ASNR AMERICAN SOCIETY OF NEUROREHABILITATION

AMERICAN SOCIETY OF NEUROREHABILITATION 2014 ANNUAL MEETING

Onsite Program

November 13, 2014 • Hyatt Regency Washington on Capitol Hill • Washington DC

Welcome to the 2014 ASNR Annual Meeting

On behalf of the American Society of Neurorehabilitation (ASNR), we are thrilled for you to join us for our Annual Meeting, held as a preconference satellite meeting of the Society for Neuroscience (SfN) in Washington DC, November 13, 2014. Our meeting provides a wonderful opportunity to gain exposure for your organization among Neurorehabilitation clinicians and researchers from all over North America and beyond. The meeting program will include groundbreaking research presentations, award lectures, and complete integration between basic science and clinical practice.

This meeting will consist of a morning plenary session, afternoon talks and a late-afternoon poster session. The plenary sessions will center around the timely topic of predicting variable phenotypic responses to neurorehabilitation and the afternoon talks are on the topics of imaging and neurophysiology. All of the sessions are meant to discuss methological and conceptual ideas applicable across several neurological disease entities.

Sincerely,

Albert Lo MD, PhD (Program Chair)

On Behalf of the Program Committee:
Thomas Carmichael, MD, PhD
Bruce Crosson, PhD, ABPP
Scott Frey, PhD
John Krakauer, MD, PhD
Jim Lynskey, PhD, PT
Krish Sathian, MD, PhD, FANA
Michael Selzer, MD, PhD
Keith Tansey, MD, PhD
Michael Weinrich, MD
George Wittenberg, MD, PhD
Steve Wolf, PhD, PT

Albert Lo, MD, PhD
2014 ASNR Program
Committee Chair (2013-2014)
Brown University
Providence Veteran Affairs Medical Center Providence, RI
Mount Sinai Rehabilitation Hospital, Saint Francis Hospital & Medical Center Hartford, CT

ASNR Mission Statement
The mission of the ASNR is to promote the medical and social wellbeing of persons with disabling neurological disorders, to advance training and research in the basic and clinical sciences that can lead to functional recovery of neurologically impaired persons, and to disseminate the knowledge of this research among professionals and the general public.

The ASNR promotes:

- Specialty training and identification of those with expertise in neurorehabilitation
- Professional and public education
- Basic science and clinical research in neurorehabilitation
- Communication and collaboration with people with neurological disorders and related organizations
- Mission of Neurorehabilitation Research

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Handouts

All attendees will receive a link to all available meeting handouts. The link will be sent from info@asnr.com. There will not be any hard copies of handouts made available unless provided by the speaker.

Abstracts

Abstract titles and presenters can be found on pages 15-21. Full text abstracts can be found online at www.asnr.com.

Annual Meeting Wifi

Complimentary wifi will be available in hotel lobby but unavailable in the Annual Meeting space. However, Attendees are able to purchase individual wifi access from the hotel.

Onsite ASNR Annual Meeting Survey

Please complete and return the Annual Meeting survey you received during check-in to the registration desk before you leave the meeting on Thursday. Your responses will prove crucial to the future success of ASNR. Thank you!

ASNR would like to thank the following Supporters for their financial support of these activities:

Thursday, November 13

TIME	TOPIC	LOCATION
7:00 am – 8:00 am	**REGISTRATION**	Regency Foyer
8:00 am – 8:45 am	Introduction and Presidential Oration **Cognitive Rehabilitation of Memory Deficits** Krish Sathian, MD, PhD, FANA *Emory University* Discussant: Leonardo Cohen, MD *National Institutes of Health*	Regency A
8:45 am – 10:15 am	**Cognitive Neuroplasticity in Neurological Dysfunction and Neurorehabilitation** Organized and moderated by: Krish Sathian, MD, PhD, FANA *Emory University* Speakers: **Translational Research, Spatial Neglect, and Prism Adaptation** A.M. Barrett, MD *Kessler Foundation* **A Behavioral Manipulation in Aphasia Treatment Engages Right Frontal Cortex and Improves Generalization** Bruce Crosson, PhD *Emory University* **Seizure Induced Neuroplasticity and Cognitive Network Reorganization in Epilepsy** Joseph Tracy, PhD *Thomas Jefferson University*	Regency A
10:15 am – 10:30 am	**BREAK**	Regency Foyer
10:30 am – 12:00 pm	**Plasticity in Sensorimotor Systems after Spinal Cord Injury: Towards Neurorehabilitation** Organized by Monica Perez, PT, PhD, *University of Pittsburgh* and Peter Ellaway, PhD *Imperial College London* Speakers: **Plasticity in the Corticospinal System after Spinal Cord Injury** Monica Perez, PT, PhD *University of Pittsburgh* **FES-enhanced Training on a Tele-Rehabilitation Workstation Improves Tetraplegic Hand Function** Arthur Prochazka, PhD *University of Alberta* **Recovery of Sensorimotor Function by Targeting Motor Cortex after Spinal Cord Injury** Peter Ellaway, PhD *Imperial College London* **Spinal Reflex Conditioning Can Trigger Widespread Beneficial Plasticity** Jonathan Wolpaw, MD *New York State Department of Health and State University of New York*	Regency A

Thursday, November 13

12:00 pm – 12:45 pm	**LUNCH** (on your own)	
12:45 pm – 2:15 pm	**The Importance of Dose in Stroke Rehabilitation** Organized and moderated by: Catherine Lang, PT, PhD *Washington University* Speakers: **How does dose of movement practice affect the brain?** Lara Boyd, PT, PhD *University of British Columbia* **How Much is More? Meta-analytic Approaches to Studying Dose in Rehabilitation** Keith Lohse, PhD *Auburn University* **How might we do more in research and clinical practice?** Catherine Lang, PT, PhD *Washington University*	Regency A
2:15 pm – 2:30 pm	**BREAK**	Regency Foyer
2:30 pm – 3:15 pm	ONCS Award Presentation and Lecture: **Are Sensitive Periods Critical to Improving Stroke Recovery?** Alexander Dromerick, MD *Georgetown University*	Regency A
3:15 pm – 4:00 pm	Viste Award Presentation and Lecture: **Translating the Science into Neurorehabilitation Practice: Challenges and Opportunities** Carolee Winstein, PhD, PT, FAPTA *University of Southern California*	Regency A
4:00 pm – 4:40 pm	Federal Clinical Research Opportunity Updates Stuart Hoffman, PhD Scientific Program Manager for Brain Injury, Rehabilitation Research and Development Service Senior Scientific Advisor for Brain Injury, Office of Research and Development *Veterans Affairs Rehabilitation Research & Development Service (VA RR&D)* **Federal Coordination for Traumatic Brain Injury Research: The National Research Action Plan, an Interagency Approach to Chronic Problems** Ralph Nitkin, PhD Acting Director, National Center for Medical Rehabilitation Research and Director, Biological Sciences and Career Development Program *National Center for Medical Rehabilitation Research (NCMRR)* **Support for Clinical Trials at the National Center for Medical Rehabilitation Research and the NIH**	Regency A

Thursday, November 13

4:40 pm – 5:30 pm	Open Discussion: Clinical Trails Research Network **Barriers to Multi-site Collaborations:** **A Case for Common Data Elements** Organized by Carolee Winstein, PhD, PT, FAPTA *University of Southern California* Panel: Prudence Plummer, PhD *University of North Carolina* Carolin Dohle, MD *Burke Rehabilitation & Research* Ronald Lazar, PhD *Columbia University*	Regency A
5:30 pm – 8:30 pm	ASNR Business Meeting followed by the Poster Viewing and Reception	Regency A
8:15 pm – 8:30 pm	Poster Awards Announcement	Regency A

