

Research in Patient Services

Division Details

RESEARCH AND TRAINING DETAILS

Faculty	8
Joint Appointment Faculty	9
Research Fellows and Post Docs	3
Total Annual Grant Award Dollars	\$892,798
Total Annual Industry Award Dollars	\$132,010
Total Publications	49



Row 1: K Harpster, N Daraiseh

Row 2: J Long, L Hunter, A Vinks, L Ramsey, H Tubbs-Cooley

Row 3: D Moore, T Phoenix, M Paterno, S Holland, C Quatman-Yates

Research Highlights

Communication Sciences Research Center

The Communication Sciences Research Center (CSRC) incorporates research in and houses the laboratories for the Divisions of Audiology, Speech-Language Pathology and the Reading and Literacy Discovery Center. CSRC is currently pursing four major lines of research involving hearing and reading. Drs. Moore and Hunter focus on hearing and listening difficulties in infants and children. Dr. Hunter's recently completed NIH grant (R01-DC010202) developed and tested new techniques to measure the function of the middle and inner ear, especially useful for babies undergoing neonatal hearing screening within the first couple of days after birth. Supported by the Center for Disease Control and Prevention (CDC) (Grant U01DD001007), she has since shown that working closely with Women, Infant and Children (WIC) centers in the community dramatically reduces the number of families who slip through the care net after their child fails neonatal screening (Pediatrics, 2016). New NIH funding to Drs. Moore, Hunter, Dimitrijevic and Holland (R01-DC014078) utilizes cutting edge techniques to measure subtle ('sub-clinical') aspects of ear and brain function in school aged children with listening difficulties (Int. J. Psychophysiology, 2015). These findings may be relevant to many common forms of learning disorders (e.g. dyslexia) in children for which subtle hearing disorders have long been suspected. Drs. Horowitz-Kraus, Holland, and our newest faculty member, pediatrician John S. Hutton, are members of the Reading & Literacy Discovery Center and are leading research in dyslexia and emergent literacy. New NIH funding to Drs. Horowitz-Kraus and Holland (R01-HD086011) is supporting their efforts to examine the neurobiological basis for a new executive function model for dyslexia as well as a new computer based intervention for this form of dyslexia (Dyslexia, 2016). Dr. Hutton joined the RLDC/CSRC faculty in July 2016 following his research fellowship in the Division of General and Community Pediatrics at Cincinnati Children's. With pilot funding from the Thrasher Foundation, Read Aloud 15 MINUTES organization and Candace Kendle Charitable Trust, he is exploring the influence of early literacy exposure (Pediatrics, 2015) and reading vs. video exposure on the neural circuitry supporting reading comprehension and imagination.

Occupational Therapy and Physical Therapy Research

The Division of Occupational Therapy, Physical Therapy and Therapeutic Recreation continues to pursue lines of research with the vision to be the leader at improving child health through the systematic generation, adoption and rapid integration of rehabilitation knowledge in order to promote healthy behaviors, engagement in valued activity and improved quality of life. In FY2016, the focus was primarily on three strategic goals: 1) Improve outcome, cost and value for patients with neuromuscular and developmental disorders seeking rehabilitation services; 2) Become an international leader in the rehabilitation management of patients with mild traumatic brain injury; and 3) Reduce anterior cruciate ligament re-injury rates after discharge from physical therapy. Central to these goals, the Division published over 20 peer-reviewed manuscripts in high impact journals such as the *American Journal of Sports Medicine*, *Pediatric Physical Therapy* and *Neuropediatrics*. Division investigators successfully procured internal funding, as well as extramural funding, from the NIH and various foundations. In recognition of outstanding work, our clinical scientists received several prestigious honors, including the Toby Long Paper of the Year for the most outstanding manuscript published in the *Pediatric Physical Therapy Journal*, the Orthopaedic Research and Education Foundation (OREF) Clinical Research Award, and the Sports Physical Therapy Section of the American Physical Therapy Association's Excellence in Research Award.

