# Michele A. Lobo, PT, Ph.D

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## **Physical Therapy Licensure**

Delaware: J1-0001384 Pennsylvania: PT011068L

## Education

The University of Delaware, Newark, DE Doctor of Philosophy in Biomechanics & Movement Science Major advisor: James C. (Cole) Galloway, PT, Ph.D. Degree conferred summa cum laude in July 2006

Vrije University, Amsterdam, The Netherlands

Visiting graduate student in lab of Professor Geert Savelsbergh, Ph.D. Department of Movement Science August 2001-June 2002

Drexel University, Philadelphia, PA Masters of Physical Therapy Focus Area: Pediatric Rehabilitation Degree conferred magna cum laude in May 1997

The College of New Jersey, Trenton, NJ Bachelor of Science in Biology, Minor in Psychology Degree conferred summa cum laude in May 1994

# **Professional Experience**

The University of Delaware, Newark, DE

Member, Center for Autonomous and Robotic Systems, 2021-Associate Professor, Physical Therapy Department, 2020-Associate Professor, Fashion & Apparel Studies Department, 2020-Assistant Professor, Physical Therapy Department, 2014-19
Director, Move to Learn (M2L) Innovation Lab, 2014-Founder & Director, Super Suits FUNctional Fashion & Wearable Technology Program, 2014Research Scientist, Motor Behavior Lab, 2010-2014
Post-doctoral Researcher, Motor Behavior Lab, 2006-2009
Per Diem Physical Therapist & Clinical Instructor, Physical Therapy Pediatric Clinic & Neurologic & Older Adult Clinic, 2006-2008
Teaching Assistant, Soft Tissue Treatment Techniques & Neurorehabilitation Course, 2002, Anatomy & Physiology, 2000-2001, Biology I, 2000-2001

The University of California, Berkeley, CA Visiting Researcher, 2010-2011



Participated in seminar meetings of The Institute of Human Development, The Institute of Cognitive and Brain Sciences, and The Gesture Group Participated in the Action Before Cognition (ABC) weekly discussion group led by Dor Abrahamson in the Department of Education Hands-on training in relational database development and programming

Austill's Rehabilitation Services, Inc., Exton, PA Pediatric Physical Therapist, 1998-2008 Early Intervention & School-based Evaluation & Intervention in Delaware, Montgomery, & Chester Counties

Pediatric Therapeutic Services, Inc., PA Pediatric Physical Therapist, 2002-2003 School-based Intervention in Pennsylvania & Delaware

St. Christopher's Hospital for Children, Philadelphia, PA Pediatric Physical Therapist, 1997-1998 Out- & in-patient evaluation and intervention services Neurology and myopathy clinic consultant Seating clinic assessments

Burlington County College, Pemberton, NJ Adjunct Faculty, Anatomy & Physiology, 1997 Adjunct Faculty, Microbiology, 1996

## **Honors and Awards**

- Oral Presentation Award. Li, B., & Lobo, M.A. (2021). Assessing the needs of children with physical disabilities for upper extremity assistive devices. 5<sup>th</sup> Assembly of the International Motor Development Research Consortium: Moving Across the Life Course Research and Practice, virtual conference, global.
- Best Design Award Functional. Golgouneh, A., Beaudette, E., Woelfle, H., Li, B., Subash, N., Redhouse, A., Jones, M., Martin, T., Lobo, M.A., Holschuh, B., & Dunne, L. (2021). Design of a hybrid SMA-pneumatic based wearable upper limb exoskeleton. Poster presentation at the *International Symposium on Wearable Computers*, virtual conference, global.
- Gayle G. Arnold Award for the Best Scientific Paper, "Efficacy of the START-Play Program for Infants with Neuromotor Disorders: Cognitive Outcomes", American Academy of Cerebral Palsy and Developmental Medicine, 2019. The Gayle G. Arnold Award is the most prestigious award of the Academy. This award is named in honor of Dr. Arnold, a self-taught developmental pediatrician and President of the Academy (1989-90). The award is presented annually to the authors of the best scientific paper.
- Stephen M. Haley Research Award, American Physical Therapy Association Section on Pediatrics, 2016
- Lolas E. Halverson National Young Investigator Award from The Motor Development & Learning Academy Committee of the North American Society for the Psychology of Sport & Physical Activity, 2008
- Dorothy Briggs Memorial Scientific Inquiry Award, American Physical Therapy Association, 2006
- University of Delaware Dissertation Fellowship Award, 2005-2006
- Promotion of Doctoral Studies II Award, Foundation for Physical Therapy, 2004-2005

- University Graduate Fellows Award, The University of Delaware, 2004-2005
- American Physical Therapy Association, Pediatric Section Clinical Research Award 2003-2004
- Competitive Fellowship Award, The University of Delaware, 2003-2004
- Promotion of Doctoral Studies II Award, Foundation for Physical Therapy, 2003-2004
- Promotion of Doctoral Studies I Award, Foundation for Physical Therapy, 2002-2003
- McMillan Doctoral Scholarship, American Physical Therapy Association, 2000-2001
- Wyeth-Ayerst Junior Award in Biology, 1994
- Annie F. Stout Scholarship for Study in Biology, 1994
- Phi Kappa Phi National Interdisciplinary Honor Society, Inducted 1993
- Tri Beta Biological Honor Society, Inducted 1993
- Psi Chi Psychological Honor Society, Inducted 1993

## **Professional Memberships**

- American Physical Therapy Association, 1995-present
- Society for Research in Child Development, 2008-present
- American Academy of Cerebral Palsy and Developmental Medicine, 2018-present
- International Society for Infant Studies, 2016-present

## **Research Interests**

- Investigation of the role of perceptual-motor experiences in learning and problem-solving
- Design of early, effective interventions and rehabilitation devices to advance development for infants and children with disabilities
- FUNctional fashion and wearable technology to improve quality of life for people with disabilities

# **Grant Funding**

### ACTIVE

<u>SCH: INT: Collaborative Research: Smart Wearable Systems to Support and Measure</u> <u>Movement in Children With and Without Mobility Impairments</u>

Role: Co-PI (0.72 academic, 0.25 summer month); PI: Dunne, L. (University of Minnesota) National Science Foundation (NSF): 1722596

10/01/2017-09/30/2021

Our team of fashion, engineering, and rehabilitation professionals will: 1) test novel movement sensing technology incorporated in soft, comfortable garments on children with and without mobility impairments, 2) create algorithms to analyze the data to categorize behaviors performed, and 3) utilize advances in soft robotics and shape memory alloys to design the first user-controlled exoskeletal garment for children with arm movement impairments. My role in this project is to interface with end users, to lead all soft robotics work, and to conduct all testing with human participants.

Funds awarded: \$1,472,680 total (\$537,101 to UD)

Leadership Education in Neurodevelopmental and Related Disorders Training Program Role: Affiliated Faculty for Physical Therapy Discipline (0.5 summer month); PI: Beth Mineo US Dept. of Health and Human Services, Health Resources and Services Administration (HRSA)

07/01/2016-06/30/2021

The Delaware LEND is a collaboration between the University of Delaware and the Nemours Foundation/A.I. duPont Hospital for Children. Faculty from these institutions and the community

represent seven core and five complementary disciplines. LEND trainees are drawn from a multitude of disciplines, and will include family members of individuals with autism or developmental delay (ASD/DD). Trainees benefit from a dynamic learning experience designed to impact their knowledge, skills, and attitudes across varying domains. The curriculum is designed to foster trainees' growth through demonstration that interdisciplinary, culturally competent, family-centered care yields enhanced outcomes for those impacted by ASD/DD. Leadership development is fostered through both explicit instruction regarding leadership principles and practices as well as the design of experiential activities that enable trainees to engage in self-reflection and hone their leadership skills. An Individual Learning Plan guides each trainee's experience and an individual portfolio is used to capture work products, reflections, and evolving competencies. Community-based experiences sensitize trainees to the application of curricular principles in authentic contexts, and trainees are required to generate products that demonstrate their evolution as learners and leaders. My role in this project is to serve as an advisor for physical therapy students engaged in this program and to develop and mentor them in their leadership research project.

### Efficacy of the START-Play Program for Infants with Neuromotor Disorders

Role: Co-Investigator, Site Primary Investigator (0.48 academic, 0.48 summer month); PI: Harbourne, R.

Institute for Education Sciences (IES): R324A150103

12/01/2019-06/30/2022

Our team was selected by the IES to compete for supplemental funding. IES was interested in selecting an active clinical trial with promising results to support for more distal longitudinal data collection. We submitted a proposal and were selected as the project they would support for this funding. Our ongoing project is a randomized controlled clinical efficacy trial of the START-Play (Sitting Together and Reaching to Play) intervention developed by our team of pediatric clinical and educational specialists. The intervention aims to advance sitting and reaching ability for 7-16-month-olds with motor delays in order to advance readiness to learn in school. The sites involved in this study include The University of Washington, The University of Nebraska Medical Center, The University of Nebraska at Omaha, The University of Delaware, and Virginia Commonwealth University. I was involved with all stages of this project and especially with development of the intervention and methods. I hold primary responsibility for the data related to reaching and means-end problem-solving.

Funds awarded in the supplement: \$999,700 (\$198,222 to UD)

### Delaware Department of Education RFP 2021-09 Education Consulting Services

Role: Expert Trainer and Consultant

Delaware Department of Education: Proposal ID 21A01274

07/01/2021-06/30/2022

This was part of a team proposal submitted through the School of Education at The University of Delaware in response to the call "Request for Proposals for Professional Services" from the Delaware Department of Education. My role is to support and advise individuals involved with educating young children and their parents about: 1) identifying children with physical disabilities in childcare, preschool, and school settings; 2) curriculum development and caregiver-infant handling and play activities to promote motor and cognitive development throughout the first years of life; and 3) effective early intervention practices to optimize motor and cognitive outcomes for children with physical disabilities. This is a multi-vendor award aimed at establishing a pool of bidders to utilize for education consulting services as needs arise. Funds requested: Hourly fee for services

### PENDING

<u>Replication to Evaluate the Efficacy of the START-Play Early Intervention Program Across a</u> Broad Population of Young Children with Significant Motor Delays

Role: Co-PI, Site Primary Investigator (0.60 academic, 0.36 summer month); Co-PI: Dusing, S. (Virginia Commonwealth University); Co-I's Harbourne, R. (Duquesne University), Westcott-McCoy, S. (Washington State University), and Bovaird, J. (University of Nebraska, Lincoln) Institute for Education Sciences

09/01/2020-08/31/2024

This is a randomized controlled clinical efficacy trial of the SMART-Play (Supporting Movement Activity for Reasoning and Thinking in Play) intervention developed by our team through the expansion of our START-Play early intervention scientific model. This intervention incorporates the same key principles of START-Play but aims to apply the scientific model of teaching problem-solving through movement activity to a broader group of participants with a more variable range of abilities at baseline. I am leading all aspects of this project along with my Co-Pl.

Submission: August 2020 Funds requested: \$4,400,000

<u>The Baby Play Program: Promoting Motor, Cognitive, and Language Outcomes for Preterm</u> <u>Infants Through Parent Education</u>

Role: Co-PI, (1.20 academic, 0.72 summer month); Co-PI: Golinkoff, R., Co-I Barnes, T.; Co-I Paul, D. (Christiana Care Health Services), Co-I Moeyaert, M. (SUNY Albany) Institute for Education Sciences

07/01/2021-06/30/2025

This project aims to develop and pilot test an innovative parent education program for parents of infants at risk for developmental delays due to preterm birth. The intervention will incorporate parent-child play practices shown by the developmental psychology and medical literature to advance motor, cognitive, and language outcomes for infants. The intervention will be fun and engaging for parents and infants. This project aims to determine how stakeholders prefer to receive the information, to evaluate the fidelity of intervention when it is provided via different mechanisms (i.e. written manual, in-person training, video training), and to evaluate the short-term impact of the intervention on a pilot group of participants randomly assigned to receive the Baby Play intervention or a control intervention that models the typical education parents receive through the medical model of intervention.

Submission: August 2019

Funds requested: \$2,000,000

### COMPLETED

Efficacy of the START-Play Program for Infants with Neuromotor Disorders Role: Co-Investigator, Site Primary Investigator (1.2 academic, 1 summer month); PI: Harbourne, R.

Institute for Education Sciences: R324A150103

07/01/2015-06/30/2019 (No cost extension through 06/30/2020)

This was a randomized controlled clinical efficacy trial of the START-Play (Sitting Together and Reaching to Play) intervention developed by our team of pediatric clinical and educational specialists. The intervention aimed to advance sitting and reaching ability for 7-16-month-olds with motor delays in order to advance readiness to learn in school. The sites involved in this study included The University of Washington, The University of Nebraska Medical Center, The University of Nebraska at Omaha, The University of Delaware, and Virginia Commonwealth University. I was involved with all stages of this project and especially with development of the intervention and methods. I hold primary responsibility for the data related to reaching and means-end problem-solving.

Funds awarded: \$3,430,109 (\$638,684 to UD)

Development of the Playskin Air<sup>™</sup>: A Novel Soft Active Exoskeletal Garment Role: Pl

UNIDEL Foundation HensWEAR Pilot Project Award 04/01/2019-03/31/2020 This project focused on the development of pneumatic actuators (air bladders) to support shoulder abduction against gravity for children 4-14 years old with arm weakness. Textile testing was conducted to determine the optimal textile for the bladder, bladder shape, sealing method, and integration method to create bladders that function to abduct the arm of a model to functional levels of greater than 120 degrees.

