 2017.
44. **Kipp K**, Giordanelli MD, Geiser CF. Neural network prediction of joint torques in Olympic weightlifting. *American Society of Biomechanics*. Boulder, CO. 2017.
45. Plunkett RD, Howenstein J, **Kipp K**, Sabick MB. Arm slot in relation to shoulder and elbow safety and efficiency in youth baseball pitchers. *American Society of Biomechanics*. Boulder, CO. 2017.
46. Mathews J, Howenstein J, **Kipp K**, Sabick MB. Comparison of kinematic and kinetic profiles of lower limbs during baseball pitching in adolescent pitchers. *American Society of Biomechanics*. Boulder, CO. 2017.
47. Howenstein J, **Kipp K**, Sabick MB. Kinematic predictors or energy flow in youth baseball pitchers. *American Society of Biomechanics*. Boulder, CO. 2017.
48. Howenstein J, **Kipp K**, Sabick MB. Energy flow in youth baseball players in relation to pitching performance and efficiency. *American Society of Biomechanics*. Boulder, CO. 2017.
49. Malloy PJ, Giordanelli M, Zaferiou A, Neumann D, **Kipp K**. Sagittal plane hip impulse during gait is greater after surgical intervention for femoroacetabular impingement syndrome. *American Society of Biomechanics*. Boulder, CO. 2017.
50. Geiser CF, Giordanelli MD, Legler L, Kost C, Malloy PJ, **Kipp K**. Muscle synergies in female athletes with and without generalized joint hypermobility during a land and cut task. *American Society of Biomechanics*. Boulder, CO. 2017.
51. **Kipp K**. Neural network prediction of barbell kinematics from joint kinetics in weightlifting. *International Society of Biomechanics in Sports*. Cologne, Germany. 2017.
52. **Kipp K**, Kiely MT, Giordanelli MD, Malloy PJ, Geiser CF. Subject- and joint-specific strategies used by male basketball players to maximize countermovement jump height. *International Society of Biomechanics in Sports*. Cologne, Germany. 2017.
53. Miller AC, Ryan KS, Uhrich TD, **Kipp K**. Bilateral correlations between peak ground reaction forces and bone mineral density in male collegiate runners. *American College of Sports Medicine*. Denver, CO. 2017.
54. Ryan KS, Miller AC, Uhrich TD, **Kipp K**. Regional differences in bone mineral density in male collegiate runners with different foot-strike patterns. *American College of Sports Medicine*. Denver, CO. 2017.
55. Giordanelli M, Malloy PJ, Neumann D, **Kipp K**. Altered hip muscle activation during gait in individuals with symptomatic femoroacetabular impingement. *Combined Sections Meeting*. San Antonio, TX. 2017.
56. Malloy PJ, Starsky A, Heinrich J, Neumann D, **Kipp K**. People with symptomatic femoroacetabular impingement demonstrate higher muscle utilization ratios during gait than healthy controls. *Combined Sections Meeting*. San Antonio, TX. 2017.
57. Geiser CF, Kiely MT, Giordanelli MD, Jandrin T, Malloy PJ, **Kipp K**. Musculotendinous stiffness is lower in division I women's basketball athletes with generalized joint hypermobility. *American Society of Biomechanics*. Raleigh, NC. 2016.
58. Kiely MT, Malloy PJ, Giordanelli MD, Jandrin T, Geiser CF, **Kipp K**. The effect of jump type and load on ground reaction force variables. *American Society of Biomechanics*. Raleigh, NC. 2016.
59. Malloy PJ, Kiely MT, Giordanelli MD, Geiser CF, **Kipp K**. Task specific kinematic and kinetic differences in people with symptomatic femoroacetabular impingement. *American Society of Biomechanics*. Raleigh, NC. 2016.