Pharmacy Research

The goals of the Pharmacy Research program are to establish a clinical research program focused on drug transporter pharmacogenetics/genomics to identify new gene-drug pairs for personalized interventions in the areas of rheumatology and oncology.

In a study, funded by the Cincinnati Children's Center for Pediatric Genomics (CpG), Dr. Laura Ramsey is studying how the drug methotrexate works in a mouse model of arthritis lacking a methotrexate transporter. Methotrexate is a drug used to treat many autoimmune diseases and some cancers. Preliminary data show that genetic variants influence response to methotrexate in children with juvenile idiopathic arthritis. By removing methotrexate from the blood by a transporter, resulting in reduced function, there is more methotrexate in the blood. She will determine the concentration of the drug in the blood of the mice and use it to find a dose of methotrexate that will provide the same drug level in the mice lacking the transporter as normal mice. This study may help determine which patients are going to be good responders to methotrexate and could start with a lower dose to avoid toxic side effects. She has also received an educational grant to assemble an expert council to write a guideline for dosing glucarpidase, an antidote to toxic methotrexate levels. She recently received an Early Career Investigator Scholarship Award sponsored by the Brandt Family Scholars Fund to present at the Mayo Clinic Individualizing Medicine Conference.

Dr. Timothy Phoenix was recently jointly recruited by Research in Patient Services and the James Winkle College of Pharmacy. He has begun studying the genetic influences on brain tumor pathogenesis and treatment response in collaboration with the Brain Tumor Program at Cincinnati Children's. Genomic advances have identified 20+ subgroups of brain tumors with distinct molecular expression patterns and genomic alterations, and may be further defined by including blood brain barrier function across pediatric brain tumor entities. This will aid drug development efforts for subgroup specific targeted therapies. Based on his previous studies of signaling and blood brain barrier function in medulloblastoma, he will study whether inhibiting blood brain barrier function in other tumors can improve drug penetration and treatment response.

Nursing Research

Using Human Factors to Improve Employee and Patient Safety

Nancy Daraiseh, PhD, an assistant professor in pediatrics through the James M. Anderson Center for Health Systems of Excellence, is using human factors methods to assess risk exposure by healthcare workers and developing feasible interventions for reducing occupational injuries to employees in medical/surgical units and psychiatry. Dr. Daraiseh's work shows the prevalence of stress outcomes among pediatric healthcare workers. She has applied human factors methods to improving health-care delivery in the neonatal intensive care unit, preventing injuries in psychiatry, measuring the impact of noise exposure on provider health as well as monitoring stress-related employee outcomes and improving injury-reporting systems. Her work is also establishing evidence linking employee and patent safety.

Improving Outcomes after Pediatric Cardiac Surgery

Sandra Staveski, PhD, RN, CPNP-AC, an assistant professor of nursing, focuses on improving outcomes of children after cardiac surgery through preventing harm they may experience during hospitalization and at home. Her current work focuses on two areas: 1)

development of a novel clinician-parent home care education intervention aimed at facilitating safe transition from hospital to home care for post-operative pediatric cardiac patients; and 2) exploring the epidemiology of delirium in post-operative pediatric cardiac surgery patients. In 2016, Dr. Staveski received a Patient Services Mentored Research Career Development (PS2) grant, as well as funding from Children's Heart Association of Cincinnati, and the CCTST to pursue these research activities. She has recently completed an international survey on delirium management of children after cardiac surgery.

