

BIOGRAPHICAL SKETCH

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| NAME Sheng Li, MD, PhD | POSITION TITLE Research Assistant Professor Department of Physical Medicine and Rehabilitation University of Texas Health Science Center at Houston, Houston, Texas |
| eRA COMMONS USER NAME shengli | |

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

| INSTITUTION AND LOCATION | DEGREE <i>(if applicable)</i> | YEAR(s) | FIELD OF STUDY |
|--|----------------------------------|---------|---------------------------|
| Beijing Medical University, Beijing, P.R. China | M.D. | 1993 | Clinical medicine |
| University of Toledo, Toledo, OH | M.S. | 1999 | Exercise Science |
| Pennsylvania State University, University Park, PA | Ph.D. | 2002 | Kinesiology/motor control |
| Rehabilitation Institute of Chicago, Chicago, IL | Research Fellow | 02-04 | Neuro-Rehabilitation |

A. Personal Statement

Adjust for different grant applications

B. Positions and Honors.

Position and Employment:

- 2009.7- Research assistant professor, PMR, UT-Houston, Houston, Texas
- 2009.7- Resident, PMR, Baylor/UT-Houston PMR alliance program, Houston Texas
- 2008.7 – 2009.6 Surgical Intern, Albert Einstein College of Medicine, Bronx, NY
- 2008.7 – 2009.6 Research Assistant Professor, Physical Therapy, University of Montana, MT
- 2004 – 2008 Assistant Professor, Physical Therapy, University of Montana, Missoula, MT
- 2002 – 2004 Postdoctoral Fellow, Northwestern University, Chicago, IL (Mentor: Dr. Zev Rymer)
- 1999 – 2002 Graduate Fellow, Pennsylvania State University, PA (Mentor: Dr. Mark Latash)
- 1997 – 1998 Research Assistant, Hong Kong Polytechnic University, Hong Kong, P.R. China
- 1993 – 1996 Resident, Orthopedics, Jishuitan Hospital, Beijing, China

Other Experience and Professional memberships

- 2011- NIH MFSR study section regular member
- 2010 NIH MFSR study section Ad hoc reviewer (June 2010)
- 2009- Member, American Association of Physical Medicine and Rehabilitation
- 2009- Member, Association of Academic Physiatrists
- 2004- Member, Society for Neuroscience
- 1999- Member, International Society of Motor Control

Honors

- 2010 Association of Academic Physiatrists (AAP) Best Paper Award
- 2004 Mary E. Switzer Distinguished Fellowship Award (National Institute on Disability and Rehabilitation Research, NIDRR)
- 2001 Graduate Student Research Award, Pennsylvania State University
- 2001 Dissertation Funds (Penn State Univ.)
- 2001 Whitaker travel grant award, 3rd International Symposium: Progress in Motor Control, Montreal, Canada, Aug 15-18, 2001

C. SELECTED PEER-REVIEWED PUBLICATIONS *(*corresponding author)*

1. ***Sheng Li**, Woo-Hyung Park, Adam M. Borg (2011) Phase-dependent respiratory-motor interactions in reaction time tasks during rhythmic voluntary breathing *Motor Control* (in press)
2. Woo-Hyung Park, **Sheng Li** (2011) There is no graded motor imagery: responses of finger muscles to TMS during motor imagery of isometric finger flexion and extension forces, *Neuroscience Letters*; 494(3):255-9
3. ***Sheng Li**, Zev Rymer (2011) Voluntary breathing influences corticospinal excitability of non-respiratory finger muscles *Journal of Neurophysiology* 105 (2):512-521
4. ***Sheng Li** (2010) Respiratory-motor interaction and its potential application for spasticity management. *American Journal of Physical Medicine and Rehabilitation* 89(4):S2
5. Elizabeth R. Ikeda, Adam Borg, Devn Brown, Jessica Malouf, Kathy M. Showers, ***Sheng Li** (2009) The Valsalva maneuver revisited: the influence of voluntary breathing on isometric muscle strength *Journal of Strength and Conditioning Research* 23(1):127-32
6. ***Sheng Li**, Jennifer A. Stevens, W. Zev Rymer (2009) Interactions between imagined movement and the initiation of voluntary movement: a transcranial magnetic stimulation (TMS) study *Clinical Neurophysiology* 120 (6): 1154-1160
7. Woo-Hyung Park, Charles T. Leonard, ***Sheng Li** (2008) Finger force perception in ipsilateral and contralateral finger force matching tasks *Experimental Brain Research* 189 (3):301-310 Aug 2008
8. Woo-Hyung Park, Charles T. Leonard, ***Sheng Li** (2007) Perception of finger forces within the hand after index finger fatiguing exercise *Experimental Brain Research* 182:169-177
9. Eric Kruger, Joshua Hoopes, Rory Cordial, ***Sheng Li** (2007) Error compensation during multi-finger force production after one- and four-finger voluntarily fatiguing exercise *Experimental Brain Research* 181:461-468
10. ***Sheng Li** (2007) Movement-specific enhancement of corticospinal excitability at subthreshold levels during motor imagery *Experimental Brain Research* 179:517-524
11. ***Sheng Li**, Nobuo Yasuda (2007) Forced ventilation increases isometric finger force variability *Neuroscience Letters* 412:243-247
12. ***Sheng Li** (2006) Perception of individual finger forces during multi-finger force production tasks *Neuroscience Letters* 409:239-243
13. ***Sheng Li**, James L. Laskin (2006) Influences of ventilation on maximal force of the finger flexors *Muscle Nerve* 34:651-655
14. ***Sheng Li**, Charles T. Leonard (2006) The effect of enslaving on perception of finger forces. *Experimental Brain Research* 172:301-309
15. ***Sheng Li**, Derek G. Kamper, W Zev Rymer (2006) Effects of changing wrist positions on finger flexor hypertonia in stroke survivors *Muscle Nerve* 33: 183-190
16. ***Sheng Li**, Jennifer A. Stevens, Derek G. Kamper, W Zev Rymer (2005) The movement-specific effect of motor imagery on the premotor time. *Motor Control* 9: 119-128
17. ***Sheng Li**, Derek G. Kamper, Jennifer A Stevens, W Zev Rymer (2004) The effect of motor imagery on spinal segmental excitability. *Journal of Neuroscience* 24(73) 9674-80
18. ***Sheng Li**, Mark L. Latash, Vladimir M. Zatsiorsky (2004) Effects of motor imagery on finger force responses to transcranial magnetic stimulation. *Brain Research Cognitive Brain Research* 20:273-280
19. Fang Gao, **Sheng Li**, Zong-Ming Li, Mark L. Latash, Vladimir M. Zatsiorsky (2003) Inter-finger connection matrices. *Biological Cybernetics* 89:407-414
20. Simon R Goodman, Mark L Latash, **Sheng Li**, Vladimir M. Zatsiorsky (2003) Optimization analysis of a network for finger coordination during two-hand multi-finger force production tasks. *Journal of Applied Biomechanics* 19: 295-309
21. **Sheng Li**, Mark L. Latash, Guang H. Yue, Vlodek Siemionow, Vinod Sahgal (2003) The effects of stroke on finger coordination in multi-finger force production tasks. *Clinical Neurophysiology* 114:1646-1655
22. Frederic Danion, Mark L. Latash, **Sheng Li** (2003) Modulation of fingertip forces evoked by transcranial magnetic stimulation during multi-finger pressing tasks. *Clinical Neurophysiology* 114:1445-1455
23. **Sheng Li**, Mark L. Latash, Vladimir M. Zatsiorsky (2003) Finger interaction during multi-finger tasks involving finger addition and removal. *Experimental Brain Research* 150: 230-236
24. Frederic Danion, Gregor Schoner, Mark L Latash, **Sheng Li**, John P Scholz, Vladimir M Zatsiorsky (2003) The force mode hypothesis for finger interaction during multi-finger force production tasks. *Biological Cybernetics* 88:91-98