Funds awarded: \$25,000

<u>Ultrasonic Welding Machine to Support the Design of Wearables for Mobility and Health</u> Role: PI

UNIDEL Foundation HensWEAR Shared Equipment Award

08/01/2019-06/30/2020

These funds supported the purchasing of an ultrasonic welding machine as shared equipment for the university and interested industry and community partners. Ultrasonic welding allows fabrics to be sealed together without the use of thread. It is especially useful for making clothing that is light weight for military and disability populations, does not have abrasive seams for populations with sensory sensitivity, and for creating air- and water-tight seals for clothing that serves to protect users from environmental hazards or that aims to retain or repel water or air, such as for underwater clothing or exoskeletal garments that support movement. Funds awarded: \$29,467

A Novel Parent Education Program for Early Intervention

Role: PI (1.8 academic month, in kind)

National Institutes of Health: Delaware Clinical and Translational Research Program ACCEL Pilot Grant Award

07/01/2018-06/30/2020

Parents of typically developing children can be taught to position and play with their young infants in ways that advance future skills like postural control, reaching, playing with toys, and walking. This project aimed to teach these activities to parents of infants born preterm and at risk for developmental delays to see if similar benefits will be observed. This is important because 50% of infants born preterm will have delays at school age, yet we lack focused, family-friendly, and affordable interventions for them in the first months of life. This project is in collaboration with David Paul, Chair of Pediatrics, and Matthew Hoffman, Chair of Obstetrics and Gynecology, at Christiana Care Health Services and Roberta Golinkoff, Unidel H. Rodney Sharp Chair at UD.

Funds awarded: \$122,401

Designing Inclusive Futures: Disability, Diversity, and Innovation Role: Co-Applicant (0% effort); PI: Kerschbaum, Stephanie UNIDEL Grand Challenge Grant 01/01/2019-06/30/2020 This grant brings together professors across departments and colleges at UD to strengthen educational programming for graduate students interested in the areas of disability, diversity, and innovation.

Funds awarded: \$14,140

Development and Testing of Wearable Technology to Promote Early Movement and Cognition

Role: PI (0.12 academic month, in kind) University of Delaware Research Foundation (UDRF) 06/01/2017-05/31/2019

At least 1 in 6 children age 3 to 17 years in the US has a disability impacting motor or cognitive development. The way parents handle and position their young infants can impact motor and cognitive development through preschool age. Parents in the US primarily position young infants supported and with infants on their backs and these infants show later milestone achievement than those in other cultures. Nationwide educational campaigns have not been sufficient to change early parent-infant handling and positioning interactions. The current project aimed to develop and test wearable technology to encourage parents to more optimally handle and position their infants in ways that may impact parent-infant interactions, health, and development. This low-cost technology could be especially beneficial to advance early development for infants at risk of delays due to socioeconomic status or medical risk. Funds awarded: \$35,000

## Lite Run Pediatric Gait Trainer

Role: Consultant

PI: Joyce Trost, Gillette Children's Hospital, St. Paul, MN

Investigators: Dr. Mark Gormley (Gillette Children's Hospital); Dr. Lars Oddsson (University of Minnesota); John Hauck and Doug Johnson (Lite Run), Dr, Anantha V.R. Lanthanum (Mayo and University of Minnesota)

New England Pediatric Device Consortium (NEPDC)

This grant aimed to develop and test a pediatric version of the pneumatic support mobility device, the Lite Run. The device assists with transitions between sitting and standing and also with walking mobility and is feasible for use with a variety of pediatric populations in the clinical setting. My role was to interface between end users and device developers to ensure user needs were met.

10/01/2016-10/01/2017

# An Affordable Home Assistive Walker Using "Spacesuit Pants" to Support Body Weight

Role: Consultant

PI: John Hauck, President Lite Run, Inc.

Investigators: Doug Johnson Bruce Wigness, Mark Johnson, Lite Run, Will Durfee PhD, Dr. Lars Oddsson PhD, Dr. Andrew Hansen PhD, and Charlotte Brenteson, DPT. Dr, Anantha V.R. Lanthanum (Mayo and University of Minnesota)

National Institute on Disability, Independent Living, and Rehabilitation (NIDILRR) SBIR Phase I 10/01/2017-04/01/2018

This project aimed to develop and test an affordable home version of a novel pneumatic support device (Lite Run) used to aid transitions between sitting and standing as well as walking mobility for individuals with mobility impairments, including those with spinal cord injury, stroke, and cerebral palsy. This type of device has the potential to significantly improve mobility for users within their homes and communities to enable more meaningful daily engagement. My role was to interface between end users and device developers to ensure user needs were met.

## Development and Testing of a Smart Garment

Role: PI

State of Delaware Federal Research and Development Grant Program, Award #109 10/01/2015-12/31/2017 (including no cost extension)

Our team of fashion, engineering, and rehabilitation professionals worked on the development and testing of stitched and conductive paint stretch sensors that could be embedded in clothing to measure movement activity. This technology has the potential to track usage of existing rehabilitation devices such as our Playskin Lift<sup>™</sup> exoskeletal garment to inform us if and how devices can affect change in the everyday activity of people in their natural environments. Funds awarded: \$100,000

#### Conductive Thread Stitched Sensor

Role: Academic Lead NSF I-Corp Training Grant 05/15/2017-08/14/2017

Currently motion capture can only be done outside of a laboratory environment with an individual having a rigid sensor adhered to each body segment. Our technology is a conductive thread that when stitched into clothing in a specific geometry, can be used to measure stretch. By strategically placing these sensors across joints in a compression garment, these stitched stretch sensors may be used to measure human movement. This technology could be extremely useful for collecting data where previously not possible: athletes underneath their gear, animation recordings not in a lab setting, gait analysis during the daily life, and input for the future of virtual reality gaming.

Funds awarded: \$3000

### The Snuggle Time Garment

Role: Investigator [Academic Lead: Abigail Clarke-Sather, PhD, Civil Engineering & Fashion & Apparel Studies; Other Investigators: Kelly Cobb, Fashion & Apparel Studies, Melissa Melby, Anthropology]

NSF I-Corp Training Grant

#### 01/27/2017-05/26/2017

The Snuggle Time Garment is a soft, functional device aiding breastfeeding and skin-to-skin contact for preterm infants in neonatal intensive care units (NICUs). Breastfeeding and skin-to-skin contact are early caregiver-infant behaviors that improve infant motor, cognitive, and social-emotional development including infants at risk. Breastfeed infants have reduced incidence of diabetes, obesity, asthma, and leukemia. Breastfeeding of preterm infants leads to improved motor, cognitive, and social-emotional development as toddlers. Skin to skin contact improves sleep, emotional regulation, alertness, and 12-month neurodevelopmental outcomes. This soft, functional device addresses privacy, infant fragility, and parent-child comfort, all of which are limitations preventing breastfeeding and skin-to-skin contact in NICUs. My role in this project was to serve as an expert on child development and pediatric rehabilitation. Funds awarded: \$3000

## An Innovative Device for Intervention in Infants with Nervous System Injury

Role: PI (10% effort)

## NIH 1R21HD076092-01A1

12/09/2013-11/30/2016 (including one no cost extension year)

In collaboration with rehabilitation engineers from A.I Dupont Hospital for Children and neonatologists from Christiana Care Health Services and Thomas Jefferson University, we tested the effectiveness of exoskeletal rehabilitation devices (P-WREX+ and the Playskin Lift<sup>™</sup>) to improve limb movement and function for infants born with brain injuries and high risk for movement disorders, such as cerebral palsy, and for toddlers with significant arm movement impairments and weakness. We observed and reported on both assistive and rehabilitative effects of the devices.

Funds awarded: \$249,154

Motor Learning and Coordination in High-risk Infants

01/01/07-12/31/12 R01 HD051748-01A1 NIH NICHD Role: Post-doctoral Fellow (2007-2009), Research Scientist (2010-2012) PI: Galloway, J.C. We used a variety of learning, memory, and developmental assessments in combination with medical and brain imaging data to compare development of infants born preterm with high-risk to those born full-term from birth through 2 years of age. The goal was to determine early predictors of future delay and need for early intervention.

## Does Early Postural Intervention Affect Sitting Balance and Reaching in Infants Born Preterm?

01/01/09-06/30/10, no cost extension through 07/01/11 Section on Pediatrics Planning Grant American Physical Therapy Association Role: Co-investigator Pl: Dusing, S.C.

Our team of individuals with expertise in clinical research worked together to design an intervention to advance sitting and object exploration ability in the first years of life for children at risk for cerebral palsy. We submitted a proposal for federal funding using a multiple-site intervention model. There were individuals from 5 different universities involved in this effort. Proposals for multi-site clinical trials submitted to NIH and the DOE emerged from this collaboration. This planning grant facilitated our team in securing our START-Play Early Intervention IES grant.

# **Invited Peer-Reviewed Publications**

- Babik, I., Cunha, A., & Lobo, M.A. (2019). Play with objects in children with arthrogryposis: Effects of intervention with the Playskin Lift<sup>™</sup> exoskeletal garment. *American Journal of Medical Genetics, Part C, Special Issue "Current Trends in Interdisciplinary Care for Arthrogryposis*", *181(3)*, 393-403, Doi: 10.1002/ajmg.c.31719.
- Lobo, M.A., Moeyaert, M., Cunha, A.B., Babik, I. (2017). Single-case design, analysis, and quality assessment for intervention research. *Journal of Neurologic Physical Therapy*, 41(3), 187-197, doi: 10.1097/NPT.00000000000187.
- Lobo, M.A., Kagan, S.H., & Corrigan, J.D. (2017). Research design options for intervention studies. *Pediatric Physical Therapy*, 29(3), S57-S63, doi: 10.1097/PEP.00000000000380.
- 4. Lobo, M.A., Galloway, J.C., & Heathcock, J.C. (2015). Characterization and intervention for upper extremity exploration and reaching behaviors in infancy. *Journal of Hand Therapy*, *28*(*2*), 114-125, doi: 10.1016/j.jht.2014.12.003.

## **Invited Non-Peer-Reviewed Publications**

1. Lobo, M.A. (2014). Invited Commentary: Rethinking computer design from a disabilities rights standpoint. *Developmental Medicine & Child Neurology, 56(12),* 1138-1139, doi: 10.1111/dmcn.12533.

## **Peer-Reviewed Publications**

 Stuyvenberg, C.L., Brown, S.E., Inamdar, K., Evans, M., Hsu, L.Y., Rolin, O., Harbourne, R.T., McCoy, S.W., Lobo, M.A., Koziol, N.A., Dusing, S.C. (2021). Targeted physical therapy combined with spasticity management changes motor development trajectory for a 2-year-old with cerebral palsy. *Journal of Personalized Medicine*. *11(3)*, 163-176, doi: 10.3390/jpm11030163.

- Singh, S., Orlando, J.M., Alghamdi, Z.S., Franklin, K.A., & Lobo, M.A. (2021). Reframing clinical paradigms: Strategies for improving patient care relationships. *Physical Therapy*, *101*, 1-13, doi: 10.1093/ptj/pzab095.
- Harbourne, R.T., Dusing, S.C., Lobo, M.A., McCoy, S.W., Koziol, N.A., Hsu, L.Y., Willett, S., Marcinowski, E.C., Babik, I., Cunha, A.B., An, M., Chang, H., Bovaird, J., & Sheridan, S.M. (in press). START-Play physical therapy intervention impacts motor and cognitive outcomes in infants with neuromotor disorders: A multi-site randomized clinical trial. *Physical Therapy.* 101, 1-11. doi: 10.1093/ptj/pzaa232.
- 4. Molinini, R.M., Koziol, N.A., Tripathi, T., Harbourne, R.T., McCoy, S.W., **Lobo, M.A.**, Bovaird, J., & Dusing, S.C. (2021). Measuring early problem-solving in children with motor impairments: A validation study. *Physical & Occupational Therapy in Pediatrics*. doi.org/10.1080/01942638.2020.1865501.
- 5. Greenspan, B., Cunha, A.B., & Lobo, M.A. (2021). Design and validation of a smart garment to measure positioning practices of parents with young infants. *Infant Behavior and Development, Special Issue Methodological Advances in the Characterization and Understanding of Caregiver-Infant Interactions, 62,* doi: 10.1016/j.infbeh.2021.101530.
- Babik, I., Cunha, A.B., Hall, M.L., & Lobo, M.A. (2021). Assistive and Rehabilitative effects of the Playskin Lift<sup>™</sup> exoskeletal garment on reaching in children with arthrogryposis. *American Journal of Occupational Therapy.* 75(1), 1-7. doi: 10.5014/ajot.2020.040972.
- Cunha, A.B., Babik, I., Koziol, N.A., Hsu, L.Y., Nord, J., Harbourne, R.T., McCoy, S.W., Dusing, S.C., Bovaird, J.A., & Lobo, M.A. (2021). A novel means-end problem-solving assessment tool for early intervention: Evaluation of validity, reliability, and sensitivity. *Pediatric Physical Therapy.* 33(1), 2-9. doi.org/10.1097/PEP.0000000000000761.
- An, M., Nord, J., Koziol, N.A., Dusing, S.C., Kane, A.E., Lobo, M.A., McCoy, S.W., & Harbourne, R.T. (2021). Developing a fidelity measure of early intervention programs for children with neuromotor disorders. *Developmental Medicine and Child Neurology*. 63 (1), 97-103. doi: 10.1111/dmcn.14702.
- 9. Greenspan, B., & Lobo, M.A. (2020). Design and initial testing of an affordable and accessible smart compression garment to measure physical activity using conductive paint stretch sensors. *Multimodal Technologies and Interaction, 4(45),* doi:10.3390/mti4030045.
- Cunha, A., Babik, I., Harbourne, R.,Cochran, N., Stankus, J., Szucs, K., & Lobo, M.A. (2020). Assessing validity and reliability of the Angles Video Goniometer App for measuring joint angles in children and adults. *Archives of Physical Medicine and Rehabilitation*. 101(2), 275-282, doi:10.1016/j.apmr.2019.07.008.
- Dusing, S., Harbourne, R.T., Lobo, M.A., Westcott-McCoy, S., Bovaird, J., Kane, A.E., Syed, G., Marcinowski, E.C., Koziol, N., & Brown, S.E. (2019). A physical therapy intervention to advance cognitive and motor skills: a single subject study of a young child with cerebral palsy. *Pediatric Physical Therapy, 31 (4),* 347-352, doi: 10.1097/PEP.0000000000635.
- Babik, I., Movva, N., Cunha, A.B., & Lobo, M.A. (2019). Development of self-feeding behavior in children with typical development and those with arm movement impairments. *Developmental Psychobiology*, *61(8)*, 1191-1203. doi.org/10.1002/dev.21861.
- Babik, I., Cunha, A.B., Moeyaert, M., Hall, M.,Paul, D.A., Mackley, A., & Lobo, M.A. (2019). Feasibility and effectiveness of intervention with the Playskin Lift<sup>™</sup> exoskeletal garment for infants at risk. *Physical Therapy, Special Issue "Infant and Child Development: Innovations and Foundations for Rehabilitation", 99(6),* 666-676. doi.org/10.1093/ptj/pzz035.

