

GILLICK PEDIATRIC NEUROMODULATION RESEARCH LAB

TESTIMONIALS

"This was a life changing experience for me. I got to be a part of something very few kids get to try."

- **Study Participant**

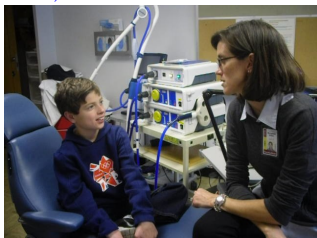
"The work Dr. Gillick and her team are doing is so special and has the potential to alter so many lives, it is simply amazing! My daughter loved being a part of this study. It was great to watch her 'come out of her shell' as she spoke to other potential participants about her experience."

- **Parent of Participant**

"Dr. Gillick's clinical background and research pursuits fill a crucial niche, strengthening the practice in pediatric neurorehabilitation and bridging research in novel electrophysiologic interventions with cutting-edge behavioral interventions." - Mentors

Dr. Bin He, Professor, Biomedical Engineering (tc.umn.edu/~binhe/bhe.htm) &

Dr. Kelvin Lim, Professor, Department of Psychiatry (bmhi.umn.edu/ihi/people/lim/)



TOURS AVAILABLE

Are you a child, caregiver, clinician or researcher who would like to learn more about our research? We invite you to call or email us to schedule a time to meet the research team and tour our lab without obligation of participation.

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Non-Invasive Brain Stimulation— What is it? Using either magnetic energy or electrical energy, a non-invasive brain stimulator can be applied to the scalp of the head. The sensation is described as painless, and does not require sedation or surgery, hence the “non-invasive” nature of the use of such a device. Research has been performed investigating the use of this form of stimulation for many applications. The interest in our lab is to investigate the effect this stimulation has on improving functional movement in a child with hemiparesis through influencing the activity of specific brain cells.



MEET OUR RESEARCH TEAM



Tonya Rich, MA, OTL/R has recently been admitted to the Rehabilitation Science Program here at the University of Minnesota. Dr. Gillick will serve as her advisor. Tonya graduated as an occupational therapist in 2000. She has been a pediatric occupational therapist at Gillette Children's Specialty Healthcare since 2004. Prior to that, she was at the Mayo Clinic in Rochester, MN. She has developed her interest in clinical research in the area of constraint-induced movement therapy (CIMT) both at Gillette (as a co-principal investigator on a modified CIMT study focusing on children with hemiplegic cerebral palsy and brachial plexopathy) and the University of Minnesota (as a co-investigator on the impact of modified CIMT and non-invasive brain stimulation—rTMS). Tonya has completed the ACQUIREc Therapist Training, the Assistive Hand Assessment certification, and other pediatric trainings and certifications related to feeding and developmental care. Tonya was just awarded a competitive 2013-2014 pre-doc LEND fellowship and a Research Assistant Merit award through the Rehabilitation Science program. On a personal note, she enjoys spending time with her family and two children at the Minneapolis parks and lakes and adventuring and relaxing at a family lake cabin.

RESEARCH PARTICIPATION OPPORTUNITIES

1. Safety of Transcranial Direct Current Stimulation in Pediatric Hemiparesis

One type of non-invasive brain stimulation, transcranial Direct Current Stimulation (tDCS), has shown beneficial behavioral effects and is more cost-effective and portable than previous types. The goal of this study is to determine the feasibility of tDCS use for children with hemiparesis.

To date we have had 13 participants and continue to recruit through October 31, 2013. Scheduling is flexible. This study is approved and audited by the University of Minnesota Clinical and Translational Science Institute and Internal Review Board.

www.physther.umn.edu/tdcs

2. Non-Invasive Brain Stimulation and Constraint-Induced Movement Therapy in Pediatric Hemiparesis”.

This newly-funded project combines a unique form of noninvasive brain stimulation (tDCS) with a behavioral treatment (CIMT) to promote a combined intervention targeted at improving hand function. Application for regulatory approval is underway. Recruitment for this study is anticipated to begin in 2014. Please check the [Gillick Research Lab](http://gillickresearchlab.com) website for updates.

For more information please contact:
Study Coordinator- Maureen Boxrud
612.626.6415 or brown029@umn.edu

NEWS

Current Funding

- National Institutes of Health Clinical and Translational Science Awards/ UMN Clinical and Translational Science Institute KL2, Pre-K, Biostatistical Design and Analysis Center
- Minnesota Medical Foundation Research Grant

Presentations/Interviews

- CBS/WCCO Radio Interview (visit our website to listen)
med.umn.edu/physther/research/gillicklab
- Medical Bulletin article: “Retraining the Brain”
mmf.umn.edu/bulletin/2013/Spring/index.cfm

Recent Articles

- **Gillick B**, Krach L, Feyma T et al, Primed low-frequency repetitive transcranial magnetic stimulation and constraint-induced movement therapy in pediatric hemiparesis: A randomized controlled trial. *Dev Med Child Neurol.* 2013
- Cassidy J, **Gillick B**, Carey J. Priming the brain to capitalize on metaplasticity in stroke rehabilitation. *Phys Ther.* 2013.

GILLICK PEDIATRIC NEUROMODULATION RESEARCH LAB
BERNADETTE GILLICK, PHD, MSPT, PT



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Volume 2

MISSION STATEMENT

We believe that all children with cerebral palsy have the potential to influence their level of function throughout their lifetime, applying the latest advances in neuroscience with rehabilitation.



A note from Dr. Gillick-

It is an exciting time for our lab and for research in pediatric rehabilitation as a whole! In Spring 2013 we hosted an open house with over 50 people visiting our lab and joining us in a town hall discussion about our research and the equipment we are investigating. This Summer, Tonya Rich, OTL/R joined our lab to pursue a PhD. Tonya's extensive experience in working with children with cerebral palsy and rehabilitation provide a solid background from which she will develop herself as a researcher. In early Fall I received a 3-year career development award which provides advanced funding for research in the use of non-invasive brain stimulation and rehabilitation techniques in children with hemiparesis. With continued involvement from the many children and caregivers/parents who participate in our studies, we hope to gain further insight into ways to improve function through advanced interventions. If you are interested in speaking with us about our research or visiting our lab, please feel free to contact us with no obligation. We would be grateful for the opportunity to share and discuss ideas.

A handwritten signature in black ink, which appears to read "Bernadette Gillick".

If you would like to be removed from our mailing list please email brown029@umn.edu or call 612-626-6415