Friday, November 14

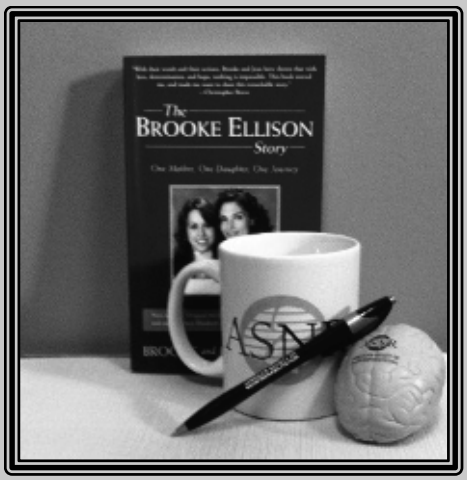
8:00 am – 7:00 pm	Translational and Computational Motor Control: From Theory to Neurorehabilitation Satellite Meeting of SfN (Please visit SfN website for details) John Krakauer, MD *Johns Hopkins Medicine* Maurice Smith, PhD, MD *Harvard School of Engineering and Applied Sciences*	Renaissance Washington, DC East Salon
7:30 pm	ASNR Education Foundation Dinner Kessler Foundation Neurorehabilitation Award Lecture **The Patient, The Person, The Professor** Brooke Ellison, PhD *An advocate for stem cell research and a testament to what can be achieved by the power of the human spirit.*	Embassy Suites Washington, DC Capitol Room C

ASNR Education Foundation Dinner
DATE: November 14, 2014
TIME: 7:30 pm
LOCATION: Embassy Suites Washington DC- Convention Center

PRELIMINARY SCHEDULE:

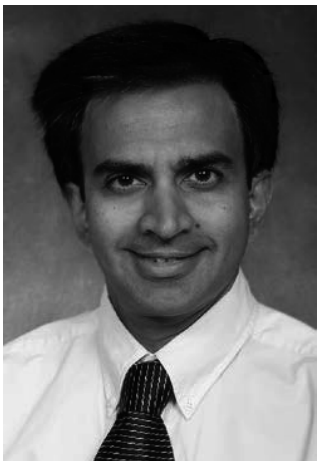
7:30 pm	Opening remarks: A.M. Barrett, MD
7:45 pm	Recognition of Award Winners and Fellows
8:00 pm	Kessler Foundation Neurorehabilitation Award Lecture: The Patient, The Person, The Professor Brooke Ellison, PhD

TICKETS: $100.00 per guest



DONATE TO THE ASNR FOUNDATION: Any donation amounts are welcome and appreciated. The first 10 donations in excess of $100.00 will receive a special donation gift bag including a signed copy of Dr. Ellison's book.

Session Moderators



Krish Sathian, MD, PhD, FANA
Emory University & Atlanta VAMC
Atlanta, GA
Cognitive Neuroplasticity in Neurological Dysfunction and Neurorebilitation

Albert Lo, MD, PhD
Brown University & Providence VAMC
Providence, RI
Plasticity in Sensorimotor Systems After Spinal Cord Injury: Towards Neurorehabilitation

Catherine Lang, PT, PhD
Washington University
Saint Louis, MO
The Importance of Dose in Stroke Rehabilitation

Thursday, November 13 8:45 am – 10:15 am

Cognitive Neuroplasticity in Neurological Dysfunction and Neurorehabilitation
Orgranized & Moderated by
Krish Sathian, MD, PhD, FANA

A.M. Barrett, MD
Kessler Foundation

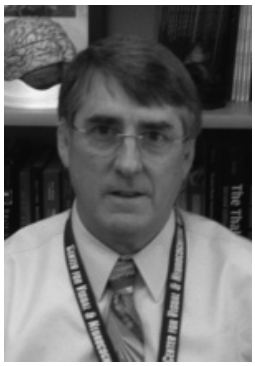
Translational Research, Spatial Neglect, and Prism Adaptation

Stroke survivors who cannot get out of bed without falling, cannot put on glasses or pants correctly, cannot resume their social and vocational roles, and cannot regain their functional freedom by reading accurately and driving, are all tremendously disabled by spatial neglect. The same disordered brain mechanisms that are fascinating in the laboratory, are vexing in the clinic: several obstacles block implementation of neglect rehabilitation. In this presentation, I will review how we might bridge knowledge gaps, and why routinely implementing prism adaptation might significantly improve stroke rehabilitation effectiveness. First, **the first six weeks after stroke is a critical period**, when a plan of care and long-term expectations are created, but rehabilitation lags in using **analytic methods** that can evaluate change in heterogenous groups. Second, US scientists have forgotten about **spatial-motor systems,** frequently abnormal after stroke and in spatial neglect, that influence real-world performance errors and respond to prism adaptation training. Lastly, we can all help to identify the priorities and assumptions that motivate clinicians to use poorly-supported treatments, so that we can help effect a paradigm change and increase true spatial recovery.

Thursday, November 13 8:45 am – 10:15 am

Cognitive Neuroplasticity in Neurological Dysfunction and Neurorehabilitation

Orgranized & Moderated by
Krish Sathian, MD, PhD, FANA *(continued)*



Bruce Crosson, MD
Emory University

A Behavioral Manipulation to Engage Right Frontal Mechanisms during Aphasia Treatment

An Intention Treatment for anomia was developed based upon two assumptions: (1) In moderate to severe aphasias, engaging right-hemisphere mechanisms will facilitate word finding. (2) Pairing left-hand movements with word-finding attempts will engage right frontal cortex. Research findings to date for this treatment will be discussed. Although the intention component (left-hand movement) has not always led to significantly greater improvement on trained words than control treatments, it has consistently shown generalization to untrained items that does not occur without the left-hand movement. The Intention Treatment also promotes generalization to word finding during discourse. Neuroimaging (fMRI) findings consistently indicate that the Intention Treatment re-lateralizes frontal language mechanisms toward the right hemisphere in both nonfluent and fluent aphasias. In nonfluent patients, the successful re-lateralization of frontal language mechanisms toward the right was associated with better treatment outcomes. However, for fluent aphasias the Intention Treatment appears to promote greater treatment gains by leveraging re-lateralization of posterior perisylvian functions. Theoretical considerations regarding the mechanism that promotes re-lateralization of language mechanisms will be discussed.

Seizure Induced Neuroplasticity and Cognitive Network Reorganization in Epilepsy

Joseph Tracy, PhD
Jefferson University

Epilepsy is a network disorder with properties that inherently generate neuroplasticity. Accordingly, even focal, lesional forms of the disorder initiate neuroplastic responses throughout large regions of cortex, disrupting a wide array of neurocognitive networks. I will focus on temporal lobe epilepsy, describing the cognitive reorganization emergent during the disease course, providing evidence from task-based functional magnetic resonance imaging (fMRI), resting-state functional connectivity, and diffusion tensor imaging for both intra- and inter-hemispheric shifts in cognitive representations. Factors that mediate change in seizure and cognitive network organization will be described, with a discussion of the neuroplastic responses that can emerge following a common treatment for the disease, i.e., anterior temporal lobectomy. I argue that only by understanding and measuring the potential for neuroplasticity will we be able to effectively predict cognitive outcomes in epilepsy, as it is these neuroplastic responses that govern the status of both neurocognitive and epileptogenic networks post-surgery. Multi-modal imaging is discussed as a means of estimating neuroplastic potential, delineating the potential cognitive mechanisms that might be available to serve recovery and good cognitive outcomes.

