

OHIO SENATE

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2018 NOV -5 AM 10:35 STATE OF OHIO

# Executive Department

OFFICE OF THE GOVERNOR

*Columbus*

I, John R. Kasich, Governor of the State of Ohio, do hereby appoint, Linda Pax Lowes, Ph.D., from Columbus, Franklin County, Ohio, as a Member of the Ohio Occupational Therapy, Physical Therapy and Athletic Trainers Board for a term beginning October 25, 2018 and ending at the close of business August 27, 2021, replacing James T. Lee, whose term expired.



IN WITNESS WHEREOF, I  
have hereunto subscribed my name  
and caused the Great Seal of the State  
of Ohio to be affixed, at Columbus, this  
25th day of October in the year of our  
Lord, Two Thousand and Eighteen.

John R. Kasich  
Governor

**Linda Pax Lowes, PT, PhD**

**CURRICULUM VITAE**

**PRESENT TITLE AND AFFILIATION**

**Clinical Therapies Research Coordinator**

Nationwide Children's Hospital  
Columbus, Ohio

**Principal Investigator**

Center for Gene Therapy  
The Research Institute at Nationwide Children's Hospital  
Columbus, Ohio

**Associate Professor**

Department of Pediatrics  
The Ohio State University College of Medicine  
Columbus, Ohio

**OFFICE ADDRESS**

Nationwide Children's Hospital  
Room AB0042  
700 Children's Dr. Columbus, OH 43205  
P: (614) 722-6881  
[Linda.Lowes@nationwidechildrens.org](mailto:Linda.Lowes@nationwidechildrens.org)

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**EDUCATION**

**Undergraduate Education**

06/1983	The Ohio State University Columbus, OH	B.S. Allied Medicine
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**Graduate Education**

06/1997	Hahnemann University Philadelphia, PA	PhD Pediatric Physical Therapy
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**ACADEMIC APPOINTMENTS**

1995-1998	Texas Women's University Houston, TX	Lecturer Physical Therapy
1999-2000	The Ohio State University Columbus, OH	Lecturer Physical Therapy

2000-Current	The Ohio State University	Adjunct Assistant Professor School of Health and Rehabilitative Sciences
2015-Current	The Ohio State University Columbus, OH	Clinical Assistant Professor Neurology
2018 – Current	Nationwide Children’s Hospital The Ohio State University Columbus, Ohio	Associate Professor Department of Pediatrics

## **STATE LICENSURE AND CERTIFICATIONS**

### **Licensure**

1987            Ohio (active)

1991            Pennsylvania (expired)

1995            Texas (expired)

### **Certifications**

1990            Pediatric Certification- Neurodevelopmental Treatment

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1996-2001      Pediatric Clinical Specialist- American Physical Therapy Association

## **SERVICE**

### **Journal Reviewer:**

BMC Neurology

Child Neurology

Developmental Medicine and Child Neurology

Neuromuscular Disorders

Occupational and Physical Therapy in Pediatrics

Pediatric Physical Therapy

Plos Currents MD

### **Grant Reviewer:**

Duchenne Parent Project Netherlands

NIAMS U01 PAR-14-200: Invited; Recused due to pending submission

## **INSTITUTIONAL/LOCAL ACTIVITIES**

2002-2005	Corporate Sponsor Chair March of Dimes Women's Board Columbus, OH
2008-2016	IRB Departmental Reviewer Physical, Occupational, Speech and Massage Therapy and Audiology
2013-2015	Program Chair Wellstone Center Research and Clinical Care Family Conference Columbus, OH
2010-2016	Research Director Physical Therapy Residency Program Joint NCH/OSU Columbus, OH

## **REGIONAL ACTIVITIES**

2002-2010	Speaker Pediatric Physical Therapy Special Interest Group Central Ohio
2004	Chair of Motor Development Committee Ohio Early Childhood Development Standards State of Ohio
2005	Motor Development Consultant California Early Childhood Development Standards State of California
2010	Speaker Pediatric Physical Therapy: What we know, what we think we know, and what we don't have a clue about. Ohio Physical Therapy Association Columbus OH

## **NATIONAL ACTIVITIES**

2005	Speaker Individuals with Disabilities Act Reauthorization Hearings US Department of Education
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Columbus, OH

2003-2008	Speaker and Planning committee Advanced Clinical Practice Course American Physical Therapy Association Fairfax, VA
2005- 2007	Content expert Pediatric Clinical Specialist Exam APTA; Alexandria, VA
2012	Speaker Pediatric Neuromuscular Disease: Research review and clinical applications Combined Sections Meeting of the American Physical Therapy Association
2015	Moderator for Case study presentations IV Step conference The Ohio State University
2016	Speaker Critical Path Institute Patient-Reported Outcome Consortium Workshop Silver Springs, MD
2016	Speaker Outcome Measures Selection in Neuromuscular Disease International Congress on Neuromuscular Disorders
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2017, 2018	Content expert Treat-NMD Advisory Committee for Therapeutics Montreal, Canada

