2025 ANNUAL MEETING

April 23-25, 2025 | Atlanta, Georgia

ASNR
AMERICAN SOCIETY OF
NEUROREHABILITATION

Welcome to the 2025 Annual Meeting of the American Society of Neurorehabilitation (ASNR)!

We are so excited you could join us here in Atlanta, Georgia. The ASNR meeting remains one of my favorite times of the year. As you will see during this event, interdisciplinary speakers, presenters, and members come together to discuss a broad range of topics that really allows us to promote 'neurorecovery through discovery'. Attendees at the conference come from a broad range of backgrounds and disciplines, and include clinicians, trainees, scientists, therapists, engineers, industry representatives, editors, and funding agency representatives. I encourage you to talk and network at the meeting, especially during our many provided networking opportunities.

Our program this year highlights the diversity of research within our society, and I encourage you to attend all the sessions in our single-track program. Our topics this year range from behavior to artificial intelligence to clinical trials to the lived experience side of clinical research. We have two interactive professional development sessions that parallel the scientific content and are sure to be a true highlight of the meeting. Make sure to take advantage of our networking lunches and times during the program this year. On Wednesday and Thursday, we are pleased to have two poster receptions that will highlight a vast range of research. Posters will only be up the day of their respective poster session! So, please review the program and make use of the poster session times.

I invite you to join us for the ASNR Business Meeting on Wednesday to learn about ASNR and ask any questions you may have to the ASNR leadership. We will be easy to identify — we will all be wearing red "Ask Me" buttons. We also hope you will join us for our diversity, equity, & inclusion offsite event on Friday to the Atlanta History Center.

We are so happy you could join us for ASNR 2025. On behalf of ASNR and the Program Committee, welcome to Atlanta and Georgia. We look forward to seeing you again in 2026!

Kelsey Potter-Baker, PhD
ASNR Program Chair

MISSION: To advance the science of neurorehabilitation and neural repair from understanding to application.

VISION: Neurorecovery through discovery

2025 PROGRAM COMMITTEE

Ahmet Arac, MD
Kelsey Potter-Baker, PhD
Laurel Buxbaum, PsyD
Naveed Ejaz, PhD
Kathleen Friel, PhD
Bernadette Gillick, PT, PhD, MSPT
Kate Hayward, PhD
Sangeetha Madhavan, PT, PhD
Natalia Sanchez, PhD
Heidi Schambra, MD
Rick Segal, PT, PhD, FAPTA
Charlotte Stagg, MRCP, DPhill

GENERAL MEETING INFORMATION

ANNUAL MEETING EVALUATION

Please complete the Annual Meeting survey throughout or following the meeting. The meeting evaluation can be found by scanning the QR code on the bottom of this page, or on any meeting signage. Your responses will prove crucial to the future success of ASNR. Thank you!

REGISTRATION HOURS

Tuesday, April 22 (outside Buckhead Ballroom).....5:00 pm – 6:00 pm
Wednesday, April 23.....7:00 am – 5:00 pm
Thursday, April 24.....7:00 am – 5:00 pm
Friday, April 25.....7:00 am – 12:30 pm

FOOD & BEVERAGE INCLUDED

Wednesday, April 24 | Boxed Lunch (ASNR Business Mtg) | 12:00 - 1:00pm | Grand Ballroom East
Wednesday, April 24 | Afternoon Beverage Break | 2:00 - 2:15pm | Grand Ballroom Prefunction
Wednesday, April 24 | Light Hors D'oeuvres & Drinks | 4:30 - 6:30pm | Grand Ballroom Prefunction

Thursday, April 25 | Continental Breakfast | 7:30 - 8:30am | Buckhead Ballroom
Thursday, April 25 | Morning Beverage Break | 9:30 - 9:45am | Grand Ballroom Prefunction
Thursday, April 25 | Lunch | 12:00 - 1:00pm | Buckhead Ballroom
Thursday, April 25 | Afternoon Beverage Break | 2:00 - 2:15pm | Grand Ballroom Prefunction
Thursday, April 25 | Light Hors D'oeuvres & Drinks | 4:30 - 6:30pm | Grand Ballroom Prefunction

Friday, April 26 | Continental Breakfast | 7:30 - 8:30am | Buckhead Ballroom
Friday, April 26 | Morning Beverage Break | 9:30 - 9:45am | Grand Ballroom Prefunction

POSTER & EXHIBIT HALL

The poster & exhibit hall is located in Grand Ballroom West and will be open to visit throughout the conference. Dedicated times are from 4:30 - 6:30pm on Wednesday and Thursday, during the Poster Receptions.

WIRELESS INTERNET INSTRUCTIONS

1. Connect to the wireless network named **Events@Grand_Hyatt**
2. Open your web browser and go to a public website, such as www.asnr.com
3. Your browser will redirect to the Encore access page automatically
4. Enter the following access code: **asnr2025**

ASNR2025 Evaluation:

Connect with ASNR on social media!

Bluesky

LinkedIn

#ASNR2025

TUESDAY, APRIL 22

6:00 - 8:30PM — **Pre-Conference Workshop & Dinner**
Building Clinical Practice Guidelines for Implantable Brain-Computer Interfaces
Buckhead Ballroom

Doors open at 5:30pm
Advance Registration Required

Speakers & Panelists: Benjamin Rapoport, MD, PHD; Daniel B. Rubin, MD, PhD; Thomas Oxley, MBBS, BMedSC, FRACP, PhD; Catherine E. Lang, PT, PhD, FASNR, FAPTA

WEDNESDAY, APRIL 23

Food/Beverage provided today: boxed lunch, afternoon beverage break, evening reception (light hors d'oeuvres)

8:30AM - 12:00PM — **Professional Development Roundtables**
Buckhead Ballroom

12:00 - 1:00PM — **ASNR Business Meeting**
Boxed Lunch
Grand Ballroom East

1:00 - 2:00PM — **Symposium 1**
The Final Common Pathway: Integrating Behavioral Economics in Neurorehabilitation
Grand Ballroom East

2:00 - 2:15PM — **Beverage Break**

2:15 - 3:15PM — **Symposium 2**
Artificial Intelligence and Computational Modeling for Diagnosis and Treatment of Functional Mobility Deficits
Grand Ballroom East

3:15 - 3:30PM — **Break**

3:30 - 4:30PM — **Oral Abstract Session**
Grand Ballroom East

4:30 - 6:30PM — **Poster Reception 1**
Grand Ballroom West

THURSDAY, APRIL 24

Food/Beverage provided today: continental breakfast, morning beverage break, lunch, afternoon beverage break, evening reception (light hors d'oeuvres)

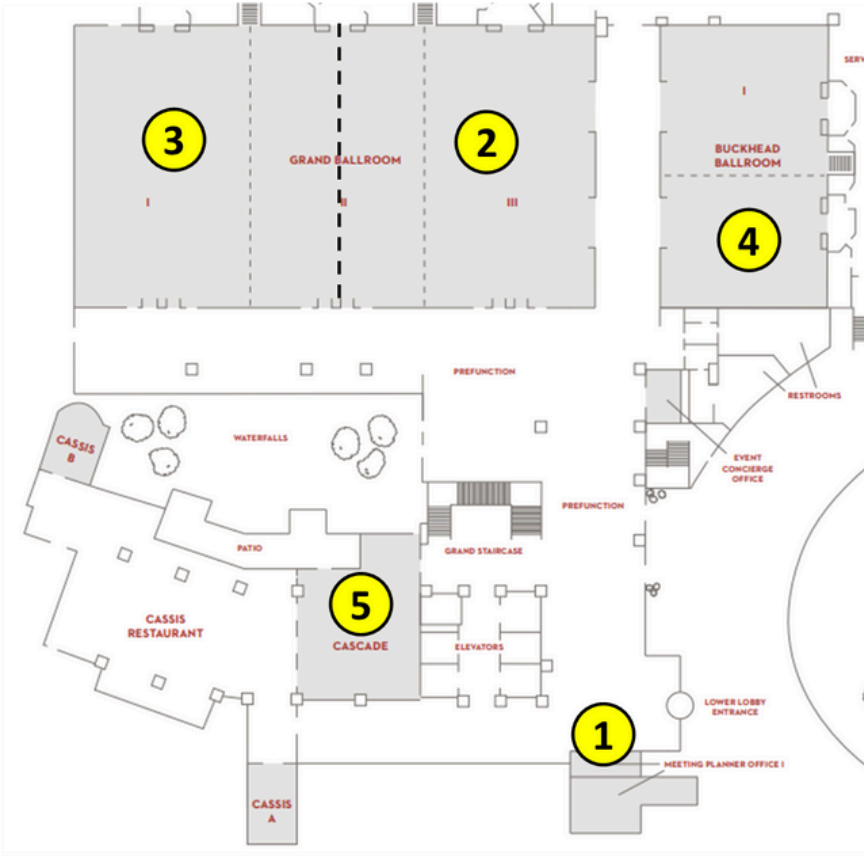
8:30 - 9:30AM	**Professional Development Session A** **Using Data Science and AI to Manage, Visualize, and Analyze Your Rehabilitation Data** *Grand Ballroom East*
9:30 - 9:45AM	**Beverage Break**
9:45 - 10:45AM	**Symposium 3** **TRANSPORT2 - A Multicenter Stroke Recovery Trial: Design, Outcomes, Standardization, Results, and What it Might Mean for Future Stroke Recovery Trials** *Grand Ballroom East*
10:45 - 11:00AM	**Break**
11:00AM - 12:00PM	**Symposium 4** **The Human Side of Brain Injury: Educational Approaches to the Lived Experience** *Grand Ballroom East*
12:00 - 1:00PM	**Lunch** *Buckhead Ballroom*
1:00 - 2:00PM	**Small Group Meetings & Networking Time**
2:00 - 2:15PM	**Break**
2:15 - 3:15PM	**Symposium 5** **Transcutaneous Spinal Cord Stimulation for Rehabilitation: Current Understanding and Remaining Questions** *Grand Ballroom East*
3:15 - 3:30PM	**Beverage Break**
3:30 - 4:30 PM	**Awards Presentation & Panel** *Grand Ballroom East*
4:30 - 6:30PM	**Poster Reception 2** *Grand Ballroom West*

FRIDAY, APRIL 25

Food/Beverage provided today: continental breakfast, morning beverage break

8:30 - 9:30AM	**Professional Development Session B** **Peer Into the Process: Delve Into a Live NIH Mock Scientific Review Section** *Grand Ballroom East*
9:30 - 9:45AM	**Beverage Break**
9:45 - 10:45AM	**Symposium 6** **Imposing Brain Rhythms With Electrical and Magnetic Stimulation to Improve Neurological Function** *Grand Ballroom East*
10:45 - 11:00AM	**Break**
11:00AM - 12:00PM	**Symposium 7** **Implantable Brain-Computer Interfaces: Understanding the End-User Experience and Decoding Intentions** *Grand Ballroom East*
12:00 - 1:30PM	**Lunch (on own)**
1:30 - 3:30PM	**Off-Site DEI Excursion** **Atlanta History Center** *(sign-up required)*

GRAND HYATT BUCKHEAD MEETING FLOOR LAYOUT



1. Registration
2. General Session
3. Posters & Exhibits
4. Meals
5. Meal Overflow Seating

TUESDAY PRE-CONFERENCE WORKSHOP

"Building Clinical Practice Guidelines for Implantable Brain-Computer Interfaces"

Tuesday, April 22, 2025 · 6:00pm – 8:30pm · Buckhead Ballroom

Dinner Included - **ADVANCE REGISTRATION REQUIRED**

As implantable brain-computer interfaces (iBCIs) move from research settings into clinical practice, there is an emerging interest in establishing evidence-based guidelines for how iBCIs will be incorporated into clinical practice. This dinner workshop will provide an overview of current approaches to the iBCI care pathway — from diagnosis and referral to implantation and ongoing management — and foster multiprofessional discussions on how to address critical gaps. Through speaker insights and audience discussion, this workshop will explore key considerations and next steps for developing guidelines to support the safe and effective integration of iBCIs into clinical care.

SPEAKERS:

Benjamin Rapoport, MD, PhD

Assistant Professor of Neurosurgery, *Icahn School of Medicine, Mount Sinai*

Scientific Director, *Mount Sinai BioDesign*

Co-Founder/CSO, *Precision Neuroscience*

Co-Lead, *Clinical Practice Guidelines Workgroup, iBCI-CC*

Daniel B. Rubin, MD, PhD

Center for Neurotechnology and Neurorecovery

Department of Neurology, Massachusetts General Hospital

Assistant Professor of Neurology, *Harvard Medical School*

Co-Lead, Clinical Practice Guidelines Workgroup, iBCI-CC

PANELISTS:

Thomas Oxley, MBBS, BMedSC, FRACP, PhD

Vascular and Interventional Neurologist, *Mount Sinai Hospital, New York City*

Founding CEO, *Synchron*

Catherine E. Lang, PT, PhD, FASNR, FAPTA

Barbara J. Norton Professor of Physical Therapy, Professor of Occupational Therapy and Neurology, Associate Director, Movement Science PhD Program, Washington University in St. Louis School of Medicine

Presented by:

ASNR AMERICAN SOCIETY OF NEUROREHABILITATION

iBCI-CC

WEDNESDAY PROGRAM DETAILS

PROFESSIONAL DEVELOPMENT ROUNDTABLES

Wednesday, April 23, 2025 • 8:30am – 12:00pm • Buckhead Ballroom

Table A:
Promoting Good Science in Uncertain Times: Strategies for Resilience and Progress

Carolee Winstein, PT, PhD, FAPTA, FAHA, FASNR, FNAK

Catherine Lang, PT, PhD, FAPTA, FASNR

Table B:
Navigating Early Career Transitions

Jessica Cassidy, PT, DPT, PhD

Jackie Palmer, PT, DPT, PhD

Table C:
Navigating Mid-Late Career Transitions

George Fulk, PT, PhD, FAPTA

Nicolas Schweighofer, PhD

Table D:
"White Matter" - Make New Connections!