Thursday, November 13 10:30 am – 12:00 pm

Plasticity in Sensorimotor Systems after Spinal Cord Injury: Towards Neurorehabilitation

Orgranized by Monica Perez, PT, PhD
Moderated by Albert Lo, MD, PhD

This symposium was made possible in part by the generous support of Jali Medical Inc.

Jali Medical, Inc.

Monica Perez,
PT, PhD
University of Pittsburgh

Plasticity in the Corticospinal System after Spinal Cord Injury

The corticospinal tract is an important target for motor recovery after spinal cord injury (SCI) in humans. Using noninvasive electrophysiological techniques we have demonstrated the presence of plasticity in corticospinal projections targeting spinal motoneurons of muscles located close and at a distance from the injury site in individuals with chronic anatomically incomplete cervical SCI. We developed tailored protocols for precisely timing the arrival of descending and peripheral volleys at corticospinal-motoneuronal synapses of hand muscles. We found that the arrival of presynaptic volleys prior to motoneuron discharge enhanced corticospinal transmission and hand voluntary motor output. These findings are the first demonstration that spike timing-dependent plasticity of residual corticospinal-motoneuronal synapses provides a mechanism to improve motor function after SCI. Modulation of residual corticospinal connections may present therapeutic target for enhancing voluntary motor output in motor disorders affecting the corticospinal tract.

FES-enhanced Training on a Tele-Rehabilitation workstation improves Tetraplegic Hand Function

Several current and emerging technologies can enhance upper limb function in people with tetraplegia. These include spring-loaded mechanical orthoses and functional electrical stimulation (FES devices). Surface FES orthoses that augment hand grasp–release are useful adjuncts to exercise therapy, particularly in the subacute stages of recovery, and in participants with medium-level disability. Their use in activities of daily life is less common, but the development of convenient, low-cost wristlets that can be voluntarily triggered and used independently may change this in the coming years. Adherence to exercise programs is a well-known barrier, that can be encouraged by providing structured exercises in the guise of computer games performed on purpose-designed devices. Tele-rehabilitation is another adjunct in its early stages. The technological barriers have been largely overcome and demonstration projects have been successfully conducted, but regulatory and reimbursement hurdles remain. The costs/benefits ratio of all of these approaches will no doubt determine their eventual success or failure.

Arthur Prochazka, PhD
University of Alberta

Thursday, November 13 10:30 am – 12:00 pm

Plasticity in Sensorimotor Systems after Spinal Cord Injury: Towards Neurorehabilitation

Orgranized by Monica Perez, PT, PhD

Moderated by Albert Lo, MD, PhD *(continued)*

Peter Ellaway, PhD
Imperial College London

Recovery of Sensorimotor Function by Targeting the Motor Cortex after Spinal Cord Injury

Injury to the spinal cord may create sensory and motor loss or impairment that is likely to be permanent and can be severe enough to significantly impair quality of life. Natural recovery is limited and treatments to aid recovery have so far provided only modest functional benefits. Approaches to restoration of function have focused on surgery, drug administration, cell-based treatments, recovery of axonal transmission and rehabilitation or combinations of these approaches. This contribution will focus on the idea that rehabilitation may be induced with non-invasive electrical and magnetic stimulation directed at cortical and spinal cord plasticity by creating long term potentiation of neuronal circuits. It is anticipated that such plasticity inducing stimuli may provide attractive non-invasive approaches to promote beneficial changes in motor circuits that have been degraded by spinal cord injury. If residual circuits can be conditioned appropriately there could be the possibility of neurophysiological changes being accompanied by functional recovery.

Activity-dependent plasticity is a central neural mechanism that has the potential to contribute to the recovery of sensorimotor function after spinal cord injury (SCI). Recent studies have used noninvasive repetitive transcranial magnetic stimulation (TMS) in individuals with complete and incomplete SCI in the acute and chronic stages of para- and tetraplegia. The effects of repetitive TMS on aspects of sensorimotor function in paralyzed limbs and sphincter muscles will be discussed. The use of repeated transcranial magnetic stimulation and peripheral nerve electrical stimulation, alone or in combination, to elicit plasticity at residual corticospinal synaptic connections based on principles of spike-time-dependent synaptic plasticity will be presented.

In particular, results will be presented of a study of 18 subjects with incomplete SCI examining the effect of paired associative stimulation (pudendal nerve electrical stimulation and TMS of the motor cortex) on the pudendal anal reflex, as a surrogate marker for the urethral sphincter reflex response (pro-continence) and the anal sphincter motor evoked potential.

In summary, new methods for inducing and guiding plasticity in central neural pathways open novel possibilities for significantly improving neurorehabilitation after SCI, and thus enhancing functional recovery.

Thursday, November 13 10:30 am – 12:00 pm

Plasticity in Sensorimotor Systems after Spinal Cord Injury: Towards Neurorehabilitation

Orgranized by Monica Perez, PT, PhD

Moderated by Albert Lo, MD, PhD *(continued)*

Jonathan Wolpaw, MD
New York State Department of Health and State University of New York

Spinal Reflex Conditioning Can Trigger Widespread Beneficial Plasticity

People with incomplete spinal cord injury (SCI) frequently suffer motor disabilities due to spasticity and poor muscle control, even after conventional therapy. Abnormal spinal reflex activity often contributes to these problems. Operant conditioning of spinal reflexes, which can target plasticity to specific reflex pathways, can enhance recovery. In rats in which a right lateral column lesion had weakened right stance and produced an asymmetrical gait, up-conditioning of the right soleus H-reflex, which increased muscle spindle afferent excitation of soleus, strengthened right stance and eliminated the asymmetry. In people with hyperreflexia due to incomplete SCI, down-conditioning of the soleus H-reflex improved walking speed and symmetry. Furthermore, modulation of electromyographic activity during walking improved bilaterally, indicating that a protocol that targets plasticity to a specific pathway can trigger widespread plasticity that improves recovery far beyond that attributable to the change in the targeted pathway. These improvements were apparent to people in their daily lives. They reported walking faster and farther, and noted less spasticity and better balance.
Operant conditioning protocols could be developed to modify other spinal reflexes or corticospinal connections; and could be combined with other therapies to enhance recovery in people with SCI or other neuromuscular disorders. (Thompson & Wolpaw, Neuroscientist (2014) DOI: 10.1177/1073858414527541, 1-13.)

Thursday, November 13 12:45 pm – 2:15 pm

The Importance of Dose in Stroke Rehabilitation

Organized & Moderated by Catherine Lang, PT, PhD

Lara Boyd, PT, PhD
University of British Columbia

How Does Dose of Movement Practice Affect the Brain?

An abundance of evidence shows that skilled motor learning induces neuroplastic change in the brain of both healthy people and individuals with stroke. This talk will review these data and demonstrate how task-specificity, challenge, and progressive repetition of behavioral training induce neuroplastic change. Further, emerging evidence will be shown demonstrating the impact of dose on relative differences in white vs. gray matter neuroplastic change associated with the learning of novel motor skills.

The objectives of this talk are to understand how the dose of skilled motor practice impacts neuroplastic change in the brains of healthy people and individuals with stroke and to understand the effects of varying task-specificity, challenge and progressive repetition on neuroplasticity in the brain.

