Danielle Levac, PhD, MSc, PT
Department of Physical Therapy, Movement and Rehabilitation Sciences
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EDUCATION

2012-2014 Postdoctoral Fellowship
University of Ottawa, Ottawa, Ontario, Canada
School of Rehabilitation Sciences, Motor Control Laboratory

2007-2012 PhD Rehabilitation Science
McMaster University, Hamilton, Ontario, Canada
School of Rehabilitation Sciences
Dissertation: The use of motor learning strategies within usual and virtual reality-based physiotherapy interventions for children with acquired brain injuries

2005-2007 MSc. Rehabilitation Science
McMaster University, Hamilton, Ontario, Canada
School of Rehabilitation Sciences
Thesis: Intra-individual variability in recovery patterns after pediatric acquired brain injury

1996-2001 BSc. Physiotherapy
University of Ottawa, Ottawa, Ontario, Canada
School of Rehabilitation Sciences

ACADEMIC APPOINTMENTS

2015-pres. Affiliated faculty
Department of Bioengineering
Northeastern University, Boston, MA

2015-pres. Assistant Professor
Department of Physical Therapy, Movement and Rehabilitation Sciences
Northeastern University, Boston, MA

PROFESSIONAL POSITIONS

2005-2009 Teaching Assistant
Master's of Physiotherapy Program, School of Rehabilitation Science, McMaster University, Hamilton, ON, Canada

2007-2010 Research Assistant
School of Rehabilitation Science and *CanChild* Centre for Childhood Disability Research
McMaster University, Hamilton, ON, Canada

2005-2008 Physiotherapist
School Health Support Services, Community Rehab
Cambridge, ON, Canada

2004-2005 Physiotherapist
Holland Bloorview Kids Rehabilitation Hospital
Toronto, ON, Canada

2001-2004 Physiotherapist
McMaster Children's Hospital, Hamilton, ON, Canada

RESEARCH & SCHOLARSHIP

PUBLICATIONS

Under review

Levac D, Galvez J, Driscoll K, Mercado K, O'Neil L. OPTIMAL practice conditions enhance the benefits of gradually increasing error opportunities on retention of a stepping sequence task. Human Movement Science.

Refereed Journal Publications

Levac D, Jovanovic B. Is children's motor learning of a postural reaching task enhanced by practice in a virtual environment? Proceedings of the 2017 International Conference on Virtual Rehabilitation; 19-22 June 2017, **DOI:** 10.1109/ICVR.2017.8007489.

Levac D, Glegg S, Coluhoun H, Miller P. How do perspectives of experienced and inexperienced clinicians differ about the use of active video games in practice? International Journal of Child Development. In press.

Levac D, Glegg S, Colquhoun H, Miller P and Wright V. Virtual reality and active video game-based practice, learning needs and preferences: A cross-

Canada survey of physiotherapists and occupational therapists. Games for Health Journal.

Levac D, Sveistrup H, Levin M, McCormack A, Brien M, Mills R*. Active video gaming home exercise programs for children with cerebral palsy: does a clinic-based virtual reality intervention component offer an additive benefit? A pilot study. Physical & Occupational Therapy in Pediatrics. ugust 2017, 6(4): 217-228. https://doi.org/10.1089/g4h.2016.0089

Levac D, Glegg SMN, Sveistrup H, Colquhoun H, Miller P, Finestone H, Harris J, DePaul V. Promoting therapists' use of motor learning strategies within virtual reality-based stroke rehabilitation. PLOS One. In Press.

Levac D, Glegg SMN, Sveistrup H, Colquhoun H, Miller P, Finestone H, Harris J, DePaul V. (2016). A knowledge translation intervention to enhance clinical application of a virtual reality system in stroke rehabilitation. BMC Health Services Research, 16:557 DOI: 10.1186/s12913-016-1807-6

O'Brien K, Colquhoun H, **Levac D,** Baxter L, Tricco A, Straus S, Wickerson L, Nayar A, Moher D, O'Malley L. (2016). Advancing Scoping Study Methodology: A web-based survey and consultation of perceptions on terminology, definitions and methodological steps. BMC Health Services Research, Jul 26;16:305 **DOI:** 10.1186/s12913-016-1579-z

Levac D, Nawrotek* J, Deschenes* E, Giguere* T, Serafin* J, Bilodeau, M, Sveistrup H. (2016). Development and Reliability Evaluation of the Movement Rating Instrument for Virtual Reality Video Game Play. JMIR Serious Games. 4(1):e9 doi:10.2196/games.5528