Ahlam Salameh, PhD

Marika Demers, PhD

Table E:
The Future of Scientific Writing: AI's Role, Risks, and Rewards

Clarisa Martinez, PT, DPT, MS

Maggie French, PT, DPT, PhD, NCS

Rachana Gangwani, PT, MS, PhD

Table F:
The Art & Science of Writing

Ben Philip, PhD

Marie McNeely, PhD

Edelle Field-Fote, PT, PhD, FAPTA, FASIA

WEDNESDAY PROGRAM DETAILS

SYMPOSIUM #1 - The Final Common Pathway: Integrating Behavioral Economics in Neurorehabilitation

Wednesday, April 23, 2025 · 1:00pm – 2:00pm · Grand Ballroom East
Course Director: James Finley, PhD

DESCRIPTION:

This symposium will provide attendees with a comprehensive approach to understanding decision-making and its neural underpinnings, with particular emphasis on how decision-making influences movement in health and disease. It begins by describing the neural networks involved in evaluating reward, effort, and risk, and explaining how these networks are altered in individuals with Parkinson's disease. The discussion will then shift to examine how mobility decisions are shaped by past experiences and risk/effort assessments, thus leading to a role of decision-making as a behavioral risk factor influencing fall risk and physical activity levels. Next, we will introduce a framework for assessing behavioral risk, which addresses the limitations of self-reported decision-making behaviors and allows for personalized assessments of risk and effort sensitivity. Assessments the follow this framework could potentially be used to tailor interventions aimed at improving mobility and reducing falls. Finally, we will discuss the challenges and potential of behavioral interventions to enhance physical activity in older adults with neurological diseases, particularly PD. We will share the results of a recent clinical trial that tested a behavioral economic intervention designed to increase physical activity at home without the need for in-clinic visits. In describing the results of the trial, we will examine how apathy and PD symptoms affect motivation and responsiveness to these interventions.

SPEAKERS:

James Finley, PhD

Vikram Chib, PhD

Kimberly Waddell, PhD, MSCI, OTR/L

SCHEDULE:

1:00 - 1:05pm: ***Introduction*** – James Finley, PhD

1:05 – 1:20pm: ***Neurobiological Mechanisms of Effort-Based Decision-Making*** – Vikram Chib, PhD

1:20 – 1:35pm: ***Contributions of Risk and Effort Assessment to Mobility-Related Decisions*** – James Finley, PhD

1:35 – 1:50pm: ***Efficacy of Remote, Automated, Behavioral Interventions to Increase Physical Activity at Home*** – Kimberly Waddell, PhD, OTR/L

1:50 – 2:00pm: ***Discussion*** - ALL

WEDNESDAY PROGRAM DETAILS

SYMPOSIUM #2 - Artificial Intelligence and Computational Modeling for Diagnosis and Treatment of Functional Mobility Deficits

Wednesday, April 23, 2025 · 2:15pm – 3:15pm · Grand Ballroom East
Course Director: Lena Ting, PhD

DESCRIPTION:

Artificial intelligence (AI) and computational modeling approaches are poised to transform medicine and neurorehabilitation. This symposium will provide examples of AI and computational models for diagnosis and prognosis of functional mobility deficits. Dr. Lena Ting, a leader in computational neuromechanics, will summarize the rationale and advantages of these approaches, and the vision to leverage AI and big data to study multi-modal neuromechanical, psychosocial, and ethno-cultural factors influencing movement in health and disease, aka 'ethnokinesiology'. Dr. McKay, faculty in Bioinformatics and Biomedical engineering, will present new research showcasing the use of AI to predict fall risk using motion capture, clinical, and medical record data. Dr. James Cotton, who has expertise spanning physiatry and neuroscience, will present emerging research leveraging computer vision to quantify gait-based biomarkers from videos collected in diverse clinical settings. Dr. Trisha Kesar, a physical therapist and gait rehabilitation researcher, will present examples using AI to characterize post-stroke gait, capitalizing on collaborative research with experts in computational neuromechanics (Dr. Ting) and computer science (Dr. Kwon). Dr. Hyeok Kwon, a computer scientist, will present leading-edge, low-cost, privacy-preserving technologies for early prediction of cognitive and mobility deficits in healthy aging and neurodegenerative disorders, while minimizing biases in AI models. The symposium will culminate in a panel discussion, Q&A with the audience, and interactive audience polling on topics pertinent to clinical applications, prioritization of future research, advantages, and potential limitations of the approaches discussed in our symposium. Our inter-disciplinary panel of speakers have expertise spanning biomedical engineering, bioinformatics, computer vision, and neuro-rehabilitation.

SPEAKERS:


Lena Ting, PhD


Lucas McKay, PhD, MSCR


James Cotton, MD, PhD


Trisha Kesar, PT, PhD


Hyeok Kwon, PhD

SCHEDULE:

2:15 - 2:25pm: ***Overview of computational modeling and artificial intelligence (AI) applications in healthcare and neurorehabilitation*** – Lena Ting, PhD

2:25 – 2:35pm: ***Predicting falls risk in Parkinson's Disease by leveraging gait and medical record data*** – Lucas McKay, PhD, MSCR

2:35 – 2:45pm: ***Quantifying gait-based biomarkers during functional mobility tasks in diverse clinical settings*** – James Cotton, MD, PhD

2:45 – 2:55pm: ***Classifying gait and characterizing individual-specific gait signatures to inform stroke rehabilitation*** – Trisha Kesar, PT, PhD

2:55 – 3:05pm: ***Privacy-preserving low-cost computer-vision approaches for early prediction of cognitive and mobility decline*** – Hyeok Kwon, PhD

3:05 – 3:15pm: ***Discussion and Q&A*** - Lena Ting, PhD, Trisha Kesar, PT, PhD

ORAL ABSTRACT PRESENTATIONS

Wednesday, April 23, 2025 · 3:30pm – 4:30pm · Grand Ballroom East

P. 8 Neurophysiological Changes Associated with Gait Recovery in Incomplete Spinal Cord Injury: A Preliminary Analysis of TMS Measures
Authors: Mengdi Wang, Kuan-Chun Liao, Faith Meza, Chad Swank, Hui-Ting Goh
Presented by: Mengdi Wang, Texas Woman's University

P. 14 Personalized poststroke brain state-dependent TMS targeting the residual corticospinal tract is feasible
Authors: Uttara Khatri, Tharan Suresh, Valeria Márquez Cárdenas, Muskan Manesiya, Michael Borich, Sara J Hussain
Presented by: Uttara Khatri, University of Texas at Austin

P. 64 Repetitive Intermittent Hypoxia Exposure Increases Serum BDNF Concentration and Corticospinal Excitability to the Lower Limb
Authors: Aviva Pollet, Alysha Bogard, Andrew Harding, Peter Kim, Andrew Quesada Tan
Presented by: Aviva Pollet, 1University of Colorado Boulder

P. 76 Low Intensity Muscle Stimulation from Non-Invasive Brain-Computer Interface Device Improves Poststroke Brain and Behavior Measures
Authors: Alexander Remsik, Brayden Fry, Peter van Kan, Veena Nair, Vivek Prabhakaran
Presented by: Alexander Remsik, University of Wisconsin-Madison

P. 83 Impact of Cognitive Load on Brain-Muscle Functional Connectivity Post-stroke
Authors: Rachana Gangwani, Umesh Radhakrishnan, Caroline Cabaniss, Jessica Cassidy
Presented by: Rachana Gangwani, University of North Carolina-Chapel Hill

P. 98 Characteristics of Transcranial Magnetic Stimulation Responses in the Trunk Muscles of People with Parkinson's Disease
Authors: Callen Maupin, Emily Lecy, Jae Chung, Colum MacKinnon
Presented by: University of Minnesota, Minneapolis, USA.

PRESENTING AUTHORS:


Mengdi Wang, PT, DPT


Uttara Khatri


Aviva Pollet


Alex Remsik, PhD, MSc


Rachana Gangwani, PT, MS, PhD


Callen Maupin, PT, DPT

WEDNESDAY - POSTER SESSION I

Wednesday, April 23, 2025 • 4:30pm – 6:30pm • Grand Ballroom West

Posters in red font indicate those selected by the review committee as Special Mention.

Underlined names indicate presenting author.

In the interest of making the Poster & Exhibit Hall space easily accessible to all, the posters will be divided into two groups to allow for more space between rows. Posters numbered 1-74 will be up for the first day, including Wednesday night's Poster Reception. Posters numbered 75-151 will be up for the second day, including Thursday night's Poster Reception.

P. 1 Validation of the Immersive Virtual Reality Lateralized Attention Test for Post-Stroke Neglect
Emily Grattan1, Grace Edwards2, Laurel Buxbaum3,4
1University of Pittsburgh, Pittsburgh, USA. 2National Institutes of Health, Bethesda, USA.3Jefferson Moss Rehabilitation Research Institute, Elkins Park, USA. 4Thomas Jefferson University, Philadelphia, USA.

P. 2 Validation of real-world actigraphy to capture post-stroke motor recovery.
Keith Lohse, Allison Miller, Marghuretta Bland, Jin-Moo Lee, Catherine Lang.
Washington University School of Medicine, Saint Louis, USA.

P. 3 Educating Students On Stakeholder Perspectives Following Brain Injury: A Preliminary Investigation With Graduate Engineers And Neuroscientist
Kevin Parcetich1, Lindsey Sydnor2, Haley Logan1, Jessica Ehret1, Garren Snow1, Nicole Pitterson2, James Sulzer3, Netta Gurari2
1Radford University, Roanoke, USA. 2Virginia Tech, Blacksburg, USA. 3Case Western Reserve University, Cleveland, USA.

P. 4 Using TENS to Remember: Sensory Stimulation Enhances Locomotor Adaptation Savings in Multiple Sclerosis
Andrew Hagen1, Tyler Whittier2, Jaclyn Stephens1, Brett Fling1
1Colorado State University, Fort Collins, CO, USA. 2Montana State University, Bozeman, MT, USA.

P. 5 The Role of Visuospatial Working Memory in Visual Feedback-Based Motor Corrections During Walking After Stroke
S Manzoor1, ED Thompson2, H Wright2, TR Wright2, AM Barela3, ML Cohen4, DS Reisman1
1Biomechanics & Movement Sciences (BIOMS), University of Delaware, Newark, USA. 2Department of Physical Therapy, University of Delaware, Newark, USA. 3Institute of Physical Activity and Sport Sciences, Cruzeiro do Sul University, Sao Paulo, Brazil. 4Department of Communication Sciences and Disorders, University of Delaware, Newark, USA.

P. 6 Perspectives of therapists on the design and delivery of the personalized integrated COgnitive-somatoSensory-Motor (iCOSMO) intervention to improve upper limb function after stroke: A qualitative study
Urvashy Gopaul, Mark Bayley
Toronto Rehabilitation Institute-KITE Research Institute, Toronto, Canada.

P. 7 Expectations of tDCS Efficacy on Motor Performance Are Modulated by Informational Priming and Prior TDCS Knowledge
Bernardo Villa-Sánchez1, Andrew Hooyman1,2, Sydney Schaefer1
1School of Biological and Health Systems Engineering, Arizona State University, Tempe, USA, 2Chapman University, Irvine, CA, USA.

P. 8 Neurophysiological Changes Associated with Gait Recovery in Incomplete Spinal Cord Injury: A Preliminary Analysis of TMS Measures
Mengdi Wang1, Kuan-Chun Liao1, Faith Meza2,3, Chad Swank2,3, Hui-Ting Goh1
1Texas Woman's University, Dallas, USA. 2Baylor Scott & White Research Institute, Dallas, USA. 3Baylor Scott & White Institute for Rehabilitation, Dallas, USA.

P. 9 Role of Lateralized Cognitive and Motor Deficits on Functional Independence Post Stroke
Pramisha Thapa1, Michele Darger1, Mark Folkertsma2, Scott Lunos3, Diane Chappuis4, Shanie Jayasinghe1
1Division of Physical Therapy and Rehabilitation Science, Department of Family Medicine and Community Health, University of Minnesota, Minneapolis, USA. 2Department of Radiology, University of Minnesota, Minneapolis, USA. 3Clinical and Translational Science Institute, University of Minnesota, Minneapolis, USA. 4Physical Medicine and Rehabilitation, Allina Health, Minneapolis, USA.

WEDNESDAY - POSTER SESSION I

Wednesday, April 23, 2025 · 4:30pm – 6:30pm · Grand Ballroom West

P. 10 Usability and Reliability of a Novel Behavioral Test to Screen for Dementia Risk in Primary Care: A Step Towards Implementation
Sydney Schaefer1,2, Elizabeth Fauth3, Josey Batura3, Andrew Hooyman4, Jill Love2,5
1Arizona State University, Tempe, USA. 2Neurosessments LLC, Tempe, USA. 3Utah State University, Logan, USA. 4Chapman University, Irvine, USA. 5Peters & Love, Inc., Redondo Beach, USA.

P. 11 Current Potential: Functional Electrical Stimulation as a Tool for Motor Recovery and Diagnostic Insight in Functional Neurological Disorder
Ilana Wolf, Daniel Leet
Burke Rehabilitation Hospital, White Plains, USA.

P. 12 Towards A Comparative Study Of Diffusion MRI Models For Fibre Tracking Through Region Of Edema: Implications For Post-Stroke Neuroimaging
Parvathy Hareesh1, Isaac Prentiss1, Sasha Hakhu1, Leland Hu2, Yuxiang Zhou2, Leslie Baxter2, Edward Ofori1, Kurt Schilling3, Scott Beeman1, Sydney Schaefer1
1Arizona State University, Tempe, USA. 2Mayo Clinic, Phoenix, USA. 3Vanderbilt University, Nashville, USA.

P. 13 Pursuing Telerehabilitation: Early Feasibility of a Protocol for Post-Stroke Mixed Reality Training and Computer Vision Assessment
Justin Huber, Amanda Glueck
University of Kentucky, Lexington, USA.

