2014 Research Annual Report

Sports Medicine

Division Summary

RESEARCH AND TRAINING DETAILS	
Number of Faculty	**9**
Number of Joint Appointment Faculty	**1**
Number of Research Students	**2**
Number of Support Personnel	**4**
Direct Annual Grant Support	**$26,200**
Peer Reviewed Publications	**48**

CLINICAL ACTIVITIES AND TRAINING	
Number of Clinical Staff	**9**
Number of Clinical Fellows	**2**
Number of Other Students	**4**
Outpatient Encounters	**5,576**

Division Photo

Row 1: K Logan, K Berz
Row 2: C Quatman-Yates, M Paterno, G Myer, A Kiefer
Row 3: G Walker, N Edwards

Significant Accomplishments

Concussion Research Earns Award

Catherine Quatman-Yates, PT, DPT, PhD, received the American Physical Therapy Association Sports Section Excellence in 2014 Research Award for her study of “A Postural Sway Complexity Protocol for Detection of Post-Concussion Deficits in Youth“.

Paul Gubanich, MD, MPH, joined the Division in December 2013 as an associate professor. Gubanich practices at our Liberty Campus, where he focuses on concussion management and musculoskeletal injuries in athletes. He has served as medical provider for sports teams including the Cleveland Browns, Cleveland Indians and the Ohio State University. Gubanich also has taken over the role of Fellowship Director and welcomed two new fellows: James Hahn, MD and Gregg Kottyan, MD.

Outreach Program Debuts

We completed the first full year of our Sports Medicine Outreach Program, which provides athletic training coverage and services to local high schools, clubs, organizations and tournaments. In the past year, we worked with seven high school programs and provided training and injury prevention services to the Warren County Soccer Club, Thunder United Futbol Club, Kolping Soccer Club, the Cincinnati Gymnastics Academy, and other organizations.

Research Highlights

Gregory D. Myer, PhD
Winner of the 2014 JOSPT George J. Davies - James A. Gould Excellence in Clinical Inquiry Award.

DiStasi S, Myer, GD, Hewett TE. Neuromuscular Training to Target Deficits Associated With Second Anterior Cruciate Ligament Injury.

Nicholas M. Edwards, MD, MPH
2013 Winner of the Oded Bar-Or Award, American Academy of Pediatrics National Conference & Exhibition, Council on Sports Medicine & Fitness given for: American Academy of Pediatrics National Conference & Exhibition Resistant Strains of Physical Inactivity: Effects of Weather on Activity in Children (Podium, 28 October 2013) Orlando, FL.

Catherine Quatman-Yates, PT, DPT, PhD
Dr. Quatman-Yates was awarded $200,000 for her project *Postural Sway Complexity as a Biomarker for Concussion in Children and Adolescents.* The objective of the project is to develop normative data for postural sway complexity for children and adolescents, test the diagnostic validity for ranges outside age norms, and compare results to other common measures of post-concussion dysfunction.

Significant Publications

Edwards NM, Khoury PR, Kalkwarf HJ, Woo JG, Claytor RP, Daniels SR. Tracking of accelerometer-measured physical activity in early childhood. *Pediatr Exerc Sci*. 2013 25(3):487-501.

This publication was the first to highlight sex differences in physical activity tracking in young children. The study showed that boys who had greater levels of moderate-vigorous physical activity (MVPA) at age 3 maintained higher MVPA over the following four years. On the contrary, girls did not demonstrate the same degree of MVPA tracking. These findings highlight that although physical activity patterns may be established early in life, the degree to which they are established may differ in boys and girls.

Halstead ME, McAvoy K, Devore CD, Carl R, Lee M,**Logan K**, Council on Sports Medicine and Fitness, Council on School Health. Returning to learning following a concussion. *Pediatrics*. 2013 132(5):948-57.

It is common for children and adolescents to experience difficulties in the school setting after they have sustained a concussion. Cognitive difficulties, such as learning new tasks or remembering previously learned material, may pose challenges in the classroom. This important report provides caretakers with improved understanding of possible factors that contribute to difficulties to learn in a school environment after a concussion. It is meant to serve as a framework for the medical home, the educational home, and the family home to guide the student to a successful and safe return to learning.

Kiefer AW, **Myer GD**, Gualberto Cremades J. Train the Brain: Novel Electroencephalography Data Indicate Links between Motor Learning and Brain Adaptations. *J Nov Physiother*. 2014 4:1-7.