Thursday, November 13 12:45 pm – 2:15 pm

The Importance of Dose in Stroke Rehabilitation

Organized & Moderated by Catherine Lang, PT, PhD

(continued)

Keith Lohse, PhD
Auburn University

How Much is More?
Meta-analytic Approaches to Studying Dose in Rehabilitation

Previous reviews have emphasized the positive benefits of additional time in therapy for rehabilitation outcomes. This talk will focus on a recent meta-analysis evaluating the dose-response relationships across different interventions, time points post-stroke, and the amount of time scheduled for therapy. Further, we will discuss an on-going large-scale systematic review and synthesis, building a database from randomized controlled trials in therapy for adults with stroke.

The objectives of this talk is to present a new perspective, through meta-data, on how dose has influenced outcome in stroke clinical trials and to appreciate the importance of information architecture and new methods of research synthesis for rehabilitation science.

How Might We Do More in Research and Clinical Practice?

Given current healthcare delivery models and pressures, this last talk will delve into the realities of dosing in research and clinical practice. Discussion will include how we might design rehabilitation trials to learn more about the effects of dose, ways that we might increase dose within the constraints of the current service delivery models, i.e. do more with the time we have, and how findings with motor interventions can be extended to cognitive and language interventions.

The objectives of this talk are to understand how study designs might be optimized to learn more about dose in early phase trials and to identify barriers and solutions within one's own practice settings to increase the dose of practice for people currently undergoing neurorehabilitation.

Catherine Lang,
PT, PhD
Washington University

Thursday, November 13 2:30 pm – 3:15 pm **Outstanding Neurorehabilitation Clinician Scientist (ONCS) Presentation & Lecture**

Alexander Dromerick, MD
Georgetown University

Are Sensitive Periods Critical to Improving Stroke Recovery?

Substantial evidence supports the idea that after acute brain injury, there may be a biologically-determined sensitive or critical period of enhanced neural plasticity. During these periods, persons with stroke would be particularly responsive to activity-based therapies such as motor training. If sensitive periods exist, they should be detectable using clinical trial methods. Exploring the cellular and molecular bases for these periods would form a foundation for discovery of drugs that could enhance recovery.

Thursday, November 13 3:15 pm – 4:00 pm **Viste Award Presentation & Lecture**

Carolee Winstein, PhD, PT, FAPTA
University of Southern California

Translating the Science into Neurorehabilitation Practice: Challenges and Opportunities

There have been only a handful of successful translational trials in neurorehabilitation. This is true when 'successful' is defined as demonstrating superiority of one treatment or intervention over another—usually the comparison intervention is a form of standard care or practice or in some cases no care at all, as was the case for the EXCITE trial of constraint-induced movement therapy. A successful definitive clinical trial in neurorehabilitation is one that informs or changes clinical practice. But, there is another definition of successful that I will argue for in this lecture. Since the goal of outstanding clinical science is to advance knowledge and challenge our conceptual models, I propose that even when the superiority hypothesis is not supported, knowledge is advanced in important ways—ways that can stimulate new discoveries and understanding of the complex process of neurorehabilitation. I will use three stroke rehabilitation trials including the VA Robot trial, the NIH supported LEAPS locomotor trial and the industry-sponsored Everest direct cortical stimulation coupled with therapy trial as examples that highlight how knowledge can be advanced even when superiority of one intervention is not supported. Importantly, I will enumerate the challenges and opportunities these examples provide for future translational research in neurorehabilitation. Finally, I will suggest several exciting frontier areas of clinical research including: modulating the motor system by action observation, and patient-centered initiatives that engage attention and motivation to facilitate motor learning and the neurorehabilitation process.

Thursday, November 13 4:00 pm – 4:40 pm **Federal Clinical Research Opportunity Updates**

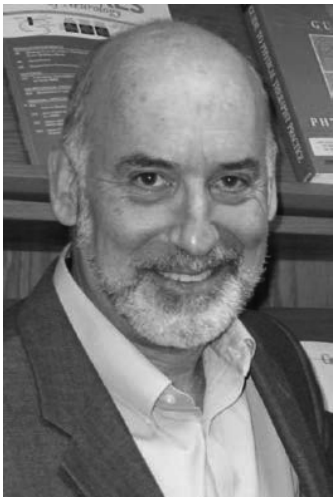
Stuart Hoffman, PhD
Veterans Affairs Rehabilitation Research & Development Service (VA RR&D)

Federal Coordination for Traumatic Brain Injury Research: The National Research Action Plan, an Interagency Approach to Chronic Problems

Since September 11, 2001, more than 2.5 million American service members have been deployed to Iraq and Afghanistan, and many others have been posted in a number of other dangerous regions around the world. Military service—especially in these regions—exposes service members to a variety of stressors, including sustained risk of and exposure to injury and death and an array of family pressures. As a Nation, we have a moral obligation to protect the well-being of veterans, service members and their families.

To improve prevention, diagnosis, and treatment of mental health conditions affecting veterans, service members, and military families, the President issued an Executive Order in 2012 directing Federal agencies to develop a coordinated National Research Action Plan. The Departments of Defense, Veterans Affairs, Health and Human Services, and Education have responded to the President's call with a wide-reaching plan to improve scientific understanding; provide effective treatment; and reduce occurrences of Post-Traumatic Stress Disorder, Traumatic Brain Injury (TBI), various co-occurring conditions, and suicide.

The NRAP outlines short, mid and long-term research and research management priorities as well as how the agencies will begin to address them. Issues to be addressed regarding TBI include development of a more precise classification system of TBI, identification of objective end points to improve the sensitivity of therapeutic trials, identification and organization of tissue repositories that can maintain both tissues and fluids for future investigations, efforts to improve patient reintegration into society, continued efforts to enhance the sharing of research data and investigation of means by which electronic medical records can be utilized for epidemiologic and clinical studies. While the partnering agencies had, in many cases, existing, and enduring lines of communication and coordination, this plan and its associated EO adds the concern and weight of the President to our efforts. It has also stimulated closer coordination between the neurotrauma and mental health fields which adds value to the efforts given the frequencies of traumatic and psychological co-morbidities.



Ralph Nitkin, PhD
National Center for Medical Rehabilitation Research (NCMRR)

Support for Clinical Trials at the National Center for Medical Rehabilitation Research and the NIH

The NCMRR is interested in supporting higher quality, more impactful clinical trials – which influence clinical practice and access to health-care resources. Better clinical trial design is a transcendent issue across the NIH, but even more significant in rehabilitation where we often apply combinational therapies and more long-term outcomes. Thus there are significant issues with respect to defining and operationalizing the 'active ingredient', optimizing dosing, appropriate outcome measures, heterogeneity and confounds, environmental factors, statistical analysis, and patient support. Some NIH research initiatives, infrastructure, and other opportunities will be described.

Thursday, November 13 4:40 pm – 5:30 pm **Open Discussion: Clinical Trials Research Network**

Organized by Carolee Winstein, PhD, PT, FAPTA

Barriers to Multi-site Collaborations: A Case for Common Data Elements

One of the many challenges to multi-site collaborations in neurorehabilitation, whether it is a retrospective chart review or a prospective project, is the heterogeneity of clinical assessment tools routinely used in the clinical setting. This variability in the kind of data that are routinely collected can present a problem for those seeking to collaborate by pooling those data for a particular diagnostic group of interest (e.g., stroke, PD). This prevalent challenge to multi-site collaborations makes a strong case for adopting a common set of data elements or CDEs. While this is an accepted and necessary aspect of multi-site RCTs, it is not common for clinical practice settings in rehabilitation. This interactive panel discussion will introduce the idea of CDEs, review several examples of CDE databases available online or in development, and provide guidelines for the selection of appropriate CDEs across the ICF domains of body structure/body functions, activity, and participation/quality of life most relevant for clinical research in nerurorehabilitation.