P. 14 Personalized poststroke brain state-dependent TMS targeting the residual corticospinal tract is feasible
Uttara Khatri1, Tharan Suresh1, Vridhi Rohira1, Valeria Márquez Cárdenas1, Muskan Manesiya1, Michael Borich2, Sara J Hussain1
1University of Texas at Austin, Austin, USA. 2Emory University, Atlanta, USA.

P. 15 Drift in expectations about tDCS efficacy during online stimulation and motor training: Implications for placebo effects and mindfulness
Heidi Benson Rodríguez1, Bernardo Villa-Sánchez1, Andrew Hooyman2, Benedict Alter3, Nicole K. Haikalis1, Jessica L. Trevino1, Sydney Y. Schaefer1
1Arizona State University, Tempe, USA. 2Chapman University, Irvine, USA. 3University of Pittsburgh, Pittsburgh, USA.

P. 16 Reduced Capacity To Modulate Sensory Information Processing During Reactive Balance Control Is Associated With Lower Balance And Cognitive Set Shifting Ability In Aging And After Stroke
Jasmine Mirdamadi, Janna Protzak1,2, Lena Ting1,2, Michael Borich1
1Emory University, Atlanta, USA. 2Georgia Tech, Atlanta, USA.

P. 17 A Gamified Visuomotor Task Reveals Differences in Motor Performance and Learning among Children Born Preterm and Term
Cassandra Kemmel-Bartletti, Md. Raihan Mia, Sheikh Iqbal Ahamed, Naveen Bansal, Samuel Nemanich
Marquette University, Milwaukee, USA.

P. 18 Understanding the Effect of Upper Limb Proprioception on Paretic Arm Activity After Stroke
Joanna E. Hoh1,2, Darcy S. Reisman1,3, Jennifer A. Semrau1,2,4
1Interdisciplinary Graduate Program in Biomechanics and Movement Science, University of Delaware, Newark, USA. 2Department of Kinesiology and Applied Physiology, University of Delaware, Newark, DE, USA. 3Department of Physical Therapy, University of Delaware, Newark, DE, USA. 4Department of Biomedical Engineering, University of Delaware, Newark, DE, USA.

P. 19 Distinct patterns of neuroplasticity of sensorimotor network following gait therapy with versus without transcranial Direct Current Stimulation (tDCS)
Margaret Skelly1, Sarah Carr2, Jessica McCabe1, Ahlam Salameh1,3, Lisa Leonhardt1, Terri Hisel1, Svetlana Pundik1,4
1VA Northeast Ohio Healthcare System, Cleveland, USA. 2King's College, London, United Kingdom. 3Kent State University College of Podiatric Medicine, Kent, USA. 4Case Western Reserve University School of Medicine, Cleveland, USA.

WEDNESDAY - POSTER SESSION I

Wednesday, April 23, 2025 • 4:30pm – 6:30pm • Grand Ballroom West

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Underlined names indicate presenting author.

P. 20 Changes in white matter structure in response to gait therapy with and without transcranial Direct Current Stimulation (tDCS) in chronic stroke

Jessica McCabe1, Sarah Carr2, Margaret Skelly1, Ahlam Salameh1,3, Kelsey Duncan3,4, Lisa Leonhardt1, Terri Hisel1, Svetlana Pundik1,3

1VA Northeast Ohio Healthcare System, Cleveland, USA. 2King's College, London, United Kingdom. 3Case Western Reserve University School of Medicine, Cleveland, USA. 4University Hospitals of Cleveland, Cleveland, USA.

P. 21 Drawing With Either Hand Depends on a Left Hemisphere Motor-Premotor System, Regardless of Peripheral Impairment

Namarta Kapil1, Taewon Kim1,2, Samah Gassass1, Ruiwen Zhou1, Alexandre Carter1, Ian Dobbins1, Mark McAvoy1, Yong Wang1, Benjamin Philip1

1Washington University in St. Louis, St. Louis, USA. 2Pennsylvania State University, University Park, USA.

P. 22 The Differential Effects Of Fast Walking Speed On Muscle Coactivation In The Paretic And Non-paretic Extremities Post-stroke

Samantha N. Jeffcoat1, Andrian Kuch1, Andrew Hooyman1, Aria Haver-Hill2, Maryana Bonilla-Yanez2, Christina Holl2, Kristan Leech2,3, Natalia Sanchez1,4

1Chapman University, Irvine, USA. 2University of Southern California, Los Angeles, USA. 3Neuroscience Graduate Program, University of Southern California, Los Angeles, USA. 4Department of Electrical Engineering and Computer Science, Chapman University, Irvine, USA.

P. 23 Correlation Between Impairments and Motor Pathway Asymmetry in Chronic Hemiparetic Stroke

Rita Huan-Ting Peng1,2, Paul B. Camacho3, Brad Sutton1,3, Yuan Yang1,2,4

1Department of Bioengineering, Grainger College of Engineering, University of Illinois Urbana-Champaign, Urbana, USA. 2Clinical Imaging Research Center, Stephenson Family Clinical Research Institute, Carle Foundation Hospital, Urbana, USA. 3Beckman Institute for Advanced Science and Technology, University of Illinois Urbana-Champaign, Urbana, USA. 4Department of Physical Therapy and Human Movement Sciences, Northwestern University, Urbana, USA.

P. 24 Graded Intensity Aerobic Exercise To Improve Cerebrovascular Function And Cognition In Older Adults

Joe Nocera1,2, Keith McGregor3, Kevin Mammino1, Medina Bello1, Mark Vernon1, Thomas Novak1

1Center of Visual and Neurocognitive Rehabilitation (CVNR); Joseph Maxwell Cleland Atlanta VA Medical Center, Decatur, USA. 2Emory University, School Of Medicine, Atlanta, USA. 3The University of Alabama at Birmingham, Birmingham, USA.

P. 25 Quantifying An Explanatory Model For Balance Ability

Jasmine Cash1,2, Margaret French3, Mark Bowden4, Jesse Dean1,2, Steven Kautz1,2, Craig Velozo1, Bryant Seamon1,2

1Medical University of South Carolina, Charleston, USA. 2Ralph H. Johnson VA Medical Center, Charleston, USA. 3University of Utah, Salt Lake City, USA. 4Brooks Rehabilitation, Jacksonville, USA.

P. 26 Closed-loop Vagus Nerve Stimulation (CLV) Paired with Lower limb Rehabilitation Improves Walking after Chronic Incomplete Spinal Cord Injury: A Pilot Study

Emmanuel Adehunoluwa1,2, Spencer Dunbar1,3, Rhys Switzer1, Joseph Epperson1, Christi Stevens4, Chad Swank4, Jane Wigginton1, Amy Porter1, Robert Rennaker1,2, Seth Hays1,3, Michael Kilgard1,2

1Texas Biomedical Device Center, University of Texas at Dallas, Richardson, USA. 2School of Behavioral and Brain Sciences, University of Texas at Dallas, Richardson, USA. 3Erik Jonsson School of Engineering and Computer Science, University of Texas at Dallas, Richardson, USA. 4Baylor Scott & White Institute for Rehabilitation, Dallas, USA.

P. 27 A Computational Model To Predict Muscle Spindle Firing During Passive And Active Rhythmic Movements

Surabhi Simha, Tim Cope, Lena Ting

Emory & Georgia Tech, Atlanta, USA.

WEDNESDAY - POSTER SESSION I

Wednesday, April 23, 2025 • 4:30pm – 6:30pm • Grand Ballroom West

P. 28 Relationship Between Self-reported Body Position and Arm Use Time in Chronic Stroke: An Ecological Momentary Assessment Study
Rushali Pandya1, Yi-An Chen2, Hui-Ting Goh3, Chih-Hsiang Yang1, Carolee Winstein4, Jill C. Stewart1
1University of South Carolina, Columbia, USA. 2Georgia State University, Atlanta, USA. 3Texas Women's University, Denton, USA. 4University of Southern California, Los Angeles, USA.

P. 29 The Cortical N1 Response to a Balance Disturbance is Associated with Anxiety and the Error-Related Negativity in Children
Aiden Payne1, N. Brad Schmidt1, Alex Meyer2, Greg Hajcak2
1Florida State University, Tallahassee, USA. 2Santa Clara University, Santa Clara, USA.

P. 30 Reduced coordination complexity and altered spatiotemporal coordination in post-stroke fingers
Patrick Ihejirika1, Michael Rosenberg2, Jing Xu1
1University of Georgia, Athens, USA. 2Emory University, Atlanta, USA.

P. 31 Assessing Presynaptic Inhibition of Spinal Reflex Circuits During Gait Post-Stroke
J. Sebastian Correa1,2, Ricardo Siu2, Dana Lorenz2, Shreya Ramani2, William Kozak2, David Cunningham1,2, James Sulzer1,2
1Case Western Reserve University, Cleveland, USA. 2The MetroHealth System, Cleveland, USA.

P. 32 Harnessing Wearable Technology for Stroke Recovery: Perspectives from Research Experts
Marika Demers1, Amelia Cain2, Tanisha Gunby2, Carolee Winstein2
1Université de Montréal, Montreal, Canada. Centre de Recherche Interdisciplinaire en Réadaptation du Montréal métropolitain, Montreal, Canada. 2University of Southern California, Los Angeles, USA.

P. 33 Development and Evaluation of a Non-Invasive Brain-Spine Interface Using Transcutaneous Spinal Cord Stimulation
Carolyn Atkinson, Lorenzo Lombardi, Meredith Lang, Rodolfo Keesey, Rachel Hawthorn, Zachary Seitz, Eric Leuthardt, Peter Brunner, Ismael Seáñez
Washington University in St. Louis, St. Louis, USA.

P. 34 Modulation of cortical beta burst dynamics predict reactive stepping behavior in older adults and show impairments after stroke
Jacquelyn VL Sertic1, Si-Yu Tsai1, Aiden M Payne2, Jasmine L Mirdamadi3, Lena H Ting3, Michael R Borich3, Jacqueline A Palmer1
1University of Minnesota, Minneapolis, USA. 2Department of Psychology, Florida State University, Tallahassee, USA. 3Emory University, Atlanta, USA.

P. 35 Slower reactive stepping kinematics are associated with delayed cortical evoked responses and lower behavioral performance during balance recovery after stroke
Si-Yu Tsai1, Aiden M Payne2, Jasmine L Mirdamadi3, Lena H Ting3, Michael R Borich3, Jacqueline A Palmer1
1University of Minnesota, Minneapolis, USA. 2Department of Psychology, Florida State University, Tallahassee, USA. 3Emory University, Atlanta, USA.

P. 36 Proof-of-concept of a Markerless Approach in Analyzing Upper Limb Kinematics in Tetraplegic Patients
Anne-Charlotte Desbarbieux1,2, Abolfazl Mohebbi1, Dorothy Barthélemy2,3, Diana Zidarov2,3, Youssef El Khamlichi2, Amedeo Ceglia2,3, Marika Demers2,3
1Polytechnique Montréal, Montreal, Canada. 2Centre de Recherche Interdisciplinaire en Réadaptation (CRIR), Montreal, Canada. 3University of Montreal, Montreal, Canada.

P. 37 Subgroups of Individuals with Stroke Characterized by Unique Functional Mobility Recovery Patterns
Margaret French1, Ryan Roemmich2,3, Preeti Raghavan3
1University of Utah, Salt Lake City, USA. 2Kennedy Krieger Institute, Baltimore, USA. 3Johns Hopkins University, Baltimore, USA.

WEDNESDAY - POSTER SESSION I

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Posters in red font indicate those selected by the review committee as Special Mention.

Underlined names indicate presenting author.

P. 38 Accelerated High-Frequency rTMS For Post-Stroke Fatigue: Protocol and Preliminary Findings
Jasmine Cash1,2, Korey Little1, Mark Bowden3, Chen Lin4,5, Lisa McTeague1,2, Steve Kautz1,2, John Kindred1,2
1Ralph H. Johnson VA Health Care System, Charleston, USA. 2Medical University of South Carolina, Charleston, USA. 3Brooks Rehabilitation, Jacksonville, USA. 4Birmingham VA Health Care System, Birmingham, USA. 5University of Alabama at Birmingham, Birmingham, USA.

P. 39 Relationship Between Trial-To-Trial Variability in Cognitive-Motor Task and Instrumental Activities Of Daily Living After Stroke
Anjali Tiwari, Stefan Delmas, Neha Lodha
Colorado State University, Fort Collins, USA.

P. 41 Self-Supervised Learning to Quantify Motor Control Strategies from Spatiotemporal Movement Trajectories in Young Children
Md Raihan Mia1, Sheikh Iqbal Ahamed1, Cassandra Kemmel-Bartletti2, Subarna Alam1, Samuel Nemanich2
1Department of Computer Science, Marquette University, Milwaukee, USA. 2Department of Occupational Therapy, Marquette University, Milwaukee, USA.

P. 42 Impact of Transcranial Photobiomodulation on Cortical Excitability in Chronic Stroke Survivors: A Pilot Study
Bokkyu Kim, Laura Sarkisian, Gabriella Walsh, Julia Ivanick, Yi-Ling Kuo
SUNY Upstate Medical University, Syracuse, USA.

P. 44 kTMP: A Novel Method of Non-Invasive Brain Stimulation to Enhance Motor Function with No Discomfort in Chronic Stroke Patients
Christina M Merrick1, Feiyang Dai1, Philipp Reber2, Saumya Singh2, Katheryn Thayer-Pham1, Angel V Peterchev3, Cidnee Luu1, Daniel Sheltraw1, Ludovica Labruna1, Richard B Ivry2, Karunesh Ganguly4
1Magnetic Tides, Inc., Berkeley, USA. 2University of California Berkeley, Departments of Psychology and Neuroscience, Berkeley, USA. 3Duke University, Departments of Psychiatry and Behavioral Sciences, Biomedical Engineering and Electrical and Computer Engineering, Durham, USA. 4University of California San Francisco, Department of Neurology, Weill Institute for Neuroscience, San Francisco, USA.

