

# Sports Medicine

## Division Details

### RESEARCH AND TRAINING DETAILS

Faculty	9
Joint Appointment Faculty	2
Research Graduate Students	2
Total Annual Grant Award Dollars	\$364,073
Total Annual Industry Award Dollars	\$1,102,258
Total Publications	48

### CLINICAL ACTIVITIES AND TRAINING

Staff Physicians	4
Clinical Fellows	2



Row 1: P Gubanich, A Kiefer, K Logan, K Berz

Row 2: C Quatman-Yates, G Walker, G Myer

## Research Highlights

### Significant Funding and Individual Awards

In FY16, with funding from the National Institutes of Health (NIH), the Division of Sports Medicine received a five year grant (Real-Time Sensorimotor Feedback for Injury Prevention Assessed in Virtual Reality [1U01AR067997 - 01A1]) funding that capitalized on the technological advances with the creation and construction of a new state-of-the art facility called the SPORT Center.

[Adam Kiefer, PhD](#), and co-PI, received a [University of Cincinnati Strategic Collaborative Grant Program](#) with the proposal titled, "Development of a neurophysiologically integrated exoskeleton for sit-to-stand transitions."

[Mark Paterno, PT, PhD, MBA, SCS, ATA](#), received the Excellence in Research Award this year from the Sports section of the APTA.

[Catherine Quatman-Yates, PT, DPT, PhD](#), received the 2016 [Pediatric Physical Therapy Journal](#) Toby Long Paper of the Year Award for her manuscript entitled "Post-concussion postural sway variability changes in youth: The benefit of structural variability analyses."

### 2016 Awards

In FY16 Division of Sports Medicine authors received the following awards:

- [American College of Sports Medicine](#) International Clinical Scholar Award. Reches A, Barber Foss KD, Weiss M, Thomas S. DiCesare C, Kiefer AW, Krueger D, Geva AB, Myer GD. Accumulated G forces sustained during hockey correlate with changes in brain network activation score.
- American Journal of Sports Medicine Systematic Review Award. Wiggins AJ, Grandhi RK, Schneider DK, Stanfield D, Webster KE, Myer GD. Risk of Secondary Injury in Younger Athletes after Anterior Cruciate Ligament Reconstruction: A Systematic Review and Meta-analysis.

- [American Academy of Orthopaedic Surgeons Kappa Delta/OREF Clinical Research Award](#). Hewett TE, Myer GD, Ford KR, Paterno, MV, Quatman CE. Mechanisms and Prevention of ACL Injuries: Cutting ACL Injury Risk with Finley Sharpened Tools.
- [British Journal of Sports Medicine](#) Systematic Review Award. Sugimoto D, Myer GD, Foss KD, Hewett TE. Specific exercise effects of preventive neuromuscular training intervention on anterior cruciate ligament injury risk reduction in young females: meta- analysis and subgroup analysis.