## HONORS AND AWARDS

1997	Evelyn B. Noyovitz Award for Outstanding Graduate Student Hahnemann University Philadelphia, PA
1997	Dissertation of the Year Section on Pediatrics, American Physical Therapy Association Fairfax, VA

2009	Clinical Therapies Director's Merit Award Nationwide Children's Hospital Columbus, OH
Yearly between 2012- 2017	Outstanding Poster Award World Muscle Society Perth, Australia
2014	Lea Rose Award for Research in Spinal Muscular Atrophy World Muscle Society Berlin, Germany
2016	Rare Disease Hero Nominee Rare Disease Report Plainsboro NJ
2018	Outstanding Poster Award International Congress on Spinal Muscular Atrophy Krakov Poland

## RESEARCH SUPPORT

### COMPLETED RESEARCH

#### Peer Reviewed

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<p>University of Alabama; Birmingham Multi-Site Trial for ACQUIREc Therapy Supplement: Evaluation of constraint induced movement therapy Key Personnel \$15,750</p>	<p>Case-Smith 9/2008-9/2010</p>
<p>Foundation for Physical Therapy A comparison of the treatment outcomes of early mobilization versus rest for acute sprained ankles: Comparison of 2 different treatment techniques for acute sprained ankles. \$40,000</p>	<p>Lowes 1/2010- 12/2014</p>
<p>Pedal with Pete Foundation CP database Pedal with Pete: Implement a learning health system in CP clinic \$28,750</p>	<p>Lowes 4/2011- 4/2012</p>

	Lowes	5/2012-5/2013
NCH Office of Technology Development		
Natural User Interface -based Upper Extremity Evaluation Tool: Development of our assessment tool ACTIVE to measure work space volume		
\$20,000		

	Kolb	6/2012-6/2015
Neuro NEXT		
Motor function test reliability in Neuro NEXT infant SMA bio-maker study		
Key Personnel		
\$18,822		

	Lowes	12/2014-12/2016
Novartis		
Prospective Natural History Study in Sporadic Inclusion Body Myositis		
\$283,000		

	Lowes	12/2014-12/2016
RTI		
Validation of the SIFA		
\$10,000		
\$7540		
\$65,000		

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**Current Funding**

	Lowes	3/2015-10/2017
Institute of Myology		
Use of ACTIVE in longitudinal natural history study of spinal muscular atrophy types 2 and 3		
\$41,000		

AD-1409-20772	Gauthier	11/2015-11/2017
PCORI		
Comparative Effectiveness of a Virtual Reality Platform for Neurorehabilitation of Hemiparesis: Multisite trial of treatment options		
Co-Investigator		
\$27,307		

W81XWH-16-1-0305	Lowes	12/16-12/18
Department of Defense		
Validation of Functional Reaching Volume as an Outcome Measure across the Spectrum of Abilities in Muscular Dystrophy		

## Principal Investigator

	Lowes	10/2014-10/17
Sarepta Therapeutics		
Establishing normative data for the 100-meter walk run test		
\$50,978		

	Lowes	2/2015-2/2017
Cure SMA		
Development of an innovative outcome measure to define disease progression in spinal muscular atrophy type 1 for use in the home or clinic		
\$149,626		

## LICENSED TECHNOLOGIES WITHOUT PATENTS

1. ACTIVE: Linda Lowes and Lindsay Alfano, Sarepta Therapeutics filed on April 15, 2014
2. ACTIVE Linda Lowes and Lindsay Alfano, Institute of Myologie filed on April 23, 2015
3. ACTIVE: Linda Lowes and Lindsay Alfano, Audentes filed on July 28, 2015
4. ACTIVE mini: Linda Lowes and Lindsay Alfano, Audentes filed on July 28, 2015

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## PUBLICATIONS

<https://www.ncbi.nlm.nih.gov/sites/myncbi/linda.lowes.1/bibliography/40082341/public/?sort=date&direction=descending>

### Articles in Peer Reviewed Journals

1. Palisano RJ, Kolobe TH, Haley SM, **Lowes LP**, Jones SL.(1995) Validity of the Peabody Developmental Gross Motor Scale as an evaluative measure of infants receiving physical therapy. Physical therapy 75(11):939-48
2. **Lowes LP**, Effgen SK.(1996) The Americans with Disabilities Act of 1990: Implications for Pediatric Physical Therapists. Pediatric physical therapy 8(3):103-144.
3. Westcott SL, **Lowes LP**, Richardson PK. (1997) Evaluation of postural stability in children: current theories and assessment tools. Physical therapy 77(6):629-45.
4. **Lowes LP**, Westcott SL, Palisano RJ, Effgen SK, Orlin MN (2004). Muscle force and range of motion as predictors of standing balance in children with cerebral palsy. Physical & occupational therapy in pediatrics; 24(1-2):57-77.