- 14. Lobo, M.A., Hall, M.L., Greenspan, B., Rohloff, P., Prosser, L.A., & Smith, B.A. (2019). Wearables for pediatric rehabilitation: How to optimally design and utilize products to meet the needs of users. *Physical Therapy, Special Issue "Infant and Child Development: Innovations and Foundations for Rehabilitation", 99(6),* 647-657. doi.org/10.1093/ptj/pzz024.
- Babik, I., Cunha, A.B., Ross, S.M., Logan, S.W., Galloway, J.C., & Lobo, M.A. (2019). Means-end problem solving in infancy: Development, emergence of intentionality, and transfer of knowledge. *Developmental Psychobiology*, *61(2)*, 191-202. doi.org/10.1002/dev.21798.
- Cunha, A.B., Babik, I., Ross, S.M., Logan, S., Galloway, J.C., Clary, E., & Lobo, M.A. (2018). Prematurity may negatively impact means-end problem solving across the first two years of life, *Research in Developmental Disabilities*, *81*, 24-36. doi.org/10.1016/j.ridd.2018.03.007.
- Harbourne, R.T., Chang, H., Dusing, S.C., Lobo, M.A., McCoy, S.W. Bovaird, J., Sheridan, S., Hsu, L., Koziol, N., Marcinowski, E., & Babik, I. (2018). Sitting together and reaching to play (START-Play): Design and protocol for a multisite randomized controlled efficacy trial on intervention for infants with neuromotor disorders. *Physical Therapy*, *98(6)*, 494-502. doi: 10.1093/ptj/pzy033.
- 18. Greenspan, B., Hall, M.L., Cao, H., & Lobo, M.A. (2018). Development and testing of a stitched stretch sensor with the potential to measure human movement. *The Journal of the Textile Institute, 109, 1493-1500.* doi: 10.1080/00405000.2018.1432189.
- 19. Hall, M.L. & Lobo, M.A. (2018). Design and development of the first exoskeletal garment to enhance arm mobility for children with movement impairments. *Assistive Technology*, *30(5)*, 251-258. doi: 10.1080/10400435.2017.1320690.
- Babik, I., Galloway, J.C., & Lobo, M.A. (2017). Infants born preterm demonstrate impaired exploration of their bodies and surfaces throughout the first two years of life. *Physical Therapy*, 97 (9), 915-925. doi: <u>10.1093/ptj/pzx064</u>.
- Logan, S.W., Lobo, M.A., Feldner, H.A., Schreiber, M., MacDonald, M., Winden, H.N., Stoner, T., & Galloway, J.C. (2017). Power up: Exploration and play in a novel modified ride-on car for standing. *Pediatric Physical Therapy*, 29(1), 30-37, doi: 10.1097/PEP.00000000000336.
- Braswell Christy, J., Bjornson, K., Dusing, S., Gannotti, M., Heathcock, J., Lobo, M.A., O'Neil, M., Field-Fote, E., & Rimmer, J. (2016). Technology for children with brain injury and motor disability: Executive Summary from Research Summit IV. *Pediatric Physical Therapy*, 28(4), 483-489, doi: 10.1097/PEP.00000000000017.
- Logan, S.W., Ross, S.M., Schreiber, M., Feldner, H.A., Lobo, M.A., Catena, M.A., MacDonald, M., Galloway, J.C. (2016). Why we move: Social mobility behaviors of nondisabled and disabled children across childcare contexts. *Frontiers in Public Health*, 4(UNSP 204), doi: 10.3389/fpubh.2016.00204.
- 24. Babik, I., Kokkoni, E., Cunha, A.B., Galloway, J.C., Rahman, T., & Lobo, M.A. (2016). Feasibility and effectiveness of a novel exoskeleton for an infant with arm movement impairments. *Pediatric Physical Therapy*, 28(3), 338-46, doi: <u>10.1097/PEP.000000000000271</u>.
- Lobo, M.A., Koshy, J., Hall, M.L., Erol, O., Cao, H., Buckley, J. Galloway, J.C., & Higginson, J. (2016). Playskin Lift<sup>™</sup>: Development and initial testing of an exoskeletal garment to assist upper extremity mobility and function. *Physical Therapy*, *96(3)*, 390-399, doi: <u>10.2522/ptj.20140540</u>.
- Cunha, A.B., Lobo, M.A., Kokkoni, E., Galloway, J.C., & Tudella, E. (2016). Effect of short-term training on reaching behavior in infants: A randomized controlled clinical trial. *Journal of Motor Behavior*, 48(2), 132-142, doi: <u>10.1080/00222895.2015.1050549</u>.

- Logan, S.W., Schreiber, M., Lobo, M.A., Pritchard, B., George, L., & Galloway, J.C. (2015). Real world performance: Physical activity, play, and object-related behaviors of toddlers with and without disabilities. *Pediatric Physical Therapy*, 27(4), 433-441, doi: 10.1097/PEP.00000000000181.
- 28. Lobo, M.A., Kokkoni, E., Cunha, A.B., & Galloway, J.C. (2015). Infants born preterm demonstrate impaired exploration behaviors throughout infancy and toddlerhood. *Physical Therapy*, *95(1)*, 51-64, doi: 10.2522/ptj.20130584.
- 29. Lobo, M.A., Kokkoni, E., de Campos, A.C., & Galloway, J.C. (2014). Not just playing around: Infants' behaviors with objects reflect ability, constraints, and object properties. *Infant Behavior & Development, 37(3),* 334-351, doi: 10.1016/j.infbeh.2014.05.003.
- Lobo, M.A., Paul, D.A., Mackley, A., Maher, J., & Galloway, J.C. (2014). Instability of delay classification and determination of early intervention eligibility in the first two years of life. *Research in Developmental Disabilities*, *35*, 117-126, doi: 10.1016/j.ridd.2013.10.017.
- Harbourne, R.T., Lobo, M.A., Karst, G.M., & Galloway, J.C. (2013). Sit happens: Does sitting development perturb reaching development or vice versa? *Infant Behavior & Development*, 36(3), 438-450, doi: 10.1016/j.infbeh.2013.03.011.
- Lobo, M.A., & Galloway, J.C. (2013). Assessment and stability of early learning abilities in preterm and full-term infants across the first two years of life. *Research in Developmental Disabilities, 34(5),* 1721-30, doi: 10.1016/j.ridd.2013.02.010.
- 33. Lobo, M.A., Harbourne, R.T., Dusing, S.C., & Westcott McCoy, S. (2013). Grounding early intervention: Physical therapy cannot just be about motor skills anymore. *Physical Therapy*, *93(1)*, 94-103, doi: 10.2522/ptj.20120158.
- Dusing, S.C., Lobo, M.A., Lee, H., & Galloway, J.C. (2013). Intervention in the first weeks of life for infants born late preterm: A case series. *Pediatric Physical Therapy*, 25(2), 194-203, doi: 10.1097/PEP.0b013e3182888b86.
- 35. Lobo, M.A. & Galloway, J.C. (2013). The onset of reaching significantly impacts how infants explore both objects and their bodies. *Infant Behavior and Development, 36(1),* 14-24, doi: 10.1016/j.infbeh.2012.09.003.
- Gadin, E., Lobo, M.A., Sem, K., Paul, D., Steiner, K., Mackley, A., Anzillotti, K., & Galloway, J.C. (2012). Volumetric MRI and MRS and early motor development of infants born preterm. *The Journal of Pediatric Physical Therapy, 24 (1),* 38-44, doi: 10.1097/PEP.0b013e31823e069d.
- 37. Lobo, M.A., & Galloway, J.C. (2012). Enhanced handling and positioning in early infancy advances development throughout the first year. *Child Development*, *83(4)*, 1290-1302, doi: 10.1111/j.1467-8624.2012.01772.x.
- Lobo, M.A. & Galloway, J.C. (2008). Postural and object-oriented experiences advance early reaching, object exploration, and means-end behavior. *Child Development*, 79(6), 1869-1890, doi: 10.1111/j.1467-8624.2008.01231.x.
- Heathcock, J.C., Lobo, M.A., & Galloway, J.C. (2008). Movement training advances the emergence of reaching in infants born at less than 33 weeks of gestational age: A randomized clinical trial. *Physical Therapy*, 88(3), 310-322, doi: <u>10.2522/ptj.20070145</u>.
- Heathcock, J.C., Bhat, A.N., Lobo, M.A., & Galloway, J.C. (2005). The relative kicking frequency of infants born full-term and preterm during learning and short-term and longterm memory periods of the mobile paradigm. *Physical Therapy*, 85(1), 8-18, <u>doi.org/10.1093/ptj/85.1.8</u>.
- 41. Lobo, M.A., Galloway, J.C., Savelsbergh, G.J.P. (2004). General & task-related experiences affect early object interaction. *Child Development*, *75(4)*, 1268-1281, DOI: 10.1111/j.1467-8624.2004.00738.x.

 Heathcock, J.C., Bhat, A.N., Lobo, M.A., & Galloway, J.C. (2004). The performance of infants born preterm and full-term in the mobile paradigm: Learning and memory. *Physical Therapy*, 84(9), 808-821, doi. org/10.1093/ptj/84.9.808.

## **Peer-Reviewed Published Conference Manuscripts**

- Golgouneh, A., Beaudette, E., Woelfle, H., Li, B., Subash, N., Redhouse, A.J., Jones, M., Martin, T., Lobo, M.A., Holschuh, B., Dunne, L.E. (2021). Design of a hybrid SMApneumatic based wearable upper limb exoskeleton. *International Symposium on Wearable Computers (ISWC)*, 179-183, doi.org/10.1145/3460421.3478838.
- Lobo, M.A., & Li, B. (2020). Feasibility and effectiveness of a soft exoskeleton for pediatric rehabilitation. WeRob2020 – The International Symposium on Wearable Robots.
- 3. Orlando, J.M., Gorea, A., Orlando, K., & **Lobo, M.A.** (2020). Adaptive casual shoe for ankle foot orthotic users. *International Textile and Apparel Association Annual Conference Proceedings.*
- Li, B., Greenspan, B., Mascitelli, T., Raccuglia, M., Denner, K., Duda, R., & Lobo, M.A. (2019). Design of the Playskin Air<sup>™</sup>: A user-controlled, soft pneumatic exoskeleton. 2019 Proceedings of the Design of Medical Devices Conference, ASME Digital Collection.

# **Invited Books/Chapters**

- 1. Lobo, M.A., & Li, B. (2021). Feasibility and effectiveness of a soft exoskeleton for pediatric rehabilitation. In J.C. Moreno et al. (Eds), *Biosystems & Biorobotics: Wearable Robotics: Challenges and Trends (Chapter 53).*
- Cunha, A.B., Orlando, J., Li, B., & Lobo, M.A. (2021). Tecnologia vestível na reabilitação pediátrica (Wearable technology in pediatric rehabilitation). In E. Tudella & C. Formiga (Eds.), *Fisioterapia Neuropediátrica: Abordagem Bilopsicossocial (Neuropediatric Physiotherapy: Biopsychosocial Approach), 1<sup>st</sup> Edition (Chapter 41), p 354.*

## **Peer-Reviewed Presentations**

- Lobo, M.A., Franklin, K.A., Magnusson, D.M., Orlando, J.M., Santa, S., and Singh, S. (2022). Putting family at the center of family-centered care: Parent and clinician perspectives and communication strategies. Educational session at the *Combined Sections Meeting of the American Physical Therapy Association,* hybrid, San Antonio, TX.
- Lobo, M.A., Cunha, A.B., Li, B., Orlando, J.M. (2022). Wearables for pediatrics: A model for selecting orthotics/exoskeletons and review of exoskeletons in pediatric rehabilitation. Educational session at the *Combined Sections Meeting of the American Physical Therapy Association,* hybrid, San Antonio, TX.
- 3. Li, B., Patel, J., & Lobo, M.A. (2022). Identification of users' needs for pediatric upper extremity exoskeleton devices. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* hybrid, San Antonio, TX.
- Molinini, R., Inamdar, K., Evans, M., Bowler, K., Griffin, R., Simmons, R.M., Harbourne, R.T., Lobo, M.A., Koziol, N.A., McCoy, S.W., Bovaird, J.A., & Dusing, S.C. (2022). Feasibility and validation of a problem-solving measure for young children with motor delays. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, hybrid, San Antonio, TX.
- 5. Molinini, R., Inamdar, K., Harbourne, R.T., Lobo, M.A., McCoy, S.W., Bovaird, J.A., & Dusing, S.C. (2022). Different toys elicit different problem-solving skills in children with

mild or significant motor delays. Poster presentation at the *Combined Sections Meeting* of the American Physical Therapy Association, hybrid, San Antonio, TX.