Tricco AC, Lillie E, Zarin W, O'Brien K, Colquhoun H, Kastner M, **Levac D**, Ng C, Sharpe JP, Wilson K, Kenny M, Warren R, Wilson C, Stelfox H, Straus S. (2016). A scoping review on the conduct and reporting of scoping reviews. BMC. Medical Research Methodology.16:15 DOI: 10.1186/s12874- 016-0116-4

Sheehy, L, Taillon-Hobson A, Sveistrup H, Bilodeau M, Fergusson D, **Levac D,** Finestone H. Does the addition of virtual reality training to a standard program of inpatient rehabilitation improve sitting balance ability and function after stroke? Protocol for a single-blind randomized controlled trial. BMC Neurology. Mar 31;16:42 doi: 10.1186/s12883-016-0563-x.

Levac D, Glegg S, Camden C, Rivard L. (2015). Best practice guidelines for the development, implementation, and evaluation of online knowledge translation resources in rehabilitation. Physical Therapy. 95(4): 648-62.

Levac D, Fox E, Espy D, Pradhan S, Deutsch J. (2015). 'Kinect-ing' with clinicians: A knowledge translation resource to support decision-making

about virtual reality video game use in rehabilitation. Physical Therapy. 95(4):426-40.

Colquhoun H, O'Brien K, **Levac D**, Strauss S, Moher D. (2014). Scoping reviews: Time for clarity in conduct and reporting. Journal of Clinical Epidemiology. 67(12): 1291-4.

Dematteo C, Rubinoff M, Greenspoon D, **Levac D.** (2014). Evaluating the contribution of the Nintendo Wii in assessing return to activity readiness in youth with mild traumatic brain injury. Physical and Occupational Therapy in Pediatrics. 34(3):229-244.

Levac D, Miller P. (2013). Integrating virtual reality video games into therapy: clinician's experiences. Physiotherapy Theory & Practice. 29(7):504-12.

Levac D, Missiuna C, Wishart L, DeMatteo C, and Wright V. (2013). The Motor Learning Strategy Instrument: inter-rater reliability within usual and virtual reality physical therapy interventions. Pediatric Physical Therapy, 25(1):53-60.

Levac D, Galvin J. (2013) When is virtual reality 'therapy'? Archives of Physical Medicine & Rehabilitation. 94(4):795-8

Janssen J, Verschuren O, **Levac D**, Ermers J, Ketelaar M. (2012). Structured game-related group therapy for an Adolescent with Acquired Brain Injury: a case report. Journal of Pediatric Rehabilitation Medicine, *5*(2):125-32.

Levac D, Rivard L, Missiuna C. (2012). Describing the active ingredients of interactive computer play interventions for children with neuromotor impairments: a scoping review. Research in Developmental Disabilities, 33, 214-223.

Kamath T, Banerjee P, Hunter T, Ito J, Pfeifer M, Salbach N, Wright V, and **Levac D**. (2012). Reliability of the Motor Learning Strategy Rating Instrument for children and youth with Acquired Brain Injury. Physical and Occupational Therapy in Pediatrics, 32(3):288-305

Missiuna C, Pollock N, **Levac D,** Campbell W, Sahagian Whalen S, Bennett S Hecimovich C, et al. (2012). Partnering for Change: An innovative school-based occupational therapy service delivery model for children with developmental coordination disorder. Canadian Journal of Occupational Therapy. 2012 Feb;79(1):41-50.

Levac D, Miller P, Missiuna C. (2012). Usual and virtual reality video game-based physiotherapy interventions for children and youth with acquired

brain injuries. Physical & Occupational Therapy in Pediatrics, 32(2):180-95.

Letts L, Ginis KA, Faulkner G, Colquhoun H, **Levac D**, Gorczynski P. (2011) Preferred methods and messengers for delivering physical activity information to people with spinal cord injury: A focus group study. Rehabilitation Psychology 56(2):128-37

Levac D, Missiuna C, Wishart L, DeMatteo C, Wright V. (2011). Documenting the content of physical therapy for children with acquired brain injury: Development and validation of the Motor Learning Strategy Rating Instrument. Physical Therapy, 91(5):689-99

Levac D, Galvin J (2011). Facilitating clinical decision-making about the use of virtual reality within pediatric motor rehabilitation: application of a classification framework. Developmental Neurorehabilitation 14(3): 177-184.