Understanding Effects of Nurse Certification on Patient Outcomes

Heather Tubbs Cooley, PhD, RN, assistant professor of nursing, who is also affiliated with the James M. Anderson Center for Health Systems Excellence, was named an American Nurses Foundation Scholar for the 2015-2016 academic year, to evaluate effects of nurse certification on patient outcomes in neonatal intensive care. Professional nursing organizations advocate nurse certification as a way to validate clinical competence in a specialty area of nursing and improve nursing care quality, yet evidence to support a linkage between certification and patient outcomes is lacking. Dr. Tubbs Cooley and colleagues are evaluating a certification-outcomes relationship between individual nurse certification and individual patient outcomes, and also between shift composition of certified nurses on shift-level outcomes in neonatal intensive care. The results of the study will provide nurse executives with empirical results that can inform hospital financial investments in nurse workforce certification. The study is a collaboration with the Ohio State University, and the University of North Carolina at Chapel Hill.

Significant Publications

Dawes P, Cruickshanks KJ, Moore DR, Fortnum H, Edmondson-Jones M, McCormack A, Munro KJ. The Effect of Prenatal and Childhood Development on Hearing, Vision and Cognition in Adulthood. *PLoS One*. 2015 Aug 24;10(8):e0136590.

This is one of the first studies published using data from the UK Biobank resource that includes data from more than 400,000 individual subjects. Analysis of more than 37,000 data sets found a positive association between birth weight and sensory and cognitive function. These results suggest that adverse prenatal and childhood experiences are a risk for poorer sensory and cognitive function and earlier development of sensory and cognitive impairment in adulthood. This finding could have significant implications for preventing sensory and cognitive impairment in older age.

Horowitz-Kraus T, DiFrancesco M, Kay B, Wang Y, Holland SK. Increased resting-state functional connectivity of visual- and cognitive-control brain networks after training in children with reading difficulties. *NeuroImage Clin*. 2015 Jul 3;8:619-30.

Computerized reading-training has shown to improve reading fluency and comprehension in children with dyslexia. This paper demonstrates the effect of the computerized training on brain networks related to visual processing, executive functions, attention, memory, and language. It establishes the connection between the neurobiological impact of the treatment and improved reading skills in children.

Zwolski C, Schmitt LC, Quatman-Yates C, Thomas S, Hewett TE, Paterno MV. The Influence of Quadriceps Strength Asymmetry on Patient-Reported Function at Time of Return to Sport after Anterior Cruciate Ligament Reconstruction. *Am J Sports Med*. 2015 Sep;43(9):2242-49.

Based on the results of this study, a patient-reported measure of knee function may be able to serve as an easy to administer screening tool to indicate that quadriceps strength is sufficient to allow young athletes to return to playing sports after surgical reconstruction of the anterior cruciate ligament (ACL).

Tubbs-Cooley HL, Pickler RH, Simmons JM, Auger KA, Beck AF, Sauers-Ford HS, Sucharew H, Solan LG, White CM, Sherman SN, Statile AM, Shah SS. **Testing a post-discharge nurse-led transitional home visit in acute care pediatrics: the Hospital-To-Home Outcomes (H2O) study protocol**. *J Adv Nurs*. 2016 Apr;72(4):915–25.

Transition from impatient hospitalization to outpatient care is a vulnerable time for children and their families. Interventions to address transition difficulties can mitigate poor outcomes for children who are at risk. This work outlines a strategy for improving pediatric care transitions and associated post-discharge outcomes and is relevant health care funding policy making.

Ramsey LB, Janke LJ, Payton MA, Cai X, Paugh SW, Karol SE, Kamdem Kamdem L, Cheng C, Williams RT, Jeha S, Pui CH, Evans WE, Relling MV. Antileukemic Efficacy of Continuous vs Discontinuous Dexamethasone in Murine Models of Acute Lymphoblastic Leukemia. *PLoS One*. 2015 Aug;7(10):e0135134.

Osteonecrosis is one of the most common, serious, toxicities resulting from the treatment of acute lymphoblastic leukemia. This study supports the use of discontinuous rather than continuous dexamethasone dosing in patients with acute lymphoblastic leukemia to reduce the adverse side effect of bone loss while effectively treating the leukemia.

