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Name of Organizer: A.M. Barrett, MD

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I am a current member of the ASNR (Symposium organizers must be ASNR members): Yes

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Title of Symposium: "Spatial neglect research to advance translational stroke rehabilitation."

Description of Submitted Symposium (please limit to 2000 characters): Elucidating the mechanisms of the fascinating and tremendously disabling post-stroke disorder, spatial neglect, can uniquely advance recovery and rehabilitation science in general, but little US funding supports this work. In this symposium, authorities in brain-behavior relationships after stroke fire enthusiasm for spatial neglect research by describing how other areas of stroke recovery could be completely transformed by more information on spatial cognition. The plan includes two non-member speakers: I previously reviewed with Dr. Carmichael. 1.Spatial neglect research builds systems-level knowledge about diaschisis and recovery (Fink) Kinsbourne hypothesized that spatial neglect reflects the "disinhibited" contribution to clinical impairment of the intact hemisphere in spatial processing as it is no longer inhibited by the damaged, underactive right hemisphere. This concept should extend beyond disturbed spatial cognition. We investigated how cerebral networks reorganize functional anatomy to compensate for both the lesion itself and remote effects (diaschisis). Functional neuroimaging data enables us to the contribution of individual brain areas and also brain systems to recovery of function, and studying the effect of transcranial direct current stimulation (tDCS)or transcranial magnetic stimulation (TMS) on cortical reorganization and recovery provides insights into how to target pathological network configurations associated with incomplete recovery in other cognitive domains.d recovery 2. Neuromodulation in Aphasia and Spatial Neglect: Two Sides of the Same Interhemispheric Coin? (Hamilton; abstract below) 3. Spatial neglect research can advance recovery of community mobility (Plummer, abstract below) 4. Spatial neglect as a model for treatment of attention disorders (Vuilleumier, Patrik, abstract below)

Length of time required for symposium?: 90 minutes

Additional Presenters (Limited to 4 additional presenters, list full name and email address) Please Note: Any Non-member speakers must receive prior approval from the Program Chair.: Fink, Gereon R. [G.R.Fink@fz-juelich.de] Hamilton, Roy [Roy.Hamilton@uphs.upenn.edu] The relevance of interactions between damaged and non-damaged hemispheres of the brain is a common conceptual thread linking aphasia and spatial neglect. Here we will discuss the role the notion of interhemispheric inhibition played in the field of aphasia recovery, specifically re: therapeutic applications of noninvasive brain stimulation

(TMS, tDCS). We will subsequently explore how noninvasive brain stimulation techniques reveal both the strengths and weaknesses of the interhemispheric inhibition model in aphasia, and how characterizing hemispheric interactions in neglect could address the model's weaknesses. We will also consider whether right hemisphere inhibitory stimulation, administered in aphasia studies, affects spatial processing after stroke. Finally, we will look at the use of noninvasive brain stimulation in patients with developmental and degenerative aphasia, and speculate about whether these technologies could have similar future applications in spatial neglect. Plummer, Prudence [pplummer@email.unc.edu] Walking in the real world involves continuous navigation and awareness of the surrounding environment. Dual-task walking, which is believed to be a more authentic representation of community ambulation than undistracted clinic-based gait assessments, is considered to be mainly under executive control. However, the contribution of spatial processing to community mobility deficits after stroke cannot be ignored. Mechanistic research on spatial neglect may advance knowledge of mobility performance in the real world. Vuilleumier, Patrik [patrik.vuilleumier@unige.ch]Converging results from neuropsychological and neuroimaging studies of spatial neglect after stroke have highlighted brain mechanisms of attention, revealing how sensory processing and awareness are governed by top-down modulatory signals from fronto-parietal networks. Such knowledge can now be harne

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What is the role of each presenter?: Each presenter will present a 20-minute lecture as listed under the symposium. Barrett will then facilitate a 30 minute panel discussion and audience Q/A with all the speakers and audience on the advantages for theoretical and implementation research of increased knowledge about spatial systems.

Objective 1: Learners will be able to discuss contrasting theories of how network interactions contribute to spatial cognition and to other cognitive and motor disorders.

Objective 2: Learners will become familiar with several hypotheses about the mechanisms explaining neuromodulatory effects of non-invasive electrical and magnetic brain stimulation.

Objective 3: Learners will understand the literature supporting intimate interactions of spatial and attentional function, and how sensory-spatial thinking informs purposive action.

Target Audience: Neurologist Neuroscientist Allied health professional Psychologist Other rehabilitation professional

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Type of Educational Activity: Symposia

Lecture - oral didactic presentation: Yes

Forum - open dialogue and discussion among all participants: No

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Panel Discussion - 3 to 6 faculty engaged in dialogue: Yes

Please explain: Compromise between dynamic engagement of the audience and opportunity to allow these world-renowned experts to present their data to neurorehabilitationists unfamiliar with their work.

Please explain: Learners are often unable to reason deductively across symptom-based research studies to derive novel, translational solutions to clinical and research problems.

How do you know the practice gap exists? (You must answer this question for your symposium to be considered): Other

Please describe: Empiric observation of dozens of learners in clinical and research settings over more than 20 years.

What Desirable Physician Attribute(s) will your symposium address? (Select all that apply): Medical knowledge

At the end of the educational session, what will your learners have gained? (check all that apply - you must answer this question for your symposium to be considered): Knowledge (information)

Please indicate any other needs for the symposium.: This symposium engages two international colleagues who would be very valuable contributors to the organization if stimulated to attend our meetings again in the future. Ultimately this might begin a cultivation that would lead to their joining our organization.

By clicking "submit form" below, I agree to adhere to all deadlines and requirements as set forth by the ASNR Executive Office and understand if I do not adhere to these deadlines and requirements I may be disqualified from presenting at the meeting.:

Line:

Response ID: 1564