5. **Lowes LP**, Alfano L, Viollet L, Rosales XQ, Sahenk Z, Kaspar BK, Clark KR, Flanigan KM, Mendell JR, McDermott MP (2012). Knee extensor strength exhibits potential to predict function in sporadic inclusion-body myositis. *Muscle & nerve* 45(2):163-8.
6. **Lowes LP**, Alfano LN, Yetter BA, Worthen-Chaudhari L, Hinchman W, Savage J, Samona P, Flanigan KM, Mendell JR (2013). Proof of concept of the ability of the Kinect to quantify upper extremity function in dystrophinopathy; *PLoS currents* 5
7. Alfano LN, **Lowes LP**, Flanigan KM, Mendell JR (2013) Correlation of knee strength to functional outcomes in Becker muscular dystrophy; *Muscle & nerve*. 47(4):550-4.
8. Flanigan KM, Ceco E, Lamar KM, Kaminoh Y, Dunn DM, Mendell JR, King WM, Pestronk A, Florence JM, Mathews KD, Finkel RS, Swoboda KJ, Gappmaier E, Howard MT, Day JW, McDonald C, McNally EM, Weiss RB (2013). LTBP4 genotype predicts age of ambulatory loss in Duchenne muscular dystrophy. *Annals of neurology*; 73(4):481-8.
9. Connolly AM, Florence JM, Cradock MM, Malkus EC, Schierbecker JR, Siener CA, Wulf CO, Anand P, Golumbek PT, Zaidman CM, Philip Miller J, **Lowes LP**, Alfano LN, Viollet-Callendret L, Flanigan KM, Mendell JR, McDonald CM, Goude E, Johnson L, Nicorici A, Karachunski PI, Day JW, Dalton JC, Farber JM, Buser KK, Darras BT, Kang PB, Riley SO, Shriber E, Parad R, Bushby K, Eagle M (2013). Motor and cognitive assessment of infants and young boys with Duchenne Muscular Dystrophy: results from the Muscular Dystrophy Association DMD Clinical Research Network. *Neuromuscular disorders: NMD*. 23(7):529-39.
10. **Lowes LP**, Alfano LN, Ray Will, Flanigan KM, Mendell JR, Kaspar BK (2013) Development of a proof-of-concept device using the Microsoft Kinect to assess movement in infants with spinal muscular atrophy 18th International Congress of The World Muscle Society; *Neuromuscular Disorders*;

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11. Mendell JR, Rodino-Klapac LR, Sahenk Z, Roush K, Bird L, **Lowes LP**, Alfano L, Gomez AM, Lewis S, Kota J, Malik V, Shontz K, Walker CM, Flanigan KM, Corridore M, Kean JR, Allen HD, Shilling C, Melia KR, Sazani P, Saoud JB, Kaye EM(2013). Eteplirsen for the treatment of Duchenne muscular dystrophy; *Annals of neurology* 74(5):637-47.
12. Rose MR (2013). 188th ENMC International Workshop: Inclusion Body Myositis, 2-4 December; Naarden, The Netherlands. *Neuromuscular disorders* 23(12):1044-55.
13. Maung D, Gauthier LV, Crawfis R, Worthen-Chaudhari Lise, **Lowes LP**, Borstad A. (2014) Games for Therapy: Defining a Grammar and Implementation for the Recognition of Therapeutic Gestures. *International Conference on the Foundations of Digital Games* <http://www.fdg2014.org/proceedings.html>
14. **Lowes LP**, Mayhan M, Orr T, Batterson N, Tonneman JA, Meyer A, Alfano L, Wang W, Whalen CN, Nelin MA, Lo WD, Case-Smith J. (2014) Pilot study of the efficacy of constraint-induced movement therapy for infants and toddlers with cerebral palsy. *Physical & occupational therapy in pediatrics* 34(1):4-21.
15. Lowes LP, Lo WD, Alfano LN, Case-Smith J. (2014) Authors' response to evidence to practice commentary. *Physical & occupational therapy in pediatrics* 34(1):25-9.