Division Publications

- 1. Barry J, Tomlin D, Moore D, Dillon H. **Use of Questionnaire-Based Measures in the Assessment of Listening Difficulties in School-Aged Children**. *Ear Hear*. 2015; 36:E300-E13.
- 2. Daraiseh N, Summerville L. Subjective Health Complaints in Registered Nurses: Associations with Select Individual and Organizational Factors. *IIE Transactions On Occupational Ergonomics And Human Factors*. 2016; 4:54-66.
- 3. Dawes P, Cruickshanks K, Moore D, Fortnum H, Edmondson-Jones M, McCormack A, Munro K. **The Effect of Prenatal and Childhood Development on Hearing, Vision and Cognition in Adulthood.** *Plos One*. 2015; 10.
- 4. Dorich J, Harpster K. **Pediatric Hand Therapy**. In: J Case-Smith, J Clifford O'Brien, eds. *Occupational Therapy for Children and Adolescents*. St. Louis MO: Mosby; 2015:812-38.
- 5. Elsayed A, Hunter L, Keefe D, Feeney M, Brown D, Meinzen-Derr J, Baroch K, Sullivan-Mahoney M, Francis K, Schaid L. Air and Bone Conduction Click and Tone-Burst Auditory Brainstem Thresholds Using Kalman Adaptive Processing in Nonsedated Normal-Hearing Infants. *Ear Hear*. 2015; 36:471-81.
- 6. Fernandez C, Smith C, Yang W, Mullighan C, Qu C, Larsen E, Bowman W, Liu C, Ramsey L, Chang T. **Genome-Wide Analysis** Links Nfatc2 with Asparaginase Hypersensitivity. *Blood*. 2015; 126:69-75.
- 7. Ford K, Schmitt L, Hewett T, Paterno M. Identification of Preferred Landing Leg in Athletes Previously Injured and Uninjured: A Brief Report. Clinical Biomechanics. 2016; 31:113-16.
- 8. Gilliland J, Donnellan A, Justice L, Moake L, Mauney J, Steadman P, Drajpuch D, Tucker D, Storey J, Roth S. **Establishment of Pediatric Cardiac Intensive Care Advanced Practice Provider Services.** *World J Pediatr Congenit Heart Surg.* 2016; 7:72-80.
- 9. Hosseinabad H, Derakhshandeh F, Mostaajeran F, Abdali H, Davari H, Hassanzadeh A, Kummer A. Incidence of Velopharyngeal Insufficiency and Oronasal Fistulae after Cleft Palate Repair: A Retrospective Study of Children Referred to Isfahan Cleft Care Team between 2005 and 2009. Int J Pediatr Otorhinolaryngol. 2015; 79:1722-26.
- 10. Hugentobler J, Vegh M, Janiszewski B, Quatman-Yates C. Physical Therapy Intervention Strategies for Patients with Prolonged Mild Traumatic Brain Injury Symptoms: A Case Series. pmc/PMC4595921. Int J Sports Phys Ther. 2015; 10:676-89.
- 11. Hugentobler JA, Gupta R, Slater R, Paterno MV, Riley MA, Quatman-Yates C. Influence of Age on Postconcussive Postural Control Measures and Future Implications for Assessment. Clin J Sport Med. 2016.
- 12. Hunter L, Choo D. **Conductive Hearing Loss in Children: Otitis Media with Effusion and Congenital Conditions**. In: A Tharpe, R Seewald, eds. *Comprehensive Handbook of Pediatric Audiology*. San Diego CA: Plural Publishing; 2016.
- 13. Hunter LL, Keefe DH, Feeney MP, Fitzpatrick DF, Lin L. Longitudinal Development of Wideband Reflectance Tympanometry in Normal and at-Risk Infants. *Hear Res.* 2016; 340:3-14.
- 14. Ithurburn M, Paterno M, Ford K, Hewett T, Schmitt L. Young Athletes with Quadriceps Femoris Strength Asymmetry at Return to Sport after Anterior Cruciate Ligament Reconstruction Demonstrate Asymmetric Single-Leg Drop-Landing Mechanics. *Am J Sports Med.* 2015; 43:2727-37.