EEG differences were examined following different practice techniques during the learning of a novel motor task. The results indicate the utility of EEG for learning assessments in athletes. More specifically, the data indicate improved learning strategies that have a partial movement focus, thought to be a beneficial strategy to support the development of complex sport skills training and rehabilitation strategies focused on reacquisition of skills prior to sport reintegration.

Paterno MV, Rauh MJ, Schmitt LC, Ford KR, Hewett TE. Incidence of Second ACL Injuries 2 Years After Primary ACL Reconstruction and Return to Sport. *Am J Sports Med*. 2014 42:1567-1573.

This significant publication was the first in the literature to identify the incidence rate of second anterior cruciate ligament (ACL) injury within the first 24 months following ACL reconstruction and return to sport

activity when normalized to athletic exposure. This data identified that young, active individuals who return to pivoting and cutting sports after ACL reconstruction were six times more likely to suffer a second ACL injury than an uninjured cohort. Females were two times more likely to suffer a contralateral injury rather than an ipsilateral graft re-tear. This landmark study highlights this high risk of subsequent ACL injury following ACL reconstruction and return to sport.

Quatman-Yates CC, Lee A, Hugentobler JA, Kurowski BG, **Myer GD**, Riley MA. Test-retest consistency of a postural sway assessment protocol for adolescent athletes measured with a force plate. *Int J Sports Phys Ther*. 2013 8(6):741-8.

This study demonstrated that a force plate assessment protocol designed specifically to optimize the collection of postural sway dynamics following mild traumatic brain injury yielded good short-term and long-term test-retest reliability in a cohort of adolescent athletes. The protocol consists of two-minute trials under eyes open and eyes closed conditions with center-of-pressure analyses for conventional measures of sway (i.e., standard deviation and path length) as well as the dynamical systems measure of Detrended fluctuation analysis.

Division Publications

1. Alentorn-Geli E, Mendiguchia J, Samuelsson K, Musahl V, Karlsson J, Cugat R, Myer GD. **Prevention of non-contact anterior cruciate ligament injuries in sports. Part II: systematic review of the effectiveness of prevention programmes in male athletes**. *Knee Surg Sports Traumatol Arthrosc*. 2014; 22:16-25.
2. Barber Foss KD, Myer GD, Hewett TE. **Epidemiology of basketball, soccer, and volleyball injuries in middle-school female athletes**. *Phys Sportsmed*. 2014; 42:146-53.
3. Bates NA, Ford KR, Myer GD, Hewett TE. **Timing differences in the generation of ground reaction forces between the initial and secondary landing phases of the drop vertical jump**. *Clin Biomech (Bristol, Avon)*. 2013; 28:796-9.
4. Di Stasi S, Myer GD, Hewett TE. **Neuromuscular training to target deficits associated with second anterior cruciate ligament injury**. *J Orthop Sports Phys Ther*. 2013; 43:777-792, A1-11.
5. Edwards NM, Khoury PR, Kalkwarf HJ, Woo JG, Claytor RP, Daniels SR. **Tracking of accelerometer-measured physical activity in early childhood**. *Pediatr Exerc Sci*. 2013; 25:487-501.
6. Faigenbaum AD, Lloyd RS, Myer GD. **Youth resistance training: past practices, new perspectives, and future directions**. *Pediatr Exerc Sci*. 2013; 25:591-604.
7. Faigenbaum AD, Myer GD. (Dec. 10, 2013) **Active Voice: Train the Developing Brain: Beyond Sets and Reps**. Sports Medicine Bulletin. American College of Sports Medicine. .
8. Faigenbaum AD, Myer GD, Farrell A, Radler T, Fabiano M, Kang J, Ratamess N, Khoury J, Hewett TE. **Integrative neuromuscular training and sex-specific fitness performance in 7-year-old children: an exploratory investigation**. *J Athl Train*. 2014; 49:145-53.
9. Faigenbaum AD, Myer GD, Fernandez IP, Carrasco EG, Bates N, Farrell A, Ratamess NA, Kang J. **Feasibility and reliability of dynamic postural control measures in children in first through fifth grades**. *Int J Sports Phys Ther*. 2014; 9:140-8.
10. Filipa AR, Smith TR, Paterno MV, Ford KR, Hewett TE. **Performance on the Star Excursion Balance Test predicts functional turnout angle in pre-pubescent female dancers**. *J Dance Med Sci*. 2013; 17:165-9.
11. Gokeler A, Benjaminse A, Hewett TE, Paterno MV, Ford KR, Otten E, Myer GD. **Feedback techniques to target functional deficits following anterior cruciate ligament reconstruction: implications for motor**