16. Connolly AM, Florence JM, Craddock MM, Eagle M, Flanigan KM, McDonald CM, Karachunski PI, Darras BT, Bushby K, Malkus EC, Golumbek PT, Zaidman CM, Miller JP, Mendell JR (2014). One year outcome of boys with Duchenne muscular dystrophy using the Bayley-III scales of infant and toddler development. *Pediatric neurology*; 50(6):557-63.
17. Christensen C, **Lowes LP** (2014). Treadmill training for a child with spina bifida without functional ambulation; *Pediatric physical therapy*; 26(2):265-73.
18. Mendell JR, Sahenk Z, Malik V, Gomez AM, Flanigan KM, **Lowes LP**, Alfano LN, Berry K, Meadows E, Lewis S, Braun L, Shontz K, Rouhana M, Clark KR, Rosales XQ, Al-Zaidy S, Govoni A, Rodino-Klapac LR, Hogan MJ, Kaspar BK(2015). A phase 1/2a follistatin gene therapy trial for becker muscular dystrophy. *Molecular therapy* 23(1):192-201.
19. Connolly AM, Malkus EC, Mendell JR, Flanigan KM, Miller JP, Schierbecker JR, Siener CA, Golumbek PT, Zaidman CM, McDonald CM, Johnson L, Nicorici A, Karachunski PI, Day JW, Kelecic JM, **Lowes LP**, Alfano LN, Darras BT, Kang PB, Quigley J, Pasternak AE, Florence JM(2015). Outcome reliability in non-ambulatory boys/men with Duchenne muscular dystrophy; *Muscle & nerve*; 51(4):522-32.
20. **Lowes LP**, Alfano LN, Crawfis R, Berry K, Yin H, Dvorchik I, Flanigan KM, Mendell JR (2015). Reliability and validity of active-seated: An outcome in dystrophinopathy. *Muscle & nerve*; 52(3):356-62.
21. **Lowes LP**, Clark TS, Noritz G (2016). Factors associated with caregiver experience in families with a child with cerebral palsy. *Journal of pediatric rehabilitation medicine*; 9(1):65-72.
22. Soran B, **Lowes LP**, Steele KM (2016). Computer Vision – ECCV Workshops; 1 ed. Hua Gang, Jégou H, editors. Switzerland: Springer International Publishing; 201600. Evaluation of Infants with Spinal Muscular Type 1 Using Convolutional Neuronal Network; p.495-507.
23. Mendell JR, Goemans N, **Lowes LP**, Alfano LN, Berry K, Shao J, Kaye EM, Mercuri E. (2016) Longitudinal effect of eteplirsen versus historical control on ambulation in Duchenne muscular dystrophy. *Annals of neurology* 79(2):257-71.
24. Connolly AM, Florence JM, Zaidman CM, Golumbek PT, Mendell JR, Flanigan KM, Karachunski PI, Day JW, McDonald CM, Darras BT, Kang PB, Siener CA, Gadeken RK, Anand P, Schierbecker JR, Malkus EC, **Lowes LP**, Alfano LN, Johnson L, Nicorici A, Kelecic JM, Quigley J, Pasternak AE, Miller JP (2016). Clinical trial readiness in non-ambulatory boys and men with duchenne muscular dystrophy: MDA-DMD network follow-up. *Muscle & nerve*; 54(4):681-9.
25. Truxal KV, Fu H, McCarty D, McNally K, Kunkler K, Zumberge N, Martin L, Aylward SC, Alfano L, Berry K, **Lowes LP**, Corridore M, McKee C, McBride KL, Flanigan KM (2016). A prospective one-year natural history study of mucopolysaccharidosis types IIIA and IIIB: Implications for clinical trial design. *Molecular genetics and metabolism* 119(3):239-248
26. Alfano LN, Yin H, Dvorchik I, Maus EG, Flanigan KM, Mendell, JR, **Lowes LP**. Modeling functional decline over time in sporadic inclusion body myositis. *Muscle Nerve*. 2017;55(4):526-531.