Levac D, Colquhoun H, O'Brien K. (2010) Scoping Studies: Advancing the methodology. Implementation Science. 5:69

Levac D, Pierrynowski M, Canestrano M, Gurr L, Leonard L, Neeley C. (2010) Exploring children's movement characteristics during virtual reality video game play. Human Movement Science 29: 1023-1038.

Galvin J, **Levac D**. (2010) Facilitating clinical decision-making about the use of virtual reality within pediatric motor rehabilitation: Describing and classifying virtual reality systems. Developmental Neurorehabilitation, *14*(2), 112-122.

Levac D, Wishart L, Missiuna C, Wright V. (2009). The application of motor learning strategies within functionally based interventions for children and youth with neuromotor conditions. Pediatric Physical Therapy 21: 345-355.

Levac D., DeMatteo C. (2009). Bridging the gap between theory and practice: Dynamic Systems Theory as a framework for understanding and promoting recovery of function in children and youth with acquired brain injuries. Physiotherapy Theory and Practice, *25*(8), 544-554.

Levac D., DeMatteo C., Hanna S., Wishart L. (2008). Intra-individual variability in recovery from paediatric acquired brain injury: Relationship to outcomes at 1 year. Developmental Neurorehabilitation, *11*(3), 195-203.

Non-refereed publications

Invited Commentaries

Levac D. (2016). How can therapists enhance children's engagement in home-based rehabilitation interventions? Evidence to Practice Commentary. \ Physical and Occupational Therapy in Pediatric, 36(4):359-62. doi: \ 10.1080/01942638.2016
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Professional Publications

King, J., **Levac, D**., Hard, J., Fraser, M. (2010). Lost in Translation: Exploring the potential safety impacts of culturally-based communication challenges in the patient-physiotherapist relationship. *The Interdivisional Review of the Canadian Physiotherapy Association: Safety*, 34-38.

Levac D., Missiuna C. (2009). *An update on the use of virtual reality technology to improve movement in children with physical impairments*. McMaster University, Hamilton, ON: CanChild Centre for Childhood Disability Research. Available at www.canchild.ca.

Crowley, H., **Levac, D**. (2008). The impact of obesity and lifestyle factors on the transition from under nutrition/infectious disease to overnutrition/noncommunicable disease in the majority world. *The Interdivisional Review of the Canadian Physiotherapy Association: Obesity*, 28-32.

Levac, D., Tata, E., Cleaver, S., Raman, S., Balogh, R., Ellis, K. (2007). Inter-professional practice and education: the perceived cultural divide. *The Interdivisional Review of the Canadian Physiotherapy Association: Interdisciplinary Care*, 22-26.

Book Chapters

Levac D & Sveistrup H. *Motor Learning and Virtual Reality. In MF Levin, PL Weiss (Eds).* Virtual reality technologies for health and clinical applications Volume 1: Applying virtual reality technologies to motor rehabilitation. Springer, NY, 2014.

PRESENTATIONS AND PROCEEDINGS

International Conference Presentations

Levac D, Jovanovic B. Is children's motor learning of a postural reaching task enhanced by practice in a virtual environment? International Conference on Virtual Rehabilitation, Montreal, QC, June 20-22, 2017.

Glegg S, **Levac D.** Enhancing clinical implementation of virtual reality: an evidence-based perspective and call to action. International Conference on Virtual Rehabilitation, Montreal, QC, June 20-22, 2017.

Mills RS, **Levac D,** and Sveistrup H. 'Kinematics and postural muscular activity during continuous oscillating platform movement in children and adolescents with cerebral palsy', Oral presentation accepted to the Movementis Conference, Oxford, 9-11 July 2017.

Mills RS, **Levac D,** and Sveistrup H. 'The effects of a one-week intensive physiotherapy programme on kinematics and postural muscle activity in children and adolescents with cerebral palsy', Poster presentation accepted to the Movementis Conference, Oxford, 9-11 July 2017.

Levac D, Glegg SMN, Miller P, Colquhon H. (2016) How do the perspectives of clinicians with and without virtual reality/active video game experience differ about its use in practice? International Conference for Disability, Virtual Reality and Rehabilitation, LA, USA.

Levac D, Kelly A, Polizzano M, Saffee S. (2016) Do user motivation and attention influence performance of a postural reaching task in a virtual environment? International Conference for Disability, Virtual Reality and Rehabilitation, CA, USA.