---

## Division Publications

1. Bates NA, Nesbitt RJ, Shearn JT, Myer GD, Hewett TE. [Sex-Based Differences in Knee Ligament Biomechanics During Robotically Simulated Athletic Tasks](#). *J Biomech*. 2016; 49:1429-36.
2. Bates NA, Nesbitt RJ, Shearn JT, Myer GD, Hewett TE. [A Novel Methodology for the Simulation of Athletic Tasks on Cadaveric Knee Joints with Respect to in Vivo Kinematics](#). *Ann Biomed Eng*. 2015; 43:2456-66.
3. Bates NA, Nesbitt RJ, Shearn JT, Myer GD, Hewett TE. [Relative Strain in the Anterior Cruciate Ligament and Medial Collateral Ligament During Simulated Jump Landing and Sidestep Cutting Tasks: Implications for Injury Risk](#). *Am J Sports Med*. 2015; 43:2259-69.
4. Berz K, McCambridge T. [Amenorrhea in the Female Athlete: What to Do and When to Worry](#). *Pediatric Annals*. 2016; 45:E97-E102.
5. Cortes N, Stone H, Lincoln A, Hepburn L, Putukian M, Myer G, Caswell S. [Video Analysis Verification of Wearable Sensor-Based Head Impacts: 2774 Board #297 June 3, 9: 30 Am - 11: 00 Am](#). *Med Sci Sports Exerc*. 2016; 48:780.
6. DiCesare CA, Bates NA, Barber Foss KD, Thomas SM, Wordeman SC, Sugimoto D, Roewer BD, Medina McKeon JM, Di Stasi S, Noehren BW, Ford KR, Kiefer AW, Hewett TE, Myer GD. [Reliability of 3-Dimensional Measures of Single-Leg Cross Drop Landing across 3 Different Institutions: Implications for Multicenter Biomechanical and Epidemiological Research on Acl Injury Prevention](#). *Orthop J Sports Med*. 2015; 3:2325967115617905.
7. DiCesare CA, Kiefer AW, Nalepka P, Myer GD. [Quantification and Analysis of Saccadic and Smooth Pursuit Eye Movements and Fixations to Detect Oculomotor Deficits](#). *Behav Res Methods*. 2015:1-9.
8. Donaworth M, Grandhi R, Logan K, Gubanich P, Myer G. [Is Current Medical Education Adequately Preparing Future Physicians to Manage Concussion: An Initial Evaluation](#). *Physician Sportsmed*. 2016; 44:1-7.
9. Dorrel B, Long T, Shaffer S, Myer G. [Evaluation of the Functional Movement Screen as an Injury Prediction Tool among Active Adult Populations: A Systematic Review and Meta-Analysis](#). *Sports Health*. 2015; 7:532-37.
10. Edwards NM, Myer GD, Kalkwarf HJ, Woo JG, Khoury PR, Hewett TE, Daniels SR. [Outdoor Temperature, Precipitation, and Wind Speed Affect Physical Activity Levels in Children: A Longitudinal Cohort Study](#). *J Phys Act Health*. 2015; 12:1074-81.
11. Faigenbaum AD, Lloyd RS, MacDonald J, Myer GD. [Citius, Altius, Fortius: Beneficial Effects of Resistance Training for Young Athletes: Narrative Review](#). *Br J Sports Med*. 2016; 50:3-7.
12. Fort-Vanmeerhaeghe A, Montalvo AM, Sitja-Rabert M, Kiefer AW, Myer GD. [Neuromuscular Asymmetries in the Lower Limbs of Elite Female Youth Basketball Players and the Application of the Skillful Limb Model of Comparison](#). *Phys Ther Sport*. 2015; 16:317-23.
13. Fort-Vanmeerhaeghe A, Romero-Rodriguez D, Montalvo AM, Kiefer AW, Lloyd RS, Myer GD. [Integrative Neuromuscular Training and Injury Prevention in Youth Athletes. Part I: Identifying Risk Factors](#). *Strength Cond J*. 2016; 38:36-48.