- Kretch, K.S., Marcinowski, E.C., Kane, A., Bovaird, J., Harbourne, R.T., Hsu, L.Y., Koziol, N.A., Lobo, M.A., McCoy, S.W., & Dusing, S.C. (2021). Effect of posture on caregiver-provided learning opportunities in typically developing infants and infants with motor delay. Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, virtual, global.
- 7. Civil, D.A., Li, B., Cunha, A.B., Orlando, J.M., & Lobo, M.A. (2021). Design of the Soft Ankle Support (SAS) for children with ankle instability. Oral presentation at the 2021 International Textile and Apparel Association (ITAA) Conference, virtual, global.
- Ren, J., Li, B., Cunha, A.B., Palmer, D., Cao, H., Gorea, A., & Lobo, M.A. (2021). Assessing the needs of children with sialorrhea in relation to clothing protectors. Oral presentation at the 2021 International Textile and Apparel Association (ITAA)- Korean Society of Clothing and Textiles (KSCT) Biennial Joint Symposium, virtual conference, global.
- Li, B., & Lobo, M.A. (2021). Assessing the needs of children with physical disabilities for upper extremity assistive devices. Oral presentation at the 5<sup>th</sup> Assembly of the International Motor Development Research Consortium: Moving Across the Life Course – Research and Practice, virtual conference, global.
- 10. Orlando, J.M., Cunha, A.B., Alghamdi, Z.S., & **Lobo, M.A.** (2021). Understanding parents' preferences for education about infant development and play. Oral presentation at the 5<sup>th</sup> Assembly of the International Motor Development Research Consortium: Moving Across the Life Course Research and Practice, virtual conference, global.
- 11. Cunha, A.B., Babik, I., Choi, D., Koziol, N., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J., Willett, S., & Lobo, M.A. (2021). Effects of the START-Play intervention on means-end problem-solving in children with mild vs. significant motor delays. Oral presentation at the 5<sup>th</sup> Assembly of the International Motor Development Research Consortium: Moving Across the Life Course – Research and Practice, virtual conference, global.
- Alghamdi, Z.S., Orlando, J.M., Cunha, A.B., & Lobo, M.A. (2021). Systematic evaluation of infant containers: Movement opportunities they provide and constraints they impose throughout the first year of life. Oral presentation at the 5<sup>th</sup> Assembly of the International Motor Development Research Consortium: Moving Across the Life Course – Research and Practice, virtual conference, global.
- Jancart, K.L., Dusing, S.C., Lobo, M.A., McCoy, S.W., Koziol, N.A., Hsu, L.Y., Bovaird, J.A., An, M., Delprince, A., Tommer, M., Spirnak, J., Boe, C., & Harbourne, R.T. (2021). Long-term object permanence and sitting in infants with motor delays. Poster presentation at the *Annual American Psychological Association Conference*, virtual.
- 14. Golgouneh, A., Beaudette, E., Woelfle, H., Li, B., Subash, N., Redhouse, A., Jones, M., Martin, T., Lobo, M.A., Holschuh, B., & Dunne, L. (2021). Design of a hybrid SMApneumatic based wearable upper limb exoskeleton. Poster presentation at the *International Symposium on Wearable Computers,* virtual conference, global.
- 15. Babik, I., Cunha, A.B., Choi, D., Koziol, N., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J., & Lobo, M.A. (2021). The effect of the START-Play intervention on the development of reaching skills in children with mild versus significant motor delays. Poster presentation at the *Early Detection and Early Intervention in Neurodevelopmental Disorders International Congress 2021*, hybrid conference, Groningen, NL.
- Orlando, J.M., Cunha, A.B., Alghamdi, Z.S., Abramson, E.A., Seifert, M.C., & Lobo, M.A. (2021). Systematic evaluation of the content regarding infant play and development presented in common education sources. Poster presentation at the *Early Detection and*

Early Intervention in Neurodevelopmental Disorders International Congress 2021, hybrid conference, Groningen, NL.

- 17. Cunha, A.B., Babik, I., **Lobo, M.A.** (2021). The effect of parent education on parent-child interaction and motor development. Poster presentation at *The 6<sup>th</sup> Lancaster Conference on Infant and Early Child Development,* virtual conference, Lancaster University, England.
- 18. Babik, I., Cunha, A.B., Choi, D., Koziol, N., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J., & Lobo, M.A. (2021). Severity of motor delay and timing of reaching mastery achievement determine the effectiveness of the START-Play intervention on children's reaching outcomes. Poster presentation at *The 6<sup>th</sup> Lancaster Conference on Infant and Early Child Development,* virtual conference hosted by Lancaster University, England.
- 19. Cunha, A.B., Babik, I., **Lobo, M.A.** (2021). The behaviors infant use for self and object exploration relate throughout the first two years of life. Poster presentation at the *Society* for Research in Child Development Biennial Meeting, virtual international conference.
- 20. Cunha, A.B., Babik, I., Choi, D., Koziol, N., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J., & Lobo, M.A. (2021). Performance after mastery of means-end problem solving differs in children with mild versus significant motor delays. Poster presentation at the Society for Research in Child Development Biennial Meeting, virtual conference.
- 21. Lobo, M.A., Cunha, A.B., Orlando, J., Alghamdi, Z. (2021). Parent education in early intervention: Quality of popular sources and best practice for service providers. Educational session at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual conference.
- 22. Babik, I., Cunha, A., Choi, D., Koziol, N.A., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J.A., & **Lobo**, **M.A.** (2021). START-Play intervention advanced reaching outcomes in children with significant but not mild motor delay. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, virtual conference.
- 23. Li, B., Orlando, J., Gorea, A., & **Lobo, M.A.** (2021). User perceptions about lower extremity orthotic devices: A systematic review. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual conference.
- 24. Li, B., Cunha, A., & **Lobo, M.A.** (2021). Feasibility and effectiveness of exoskeletons in children with motor disabilities: A systematic review. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual conference.
- Harbourne, R., Jancart, K., Hsu, L.Y., Willett, S., McCoy, S.W., Dusing, S.C., & Lobo, M.A. (2021). The relationship between sitting function and trunk alignment in infants with severe motor delays. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual conference.
- 26. Kane, A.E., Koziol, N., Inamdar, K., Molinini, R., Marcinowski, E.C., Harbourne, R.T., Lobo, M.A., McCoy, S.W., Hsu, L.Y., & Bovaird, J.(2021). Early motor skills predict the development of problem solving in young children with motor delays. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, virtual conference.
- 27. Hsu, L.Y. (2021). Validity of the Gross Motor Function Measure-66 Item-Sets in high-risk infants. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual conference.
- 28. Inamdar, K., Brown S.E., Evans M., Rolin O., Dusing S.C., Harbourne, R.T., **Lobo, M.A.**, McCoy, S.W., Bovaird, J. (2021). SMART-Play intervention to advance cognitive and motor skills in a young child with Cerebral Palsy. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, virtual conference.

- 29. Lobo, M.A., & Li, B. (2020). Feasibility and effectiveness of a soft exoskeleton for pediatric rehabilitation. Oral presentation in the special session on "Soft wearable robots for health and industry" organized by Conor Walsh, Richard Nuckols, and Jesus Ortiz at the *WeRob 2020 Conference*, virtual conference.
- 30. Orlando, J., Gorea, A., Orlando, K., & **Lobo**, **M.A.** (2020). Adaptive casual shoe for ankle foot orthosis users. Oral presentation at the *International Textile and Apparel Association Annual Conference*, virtual conference.
- Harbourne, R.T., Willett, S., Brown, S., Stoner, T., Schwarcz, L., Dusing, S.C., Lobo, M.A., & McCoy, S.W. (2020). START-Play: Building brains in early intervention. Intensive workshop at the *Academy of Pediatric Physical Therapy Annual Conference*, virtual conference.
- 32. Civil, D.A., Orlando, J.M., Cunha, A.B., & **Lobo, M.A.** (2020). Development and evaluation of a soft ankle support garment for ankle-foot orthosis wearers. Oral platform presentation at the *Academy of Pediatric Physical Therapy Annual Conference*, virtual conference.
- 33. Cunha, A.B., Babik, I., Koziol, N.A., Hsu, L.Y., Nord, J., Harbourne, R.T., Westcott-McCoy, S., Dusing, S.C., Bovaird, J.A., & Lobo, M.A. (2020). Sensitivity of the Means-End Problem Solving Assessment Tool (MEPSAT) for discriminating among infants with varying levels of motor delay. Poster presentation at the 74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine, virtual conference.
- 34. Cunha, A.B., Babik, I., Gaston, R., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Bovaird, J.A., & Lobo, M.A. (2020). Development of reaching behaviors across time in infants with varying levels of motor delay. Oral free paper presentation at the 74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine, virtual conference.
- 35. Jancart, K., Harbourne, R.T., Dusing, S.C., **Lobo, M.A.**, Koziol, N.A., Bovaird, J.A., McCoy, S.W., Hsu, L.Y., Cunha, A.B., & An, M. (2020). Long term change in object permanence in infants with motor delays: Group and individual differences in START-Play and usual early intervention. Oral free paper presentation at the *74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine*, virtual conference.
- 36. Kane, A., Koziol, N., Hsu, L.Y., Inamdar, K., Molinini, R., Harbourne, R.T., Lobo, M.A., McCoy, S.W., Bovaird, J.A., & Dusing, S.C. (2020). Relationship between mobility and parent-provided cognitive opportunities in young children with heterogenous motor abilities. Oral free paper presentation at the 74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine, virtual conference.
- 37. Molinini, R.M., Koziol, N.A., Tripathi, T., Inamdar, K., Harbourne, R.T., Lobo, M.A., McCoy, S.W., Bovaird, J.A. & Dusing, S. (2020). Measuring early problem-solving skills in young children with motor impairments: A validation study. Oral presentation at 74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine, virtual conference.
- 38. Inamdar, K., Molinini, R., Kane, A., Hsu, L.Y., Koziol, N., Harbourne, R.T., McCoy, S.W., Lobo, M.A., Bovaird, J.A., & Dusing, S.C. (2020). Relationship between mobility and problem-solving skills in young children with heterogenous motor abilities. Oral free paper presentation at the 74<sup>th</sup> Annual Meeting of the American Academy of Cerebral Palsy and Developmental Medicine, virtual conference.
- 39. Babik, I., Cunha, A.B., Morrell, K., Pfohl, M.J., & **Lobo, M.A.** (2020). Development of infants' means-end problem solving in relation to gross motor milestones. Poster presentation at the *International Conference for Infant Studies*, virtual conference.
- 40. Cunha, A.B., Babik, I., Koziol, N., Hsu, L.Y., Nord, J., START-Play Consortium, & Lobo, M.A. (2020). A novel Means-End Problem Solving Assessment Tool (MEPSAT):

Evaluation of validity and reliability. Poster presentation at the *International Conference for Infant Studies,* virtual conference.

- 41. Cunha, A.B., Babik, I., Wright, E., & **Lobo**, **M.A.** (2020). Parent-child interaction in the first six months and its relation to motor development. Poster presentation at the *International Conference for Infant Studies,* virtual conference.
- 42. Cunha, A.B., Babik, I., Chrobot, B., Koziol, N., Hsu, L.Y., START-Play Consortium, & Lobo, M.A. (2020). Positive effects of START-Play intervention on reaching and cognitive outcomes in young children with motor delay. Poster presentation at the *International Conference for Infant Studies,* virtual conference.
- Molinini, R., Kane, A., Marcinowski, E., Koziol, N., Dusing, S., Harbourne, R.T., Lobo, M.A., McCoy, S.W., & Bovaird, J. (2020). Parent sensitive play predicts the development of problem solving skills in young children with motor impairments. Poster presentation at the *International Conference for Infant Studies*, virtual conference.
- 44. An, M., Harbourne, R., Dusing, S.C., Kane, A., Nord, J., Koziol, N., McCoy, S., Lobo,
  M.A., & Bovaird, J. (2020). Implementation of a multi-dimensional fidelity measure in the START-Play clinical trial. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- 45. Khurana, S., Kane, A., Marcinowski, E., Harbourne, R., **Lobo, M.A.**, McCoy, S.W., Bovaird, J., Koziol, N., & Dusing, S.C. (2020). Developing a sensitive model measuring change in problem-solving skills in infants with motor delays. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- 46. Khurana, S., Kane, A., Marcinowski, E., Harbourne, R., **Lobo, M.A.**, McCoy, S.W., Bovaird, J., Koziol, N., & Dusing, S.C. (2020). Changes in parent-child interaction following START-Play intervention. Oral platform presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- 47. LeVac, D., Smith, B.A., Dusing, S.C., **Lobo**, **M.A**., & Heathcock, J.C. (2020). Strategies to elicit, sustain, and measure behavior change in pediatric rehabilitation research. Educational session at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- Paulson, M.L., Hsu, L.Y., Harbourne, R., Dusing, S.C., Lobo, M.A., & McCoy, S.W. (2020). Adaptive behavior in infants with neuromotor delay. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- 49. Hsu, L.Y., Paulson, M.L., Harbourne, R., Dusing, S.C., **Lobo**, **M.A**., & McCoy, S.W. (2020). Efficacy of the START-Play program for infants with neuromotor disorders: Adaptive behavior outcome. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Denver, CO.
- 50. Harbourne, R., Dusing, S.C., **Lobo, M.A.**, McCoy, S.W., Bovaird, J., Willett, S., & the START-Play Consortium. (2020). Efficacy of the START-Play program for infants with neuromotor disorders: Closing the gap between movement and cognition in early intervention. Poster presentation at the *Institute for Education Sciences Primary Investigator Meeting*, Alexandria, VA.
- 51. Ren, J., Li, B., Cao, H., & **Lobo**, **M.A.** (2019). The design of saliva-wicking scarves for individuals with oral-motor impairments. Oral presentation at the *International Textile and Apparel Association Annual Conference*, Las Vegas, NV.
- 52. Marcinowski, E.C., Hsu, L., Dusing, S.C., Bovaird, J., Harbourne, R., **Lobo, M.A.**, McCoy, S.W., Koziol, N., & START-Play Consortium. (2019). Sit long, talk much. Language, general motor ability, and independent sitting for infants with motor delays. Oral presentation at *Society for Research in Child Development Workshop on Early Language in Neurodevelopmental Disorders*, Lisbon, Portugal.