control and reduction of second injury risk. *Sports Med*. 2013; 43:1065-74.
12. Gokeler A, Bisschop M, Benjaminse A, Myer GD, Eppinga P, Otten E. **Quadriceps function following ACL reconstruction and rehabilitation: implications for optimisation of current practices**. *Knee Surg Sports Traumatol Arthrosc*. 2014; 22:1163-74.
13. Grooms DR, Palmer T, Onate JA, Myer GD, Grindstaff T. **Soccer-specific warm-up and lower extremity injury rates in collegiate male soccer players**. *J Athl Train*. 2013; 48:782-9.
14. Halstead ME, McAvoy K, Devore CD, Carl R, Lee M, Logan K, Council on Sports M, Fitness, Council on School H. **Returning to learning following a concussion**. *Pediatrics*. 2013; 132:948-57.
15. Herrington L, Myer G, Horsley I. **Task based rehabilitation protocol for elite athletes following Anterior Cruciate ligament reconstruction: a clinical commentary**. *Phys Ther Sport*. 2013; 14:188-98.
16. Herrington L, Myer GD, Munro A. **Intra and inter-tester reliability of the tuck jump assessment**. *Phys Ther Sport*. 2013; 14:152-5.
17. Kiapour AM, Wordeman SC, Paterno MV, Quatman CE, Levine JW, Goel VK, Demetropoulos CK, Hewett TE. **Diagnostic value of knee arthrometry in the prediction of anterior cruciate ligament strain during landing**. *Am J Sports Med*. 2014; 42:312-9.
18. Kiefer AW, Myer GD, Gualberto Cremades J. **Train the Brain: Novel Electroencephalography Data Indicate Links between Motor Learning and Brain Adaptations**. *Journal of Novel Physiotherapies*. 2014; 4:1-7.
19. Kiefer AW, Rhea CK. **Patterned Variability in Gait Behavior: How Can it be Measured and what does it Mean?** . In: L Li, M Holmes, eds. *Gait Biometrics: Basic Patterns, Role of Neurological Disorders and Effects of Physical Activity*. Hauppauge, NY: Nova Science Publishers ; 2013:17-44.
20. Kiefer AW, Riley MA, Shockley K, Sitton CA, Hewett TE, Cummins-Sebree S, Haas JG. **Lower-limb proprioceptive awareness in professional ballet dancers**. *J Dance Med Sci*. 2013; 17:126-32.
21. Kiefer AW, Wallot S, Gresham LJ, Kloos H, Riley MA, Shockley K, Van Orden G. **Development of coordination in time estimation**. *Dev Psychol*. 2014; 50:393-401.
22. Kottyan G, Kottyan L, Edwards NM, Unaka NI. **Assessment of active play, inactivity and perceived barriers in an inner city neighborhood**. *J Community Health*. 2014; 39:538-44.
23. Kreiswirth EM, Myer GD, Rauh MJ. **Incidence of injury among male Brazilian jiujitsu fighters at the World Jiu-Jitsu No-Gi Championship 2009**. *J Athl Train*. 2014; 49:89-94.
24. Lloyd RS, Faigenbaum AD, Stone MH, Oliver JL, Jeffreys I, Moody JA, Brewer C, Pierce KC, McCambridge TM, Howard R, Herrington L, Hainline B, Micheli LJ, Jaques R, Kraemer WJ, McBride MG, Best TM, Chu DA, Alvar BA, Myer GD. **Position statement on youth resistance training: the 2014 International Consensus**. *Br J Sports Med*. 2014; 48:498-505.
25. Lloyd RS, Faigenbaum AD, Stone MH, Oliver JL, Jeffreys I, Moody JA, Brewer C, Pierce KC, McCambridge TM, Howard R, Herrington L, Hainline B, Micheli LJ, Jaques R, Kraemer WJ, McBride MG, Best TM, Ramirez R, Chu DA, Alvar BA, Esteve-Lanao J, Alonso JM, Myer GD. **Posicionamiento sobre el entrenamiento de fuerza en Jóvenes. Consenso Internacional de 2014**. *Archivos de Medicina del Deporte*. 2014; 31:111-124.
26. Lloyd RS, Oliver JL, Faigenbaum AD, Myer GD, De Ste Croix MB. **Chronological age vs. biological maturation: implications for exercise programming in youth**. *J Strength Cond Res*. 2014; 28:1454-64.
27. Mendiguchia J, Arcos AL, Garrues MA, Myer GD, Yanci J, Idoate F. **The use of MRI to evaluate posterior thigh muscle activity and damage during nordic hamstring exercise**. *J Strength Cond Res*. 2013; 27:3426-35.
28. Montalvo AM, Cara EL, Myer GD. **Effect of kinesiology taping on pain in individuals with musculoskeletal injuries: Systematic review and meta-analysis**. *Phys Sportsmed*. 2014; 42:48-57.