60. Meinerz CM, Fritz JM, **Kipp K**, Harris GF, Vetter C. Running to the beat: does listening to music affect running cadence and biomechanics? *American Society of Biomechanics*. Raleigh, NC. 2016.
61. Malloy PJ, Morgan AM, Giordanelli MD, Starsky A, Heinrich J, Neumann D, Geiser CF, **Kipp K**. Persons with symptomatic femoroacetabular impingement do not demonstrate differences in sagittal plane hip biomechanics during gait despite significantly less hip flexion range of motion and maximal hip flexor torque. *Combined Sections Meeting*. Anaheim, CA. 2016.
62. **Kipp K**, Giordanelli MD, Malloy PJ, Jandrin T, Geiser CF. Muscle architectural parameters predict force-velocity parameters derived from loaded countermovement jumps. *American Society of Biomechanics*. Columbus, OH. 2015.
63. Morgan AM, Malloy PJ, Geiser CF, **Kipp K**. Audio and visual biofeedback as methods of gait retraining to reduce tibial acceleration upon foot strike. *American Society of Biomechanics*. Columbus, OH. 2015.
64. Malloy PJ, Morgan AM, Geiser CF, **Kipp K**. Patients with femoroacetabular impingement (FAI) demonstrate different lower extremity coordination compared to healthy controls during a double leg squat task. *American Society of Biomechanics*. Columbus, OH. 2015.
65. Geiser CF, Morgan AM, Malloy PJ, **Kipp K**. Generalized joint hypermobility does not affect ground reaction force variables during vertical countermovement jumps. *American Society of Biomechanics*. Columbus, OH. 2015.
66. **Kipp K**. Stretch-shortening-cycle behavior of the knee extensor muscle-tendon unit during the power clean. *International Society of Biomechanics in Sports*. Poitiers, France. 2015.
67. **Kipp K**, Kiely MT, Geiser CF. Changes in principal component structure of countermovement jumps after a volleyball season. *International Society of Biomechanics in Sports*. Poitiers, France. 2015.
68. Giordanelli MD, Geiser CF, Malloy PJ, Morgan A, **Kipp K**. Acute increases in ankle dorsiflexion range of motion alter knee mechanics in active college age females. *National Athletic Trainers Association*. St Louis, MO. 2015.
69. Geiser CF, Meinerz CM, Malloy PJ, **Kipp K**. Generalized joint hypermobility alters frontal plane knee loading During a drop jump task in division 1 female athletes. *ACL Retreat V*. Greensboro, NC. 2015.
70. Giordanelli MD, Geiser CF, Malloy PJ, Morgan A, **Kipp K**. Acute increases in ankle dorsiflexion range of motion alter knee mechanics in active college age females. *Great Lakes Athletic Trainers Association*. Milwaukee, WI. 2015.
71. Garbarz J, Geiser CF, Meinerz CM, Malloy PJ, **Kipp K**. Analysis of a weight-bearing method to assess bilateral hip muscle strength. *Combined Sections Meeting*. Indianapolis, IN. 2015.
72. **Kipp K**, Harris C. Associations between ground reaction force and barbell accelerations in weightlifting. *International Society of Biomechanics in Sports*. Johnsonville, TN. 2014.
73. **Kipp K**, Harris C. Musculoskeletal gearing of the lower extremities across submaximal loads in weightlifting. *International Society of Biomechanics in Sports*. Johnsonville, TN. 2014.
74. Geiser CF, Meinerz CM, Malloy PJ, **Kipp K**. Generalized joint hypermobility alters frontal plane knee joint loading during a single land and cut task in female collegiate division I lacrosse athletes. *International Society of Biomechanics in Sports*. Johnsonville, TN. 2014.
75. **Kipp K**, Wenson SE, Meinerz CM, Malloy PJ, Geiser CF, Morgan A. Functional cluster analysis of frontal-plane knee joint torques. *World Congress of Biomechanics*. Boston, MA. 2014.
76. Malloy PJ, Meinerz CM, Morgan AM, Geiser CF, **Kipp K**. Female athletes with ACL reconstruction demonstrate similar muscle synergy patterns to healthy athletes during a drop vertical jump. *World Congress of Biomechanics*. Boston, MA. 2014.
77. Morgan AM, Meinerz CM, Malloy PJ, Geiser CF, **Kipp K**. Audio and visual biofeedback as methods of gait retraining to reduce tibial acceleration upon foot strike. *World Congress of Biomechanics*. Boston, MA. 2014.
78. Geiser CF, Meinerz CM, Malloy PJ, **Kipp K**. Generalized joint hypermobility alters muscle activation patterns in division 1 female athletes. *National Athletic Trainers Association*. Indianapolis, IN. 2014.