Krasovsky T., Eisenstein E., Tamar Y., Bar O., and **Levac D**. (2015). Use of motor learning strategies in occupational and physical therapy for pediatric acquired brain injury. International Conference on Paediatric Acquired Brain Injury, Liverpool, England.

Tricco A.; Lillie E., Zarin W., O'Brien K., Colquhoun H, Kastner M., **Levac D.,** et al. (2015) Scoping reviews versus systematic reviews: Results from a scoping review of scoping reviews. 23rd Cochrane Colloquium, Vienna, Austria.

Glegg SMN, **Levac D,** Sveistrup H, Colquhoun H, Miller P, Depaul V, Finestone H, Wishart L, Harris J, Brien M. (2014). Integrating motor learning and virtual reality into practice: A knowledge translation challenge. International Conference on Disability, Virtual Reality and Associated Technologies (ICDVRAT) 2014, Gothenburg, Sweden.

Levac D, Glegg S, Sveistrup H, Colquhoun H, Miller P. (2013). Supporting therapists to integrate virtual reality systems within clinical practice: A knowledge translation study. International Conference on Virtual Rehabilitation, Philadelphia, Pennsylvania.

DeMatteo C., Rubinoff M., Greenspoon, D. **Levac, D.** (2012). Development of a Nintendo Wii Protocol for Assessment of Return to Activity Readiness in Youth with Mild Traumatic Brain Injury. 9th World Congress on Brain Injury, Edinburgh, UK.

Levac D., Galvin J. (2012) What is the role of the therapist in pediatric virtual reality interventions? A scoping review of the literature. 9th International Conference Series on Disability, Virtual Reality and Associated Technologies, Laval, France.

Levac D., & Missiuna C. (2009). What are the educational needs of health professionals who transfer knowledge about DCD to parents and teachers? DCD VIII International Conference, Baltimore, Maryland.

Levac D., & Wishart L. (2009). How are motor learning strategies applied within physical and occupational therapy interventions for children with DCD? DCD VIII International Conference, Baltimore, Maryland.

National Conference Presentations

Levac D, Lohse K, Proffitt R. (2016). Maximizing motivation and engagement during motor learning: insights from practice in a virtual environment. American Congress of Rehabilitation Medicine Annual Congress, IL, USA.

Levac D, Glegg SMN. (2015). Toward best practices in virtual reality and active video game use within pediatric rehabilitation: Competencies, clinical decision-making and outcome measurement. American Academy for Cerebral Palsy and Developmental Medicine 69th Annual Meeting, Austin, TX.

Colquhoun, H., O'Brien, K., **Levac, D**., Tricco, A., Zarin, W., Lillie, E., Straus, S. (2016). Current best practices for the conduct of scoping reviews. Canadian Association of Occupational Therapists National Conference Banff, AB.

Levac D, Miller P, Glegg SMN, Colquhoun H, Wright V. (2016). A survey of physical and occupational therapists' virtual reality use and learning needs. Canadian Physiotherapy Association Conference, Victoria BC.

Glegg SMN, **Levac D**, Miller M, Colquhoun H, Wright V. (2016). Virtual reality use and learning needs among Canadian therapists. Canadian Association of Occupational Therapists National Conference, Banff, AB.

Levac D, Glegg SMN, Sveistrup H, Colquhoun H, Miller P, Depaul V, Finestone H, Wishart L, Harris J, Brien M. (2014). The reality of virtual reality in stroke rehabilitation. Annual Congress of Rehabilitation Medicine, Toronto.

Missiuna C., Pollock N., Hecimovich, C., Sahagian Whalen S., Gaines R., Russell D., Rosenbaum P., Bennett S., Campbell W., **Levac D**., Rivard L., DeCola C. & Cairney J. (2012). Partnering for Change: Transforming health services for children with developmental coordination disorder. Canadian Association of Paediatric Health Centres (CAPHC) Annual Conference, Vancouver, BC.

Missiuna C., Pollock N., Hecimovich C., Sahagian Whalen S., Gaines R., Russell D., Rosenbaum P., Bennett S., Campbell W., **Levac D**., Rivard L., DeCola C. & Cairney J. (2012). Partnering for Change: Transforming health services for children with developmental coordination disorder. American Academy for Cerebral Palsy and Developmental Medicine (AACPDM), Toronto, ON.

Rivard L., **Levac D**., Missiuna C. (2012). Developmental Coordination Disorder (DCD): Using knowledge translation as a physiotherapy management strategy. Canadian Physiotherapy Association Congress, Saskatoon, SK.