P. 45 The MouthPad^: A High Bandwidth Wearable Intra-oral Computer Interface
Suraj Gowda, Fernando del Campo, Julian Castellon, Randy Castellon, Corbin Halliwill, Jana Hemsing, Virgie Hoban, Shin Dawn Lo, Brian Loh, Gabi Munoz, Jose Pozuelo, Oscar Rosello, Corten Singer, Tomas Vega
Augmental Technologies, San Francisco, USA.

P. 46 The Influence of Action Observation on Sensorimotor Integration During Motor Performance
Layla Abdullatif, Maria Lindsey, Ethan Percell, Tia Tweh, Lewis Wheaton
Georgia Institute of Technology, Atlanta, USA.

P. 47 Replication of sensor-based categorization of upper-limb performance in daily life of people with stroke and its generalizability to other populations
Chelsea E. Macpherson1, Marghuretta D Bland1, Christine Gordon1, Allison E. Miller1, Caitlin Newman2, Carey L. Holleran1, Christopher J. Dy1, Lindsay Peterson1, Keith R. Lohse1, Catherine E. Lang1
1Washington University in St. Louis, St. Louis, USA. 2Shirley Ryan Ability Lab, Chicago, USA.

P. 48 Center of Mass-Driven Exoskeleton Control Scheme Generalizes Across Movement Contexts
Kristen Jakubowski1,2, Gregory Sawicki2,3, Lena Ting1,2
1Emory University, Atlanta, USA. 2Georgia Tech, Atlanta, USA. 3Institute for Human and Machine Cognition, Pensacola, USA.

P. 49 Remote-supervised Upper-extremity Motor Exercises (ReSUME) Training using Grip Sensor-based Exergaming Combined with Transcranial Direct Current Stimulation: A Case Series
Vikram Shenoy Handiru1,2, Sai Pamula2, Karen Nolan1,2
1Kessler Foundation, West Orange, USA. 2Rutgers New Jersey Medical School, Newark, USA.

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P. 50 Multivariate Machine-learning Approach for Predicting Hand Dexterity of the Affected Arm in Individuals with Acquired Brain Injury Using Diffusion Tensor Imaging

Vikram Shenoy Handiru1,2, Nichole Sanchez3, Easter Selvan Suviseshamuthu1,2, Soha Saleh4, Kirk Lercher5, Didier Allexandre6, Guang Yue1,2

1Kessler Foundation, West Orange, USA. 2Rutgers New Jersey Medical School, Newark, USA. 3Montclair State University, Montclair, USA. 4Rutgers Health School of Health Professions, Newark, USA. 5Kessler Institute for Rehabilitation, West Orange, USA. 6Meta Reality Labs, Burlingame, USA.

P. 52 Transient Effects In Corticospinal And Reticulospinal Excitability Induced By Motor-Skill And Isometric Resistance Training

Rachel Hawthorn, Carolyn Atkinson, Meredith Lang, Rodolfo Keesey, Haolin Nie, Zachary Seitz, Ismael Seáñez

Washington University in St. Louis, St. Louis, USA.

P. 53 Optimizing Electric Field Modeling to Advance Neuromodulation Interventions in Chronic Stroke

Diego E. Arias, Alex Ford, Kevin A. Caulfield, Whitney Washington, Seth Stalcup, Kirstin-Friederike Heise

Medical University of South Carolina, Charleston, USA.

P. 54 Cerebellar DBS Promotes Corticomotor Excitability in Chronic Post-Stroke Survivors - A DBS + TMS Study

Xin Li1, Kenneth Baker2,3, Kyle O'Laughlin1, Yin-Liang Lin1,4, Kelsey Baker1,5, Robert Chen6,7, Jacqueline Chen8, Andre Machado2,9, Ela B. Plow1,2,10

1Department of BME, Cleveland Clinic, Cleveland, USA. 2Center for Neurological Restoration, Neurological Institute, Cleveland Clinic, Cleveland, USA. 3Department of Neurosciences, Lerner Research Institute, Cleveland Clinic, Cleveland, USA. 4Department of Physical Therapy and Assistive Technology, National Yang Ming Chiao Tung University, Taipei, China. 5Department of Neuroscience, School of Medicine, University of Texas Rio Grande Valley, Rio Grande Valley, USA. 6Krembil Research Institute, University Health Network, Toronto, Canada. 7Division of Neurology, Department of Medicine, University of Toronto, Toronto, Canada. 8Department of Diagnostic Radiology, Cleveland Clinic, Cleveland, USA. 9Department of Neurosurgery, Neurological Institute, Cleveland Clinic, Cleveland, USA. 10Cleveland Clinic Rehabilitation Hospitals (CCRH), Department of PM&R, Cleveland Clinic, Cleveland, USA.

P. 55 A Novel Co-contraction Index Analysis Reveals a Phasic Role of Intermuscular Coherence During Elbow Extension in People with Chronic Motor Deficits After Stroke

Ahlam Salameh1,2,3, Joshua Pollock4, Margaret Skelly3,5, Lisa Leonhardt5, Jessica McCabe5, Svetlana Pundik2,3,5

1Kent State University College of Podiatric Medicine, Independence, USA. 2Case Western Reserve University, Cleveland, USA. 3Cleveland FES Center, Cleveland, USA. 4Kent State University, Kent, USA. 5VA Northeast Ohio Healthcare System, Cleveland, USA.

P. 56 Integrating Sleep-Based Targeted Memory Reactivation with Myoelectric Interface Neurorehabilitation to Enhance Stroke Recovery

Abed Khorasani, Cynthia Gorski, Prashanth Prakash, Jason Huang, Nathan Whitmore, Ken Paller, Marc Slutzky

Northwestern University, Chicago, USA.

P. 57 Optimized EEG Channel Selection and Multidimensional Analysis for Monitoring Neural Dynamics and Supporting Neurorehabilitation in Stroke Patients

Parikshat Sirpal1, Nishaal Parmar1, Hazem Refai1, Yuan Yang2,3,4,5

1School of Electrical and Computer Engineering, Gallogly College of Engineering, University of Oklahoma, Norman, USA. 2University of Illinois Urbana-Champaign, Department of Bioengineering, Grainger College of Engineering, Urbana, USA. 3Carle Foundation Hospital, Stephenson Family Clinical Research Institute, Clinical Imaging Research Center, Urbana, USA.4University of Illinois Urbana-Champaign, Beckman Institute for Advanced Science and Technology, Urbana, USA. 5Northwestern University, Physical Therapy and Human Movement Sciences, Evanston, USA.

P. 58 Exploring the Relationship Between Abnormal Intermuscular Coordination and Joint Torque Coupling: Insights for Post-Stroke Rehabilitation

Kyoungsoon Kim1, Marcia O'Malley2, Jinsook Roh1

1University of Houston, Houston, USA. 2Rice University, Houston, USA.

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Underlined names indicate presenting author.

P. 60 Mapping The Human Direct And Indirect Motor Descending Pathways Using High-resolution Tractography With Diffusion Imaging
Divya Rai1, Sweya Surapaneni1, Timothy Verstynen2, Jing Xu1
1University of Georgia, Athens, USA. 2Carnegie Mellon University, Pittsburgh, USA.

P. 61 Neural Processes Underlying Gamified Biofeedback to Augment Gait Performance
Bennett Alterman, Alexandra Slusarenko, Jasmine Mirdamadi, Catherine Mason, Michael Borich, Trisha Kesar
Emory University, Atlanta, USA.

P. 62 Lateralized Attentional Biases After Right-Hemisphere Stroke Can Affect Performance on Tests With Horizontal Stimulus Layouts Even in the Absence of Significant Hemispatial Neglect
Sarah Haile, Kasey Stack, Anna Seydell-Greenwald
Georgetown University Medical Center, Washington D.C., USA.

P. 63 An Intuitive, Bimanual, High-throughput QWERTY Keyboard Touch Typing Neuroprosthesis
Justin Jude1,2, Hadar Levi-Aharoni1,2, Alexander Acosta1, Shane Allcroft3, Nicholas S. Card4, Maitreyee Wairagkar4, David M. Brandman4, Sergey D. Stavisky4, Ziv Williams1,5, John Simeral3,6,8, Leigh R. Hochberg1,2,3,6, Daniel B. Rubin1,2
1Ctr. for Neurotechnology and Neurorecovery, Dept. of Neurology, Massachusetts General Hospital, Boston, USA. 2Dept. of Neurology, Harvard Medical School, Boston, USA. 3Sch. of Engineering, Brown University, Providence, USA. 4Dept. of Neurological Surgery, University of California Davis, Davis, USA. 5Program in Neuroscience, Harvard-MIT Program in Health Sciences and Technology, Harvard Medical School, Boston, USA. 6VA R&D Ctr. for Neurorestoration and Neurotechnology, Dept. of VA Med. Ctr., Providence, USA. 7Sch. of Engineering, Brown University, Providence, USA. 8Carney Institute for Brain Science, Brown University, Providence, USA.

P. 64 Repetitive Intermittent Hypoxia Exposure Increases Serum BDNF Concentration and Corticospinal Excitability to the Lower Limb
Aviva Pollet1, Alysha Bogard1, Andrew Harding1, Peter Kim1, Andrew Quesada Tan1,2
1University of Colorado Boulder, Boulder, USA. 2CU Boulder Center for Neuroscience, Boulder, USA.

P. 65 Only Baseline Asymmetry Predicts The Magnitude Of Asymmetry During Gait With Visual Feedback
Andrian Kuch, Samantha Jeffcoat, Alejandro Aguirre Ramirez, Evan Shrier, Natalia Sanchez
Chapman University, Orange, USA.

P. 66 Transcranial magnetic stimulation of non-primary motor areas immediately improves reaching in individuals with chronic stroke
Roberto de Freitas1, Golnaz Haddadshargh2, Amy Boos3,4 Jennifer Mak2,3,4, Xiaoqi Fang3,4, Liu Fang3,5, George Wittenberg2,3,4,5
1Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, USA. 2Department of Bioengineering, University of Pittsburgh, Pittsburgh, USA. 3TECH-GRECC & HERL, VA Pittsburgh Healthcare System, Pittsburgh, USA. 4Department of Neurology, University of Pittsburgh, Pittsburgh, Pittsburgh, USA. 5Department of Physical Medicine and Rehabilitation, University of Pittsburgh, Pittsburgh, USA.

P. 67 Neural Mechanisms of Prism Adaptation in Healthy Aging
Fisayo Aloba1,2, Maithri Muthukumar3, Trisha M. Kesar1,2
1Emory University Neuroscience Graduate Program, Atlanta, USA. 2Emory University School of Medicine, Department of Physical Medicine and Rehabilitation, Atlanta, USA. 3Emory University, Neuroscience Undergraduate Program, Atlanta, USA.

P. 68 Factors Associated with Inpatient Rehabilitation Admission and Length of Stay: A Retrospective Stroke Cohort Study
Alejandra Cardenas-Rojas1, Grace C. Bellinger1, Annette Lavezza1, Margaret A. French2, Ryan T. Roemmich1,3
1Johns Hopkins University School of Medicine, Baltimore, USA. 2University of Utah, Salt Lake City, USA. 3Kennedy Krieger Institute, Baltimore, USA.

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Wednesday, April 23, 2025 · 4:30pm – 6:30pm · Grand Ballroom West

P. 69 Cortical Response to Balance Perturbation is More Sensitive in Modern Dancers than Nondancers during Biomechanically Similar Balance Recovery

Kennedy Kerr1, Scott Boebinger1, Jasmine Mirdamadi1, Michael Borich2, Lena Ting1
1Emory University and Georgia Tech, Atlanta, USA. 2Emory University, Atlanta, USA.

P. 70 Ipsilateral Corticomotor Pathways in People with Cervical Spinal Cord Injury: Implications for Upper Limb Motor Function

Jia Liu1, Madeline Cantu2, Kyle O'laughlin1, David Cunningham3, Akhil Mohan1, Gail Forrest4, Steven Kirshblum5, Kevin Kilgore3, Anne Bryden3, Svetlana Pundik6, Tarun Arora7, Gregory Nemunaitis1, Francois Bethoux1, Xiafeng Wang1, M. Kristi Henzel6, Ela B. Plow1,8
1Department of BME, Cleveland Clinic, Cleveland, USA. 2Case Western Reserve University, Cleveland, USA. 3MetroHealth, Cleveland, USA. 4Kessler Foundation, East Hanover, USA. 5Kessler Institute for Rehabilitation, East Hanover, USA. 6Louis Stokes Cleveland VA Medical Center, Cleveland, USA. 7Oslo University Hospital, Oslo, Norway. 8Cleveland Clinic Rehabilitation Hospitals (CCRH), Department of PM&R, Cleveland Clinic, Cleveland, USA.

P. 72 Clinimetric Properties of the Wolf Motor Function Test and its Modified Versions: a Systematic Review with Meta-analysis

Leonardo Pellicciari1, Lorena Sabrina Pometti1, Alessandro Ugolini2, Francesco Ferrarello3, Francesco Notturni4, Andrea Coppari5, Serena Caselli6, Fabio La Porta1, Mindy F. Levin7, Daniele Piscitelli8
1IRCCS Istituto delle Scienze Neurologiche di Bologna, Bologna, Italy. 2Independent researcher, Empoli (FI), Italy. 3Unit of Functional Rehabilitation, Department of Allied Health Professions, Azienda USL Toscana Centro, Prato, Italy. 4CRT, Clinica di Riabilitazione Toscana, Montevarchi (AR), Italy. 5Physical and Rehabilitation Medicine Unit, Azienda Sanitaria Territoriale, Jesi (AN), Italy. 6Azienda Ospedaliero-Universitaria di Modena, Modena, Italy. 7School of Physical and Occupational Therapy, Faculty of Medicine and Health Sciences, McGill University, Montreal, Canada. 8Doctor of Physical Therapy Program, Department of Kinesiology, University of Connecticut, Storrs, USA.