Who Needs Common Data Elements?
Carolee Winstein
PhD, PT, FAPTA
University of Southern California

CDE Databases -
What's Out There?
Prudence Plummer, PhD
University of North Carolina

Developing a CDE Database -
the Cornell Experience.
Carolin Dohle, MD
Burke Rehabilitation & Research

A Neuropsychological
Perspective on CDEs
Ronald Lazar, PhD
Columbia University

ASNR Clinical Research Network

ASNR is seeking to facilitate neurorehabilitation research projects that are low cost and easy to implement in clinical practice across multiple sites. The goal of this program is to enhance evidence-based clinical practice as well as to provide training opportunities for junior researchers to work with more experienced researchers. To this end, ASNR solicits proposals from investigators who wish to conduct either descriptive-epidemiological or interventional research that easily fits within normal clinical practice and can be conducted with minimal to no funding. ASNR will review these proposals and will provide the successful applicants with the infrastructure to identify collaborative sites for their project. More information on the benefits, application process, and review criteria is found below.

Why apply for this research opportunity when there is no funding attached?

Some of the general benefits for junior and senior investigators are the opportunity to collaborate and develop your research skills while at the same time, advance the field of Neurorehabilitation.

If you have a research interest, but know you do not have the patient population at your institution, this might be an opportunity to find appropriate sites for your clinical research ideas. For more information and to apply, go to www.asnr.com

Thursday, November 13 5:30pm – 8:30pm

Cognitive Rehabilitation

Poster 1: Effect of Prism Adaptation Treatment on Reading Performance in Right-Brain Stroke Survivors Peii Chen[1,2], Kimberly Ramos[1], Elizabeth E. Galletta[3]

Poster 2: Activity of the Action Observation Network with Lower Extremity Use in Chronic Stroke Participants
Panthea Heydari[1,4], Carolee Winstein[3,4], Lisa Aziz-Zadeh[2,4]

Poster 3: An iPod-based dual-task test for differentiating freezers and non-freezers in Parkinson's disease
Fernando Pereira[1], Taylor Chomiak[1], Nicole Meyer[1], Lesley Brown[2], Natalie de Bruin[2], Bin Hu[1]

Poster 4: Cognitive Processing Speed, Mood, and Fatigue Improvements in Persons with Multiple Sclerosis Treated with Dalfampridine
Jennifer A. Ruiz[1], Elizabeth W. Triche[1,2], Beth M. Anderson[1], Kayla M. Olson[1], Albert C. Lo[1,3]

Motor Rehabilitation

Poster 5: Reliability and validity of a new forward reach assessment tool in a sample of healthy controls
Jennifer A. Ruiz, PT, DPT[1], Kayla M. Olson[1], Albert C. Lo, MD, PHD[1,2]

Poster 6: A Pilot Randomized Trial Comparing Inter-session Scheduling of Biofeedback Results to Individuals with Chronic Pain: Influence on Psychological and Physical Function
Douglas Weeks, Anthony Whitney, Angelique Tindall, Gregory Carter

Poster 7: Interhemispheric interactions between axial and proximal arm muscle representations of the primary motor cortex
Loyda Jean-Charles[1,2], Jean-Francois Nepveu[1,2], Numa Dancause[1,2], Dorothy Barthélemy[1,2]

Poster 8: Attitudes of clinicians towards spasticity assessment
Andreanne K. Blanchette[1,3], Marika Demers[2,3], Kathleen Woo[2,3], Akash Shah[4], John Solomon[4], Mindy F. Levin[2,3]

Poster 9: Does task engagement level affect how we move?
Yi-An Chen, Yu-Chen Chung, Bokkyu Kim, Carolee Winstein

Poster 10: Remote Limb Ischemic Conditioning Enhances Motor Learning
Kendra Cherry-Allen, Catherine Lang, Jeff Gidday, Jin-Moo Lee

Poster 11: Overcoming hurdles towards maximally effective transcranial direct current stimulation
Pratik Chhatbar, Jan Aldrin Enabore, Robert Adams, Wayne Feng

Poster 12: Development Of A Simple App For Stepping Height Measurements During Rehabilitation Training In Parkinson's Disease
Taylor Chomiak, Fernando V Pereira, Kailie Luan, Nicole Meyer, Bin Hu

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 13: Repetitive transcranial magnetic stimulation to modulate cortical excitability after stroke: effect of participant characteristics
Yu-Chen Chung[1], Liya Yin[1], Carolee Winstein[1,2], Nerses Sanossian[2], Brent Liu[3], Beth Fisher[1,2]

Poster 14: Combining Theta Burst Stimulation with Reaching Practice in Individuals with Severe Post-Stroke Arm Impairment: Two Case Studies
Rachael Harrington[2,3], Evan Chan[3], Sambit Mohaptra[2,3], Kelly Michaelis[2], Michelle Harris-Love[1,3]

Poster 15: Using dual-task paradigms to detect motor learning effects in older adults after task-specific training: A feasibility study
Caitlin Hengge[1], Jacob Pierce[1], Sydney Schaefer[1,2]

Poster 16: Enhancing activation of object use information with transcranial direct current stimulation
Steven Jax, Laurel Buxbaum

Poster 17: Enhancing the mirror illusion with transcranial direct current stimulation
Steven Jax[1], Diana Rosa-Leyra[1], H. Branch Coslett[2]

Poster 18: Manual Asymmetry in motor skill learning
Robert McGrath, Shailesh Kantak

Poster 19: Bimanual coordination for functional tasks in patients post-stroke
Shailesh Kantak, Nazaneen Zahedi, Robert McGrath

Poster 20: MEG-based functional connectivity changes with motor imagery training: evidence for motor imagery as an acquired skill
Sarah Kraeutner[1], Tim Bardouille[2], Shaun Boe[1]

Poster 21: Cortical patterns and functional recovery in chronic stroke patients by functional electrical stimulation
Masafumi Kubota[1], Osamu Yamamura[2], Tomoko Kamisawa[2], Chiaki Igarashi[1], Yudai Watabe[1], Seiichiro Shimada[1], Tetsuya Tsujikawa[3], Hidehiko Okazawa[3], Ryu Kato[4], Hiroshi Yokoi[5], Kenzo Uchida[6], Hisatoshi Baba[6]

Poster 22: The Use of Body-Machine Interfaces to Examine Developmental Change in Motor Skill Acquisiton
Mei-Hua Lee[1], Ali Farshchiansadegh[2]

Poster 23: Dissociating the mechanisms of savings and anterograde interference
Li-Ann Leow[1], Geoff Hammond[4], Aymar de Rugy[2,3]

Poster 24: Reduced Intracortical Inhibition is Associated with Bimanual Common and Dual Goal Tasks
Wan-wen Liao[1], Shailesh Kantak[4], Joseph Barton[2,3], Jill Whitall[1], Sandra McCombe Waller[1]

Poster 25: Cortico-cortical coupling during bilateral forces
Jinyi Long, Monica A. Perez

Poster 26: Effects of Short-Term Cycling Exercise on Functional Measures of Aging Related Changes in Upper Extremity Function
Keith McGregor[1,2], Joe Nocera[1,2], Bruce Crosson[1,2], Andrew Butler[1,3]

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 27: Home-based Mirror Therapy for Rehabilitation of Hemiparetic Lower Limb Post-Stroke: A Pilot Study
Andrew Packel[1], Rami Hamzey[2], Steven Jax[1], Erin Vasudevan[2]

Poster 28: Diffusion tensor tractography study of sensorimotor pathways in unilateral hand amputees
Huiling Peng, Carmen Cirstea, Kenneth Valyear, Scott Frey