- 15. Ithurburn M, Paterno M, Thomas S, Hewett T, Schmitt L. Knee Function, Strength, and Maintenance of Pre-Injury Sports

 Participation after Anterior Cruciate Ligament Reconstruction: 1613 Board #266 June 2, 8: 00 Am 9: 30 Am. Med Sci Sports

 Exerc. 2016; 48:445.
- 16. Jones P, Moore D, Shub D, Amitay S. **The Role of Response Bias in Perceptual Learning**. *J Exp Psychol Learn Mem Cogn*. 2015; 41:1456-70.
- 17. Karol S, Mattano L, Yang W, Maloney K, Smith C, Liu C, Ramsey L, Fernandez C, Chang T, Neale G. **Genetic Risk Factors for the Development of Osteonecrosis in Children under Age 10 Treated for Acute Lymphoblastic Leukemia.** *Blood*. 2016; 127:558-64.
- 18. Keefe D, Hunter L, Feeney M, Fitzpatrick D. **Procedures for Ambient-Pressure and Tympanometric Tests of Aural Acoustic Reflectance and Admittance in Human Infants and Adults.** *J Accoust Soc Am.* 2015; 138:3625-53.
- Kiapour A, Kiapour A, Goel V, Quatman C, Wordeman S, Hewett T, Demetropoulos C. Uni-Directional Coupling between
 Tibiofemoral Frontal and Axial Plane Rotation Supports Valgus Collapse Mechanism of Acl Injury. J Biomech. 2015; 48:1745-51.
- 20. 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.
- 21. Liu C, Janke L, Kawedia J, Ramsey L, Cai X, Mattano L, Boyd K, Funk A, Relling M. **Asparaginase Potentiates Glucocorticoid-Induced Osteonecrosis in a Mouse Model.** *Plos One*. 2016; 11.
- 22. Long J. Multisegmental Foot and Ankle Modeling: History, Development, and Implications in Osteogenesis Imperfecta. In: P Smith, F Rauch, G Harris, eds. *Transitional Care in Osteogenesis Imperfecta: Advances in Biology, Technology, and Clinical Practice*. Chicago IL: Shriners Hospital for Children Chicago; 2015:233-49.
- 23. Magnussen R, Pottkotter K, Stasi S, Paterno M, Wordeman S, Schmitt L, Flanigan D, Kaeding C, Hewett T. **Femoral Nerve Block after Anterior Cruciate Ligament Reconstruction.** *J Knee Surg.* 2015.
- 24. McHenry BD, Exten E, Long JT, Harris GF. **Sagittal Fluoroscopy for the Assessment of Hindfoot Kinematics.** *J Biomech Eng.* 2016; 138:4032445.
- 25. Munro K, Newton V, Moore D. **Audiological Assessment and Management in the Era of Precision Medicine.** *Monogr Hum Genet.* 2016; 20:19-29.
- 26. Murphy C, Moore D, Schochat E. **Generalization of Auditory Sensory and Cognitive Learning in Typically Developing Children.***Plos One. 2015; 10.
- 27. Murtagh K, E, Schondelmeyer A, Brown C, Dandoy C, Hanke S, Tubbs-Cooley H. **A Practical Guide to Conducting Quality Improvement in the Health Care Setting.** *Curr Treat Options Pediatr.* 2015; 1:380-92.
- 28. Paterno M. Incidence and Predictors of Second Anterior Cruciate Ligament Injury after Primary Reconstruction and Return to Sport. J Athl Train. 2015; 50:1097-99.
- 29. Paterno M, Kiefer A, Bonnette S, Riley M, Schmitt L, Ford K, Myer G, Shockley K, Hewett T. 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. Clinical Biomechanics. 2015; 30:1094-101.
- 30. Payton A, Dawes P, Platt H, Morton C, Moore D, Massey J, Horan M, Ollier W, Munro K, Pendleton N. A Role for Hla-Drb1*1101 and Drb1*0801 in Cognitive Ability and Its Decline with Age. Am J Med Genet B Neuropsychiatr Gen. 2016; 171B:209-14.
- 31. Presnell L, Blankenship A, Cheatham S, Owens G, Staveski S. **An Overview of Pulmonary Atresia and Major Aortopulmonary Collateral Arteries.** *World J Pediatr Congenit Heart Surg.* 2015; 6:630-39.