P. 73 Clinical Relationship Between the Tonic Stretch Reflex Threshold and μ as Measures of Upper Limb Spasticity and Motor Impairment Following Stroke

Daniele Piscitelli1, Joy Khayat2,3, Anatol G. Feldman4, Mindy F. Levin3,5
1Doctor of Physical Therapy Program, Department of Kinesiology, University of Connecticut, Storrs, USA. 2School of Physical and Occupational Therapy, Faculty of Medicine and Health Sciences, McGill University, Montreal, Canada. 3Center for Interdisciplinary Research in Rehabilitation (CRIR), Montreal, Canada. 4Department of Neuroscience, University of Montreal, Montreal, Canada. 5School of Physical and Occupational Therapy, Faculty of Medicine and Health Sciences, McGill University, Montreal, Canada.

P. 74 Shared cortical responses to upper-limb and whole-body perturbations

Janna Protzak1,2, Iran Gutierrez1, Jasmine Mirdamadi1, Michael Borich1, Lena Ting1,2
1Emory University, Atlanta, USA. 2Georgia Tech, Atlanta, USA.

THURSDAY PROFESSIONAL DEVELOPMENT SESSION A

Using Data Science and AI to Manage, Visualize, and Analyze Your Rehabilitation Data

Thursday, April 24, 2025 · 8:30am – 9:30am · Grand Ballroom East

Course Director: Sook-Lei Liew, PhD, OTR/L, FAOTA

DESCRIPTION:

In this session, we will first provide an overview of the importance of data science (e.g., programming, version control) and generative AI to work with rehabilitation datasets of all sizes and types. We will discuss how these methods can improve the rigor and reproducibility of science, facilitate data sharing and enable the use of AI/ML methods in rehabilitation research (20 min). During this time, we will also provide hands-on support for people who need assistance executing the provided code notebooks on their computers. The overall goal of the hands-on session is to demonstrate how programming and AI can facilitate reproducibility of previously published results. To accomplish this goal, we will lead participants through: (1) importing an open-source dataset used in a prior peer-reviewed publication, (2) performing basic data manipulations/data cleaning to reformat the dataset, and (3) analyzing and visualizing the dataset, to reproduce the previously published results. Throughout the session, we will provide challenge points in the code (places where code may be incomplete) where attendees can discuss in small groups how to resolve the issue or engage with a generative AI model for a solution. We will then provide brief real-world examples from current and past fellows in the Reproducible Rehabilitation (ReproRehab) educational program, who will share how learning different data science skills has impacted their work. As noted above, attendees do not need any prior assistance with programming to participate in the session, and they are also welcome to simply observe if they prefer. We will provide assistance in troubleshooting and have ReproRehab fellows walking around during the session to assist people as needed, and we will also be available post-session for additional troubleshooting or questions.

SPEAKERS:

Sook-Lei Liew, PhD, OTR/L

Keith Lohse, PhD

Andrew Hooyman, PhD

SCHEDULE:

8:30 - 8:40am: ***An overview of data science and AI tools*** – Keith Lohse, PhD

8:40 - 9:20am: ***Hands-on Workshop*** – Andrew Hooyman, PhD

9:20 - 9:30am: ***Discussion and Q&A*** – All

THURSDAY PROGRAM DETAILS

SYMPOSIUM #3 - TRANSPORT2 - A Multicenter Stroke Recovery Trial: Design, Outcomes, Standardization, Results, and What it Might Mean for Future Stroke Recovery Trials

Thursday, April 24, 2025 · 9:45am – 10:45am · Grand Ballroom East
Course Director: Gottfried Schlaug, MD

DESCRIPTION:

Non-invasive transcranial direct current stimulation (tDCS) can modulate motor cortical excitability, modify stroke-induced inter-hemispheric imbalance, and increase synaptic plasticity when combined with peripheral sensorimotor stimulation. Meta-analyses and experimental studies suggested a safe dose-response relationship between current density and motor impairment reduction. We have conducted a multi-center randomized, shamcontrolled Phase 2 dose-finding (4mA vs. 2mA vs. sham stimulation) study. The intervention is 10 sessions of bihemispheric tDCS for 30 minutes at three different dose levels, along with modified constraint-induced movement therapy (mCIMT) for 2 hrs. Participants were 1-6 months after their first ischemic stroke with mild/moderate impairment (Upper Extremity – Fugl-Meyer (UE-FM) of ≤54) . The primary endpoint is the change on FM-UE score from baseline to Day 15 (i.e. immediately after the 10- day intervention period). Sustained benefits were assessed at 1+3 months after intervention. The secondary aims evaluated safety (rate of adverse events), tolerability of the stimulation (using a visual analog scale), and feasibility of the intervention (≥80% of treatment sessions completed). Exploratory outcomes included imaging (i.e., corticospinal tract lesion load and other measures) and neurophysiological measures (i.e., presence of motor evoked potentials by single-pulse transcranial magnetic stimulation) which were correlated with changes in UE-FM to see if they can be biomarkers for subject selection in future clinical trials. TRANSPORT2 study results will provide critical evidence regarding the efficacy, safety, feasibility of tDCS at different current levels, along with constraint-induced movement therapy. Lessons learned have implications for future high-impact stroke recovery studies.

SPEAKERS:

Gottfried Schlaug, MD, PhD

Christy Cassarly, PhD

Veronica Rowe, PhD, OTR/L

Stacy Fritz, PhD, PT

Wayne Feng, MD, MS

SCHEDULE:

9:45 – 9:55am: ***Trial design, statistical justification, and go or no-go criteria*** – Christy Cassarly, PhD

9:55 – 10:05am: ***Standardization and assessment of Upper Extremity - Fugl-Meyer and other outcomes*** – Veronica Rowe, PhD, OTR/L

10:05 – 10:15am: ***mCIMT standardization and lessons learned*** – Stacy Fritz, PhD, PT

10:15 – 10:25am: ***Primary results and lessons learned from trial conduction during the Covid19*** – Wayne Feng, MD, MS

10:25 – 10:35am: ***Imaging and TMS results and overall considerations for future trials*** – Gottfried Schlaug, MD, PhD

10:35 – 10:45am: ***Discussion and Q&A –*** All

THURSDAY PROGRAM DETAILS

SYMPOSIUM #4 - The Human Side of Brain Injury: Educational Approaches to the Lived Experience

Thursday, April 24, 2025 · 11:00am – 12:00pm · Grand Ballroom East
Course Director: Netta Gurari, PhD

DESCRIPTION:

A brain injury can impact nearly every facet of daily life. Correspondingly, navigating healthcare after a brain injury involves a vast, interdisciplinary neurorehabilitation team. At the core of neurorehabilitation are the individual(s) living the experience – the patient and their caregiver(s). The patient and caregiver(s) learn about brain injury through their lived experiences and, in turn, deeply understand pressing challenges. Healthcare providers learn about brain injury through years of observations, didactic training, and clinical practice. While the lived, immersive experience is inherent to each of these communities, other skilled professionals who enter the field of neurorehabilitation are currently not formally educated on the lived brain injury experience (e.g., engineers). These skilled individuals often work in silos, unfamiliar with the complexities of a brain injury and the healthcare process and, in turn, are challenged to effectively integrate into and support neurorehabilitation. To address this barrier, we developed and tested a novel educational approach for training students on the lived brain injury experience. In this session, we will share our experiences and provide our perspectives on how to learn about the lived brain injury experience.

SPEAKERS:

Netta Gurari, PhD

James Sulzer, PhD

Kevin Parcetich, PhD, PT, DPT

Steven Nape, PhD

SCHEDULE:

11:00 – 11:05am: ***Introduction to Topic and Panel*** – Netta Gurari, PhD

11:05 – 11:20am: ***Ongoing Challenges*** – James Sulzer, PhD

11:20 – 11:30am: ***Novel Educational Approach*** – Kevin Parcetich, PhD, PT, DPT

11:30 – 11:50am: ***Lessons Learned and Future Considerations*** – Netta Gurari, PhD and Steven Nape, PhD

11:50 – 12:00pm: ***Discussion and Q&A –*** All

THURSDAY PROGRAM DETAILS

SYMPOSIUM #5 - Transcutaneous Spinal Cord Stimulation for Rehabilitation: Current Understanding and Remaining Questions

Thursday, April 24, 2025 • 2:15pm – 3:15pm • Grand Ballroom East
Course Director: Ismael Seáñez, PhD

DESCRIPTION:

Although spinal cord stimulation (SCS) with epidural implants was first observed to improve motor function in people with neuromotor disorders over half a century ago, an incomplete understanding of its mechanisms of action likely resulted in inconsistent outcomes in large-scale trials. Recent findings by multiple groups have shown that combining SCS with practice and training can lead to unprecedented improvements in motor function after spinal cord injury (SCI). These findings have rapidly renewed interest in the clinical, research, and commercial applications of SCS, promoting the exploration of novel approaches to maximize recovery for individuals with neuromotor disorders. Therefore, a better scientific understanding of the neurophysiological mechanisms underlying these advancements is crucial to prevent challenges similar to those experienced in the early development of SCS. In this symposium, we will provide a comprehensive overview of our current understanding and knowledge gaps regarding how non-invasive, transcutaneous SCS (tSCS) improves motor function after SCI and how to effectively implement tSCSassisted rehabilitation. We will begin by reviewing the history of tSCS, early setbacks, and the lessons learned that have led to current advancements. Discussions will then focus on how specific stimulation settings can enhance motor function and reduce spasticity, offering practical guidance for tailoring interventions to individual patient needs. Finally, we will discuss how kilohertz-frequency carriers can impact muscle recruitment mechanisms in tSCS. By integrating current research with clinical practice, this symposium will equip attendees with enhanced knowledge of tSCS for neurorehabilitation.

SPEAKERS:

Ismael Seáñez, PhD

Karen Minassian, PhD

Edelle Field-Fote, PT, PhD

Ashley Dalrymple, PhD

SCHEDULE:

2:15 – 2:20pm: ***Introduction*** – Ismael Seáñez, PhD

2:20 – 2:35pm: ***What is considered transcutaneous spinal cord stimulation? Historical overview, current applications, and future directions*** – Karen Minassian, PhD

2:35 – 2:50pm: ***Choosing stimulation site and parameters to improve motor function and spasticity*** – Edelle Field-Fote, PT, PhD

2:50 – 3:05pm: ***Kilohertz-frequency carriers for transcutaneous spinal cord stimulation*** – Ashley Dalrymple, PhD

3:05 – 3:15pm: ***Discussion and Q&A –*** All

2025 ASNR AWARD CEREMONY

Thursday, April 24, 2025 • 3:30pm – 4:30pm • Grand Ballroom East

Ela Plow, PT, PhD

2025 FELLOW OF AMERICAN SOCIETY OF NEUROREHABILITATION (FASNR) RECIPIENT

The title of Fellow of the American Society of Neurorehabilitation is reserved for individuals who have contributed significantly to the field of Neurorehabilitation, and also to the American Society of Neurorehabilitation.

Heidi Schambra, MD

2025 OUTSTANDING NEUROREHABILITATION CLINICIAN-SCIENTIST AWARD RECIPIENT

This award, based on the evaluation of his or her peers, honors scholarly achievements and contributions to knowledge about mechanisms of neural repair, translational research from mechanisms of repair to clinical practice, or clinical Neurorehabilitation. Nominations are invited from the membership of the American Society of Neurorehabilitation.

DIVERSITY TRAVEL FELLOWSHIP

The Diversity Fellowship Travel Grant supports up to three underrepresented individuals and provides meeting travel support in the amount of $1,000 per year for three consecutive years. The award also includes complimentary meeting registration for all three award years. During the last year of the fellowship, each Diversity Fellow is required to serve as a mentor to a first-year awardee. This format is designed to provide a sustained opportunity for our Diversity Fellows to become more fully immersed in the meeting and establish long-term, meaningful relationships within ASNR.

2025 DIVERSITY TRAVEL FELLOWSHIP RECIPIENTS

Fisayo Aloba

J. Sebastian Correa

Alejandra Cardenas Rojas

OTHER CURRENT DIVERSITY TRAVEL FELLOWSHIP RECIPIENTS

Caitlin Banks

Ermyntrude Adjei

Michelle Corkrum

Nicole Haikalis

Alex Benedetto

Alexandra Reed

Manuel Portillo-Jimenez

THURSDAY - POSTER SESSION II

Thursday, April 24, 2025 · 4:30pm – 6:30pm · Grand Ballroom West

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In the interest of making the Poster & Exhibit Hall space easily accessible to all, the posters will be divided into two groups to allow for more space between rows. Posters numbered 1-74 will be up for the first day, including Wednesday night's Poster Reception. Posters numbered 75-151 will be up for the second day, including Thursday night's Poster Reception.

P. 75 Cortical contributions to balance are related to ideal exoskeleton assistance levels
JoonHan Kim1, Rish Rastogi2, Giovanni Martino3, Max Shepherd2, Gregory Sawicki4, Lena Ting1,4, Kristen Jakubowski1,4
1Emory University, Atlanta, USA. 2Northeastern, Boston, USA. 3University of Padova, Padua, Italy. 4Georgia Institute of Technology, Atlanta, USA.

P. 76 Low Intensity Muscle Stimulation from Non-Invasive Brain-Computer Interface Device Improves Poststroke Brain and Behavior Measures
Alexander Remsik, Brayden Fry, Peter van Kan, Veena Nair, Vivek Prabhakaran
University of Wisconsin-Madison, Madison, USA.

P. 77 Cortically-Mediated Muscle Responses to Balance Perturbations Increase With Perturbation Magnitude in Older Adults With and Without Parkinson's Disease
Scott Boebinger1,2, Jife Xiao3, Aiden Payne3, Michael Borich1, Lena Ting1
1Emory University, Atlanta, USA. 2Georgia Institute of Technology, Atlanta, USA. 3Florida State University, Tallahassee, USA.