27. Alfano LN, Miller NF, Berry KM, Yin H, Rolf KE, Flanigan KM, Mendell JR, **Lowes LP**. The 100-meter timed test: Normative data in healthy males and comparative pilot outcome data for use in Duchenne muscular dystrophy clinical trials. *Neuromuscul Disord*. 2017;27(5):452-457.
28. **Lowes LP**, Noritz GP, Newmeyer A, Embi PJ, Yin H, Smoyer WE, Learn from Every Patient Study Group. 'Learn From Every Patient': implementation and early results of a learning health system. *Dev Med Child Neurol*. 2017;59(2):183-191.
29. Mendell JR, Sahenk Z, Al-Zaidy S, Rodino-Klapac LR, **Lowes LP**, Alfano LN, Berry K, Miller N, Yalvac M, Dvorchik I, Moore-Clingenpeel M, Flanigan KM, Church K, Shontz K, Curry C, McColly M, Hogan MJ, Kaspar BK. Follistatin Gene Therapy for Sporadic Inclusion Body Myositis Improves Functional Outcomes. *Mol Ther*. 2017;25(4):870-879.
30. Kinane TB, Mayer OH, Duda PW, **Lowes LP**, Moody SL, Mendell JR. Long-Term Pulmonary Function in Duchenne Muscular Dystrophy: Comparison of Eteplirsen-Treated Patients to Natural History. *J Neuromuscul Dis*. 2018;5(1):47-58.
31. Iammarino K, Marrie J, Selhorst M, **Lowes LP**. Efficacy of the Stretch Band Ankle Traction Technique in the Treatment of Pediatric Patients with Acute Ankle Sprains: A Randomized Control Trial. *Int J Sports Phys Ther*. 2018 Feb;13(1):1-11.
32. Diaz-Manera J, Fernandez-Torron R, LLauger J, James MK, Mayhew A, Smith FE, Moore UR, Blamire AM, Carlier PG, Rufibach L, Mittal P, Eagle M, Jacobs M, Hodgson T, Wallace D, Ward L, Smith M, Stramare R, Rampado A, Sato N, Tamaru T, Harwick B, Rico Gala S, Turk S, Coppennrath EM, Foster G, Bendahan D, Le Fur Y, Fricke ST, Otero H, Foster SL, Peduto A, Sawyer AM, Hilsden H, Lochmuller H, Grieben U, Spuler S, Tesi Rocha C, Day JW, Jones KJ, Bharucha-Goebel DX, Salort-Campana E, Harms M, Pestronk A, Krause S, Schreiber-Katz O, Walter MC, Paradas C, Hogrel JY, Stojkovic T, Takeda S, Mori-Yoshimura M, Bravver E, Sparks S, Bello L, Semplicini C, Pegoraro E, Mendell JR, Bushby K, Straub V; Jain COS Consortium. Collaborators: Arrieta A, Feng J, Hwang E, Lee E, Illa I, Gallardo E, Hernández IP, Jimeno IB, Maron E, Prügel J, Sanjak M, Sykes J, **Lowes LP**, Alfano L, Berry K, Yetter B, Lapeyssonie B, Shahram A, Albane TF, Thiele S, Bettinson K, Lofra RM, Harris E, Moat D, Galley D, Calore C, Gidaro T, Servais L, Canal A, Ollivier G, Decostre V, Theis C, Diabaté O, Florence J, Schimmoeller L, Siener C, Schierbecker J, Méndez B, Carbonell P, Sanchez-Aguilar N, Cabrera M, Morgado Y, Gee R, Duong T, Perez J, Clarke NF, Sandaradura S, Ghaoui R, Cornett K, Miller C, Harman M, Rose K, Kobayashi Y, Yajima H, Sakamoto C, Tateishi T, Ashida A, Nakayama T, Segawa K, Ohtaguro S, Nakamura H, Ohhata M, Kimura E, Endo M, Drogo B, Brody N, Leach ME, Toles A. Muscle MRI in patients with dysferlinopathy: pattern recognition and implications for clinical trials. *J Neurol Neurosurg Psychiatry*. 2018 May 7.

### Invited Articles

1. Alfano LN, **Lowes LP** (2015). Emerging therapeutic options for sporadic inclusion body myositis; Therapeutics and clinical risk management; 11:1459-67.

### Editorials

1. Goodrich N\*, **Lowes LP** (2012). Commentary on "Limb length discrepancies among 8 to 12-year-old children who are developing typically" *Pediatric physical therapy* 24(4):338.

## **Abstracts**

Christensen, C., Landsettle ,A., Antoszewski S, Ballard BB, Carey H, **Lowes LP**. (2009) Idiopathic Toewalking: An evidence based protocol. Poster presentation at 2009 OPTA Annual Conference

**Lowes LP**, Alfano LN, Viollet LC, Rosales XQ, Kaspar BK, Clark KR, Sahenk Z, Flanigan KM, Mendell JR (2011) Defining Outcome Measures in Sporadic IBM for a Follistatin Gene Transfer Clinical Trial. Muscular Dystrophy Association Scientific Meeting , American Cell and Gene Therapy Association (768)

**Lowes LP**, Alfano LN, Berry K, Wang W, Flanigan KF, Mendell JR. (2012) Diverse walking distances predict functional outcomes in Duchenne Muscular Dystrophy. *Neuromuscular disorders* : NMD ;22:876.

**Lowes, Linda**, Lindsay Alfano, Laurence Viollet, Kevin Flanigan, and Jerry Mendell (2012). Moderate Walking Distances and Velocity Correlate with Function Comparable to 6 Minute Walk Test, *Neurology* Vol. 78, No. Meeting Abstracts 1, S49.005, 2012.

James MK, Eagle M, Mayhew A, Rose K, Glanzman A, Florence J, Mazzone E, **Lowes LP**, Green E, Jeter B, Jordan M, Morgan A, Wardell C. (2012) Clinical Evaluator training for the GSK DEMAND programme. *Neuromuscular disorders* : NMD ;22:892.