- Kokkoni, E., Haworth, J., Cunha, A.B., Galloway, J.C., Rahman, T., & Lobo, M.A. (2019). Object-oriented changes in hand kinematics and postural sway of an infant wearing an arm exoskeleton. Poster presentation at the *American Congress of Rehabilitative Medicine 96<sup>th</sup> Annual Conference*, Chicago, IL.
- 54. Lobo, M.A. (Discussant), Harbourne, R. (Chair), Dusing, S., Morgan, C., & Guzetta, A. (2019). From motion to cognition: What are the best ingredients for early intervention to optimize the transition to school entry for infants with neuromotor dysfunction? Focused symposium at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 55. Lobo, M.A., Harbourne, R.T., Dusing, S.C., McCoy, S.W., Cunha, A.B., Babik, I., Hsu, L., Koziol, N., Bovaird, J.A., Marcinowski, E.C., Chang, H., An, M.A., Sheridan, S., Willett, S. (2019). Efficacy of the START-Play program for infants with neuromotor disorders: Motor outcomes. Oral presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 56. Harbourne, R.T., Dusing, S.C., Lobo, M.A., McCoy, S.W., Koziol, N., Hsu, L., Willett, S., Marcinowski, E.C., Babik, I., Cunha, A.B., An, M.A., Chang, H., Bovaird, J.A., Sheridan, S., (2019). Efficacy of the START-Play program for infants with neuromotor disorders: Cognitive outcomes. Oral presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 57. Cunha, A.B., Babik, I., Koziol, N., Nord, J., Hsu, L.Y., Harbourne, R., Bovaird, J., Dusing, S., Westcott-McCoy, S., & Lobo, M.A. (2019). Feasibility, Validity, and Reliability of a Novel Means-End Problem Solving Assessment Tool (MEPSAT). Poster presentation at the American Academy of Cerebral Palsy and Developmental Medicine Conference, Anaheim, CA.
- **58.** Cunha, A.B., Babik, I., **Lobo, M.A.** (2019). Assistive and rehabilitative effects of the Playskin Lift<sup>™</sup> exoskeletal garment in children with arthrogryposis. Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 59. Hsu, L.Y., Paulson, M., McCoy, S.W., Dusing, S., **Lobo, M.A.**, & Harbourne, R. (2019), Development of adaptive behavior in infants and toddlers with neuromotor delay. Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 60. Molinini, R.M., Inamdar, K., Marcinowski, E.C., Dusing, S.C., Koziol, N.A., Lobo, M.A., Harbourne, R.T., McCoy, S.W., Bovaird, J.A. (2019). Measuring Early Problem-Solving in Children with Motor Impairments: Evaluating change over time using a modification of the Early Problem Solving Indicator. Oral presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 61. Molinini, R., Inamdar, K., Marcinowski, E., Dusing, S., Koziol, N., Lobo, M.A., Harbourne, R., Mccoy, S., & Bovaird, J. (2019). Measuring early problem-solving in children with motor impairments: evaluating responsiveness over time using a modification of the early problem-solving indicator. Oral presentation at the *American Academy of Cerebral Palsy and Developmental Medicine Conference*, Anaheim, CA.
- 62. Li, B., Greenspan, B., Mascitelli, T., Raccuglia, M., Denner, K., Duda, R., & Lobo, M.A. (2019). Design of the Playskin Air<sup>™</sup>: A user-controlled, soft pneumatic exoskeleton. Poster presentation at the *Design of Medical Devices Conference*, Minneapolis, MN.
- 63. Cunha, A.B., Greenspan, B., Babik, I., Rubin, A., & **Lobo, M.A.** (2019). Validity and reliability of a novel smart garment for tracking infants' body position: a preliminary study. Poster presentation at the *Society for Research in Child Development Biennial Meeting,* Baltimore, MD.

- 64. Babik, I., Cunha, A., Morrell, K., & **Lobo**, **M.A.** (2019). Postural control and locomotor ability relate to means-end problem-solving. Poster presentation at the *Society for Research in Child Development Biennial Meeting*, Baltimore, MD.
- 65. Babik, I., Movva, N., Cunha, A., & **Lobo**, **M.A.** (2019). Characterization of self-feeding and problem-solving in children with arm movement impairments. Poster presentation at the *Society for Research in Child Development Biennial Meeting*, Baltimore, MD.
- 66. Lobo, M.A. (Discussant), Ledebt, A. (Chair), West, K., Thurman, S., & van Setten, L. (2019). Understanding motor activity in infants: The role of parent-child interaction. Oral paper symposium presentation at the *Society for Research in Child Development Biennial Meeting*, Baltimore, MD. Senior symposium collaborators: Linda B. Smith, Daniella Corbetta, and George F. Michel.
- 67. Babik, I., Cunha, A.B., & Lobo, M.A. (2019). A garment facilitating use of the affected hand and bimanual hand use in children with hemiplegia. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* Washington, DC.
- 68. Babik, I., Cunha, A.B., & **Lobo, M.A.** (2019). Effects of Playskin Lift<sup>™</sup> exoskeletal garment intervention on reaching and object exploration of infants at risk. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Washington, DC.
- 69. Lobo, M.A., Dusing, S., Harbourne, R., & Westcott-McCoy, S. (2019). Making children smarter: Jointly advancing motor and cognitive development. One day preconference course at the *Combined Sections Meeting of the American Physical Therapy Association,* Washington, DC.
- 70. Lobo, M.A., Dusing, S., Harbourne, R., & Westcott-McCoy, S. (2018). START-Play: Jointly advancing motor and cognitive development in infants with motor delays. Instructional course at the *American Academy of Cerebral Palsy and Developmental Medicine*, Cincinnati, Ohio.
- 71. Babik, I., Cunha, A.B., & **Lobo, M.A.** (2018). Assessment of an intervention using an exoskeleton to improve reaching and object exploration in infants born with a brain injury. Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine*, Cincinnati, Ohio.
- 72. Cunha, A., Babik, I., & Lobo, M.A. (2018). Development of means-end problem solving in infants born preterm versus full-term. Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine*, Cincinnati, Ohio.
- 73. Dusing, S.C., Harbourne, R., Lobo, M.A., Westcott McCoy, S., Bovaird, J. (2018). Improvements in Motor and Cognitive Development Following Sitting Together and Reaching To Play (START-Play): Single Subject Multiple Baseline Study of Two Children. Free Paper Oral Presentation at the American Academy of Cerebral Palsy and Developmental Medicine, Cincinnati, Ohio. Abstract also published in Developmental Medicine and Child Neurology).
- 74. Harbourne, R., Dusing S.C., Lobo, M.A., & McCoy, S.W. (2018). A comparison of object permanence progression during sitting development in infants with typical development and infants with motor delay "Poster presentation at the *American Academy of Cerebral Palsy and Developmental Medicine*, Cincinnati, Ohio. Abstract also published in *Developmental Medicine and Child Neurology*).
- 75. Babik, I., Cunha, A.B., & **Lobo, M.A.** (2018). Effects of the Playskin Lift<sup>™</sup> exoskeletal garment on arm function for children with arthrogryposis. Oral presentation at the 3<sup>rd</sup> International Symposium on Arthrogryposis, Philadelphia, PA.
- 76. Lobo, M.A. (2018). Chair of symposium "Co-development of motor and cognitive abilities in infancy: Dynamic systems approach", including presentation by Babik, I., Cunha, A., & Lobo, M.A. From postural control and object exploration to means-end

problem solving: A dynamic developmental cascade. *International Conference for Infant Studies,* Philadelphia, PA. Senior presenters: Linda B. Smith, Daniella Corbetta, George Michel.

- 77. Babik, I., Cunha, & **Lobo**, **M.A.** (2018). Impact of cognitive, fine motor, and gross motor development on means-end problem solving. Poster presentation at the *International Conference for Infant Studies*, Philadelphia, PA.
- 78. Babik, I., Cunha, & Lobo, M.A. (2018). Impact of amount and variability of exploration on infants' means-end problem solving. Poster presentation at the *International Conference for Infant Studies,* Philadelphia, PA.
- Cunha, Babik, I., Lobo, M.A., Koziol, N., Hsu, L., Bovaird, J., Dusing, S., Harbourne, R., & Westcott-McCoy, S. (2018). Reaching performance while sitting with or without support in infants with different levels of mobility. Poster presentation at the *International Conference for Infant Studies,* Philadelphia, PA.
- Cunha, A.B., Greenspan, B., Babik, I., Hall, M., Sousa, K.G., & Lobo, M.A. (2018). Testing validity and reliability of a smart garment for tracking infants' body position. Poster presentation at the *International Conference for Infant Studies*, Philadelphia, PA.
- Lobo, M.A., Lasko, Y., Willkomm, T., & Hurst, A. (2018). Real world rehabilitation technology: Development, dissemination, and research. Research forum educational session at *Combined Sections Meeting of the American Physical Therapy Association*, New Orleans, LA.
- 82. Harbourne, R., **Lobo, M.A**., McCoy, S.W., & Dusing, S. (2018). Making children smarter: Jointly advancing motor and cognitive development. Educational session at *Combined Sections Meeting of the American Physical Therapy Association,* New Orleans, LA.
- 83. Cunha, A.B., Babik, I., Harbourne, R., Chang, H., Stankus, J., & **Lobo**, **M.A.** (2018). Validity and reliability of the Angles Video Goniometer App for the assessment of joint angles in children and adults. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, New Orleans, LA.
- 84. Cunha, A.B., Babik, I., Ross, S., Logan, S., Galloway, J.C., & Lobo, M.A. (2018). Prematurity may impact problem-solving behaviors across the first two years of life. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, New Orleans, LA.
- 85. Babik, I., Cunha, A.B., Hall, M.L., & **Lobo, M.A.** (2018). Effect of the Hug n' Move postural support garment on a child's posture, attention, and object interaction during play. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* New Orleans, LA.
- Chang, H., Hsu, L., Westcott-McCoy, S., Harbourne, R., Dusing, S., & Lobo, M.A. (2018). Service delivery of PTs and Ots in early intervention: How are we doing? Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, New Orleans, LA.
- 87. Hsu, L., Chang, H., Gregory, W., Westcott-McCoy, S., Harbourne, R., Dusing, S., & Lobo, M.A. (2018). Concurrent validity of two abbreviated versions of the Gross Motor Function Measure in young infants with neuromotor disorders. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* New Orleans, LA.
- Chang, H., Stankus, J., Harbourne, R., Dusing, S., Lobo, M.A., & Westcott-McCoy, S. (2018). The relationship between developing sitting postural control and object permanence in infants with neuromotor disorders. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, New Orleans, LA.
- 89. Tripathi, T., Koziol, N., Marcinowski, E., Hsu, L, Dusing, S., Harbourne, R., **Lobo, M.A.**, Westcott-McCoy, S. (2018). Sitting abilities predict early problem solving in infants with

motor delays. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association,* New Orleans, LA.

- 90. Hall, M.L., Sieber, G., Hollen, S., & Lobo, M.A. (2017). Creating an inclusive design toolkit: Using grounded theory and participatory process to engage children with disabilities. Poster presentation at *International Textile and Apparel Association Annual Conference,* St. Petersburg, FL.
- Babik, I., Cunha, A., & Lobo, M.A.; Thurman, S., & Corbetta, D.; Fears, N., Walsh, L., Maldarelli, J., & Lockman, J.; Murrah, W., Ruzek, E., & Grissmer, D. (Chair: Lobo, M.A.). (2017). Motor Skill Foundations of Cognitive Development and Academic Achievement. Paper symposium at the *Society for Research in Child Development*, Austin, TX.
- 92. Babik, I., Cunha, A.B., Movva, N., & **Lobo, M.A.** (2017). Longitudinal Effects of an Exoskeletal Garment on Reaching and Object Manipulation in Children with Arm Movement Impairments. Poster presentation at the *Society for Research in Child Development,* Austin, TX.
- 93. Movva, N., Babik, I., & Lobo, M.A. (2017). Self-Feeding Behavior in Typically Developing Children and Children with Arm Movement Impairments. Poster presentation at the Society for Research in Child Development, Austin, TX.
- 94. Lobo, M.A., Cunha, A., Ross, S., Babik, I., Movva, N., Clary, E., Galloway, J.C., & Logan, S. (2017). Problem Solving Behaviors in Preterm and Full-Term Infants During the First Two Years of Life. Poster presentation at the Society for Research in Child Development, Austin, TX.
- 95. Lobo, M.A., Heathcock, J.C., Dusing, S.C., & Smith, B. (2017). High- and low-tech approaches to assessing and treating infants with motor delay. Educational session at *Combined Sections Meeting of the American Physical Therapy Association,* San Antonio, TX.
- 96. Chang, Hui-Ju, Dusing, S., Harbourne, R., Lobo, M., & McCoy, S. (2017). A model for designing and maintaining fidelity for process-based interventions: The START-Play clinical trial. Poster presentation at *Combined Sections Meeting of the American Physical Therapy Association,* San Antonio, TX.
- 97. Tripathi, T., Hsu, L.Y., Koizol, N., Syed, G., Dusing, S.C., Bovaird, J., Harbourne, R., Lobo, M.A., & Westcott McCoy, S. (2017) Concurrent validity of the Bayley cognitive subtest and early problem-solving indicator in infants with neuromotor impairments. Poster presentation at the American Academy of Cerebral Palsy and Developmental Medicine, Montreal, Canada. Abstract also published in Dev Med Child Neurol. 2017;59:113-113. doi:10.1111/dmcn.55\_13512
- 98. Greenspan, B., Hall, M.L., Cao, H., & **Lobo, M.A.** (2016). Development & testing of a stitched stretch sensor for measuring human movement. Poster presentation at *The Fiber Society*, Ithaca, NY.
- Lobo, M.A. (Chair), Leezenbaum, N., Iverson, J., Babik, I., Movva, N., Lobo, M.A., Kokkoni, E., Galloway, J., Heathcock, J., Capetillo, D., & Durbak, E. (2016). Motor Development in Infants at Risk: Negative Outcomes, Early Diagnosis, and Intervention. Paper Symposium at *International Conference on Infant Studies*, New Orleans, LA.
- 100. Babik, I., Movva, N., & **Lobo**, **M.A.** (2016). Hand use for reaching and object exploration in infants with impaired upper extremity functioning: Preferences v. affordances. Poster presentation at *International Conference on Infant Studies*, New Orleans, LA.
- 101. **Lobo, M.A.**, Babik, I., & Hall, M.L. (2016). FUNctional fashions & wearable technology for kids with disabilities. Educational Session at *Combined Sections Meeting of the American Physical Therapy Association,* Anaheim, CA.