- 32. Quatman-Yates C, Bonnette S, Hugentobler J, Mede B, Kiefer A, Kurowski B, Riley M. **Postconcussion Postural Sway Variability Changes in Youth: The Benefit of Structural Variability Analyses.** *Pediatr Phys Ther.* 2015; 27:316-27.
- 33. Quatman-Yates C, Cupp A, Gunsch C, Haley T, Vaculik S, Kujawa D. Physical Rehabilitation Interventions for Post-Mtbi Symptoms Lasting Greater Than Two Weeks: A Systematic Review. Phys Ther. 2016.
- 34. Ramsey L, Janke L, Payton M, Cai X, Paugh S, Karol S, Kamdem L, Cheng C, Williams R, Jeha S. **Antileukemic Efficacy of Continuous Vs Discontinuous Dexamethasone in Murine Models of Acute Lymphoblastic Leukemia.** *Plos One*. 2015; 10.
- 35. Raylman R, Staveski S. International Pediatric Cardiac Efforts. Prog Pediatr Cardiol. 2016; 42:31-33.
- 36. Reddy R, Reddy S, Banala B, Bronkhorst E, Kummer A, Kuijpers-Jagtman A, Berge S. **Use of a Modified Furlow Z-Plasty as a Secondary Cleft Palate Repair Procedure to Reduce Velopharyngeal Insufficiency.** *Int J Oral Maxillofac Surg.* 2016; 45:170-76.
- 37. Rhine T, Quatman-Yates C, Clark RA. A Longitudinal Examination of Postural Impairments in Children with Mild Traumatic Brain Injury: Implications for Acute Testing. *J Head Trauma Rehabil*. 2015.
- 38. Rosenfeld R, Shin J, Schwartz S, Coggins R, Gagnon L, Hackell J, Hoelting D, Hunter L, Kummer A, Payne S. Clinical Practice Guideline: Otitis Media with Effusion (Update). Otolaryngol Head Neck Surg. 2016; 154:S1-S41.
- 39. Rosenfeld R, Shin J, Schwartz S, Coggins R, Gagnon L, Hackell J, Hoelting D, Hunter L, Kummer A, Payne S. Clinical Practice Guideline: Otitis Media with Effusion Executive Summary (Update). Otolaryngol Head Neck Surg. 2016; 154:201-14.
- 40. Sauers-Ford H, Simmons J, Shah S. **Strategies to Engage Stakeholders in Research to Improve Acute Care Delivery.** *J Hosp Med*. 2016; 11:123-25.
- 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. Smits C, Watson C, Kidd G, Moore D, Goverts S. A Comparison between the Dutch and American-English Digits-in-Noise (Din)

 Tests in Normal-Hearing Listeners. Int J Audiol. 2016; 55:358-65.
- 43. Solan L, Beck A, Brunswick S, Sauers H, Wade-Murphy S, Simmons J, Shah S, Sherman S. **The Family Perspective on Hospital to Home Transitions: A Qualitative Study.** *Pediatrics*. 2015; 136:E1539-E49.
- 44. Stein C, MacDougall R, Quatman-Yates C, Myer G, Sugimoto D, Dennison R, Meehan W. Young Athletes? Concerns About Sport-Related Concussion: The Patients Perspective. Clin J Sport Med. 2015; 26:386-90.
- 45. Tubbs-Cooley H, Pickier R, Simmons J, Auger K, Beck A, Sauers-Ford H, Sucharew H, Solan L, White C, Sherman S. **Testing a**Post-Discharge Nurse-Led Transitional Home Visit in Acute Care Pediatrics: The Hospital-to-Home Outcomes (H2o) Study