79. Walczak SA, Meinerz CM, Malloy PJ, Wenson SE, Morgan AM, Geiser CF, **Kipp K**. Associations between landing mechanics and biomotor performance. *American College of Sports Medicine*. Orlando, FL. 2014.
80. Wenson SE, Walczak SA, Meinerz CM, Morgan AM, Malloy PJ, Geiser CF, **Kipp K**. Correlation between two clinical assessments of jump landing mechanics. *American College of Sports Medicine*. Orlando, FL. 2014.
81. **Kipp K**, Geiser CF, Meinerz CM, Wood CM, Watson KD. Kinematic comparison of successful and unsuccessful landings during unanticipated movement tasks. *American Society of Biomechanics*. Omaha, NE. 2013.
82. Malloy PJ, Geiser CF, Meinerz CM, Wood CM, Watson KD, **Kipp K**. Associations between clinical dorsiflexion range of motion and landing mechanics during a drop jump. *American Society of Biomechanics*. Omaha, NE. 2013.
83. Geiser CF, Meinerz CM, Wood CM, Watson KD, **Kipp K**. External rotation strength impacts lower extremity mechanics during unanticipated landing activities in collegiate female soccer players. *American Society of Biomechanics*. Omaha, NE. 2013.
84. **Kipp K**, Harris C. Effective mechanical advantage of the knee joint across submaximal loads while performing the clean. *National Strength and Conditioning Association*. Las Vegas, NV. 2013.
85. **Kipp K**, Harris C. Patterns of barbell acceleration during the snatch in weightlifting competition. *National Strength and Conditioning Association*. Las Vegas, NV. 2013.
86. Meinerz CM, Geiser CF, Wood CM, **Kipp K**. Hip external rotation strength impacts frontal plane hip motion during unanticipated landing and cutting activities in collegiate female soccer players. *National Athletic Trainers Association*. Las Vegas, NV. 2013.
87. **Kipp K**, Malowanski C, Palmieri-Smith RM. Muscle synergies during side-cutting in people with chronic ankle instability. *American College of Sports Medicine*. Indianapolis, IN. 2013.
88. Frett H, Meinerz CM, Geiser CF, **Kipp K**. Principal components analysis of ground reaction forces while running at different speeds. *American College of Sports Medicine*. Indianapolis, IN. 2013.
89. Garceau L, Geiser CF, **Kipp K**, Starsky AJ. Lower body muscle activation is similar when running on a curved non-motorized treadmill and flat motorized treadmill. *American College of Sports Medicine*. Indianapolis, IN. 2013.
90. Harris C, **Kipp K**. Factor analysis of weightlifting biomechanics during the snatch lift. *American College of Sports Medicine*. Indianapolis, IN. 2013.
91. Watson KD, Wood C, **Kipp K**. Fatigue deleteriously alters muscle activation patterns during landing and cutting tasks. *American College of Sports Medicine*. Indianapolis, IN. 2013.
92. Wood C, **Kipp K**. Audio biofeedback as a method of gait retraining to reduce tibial acceleration on foot strike. *American College of Sports Medicine*. Indianapolis, IN. 2013.
93. **Kipp K**, Hoffman S. Lower extremity biomechanics and barbell position during a weightlifting movement. *National Strength and Conditioning Association*. Providence, RI. 2012.
94. Vogel C, Holtz K, **Kipp K**. Acute exercise has deleterious effects on muscle activation during a cutting but not landing task. *National Strength and Conditioning Association*. Providence, RI. 2012.
95. Garceau L, Geiser CF, **Kipp K**, Starsky AJ. Flat motorized and curved non-motorized treadmills: analysis of heart rate, perceived exertion and running speed. *National Strength and Conditioning Association*. Providence, RI. 2012.
96. **Kipp K**, Vogel C, Holtz K. Vertical jump performance is associated with principal component-derived time-varying ground reaction force features. *National Strength and Conditioning Association*. Providence, RI. 2012.
97. Vogel C, Holtz K, **Kipp K**. Fatigue-induced increases in quadriceps-to-hamstring muscle activation ratios are associated with increases in sagittal-plane tibial accelerations during a cutting task. *Wisconsin Physical Therapy Association*. Pewaukee, WI. 2012.
98. Garceau L, Geiser CF, **Kipp K**, Starsky AJ. Kinematics and perceived effort of running on a curve® vs. standard treadmill. *Wisconsin Physical Therapy Association*. Pewaukee, WI. 2012.