Poster 29: Classification of Normal and Abnormal Gait in Young Children Based on Foot Pressure Data: Towards Remote Monitoring of Medical Interventions
Paola Pergami, Wenbin Chen, Keegan Guffey, Guodong Guo

Poster 30: Severe spondylosis presenting with anterior cervical osteophytes induced respiratory arrest and incomplete quadriplegia secondary to cervical spondylotic myelopathy: A rare case report
Charlotte Pham[1], Nelson Wong[2], Daniel Perri[2], Inocencia CARRANO[2], Rayanah Kawan[1]

Poster 31: **Skill acquisition with the non-dominant hand and associated changes in functional connectivity between sensorimotor hand representations.**
Benjamin Philip, Scott Frey

Poster 32: Predicting variability of distal muscle recruitment curves in stroke using diffusion tensor imaging (DTI)
Kelsey Potter-Baker[1], Nicole Varnerin[1], David Cunningham[1,2], Sarah Roelle[1], Vishwanath Sankarasubramanian[1], Andre Machado[1], Adriana Conforto[3], Ela Plow[1]

Poster 33: Increasing Repertoire of Finger Movements to Improve Hand Dexterity in Stroke
Rajiv Ranganathan

Poster 34: Efficacy and feasibility of functional upper extremity task-specific training for older adults
Sydney Schaefer[1,2], Leland Dibble[2], Kevin Duff[2]

Poster 35: Learning, retention, and inter-limb transfer of a novel gait training paradigm
Manik Tetarbe[1], Lauren Letherwood[1], Margaret Ehinger[1], Rajiv Ranganathan[2], Chandramouli Krishnan[1]

Poster 36: Use of inertial sensors for determining rate of kicking in infants
Ivan Trujillo-Priego, Beth Smith

Poster 37: Capturing Upper Extremity Function with Acceleration Variability Metrics
M.A. Urbin, Kimberly Waddell, Ryan Bailey, Catherine Lang

Poster 38: Amputation-related changes in inter-hemispheric interactions are reversible through transplantation of the human hand
Kenneth Valyear[1,2], Benjamin Philip[1,2], Christina Kaufman[3], Joseph Kutz[3], Scott Frey[1,2]

Poster 39: Restoration of cortical blood flow precedes spontaneous forelimb recovery after cortical infarcts in mice
Daniel Woodie[1], Shams Kazmi[1], Min Fu[2], Anh Tang[1], Andrew Dunn[1], Theresa Jones[1]

Poster 40: Forearm muscle activation in children with cerebral palsy and typically developing children during massed practice through adapted video game play
Yi-Ning Wu[1], Veton Saliu[2], Noah Donoghue[2], Karen Kerman[3,2]

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 41: Effect of burst stimulation by high frequency biphasic square-wave pulse on cortical perfusion after stroke: A pilot study
Osamu Yamamura[1], Tomoko Kamisawa[1], Masafumi Kubota[2], Chiaki Igarashi[2], Ryu Kato[3], Hiroshi Yokoi[4], Tetsuya Tsujikawa[5], Hidehiko Okazawa[5], Yudai Watabe[2], Seiichiro Shimada[2], Kenzo Uchida[6], Hisatoshi Baba[6], Tadanori Hamano[1], Yasunari Nakamoto[1]

Poster 42: Paradoxical motor recovery from a first stroke by re-opening a sensitive period with a second stroke
Steven Zeiler[1], Robert Hubbard[1], Ellen Gibson[1], Kwan Ng[2], Tony Zheng[1], Richard O'Brien[3], John Krakauer[1]

Poster 43: Clinical Implementation of an iPod-based Gait Assessment System for In-patient Stroke and Brain Injury Rehabilitation
Pu Zhang[1,2], Xiaoping Yun[1,2], Bin Hu[3]

Poster 44: Distinctive Impairment Profiles between Parkinsonian and Hemiplegic Gait Based on 6 Minute Walking and Dual Task Working Memory Tests
Pu Zhang[1,2], Xiaoping Yun[1,2], Fernando V. Pereira[3], Taylor Chomiak[3], Bin Hu[3]

Neural Repair

Poster 45: Improved sensation in a replanted or transplanted hand
Nathan A. Baune[1], Benjamin A. Philip[1], Christina Kaufman[2], Joseph Kutz[2], Scott H. Frey[1]

Poster 46: Spectroscopic evidence for lower neuronal metabolism and time-dependent increases in inhibition within the former sensorimotor hand territory of chronic unilateral amputees
Carmen Cirstea, Huiling Peng, Scott Frey

Poster 47: Facilitating supplementary motor area using near-infrared spectroscopy mediated neurofeedback improves postural stability but not hand dexterity
Hiroaki Fujimoto[1,2], Masahito Mihara[1,2], Noriaki Hattori[1], Megumi Hatakenaka[1], Hajime Yagura[1], Teiji Kawano[1], Ichiro Miyai[1], Hideki Mochizuki[2]

Poster 48: Reliability of Ipsilateral Silent Period to Measure Interhemispheric Inhibition: Preliminary Results in Non-disabled Young Adults
Yi-Ling Kuo, Clarisa Martinez, Tobin Dubuc, Carolee Winstein, Nicolas Schweighofer, Kornelia Kulig, Beth Fisher

Poster 49: Transcranial direct stimulation: modulating functional connectivity across pain networks
V Sankarasubramanian, D Cunningham, S Roelle, K Potter-Baker, E Beall, A Machado, E Plow

Poster 50: RhoA Expression in Lamprey Brain Neurons After Spinal Cord Injury
Guixin Zhang[1,2], Jianli Hu[1,2], William Rodemer[1,2], Michael Selzer[1,2]

Poster 51: Genotyping of brain-derived neurotrophic factor predicts response to single-pulse transcranial magnetic stimulation at rest
Priyanka P. Shah[1], Felix Gervits[1,2], Olufunsho Faseyitan[1,2], Falk W. Lohoff[3], Roy H. Hamilton[1,2]

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 52: Capabilities of the neurorehabilitation are under evaluated. A world wide stigma
Karim Tawfik

Poster 53: Longitudinal imaging of thalamocortical projections after stroke
Kelly Tennant, Stephanie Taylor, Akram Zamani, Craig Brown

SCI

Poster 54: Transcutaneous spinal cord stimulation to modulate spinal reflex excitability motor output after SCI
Brad Farrell[1], Joy Bruce[1], William B. McKay[1], Keith Tansey[2]
[1]Shepherd Center, Atlanta, GA, USA, [2]Emory University, Atlanta, GA, USA, [3]Atlanta VA Medical Center, Atlanta, GA, USA

Poster 55: Impaired Modulation of Corticospinal Drive before Movement Onset after Spinal Cord injury
Paolo Federico, Monica A. Perez

Poster 56: Cardiovascular responses to cutaneous nociceptive input after cervical spinal cord injury: role of pain afferent types and their plasticity
Hyun Joon Lee[1], Jumi Chung[1], Keith E. Tansey[1,2]

Poster 57: Effect of daily acute intermittent hypoxia on hand function in persons with incomplete cervical spinal cord injury
Randy Trumbower[1,2], Victoria Stahl[1], Heather Hayes[1]

Stroke

Poster 58: Impairments and Demographics Associated with Lateropulsion after Stroke: A Logistic Regression Analysis
Suzanne R. Babyar[1,2], Margaret G.E. Peterson[3], Krupa Daniel[1], Michael Reding[1]

Poster 59: Robot-assisted hand exercise compared with conventional exercise therapy after ischemic stroke: A pilot study
Lauri Bishop[1], Joel Stein[1], Gudrun Schoenherr[2], Christine Chen[1], Dawn Nilsen[1], Ronny Beer[2], Raimund Helbok[2]