- 102. Heathcock, J.C., Gannotti, M.E., **Lobo**, **M.A**., Christy, J.B., Bjornson, K., & Dusing, S. (2016). Technology for enhanced movement in pediatrics: An update from Research Summit IV. Educational Session at *Combined Sections Meeting of the American Physical Therapy Association*, Anaheim, CA.
- 103. Hall, M.L., & **Lobo**, **M.A.** (2016). Co-designing a rehabilitative device: The Playskin Lift<sup>™</sup> project. Poster presentation at *Combined Sections Meeting of the American Physical Therapy Association,* Anaheim, CA.
- 104. Babik, I., Movva, N., & **Lobo, M.A.** (2016). Novel Playskin Lift<sup>™</sup> exoskeletal garment improves multimodal object exploration in infants at risk. Poster presentation at *Combined Sections Meeting of the American Physical Therapy Association,* Anaheim, CA.
- 105. Hall, M.L., Cao, H., & Lobo, M.A. (2015). Playskin Lift<sup>™</sup>: An exoskeletal garment for children with limited arm mobility. Poster presentation at *The Fiber Society: Advancing Scientific Knowledge Pertaining to Fibers and Fibrous Materials*, Raleigh, NC.
- 106. Movva, N., Babik, I., & **Lobo, M.A.** (2015). Effectiveness of the first exoskeletal garment (Playskin Lift<sup>™</sup>) to improve reaching and object exploration in infants born with brain injury. Poster presentation at *Northeast Regional IDeA Conference*, Bar Harbor, ME.
- 107. Hall, M.L., & **Lobo**, **M.A.** (2015). FUNctional design: Exploring design for disability in a childrenswear course. Poster presentation at *International Textile and Apparel Association Annual Conference*, Santa Fe, NM.
- 108. Greenspan, B., & **Lobo**, **M.A.** (2015). Developing innovative exoskeletal garments for children with disabilities. Interactive exhibit at *US National Maker-Faire*, Washington, DC.
- Lobo, M.A., Buckley, J., Doyle, J., Thompson, C., Szczepanek, G., & Marcozzi, A. (2015). Playskin Air<sup>™</sup>: Pediatric Exoskeletal Garment. Poster and design presentation at 2015 Summer Biomechanics, Bioengineering, and Biotransport Conference – Undergraduate Design Competition, Snowbird, UT.
- Lobo, M.A., Buckley, J., Doyle, J., Thompson, C., Szczepanek, G., & Marcozzi, A. (2015). Playskin Air<sup>™</sup>: Pediatric Exoskeletal Garment. Poster and design presentation at 2015 Design of Medical Devices Conference – International Student Design Showcase, Minneapolis, MN.
- 111. Hall, M., Babik, I., Koshy, J., & **Lobo**, **M.A.** (2015). My exoskeleton has sequins: Merging fashion, engineering, rehabilitation, and child development to design assistive devices. Poster presentation at the *Society for Research in Child Development Biennial Conference*, Philadelphia, PA.
- 112. Babik, I., Libassi, L., Movva, N., & **Lobo**, **M.A.** (2015). Rehabilitation intervention changing the dynamics of movement in children with arthrogryposis. Poster presentation at the *Society for Research in Child Development Biennial Conference*, Philadelphia, PA.
- 113. Hall, M.L., Koshy, J., & **Lobo**, **M.A.** (2015) Playskin Lift<sup>™</sup>: Development of a garment-based exoskeleton for children with arm movement impairments. Oral presentation at the *TechStyleLAB Symposium*, Kent, Ohio.
- Koshy, J., Chang, K., Oblender, R., Olaya, M., Buckley, J.M., Hall, M. & Lobo,
   M.A. (2014). Playskin Lift<sup>™</sup>: An exoskeletal garment to assist upper extremity mobility and function. Poster presentation at *The 7<sup>th</sup> World Congress of Biomechanics*, Boston, MA.
- 115. Rahman, T., Kokkoni, E., Galloway, J.C., & **Lobo**, **M.A.** (2014). Development and testing of a modular upper extremity exoskeleton for infants. *Biodevices Conference*, France.

- 116. **Lobo, M.A.** & Heathcock, J. (2014). Early intervention to promote upper extremity function: What's known. Two-hour oral session at the *Combined Sections Meeting of the American Physical Therapy Association,* Las Vegas, NV.
- 117. **Lobo, M.A.** & Heathcock, J. (2014). Early intervention to promote upper extremity function: What's needed. Two-hour oral session at the *Combined Sections Meeting of the American Physical Therapy Association,* Las Vegas.
- 118. **Lobo, M.A.** & Galloway, J.C. (2014). I Want It All, and I Want It Now: Pediatric Assistive Technology That Behaves Like a Kid. Two-hour oral session at the *Combined Sections Meeting of the American Physical Therapy Association,* Las Vegas.
- 119. Baraldi Cunha, A., **Lobo, M.A.**, Kokkoni, E., Galloway, J.C., & Tudella, E. (2014). Effect of short-duration training on reaching behavior in infants. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Las Vegas, NV.
- 120. Kokkoni, E., Cunha, A., Rahman, T., Galloway, J.C., & Lobo, M.A. (2014). Use of a novel rehabilitation device to improve upper extremity function and play in an infant with arthrogryposis. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association*, Las Vegas, NV.
- 121. **Lobo, M.A.**, Kokkoni, E., Baraldi Cunha, A. & Galloway, J.C. (2013). Infants born preterm explore objects differently than full-term infants throughout infancy and toddlerhood. Oral presentation at the *Motor Development Research Consortium*, Philadelphia.
- 122. **Lobo, M.A.** & Galloway, J.C. Assessment and stability of early learning abilities in preterm and full-term infants across the first two years of life. (2013). Oral presentation at the *Motor Development Research Consortium,* Philadelphia.
- 123. Baraldi Cunha, A., Kokkoni, E., Lobo, M.A., de Almeida Soares, D., Galloway, J.C., & Tudella, E. (2013). Effect of different types of short-duration training on spatio-temporal parameters of reaching in infants. Poster presentation at the 12<sup>th</sup> Congress of European Forum for Research in Rehabilitation, Istanbul.
- 124. Dusing, S., Lobo, M.A., & Galloway, J.C. (2013). Posture and movement experience advance object exploration and motor development in the late preterm infant: A prospective case series report. Poster presentation at the *Combined Sections Meeting* of the American Physical Therapy Association.
- 125. Kokkoni, E., Paul, D., Mackley, A., Steiner, K., Gadin, E., Anzilotti, K., Galloway, J.C., & Lobo, M.A. (2012) Object exploration in the first years of life may be primarily unimanual for infants with Cerebral Palsy. Preliminary evidence. Poster presentation at the *AACPDM Conference*.
- Paul, D. A., Mackley, A., Lobo, M.A., Anzilotti, K., Steiner, K., & Galloway, J. C. (2012). Motor delay in preterm infants is not associated with changes in cerebellar volume measured prior to hospital discharge. Poster presentation at the *Pediatric Academic Societies Annual Meeting*.
- 127. Lobo, M.A., & Galloway, J.C. (2011). Developmental impact of a caregiverprovided postural training program in infancy. Poster presentation at the *Combined Sections Meeting of the American Physical Therapy Association.*
- 128. Lobo, M.A., Galloway, J.C., Harbourne, R., & Dusing, S. (2011). Intervention to advance sitting and reaching in infants and young children with disabilities: Evidence and clinical decision making principles. Educational session at the *Combined Sections Meeting of the American Physical Therapy Association*.
- 129. Libertus, K. Lobo, M.A., Schwartzer, G., & Galloway, J.C. (2011). Enhancing development? The positive influences of early experiences on development. Paper symposium presentation at *The Society for Research in Child Development*.

- 130. Lobo, M.A., & Galloway, J.C. (2010). Object exploration behaviors in early infancy: Relationship with age, spontaneous movements, and reaching ability. Poster presentation at the *International Conference on Infant Studies*.
- Gadin, E., Paul, D.A., Mackley, A., Anzilotti, K., Steiner, K., Lobo, M.A., Sem, K., & Galloway, J.C. (2010). Correlation of proton magnetic resonance spectroscopy (MRS) and volumetric magnetic resonance imaging (MRI) of the preterm white matter. Poster presentation at the *Pediatric Academic Societies' Annual Meeting*.
- 132. Lobo, M.A., & Galloway, J.C. (2009). Early object exploration in infancy: Effects of the onset of reaching and gestational age at birth. Poster presentation at the *American Physical Therapy Association's Annual Conference and Exposition*.
- 133. Lobo, M.A., & Galloway, J.C. (2008). Postural and object-oriented experiences advance early reaching, object exploration, and means-end behavior. Poster presentation at the *International Conference on Infant Studies*.
- 134. Lobo, M.A., & Galloway, J.C. (2006). Postural & task-related experiences advance infants' abilities to contact & explore objects. Poster presentation at the *International Conference on Infant Studies.*
- 135. Lobo, M.A., Galloway, J.C., & Savelsbergh, G.J.P. (2005). General & task-related experiences affect early object interaction. Poster presentation at the *Motor Development & Learning in Infancy II Conference.*
- 136. Lobo, M.A., & Galloway, J.C. (2005). Effects of social, postural, & task-related experiences on infants' abilities to contact & explore objects. Poster presentation at the *Motor Development & Learning in Infancy II Conference.*
- 137. Galloway, J.C., Lobo, M.A., Bhat, A. (2005). The emergence of purposeful control in early infancy: Appreciating Esther Thelen. Symposium at the *NASPSPA Annual Conference.*
- 138. Lobo, M.A., & Galloway, J.C. (2005). Effects of social, postural, & task-related experiences on infants' abilities to contact & explore objects. Poster presentation at the *Society for Neuroscience 35<sup>th</sup> Annual Meeting.*
- 139. Bhat, A., Heathcock, J., Lobo, M., & Galloway, J.C. (2004). Spatio-temporal patterns of early arm movements. Poster presentation at the *International Conference on Infant Studies.*
- 140. Lobo, M.A., Galloway, J.C., & Savelsbergh, G.J.P. (2004). General & task-related experiences affect early object interaction. Poster presentation at the *International Conference on Infant Studies*.
- 141. Heathcock, J., Bhat, A., Lobo, M.A., & Galloway, J.C. (2003). Learning in fullterm and pre-term infants: Implications for intervention with 'prefunctional' infants. Poster presentation at the *American Physical Therapy Association Combined Sections Meeting*.
- 142. Galloway, J.C., Bhat, A., Heathcock, J., Manal, K., & Lobo, M.A. (2003). Shoulder & elbow dynamics during vertical arm movements of various directions and speeds. Poster presentation at *Physical Therapy 2003: Annual Conference & Exposition* of the American Physical Therapy Association.
- 143. Lobo, M.A., Galloway, J.C., Savelsbergh, G.J.P. (2003). General v. specific movement training of hand and foot reaching in infants. Poster presentation at *Physical Therapy 2003: Annual Conference & Exposition of the American Physical Therapy Association.*
- 144. Lobo, M.A., Galloway, J.C., & Savelsbergh, G.J.P. (2003). Task-specific and generalized movement training affects the development of reaching in infants. Poster presentation at the NASPSPA Annual Conference.
- 145. Galloway, J.C., Heathcock, J., Bhat, A., & Lobo, M.A. (2002). Feet reaching in young infants: the interaction of experience & ability. Poster presentation at the *International Conference on Infant Studies.*

- 146. Galloway, J.C., Bhat, A., Heathcock, J., Manal, K., & Lobo, M.A. (2002). Shoulder and elbow dynamics during vertical arm movements of various directions and speeds: Implications for infant development and patients with neurologic disorders. Poster presentation at the *American Physical Therapy Association Annual Conference*.
- 147. Galloway, J.C., Heathcock, J., Bhat, A., & Lobo, M.A. (2002). Development of object exploration with hands and feet in preterm infants. Poster presentation at NASPSPA Annual Conference (motor control and motor development society).
- 148. Galloway, J.C., Heathcock, J., Bhat, A. & Lobo, M.A. (2002). Feet reaching: The interaction of experience and ability in full-term infants. Poster presentation at the NASPSPA Annual Conference.
- 149. Galloway, J.C., Bhat, A., Heathcock, J., Manal, K., & Lobo, M.A. (2001). Shoulder & elbow dynamics during vertical arm movements of various directions & speeds: implications for development. Poster presentation at the *Society for Neuroscience Conference*.

# **Invited Presentations**

- "User-centered Design for Wearable Devices: What are We Doing Right and How Can We Do Better?" Invited speaker at the Orthotic and Prosthetic Innovative Technologies Conference (OPTech) 2022 Conference, Gillette Children's Speciality Healthcare, St. Paul, MN, May 20, 2022.
- "Translating Evidence into Clinical Practice: A Conversation with the START-Play team." Invited speaker at the Munroe-Meyer Institute, University of Nebraska Medical Center, Omaha, Nebraska, October 14, 2021.
- 3. "Updates for the AMC Community from the Move to Learn Innovation Lab and Super Suits FUNctional Fashion & Wearable Technology Program." Invited speaker at the *Arthrogryposis Multiplex Congenita Support, Inc. (AMCSI) Annual Conference,* virtual meeting, July 22, 2021.
- 4. "Systematic reviews provide the best available evidence to guide. Physical therapy practice." Invited speaker for the Eugene Michels Research Forum at the *Combined Sections Meeting of the American Physical Therapy Association,* virtual meeting, February 24, 2021.
- 5. "Wearables for Rehabilitation: What's Available, How PTs Can Use Them, and How PTs Can Improve Them." Invited speaker at the *Delaware Physical Therapy Association Annual Meeting*, virtual meeting, November 7, 2020.
- "Exoskeletons for rehabilitation: Critical design and evaluation considerations from a clinical perspective". Invited speaker for workshop on "User-centered Design and Evaluation of Wearable Arm/Hand Exoskeletons: Promoting Use and Acceptance" organized by Roger Gassert and Jan Meyer at the *BioRob 2020 Conference*, virtual conference, November 29, 2020.
- 7. "Two Key Mistakes Experts on Infant Motor Development Make That Harm Our Profession and Infants." Invited keynote speaker at the *National Assembly of the International Motor Development Research Consortium*, virtual meeting, October 11, 2020.
- 8. "Super Suits FUNctional Fashion & Wearable Technology program: Recent Efforts." Invited presenter at the *Henswear Annual Symposium*, Newark, DE, February 21, 2020.
- "SCH:INT: Collaborative Research: Smart Wearable Systems to Support and Measure Movement in Children With and Without Mobility Impairments." Invited panelist for "Human in the Loop Panel", National Science Foundation Smart and Connected Health Primary Investigator Meeting, Alexandria, VA, January 6, 2020.