99. **Kipp K**, Palmieri-Smith R. Chronic ankle instability alters the kinematic control strategy of ankle joint motions. *American College of Sports Medicine*. San Francisco, CA. 2012.
100. **Kipp K**, Palmieri-Smith RM. Principal component based analysis of biomechanical inter-trial variability in individuals with chronic ankle instability. *Gait and Clinical Movement Analysis Society*. Grand Rapids, MI. 2012.
101. **Kipp K**, Johnson ST, Hoffman MA. Functional data analysis of spinal-reflex recruitment curves. *American College of Sports Medicine*. Denver, CO. 2011.
102. **Kipp K**, Brown T, McLean S, Palmieri-Smith R. Altered knee muscle reflex activity during a cutting maneuver is influenced by motor learning not neuromuscular training. *American Society of Biomechanics*. Providence, RI. 2010.
103. Johnson ST, **Kipp K**, Hoffman MA. Rate of torque development differs between the sexes during time-critical periods. *National Athletic Trainers Association*. Philadelphia, PA. 2010.
104. **Kipp K**, McLean SG, Brown TN, Palmieri-Smith RM. Frontal-plane knee motion during anticipated and unanticipated cutting in recreational and elite female athletes. *American College of Sports Medicine*. Baltimore, MD. 2010.
105. **Kipp K**, Redden J, Harris C, Sabick MB. 2012. Kinematic and kinetic patterns in Olympic weightlifting. *International Society of Biomechanics in Sports*. Marquette, MI. 2010.
106. **Kipp K**, McLean SG, Palmieri-Smith RM. Patterns of hip flexion motion predict knee abduction torques during a single-leg land and cut maneuver. *ACL Retreat V*. Greensboro, NC. 2010.
107. Pfeiffer, RP, **Kipp K**, Sabick, MB, Kuhlman, S, Sutter, J, Shea, KG. Gender differences in lower extremity landing mechanics in youth soccer players performing a single-leg landing. *ACL Retreat V*. Greensboro, NC. 2010.
108. **Kipp K**, Doeringer J, Johnson ST, Hoffman MA. The effects of whole-body vibration on neural excitability and intrinsic pre-synaptic inhibition. *American College of Sports Medicine*. Seattle, WA. 2009.
109. Hong J, **Kipp K**, Oh J, Hoffman MA. The acute effects of whole body vibration on electromechanical delay and rate of force development. *American College of Sports Medicine*. Seattle, WA. 2009.
110. Doeringer J, **Kipp K**, Johnson ST, Hoffman MA. The short-term effects of whole-body vibration on the spinal reflex activation of the soleus and gastrocnemius. *American College of Sports Medicine*. Seattle, WA. 2009.
111. Johnson ST, **Kipp K**, Yun J, Hoffman MA. Spinal mechanisms contributing to rate of force development. *American College of Sports Medicine*. Seattle, WA. 2009.
112. **Kipp K**, Pavol MJ. Effects of the seat armrest and assistive devices on lumbar kinetics during dependent transfers on an aircraft. *North American Congress on Biomechanics*. Ann Arbor, MI. 2008.
113. **Kipp K**, Pavol MJ. Effects of the seat armrest and assistive devices on trunk kinematics during dependent transfers on an aircraft. *Human Factors and Ergonomics Society*. New York, NY. 2008.
114. Pavol M, Higginson B, **Kipp K**. Biomechanics of dependent transfers on an aircraft. *International Conference on Aging, Disability and Independence*. St. Petersburg, FL. 2008.
115. **Kipp K**, Pavol MJ. Predictors of lumbar loading during dependent transfer on board an aircraft. *Northwest Biomechanics Symposium*. Boise, ID. 2008.
116. Pfeiffer R, Sabick M, Clarke D, Kuhlman S, Shea K, **Kipp K**, Kipp K. Effects of gender on lower extremity muscle activation in children performing a single-leg landing task. *American Society of Biomechanics*. Palo Alto, CA. 2007.
117. **Kipp K**, Harris C, Sabick M, Kuhlman S, Redden J. Lower extremity joint power production during Olympic weightlifting exercise. *American College of Sports Medicine*. Denver, CO. 2006.
118. Bennett M, Berg K, Harris C, **Kipp K**, DeBeliso M, Adams K. The effects of sprinting induced fatigue on ground reaction force symmetry in jump landing kinetics. *American College of Sports Medicine*. Denver, CO. 2006.

119. Berg K, Harris C, **Kipp K**, DeBeliso M, Bennett M. The effects of fatigue from rapid acceleration and decelerations on jump landing kinetics. *American College of Sports Medicine*. Denver, CO. 2006.
120. Pfeiffer R, Sabick M, **Kipp K**, Kipp K, DeBeliso M, Shea K. Effects of gender on landing mechanics in an unanticipated landing task in children. *American College of Sports Medicine*. Denver, CO. 2006.
121. Sabick M, **Kipp K**, Pfeiffer R. Differences in joint kinetics due to choice of body segment parameters. *International Society of Biomechanics*. Cleveland, OH. 2005.
122. Redden J, **Kipp K**, Harris C, Conroy M. The effects of different warm-up strategies in the clean movement in Olympic weightlifting. *National Strength and Conditioning Association*. Las Vegas, NV. 2005.
123. **Kipp K**, Harris C, Pfeiffer R, Sabick M, DeBeliso M. Effects of a dynamic resistive exercise warm-up on subsequent shot put performance. *Northwest American College of Sports Medicine*. Moscow, ID. 2005.
124. **Kipp K**, Sabick M, DeBeliso M. Reliability of a kinematic model of the upper extremity. *American Society of Biomechanics*. Portland, OR. 2004.