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Alfano, Lindsay, **Linda Lowes**, Laurence Viollet, Kevin Flanigan, and Jerry Mendell. (2012) Functional Outcome Measures Correlated with Strength in Becker Muscular Dystrophy *Neurology* Vol. 78, No. Meeting Abstracts 1, P02.001,

**Lowes LP**, Alfano LN, Smigelsi J, Mendell JR, Flanigan KF. (2012) Development of a virtual upper extremity assessment tool for individuals with DMD across the lifespan. *Neuromuscular disorders* : NMD ;22:878-879.

**Lowes LP**, Alfano LN, Flanigan KM, Mendell JR. (2012) Effect of Sildenafil to improve strength and function of a 45 year ol woman with limb girdle muscular dystrophy type 2D. Muscular Dystrophy Association Clinic conference, Las Vegas;

**Lowes LP**, Alfano LN, Dvorchik I, Yin H, Maus, EG, Flanigan, KM, Mendell, JR.(2013) Longitudinal changes in strength and functional outcomes in sporadic inclusion body myositis. *Neuromuscular disorders* : NMD 2013;23:818.

Case-Smith J, Mayhan M, Orr T, Tonnemon J, **Lowes LP** (2013) Efficacy of Constraint induced Movement Therapy in Infants and Young Children *AJOT*, 2013

**Lowes LP**, Alfano LN, Ray W, Wolock S, Flanigan, KM, Mendell, JR, Kaspar, BK(2013). Development of a proof-of-concept device using the Microsoft Kinect to assess movement in infants with spinal muscular atrophy. Neuromuscular disorders : NMD ;23:770.

Alfano LN, **Lowes LP**, Dvorchik I, Yin, H, Maus, EG, Flanigan, KM, Mendell, JR.(2013) Evaluation of the ability of timed walking tests to quantify function in sporadic inclusion body myositis. Neuromuscular disorders : NMD ;23:818.

Alfano LN, **Lowes LP**, Flanigan KM, Mendell JR (2013). A shorter timed walking or running test may be sufficient for testing function in Duchenne muscular dystrophy. Neuromuscular disorders : NMD ;23:751-752.

**Lowes, LP**; Noritz,G; Tidball,A. Newmeyer, A; Love, L; Clark, T; Miller, M; Smoyer, W. (2013) Learn From Every Patient: Feasibility and early results of a clinical care and research integration to operationalize a learning health system. Developmental Medicine & Child Neurology, 55: 84–86.

Gauthier, L.V.; Borstad, A.; **Lowes, LP.**; Worthen-Chaudhari, L.; Crawfis, R.; McPherson, R.; Phillips, K.; Jaffe, J.; Maung, D. (2014) Delivery Of Constraint-Induced Movement Therapy Through A Video Game: a Pilot Study in Stroke. American Congress of Rehabilitation Medicine. Toronto, Canada.

Alfano LN, **Lowes LP**, Dvorchik I, Yin H, Maus EG, Flanigan KM, Mendell JR (2014). The 2-min walk test is sufficient for evaluating walking abilities in sporadic inclusion body myositis. Neuromuscular disorders NMD. 24(3):222-6.

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McDonald CM, Bushby K, Tulinius M, Finkel R, Topaloglu H, Day JW, Flanigan K, **Lowes L**, Eagle M, Luo X, Elfring G, Kroger H, Riebling P, Ong T, Spiegel R, Peltz SW. Ataluren: an overview of clinical trial results in nonsense mutation Duchenne Muscular Dystrophy (2016) Canadian Journal of Neurological Sciences / Journal Canadien des Sciences Neurologiques. 43(Supplement S2):S8-S8.

Lindsay N Alfano, Katherine M Berry, Jerry R Mendell, H. Eliopoulos, L. Han, **Linda P Lowes**. Effects of long-term eteplirsen treatment on upper limb function in patients with Duchenne muscular dystrophy: findings of two phase 2 clinical trials. (2017) Neuromuscular Disorders. 26 (Supplement S2).

**Linda P Lowes**, Lindsay N Alfano, Natalie F Miller, Megan A Iammarino, Margaret E Dugan, Katherine M Berry, Samiah Al-Zaidy, Jerry R Mendell. AVXS-101, Gene Replacement Therapy study for Spinal Muscular Atrophy type 1: Patients demonstrate cognitive, fine motor and language abilities within the normal range. (2017) Neuromuscular Disorders. 26 (Supplement S2).