Levac D., Fricke M., Yeung E. (2012). Be it resolved that a 'global health' can be found in Canada: a structured debate. Canadian Physiotherapy Association Congress, Saskatoon, SK.

Missiuna C., Pollock N., Rivard L., Russell D., Campbell W., **Levac D**., & Sahagian Whalen S. (2012) *Partnering for Change: A capacity building model for children with motor challenges.* American Academy for Cerebral Palsy and Developmental Medicine Annual Meeting, Toronto, ON.

Levac D., Miller P., Missiuna C. (2011). "You have to think about why you're doing it": Pediatric physiotherapists' use of the Nintendo Wii/WiiFit. Canadian Physiotherapy Association Conference, Whistler, British Columbia.

Levac D., Galvin J. (2011). Virtual Reality Systems in Pediatric Rehabilitation: Making sense of the many options. Canadian Physiotherapy Association Conference, Whistler, British Columbia.

Missiuna C., Pollock N., Sahagian-Whalen S., **Levac D**., & Bennett S. (2011). Partnering for Change: Building capacity through coaching in school contexts. Canadian Association of Occupational Therapists' Annual Conference, Saskatoon, Saskatchewan.

Levac D., Pierrynowski,M. (2010). Characteristics of total body movement during virtual reality video game play in healthy children. Canadian Physiotherapy Association Conference, St. John's, Newfoundland.

Levac D. (2008). The role of motor learning principles within physiotherapy intervention approaches: a comparative analysis and application to children and youth with acquired brain injury. American Congress of Rehabilitation Medicine- American Society of Neurorehabilitation Joint Educational Conference, Toronto, Ontario.

Levac D., DeMatteo C., Hanna S., Wishart L. (2008). What is the role of intra-individual variability in recovery from pediatric ABI? 7th World Congress on Brain Injury, Lisbon, Portugal.

Levac D., DeMatteo C., Hanna S., & Wishart L. (2008). Implications for physiotherapists of Intra-individual variability in recovery from pediatric acquired brain injury. Canadian Physiotherapy Association Conference, Ottawa, Ontario.

Levac D., Cleaver S., Hard J. (2008). Reflecting on the role of physiotherapy in developing countries: where can you fit in? Canadian Physiotherapy Association Conference, Ottawa, Ontario

Levac D, Galvin J, Brien M. (2013). Virtual reality systems in neurorehabilitation: clinical decision-making and motor learning applications (accepted; not presented). American Congress of Rehabilitation Medicine, FL, USA.

Levac D., DeMatteo C., Hanna S., & Wishart L. (2007). Intra-individual variability in recovery from pediatric acquired brain injury: relationship to functional outcomes at one year. North American Brain Injury Society Conference, San Antonio, Texas.

Levac D., DeMatteo C. (2007). Bridging the gap between theory and practice: Dynamic Systems Theory as a framework for understanding and promoting recovery of function in children and youth with acquired brain injuries. North American Brain Injury Society Conference, San Antonio, Texas.

Regional/Local conference presentations

2016 **Levac D**. Ionta Symposium. Kinect'ing with clinicians: Benefits and Challenges of Virtual reality and active video game use in Rehabilitation. Spaulding Rehabilitation Hospital, Charlestown, MA.

2015 **Levac D.** Kinect'ing with clinicians: Benefits and Challenges of Virtual reality and active video game use in Rehabilitation. APTA of Massachusetts Regional Conference, Norwood, MA.

Invited talks

National:

Levac D. (2016). Virtual reality: A motor learning friend or foe? University of Southern California Division of Biokinesiology and Physical Therapy. September 23, LA, California.

Regional:

Levac D (2016). Exploring the role of motivation and engagement for motor learing in virtual environments. Northeastern Personal Health Informatics Speaker Series. October 17, Boston, MA.

Levac D. (2015). Virtual reality: a motor learning friend or foe? APTA of Massachusetts Neurological and Pediatric SIG. November 6, Boston, MA.

