



Department of Psychiatry

Columbia University, College of P&S

NYS

Psychiatric Institute

DIVISION OF BRAIN STIMULATION AND THERAPEUTIC MODULATION

JOURNAL CLUB

JOHN W. KRAKAUER, M.D.

ASSOCIATE PROFESSOR OF NEUROLOGY
DIVISION OF STROKE AND CRITICAL CARE
COLLEGE OF PHYSICIANS AND SURGEONS
COLUMBIA UNIVERSITY

will discuss the following paper

**Reis J, Schambra HM, Cohen LG, Buch ER, Fritsch B, Zarahn E, Celnik PA, Krakauer JW.
Noninvasive cortical stimulation enhances motor skill acquisition over multiple days
through an effect on consolidation.
Proc Natl Acad Sci U S A. 2009 Jan 21.**

Wednesday February 18, 2009

1:00 PM to 2:00 PM

Location: New York State Psychiatric Institute, 1051 Riverside Drive, Room 5001
(Enter Kolb Annex, 40 Haven Ave., turn rt., walk through atrium and across bridge over Riverside Dr. to new NYSPI, take elevator to 5th Fl.)

(See over for brief speaker biography and selected publications)

ABOUT JOHN KRAKAUER, M.D.

John W. Krakauer is an Associate Professor of Neurology at Columbia University College of Physicians and Surgeons. He is co-director of the Motor Performance Laboratory at the Neurological Institute.

He obtained his BA from Cambridge University and received his MD from Columbia University College of Physicians and Surgeons. He did his internship at Johns Hopkins Hospital and his neurology residency at Columbia University Medical Center. He did a research fellowship in motor control in the laboratory of Dr. Claude Ghez at the Center for Neurobiology and Behavior at Columbia University. He completed a stroke fellowship at the Neurological Institute, Columbia University Medical Center.

Dr. Krakauer's research has been NIH funded and his interests include (1) trajectory control and motor learning during reaching movements in healthy subjects and in patients with stroke. (2) Functional brain imaging of motor learning and stroke recovery.

Dr. Krakauer's clinical interest is stroke, including ischemic cerebrovascular disease, subarachnoid and intracerebral hemorrhage, arteriovenous malformation, cerebral vasculitis, cerebral aneurysm, and venous and sinus thrombosis.

Faculty webpage: <http://web.neuro.columbia.edu/members/Test3.php?id=49>

RECENT SELECTED PUBLICATIONS

Ghilardi MF, Moisello C, Silvestri G, Ghez C, Krakauer JW. Learning of a sequential motor skill comprises explicit and implicit components that consolidate differently. *J Neurophysiol.* 2008 Dec 10. [Epub ahead of print]

Zarahn E, Weston GD, Liang J, Mazzoni P, Krakauer JW. Explaining savings for visuomotor adaptation: linear time-invariant state-space models are not sufficient. *J Neurophysiol.* 2008 Nov;100(5):2537-48. Epub 2008 Jul 2.

Shadmehr R, Krakauer JW. A computational neuroanatomy for motor control. *Exp Brain Res.* 2008 Mar;185(3):359-81. Epub 2008 Feb 5. Review.

Krakauer JW, Shadmehr R. Towards a computational neuropsychology of action. *Prog Brain Res.* 2007;165:383-94. Review.

Prabhakaran S, Zarahn E, Riley C, Speizer A, Chong JY, Lazar RM, Marshall RS, Krakauer JW. Inter-individual variability in the capacity for motor recovery after ischemic stroke. *Neurorehabil Neural Repair.* 2008 Jan-Feb;22(1):64-71. Epub 2007 Aug 8.

Mazzoni P, Hristova A, Krakauer JW. Why don't we move faster? Parkinson's disease, movement vigor, and implicit motivation. *J Neurosci.* 2007 Jul 4;27(27):7105-16.

Tseng YW, Diedrichsen J, Krakauer JW, Shadmehr R, Bastian AJ. Sensory prediction errors drive cerebellum-dependent adaptation of reaching. *J Neurophysiol.* 2007 Jul;98(1):54-62. Epub 2007 May 16.

Krakauer JW. Avoiding performance and task confounds: multimodal investigation of brain reorganization after stroke rehabilitation. *Exp Neurol.* 2007 Apr;204(2):491-5. Epub 2007 Jan 25. No abstract available.

Krakauer JW, Mazzoni P, Ghazizadeh A, Ravindran R, Shadmehr R. Generalization of motor learning depends on the history of prior action. *PLoS Biol.* 2006 Oct;4(10):e316.

PAPER TO READ FOR JOURNAL CLUB

Reis J, Schambra HM, Cohen LG, Buch ER, Fritsch B, Zarahn E, Celnik PA, Krakauer JW. Noninvasive cortical stimulation enhances motor skill acquisition over multiple days through an effect on consolidation. *Proc Natl Acad Sci U S A.* 2009 Jan 21. [Epub ahead of print]