14. Herbst KA, Foss KDB, Fader L, Hewett TE, Witvrouw E, Stanfield D, Myer GD. **Hip Strength Is Greater in Athletes Who Subsequently Develop Patellofemoral Pain.** *Am J Sports Med.* 2015; 43:2747-52.
15. Hewett T, Ford K, Xu Y, Khoury J, Myer G. **Utilization of Acl Injury Biomechanical and Neuromuscular Risk Profile Analysis to Determine the Effectiveness of Neuromuscular Training: A Prospective Cohort Double Blind Randomized Controlled Trial.** *Orthop J Sports Med.* 2015; 3:1.
16. Hewett TE, Myer GD, Kiefer AW, Ford KR. **Longitudinal Increases in Knee Abduction Moments in Females During Adolescent Growth.** *Med Sci Sports Exerc.* 2015; 47:2579-85.
17. Hewett TE, Roewer B, Ford K, Myer G. **Multicenter Trial of Motion Analysis for Injury Risk Prediction: Lessons Learned from Prospective Longitudinal Large Cohort Combined Biomechanical - Epidemiological Studies.** *Braz J Phys Ther.* 2015; 19:398-409.
18. Kashikar-Zuck S, Tran ST, Barnett K, Bromberg MH, Strotman D, Sil S, Thomas SM, Joffe N, Ting TV, Williams SE, Myer GD. **A Qualitative Examination of a New Combined Cognitive-Behavioral and Neuromuscular Training Intervention for Juvenile Fibromyalgia.** *Clin J Pain.* 2016; 32:70-81.
19. Kiefer AW, Foss KB, Reches A, Gadd B, Gordon M, Rushford K, Laufer I, Weiss M, Myer GD. **Brain Network Activation as a Novel Biomarker for the Return-to-Play Pathway Following Sport-Related Brain Injury.** *Front Neurol.* 2015; 6:243.
20. Kiefer AW, Myer GD. **Training the Antifragile Athlete: A Preliminary Analysis of Neuromuscular Training Effects on Muscle Activation Dynamics.** *Nonlinear Dynamics Psychol Life Sci.* 2015; 19:489-510.
21. Kurowski BG, Hugentobler J, Quatman-Yates C, Taylor J, Gubanich PJ, Altaye M, Wade SL. **Aerobic Exercise for Adolescents with Prolonged Symptoms after Mild Traumatic Brain Injury: An Exploratory Randomized Clinical Trial.** *J Head Trauma Rehabil.* 2016.
22. LaPrade RF, Agel J, Baker J, Brenner JS, Cordasco FA, Cote J, Engebretsen L, Feeley BT, Gould D, Hainline B, Hewett T, Jayanthi N, Kocher MS, Myer GD, Nissen CW, Philippon MJ, Provencher MT. **Aossm Early Sport Specialization Consensus Statement.** *Orthop J Sports Med.* 2016; 4:2325967116644241.
23. Lloyd RS, Cronin JB, Faigenbaum AD, Haff GG, Howard R, Kraemer WJ, Micheli LJ, Myer GD, Oliver JL. **National Strength and Conditioning Association Position Statement on Long-Term Athletic Development.** *J Strength Cond Res.* 2016; 30:1491-509.
24. Luz J, Walker G, Edwards N, Pepin M, Faigenbaum A, Myer G, Stracciolini A. **Disease Centricity Versus Prevention? Physician Barriers to Pediatric Physical Activity Evaluation and Treatment: 2453 June 3, 11: 15 Am - 11: 30 Am.** *Med Sci Sports Exerc.* 2016; 48:673-4.
25. Myer G, Faigenbaum A, Edwards N, Clark J, Best T, Sallis R. **Sixty Minutes of What? A Developing Brain Perspective for Activating Children with an Integrative Exercise Approach.** *Br J Sports Med.* 2015; 49:1510-16.
26. Myer G, Jayanthi N, DiFiori J, Faigenbaum A, Kiefer A, Logerstedt D, Micheli L. **Sport Specialization, Part I: Does Early Sports Specialization Increase Negative Outcomes and Reduce the Opportunity for Success in Young Athletes?** *Sports Health.* 2015; 7:437-42.
27. Myer GD, Barber Foss KD, Gupta R, Hewett TE, Ittenbach RF. **Analysis of Patient-Reported Anterior Knee Pain Scale: Implications for Scale Development in Children and Adolescents.** *Knee Surg Sports Traumatol Arthrosc.* 2016; 24:653-60.
28. Myer GD, Jayanthi N, DiFiori JP, Faigenbaum AD, Kiefer AW, Logerstedt D, Micheli LJ. **Sports Specialization, Part II: Alternative Solutions to Early Sport Specialization in Youth Athletes.** *Sports Health.* 2016; 8:65-73.
29. Myer GD, Yuan W, Barber Foss KD, Smith D, Altaye M, Reches A, Leach J, Kiefer AW, Khoury JC, Weiss M, Thomas S, Dicesare C, Adams J, Gubanich PJ, Geva A, Clark JF, Meehan WP, 3rd, Mihalik JP, Krueger D. **The Effects of External Jugular Compression Applied During Head Impact Exposure on Longitudinal Changes in Brain Neuroanatomical and Neurophysiological Biomarkers: A Preliminary Investigation.** *Front Neurol.* 2016; 7:74.