GRANTS

EXTERNAL

Under review

Mentored Research Scientist Career Development (K) award (Levac) 2017-2022
National Institutes of Health
Motor learning and transfer in virtual environments
$600,000

Funded

Child Health Research Award **(**Levac) 2017-2019
Charles H. Hood Foundation
Is motor learning enhanced by practice in a virtual environment for children with cerebral palsy?
$150,000

Tufts CTSI Pilot Grant (Levac) May 2017-April 2018
Influence of virtual environment complexity on motor learning in children with cerebral palsy: Implications for virtual reality use in rehabilitation
Role: Co-Principal Investigator
($45,000)
Percent effort: 15% (In-Kind)
Roles of others: Nathan Ward, Co-Principal Investigator

Deborah Munroe Noonan Memorial Research Fund (Levac) 09/01/2016-08/31/2017
Usability evaluation of the FITBoard (Fun Interactive Therapy Board): A motivating, movement-based rehabilitation tool for children with disabilities.
Role: Principal Investigator
($80,000)
Percent effort: 20%
Roles of others: Waleed Meleis, Co-investigator

Canadian Institutes for Health Research (Wright) 2014-2019
Evaluation of the effect of robotic gait training and and gait-focused physical therapy programs for children and youth with CP: a mixed methods RCT
Role: Co-investigator
(74.621$/yr X 5 years)
Percent effort: 5% (In-kind)
Roles of Others: Wright V (PI), Wiart L, Fehlings D (Co-Investigators).

Heart & Stroke Foundation Research Grant (Finestone) 2014-2016
Does virtual reality exercise improve sitting balance ability and function after stroke?
Role: Co-investigator
($229,497)
Roles of Others: Finestone H (PI), Sveistrup H, Bilodeau M, Fergusson D (Co-investigators)

Planning and Dissemination Grant (O'Brien) 2014-2015
Canadian Institute of Health Research
Establishing Methodological Quality Guidelines for Scoping Studies: Advancing the Field of Knowledge Synthesis within the Context of Chronic Disease and Rehabilitation
Role: Co-Investigator
($25,000 (CAN))
Percent effort: 5% (In-kind)
Roles of others: O'Brien K (PI), Colquhoun H (Co-I)

Ontario Federation for Cerebral Palsy Research Grant (Levac) 2013-2014
Jump-Start': Comparing the Effect of home-based versus clinic-based virtual

reality Therapy on functional Mobility, physical Activity and Participation in Children and young Adults with CP
Role: PI
($35,000 (CAN))
Percent effort: 20% (In-kind)
Roles of Others: Sveistrup H. (Levin M., Brien M., McCormack A., Miller E (Co-I)

Ontario Stroke Network (Levac) 2012-2014
Development and evaluation of an integrated knowledge translation initiative to train physical and occupational therapists in a motor learning-based virtual reality intervention program
Role: PI (
$96,000 (CAN))
Percent effort: 20% (In kind)
Roles of others: Sveistrup H., Colquhoun H., Glegg SMN, Brien M, Miller P, Finestone F, Harris J, DePaul V (Co-investigators)

Neurosciences Division Grant (Levac) 2009-2010
Physiotherapy Foundation of Canada
Exploring the use of virtual reality (Nintendo Wii & WiiFit) within physiotherapy interventions for children and youth with acquired brain injury
Role: PI
($3,000 (CAN))
Percent effort: 50% (In kind)
Roles of others: Missiuna, C., Wright, V., Wishart, L., DeMatteo, C., Miller, P. (Co-Is)

Declined

Jacobs Foundation Early Career Research Fellowship (Levac) July 2016
(Invited to 2nd round)
Roles of others: Sternad D (Co-investigator)

Cerebral Palsy Alliance Research Grant (Levac) August 2015
Motor learning in virtual and physical environments for children with cerebral palsy.
$97,000
Roles of others: Sternad D (Co-investigator)

Cerebral Palsy Alliance Career Development Grant (Levac) August 2015
Development and evaluation of motivating virtual environments for motor skill learning in children with cerebral palsy.
$63,000
Roles of others: Sternad D (Co-investigator)

INTERNAL

Funded

Mutual Mentoring Advancement Program (Levac) October 2016
Using electoencephalography to measure attention, motivation and engagement in motor learning.
Role: PI ($3000)
Percent effort: 20% (In-kind)
Roles of others: Erdogmus D, Lin Y, Lohse K (co-Investigators)

Interdisciplinary Tier 1 Grant (Levac) July 2015- June 2016
Northeastern University
Does narrative feedback enhance motor learning of a virtual balance task in children with cerebral palsy?
Role: Co-PI ($50,000)
Percent effort: 20% (In-kind)
Roles of others: Lu, A (Co-PI)

Provost Grant Research and Creative Endeavour Award Levac May 2016
Northeastern University
Development of the Fun Interactive Therapy Board.
Costs: $1500
Role: Principal Investigator
Percent effort: 5% (In kind)
Roles of Others: Scudder C, Student Investigator.