### INVITED PRESENTATIONS

1. **Kipp K**. Accelerating weightlifting performance: biomechanical insights beyond bar path. *USA Weightlifting Online Coaching Symposium*. USA Weightlifting. 2021.
2. **Kipp K**. Applied aspects in the training of weightlifters. *International Master in Sports Training and Nutrition*. Escuela Universitaria Real Madrid / Universidad Europea. 2021.
3. **Kipp K**. Practical biomechanical applications for weightlifting performance. *3° Simposio de Ciencias Aplicadas al Deporte*. Chilean Department of Sport. Santiago, Chile. 2021.
4. **Kipp K**. Weightlifting biomechanics. *USA Weightlifting Online Speaker Series*. USA Weightlifting. 2020.
5. **Kipp K**. Science and practice in weightlifting. *International Master in Sports Training and Nutrition*. Escuela Universitaria Real Madrid / Universidad Europea. Madrid, Spain. 2020.
6. **Kipp K**. Weightlifting biomechanics: selected thoughts. *Sports Biomechanics Lecture Series*. Sports Biomechanics Online. 2020.
7. **Kipp K**. Contemporary topics in sports biomechanics. *Fulbright Espana Mid-year Seminar*. Universidad de Murcia. Murcia, Spain. 2020.
8. **Kipp K**. Integrated sports performance: perspective from the American collegiate system. *International Master in Football Coaching and Management*. Escuela Universitaria Real Madrid / Universidad Europea. Madrid, Spain. 2020.
9. Moon S, Devos H, **Kipp K**. Scoping review on artificial neural networks in neurorehabilitation research: current status and future avenues. *Annual Congress of Rehabilitation Medicine*. Chicago, IL. 2019.
10. **Kipp K**. Neural Network Applications in Sports Performance Settings. *Great Lakes Analytics Conference*. University of Wisconsin – Stevens Point. Stevens Point, WI. 2019.
11. **Kipp K**. Applications of Machine Learning in Exercise Science Research. *Exercise and Rehabilitation Sciences Graduate Seminar*. Marquette University, WI. 2019.
12. **Kipp K**. Stretch-shortening cycle function and applications for high-intensity exercise performance. *Wisconsin Strength and Conditioning Conference*. Waukesha, WI. 2017.
13. **Kipp K**. Defeating gravity: The biomechanics of weightlifting. *Clinical and Translational Rehabilitation Health Sciences Graduate Seminar*. Marquette University, WI. 2015.
14. **Kipp K**. Performance and training models for the throws in track and field. *Wisconsin Strength and Conditioning Conference*. Waukesha, WI. 2015.
15. **Kipp K**. Weightlifting biomechanics. *Wisconsin Strength and Conditioning Conference*. Waukesha, WI. 2014.
16. **Kipp K**. Novel feedback paradigms in sports biomechanics. *Kinesiology Department Seminar*. University of Wisconsin, Milwaukee, WI. 2014.

17. **Kipp K.** Lower extremity and barbell biomechanics during weightlifting. *Conference on Sport Science for Enhancement of Athletic Performance*. Korean Nationals Sports University, Seoul, Korea. 2013.
18. **Kipp K.** Sensorimotor integration in chronic ankle instability. *Integrative Neuroscience Research Center*. Marquette University, WI. 2011.
19. **Kipp K.** Single-subject analyses in human movement research. *Advanced Rehabilitation Research Seminar*. University of Michigan, MI. 2010.
20. **Kipp K.** Neuromuscular function and biomechanical control in patients with functional ankle instability. *Advanced Rehabilitation Research Seminar*. University of Michigan, MI. 2010.
21. Pavol M, Higginson B, **Kipp K**, Welsh L. Biomechanics of dependent transfers on an aircraft. *ICDR-IST State-of-the-Art Conference: Technologies and Strategies for Physical Transfer of Individuals with Motor Impairments*. Washington, DC. 2007.