30. Myer GD, Yuan W, Barber Foss KD, Thomas S, Smith D, Leach J, Kiefer AW, Dicesare C, Adams J, Gubanich PJ, Kitchen K, Schneider DK, Braswell D, Krueger D, Altaye M. **Analysis of Head Impact Exposure and Brain Microstructure Response in a Season-Long Application of a Jugular Vein Compression Collar: A Prospective, Neuroimaging Investigation in American Football.** *Br J Sports Med.* 2016; 50:1276-85.
31. Pappas E, Shiyko MP, Ford KR, Myer GD, Hewett TE. **Biomechanical Deficit Profiles Associated with Acl Injury Risk in Female Athletes.** *Med Sci Sports Exerc.* 2016; 48:107-13.
32. Paterno MV, Kiefer AW, Bonnette S, Riley MA, Schmitt LC, Ford KR, Myer GD, Shockley K, Hewett TE. **Prospectively Identified Deficits in Sagittal Plane Hip-Ankle Coordination in Female Athletes Who Sustain a Second Anterior Cruciate Ligament Injury after Anterior Cruciate Ligament Reconstruction and Return to Sport.** *Clin Biomech (Bristol, Avon).* 2015; 30:1094-101.
33. Petushek EJ, Cokely ET, Ward P, Durocher JJ, Wallace SJ, Myer GD. **Injury Risk Estimation Expertise: Assessing the Acl Injury Risk Estimation Quiz.** *Am J Sports Med.* 2015; 43:1640-7.
34. Petushek EJ, Ward P, Cokely ET, Myer GD. **Injury Risk Estimation Expertise: Interdisciplinary Differences in Performance on the Acl Injury Risk Estimation Quiz.** *Orthop J Sports Med.* 2015; 3:2325967115614799.
35. Quatman-Yates CC, Bonnette S, Hugentobler JA, Mede B, Kiefer AW, Kurowski BG, Riley MA. **Postconcussion Postural Sway Variability Changes in Youth: The Benefit of Structural Variability Analyses.** *Pediatr Phys Ther.* 2015; 27:316-27.
36. Read P, Oliver J, De S, Croix, MB, Myer G, Lloyd R. **Consistency of Field-Based Measures of Neuromuscular Control Using Force Plate Diagnostics in Elite Male Youth Soccer Players.** *J Strength Cond Res.* 2016.
37. Read P, Oliver JL, De Ste Croix MBA, Myer GD, Lloyd RS. **Injury Risk Factors in Male Youth Soccer Players.** *Strength Cond J.* 2015; 37:1-7.
38. Read PJ, Oliver JL, De Ste Croix MB, Myer GD, Lloyd RS. **The Scientific Foundations and Associated Injury Risks of Early Soccer Specialisation.** *J Sports Sci.* 2016:1-8.
39. Read PJ, Oliver JL, de Ste Croix MB, Myer GD, Lloyd RS. **Reliability of the Tuck Jump Injury Risk Screening Assessment in Elite Male Youth Soccer Players.** *J Strength Cond Res.* 2016; 30:1510-6.
40. Read PJ, Oliver JL, De Ste Croix MBA, Myer GD, Lloyd RS. **Assessment of Injury Risk Factors in Male Youth Soccer Players.** *Strength Cond J.* 2016; 38:12-21.
41. Schmitt L, Paterno M, Ford K, Myer G, Hewett T. **Strength Asymmetry and Landing Mechanics at Return to Sport after Anterior Cruciate Ligament Reconstruction.** *Med Sci Sports Exerc.* 2015; 47:1426-34.
42. Schneider DK, Grandhi RK, Bansal P, Kuntz GEt, Webster KE, Logan K, Barber Foss KD, Myer GD. **Current State of Concussion Prevention Strategies: A Systematic Review and Meta-Analysis of Prospective, Controlled Studies.** *Br J Sports Med.* 2016.
43. Schneider DK, Grawe B, Magnussen RA, Ceasar A, Parikh SN, Wall EJ, Colosimo AJ, Kaeding CC, Myer GD. **Outcomes after Isolated Medial Patellofemoral Ligament Reconstruction for the Treatment of Recurrent Lateral Patellar Dislocations: A Systematic Review and Meta-Analysis.** *Am J Sports Med.* 2016.
44. Slattery EW, Logan K, Gubanich P. **An Assessment of Population-Based Norms in Child and Adolescent on the King-Devick: 1930 Board #82 June 2, 3: 30 Pm - 5: 00 Pm.** *Med Sci Sports Exerc.* 2016; 48:533.
45. Stein C, MacDougall R, Quatman-Yates C, Myer G, Sugimoto D, Dennison R, Meehan W. **Young Athletes? Concerns About Sport-Related Concussion: The Patient?S Perspective.** *Clin J Sport Med.* 2015; 26:386-90.
46. Straccolini A, Hanson E, Kiefer AW, Myer GD, Faigenbaum AD. **Resistance Training for Pediatric Female Dancers.** *J Dance Med Sci.* 2016; 20:64-71.
47. Sugimoto D, Myer GD, Barber Foss KD, Pepin MJ, Micheli LJ, Hewett TE. **Critical Components of Neuromuscular Training to Reduce Acl Injury Risk in Female Athletes: Meta-Regression Analysis.** *Br J Sports Med.* 2016; 50:1259-66.