Provost Grant Research and Creative Endeavour Award Levac Sept 2015
Northeastern University
Development and validation of a motor learning balance task in virtual and physical environments
Costs: $3000
Role: Principal Investigator
Percent effort: 5% (In-kind)
Roles of Others**:** Lomberg P, Sullo N, Wolfe A (Student investigators), Lin Y (Co-Investigator)

HONORS & AWARDS

2017	Best presentation award, International Conference on Virtual Rehabilitation 2017
2017	Outstanding student research award, Health Services, Northeastern University RISE 2017 (Yap, G. A motivating motion-capture based robot for children with disabilities).

2016	Commendation, Best Short Paper, ICDVRAT Conference
2016	Undergraduate Provost Research Award
2016	Outstanding student research award, Engineering and Technology, Northeastern University RISE 2016 (Do, Q. A sensor-based app for video game play).
2015	Undergraduate Provost Research Award
2013	Pursuit Award in Childhood Disability (3rd Prize), Holland Bloorview Kids Rehabilitation Hospital
2012	NeuroDevNet Postdoctoral Fellowship
2012	CIHR Institute for Human Development, Child and Youth Health Travel Award for Students and Post Doctoral Fellows
2012	CIHR Bisby Prize
2012	Canadian Child Health Clinician Scientist Program Career Enhancement Award
2012	Anne Hall Memorial Prize (School of Graduate Studies)
2012-2015	CIHR Post-Doctoral Fellowship
2012-2015	Canadian Child Health Clinician Scientist Program Post-Doctoral Award (awarded, declined)
2012	MITACS Post-Doctoral Fellowship (awarded, declined)
2010-2012	Faculty of Health Sciences Graduate Programs Excellence Award
2010	Anne Hall Memorial Prize (School of Graduate Studies)
2010	Dean's Award for Graduate Student Knowledge Translation and Innovation (nominated, not awarded)
2010	CIHR Institute for Human Development, Child and Youth Health Travel Award for Students and Post Doctoral Fellows
2009-2013	Canadian Child Health Clinician Scientist Program Doctoral Award (partly funded by the McMaster Child Health Research Institute)
2009	CIHR Frederick Banting & Charles Best Canada Graduate Scholarship
2009	*CanChild* Centre for Childhood Disability Research Studentship Award
2008-2010	Ontario Neurotrauma Foundation PhD Award in ABI research
2005-2009	Canadian Institute for Health Research (CIHR) Quality of Life Strategic Training Fellow in Rehabilitation Research
2008	Ontario College of Physiotherapists Award for Research Advancing Quality Care
2007	Ontario Graduate Scholarship
2006	Ontario Graduate Fellowship

TEACHING AND ADVISING

COURSES

Course #	Title	Role	# of students	Credits	Term & Year

PT 5209	Neurological Rehabilitation I	Instructor	109	4	Fall 2015
PT 5210	Neurological Rehabilitation I Lab	Not yet participated	N/A	1	N/A
PT 5227	PT Project 1	Advisor	4	3	Fall 2015, Fall 2016
PT 6221	Neurological Rehabilitation II	Instructor	106	4	Spring 2015, Spring 2016
PT 5229	PT Project 2	Advisor	4	2	Spring 2015, Spring 2016
IE 4991	Research for Credit	Advisor	3	1	Fall 2015, Spring 2016, Summer I 2016

GUEST LECTURES

Fall 2016 "Kinect'ing with clinicians: Virtual reality and video gaming in Rehabilitation" Bridgewater State University, Therapy/Adapted Physical Education Program

Spring 2016 'Virtual reality for rehabilitation', Enabling Engineering (EECE 270: Enabling Engineering) Northeastern University

'Gaming environments for rehabilitation' COMM 2555/GAME 2555 Games for Change, Northeastern university

Spring 2015 'Gaming environments for rehabilitation' COMM 2555/GAME 2555 Games for Change, Northeastern University

SUPERVISION OF GRADUATE STUDENTS/FELLOWS

Capstone Project Advisor:

2016-pres. Jessica Galvez, Linsday O'Neill, Kathleen Mercado, Kate Driscoll. "Exploring the effects of errorful versus errorless learning combined with positive or negative feedback in a virtual environment'.

Honors Capstone Project. Department of Physical Therapy, Movement and Rehabilitation Sciences.