Poster 60: Neurally dissociable information-processing components of reading deficits in subacute stroke
Olga Boukrina[1], E.J. Alexander[1], A.M. Barrett[2,3], W.W. Graves[1]

Poster 61: Proportional recovery of the upper limb after stroke depends on corticospinal tract integrity and not therapy
Winston Byblow, Cathy Stinear

Poster 62: Interhemispheric imbalance of primary motor cortex excitability during spontaneous recovery after stroke
Winston Byblow[1], Cathy Stinear[1], Matthew Petoe[2]

Poster 63: Does Increasing Progenitor Cell Survival Improve Stroke Recovery?
Maheen Ceizar

Poster 64: Spatial bias, the superior colliculus, and prism adaptation
Amit Chaudhari[1,2], A.M. Barrett[1,2]

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 65: Stroke subtype and motor impairment influence contralesional excitability
Mar Cortes[1,2], Avrielle Rykman[1], Gary Thickbroom[3], Bruce Volpe[4], Felipe Fregni[5], Hermano Krebs[6], Alvaro Pascual-Leone[7], Dylan Edwards[1,2]

Poster 66: Putting transcranial magnetic stimulation, diffusion tensor imaging and functional MRI to the test: A study of interhemispheric imbalance in chronic stroke
David Cunningham[1,2], Andre Machado[1], Daniel Janini[1], Nicole Varnerin[1], Corin Bonnett[1], Sarah Roelle[1], Guang Yue[3], Stephen Jones[1], Mark Lowe[1], Erik Beall[1], Ken Sakaie[1], Ela Plow[1]

Poster 67: Positive dose response relationship for upper limb rehabilitation after stroke delivered unsupervised at home using the video game Circus Challenge
Janet Eyre, Graham Morgan, Charlotte Lambden, Martin Smith, Craig Sharp, Javier Serradilla, Jian Shi

Poster 68: An Algorithm Assessing Upper Limb Function After Stroke From Action Video Gameplay For Remote Monitoring Of Home Based Rehabilitation: Validity And Sensitivity To Change
Jian Shi, Javier Serradilla, Yafeng Cheng, Charlotte Lambden, Graham Morgan, Janet Eyre

Poster 69: The impact of metabolic syndrome on cortical microvasculature - form and function
Mariana Gomez-Smith[2,1], Carine Nguemeni[3,1], Matthew Jeffers[3,1], Adrienne Dorr[4], Bojana Stefanovic[4,5], Dale Corbett[1,3]

Poster 70: Use of Liquid Consistency Modification (LCM) and Augmented Hydration (AH) Orders for dysphagic patients following stroke
Holly Goroff, Lauren Herzog, Roseann Cardi, Mike Reding

Poster 71: Effects of movement duration on use of the affected limb in individuals post-stroke
Sujin Kim, Hyeshin Park, Carolee Winstein, Nicolas Schweighofer

Poster 72: Voxel-based lesion symptom mapping of factors related to language deficits after stroke
Elizabeth Lacey[1,2], Laura Skipper[1], Shihui Xing[1,3], Xiong Jiang[1], Mackenzie Fama[1], Peter Turkeltaub[1,2]

Poster 73: The Functional Role of Adult Neurogenesis in Promoting Stroke Receovery
Karah Lee[1], Anthony Carter[1,2], Véronique LeBlanc[1], Matthew Jeffers[1], Heather Cameron[3], Dale Corbett[1,2], Diane Lagace[1]

Poster 74: Influence of depression and cognitive deficits on use of feedback for upper limb recovery in chronic stroke
Mindy F. Levin[1,3], Sandeep K. Subramanian[2,3], Gevorg Chilingaryan[1,3], Heidi Sveistrup[4]

Poster 75: Vitamin D Levels and Stroke Severity in the Acute Inpatient Rehabilitation Setting
Matthew Magruder[1,2], Jennie Valles[2], Mery Elashvili[2], Carolin Dohle[2]

Poster 76: Can inertial sensors characterize treatment-induced skill acquisition in chronic stroke?
Clarisa Martinez, Helen Bacon, James Finley, Nicolas Schweighofer, Carolee Winstein

Poster 77: Effects of task-oriented Exoskeleton Robotic Hand Training on Motor Function Recovery in Chronic Stroke: a six month follow-up study
Corinna Ockenfeld, Raymond Kai-yu Tong, Evan Susanto, Sze-Kit Ho, Xiao-ling Hu

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Thursday, November 13 5:30pm – 8:30pm *(continued)*

Poster 78: Improved spasticity correlates with change in contralesional cortical thickness, following upper limb motor therapy
Svetlana Pundik[1,2], Margaret Skelly[2], Jessica McCabe[2], Randy Karim[2], Aleka Scoco[1], Janis Daly[3]

Poster 79: Changes of Motor Recovery in Chronic Stroke Patients
Álvaro Rodríguez[1], Edicson Ruiz[1], Jorge Díaz[1,3], Fernando Ortíz[1,2]

Poster 80: Combination of transcranial magnetic stimulation, botulinum toxin A and intensive occupational therapy facilitate functional recovery of stroke patients
Risa Seki[1], Kiyomi Mineoka[1], Tomie Iyanaga[1], Hirotake Hirata[1], Isao Inoue[1], Atsushi Doi[2]

Poster 81: Heart rate variability is associated with upper extremity recovery after stroke
Amit Sethi, Clifton Callaway, Ervin Sejdic, Lauren Terhorst, Elizabeth Skidmore

Poster 82: Interhemispheric frontal resting connectivity increases in post-stroke aphasia and is associated with worse performance
Laura Skipper[1], Elizabeth Lacey[1,2], Shihui Xing[1], Alexa Desko[1], Mackenzie Fama[1], Xiong Jiang[1], Peter Turkeltaub[1,2]

Poster 83: Multimodal predictors of rehabilitation related recovery in stroke
Nicole Varnerin, David Cunningham, Sarah Roelle, Kelsey Potter-Baker, Vishwanath Sankarasubramanian, Ken Sakaie, Erik Beall, Andre Machado, Ela Plow

Poster 84: Aphasia severity relates to right supramarginal gyrus grey matter volume after accounting for lesion-related factors in chronic stroke
Shihui Xing[1,3], Elizabeth H Lacey[1,2], Laura M Skipper[1], Xiong Jiang[1], Mackenzie E Fama[1], Peter E Turkeltaub[1,2]

TBI

Poster 85: Recovery of Life Role Activities and Underlying Impairment Gains In Response to Comprehensive, Integrated, Milieu Intervention for TBI Survivors
Janis Daly[1,2], Jessica McCabe[3], Stephanie Pudlik[2], Richard Burdsall[3], Timothy Leslie[2], Helen Emery[2], Carolyn Hanson[2]

Poster 86: Sensory processing and sensory augmentation for balance control in chronic post-concussive syndrome
Laurie King, Martina Mancini, Robert Peterka

Poster 87: Educate, Train, Treat, Track: Bringing State of the Art Care to our Military with Traumatic Brain Injury
Stephanie Maxfield-Panker[1], Tara Cozzarelli[1], Lynne Lowe[4,1], Mary Radomski[3,1], Karen McCulloch[2,1]

Poster 88: **Creatine Monohydrate as a neuroprotective supplement for mild traumatic brain injury**
Clare Turner, Winston Byblow, Suzanne Barker-Collo, Robert Kydd, Nicholas Gant

Poster 89: Assessing Motor Performance Following mTBIin Military Service Members Using Body Worn Intertial Sensors
Roger Yu, Karen McCulloch, Oleg Favorov, Richard Goldberg

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Friday, November 14 | 7:30 pm | **ASNR Education Foundation Dinner** *(Ticketed Event)*

The ASNR Education Foundation Dinner is made possible by the Kessler Foundation

The American Society of Neurorehabilitation Research and Education Foundation (ASNREF) was developed as a not-for-profit tax-exempt endowment fund to support research and education in neurorehabilitation. The Foundation was established in honor of Fletcher McDowell, MD, Labe Scheinberg, MD, and Norman Namerow, MD.