P. 78 A Domain-Specific Approach to Characterizing Falls Efficacy Post-Stroke
Grace Kellaher, Ryan Pohlig, Darcy Reisman, Jeremy Crenshaw
University of Delaware, Newark, USA.

P. 79 Aging and cognitive-motor challenge differentially modulate cortical motor contributions to standing balance control
Catherine Mason1, Sujay Edavalapati1, Camille Guzman1,2, Taylor Leone1, Nathan Baune1, Rish Rastogi2, Rajashree Ramamoorthy2, Keenan Whitesides1, Alejandro Lopez1, Michael Borich1,2, Trisha Kesar1,2, Lena Ting1,2
1Emory University, Atlanta, USA. 2Georgia Institute of Technology, Atlanta, USA.

P. 80 Repetitive Intermittent Hypoxia Improves Motor Learning and Savings of Adaptive Mediolateral Control During Split-Belt Walking
Norah Nyangau1, Alysha Bogard1, Aviva Pollet1, Logan Pelligrino1, Andrew Quesada Tan1,2
1University of Colorado, Boulder, Boulder, USA. 2CU Boulder Center for Neuroscience, Boulder, USA.

P. 81 A Novel Movement Quality Biomarker For Neuromodulation: Personalized ctDCS Effects On Dynamic Stability And Bimanual Coordination
Stanislaw Solnik1, Aubrey Alvilhiera1, Grady Howell1, Daniele Piscitelli2, Cristian Cuadra3
1University of North Georgia, Dahlonega, USA. 2University of Connecticut, Storrs, USA. 3University at Buffalo, Buffalo, USA.

P. 82 Do underlying mechanisms of handedness affect early fine motor symptoms in Parkinson's Disease
Jessica Manning1, Caroline Selb1, Matthew J. Barrett2, Brian D. Berman2, Peter Pidcoe3, Dean Krusienski4, Brooke Dexheimer1
1Virginia Commonwealth University Department of Occupational Therapy, Richmond, USA. 2Virginia Commonwealth University Department of Neurology, Richmond, USA. 3Virginia Commonwealth University Department of Physical Therapy, Richmond, USA. 4Virginia Commonwealth University Department of Biomedical Engineering, Richmond, USA.

P. 83 Impact of Cognitive Load on Brain-Muscle Functional Connectivity Post-stroke
Rachana Gangwani, Umesh Radhakrishnan, Caroline Cabaniss, Jessica Cassidy
University of North Carolina, Chapel Hill, USA.

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P. 84 Patient-Reported Performance Metrics and Relationship to Remote Activity Monitoring

Gina Brunetti1, Hannah Grimes1, Josh Encarnacion2, Jessica Howarth2, Mark Bowden3

1Brooks Rehabilitation, Center for Innovation, Jacksonville, USA. 2Brooks Rehabilitation, Clinical Research Center, Jacksonville, USA. 3Brooks Rehabilitation, Division of Clinical Integration and Research, Jacksonville, USA.

P. 85 The Impact of Backward and Forward Non-Body Weight Supported Treadmill Training on Post-Stroke Survivors with Severe Walking Impairment: A Pilot Randomized Control Trial

Saiprasad Naidu1, Colin Drury2, Oluwole Awosika2

1University of Cincinnati College of Medicine, Cincinnati, USA. 2University of Cincinnati College of Medicine Department of Neurology and Rehabilitation Medicine, Cincinnati, USA.

P. 86 Validation of Early Prognostic Data for Recovery Outcome after Stroke for Future, Higher Yield Trials (VERIFY) Study

Cathy Stinear1, Pooja Khatri2, Achala Vagal2, Steven Cramer3, Kalli Beasley2, Harry Jordan1, Tyler Behymer2, Sharon Yeatts4, Lydia Foster4, Catherine Dillon4, Natalia Hays4, Max Mays2, Laura Benken2, Joseph Broderick2, Carlos Faraco5, Scott Janis5

1University of Auckland, Auckland, New Zealand. 2University of Cincinnati, Cincinnati, USA. 3University of California, Los Angeles, USA. 4Medical University of South Carolina, Charleston, USA. 5NINDS, Bethesda, USA.

P. 87 Size Estimation Following Reduced Somatosensory Feedback of the Upper Limb and Hand with Prosthesis Use

Phenique Parker, Shreya Dhara, Lewis Wheaton

Georgia Institute of Technology, Atlanta, USA.

P. 88 Evaluating The Effect Of Ethnicity And Amyloid On Gait Speed In The Healthy Aging Brain Study-Health Disparities Study

Alexandra Reed1, Andrew Hooyman2, Edward Ofori1, Sydney Schaefer1

1Arizona State University, Tempe, USA. 2Chapman University, Orange, USA.

P. 89 Reduced Arm Movement-Evoked Neuromodulatory Responses In Patients With Stroke

Richard Hardstone1,2, Aliceson N. Dusang1,2,3, Sarah Cavanagh1,2,4,5, Julie A. DiCarlo1, Leigh R. Hochberg1,2,3,5, David J. Lin1,2,5

1Center for Neurotechnology and Neurorecovery, Department of Neurology, Massachusetts General Hospital, Boston, MA, USA. 2VA RR&D Center for Neurorestoration and Neurotechnology, Department of Veterans Affairs Medical Center, Providence, RI, USA. 3Carney Institute for Brain Science and School of Engineering, Brown University, Providence, RI, USA. 4John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA. 5Harvard Medical School, Boston, MA, USA.

P. 90 Cervical transcranial magnetic stimulation to measure spinal excitability at spinal level post-stroke

Amit Sethi1, Ghaleb Almalki2, Danny Magruder1, Anadil Bayazeed2, Lauren Terhorst2, Emily Grattan2, Chandramouli Krishnan3

1University of Utah, Salt Lake City, USA. 2University of Pittsburgh, Pittsburgh, USA. 3University of Michigan, Ann Arbor, USA.

P. 91 Characterizing Wrist Flexor and Extensor Muscle Activation Timing via Electromyographic-Computer Interface

Aaron Huynh1,2, Shiyang (Tori) Gu1, Adarsh Mavathaveedu1, Paige Hepple1, Ania Busza1,2

1University of Rochester Medical Center, Rochester, USA. 2University of Rochester School of Medicine and Dentistry, Rochester, USA.

P. 92 Utility of 3D Inertial Sensors to Capture Training Associated Changes in Dynamic Postural Stability in Chronic Stroke Survivors

Khwahish Singh1, Brad Woodie1, Colin Drury1, Lorenna Altman2, Amit Bhattacharya2, Oluwole Awosika1

1University of Cincinnati College of Medicine Department of Neurology and Rehabilitation Medicine, Cincinnati, USA. 2Early Detection of Degenerative Disorders & Innovative Solutions, Department of Environmental Health, University of Cincinnati, Cincinnati, USA.

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P. 93 Variability in Muscle Co-activation Patterns Within Upper Extremity Fugl-Meyer Sub-Scores After Stroke

Adrian Lin1,2,3, Sarah Cavanagh2,3,4, Christian Finetto5,6, Federico Tessari7, Kelly Rishe2,3,5, Michelle Woodbury5,6, Steve Kautz5,6, David Lin2,3,8,9

1Brown University, Providence, USA. 2Center for Neurotechnology and Neurorecovery, Department of Neurology, Massachusetts General Hospital, Harvard Medical School, Boston, USA. 3VA RR&D Center for Neurorestoration and Neurotechnology, Rehabilitation R&D Service, Department of VA Medical Center, Providence, USA. 4John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, USA. 5Department of Health Sciences and Research, Medical University of South Carolina, Charleston, USA. 6Ralph H. Johnson VA Medical Center, Charleston, USA. 7Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, USA. 8Department of Rehabilitation Sciences, MGH Institute of Health Professions, Boston, USA. 9Division of Neurocritical Care, Department of Neurology, Massachusetts General Hospital, Boston, USA.

P. 94 Modulation of spinal excitability with balance task difficulty and cognitive dual task performance

Camille Guzman1,2, Catherine Mason1, Lena Ting1,2, Trisha Kesar1,2, Michael Borich1,2

1Emory University, Atlanta, USA. 2Georgia Institute of Technology, Atlanta, USA.

P. 95 Limited Utility of the Rey-Osterrieth Complex Figure for Differentiating Stroke Survivors and Controls: Findings Consistent Across Raters and Scoring Systems

Kasey Stack1, Sarah Haile1, Regan Hau1,2, Anna Seydell-Greenwald1,3

1Georgetown University Medical Center, Washington, USA. 2Colgate University, Hamilton, USA. 3MedStar National Rehabilitation Hospital, Washington, USA.

P. 96 Fundamental Limitations Of Kilohertz-Frequency Carriers In Afferent Fiber Recruitment With Transcutaneous Spinal Cord Stimulation

Rodolfo Keesey1, Ursula Hofstoetter2, Zhaoshun Hu3, Lorenzo Lombardi1, Rachel Hawthorn1, Noah Bryson1, Abdallah Alashqar3, Andreas Rowald3, Karen Minassian2, Ismael Seáñez1

1Washington University in St. Louis, Saint Louis, USA. 2Medical University of Vienna, Vienna, Austria.3University of Erlangen-Nuremberg, Erlangen, Germany.

P. 97 Delayed Cortical Contributions to Muscle Activity During Reactive Balance Control in People after Stroke

Jifei Xiao1, Jacqueline Palmer2, Michael Borich1,3, Lena Ting1,3, Scott Boebinger1

1Wallace H. Coulter Department of Biomedical Engineering, Emory University and Georgia Institute of Technology, Atlanta, USA. 2Division of Physical Therapy and Rehabilitation Science, University of Minnesota, Minneapolis, USA. 3Division of Physical Therapy, Department of Rehabilitation Medicine, Emory University, Atlanta, USA.

P. 98 Characteristics of Transcranial Magnetic Stimulation Responses in the Trunk Muscles of People with Parkinson's Disease

Callen Maupin, Emily Lecy, Jae Chung, Colum MacKinnon

University of Minnesota, Minneapolis, USA.

P. 99 Facilitating Neuroplasticity with Occlusion-Reperfusion in Early subacute Stroke Rehabilitation – An Exploratory Study

Giovanni Oppizzi1, Soh-Hyun Hur2, Dali Xu2, Li-Qun Zhang1,2

1University of Maryland, College Park, USA. 2University of Maryland, Baltimore, USA.

P. 100 Dynamical Gait Signatures Capture Holistic Changes in Post-Stroke Gait Biomechanics with Walking Speed

Michael Rosenberg1, Taniel Winner1, Gordon Berman1, Tisha Kesar1, Lena Ting1,2

1Emory University, Atlanta, USA. 2Georgia Tech, Atlanta, USA.

P. 101 Performance Differences between Black and White Stroke Survivors on the Shortened Geneva Emotion Recognition Test Suggest Effects of Sociocultural Background on Emotion Recognition

Sarah Phillips, Abigail Marsh, Anna Seydell-Greenwald

Georgetown University, Washington DC, USA.

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P. 102 Evaluating Ischemic Stroke Outcomes from Lesion Location Characteristics: A Retrospective Analysis of a Regional Primary Stroke Center

Isabella Rhangos1, Aisha Bushra2, Alaina Moore1, Rebekah Dry1, Khadeeja Shabbir1, Jing Xu2, Deborah Barany1,2

1Augusta University/University of Georgia Medical Partnership, Athens, USA. 2University of Georgia, Athens, USA.

P. 103 TMS-induce I-waves and their role in chronic post-stroke hemiplegia

Rifeng Jin1,2,3, Jisung Yuk1,3, Shreya Ramani2, David Cunningham1,2,3

1Case Western Reserve University School of Medicine, Cleveland, USA. 2The MetroHealth Systems, Cleveland, USA. 3Cleveland Functional Electrical Stimulation Center, Cleveland, USA.

P. 104 The Influence of Vision and Attention on Gait Initiation in People with Parkinson Disease

Chelsea Parker Duppen1,2, Jenevieve Surkin2, Shefaali Mahendar2, Jordan Saunders2, Jenna Cole2, Nina Browner2, Michael D. Lewek2

1University of North Carolina at Chapel Hill, Chapel Hill, USA. 2Virginia Commonwealth University, Richmond, USA.

P. 105 Ensemble Machine Learning for Early-Onset Parkinson's Disease Classification Using Upper Limb Robotics and Gait Analysis

Daniel Salinas1, Gerardo Medellin2, Katherine Bolado2, Diego Rojano2, Marysol Cabello2, Tomas Gomez2, Christopher Cavazos2, Nawaz Hack1, Ramu Vadukapuram2, Jorge Igor Zwir1, Kelsey Potter-Baker2

1University of Texas Rio Grande Valley, Harlingen, USA. 2University of Texas Rio Grande Valley, Edinburg, USA.

P. 106 Post-stroke Hand and Finger Function Predictions are Improved by Adding Motor Network Disconnectivity Information to MEP Status

Kate Pirog Revill1, Elizabeth Rizor2, Marc Haut3, Stephanie Rellick3, Scott Grafton2, Cathrin Buetefisch3

1Emory University, Atlanta, USA. 2University of California, Santa Barbara, Santa Barbara, USA. 3West Virginia University, Morgantown, USA.

P. 107 Remote Ischemic Conditioning Combined with Hand Arm Bimanual Therapy Enhances Bimanual Coordination, Hand Function, and Bimanual Performance in Children with Unilateral Cerebral Palsy: A Randomized Controlled Trial

Swati Surkar1, Shailesh Gardas1, Christine Lysaght1, John Willson1, Jessica Cassidy2, Shailesh Kantak3

1East Carolina University, Greenville, USA. 2University of North Carolina at Chapel Hill, Chapel Hill, USA. 3Rancho Research Institute, Downey, USA.