Natalie F Miller, Lindsay N Alfano, Megan A Iammarino, Margaret E Dugan, Kevin M Flanigan, Samiah Al-Zaidy, Chang-Yong Tsao, Jerry R Mendell, **Linda P Lowes**. The 100 meter

timed test is able to quantify change over time and may predict loss of ambulation in Duchenne muscular dystrophy. (2017) Neuromuscular Disorders. 26 (Supplement S2).

Megan A Iammarino, Lindsay N Alfano, Natalie F Miller, Margaret E Dugan, Melissa Moore-Clingenpeel, Kevin M Flanigan, Samiah Al-Zaidy, Jerry R Mendell, **Linda P Lowes**. Utility of ACTIVE Workspace volume as a clinically meaningful measure of upper extremity function in individuals with spinal muscular atrophy. (2017) Muscle Nerve. 56(Supplement S1).

### Book Chapters

1. **Lowes LP**, Greis S (1999). The role of therapy for children with cerebral palsy. The Cerebral Palsies, 1 ed. Miller G, Clark Gary D, editors. Burlington MA: Butterworth-Heinemann
2. **Lowes LP**, Sveda M, Carrie GG, Robert GL. (2012) Musculoskeletal development and adaption (2012). In Physical Therapy for Children; Suzann Campbell, Editor, St Louis MO: Elsevier Saunders; p.175-204.
3. Orlin MN, **Lowes LP** (2012). Musculoskeletal System: Structure Function and Evaluation; in Meeting the Physical Therapy Needs of Children Second ed. Effgen SK, editor. Philadelphia, PA: FA Davis, p.183-219.
4. **Lowes LP**, Alfano LN (2012) Musculoskeletal System: Considerations and Interventions for Specific Pediatric Pathologies in Meeting the Physical Therapy Needs of Children 2 ed. Effgen SK, editor. Philadelphia, PA: FA Davis; p.219-268.
5. **Lowes LP**, Hay K. (2016) Musculoskeletal development and adaption. In Physical Therapy for Children; Suzann Campbell, Editor, St Louis MO: Elsevier Saunders; p.175-204. (in press)

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## TEACHING

### Courses Taught

1996-1998	Pediatric Evaluation and Treatment Texas Women's University Houston, TX
1996-1998	Motor Learning Texas Women's University Houston, TX
1999- 2001	Introduction to Physical Therapy Practice The Ohio State University Columbus, OH
1999- 2001	Pediatric Evaluation and Treatment The Ohio State University Columbus, OH

**Direct Supervision****Doctorate of Physical Therapy Students- Final Clinical Rotation**

2010	Andrea Todd The Ohio State University Columbus, OH
2011	Jessica Brock The Ohio State University Columbus, OH
2012	Erin Gates The Ohio State University Columbus, OH

**Student Advisory Committees**

1998	Lisa Devon Linda Pax Lowes Texas Women's University- Houston Campus Doctorate of Physical Therapy Houston, TX
1998	Devanshi Gandhi Linda Pax Lowes Texas Women's University- Houston Campus Doctorate of Physical Therapy Houston, TX

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2003	Renee Casady Deborah Nichols-Larsen The Ohio State University Masters of Allied Health Columbus, OH
2009	Shannon Walsh Lucinda Boullin Rocky Mountain University of the Health Sciences DSc Provo, UT
2016	Leslie Nelson Mary Thompson PhD Texas Women's University PhD Denton, TX

**Oral Exam Participation**

2003	Renee Casady The Ohio State University Masters of Allied Health Columbus, OH
2009	Shannon Walsh Rocky Mountain University of the Health Sciences DSc Provo, UT
2018	Leslie Nelson Mary Thompson PhD Texas Women's University PhD Denton, TX

### **Research Director for Joint OSU/NCH Physical Therapy Residency Program**

The joint residency is competitive 1 year training for post professional physical therapists. Mentorship is provided to each resident approximately 4 hours/week.

2008	Lindsay Alfano
2009	Kim Scott
2011	Natalie Goodman
2012	Sarah Hendershot
2013	Jessica Brock
2014	Marlise Leggett
2015	Krystal Hay
2016	Lindsey Tobias
2017	Nicholas Kelly

### **LOCAL/REGIONAL DISTINGUISHED ACTIVITIES**

1. Developmental Milestones And Age Appropriate Play Activities; Orthopedic Nurses Association, 1987 Lexington, Kentucky
2. Developmental Issues in Children with Myelomeningocele Ohio Special Education Instructors conference. 1990 Dayton, Ohio.
3. Physical Therapy Management following Selective Posterior Dorsal Rhizotomy A.I. du Pont Institute Rehabilitation Conference. 1990 Wilmington, De.
4. Pediatric Balance Assessment and Treatment Philadelphia Public School District. (1994) Philadelphia, Pa.
5. Pediatric Balance Assessment and Treatment Pennsylvania Physical Therapy Association State Conference. (1995) Philadelphia, Pa.
6. Ethical and Legal Concern of Physical Therapists Working in a School-Based (1998) Houston Independent School District. Houston, Tx.