- "SCH:INT: Collaborative Research: Smart Wearable Systems to Support and Measure Movement in Children With and Without Mobility Impairments." Invited panelist for "Medical Cyber-Physical Systems and Autonomy: Beyond Pacemakers and Pancreases Panel", National Science Foundation Smart and Connected Health Primary Investigator Meeting, Alexandria, VA, January 7, 2020.
- 11. "Activity- and Technology-based Interventions for Children with Disabilities." Invited speaker, Wilmington Consortium, Wilmington, DE, November 14, 2019.
- 12. "Humancentric Approach to Assistive Technology Development and Utilization." Invited speaker in collaboration with Dr. Conor Walsh, John L. Loeb Associate Professor, Harvard University, for the John P. Scholz Research Symposium, University of Delaware, Newark, DE, November 16, 2018.
- "Creating Effective Devices for Users with Disabilities: Design Model, Stories, and Lessons from the Super Suits FUNctional Fashion & Wearable Technology Program." Invited speaker for Grand Rounds, Munroe-Meyer Institute, Omaha, NE, September 17, 2018.
- 14. "Using Developmental Science & Play to Improve Outcomes for Infants at Risk." Invited presenter for continuing education series for clinicians, Munroe-Meyer Institute, Omaha, NE, September 17, 2018.
- 15. "A Novel Parent Education Program for Early Intervention." Invited speaker at ACCEL Community Advisory Council Meeting, Wilmington, DE, August 22, 2018.
- "Developmental Science + Infants at Risk = A Formula for Improved Developmental Outcomes." Invited speaker for Ob/Gyn Grand Rounds, Christiana Care Health System, Newark, DE, June 27, 2018.
- 17. "Helping People Live Better Lives Through Fashion and Technology." Invited speaker for the Osher Lifelong Learning Institute, Wilmington, DE, June 14, 2018.
- "Move to Learn Innovation Lab: Developing and Testing Intervention Activities and Tools for Children with Delays." Invited presenter at the University of Delaware-AI DuPont Nemours collaborative meeting for research in cerebral palsy, Wilmington, DE, April 16, 2018.
- 19. "Super Suits: How Advances in Fashion & Wearable Technology Can Improve Life for People with Disabilities." Invited speaker for the ACCEL Innovative Discovery Series, Christiana Care Heath Services, Newark, DE, March 23, 2018.
- 20. "Super Suits FUNctional Fashion and Wearable Technology Program Overview." Invited presenter for the Nemours Maker Event, AI DuPont Nemours Hospital for Children, Wilmington, DE, March 17, 2018.
- 21. "Technologies for Use in Rehabilitation: Exoskeletons, Postural Support Garments, Activity Sensing Garments, and More." Invited presenter at TechnoPalooza, Organized by the Technology Special Interest Group of the American Physical Therapy Association, Combined Sections Meeting of the American Physical Therapy Association, New Orleans, LA, February 24, 2018.
- 22. "Functional Design for Teens with Cerebral Palsy." Dyes, C., Hall, M.L., & Lobo, M.A. Invited poster presentation for the "Strengthening Partnerships in Health and Education: Delaware and the Nation" Conference, University of Delaware, Newark, DE, October 30, 2017.
- 23. "FUNctional Fashions & Wearable Technology for People With Disabilities." Invited speaker for the annual meeting of the California American Physical Therapy Association, San Diego, CA, September 17, 2017.
- 24. "Baby Play That Advances Development Down the Road: How Very Early Parent Education & Novel Tools May Minimize Future Delays for Infants At Risk." Invited speaker for the Delaware Institute for Excellence in Early Childhood (DIEEC), Newark, DE, June 9, 2017.

- 25. "Baby Play That Advances Development Down the Road: How Very Early Parent Education May Minimize Future Delays for Infants At Risk." Invited speaker for the first Christiana Care Health System and University of Delaware Joint Research Meeting, Newark, DE, June 7, 2017.
- 26. "FUNctional Fashions to Empower People With Disabilities." Invited speaker for the Opening Ceremony, Second Skin Exhibit, Chemical Heritage Museum, Philadelphia, PA, November 4, 2016.
- 27. "How Advances in Fashion & Wearable Technology Can Improve Life for People With Disabilities." Invited speaker for the Scholars' Gild of the Arden Club, Wilmington, DE, November 15, 2016.
- 28. "FUNctional Fashion & Wearable Technology: How Clothing & Soft/DIY Devices Can Improve Function, Independence, and Quality of Life for Individuals With Physical Disabilities." Invited speaker 16<sup>th</sup> Annual Patricia Leahy Memorial Lecture, University of the Sciences, Philadelphia, PA, October 6, 2016.
- 29. "Super Suits: Clothing to Make Kids Smarter." Invited lecture for the Cognitive Science Group, University of Delaware, Newark, DE, September 26, 2016.
- 30. "Inclusive Design, Assistive Technology, and Prosthetics." Invited to present Super Suits Program products at the White House Fashion Show, Washington, DC, September 15, 2016.
- 31. "The new face of single subject research designs: Causal inference, statistical significance, externally validity, and more." Invited plenary speaker and participant, IV STEP: Prevention, Prediction, Plasticity, and Participation, Sponsored by the American Physical Therapy Association's Neurology and Pediatric Sections, Columbus, OH, July 14-19, 2016.
- 32. "Real world wearable rehabilitative technology for kids with disabilities." Invited featured speaker, Design of Medical Devices Conference, Minneapolis, MN, April 11-14, 2016.
- 33. "Wearable Technology with a Purpose." Invited talk and panel discussant, Tech2Gether Event, Wilmington, DE, November 18, 2015.
- 34. "Super Suits Model: Designing Rehabilitative Devices That People Want to Use." Invited Lecture, Consulting, and Judging, Collaborative Design Charrette: Nothing For Us Without Us, Syracuse University, Syracuse, NY, October 9-11, 2015.
- 35. "Super Suits Model: Designing Rehabilitative Devices That People Want to Use." Invited Lecture, Design & Manufacturing Conference, Philadelphia, PA, October 8, 2015.
- 36. "Learn to Move, Move to Learn: Pediatric Assistive and Rehabilitative Technology." Invited Inservice, Easter Seals, New Castle County, DE, May 12, 2015.
- 37. "Build It and They Will Come (or NOT!): A Radical Shift in Process, Prototypes, and Priorities in Pediatric Assistive Technology." Invited Workshop, Advanced Technologies Conference, Kennedy Krieger Institute, Baltimore, MD, Spring 2015.
- 38. "SewBabySew: Integrating Fashion, Engineering, & Rehabilitation for Wearable Technology & FUNctional Fashions that Get Kids Moving, Playing, & Learning." Invited presentation at the University of Delaware's UD in DC Day. March 25, 2015.
- 39. "Learn to Move, Move to Learn: Pediatric Assistive and Rehabilitative Technology." Invited presentation for the University of Delaware's Center for Disabilities Studies' Community Workshop on Early Childhood Assistive Technology. December 5, 2014.
- 40. "I Want It All, and I Want It Now: Pediatric Assistive Technology That Behaves Like a Kid." Invited Lecture, 15<sup>th</sup> Annual Susan Harryman Cerebral Palsy Lectureship, Kennedy Krieger Institute, Baltimore, MD, November 6, 2014.
- 41. "Choosing a Path in Physical Therapy: Entrepreneur." American Physical Therapy Association National Student Conclave, Milwaukee, Wisconsin, October 31, 2014.

- 42. "Recent Insights and Innovations for Early Assessment & Intervention for Infants at Risk." Invited Lecture, Margaret I. Handy Memorial Lectureship, Christiana Care Health System, Newark, DE, September 16, 2014.
- 43. "Panel: Designing Meaningful Inter-disciplinary Capstone Projects and Internships." University of Delaware Summer Faculty Institute, June 4, 2014.
- 44. "I Want it All, I Want it Now: Creating Assistive Technology that Behaves Like a Kid." Invited Continuing Education Course for the South Carolina Occupational Therapy Association Conference, March 8, 2014.
- 45. "I Want it All, I Want it Now: Creating Assistive Technology that Behaves Like a Kid." American Academy for Cerebral Palsy and Developmental Medicine (AACPDM). Invited webinar for physicians, therapists, educators, and others working with at-risk populations, December 2013.
- 46. "Grounding Early Intervention: Physical Therapy Cannot Just Be About Motor Skills Anymore." Physical Therapy Journal podcast discussion, January 2013.
- 47. "A Fresh Perspective for Early Intervention: Using Current Science to Guide Best Practice and How to Collaborate with the Educational System." Gillette Children's Specialty Healthcare Continuing Education Conference, St. Paul, MN, 12.5 continuing education contact hours for occupational, speech, and physical therapists, October 2012.
- 48. "Creating Development: Insights from Atypical Development." Cognitive Development Society Pre-Conference Event: Creating Development: Integrating Processes over Multiple Timescales. Philadelphia, PA, October 13, 2011.
- 49. "Designing & Writing Effective Specially-Designed Instructions: An Important Part of Early Intervention & School-based Pediatric Therapeutic Services." Austill's Rehabilitation Continuing Education Workshop, Exton, PA, 2 continuing education contact hours for occupational & physical therapists, April 2008.

# Teaching

- PHYT 811 Pediatric Physical Therapy, Course Coordinator & Instructor (each spring since 2014)
- BMSC 622 Readings in Movement Science: Critically Evaluating the Literature, Instructor, 03/12/2021
- Coordination, grading, and mentoring of Doctoral of Physical Therapy Student Pediatric Integrated Clinical Experiences (2014-)
- Invited Lecturer, Superheroes, Villains, and Kinesiology Course, Coordinated by Donetta Cothran, PhD, Indiana University, Fall 2020
- Invited Lecturer, CSCD 810 Advanced Seminar in Communication Sciences and Disorders: Movement, Cognition, Speech, Language, Fluency, and Voice, Fall 2018
- Invited Lecturer, FASH 800 Research Analysis in Fashion Studies, Fall 2017
- Invited Lecturer, Clinical Biomechanics, MEEG 482/682, Pediatric Interventions and Developmentally-Inspired Rehabilitation Devices, Spring 2014, 2015, 2017
- Invited Lecturer, NURS 362 Research Concepts in Healthcare, Spring 2015
- Invited Lecturer, KAAP 285 Introduction to Research in Health Sciences, Fall 2014

# Service

Departmental & Biomechanics & Movement Science Graduate Program Service

- DPT Student Awards Working Group, Member, 2021-
- Strategic Planning Committee, Member, Biomechanics & Movement Science Program, University of Delaware, 2020-21

- Neuro-Geri-Peds DPT Curriculum Working Group, Member, Physical Therapy, University of Delaware, 2020-21
- DPT Cognition Content Working Group, Member, Physical Therapy, University of Delaware, 2018-19
- DPT Balance Content Working Group, Member, Physical Therapy, University of Delaware, 2018-19
- DPT Track Development Committee, Member, Physical Therapy, University of Delaware, 2018-19
- Curriculum Committee, Member, Biomechanics & Movement Science Program, University of Delaware, 2018-
- PT Endowment Scholarship Development Committee, Member, Physical Therapy, University of Delaware, 2017-19
- External Awards Committee, Chair, Department of Physical Therapy, leading efforts to nominate faculty members and students for national and international awards, 2017-
- Continuing Education Development Committee Member, Physical Therapy, University of Delaware, 2017-
- Pediatric Clinical Experience Reevaluation Committee Member, Physical Therapy, University of Delaware, 2017
- New Faculty Search Committee Member, Physical Therapy, University of Delaware, 2016-17
- Co-coordinator for the weekly Biomechanics and Movement Science Seminar Series at the University of Delaware, 2015-2019

## College Service

- Maternal-Child Collaborative Research Meeting Series, co-coordinator with Dr. David Paul, Chair of Pediatrics at Christiana Care Health Services, Newark, DE, 2017-
- Designs for Healthy Living Event, 2014-15, University of Delaware, Provided personnel, financial, and temporal resources to organize and run the first Designs for Healthy Living Event showcasing designs from across campus that aim to impact health and well-being for members of the local and global community.

### University Service

- Internal Review Board Member, October 2019-present.
- ADVANCE Promotion and Tenure Panel Participant, 03/12/2021
- Reception Display Presentation: Exoskeletal and Smart Garments to Help Children with Disabilities Move and Learn, April 10, 2019, UD Day in D.C.
- "Super Suits: Clothing to Make Kids Smarter", 2016, Invited presentation for Cognitive Science Discussion Series, University of Delaware.
- "Super Suits: Clothing to Make Kids Smarter", 2016, Invited Presenter in College of Agriculture and Natural Resources' Lunch and Learn Discussion Series, University of Delaware.
- "Solving real problems for real clients." Invited presentation, Winter Faculty Institute, University of Delaware, Newark, DE, January 8, 2016.
- Reception Display Presentation: Super Suits: Integrating Fashion, Engineering, & Rehabilitation For Wearable Technology & FUNctional Fashions That Get Kids Moving, Playing, & Learning, 2015, UD Day in D.C.
- Faculty Advisor to the Functional Fashion Undergraduate Organization, 2015-17, University of Delaware, aimed at connecting with and supporting families in the community who have children with disabilities by designing clothing solutions for them.

- Design Design at UD, 2015, Invited Participant, Organized by the Delaware Design Institute, in collaboration with the Office of the Provost to: develop awareness of what design related organizations are doing, what the challenges are that they are experiencing, and how design is currently thriving at UD; to create a draft of what design might look like at UD, both internally and to external potential clients and partners.
- "Designing Meaningful Inter-disciplinary Capstone Projects and Internships", 2014, Panel Member, University of Delaware Summer Faculty Institute.