29. Mostafavifar AM, Best TM, Myer GD. **Early sport specialisation, does it lead to long-term problems?**. *Br J Sports Med*. 2013; 47:1060-1.
30. Myer GD, Faigenbaum AD, Stracciolini A, Hewett TE, Micheli LJ, Best TM. **Exercise deficit disorder in youth: a paradigm shift toward disease prevention and comprehensive care**. *Curr Sports Med Rep*. 2013; 12:248-55.
31. Myer GD, Ford KR, Foss KD, Rauh MJ, Paterno MV, Hewett TE. **A predictive model to estimate knee-abduction moment: implications for development of a clinically applicable patellofemoral pain screening tool in female athletes**. *J Athl Train*. 2014; 49:389-98.
32. Myer GD, Heidt RS, Waits C, Finck S, Stanfield D, Posthumus M, Hewett TE. **Sex comparison of familial predisposition to anterior cruciate ligament injury**. *Knee Surg Sports Traumatol Arthrosc*. 2014; 22:387-91.
33. Myer GD, Kushner AM, Faigenbaum AD, Kiefer A, Kashikar-Zuck S, Clark JF. **Training the developing brain, part I: cognitive developmental considerations for training youth**. *Curr Sports Med Rep*. 2013; 12:304-10.
34. Myer GD, Lloyd RS, Brent JL, Faigenbaum AD. **How Young is "Too Young" to Start Training?**. *ACSMs Health Fit J*. 2013; 17:14-23.
35. Myer GD, Smith D, Barber Foss KD, Dicesare CA, Kiefer AW, Kushner AM, Thomas SM, Sucharew H, Khoury JC. **Rates of concussion are lower in National Football League games played at higher altitudes**. *J Orthop Sports Phys Ther*. 2014; 44:164-72.
36. Myer GD, Wordeman SC, Sugimoto D, Bates NA, Roewer BD, Medina McKeon JM, DiCesare CA, Di Stasi SL, Barber Foss KD, Thomas SM, Hewett TE. **Consistency of clinical biomechanical measures between three different institutions: implications for multi-center biomechanical and epidemiological research**. *Int J Sports Phys Ther*. 2014; 9:289-301.
37. Paterno MV, Prokop TR, Schmitt LC. **Physical therapy management of patients with osteochondritis dissecans: a comprehensive review**. *Clin Sports Med*. 2014; 33:353-74.
38. Paterno MV, Rauh MJ, Schmitt LC, Ford KR, Hewett TE. **Incidence of Second ACL Injuries 2 Years After Primary ACL Reconstruction and Return to Sport**. *Am J Sports Med*. 2014; 42:1567-1573.
39. Paterno MV, Taylor-Haas JA, Myer GD, Hewett TE. **Prevention of overuse sports injuries in the young athlete**. *Orthop Clin North Am*. 2013; 44:553-64.
40. Proudfoot LE, Powell AM, Ayis S, Barbarot S, Baselga Torres E, Deleuran M, Folster-Holst R, Gelmetti C, Hernandez-Martin A, Middelkamp-Hup MA, Oranje AP, Logan K, Perkin M, Patrizi A, Rovatti G, Schofield O, Spuls P, Svensson A, Vestergaard C, Wahlgren CF, Schmitt J, Flohr C, European Dermato-Epidemiology N. **The European TREatment of severe Atopic eczema in children Taskforce (TREAT) survey**. *Br J Dermatol*. 2013; 169:901-9.
41. Quatman-Yates CC, Gupta R, Paterno MV, Schmitt LC, Quatman CE, Ittenbach RF. **Internal consistency and validity of the QuickDASH instrument for upper extremity injuries in older children**. *J Pediatr Orthop*. 2013; 33:838-42.
42. Quatman-Yates CC, Lee A, Hugentobler JA, Kurowski BG, Myer GD, Riley MA. **Test-retest consistency of a postural sway assessment protocol for adolescent athletes measured with a force plate**. *Int J Sports Phys Ther*. 2013; 8:741-8.
43. Quatman-Yates CC, Myer GD, Ford KR, Hewett TE. **A longitudinal evaluation of maturational effects on lower extremity strength in female adolescent athletes**. *Pediatr Phys Ther*. 2013; 25:271-6.
44. Roewer BD, Ford KR, Myer GD, Hewett TE. **The 'impact' of force filtering cut-off frequency on the peak knee abduction moment during landing: artefact or 'artifiction'?**. *Br J Sports Med*. 2014; 48:464-8.
45. Smith DW, Myer GD, Comstock RD, Clark JF, Bailes JE. **Altitude Does Not Reduce Concussion**