P. 108 Estimating the Prevalence of Upper Extremity Motor Deficits in Acute and Chronic Stroke Through Medical Chart Review

Jennifer Hebert1,2, Julie DiCarlo1,2, Kailey Takaoka1, Sydney McKiernan1, Kristi Emerson1, Kristina Goode2, David Lin1,2

1Massachusetts General Hospital, Boston, USA. 2Providence Veterans Affairs Medical Center, Providence, USA.

P. 109 Can Twenty Minutes of Exercise Change Cortical GABA Levels in Chronic Stroke Patients?

Emily Smith1,2, Anastasia Bohsali3, Kevin Mammino1, Veronica Rowe3, Arash Harzand1,4, Venkatagiri Krishnamurthy1,4, Steven Wolf4, Keith McGregor5, Lisa Krishnamurthy1,4

1Atlanta Veterans Affairs Medical Center, Atlanta, USA. 2Georgia Institute of Technology and Emory University, Atlanta, USA. 3Georgia State University, Atlanta, USA. 4Emory University, Atlanta, USA. 5University of Alabama at Birmingham, Birmingham, USA.

P. 110 Measures Of Corticospinal Tract Conduction During Fine And Gross Motor Actions Were Unaffected By Age

Rob MacLennan1,2, Shawn Reese3, Alex Olmos4, Claire Smith5, Clayton Swanson1,2, Jason DeFreitas5

1Department of Veteran Affairs, Gainesville, USA. 2University of Florida, Gainesville, USA. 3Fairmont State University, Fairmont, USA. 4Christopher Newport University, Newport, USA. 5Syracuse University, Syracuse, USA.

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P. 111 Soleus H-reflex and M-wave Magnitudes Are Not Contaminated by Crossed Spinal Inhibitory Pathways During Bilateral Recruitment Curves
Bridgette Damewood, Mark Lyle
Emory University, Atlanta, USA.

P. 112 Implications of Weight-Bearing Asymmetry on Balance Function and Perceptual Ability Post-Stroke
Mehek Sharma1, Lena Ting2,3, Michael Borich3, Jasmine Mirdamadi3
1Augusta University, Augusta, USA. 2Georgia Institute of Technology, Atlanta, USA. Emory University, Atlanta, USA.

P. 113 Adaptive roles of corticospinal excitability and intracortical inhibition at rest and during movement preparation in chronic post-stroke hemiplegia
Jisung Yuk1,2, Rifeng Jin1,2,3, Shreya Ramani1, David Cunningham1,2,3
1Physical Medicine and Rehabilitation, The MetroHealth System, Case Western Reserve University School of Medicine, Cleveland, USA. 2Cleveland Functional Electrical Stimulation Center, Cleveland, USA. 3Department of Biomedical Engineering, Case Western Reserve University. Cleveland, USA.

P. 114 Balance and dual task gait deficits among older adults without and with mild cognitive impairment
Vyoma Parikh, Nia Whittle, Stephen Orr, Joe Nocera, Madeleine Hackney, Trisha Kesar
Emory University, Atlanta, USA.

P. 116 Effect of Dance-Based Intervention on Average and Variability Metrics of Forward and Backward Walking in Individuals with Parkinson's Disease
Chitra Lakshmi K Balasubramanian1, Caroline Santella2, Chelsea Moehlenbrock2, Kelly O'Daniel2, Jane Freund2, Srikant Vallabhajosula2
1University of North Florida, Jacksonville, USA. 2Elon University, Elon, USA.

P. 117 Can Subscales of the Upper Limb Fugl-Meyer Assessment Provide Evidence for Competition Between Descending Motor Tracts after Stroke?
Alkis Hadjiosif1,2,3, Julie DiCarlo1,4, David Lin2,5
1Center for Neurotechnology and Neurorecovery, Department of Neurology, Massachusetts General Hospital, Boston, MA, USA. 2Department of Veterans Affairs, Rehabilitation Research and Development Service, Center for Neurorestoration and Neurotechnology, Providence, RI, USA. 3School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, USA. 4Department of Psychology, Tufts University, Medford, MA, USA. 5Department of Neurology, Division of Neurocritical Care and Stroke Service, Center for Neurotechnology and Neurorecovery, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA.

P. 118 Use of Marker-less Motion Capture Systems for Neurological Disorders in Community Care Settings: A Systematic Review
Anjana Ganesh, Kelsey Baker
UTRGV School of Medicine, Edinburg, USA.

P. 119 The role of cognitive function in upper extremity motor impairments after stroke
Julie DiCarlo1,2, Abhishek Jaywant3, Nathan Ward2, David Lin1
1Department of Neurology, Center for Neurotechnology and Neurorecovery, Massachusetts General Hospital, Boston, USA. 2Department of Psychology, Tufts University, Medford, USA. 3Departments of Psychiatry and Rehabilitation Medicine, Weill Cornell Medicine, New York, USA.

P. 120 Self-Reported Global Rating Of Change Scores: Perceptions Of Walking-Related Change Following The PROWALKS Intervention
Elizabeth D. Thompson1, Kiersten M. McCartney1,2, Tamara Wright1, Henry Wright1, Darcy S. Reisman1,2
1University of Delaware, Physical Therapy Department, Newark, DE, USA. 2University of Delaware, Biomechanics and Movement Science (BIOMS) Program, Newark, DE, USA.

P. 121 Turning Performance in Older Adults: The Role of Cognitive Function and Cortical Thickness
Clayton Swanson1,2, Anthony Gruber2, Adam Woods3, Dorian Rose1, Rachael Seidler1, David Clark1,2
1University of Florida, Gainesville, USA. 2Malcom Randall VA Medical Center, Gainesville, USA. 3University of Texas at Dallas, Richardson, USA.

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P. 122 Quantifying Axonal Damage in Ischemic Stroke Using AxCaliber MRI in High-Gradient Diffusion Imaging
Liqi Shu1, Aneri Bhatt2,3, Wanyi Qing3,4, Qiuyun Fan2,3, David Lin3, Susie Huang2,2
1Warren Alpert Medical School of Brown University, Providence, USA. 2Athinoula A. Martinos Center for Biomedical Imaging, Department of Radiology, Massachusetts General Hospital, Boston, USA. 3Massachusetts General Hospital and Harvard Medical School, Boston, USA. 4Hong Kong Polytechnic University, Hong Kong, China.

P. 123 Computing Motor Modules with an Autoencoder Enables Stronger Confidence in Module Structure and Functional Interpretability
Siddharth Nathella1, Aaron Young1, Lena Ting1,2
1Georgia Institute of Technology, Atlanta, USA. 2Emory University, Atlanta, USA.

P. 124 Association between Depression and Executive Functioning within the First Year after a Traumatic Brain Injury
Chitra Lakshmi K Balasubramanian1, John Reddell2, Diego Moreno2, Summer Rolin2, Jeremy Davis2, Sandeep Subramanian2
1University of North Florida, Jacksonville, USA. 2UT Health, San Antonio, USA.

P. 125 Hybrid Robot – FES Ankle Rehabilitation Post Stroke
Dali Xu1, Raziyeh Baghi1, Meizhen Huang2, Soh-Hyun Hur, Giovanni Oppizzi3, Wei Yin4, Zongpan Li1, Gad Alon1, Glenn Kehs5, Robynne Braun5, Li-Qun Zhang1,3
1University of Maryland Baltimore, Baltimore, USA. 2Hong Kong Polytec University, Hong Kong, Hong Kong. 3University of Maryland College Park, College Park, USA. 4New Jersey Institute Technology, Newark, USA. 5University of Maryland Rehabilitation and Orthopaedic Institute, Baltimore, USA.

P. 126 Hemisphere-specific Differences In The Use Of Perceptual Feedback During Bimanual Practice After Unilateral Stroke
Shailesh Kantak1,2,3, Joshua Jacob3, Jessica Hesling3, George Wittenberg4,5
1Rancho Research Institute, Downey, USA. 2University of Southern California, Los Angeles, USA. 3Jefferson Moss Rehabilitation Research Institute, Philadelphia, USA. 4University of Pittsburgh, Pittsburgh, USA. 5TECH-GRECC, VA Pittsburgh Healthcare System, Pittsburgh, USA.

P. 127 Effects of Unilateral Gait Biofeedback on Bilateral Joint Mechanical Work in Able-Bodied and Post-Stroke Individuals
Hansol X. Ryu1,2, Nicole K. Rendos2, Trisha M. Kesar2
1Georgia Institute of Technology, Atlanta, GA, USA. 2Emory University, Atlanta, GA, USA.

P. 128 Biomechanical Comparison of the Effects of Game-Based Versus Conventional Biofeedback for Stroke Gait Retraining
Alexandra Slusarenko, Jorjie Wilson, Bennett Alterman, Minuk Kim, Anna Cho, Trisha Kesar
Emory University, Atlanta, USA.

P. 129 Galvanic Vestibular Stimulation Modulates Upper Limb Spinal Excitability: A Study On The Flexor Carpi Radialis H-Reflex
Ignacio Novoa, Cristian Cuadra
SUNY Buffalo, Buffalo, USA.

P. 130 Assessing The Feasibility Of Trans-spinal Magnetic Stimulation In Probing The Descending Tracts Connection To Spinal Motoneurons In Individuals With Stroke
Yu-Chen Chung1, Subaryani Soedirdjo1, Soumya Thomas2, Yasin Dhaher1
1University of Texas Southwestern Medical Center, Dallas, USA. 2University of Texas at Dallas, Dallas, USA.

P. 131 Effects Of Theta-Burst Stimulation To The Left Supramarginal Gyrus On Working Memory Performance In Neurotypical Adults
Connor Pate, Rachael Harrington, C. Nikki Arrington, Robin Morris
Georgia State University, Atlanta, USA.

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P. 132 A Data-Driven Approach to Planar Reaching Movement: Intuition and Analysis in Context of Upper Extremity Stroke Hemiparesis
Liqi Shu1, Sarah Cavanagh2, Aleksei Krotov3, Richard Hardstone4, Julie DiCarlo4, Nicole Dusang5, Perman Gochyyev6, Leigh Hochberg5, Karen Furie1, Dagmar Sternad3, David Lin4
1Warren Alpert Medical School of Brown University, Providence, USA. 2John A Paulson School of Engineering and Applied Sciences, Harvard University, Boston, USA. 3Departments of Biology, Electrical and Computer Engineering, and Physics, Northeastern University, Boston, USA. 4Center for Neurotechnology and Neurorecovery, Department of Neurology, Massachusetts General Hospital, Boston, USA. 5Carney Institute for Brain Science and School of Engineering, Providence, USA. 6Department of Rehabilitation Sciences, MGH Institute of Health Professions, Boston, USA.

P. 133 Quantifying the Relationships Between Muscle Coordination and Walking Dynamics in People Post-Stroke
Benjamin Fargnoli1, Taniel Winner2, Trisha Kesar2, Gordon Berman2, Michael Rosenberg2, Lena Ting2
1Georgia Institute of Technology, Atlanta, USA. 2Emory University, Atlanta, USA.

P. 134 Fatigue and Physical Function are Associated with Satisfaction with Leisure Activities in People with Multiple Sclerosis
Liraz Arie1, Ehsan Sinaei1, Simon Gregory2, Prudence Plummer1
1MGH Institute of Health Professions, Boston, USA. 2Duke University, Durham, USA.

P. 135 High-Definition Transcranial Direct Current Stimulation (HD-tDCS) of Posterior Parietal Cortex Has Lateralized Effects on Fine Motor Control
Narges Yaghoubi, Sydney Sharp, Jessica Manning, Caroline Selb, Peter Pidcoe, Brooke Dexheimer
Virginia Commonwealth University, Richmond, USA.

P. 136 Beyond TRANSPORT2: Testing Safety and Tolerability of Even Higher tDCS Doses Applied Concurrently with mCIMT
Abraham Madjidov1, Abigail Hay1, Anant Shinde1,2, Gottfried Schlaug1,2
1*Department of Neurology, University of Massachusetts Chan Medical School–Baystate, Springfield, USA. 2Department of Biomedical Engineering, Institute of Applied Life Sciences, University of Massachusetts, Amherst, USA.*

P. 137 Computational Modeling of Pathway-Specific Homeostatic Plasticity Following Partial Vision Loss
Danielle Dowe1, Robert Lamprecht1, Morgan Bade1,2, Ming-Fai Fong1
1*Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, USA. 2Department of Ophthalmology, Emory University School of Medicine, Atlanta, USA.*

P. 138 Vestibular Contributions to the Stance Phase of Gait During Downhill Walking
Caleb Bergman, Danielle Dwyer, Lynnette Montgomery
Drexel University, Philadelphia, USA.

P. 139 Lesion Correlates of Hand Motor Function and Wrist Proprioception After Stroke
Anne Schwarz, Min-Keun Song, Eden Farahmand, Rio M Gagnon, Matthew Hansen, Mikaela Kwan, Rebecca M Lee, Shivani Sakthi, Maeve M Settle, Emily Sobel, Rachel Wing, Xinyue Yang, Brittany Young, Steven C Cramer
Department of Neurology, David Geffen School of Medicine at UCLA, Los Angeles, USA. California Rehabilitation Institute, Los Angeles, USA.

P. 140 Alteration in Large-Scale Signal Propagation as Predictors of Motor Recovery After Stroke
Youngjo Song1, Taewon Kim2,3
1MORESCIENCE, Seoul, Korea, Republic of. 2Penn State College of Medicine, Hershey, USA. 3The Pennsylvania State University, University Park, USA.

P. 141 Influence of Task Demands and Reward on Arm Nonuse in Individuals with Chronic Stroke
Shauna Zodrow1, Alex DeAngelis1, Maxim Karrenbach2, Cory Potts3, Rachana Gangwani1, Shailesh Kantak4, Laurel Buxbaum1
1Jefferson Moss Magee Rehabilitation Research Institute, Elkins Park, USA. 2Carnegie Mellon University, Pittsburgh, USA. 3State University of New York at Plattsburgh, Plattsburgh, USA. 4Rancho Research Institute, Downey, USA.