## **RESEARCH FUNDING**

### **Current Support – Extramural:**

None

### **Current Support – Intramural:**

Marquette University – Explorer Challenge

*Restorative Justice in Movement: Trauma-Informed Athletic Practice Partnership*

Role (Co-I)                      Total Amount: \$24,980                      07/01/21-06/30/22

### **Pending Support – Extramural:**

None

### **Pending Support – Intramural:**

None

### **Completed Support – Extramural:**

National Science Foundation – SBIR Phase II (with Kaliber Imaging, Inc)

*Mobility Monitor: An autonomous intelligent system developed to quantitatively determine mobility*

Role (Co-PI)                      Total Amount: \$104,504                      10/01/13-09/30/15

Milwaukee Brewers Sports Medicine Research Group

*Effects of Choice Reaction Time and Decision Making on Base Running Performance*

Role (PI)                      Total Amount: \$5,650                      01/01/14-12/31/14

John C. Erkkila, M.D. Endowment for Health and Human Performance

*Persistent Effects of Muscle Fatigue on Landing Mechanics in Women and Men*

Role (Co-I)                      Total Amount: \$12,402                      6/01/08-5/31/09

### **Completed Support – Intramural:**

Athletic and Human Performance Research Center (AHPRC) – Pilot Grant

*Training Loads and Injury Risk in Male and Female College Basketball Players*

Role (Co-PI)                      Total Amount: \$15,000                      01/01/19-06/30/19

Strategic Innovation Fund – Marquette University

*Human Performance Assessment Core (Develop, equip, and staff a fee-for-service exercise testing facility)*

Role (Co-PI)                      Total Amount: \$400,000                      06/1/15-05/31/18

Department of Orthopaedic Surgery – Medical College of Wisconsin  
*Music as a device to alter cadence and lower extremity energy absorption during distance running*  
Role (Co-I)            Total Amount: \$2,000            07/01/15-06/31/16

Committee on Research – Marquette University  
*Effects of ankle flexibility training on ACL injury risk factors*  
Role (PI)            Total Amount: \$9,860            06/1/15-12/31/15

Department of Orthopaedic Surgery – Medical College of Wisconsin  
*Vibration training effect on the biomechanics related to anterior cruciate ligament injury*  
Role (Co-I)            Total Amount: \$2,000            06/01/13-05/31/14

Regular Research Grant – Marquette University  
*Feasibility of Real-time Audio Feedback to Reduce Impact Accelerations during Running*  
Role (PI)            Total Amount: \$4,200            07/01/12-12/31/12

Summer Faculty Fellowship – Marquette University  
*Muscle Activation and Joint Stability in People with Ankle Instability*  
Role (PI)            Total Amount: \$5,500            06/01/12-06/31/12

ARRT Program – NIDRR Research Stipend – University of Michigan  
*Arthrogenic Muscle Inhibition in Chronic Ankle Instability Patients*  
Role (PI)            Total Amount: \$2,000            02/08/11-02/08/12

**Not Funded – Extramural:**

Ministry of Sports of Saudi Arabia – Prince Faisal bin Fahad Award for Sports Research  
*Improving Saudi Arabian football: a targeted approach on identifying modifiable muscle activation and contractile properties in young Saudi players*  
Role (Co-PI)            Total Amount: \$120,000            07/01/21-05/30/22

JPC-8/CRM RP FY 17-18 DMRDP (Neuromusculoskeletal Injuries Research Award) – US Department of Defense  
*Prevention of secondary health effects associated with femoroacetabular impingement in military personnel (DM170384)*  
Role (PI)            Total Amount: \$915,517            6/1/17-05/31/20

JPC-8/CRM RP FY 16-17 DMRDP (Neuromusculoskeletal Injuries Research Award) – US Department of Defense  
*Femoroacetabular impingement in military personnel (MR150077)*  
Role (PI)            Total Amount: \$924,611            6/1/16-05/31/19

NBA & GE Orthopedics and Sports Medicine Collaboration – NBA & GE Healthcare  
*Longitudinal associations between training / competition loads and tendon structure / function in male and female NCAA division I basketball players*  
Role (PI)            Total Amount: \$238,835            6/1/16-12/31/17

W911QY-15-R-0016 – US Army (Natick Soldier Research, Development, and Engineering Center)  
*Development of IMU- and app-based technologies to monitor and provide real-time biofeedback on warfighter performance*  
Role (PI)            Total Amount: \$1,923,247            01/1/16-12/31/18

Clinical & Translational Science Institute – Medical College of Wisconsin  
*Peripheral and Supra-spinal Modulators of Muscle Inhibition in People with Chronic Ankle Instability*  
Role (PI) Total Amount: \$45,508 04/01/14-03/31/15

Clinical & Translational Science Institute – Medical College of Wisconsin  
*Impacting Landing Mechanics and Knee Injury Risk by Altering Ankle Dorsiflexion Range of Motion*  
Role (Co-I) Total Amount: \$37,556 04/01/14-03/31/15