Fletcher McDowell, MD focused on the care and recovery of patients following stroke. Labe Scheinberg, MD established the first multidisciplinary Multiple Sclerosis care clinic and advocated for a similar approach at other MS clinics. Norman Namerow, MD was the primary advocate for multidisciplinary care of patients with traumatic brain injury. These three individuals actively lobbied within the American Academy of Neurology, and the American Neurologic Association to recruit additional support from within the field of Neurology. Their efforts led to creation of the American Academy of Neurology Section on Neurorehabilitation in 1985, and eventually to the creation of the American Society of Neurorehabilitation in 1990.

The Neurorehabilitation Research and Education Fund is a vehicle for perpetuating goals of applying neuroscience to neurorehabilitation. We solicit donations from our physician and allied health professional colleagues, as well as from patients and family members who would like to support neurorehabilitation research and education.

The Foundation is a non-profit endowment fund established to support neurorehabilitation research and education. It is with these contributions that the Foundation will continue to flourish; we thank you for your continued support.

To donate to the Foundation, visit www.asnr.com or pick up a donation form at the registration desk during the Annual Meeting.

KESSLER FOUNDATION NEUROREHABILITATION AWARD

The American Society of Neurorehabilitation Education Foundation grants this award to an individual who has made an outstanding contribution to social and public awareness of Neurorehabilitation. Recipients may be politicians, policymakers, advocates, or other leaders.

2014 Award Recipient

Brooke M. Ellison, PhD

The Patient, The Person, The Professor

(see program insert for more information)

ASNR Education Foundation Dinner Program

7:30 pm	Opening Remarks: *AM Barrett, MD*
7:45 pm	ASNR Award Winners and Fellows Recognized
8:00 pm	Kessler Award Lecture: *Brooke Ellison, PhD*

Financial Disclosures

Speaker: A.M. Barrett, MD
Commercial Interest: SPR therapeutics
Role: PI

Speaker & Moderator: Lara Boyd, PT, PhD
Commercial Interest: None

Speaker: Bruce Crosson, MD
Commercial Interest: None

Speaker: Carolin Dohle, MD
Commercial Interest: None

Speaker: Peter Ellaway, PhD
Commercial Interest: None

Speaker: Stuart Hoffman, PhD
Commercial Interest: Progesterone for acute moderate to severe brain injury
Role: co-inventor

Speaker: Catherine Lang, PT, PhD
Commercial Interest: AOTA Press Inc.
Role: Authorship

Speaker: Ronald M. Lazar, PhD
Commercial Interest: Claret Medical, Inc.
Role: Advisory Committee/Core Laboratory

Moderator: Albert Lo, MD, PhD
Commercial Interest: Department of Veterans Affairs, National Multiple Sclerosis Society and ACORDA Therapeutics
Role: Grant Recipient and advisory panel member

Speaker: Keith Lohse, PhD
Commercial Interest: None

Speaker: Ralph Nitkin, PhD
Commercial Interest: None

Speaker: Monica Perez, PT, PhD
Commercial Interest: None

Speaker: Prudence Plummer, PhD
Commercial Interest: None

Speaker: Arthur Prochazka, PhD
Commercial Interest: Rehabtronics Inc.
Role: Consulting, Board Membership

Moderator: Krish Sathian, MD, PhD, FANA
Commercial Interest: None

Speaker: Joseph Tracy, PhD
Commercial Interest: None

Speaker: Jonathan Wolpaw, MD
Commercial Interest: None

Speaker: Carolee Winstein, PhD, PT, FAPTA
Commercial Interest: None

BENEFITS of ASNR MEMBERSHIP

In 1990, the ASNR was founded by neurorehabilitation specialists from different fields who recognized the need to be united in one organization with the single purpose of fostering excellence in neurorehabilitation research and practice. Over the years, the society has continued to foster dialogue between disciplines at our annual meetings, our regional symposia and through our internationally recognized journal, *Neurorehabilitation and Neural Repair*. ASNR subcommittees focus on promotion of common research and development interests, patient advocacy and fundraising for further growth and support of the organization.

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- Unique education opportunities through the annual meeting and workshops

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By joining the listserv, you will be able to communicate with clinicians and neuroscientists interested in neurorehabilitation. You can ask questions of other members with diverse backgrounds and viewpoints, give your input on issues of interest to you and learn by monitoring threads of responses generated by others. The listserv can be used to announce new programs, invite comments regarding new projects, even invite others to join you in collaborative efforts.

It is very easy to become a member and it is free. All you need to do is visit the ASNR website and complete the **List Serv Request** form.

Please join with us to make this effort successful. Please ask others who are involved in these activities to join. The greater the participation, the more likely the listserv will be of value to all of the members.

NEUROREHABILITATION AND NEURAL REPAIR

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Neurorehabilitation & Neural Repair offers neurologists, neurosurgeons, physiatrists, rehabilitation nurses, discharge planners, social workers, basic scientists working in neural regeneration and plasticity, and physical, occupational, and speech therapists innovative and reliable reports relevant to functional recovery from neural injury and long term neurologic care. The journal's unique focus is evidence-based basic and clinical practice and research.

NNR deals with the management and fundamental mechanisms of functional recovery from conditions such as stroke, multiple sclerosis, cerebral palsy, Parkinson's disease and other movement disorders, Alzheimer's disease and dementia, traumatic and acquired brain injuries and related secondary conditions, spinal cord injuries, and peripheral nerve injuries.

Some of the key topics covered in recent issues include cortical remodeling after stroke, traumatic brain injury or spinal cord injury studied by transcranial magnetic stimulation and functional magnetic resonance imaging, mechanisms of sprouting and regeneration, development of cell lines for transplantation and trophic factor replacement strategies to promote functional recovery in human patients, multidisciplinary management of neurologic disease, bioengineering and assistive devices used in the management of neurologic impairment or pain syndromes, pharmacological management of multiple sclerosis, pharmacology of motor recovery, cognitive rehabilitation, and design of randomized multicenter trials in neurorehabilitation.

The journal carries articles designed to appeal to a variety of audiences: clinical practice, research, brief communications, case reports, reviews, and media reviews.

Translational and Computational Motor Control: From Theory to Neurorehabilitation

Be sure to attend the Translational and computational motor control (TCMC) satellite symposium on Friday, November 14 at the Renaissance Washington, DC Downtown Hotel. This will be an exciting day of presentations with a greater focus on the neuroscience of motor neuroehabilitation with competively selected presentations from post-doctoral fellows and graduate students. The goal is to bring experimental and theoretical perspectives, pure and applied work, together in a single day session to promote inter-disciplinary thinking. Mark your calendar and plan to attend! Preregistration is not required

Date:
Friday, November 14, 2014

Location:
Renaissance Washington, DC Downtown Hotel
999 Ninth Street NW
Washington, DC 20001

Course Directors:
John Krakauer, MD
Maurice Smith, MD, PhD

Held in conjunction with the Society for Neuroscience 44th Annual Meeting

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