 Protocol. J Adv Nurs. 2016; 72:915-25.
- 46. Watson J, Kinstler A, Vidonish W, Wagner M, Davis K, Kotowski S, Daraiseh N. Impact of Noise on Nurses in Pediatric Intensive Care Units. *Am J Crit Care*. 2015; 24:377-84.
- 47. Zhang Y-X, Moore D, Guiraud J, Molloy K, Yan T-T, Amitay S. **Auditory Discrimination Learning: Role of Working Memory.** *Plos One*. 2016; 11.
- 48. Zwolski C, Schmitt L, Quatman-Yates C, Thomas S, Hewett T, Paterno M. The Influence of Quadriceps Strength Asymmetry on Patient-Reported Function at Time of Return to Sport after Anterior Cruciate Ligament Reconstruction. *Am J Sports Med*. 2015; 43:2242-49.
- 49. Zwolski C, Schmitt L, Thomas S, Hewett T, Paterno M. The Utility of Limb Symmetry Indices in Return-to-Sport Assessment in Patients with Bilateral Anterior Cruciate Ligament Reconstruction. *Am J Sports Med.* 2016.

Annual Grant Award Dollars

Investigator	Title	Sponsor	ID	Dates	Amount
Whittney J Brady RN	Effects of Virtual Realty Simulation on Worker Emergency Evacuation of Neonates	Agcy for Healthcare Research and Quality (Wright State University)	R18 HS023149	9/30/2014 - 9/29/2017	\$86,870
Andrew Dimitrijevic, PHD	Sensory and Cognitive Processing in Children with Auditory Processing Disorders: Behavior and Electrophysiology	Hearing Health Foundation	Hearing - Dimitrijev	7/1/2015 - 6/30/2016	\$30,000
Kelly R Greve, PT	Range and Strength Outcomes in Infants with Congenital Muscular Torticollis Who Do Not Receive Therapy According to Practice Guidelines	Ohio Physical Therapy Association	OPTA	11/1/2015 - 10/31/2016	\$2,500
Kelly R Greve, PT	Congenital Muscular Torticollis: Infant Characteristics	Rocky Mountain Univ Health Professions	RockyMountainGrant	5/1/2016 - 4/30/2017	\$2,000
Karen Harpster OTD-OTR- L	American Society of Hand Therapists Founders Grant	American Society of Hand Therapists	ASHT,Founders	9/1/2015 - 8/31/2016	\$5,000
Deanna T Hawkins RN	Palliative Cancer Care: Music Video for AYA-Parent Communication and Resilience	National Institutes of Health (Indiana University)	R01 CA162181	6/1/2014 - 5/31/2016	\$46,518
David R Moore, PHD	Idiopathic Auditory Dysfunction in Children: Nature and Mechanisms	National Institutes of Health	R01 DC014078	8/1/2015 - 7/31/2020	\$624,002
Catherine C Quatman- Yates, PT-DPT	Clinical Detection of Post- Concussion Impairments in Children and Adolescents	National Institutes of Health (University of Cincinnati)	KL2 TR001426	8/14/2015 - 3/31/2016	\$78,408
Heather L Tubbs Cooley, PHD	Nurse Certification and Infant Outcomes in Neonatal Intensive Care	American Nurses Foundation	ANF-NRG	9/1/2015 - 8/31/2016	\$17,500
Total Annual Grant Award Dollars					

Annual Industry Award Dollars

Investigator	Industry Sponsor	Amount
Alexander Vinks, PHD	BTG International, Inc.	\$132,010
Total Annual Industry Award Dollars		\$132,010