Clinical & Translational Science Institute – Medical College of Wisconsin  
*Spinal and Supra-spinal Modulators of Muscle Inhibition in People with Chronic Ankle Instability*  
Role (PI) Total Amount: \$45,508 04/01/13-03/31/14

National Institute of Health – NIAMS (F32)  
*Arthrogenic Muscle Inhibition and Neuromechanics in Ankle Instability*  
Role (PI) Total Amount: \$52,154 6/01/11-5/31/12

**Not Funded – Intramural:**

Committee on Research – Marquette University  
*Associations between Training Loads and Tendon Structure in NCAA Division I Basketball Players*  
Role (PI) Total Amount: \$9,645 07/01/19-12/31/19

Committee on Research – Marquette University  
*Validity of acoustoelasticity as a tool in biomechanics research*  
Role (PI) Total Amount: \$11,248 07/01/17-12/31/17

Strategic Innovation Fund – Marquette University  
*FitBeing (Development of Wearable EMG Technologies)*  
Role (Co-I) Total Amount: \$264,350 06/1/15-05/31/16

Summer Faculty Fellowship – Marquette University  
*Developing Musculoskeletal Models for Biomechanics Research*  
Role (PI) Total Amount: \$5,500 06/01/14-06/31/14

Way Klingler Teaching Enhancement Award – Marquette University  
*Integrating Interactive Media into Undergraduate Research and Laboratory-Based Classes in Exercise Physiology*  
Role (Co-PI) Total Amount: \$20,000 01/01/14-12/31/14

Way Klingler Teaching Enhancement Award – Marquette University  
*Integrating Interactive Media into Undergraduate Research and Laboratory-Based Classes in Exercise Physiology*  
Role (Co-PI) Total Amount: \$20,000 01/01/13-12/31/13

## **MENTORING EXPERIENCE**

### **PhD Level**

#### ***Primary Advisor***

Nayun Ahn – Department of Physical Therapy – EXRS (2019-present)

Marwan Aljohani – Department of Physical Therapy – CTRH (2014-2019)

Christopher Geiser – Department of Physical Therapy – CTRH (2013-present)

Mike Haischer – Department of Physical Therapy – EXRS (2019-present)

Hoon Kim – Department of Physical Therapy – CTRH (2017-2020)

Philip Malloy\* – Department of Physical Therapy – CTRH (2012-2017)

\* Recipient of *Promotion of Doctoral Studies II Scholarship* from the Foundation for Physical Therapy

#### ***Committee Member***

Tim Boerger – Department of Physical Therapy – CTRH (2019-2021)

Stephanie Raab – Department of Physical Therapy – CTRH (2020-present)

#### ***External Committee Member***

John Krzyszkowski – Texas Tech University – (2021-present)

### **MS Level**

#### ***Primary Advisor***

Mike Kiely – Department of Physical Therapy – CTRH (2014-2016)

John Krzyszkowski – Department of Physical Therapy – CTRH (2017-2019)

Alec Miller – Department of Physical Therapy – CTRH (2017-2019)

Alex Morgan – Department of Physical Therapy – CTRH (2013-2015)

Will Wolf – Department of Physical Therapy – CTRH (2017-2019)

#### ***Co-Advisor***

Tia Jandrin – Department of Physical Therapy – CTRH (2014-2016)

#### ***Committee Member***

Emily Schaefer – Department of Biomedical Engineering – BIEN (2016)

### **Undergraduate Level (SRP students, EXPH interns, or undergraduate research assistants)**

Sandra Dahling

Jessie Julian

Kevin Ryan

Jonathan Eskra

Michael Kiely

Jordan Smith

Hannah Frett

Courtney Kost

Chris Van Saders

Gretchen Geiser

John Krzyszkowski

Casey Vogel

Matthew Giordanelli

Lydia Legler

Steven Walczak

Christine Grossman

Camilla Malowanski

Krista Watson

Mike Haischer

Carolyn Meinerz

Samantha Wenson

Jordi Heeneman

Alec Miller

Claire Wood

Rachel Johnson

Alexander Morgan



## **SERVICE**

### **Marquette University – Department Level (Department of Physical Therapy)**

2017-present	Director of Disciplinary Honors Program in EXPH
2018	Search Committee Chair for Clinical EXPH Faculty Position
2016-2017	Distinguished Scholars Selection Committee Member
2014-2018	Scholarship Committee Member
2013-2014	Academic Standards Committee Member