Incidence Response. *Orthopaedic Journal of Sports Medicine*. 2014; 2:2325967114527235.
46. Smith DW, Myer GD, Currie DW, Comstock RD, Clark JF, Bailes JE. **Altitude Modulates Concussion Incidence Implications for Optimizing Brain Compliance to Prevent Brain Injury in Athletes**. *Orthopaedic Journal of Sports Medicine*. 2013; 1:2325967113511588.
47. Sugimoto D, Myer GD, Bush HM, Hewett TE. **Effects of compliance on trunk and hip integrative neuromuscular training on hip abductor strength in female athletes**. *J Strength Cond Res*. 2014; 28:1187-94.
48. Sugimoto D, Myer GD, Foss KD, Hewett TE. **Dosage effects of neuromuscular training intervention to reduce anterior cruciate ligament injuries in female athletes: meta- and sub-group analyses**. *Sports Med*. 2014; 44:551-62.

Faculty, Staff, and Trainees

Faculty Members

Kelsey Logan, MD, MPH, Associate Professor

Leadership Division Director

Research Interests Dr. Logan's research interests include concussion; female athlete issues; overuse injuries in sport.

Kate Berz, DO, Assistant Professor

Research Interests Dr. Berz's research interests are in injuries of the female athlete, nutrition, and osteopathic manipulative therapy.

Nicholas Edwards, MD,MPH, Assistant Professor

Research Interests Nicholas M. Edwards, MD, MPH is focused on the areas of physical activity promotion and cardiovascular disease prevention.

Paul Gubanich, MD, MPH, Associate Professor

Leadership Fellowship Director

Research Interests Dr. Gubanich's research interests are sports concussion; medical problems in athletes; injury prevention; performance enhancement; musculoskeletal ultrasound.

Adam Kiefer, PhD, Assistant Professor

Research Interests Dr. Kiefer's research interests include augmented/virtual reality; behavioral dynamics; biofeedback; dynamical disease; exercise science; individual/team coordination; nonlinear dynamics; quantitative methods; sports medicine.

Greg Myer, PhD, Assistant Professor

Leadership Director of Research

Research Interests Dr. Myer’s primary research interests are related to injury biomechanics, pediatric exercise science and exercise prevention strategies.

Catherine Quatman-Yates, PT, DPT, PhD, Assistant Professor

Research Interests Dr. Quatman-Yates is interested in optimizing post-concussion evaluation and rehabilitation processes for children and adolescents.

Gregory Walker, MD, Assistant Professor

Research Interests Dr. Walker's research focus is physical inactivity in youth and concussion prevention and treatment.

Timothy Hewett, PhD, Adjunct

Research Interests Dr. Hewett's research interests lie in neuromuscular; biomechanical and molecular adaptation of the muscular; boney and nervous systems to stresses such as growth, development and neuromuscular training.

Laura Schmitt, PhD, Adjunct

Research Interests Dr. Schmitt is interested in outcomes after ACL reconstruction; injury biomechanics

Joint Appointment Faculty Members

Mark Paterno, PhD,PT, MS, MBA, SCS, ATC, Associate Professor (Occupational Therapy and Physical Therapy)

Research Interests Clinical outcomes after lower extremity injury; rehabilitation intervention outcomes; outcome after ACL reconstruction

Trainees

- **Nate Bates, PhD Candidate**
- **Michael Donaworth, MD**, PGY-IV
- **Pamela Lachniet, MD, PhD**, PGY-IV
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Division Collaboration

Collaborating to develop and validate on non-invasive outcome prediction algorithm tools for Knee Osteochondritis Dissecans in children.