48. Tran ST, Guite JW, Pantaleao A, Pfeiffer M, Myer GD, Sil S, Thomas SM, Ting TV, Williams SE, Edelheit B, Ounpuu S, Rodriguez-MacClintic J, Zemel L, Zempsky W, Kashikar-Zuck S. [Preliminary Outcomes of a Cross-Site Cognitive-Behavioral and Neuromuscular Integrative Training Intervention for Juvenile Fibromyalgia](#). *Arthritis Care Res (Hoboken)*. 2016.

## Grants, Contracts, and Industry Agreements

### Annual Grant Award Dollars

Investigator	Title	Sponsor	ID	Dates	Amount
Kelsey Logan, MD-MPH	NFL Foundation ATC Outreach Grant	NFL Foundation	3056	12/1/2014 - 11/30/2015	\$22,500
Kelsey Logan, MD-MPH	2015 NFL Club Matching Certified Athletic Training Grant	NFL Foundation	5766	12/1/2015 - 11/30/2016	\$25,000
Gregory D Myer, PHD	Identification of Patellofemoral Pain Risk Factors Developed During Maturation	National Institutes of Health	R21 AR065068	2/13/2015 - 1/31/2017	\$171,600
Mark Paterno, PT	Prospective Study of Biomechanics and Early Degeneration after ACL Reconstruction	National Institutes of Health (The Ohio State University Research Fnd)	R21 AR064923	6/23/2014 - 5/31/2016	\$95,016
Catherine C Quatman-Yates, PT-DPT	Early Activity Levels and Family Function in mTBI Recovery	Ohio Department of Public Safety	Ohio EMS_Quatman-Yat	7/1/2015 - 12/31/2016	\$49,957
<b>Total Annual Grant Award Dollars</b>					<b>\$364,073</b>

### Annual Industry Award Dollars

Investigator	Industry Sponsor	Amount
Gregory D Myer, PHD	EIMindA Ltd	\$234,230
Gregory D Myer, PHD	Q30 Labs, LLC	\$868,028
<b>Total Annual Industry Award Dollars</b>		<b>\$1,102,258</b>