### **Marquette University – University Level**

2021-present	Member of Data Science @ Marquette Steering Group
2019-present	Advisory Board Member for Northwestern Mutual Data Science Initiative
2015-present	Advisory Board Member for Marquette University's AHPRC
2018	Search Committee Member for Vice Provost, Corporate Engagement
2018	Search Committee Member for University Assessment Director
2016-2018	Marquette Forum Steering Committee Member
2016	Marquette University Food Service Advisory Group Member
2015-2018	College representative to University Academic Senate

### **Grant Reviewer**

2018	Fonds Wetenschappelijk Onderzoek – Vlandereen (Flanders Research Foundation – Belgium).
2015	Stimulus for Enhancing Extramural Development Program (UW – Milwaukee)
2015	Stimulus Program to Accelerate Research Clusters (UW – Milwaukee)
2012	M.J. Murdock Charitable Trust Foundation
2010	CTSA Health Professionals Research Training Program (MICHR – University of Michigan)

### **Manuscript Reviewer**

<i>Adapted Physical Activity Quarterly</i>	<i>Journal of Mechanical Engineering Science</i>
<i>American Journal of Sports Medicine</i>	<i>Journal of Motor Behavior</i>
<i>Biology of Sport</i>	<i>Journal of Musculoskeletal and Neuronal Interactions</i>
<i>Clinical Kinesiology</i>	<i>Journal of NeuroEngineering and Rehabilitation</i>
<i>Computer Methods in Biomechanics and Biomedical Engineering</i>	<i>Journal of Science and Medicine in Sport</i>
<i>Experimental Gerontology</i>	<i>Journal of Sport and Health Science</i>
<i>European Journal of Sports Science</i>	<i>Journal of Sports Rehabilitation</i>
<i>Frontiers in Physiology</i>	<i>Journal of Sports Science and Medicine</i>
<i>Frontiers in Sports and Active Living</i>	<i>Journal of Strength and Conditioning Research</i>
<i>Gait and Posture</i>	<i>Medicine and Science in Sports and Exercise</i>
<i>Human Movement Science</i>	<i>Muscle &amp; Nerve</i>
<i>International Journal of Neuroscience</i>	<i>PLOS One</i>
<i>International Journal of Sports Physiology and Performance</i>	<i>Research in Sports Medicine</i>
<i>IEEE Journal of Biomedical and Health Informatics</i>	<i>Research Quarterly for Exercise and Sport</i>
<i>Journal of Applied Biomechanics</i>	<i>Scandinavian Journal of Medicine &amp; Science in Sports</i>
<i>Journal of Athletic Training</i>	<i>Scientific Reports</i>
<i>Journal of Biomechanics</i>	<i>Sports</i>
<i>Journal of Electromyography and Kinesiology</i>	<i>Sports Biomechanics</i>
	<i>The Knee</i>

### **Editorial Service**

2019-2021 Member of editorial board; *Sports Biomechanics*

### **Professional Society**

2020-2022 Board of Directors; International Society of Biomechanics in Sports

2021 Session chair (Upper Body & Throwing); ISBS Annual Meeting

2021 Member of nomination committee; International Society of Biomechanics in Sports

2021 Co-organizer and session moderator (Neural Networks); Virtual ISBS Mid-Year Symposium

2019 Session chair (Methods & Injury Prevention); ISBS Annual Meeting

2019 Abstract reviewer; IEEE EMBS Conference on Biomedical & Health Informatics

2018-2021 Abstract reviewer; ISBS Annual Meeting

2018-2021 Faculty mentor; ISBS Student Mentor Program

2018 Session chair (Motor Control); ISBS Annual Meeting

2017 Session co-chair (Human Performance); ASB Annual Meeting

### **HONORS/AWARDS**

2020 Fulbright Intercountry-Travel Award (University of Jyväskylä, Finland)

2020 Fulbright Intercountry-Travel Award (Galway Mayo Institute of Technology, Ireland)

2020 Fulbright Senior Scholar Award (Universidad Europea de Madrid, Spain)

2015 Marquette University Summer Faculty Research Fellowship

2013 Advisory Board of the Korean Coaching Association for Strength & Conditioning

2012 Marquette University Summer Faculty Research Fellowship

2009 National Research Service Award (Fellow on Institutional T32)

2006 Ava Milam Clark Fellowship, OSU Nutrition & Exercise Science Department

2005 BSU Kinesiology Department – Graduate student of the year

2004 American Society of Biomechanics student travel award

2003 BSU International Student & Kinesiology Department Scholarship

2003 BSU Kinesiology Department – Undergraduate student of the year

2003 Western Athletic Conference outstanding academic achievement as student-athlete

### **PROFESSIONAL MEMBERSHIPS**

American Homebrewing Association (AHA)

International Society of Biomechanics in Sports (ISBS)