## Professional Service

- Member: American Physical Therapy Association's Academy of Pediatric Physical Therapy Research Committee, 2012- ,
  - Research Mentoring Committee (2020-)
  - Research Forum Subcommittee, Chair (2016-18)
  - Pediatric Physical Therapy Researcher Development Subcommittee (2015-9)
  - Research Summit IV Planning & Dissemination Subcommittee (2013-17)
  - Knowledge Translation Subcommittee (2012-13)
- Participant: National Science Foundation Workshop on "Data Coding, Analysis, Archiving, and Sharing for Open Collaboration: From OpenSHAPA to Open Data Sharing", September 15-16, 2011
- Grant Reviewer:
  - Research Grant Committee, Chair, American Physical Therapy Association's Academy of Pediatric Physical Therapy (Fall 2019-)
  - Research, Mentored, and Planning Grant Reviewer American Physical Therapy Association's Academy of Pediatric Physical Therapy Research Committee (2018-2019)
  - Ad hoc reviewer for National Science Foundation (NSF) Smart & Connected Health Funding Program (2017-20)
- Editorial Board Membership:
  - Physical & Occupational Therapy in Pediatrics (2020-)
- International Motor Development Research Consortium, Conference Scientific Committee Member (2021)
- Manuscript Reviewer:
  - American Journal of Medical Genetics Part C (1 review in 2019)
  - Child Care Health and Development (2 reviews in 2020)
  - Child Development (1 review in 2018, 1 in 2019)
  - Developmental Medicine & Child Neurology (2 reviews in 2016)
  - Developmental Psychology (1 review in 2014)
  - Developmental Science (2 reviews in 2015)
  - Early Human Development (1 review in 2014, 1 in 2016, 1 in 2019)
  - Frontiers in Pediatrics (2 reviews in 2018)
  - IEEE Soft Robotics (1 review in 2019)
  - Infancy (1 review in 2021)
  - Infant Behavior and Development (2 reviews in 2014; 3 in 2015, 1 in 2016, 1 in 2018, 1 in 2019)
  - International Society of Mechanical Engineering Design of Medical Devices Journal (1 review in 2018)
  - o Journal of Cross-Cultural Psychology (2 reviews in 2014; 1 in 2021)
  - Journal of Healthcare Engineering (1 review in 2017)
  - Journal of Industrial Textiles (1 review in 2020)
  - Motor Control (1 review in 2017)

- Pediatric Physical Therapy (2 reviews in 2014; 1 in 2015; 2 in 2018; 1 in 2020)
- Physical and Occupational Therapy in Pediatrics (1 review in 2017; 1 in 2020; 3 in 2021)
- Physical Therapy (2 reviews in 2014; 3 reviews in 2015; 1 review in 2016)
- Physiotherapy Theory and Practice (1 review in 2017; 1 in 2018)
- PLOS One (1 review in 2017)
- Research in Developmental Disabilities (1 review in 2015)
- External Thesis Reviewer
  - The University of Melbourne, Australia (2019)
- Content Reviewer PTNow, 2013-14: reviewed content on cerebral palsy, Down syndrome, and Duchenne muscular dystrophy, American Physical Therapy Association
- Invited Participant: The APTA Section on Pediatrics Research Summit II on Early
   Intervention for Children with or at Risk for Physical Disabilities, 2007

### Community Service

- Presentation and discussion with Secretary of the Delaware Department of Health and Social Services Dr. Kara Odom Walker and Director of Medicaid and Medical Assistance Dr. Elizabeth Brown, January 23, 2020.
- Content Matter Invited Expert Consultant for the development of Christiana Care's "Women and Children's Virtual Information Center" consolidating high-quality health information and services in one, central place to help women get the care they need at every stage of their life, 2018.
- Parent Education Program Development Committee, 2017-, Co-chair, Working in collaboration with David Paul, MD, Chair of Pediatric, and Matthew Hoffman, MD, MPH, FACOG, Endowed Chair of Obstetrics and Gynecology, Christiana Care Health System (CCHS) and child development experts at the University of Delaware to develop content for a course on parenting and early development to be provided to parents through CCHS.
- "Updates from the Move 2 Learn Innovation Lab", 2017, Presenter of Clinical Inservices at Nemours AI DuPont Hospital for Children (October 26, 2017), Easter Seals (November 14, 2017), and Christiana Care Health Services (December 6, 2017).
- Win's Women of Wisdom, Invited interview, 2016, <u>http://hwcdn.libsyn.com/p/a/b/7/ab7b82b0def6d568/ml.mp3?c\_id=11588932&expiration=</u> <u>1512357903&hwt=4c19412e479ccef464e7943df8ef6d6a</u>
- "Interventions and wearables to advance movement and learning for young children: Move 2 Learn Innovation Lab", 2016, Invited presenter at the Delaware Health Science Alliance Cerebral Palsy Symposium.
- "FUNctional fashion & wearable technology for rehabilitation", 2016, PT Pintcast, Invited interview with Jimmy McCay, DPT student and broadcaster.
- Coordinator of DIY Scarf Project, 2016-17, leading an effort to connect community members with expertise in design and sewing with individuals with disabilities in order to create a DIY model for fabrication of fashionable, absorbent scarves for children with oral-motor challenges. I have worked with community volunteers, the Arden Stitch Guild, and the Leach School on this project.
- Magic Arms for the World, Advisory Board Member, 2014-17
- Mentor for middle school apprentices from the Newark Center for Creative Learning, 2014-, mentoring and supervising young students interested in design and science working weekly in my lab.

- Adapted Physical Education Provider: Lead physical education groups for students with typical development and with a variety of special needs in kindergarten through 4<sup>th</sup> grade at the Newark Center for Creative Learning, 2012-17
- Nemours Family Advisory Panel, 2015, Invited presenter, sharing information with families and medical professionals regarding pediatric research at the University of Delaware.
- "Learn to Move, Move to Learn: Pediatric Assistive and Rehabilitative Technology", 2015, Clinical Inservice for Easter Seals of Delaware.
- Invited Interview: Blog aimed at translating child development research for the general public, <u>http://gestattenmupf.com/</u>, written by Lilith Scheer, December 2013
- University of Delaware Service Learning Coordinator for the John R. Downes Elementary School Coordinated Approach to Child Health (CATCH) After School Program for Children at Risk, 2010-2012

# Mentoring

- Fulbright Mentor:
  - Klayton Galante Sousa, PhD, Associate Professor, Faculty of Health Sciences, Federal University of Rio Grande do Norte, Santa Cruz, Brazil, September-December 2017
- Post-doctoral Advisor:
  - Iryna Babik, PhD (May 2014-May 2019), currently employed as faculty in the Department of Psychological Science, Boise State University
  - Andrea Baraldi Cunha (June 2016-)
- Primary Graduate Advisor:
  - Ben Greenspan, BIOMS PhD Program (September 2015-May 2019), currently employed as a design engineer at Accenture Innovation Hub in San Francisco
  - Martha Hall, BIOMS PhD Program (September 2015-December 2018), currently employed as faculty in health sciences at the University of Delaware
  - o Bai Li, BIOMS PhD Program (September 2018-)
  - Danielle Civil, MS Fashion & Apparel Studies Program (September 2017-May 2019), currently employed as a designer at Under Armour in Maryland
  - Jiayi Ren, MS Fashion & Apparel Studies Program (January 2019-June 2020)
  - Julie Orlando, BIOMS PhD Program (September 2019-)
  - o Zainab Alghamdi, BIOMS PhD Program (September 2019-)
- Graduate Advisor:
  - Samantha Ross, PhD student with Sam Logan, PhD, Oregon State University, "Let's Go! Pediatric Mobility Devices: A Collaborative Project", Summer Intern (2016) via Travel Award from the President's Commission on the Status of Women
- Graduate Thesis Committee:
  - Mandy Kaur, PhD (Advisor: Bhat, 2016)
  - Wan-Chun Su, PhD (Advisor: Bhat, 2019-)
- Undergraduate Mentoring:
  - Kayla Morrell, Biology Senior Thesis Advisor (June 2018-May 2019)
  - Mentoring graduate students in the Master of Arts in Interaction Design Program, 2017-2019, collaborating with Ashley Pigford to connect students with those in the community with needs and to mentor students in designing materials to enable children with movement impairments to more independently engage in the act of feeding.

# **Special Skills**

- Trained relational database developer using Filemaker Pro
- Conversational proficiency in Spanish
- Basic fluency in English sign language

## In the News

A number of the research activities conducted in my lab have received local and national media coverage. Below is a list of the coverage my work has received since I began as an Assistant Professor at UD.

- Can't miss special edition of PTJ focuses on intersection of pediatric physical therapy and developmental science (06/12/2019). *PT in Motion.* <u>http://www.apta.org/PTinMotion/News/2019/06/11/PTJPediatricSpecialIssueJune2019/</u>
- Interdisciplinary solutions to pediatric mobility (2018). UDaily. <u>http://www.udel.edu/udaily/2018/april/interdisciplinary-arthrogryposis-multiplex-congenital-solutions/</u>
- Play-based study seeks to help developmentally delayed babies reach important milestones (2018). WESA: Pittsburgh's NPR News Station. <u>http://wesa.fm/post/playbased-study-seeks-help-developmentally-delayed-babies-reach-important-</u> <u>milestones#stream/0</u>
- Spicing up a wardrobe with modified jeans to simplify life (2017). *Delaware Public Media: Delaware's Source for NPR News*. <u>http://delawarepublic.org/post/spicing-wardrobe-modified-jeans-simplify-life</u>
- UD Grad Students Help Children With Disabilities Be More Independent (2017). *First,* WHYY. https://whyy.org/articles/ud-grad-students-help-children-disabilities-independent/
- Learning to Move With Move To Learn (2017). *Distillations,* Chemical Heritage Foundation. <u>https://www.chemheritage.org/distillations/blog/learning-to-move-with-move-to-learn</u>
- Martha L. Hall, Fashion Designer and Wearable Tech researcher (2017). *WoW Woman in Wearable Tech*. <u>https://www.womenofwearables.com/new-blog/wow-woman-in-</u> wearable-tech-martha-l-hall-fashion-designer-and-wearable-tech-researcher
- Super Suits: William's Robot Shirt (2016, Dec 1<sup>st</sup>). University of Delaware College of Health Sciences YouTube Channel. <u>https://www.youtube.com/watch?v=35-Xp6e-fm0</u>
- NIH Showcases 'Super Suit' at White House Fashion Show (2016). NIH Record: Briefs, Vol. LXVIII, No. 22. <u>https://nihrecord.nih.gov/newsletters/2016/10\_21\_2016/briefs.htm</u>
- Functional Fashions for People with Disabilities (2016). *Win's Women of Wisdom, Episode 75*. <u>http://www.stitcher.com/podcast/wins-women-of-wisdom/e/michele-lobo-e-75-s-2-44093676</u>
- DIY Super Suits with Michele Lobo of Sew Baby Sew (2016). *PT Pintcast, Episode 80.* <u>http://blog.ptpintcast.com/ep-80-diy-super-suits-with-michele-lobo-of-sew-baby-sew/</u>
- 'Super Suits' may aid children with developmental delays (2016). *Healio*, <u>http://www.healio.com/orthotics-prosthetics/health-care-</u> <u>updates/news/online/%7B5fd781f4-5819-4530-8eb0-8082b329d305%7D/super-suits-</u> <u>may-aid-children-with-developmental-delays</u>
- Researchers combat developmental delays with 'super suits' (2016). *Science Daily*, <u>https://www.sciencedaily.com/releases/2016/05/160517141307.htm</u>
- Developmental delays will soon be combated with newly designed 'Super Suits' (2016). *Med India*, <u>http://www.medindia.net/news/developmental-delays-will-soon-be-combated-with-newly-designed-super-suits-160019-1.htm</u>

- Developmental delay treatment breakthrough: 'Super Suits' to combat kids' developmental delays (2016). Parent Herald, <u>http://www.parentherald.com/articles/44432/20160518/developmental-delay-treatmentbreakthrough-super-suits-combat-kids-delays.htm</u>
- Super Suits: UD researchers combat developmental delays with fashionable exoskeletons (2016). UDaily. <u>http://www.udel.edu/udaily/2016/may/super-suits-051616.html</u>
- Earleville girl gets runway debut (2016). Cecil Whig. http://www.cecildaily.com/news/local\_news/article\_10234a47-2afa-5a4d-8700-01270127c615.html
- Designer mixes fashion with technology to help disabled children (2016). *The Review,* <u>http://udreview.com/16448-2/</u>
- Building functional, fashionable exoskeletons for babies (2016). WHYY's The Pulse. http://www.newsworks.org/index.php/local/the-pulse/89674-building-functionalfashionable-exoskeletons-for-babies
- UD researchers develop fashionable baby exoskeletons (2015). WDDE Delaware Public Media. <u>http://delawarepublic.org/post/ud-researchers-develop-fashionable-baby-</u> exoskeletons#stream/0
- UD researchers test intervention program for infants with poor motor skills (2015). WDDE Delaware Public Media. <u>http://delawarepublic.org/post/ud-researchers-test-intervention-program-infants-poor-motor-skills</u>
- Reaching to learn, learning to reach (2015). UDaily. http://www.udel.edu/udaily/2015/jun/infants-special-needs-060915.html
- GoBabyGo creates FUNctional Fashion for special needs children (2015). YouTube. https://www.youtube.com/watch?v=cslbDTzCLsl
- Designs for Healthy Living (2015). UDaily. <u>http://www.udel.edu/udaily/2015/apr/designs-healthy-living-042015.html</u>
- Designing for health: Interdisciplinary projects yield new engineering designs for better diagnostics, treatment (2015). *UDaily*. <u>http://www.udel.edu/udaily/2015/jan/engineering-health-010715.html</u>
- Wearable tech: Supporting limbs, easing Parksinson's (January 16, 2015). *Delaware*  News Journal. <u>http://www.delawareonline.com/story/life/2015/01/15/wearable-tech-</u> <u>supporting-limbs-easing-parkinsons/21826073/</u>
- Exoskeleton makes moving a bit easier (2014). *Delaware News Journal.* http://www.delawareonline.com/story/news/health/2014/02/03/exoskeleton-makesmoving-a-bit-easier-/5189895/
- A stellar resource for students, patients. (2014) University of Delaware Messenger, 22(1), 6-7.
- Babies learn while on the go. (2014) University of Delaware Messenger, 22(1), 37.
- P-WREX+: Upper extremity exoskeleton to be modified for infants (2014). *UDaily*. <u>http://www.udel.edu/udaily/2014/dec/infants-exoskeleton-121613.html</u>

# Important Links

- https://sites.udel.edu/move2learn/

# Exhibitions

 Playskin Lift<sup>™</sup> expressive & fashionable exoskeletal garment for a 6-year-old girl (July 29, 2016 – March 12, 2017). (*dis*)ABLED Beauty Exhibit, Kent State University, OH, <u>https://www.kent.edu/museum/event/disabled-beauty</u> Playskin Lift<sup>™</sup>: fashion-forward medical device design (October 2016 – May 2017). Second Skin Exhibit, Chemical Heritage Museum, Philadelphia, PA, <a href="https://www.chemheritage.org/second-skin-the-science-of-stretch">https://www.chemheritage.org/second-skin-the-science-of-stretch</a>