25. Minoru Shinohara, **Sheng Li**, Ning Kang, Vladimir M. Zatsiorsky, and Mark L. Latash (2003) Effects of age and gender on finger coordination in maximal contractions and submaximal force matching tasks. *Journal of Applied Physiology* 94:259-270
26. Frederic Danion, **Sheng Li**, Mark L Latash, Vladimir M Zatsiorsky (2002) Relations between surface EMG of extrinsic flexors and individual finger forces support the notion of muscle compartments. *European Journal of Applied Physiology* 88:185-188
27. **Sheng Li**, Frederic Danion, Mark L Latash, Vladimir M Zatsiorsky (2002) Coupling phenomena during asynchronous submaximal two-hand, multifinger force production tasks. *Neuroscience Letters* 331:75-78
28. Mark L. Latash, **Sheng Li**, Frederic Danion, Vladimir M. Zatsiorsky (2002) Central mechanisms of finger interaction during one- and two-hand force production at distal and proximal phalanges. *Brain Research* 924:198-208
29. **Sheng Li**, Frederic Danion, Mark L Latash, Zong-Ming Li, Vladimir M Zatsiorsky (2001) Bilateral deficit and symmetry in finger force production during two-hand multi-finger tasks. *Experimental Brain Research* 141:530-540
30. Zong-Ming Li, Vladimir M. Zatsiorsky, **Sheng Li**, Frederic Danion, Mark L. Latash (2001) Bilateral multifinger deficits in symmetric key-pressing tasks. *Experimental Brain Research* 140:86-94
31. **Sheng Li**, Charles W Armstrong, Daniel Cipriani (2001) Three-point gait crutch walking: Variability in ground reaction force during weight bearing. *Archives of Physical Medicine and Rehabilitation* 82(1): 86-92
32. **Sheng Li**, Frederic Danion, Mark L. Latash, Zong-Ming Li, Vladimir M. Zatsiorsky (2000). Characteristics of finger force production during one- and two-hand tasks. *Human Movement Science* 19:897-923
33. **Sheng Li**, Frederic Danion, Mark L Latash, Zong-Ming Li, Vladimir M Zatsiorsky (2000) Finger coordination and bilateral deficit during two-hand force production tasks performed by right-handed subjects. *Journal of Applied Biomechanics* 16:379-391

C. RESEARCH SUPPORT

On-going research support

R24 HD050821-08 Li (PI) 07/01/2011 – 06/30/2013
 Clinical application of high-density surface EMG (NIH/NICHD/NCMRR) \$90,000
 The goals are to localize motor points of biceps using high-density sEMG and to compare effectiveness of EMG-guided botulinum toxin injection with conventional methods.

R01NS060774 Li (PI) 07/01/2009 – 06/30/2013
 The Respiratory-motor Coupling (NINDS/NIH) \$918,748
 The goals are to investigate the intrinsic coupling between respiratory and motor systems, and its potential application in clinical populations, such as stroke patients.

Completed research support

R15 NS053442 Li (PI) 7/1/2006 – 6/30/2009
Linking motor imagery to motor execution (NINDS/NIH) \$211,8745
 The major goal is to examine the physiology of motor imagery and to promote its potential use for motor recovery after stroke.
 Role: PI

H133F040017 Li (PI) 8/1/2004 – 7/30/2005
Impaired hand function in stroke survivors (NIDRR) \$55,000
 The goal is to investigate both neural and peripheral origins contributing to spastic hypertonia in finger flexors after stroke.
 Role: PI