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P. 142 Alteration in Quantitative EEG Following Sensorimotor Control in Stroke
Jordan Williamson1, Nishaal Parmar2, Parikshat Sirpal2, Beni Mulyana1,3, Rita Peng1,3, Yuan Yang1,3,4
1University of Illinois Urbana Champaign, Urbana, USA. 2University of Oklahoma, Tulsa, USA. 3Carle Foundation Hospital, Urbana, USA. 4Northwestern University, Chicago, USA.

P. 143 Motor Skill Learning as an Effective Risk and Monitoring Digital Biomarker for Subjective Cognitive Scores Among a Nation-Wide Cohort
Sydney Schaefer1, Andrew Hooyman2
1Arizona State University, Tempe, USA. 2Chapman University, Irvine, USA.

P. 144 Efficacy of tDCS on Facial Emotion Recognition Therapy in Young Adults with Autism
Michelle Nishida1, Maya Cherukuri2, Jyutika Mehta1
1Texas Woman's University, Denton, USA. 2University of Texas at Dallas, Richardson, USA.

P. 145 Privacy-Preserving Mobile Artificial Intelligence System for Multi-Class Gait Classification: Development and Validation Using Smart Phone Gait Videos
Lauhitya Reddy1, Nia Whittle1, Trisha M Kesar1,2, Hyeokhyen Kwon1,2
1Emory University, Atlanta, USA. 2Georgia Institute of Technology, Atlanta, USA.

P. 146 Examining Two Methods of Quantitative Assessment of Bimanual Coordination in Older Adults
Desmond Asante, Shelby Ziccardi, Stephen Guy, Rachel Hawe
University of Minnesota, Minneapolis, USA.

P. 147 Characterizing Cortical Activity During Cognitive Set-Shifting and Upper Limb Perturbations
Iran Gutierrez, Janna Protzak, Michael Borich, Lena Ting
Emory University, Atlanta, USA.

P. 148 Closed-Loop Vagus Nerve Stimulation (CLV) Paired with Lower Limb Rehabilitation Changes Spatiotemporal Gait Metrics After Chronic Incomplete Spinal Cord Injury
Joseph Epperson, Spencer Dunbar, Emmanuel Adehunoluwa, Rhys Switzer, Kaitlyn Malley, Amy Porter, Robert Rennaker, Seth Hays, Michael Kilgard
The University of Texas at Dallas, Richardson, USA.

P. 149 Interlimb Training Improves Reach-to-Grasp Adaptation in Simulated Upper-Extremity Prosthesis Use
Bennett Alterman, Saif Ali, Emily Keeton, Katrina Binkley, William Hendrix, Jade Lee, John Johnson, Shuo Wang, James Kling, Lewis Wheaton
Georgia Institute of Technology, Atlanta, USA.

P. 150 Understanding the Influence of Gaze During Action and Execution Observation on Error Reduction in Stroke
Layla Abdullatif, Maria Lindsey1, Veronica Rowe2, Lewis Wheaton1
1Georgia Institute of Technology, Atlanta, USA. 2Georgia State University, Atlanta, USA.

P. 151 Enhancing Verbal Short-Term Memory in Stroke Survivors with Aphasia Using Transcranial Alternating Current Stimulation
Katrina Erickson1,2, Vahab Youssof Zadeh3,4, Candida Ustine3,4, Jeffrey R Binder2,3, Priyanka Shah-Basak1,2,3,4
1Cognition and Brain Stimulation Lab, Medical College of Wisconsin, Milwaukee, USA. 2Language Imaging Lab, Medical College of Wisconsin, Milwaukee, USA. 3Department of Neurology, Medical College of Wisconsin, Milwaukee, USA. 4MEG Program, Department of Neurology, Froedtert Hospital & Medical College of Wisconsin, Milwaukee, USA.

FRIDAY PROFESSIONAL DEVELOPMENT SESSION B

Peer into the Process: Delve into a live NIH Mock Scientific Review Section

Friday, April 25, 2025 · 8:30am – 9:30am · Grand Ballroom East

Course Director: Tanvi Bhatt, PT, MS, PhD

DESCRIPTION:

The number of rehabilitation scientists competing successfully for research funding is rapidly increasing. Securing federal funding could be challenging due tight pay lines and growing pool of applications received. This session will expose participants to the end-to-end grant review process undertaken by NIH's Center for Scientific Review. This session will conduct a mock study session by gathering a panel of federally funded researchers who have served as reviewers on various study sections of National Institutes of Health to which most Physical Therapy faculty submit grant proposals too (MRS and MFSR and ANNIE). The panel will focus on early career development grants (F32 and K awards) and mature research project grants (R01) which early and new investigators can take advantage off with special funding paylines established. Following the mock study section panel discussion, there will be breakout groups for discussing and answering specific questions pertaining to specific grant mechanisms – F grants (pre and post-doctoral), K grants (Career development) and R01 and R21. This process will allow tailoring of the session to participants at different career stages. Participants will be shown samples of other score-driving documents related to the review process such as mentoring plans and Human Subjects/clinical trial documents. The session will serve as a platform for meaningful dissemination of information associated with the scientific grant review process. It will also facilitate discussion on frequently asked questions from applicants.

PANELISTS:

Tanvi Bhatt, PT, MS, PhD

Jessica Cassidy, PT, PhD

Trisha Kesar, PT, PhD

Gelsy Torres-Oviedo, PhD

Shailesh Kantak, PT, PhD

Seth Hays, PhD

SCHEDULE:

8:30 - 8:38am: ***Introduction*** – Tanvi Bhatt, PT, MS, PhD

8:38 - 8:55am: ***Mock Study Panel*** – All

8:55 - 9:30am: ***Breakout Groups*** – All

FRIDAY PROGRAM DETAILS

SYMPOSIUM #6 - Imposing Brain Rhythms With Electrical and Magnetic Stimulation to Improve Neurological Function

Friday, April 25, 2025 · 9:45am – 10:45am · Grand Ballroom East
Course Director: Jason Carmel, MD, PhD

DESCRIPTION:

There is a growing recognition that mesoscale activity patterns – i.e., rhythmic oscillations that can be measured using field potentials – play an important role in learning and recovery after brain injury. One way to assess the causal importance of such oscillations is to test if exogenous imposition of such oscillations can alter function. This symposium focuses on the effect of imposing brain rhythms on neurological function. Specifically, the symposium will explore how electrically or magnetically stimulating the brain at various frequencies (delta, theta, beta) can modify neurological function in motor and visual tasks, and in a stroke model. The studies presented will range from using rodents to non-human primates with a common methodology of using external stimulation to alter behavior. Technological advances such as temporal interference, 'ringtrode' stimulation (i.e., epidural electrode-based stimulation that allows concurrent stimulation and recordings), and electromagnetic field therapy will be discussed. Together, these studies will provide a framework for casually manipulating network dynamics to modify function and to improve recovery. The symposium will conclude with an open discussion of the utility of stimulating the brain at various frequencies and discuss the current clinical studies translating the technology presented in the talks.

SPEAKERS:

Jason Carmel, MD, PhD

Natasha Kharas, MD, PhD

Naohiko Okabe, PhD

Sandon Griffin, PhD

SCHEDULE:

9:45 – 9:50am: ***Introduction*** – Jason Carmel, MD, PhD

9:50 – 10:00am: ***Sleep-like delta rhythm improves visual processing*** – Natasha Kharas, MD, PhD

10:00 – 10:10am: ***Theta rhythm enhances stroke recovery in rodent model*** – Naohiko Okabe, PhD

10:10 – 10:25am: ***Frequency-specific bi-directional modulation of motor function*** – Sandon Griffin, PhD

10:25 – 10:45am: ***Discussion and Q&A –*** All

FRIDAY PROGRAM DETAILS

SYMPOSIUM #7 - Implantable Brain-Computer Interfaces: Understanding the End-User Experience and Decoding Intentions

Friday, April 25, 2025 • 11:00am – 12:00pm • Grand Ballroom East
Course Director: Leigh Hochberg, MD, PhD

DESCRIPTION:

Implantable Brain-Computer Interfaces (iBCIs) enable direct communication between the brain and external devices by interpreting neural signals. They hold transformative potential in assisting people with disabilities, such as enabling control of prosthetics as well as restoring communication. Advances in iBCIs, particularly through machine learning, are enhancing their accuracy, adaptability, and applications to fields like neurological rehabilitation. The goal of this symposium is to provide multiple perspectives on the current state of the art of iBCIs, the evolving role of machine learning, and how these play into the end-user experience. This will include an overall update of the state of the iBCI field including the history of clinical trials. We will highlight how the latest in machine learning methods can improve the decoding and interpretation of neurophysiological signals. For example, iBCIs require a seamless integration of two intelligent systems (i.e. the brain and algorithms to interpret neural activity) for improving performance and to maintain performance over longer periods of time. We will further focus on the latest efforts from the iBCI-CC User Priorities/Preferences Workgroup and their development of understanding the end-user journey from diagnosis to independent use of iBCIs. This includes an interactive discussion about how iBCIs can play a role in the end-user journey and how the integration of adaptive decoding of intentions can change that role. Overall, we aim to provide a summary of current approaches along the end-user journey, a greater understanding of the methods used for decoding, an interactive discussion about the intersection of ML, iBCIs, and the End-User experience. We also hope to interact with clinicians with varied expertise in neurological rehabilitation and how they can become involved in the future of iBCIs.

SPEAKERS:


Leigh Hochberg, MD, PhD


Ian Burkhart


DJ Seo, PhD


Karunesh Ganguly, MD, PhD

SCHEDULE:

11:00 – 11:10am: ***Introduction*** – Leigh Hochberg, MD, PhD

11:10 – 11:30am: ***End-User Journey Experience for people living with ALS & SCI*** – Ian Burkhart and DJ Seo, PhD

11:30 – 11:45am: ***Decoders to enable longterm stable control using electrocorticography*** – Karunesh Ganguly, MD, PhD

11:45am – 12:00pm: ***Discussion intersection of ML/AI and the End User experience*** – All

ASNR
AMERICAN SOCIETY OF
NEUROREHABILITATION

IN MEMORIAM

We pause to remember the members of our community who have passed away in the past year. Their contributions and presence will be missed.

Richard Lazar, MD

October 1954 - December 2024

ASNR President, 1996-98

Davetrina Seles Gadson, PhD

May 1982 - January 2025

ASNR Diversity Fellow, 2023-2025

FRIDAY D.E.I. OUTING

Friday, April 25, 2025 · 1:30pm & 2:30pm
Atlanta History Center · 130 W Paces Ferry Rd NW, Atlanta, Georgia

Join ASNR on Friday, April 25th for a private guided tour of the Atlanta History Center!

Tour Description:

This tour of artifacts throughout the museum tells the stories of notable African American figures, historic locations, and transformative events in the city's history. This tour includes information about people such as the Herndon Family and Mayor Maynard Jackson, places such as the Atlanta University Center and Auburn Ave., and events such as enslavement and the Civil War, the Washer Women's Strike of 1881, the 1906 race massacre, and the Civil Rights Movement. This tour is conversational in style and invites participants to ask questions of their guide as they explore artifacts and stories pertaining to Black Atlanta and how the city's history fits in the larger contexts of African American History, Georgia History, and U.S. History. The duration of this tour is one hour plus additional time for Q&A.

Times: Tours available at 1:30pm and 2:30pm

Cost: ASNR will pay the tour fee for the first 50 people to register (25 for each timeslot)

For questions, or to register, please see the Registration Desk.

Our goal is to help patients reach theirs.

To do that, we provide an exceptional rehabilitation experience by championing their progress, celebrating their success and working together to rebuild their lives with confidence.

Where a patient chooses to go for rehabilitation following a stroke, spinal cord injury, brain injury or other condition is the most important step toward their recovery.

California Rehabilitation INSTITUTE
A Cedars/UCLA Health Partnership

2070 Century Park East, Los Angeles, CA 90067
californiarehabinstitute.com

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California Rehabilitation INSTITUTE
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California Rehabilitation Institute is a 138-bed inpatient medical rehabilitation hospital located in Los Angeles, CA. Committed to providing an exceptional patient care experience that promotes healing and recovery in a compassionate environment, Cal Rehab offers highly specialized care, advanced treatment and leading-edge technologies that allow individuals to rebuild their lives following injury or illness. Nationally ranked by U.S. News and World Report, Cal Rehab's unparalleled scope of rehabilitative programs and services help patients overcome medical, physical, cognitive, vocational and social challenges after stroke, brain injury, spinal cord injury, amputation, neurologic disease, orthopedic injury and other conditions.

TIRR MEMORIAL HERMANN
Rehabilitation & Research

TIRR Memorial Hermann is a nationally recognized, acute inpatient rehabilitation hospital located in Houston, TX. TIRR is a center of excellence and model system for both brain (BI) and spinal cord injuries (SCI).

NATIONAL CENTER OF NM4R Neuromodulation for Rehabilitation
An NIH Medical Rehabilitation Research Resource Network Center at Medical University of South Carolina

The National Center of Neuromodulation for Rehabilitation (NC NM4R) supports researchers and clinicians who are currently working in the field of neuromodulation for rehabilitation and who are interested in gaining immediate knowledge and training in cutting edge and next generation NM4R applications. These applications allow us to study neuroplastic changes associated with brain stimulation and operant conditioning and help understand mechanisms of neuroplasticity and will help members develop new rehabilitation interventions.

MR3 Medical Rehabilitation Research Resource
NETWORK

The Medical Rehabilitation Research Resource (MR3) Network comprises six Rehabilitation Research Resource Centers that provide infrastructure and access to expertise, technologies, and resources to foster clinical and translational research in medical rehabilitation. MR3 Network centers offer expertise from the cell to whole body across the lifespan to implementation into practice with expertise in regenerative rehabilitation, neuromodulation, pediatric rehabilitation, technology for real-world assessment, and translation/ dissemination research.

Notes