Orthopaedics » Gregory D. Myer, PhD and Eric J. Wall, MD

We continue our partnership on a five year study measuring the rate of cardiovascular aging in adolescents and young adults and will determine which risk factors best predict accelerated aging.
(Nicholas Edwards, MD, MPH)

Preventative Cardiology » Elaine Urbina, MD

This collaborative effort between Sports Medicine and PMR is a prospective assessment of risk factors for and effects of sports related concussions.

(Paul Gubanich, MD, MPH; Adam Kiefer, PhD; Kelsey Logan, MD, MPH; Gregory Myer, PhD; Catherine Quatman-Yates, PT, DPT, PhD)

Physical Medicine and Rehabilitation » Brian Hang, MD, Brad Kurowski, MD, and Shari Wade, PhD

This collaborative effort between Sports Medicine and OT/PT includes working on projects related to the effects of interventions on injury risk, concussion and foot/ankle research.
(Kate Berz, DO; Paul Gubanich, MD, MPH; Adam Kiefer, PhD; Kelsey Logan, MD, MPH, FAAP, FACP; Gregory Myer, PhD; Gregory Walker, MD)

Occupational Therapy | Physical Therapy » Katherine Hickey-Lucas, PT, DPT, Jason Hugentober, PT, DPT, Mark Paterno, PT, PhD, and Catherine Quatman-Yates, PT, DPT, PhD

Efforts with Sports Medicine and the CCIC have led the way toward development of multi-disciplinary head

injury/concussion clinic, prevention program and treatment pathways.

Comprehensive Children's Injury Center »

We continue several joint projects focused on developing new exercise protocols for obese children and assessing physical activity in summer camp settings.
(Nicholas Edwards, MD, MPH; Gregory Myer, PhD)

Center for Better Health and Nutrition » Robert Siegel, MD

The Divisions of Sports Medicine and Behavioral Therapy/Clinical Psychology have collaborated for a project entitled FIT (Fibromyalgia Integrative Training) Teens. In this study, adolescent patients with Fibromyalgia are treated with a combined treatment protocol involving both Cognitive Behavioral Therapy and Integrative Neuromuscular Training. These treatments are aimed to improve their coping abilities, improve their strength, mechanics, and postural control to overall enhance their ability to lead more active lifestyles.
(Gregory Myer, PhD)

Behavioral Medicine and Clinical Psychology » Susmita M. Kashikar-Zuck, PhD

Our joint studies attempt to determine the effectiveness of preventative strategies to mitigate incidence of mild brain injury biomarkers.
(Paul Gubanich, MD, MPH; Kelsey Logan, MD, MPH; Adam Kiefer, PhD)

Radiology and Medical Imaging » James Leach, MD and Suraj Serai, PhD

This includes additional studies to determine imaging biomarkers of mild brain injury.
(Gregory Myer, PhD)

Imaging Research Center » Weihong Yuan, PhD

We are developing studies to determine the imaging prognostic factors for healing in children with knee Osteochondritis Dissecans as well as investigations to determine early predictors of osteoarthritis after anterior cruciate ligament reconstruction in adolescents and young adults.
(Gregory Myer, PhD)

Radiology » Andrew Zbojniewicz, MD

A study to determine the effectiveness of preventative strategies to mitigate incidence of hearing loss in high risk individuals.
(Gregory Myer, PhD)

Audiology » Lisa Hunter, PhD

This project will construct a profile of driving performance for teens following concussion.
(Adam Kiefer, PhD)

Behavioral Medicine and Clinical Psychology » Dean Beebe, PhD and Jeff Epstein, PhD

This collaborative project utilizes eye tracking to modulate the attention of teen drivers with ADHD.
(Adam Kiefer, PhD)

Behavioral Medicine and Clinical Psychology » Jeff Epstein, PhD

Grants, Contracts, and Industry Agreements

HEWETT, T

Effects of Physical Activity & Marijuana Use on Frontolimbic Functioning During Adolescence: An fMRI Study
National Institutes of Health (University of Wisconsin)

R01 DA 030354	09/01/11-02/29/16	$12,841

MYER, G

Multi-Faceted Approach Modeling ACL Injury Mechanisms
National Institutes of Health (The Ohio State University Research Foundation)

R01 AR 056259	09/16/13-08/31/18	$13,359

Current Year Direct	**$26,200**
Total	**$26,200**