2015-2016 Aine Kelly, Michael Polizzanno, Sarah Safee, Teagen Ferguson. "Do user motivation and attention influence performance of a postural reaching task in a virtual environment?' Honors Capstone Project. Department of Physical Therapy, Movement and Rehabilitation Sciences.

Thesis committee member:

2015-pres. Jennifer Ryan (Advisor: Virginia Wright). "The Motor Learning Strategy Rating Instrument: Development and evaluation of rater training materials" University of Toronto MSc in Rehabilitation Science

SUPERVISION OF UNDERGRADUATE STUDENTS

Honors/Scholar's Research Assistant Mentor:

2016 Vyshnavi Chunduru. Honor's Research Assistant. D-flow programming. College of Computer and Information Science.
2016 Aiden Wolfe. Honor's Research Assistant. Construction of the physical environment for motor learning experimental paradigm. Department of Mechanical and Industrial Engineering.
2015 Benjamin Soper. Scholar's Research Assistant. D-flow programming.

Electrical and computer Engineering Capstone Faculty Mentor:

2015-2016: Project Title: An Oculus Rift and Leap Motion enabled application for hemispatial neglect (n=5) Co-Supervisor: Waleed Meleis

2016-2017: Project Title: A kinect-enabled game to support speech and motor retraining for children with cerebral palsy (n=5) Co-supervisors: Waleed Meleis and Kathyrn Connaghan

SERVICE AND PROFESSIONAL DEVELOPMENT

Departmental Service Northeastern University

Committees

2016-pres. Admissions Committee
2015-pres. Academic Standing Committee
2015-pres. Research Committee

College Service Northeastern University

Prospective student/parent open houses (2 occasions)

Professional Service

National committees

2016 – present Research Committee, Academy of Pediatric Physical Therapy, APTA

2015 – present Editorial Board, Physical & Occupational Therapy in Pediatrics

2009-2011 Chair, International Health Committee, Canadian Physiotherapy Association

2007– present Ad hoc Journal Reviewer:
Physical and Occupational Therapy in Pediatrics
Human Movement Science
Journal of Medical Internet Research (JMIR)
Physical Therapy
BMC Health Services Methodology

2015– present: Grant awards reviewer
APTA Academy of Pediatrics Research Grants
CIHR Knowledge Dissemination Grants

Membership in Scientific/Professional Organizations

American Physical Therapy Association
- Member
- Neuroscience section member
- Pediatrics SIGs section member

Canadian Institutes of Health Research Knowledge Dissemination Grant
- Peer Review Committee

Ottawa Pediatric Rehabilitation Research Association
- Committee Member

International Society for Virtual Rehabilitation
- Member

College of Physiotherapists of Ontario
- Licensee

Canadian Physiotherapy Association

- Member

Service to the Community/Public

Lunch n' learns/inservices at clinical sites:

Boston Children's Hospital
Franciscan Center for Children
Spaulding Rehabilitation Institute
Spaulding Pediatrics (Cape Cod)
Boston Ability Center
Tufts Floating Hospital for Children
May Center School for Brain Injury and Related Disorders
MGH Pediatric rehabilitation
Boston Public School Physical and Occupational Therapists

Laboratory community events

2016 Visit to Lab by afterschool program (n= 6)
2016 School visit to Lab (Mendell Elementary School 5th grade class) (n = 12)
2016 Booth, Hubbub Fest 2016 (Copley Square)
2016 Booth, Harvard AR/VR event "Exploring the emerging worlds of augmented and virtual reality"
2017 Booth, MIT Science Carnival and Robot Zoo

Professional Development

Continuing Education

2017 International Conference on Virtual Rehabilitation
2016 - present Tufts Junior Investigator Forum (monthly). Tufts Medical Center, Boston, MA.
2016 Training in Grantsmanship in Rehabilitation Research Workshop, Charlestown, SC.
2016 NIH workshop on basic and translational research in cerebral palsy, Alexandria, VA.
2016 American Physical Therapy Association IV Step Conference, Columbus, OH.
2016 International Conference on Disability, Virtual Reality and Associated Technologies, Los Angeles, CA.
2016 American Congress of Rehabilitation Medicine, Chicago, IL.
2016 Ann Gentile Memorial Motor Learning Conference; New York, NY.
2015 APTA Section on Pediatrics Research Summit IV Alexandria, VA.

2015 American Academy of Cerebral Palsy and Developmental Medicine Annual Meeting: Oct 21-24, 2015, Austin, TX.
2015 APTA New Faculty Development Workshop, Chicago, IL.