7. Ohio Physical Therapy Association Annual Conference: Seminar presentation: "Updates in Pediatric Physical Therapy" October 16 2010, Columbus Ohio
8. OSU Residency Conference: "Updates in Neuromuscular Disease Management and Research" April 2015, Columbus Ohio

## **NATIONAL/INTERNATIONAL DISTINGUISHED ACTIVITIES**

1. Maternal and Child Health Bureau Project Director Meeting.. Guest panelist on program evaluation. (1994) Washington, D. C
  2. Pediatric Balance Assessment and Treatment; APTA Combined Sections Meeting pre-conference. (1997) Atlanta, Ga.
  3. Musculoskeletal Evaluation of the Pediatric Patient; APTA Scientific Meeting and Exposition. (1997) San Diego, Ca
  4. The Musculoskeletal System: Pathology, Assessment and Intervention; Pediatric Section Advanced Clinical Practice (2001) Austin, Tx.
  5. The Musculoskeletal System: Pathology, Assessment and Intervention; Pediatric Section Advanced Clinical Practice (2003) Columbus Oh
  6. Pediatric Obesity and Fitness Intervention; Pediatric Section Advanced Clinical Practice (2004) Minneapolis, MN
  7. The Musculoskeletal System: Pathology, Assessment and Intervention; Pediatric Section Advanced Clinical Practice (2007) Indianapolis, Indiana.
  8. ACQUIREc therapy for children. American Academy for Cerebral Palsy and Developmental Disabilities, (2009) Scottsdale, Az
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9. Pediatric Neuromuscular Disease Research Update, APTA Combines Sections Meeting (2010) Boston Ma. (4 hour course)
  10. Orthopedic Physical Therapy Best Practice Guidelines; (2010) Prince George County School System (8 hour course)
  11. Use of surrogate outcome measures. Rare Diseases Meeting, (2011) Washington, DC
  12. Clinical Trial Outcome Measures in Sporadic IBM. European Neuromuscular Consortium; (2014) Narden Netherlands
  13. Reliability and validity of the ACTIVE-mini to quantify infant movement; World Muscle Society, (2015) Berlin Germany
  14. Use of ACTIVE-mini to quantify movement in infants with SMA 1. International Congress on Neuromuscular Disorders (2014) Nice, France
  15. Does my patient with a neuromuscular disorder qualify for a clinical trial? American Academy of Cerebral Palsy and Developmental Medicine (2015) Austin, TX (1.5 hour course)
  16. Providing Holistic Care for Patients with Neuromuscular Disorders, American Academy of Cerebral Palsy and Developmental Medicine (2016) Hollywood, FL (2 hour course)

17. Key Challenges in Developing, Testing and Implementing Clinical Outcome Assessments in Pediatric Trials. 7<sup>th</sup> annual Patient-reported outcome consortium workshop Critical pathways, (2016) Silver Springs MD
18. FDA Advisory Committee for Eteplersin (2016) Silver Springs, MD
19. Longitudinal assessment of infants with spinal muscular atrophy type I with ACTIVE-mini and the CHOP INTEND CureSMA scientific conference (2016) Anaheim, California
20. Ataluren: An overview of clinical trial results in nonsense mutation Duchenne Muscular Dystrophy Canadian Neurological Science Federation , (2016) Quebec, Canada
21. Selecting outcome measures for Neuromuscular Diseases. International Congress on Neuromuscular Disorders; (2016) Toronto, Canada (1.5 hour workshop)

## **PROFESSIONAL MEMBERSHIPS AND ACTIVITIES**

1983- Present	Member American Physical Therapy Association
2010- Present	Member World Muscle Association
2016-Present	Member TREAT-NMD
2017-Present	Committee Member TACT

## GOVERNOR'S APPOINTMENTS TO BOARDS AND COMMISSIONS

**Date:** 10/25/2018

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**Name of Appointee:** Dr. Linda Pax Lowes, Ph.D.

Address: 2221 N. Star Rd.  
Columbus, OH 43221  
Franklin County  
(H) - 6144859693  
(W) - 6147226881  
(M) - 6245601324

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**Name of Commission:** Ohio Occupational Therapy, Physical Therapy and Athletic Trainers Board

Contact: Melissa Craddock, Executive Director  
77 South High Street, 16th Floor  
Columbus, OH 43215  
(614) 466-3474

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**Term Begins:** 8/28/2018

**Term Ends:** 8/27/2021

**Party Affiliation:** Independent

**Senate Confirmation:** Appointed by the Governor, confirmed by the Senate

**Financial Disclosure:** Public disclosure required

**Vice:** James T. Lee