

## CURRICULUM VITAE

**Wen Liu, Ph.D.**

Date of Preparation, 2008

Mail Code 2002

3901 Rainbow Boulevard

Kansas City, KS 66160

Phone: (913) 588-4564

Department of Physical Therapy and Rehabilitation Science

University of Kansas Medical Center

### Education

Drexel University, Philadelphia, PA	1994-1997	Biomedical Engineering	PhD	1997
Beijing University of Aeronautics and Astronautics, Beijing, China	1984-1986	Mechanical Engineering	MS	1986
Nanchang University, Nanchang, China	1978-1982	Mechanical Engineering	BS	1982

### Employment and Positions Held

Associate Professor, tenured	Univ. Kansas Med. Center, Kansas City, KS	2005-present
Assistant professor, tenure track	Univ. Kansas Med. Center, Kansas City, KS	<del>1999</del>
		2005
Research Associate	Boston University, Boston, MS	1999
Postdoctoral Fellow	Univ. Calgary, Calgary, Canada	1997-1998
Research Engineer	Yale Univ. School of Med., New Haven, CT	<del>1991</del>
		1994
Lecturer, Nanchang	Univ. of Aeronautics, Nanchang, China	1986-1991

### Peer Reviewed Publications

Bury, S.D., Plautz, E.J., **Liu, W.**, Maletsky, R.A., Luchies, C.W., Quaney, B.M., & Nudo, R.J. (in press) A novel device to measure grip forces in squirrel monkeys.

John, E.B, **Liu, W.** & Gregory, R.W. (in press) Biomechanics of muscular effort: age-related changes. *Medicine & Science in Sports & Exercise*.

Muniz, A.M, Nadal, J., Liu, H., Lyons, K.E, Pahwa, R. & **Liu, W.** (in press) Application of the principal component analysis in the quantitative evaluation of the effects of subthalamic stimulation for Parkinson disease. *Neuroscience Letter*.

Loudon, J., Santos, M., Franks, L. & **Liu, W.** (2008) Active exercise for functional ankle instability: a systematic review. *Sports Medicine*, 38(7):553-563.

Natarajan, P., Oelschlaeger, A., Agah, A., Pohl, P., Ahmad, S. & **Liu, W.** (2008) Current clinical practices in stroke rehabilitation: a regional pilot survey. *Journal of Rehabilitation Research and Development*, 45:841-849.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2008) Treatment of adolescent idiopathic scoliosis with quantified trunk rotational strength training: a pilot study. *Journal of Spinal Disorders & Techniques*, 21:349358.

**Liu, W.**, Mukherjee, M., Sun, C., Liu, H. & McPeak, L. (2008) Electroacupuncture may help motor

recovery in chronic stroke survivors: a pilot study. *Journal of Rehabilitation Research and Development*, 45:587-595.

Santos, M. & **Liu, W.** Possible factors related to functional ankle instability. (2008) *The Journal of Orthopaedic and Sports Physical Therapy*, 38:150-157.

Santos, M., Liu, H. & **Liu, W.** (2008) Unloading reaction in individuals with functional ankle instability. *Gait & Posture*, 27(4):589-94.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2007) Comparison of isometric trunk rotational strength of adolescents with idiopathic scoliosis to healthy adolescents: an observational study. *Scoliosis*, 9:2-9.

McIntire, K., Asher, M., Burton, D., Liu, H. & **Liu, W.** (2007) Reliability of a protocol for isometric trunk rotational strength and strength asymmetry assessment. *Isokinetics and Exercise Science*, 15:183-194.

Santos, M. & **Liu, W.** (2007) Unloading reaction to electrical stimulation at neutral and supinated ankle positions. *Gait & Posture*, 26:106-112.

Mukherjee, M., McPeak, L., Redford, J., Sun, C. & **Liu, W.** (2007) The electro-acupuncture reduced elbow spasticity in chronic stroke survivors. *Archives of Physical Medicine and Rehabilitation*, 88:159-166.

**Liu, W.**, McIntire, K., Kim, S.H., Zhang, J., Dascalos, S., Lyons, K.E. & Pahwa R. (2006) Bilateral subthalamic stimulation improve gait initiation for patients with parkinson's disease. *Gait & Posture*, 23:492-498.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2006) Comparison of isometric trunk rotational strength of adolescents with idiopathic scoliosis to healthy adolescents. *Stud Health Technol Inform.*123:509-12.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2006) Trunk rotational strength training for the management of adolescent idiopathic scoliosis (AIS). *Stud Health Technol Inform.* 123:273-80.

**Liu, W.**, McIntire, K., Kim, S.H., Zhang, J., Dascalos, S., Lyons, K.E. & Pahwa, R. (2005) Quantitative assessments of the effect of bilateral sub-thalamic stimulation on multiple aspects of sensori-motor function for patients with Parkinson's Disease. *Parkinsonism & Related Disorders*, 11:503-508.

Santos, J.M., McIntire, K., Foecking, J. & **Liu, W.** (2004) Effects of ankle bracing on motions of the knee and hip joints during trunk rotational tasks. *Clinical Biomechanics*, 19:964-971.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2004) Quantified rotational strength training: preliminary study of an alternative method for idiopathic scoliosis management. In: Sawatzky BJ (Ed.), *International Research Society of Spinal Deformities: Symposium 2004*, pp. 372-376.

McIntire, K., Asher, M., Burton, D., Liu, H. & **Liu, W.** (2004) Patterns of trunk rotational strength in healthy adults. In: Sawatzky BJ (Ed.), *International Research Society of Spinal Deformities: Symposium 2004*, pp: 377-380.

**Liu, W.** & Maitland M. (2003) The influence of individual anthropometric and mechanical variations on functional instability in the ACL-deficient knee during gait: a two-dimensional modeling study. *Annals of Biomedical Engineering*, 31 (10):1-9.

Hsiao-Wecksler ET, Katdare K, Matson J, **Liu, W.**, Lipsitz LA, Collins JJ. Predicting the dynamic postural control response from quiet-stance behavior in elderly adults. *Journal of Biomechanic*, 36: 1327-1333, 2003.

**Liu, W.**, Kim, S.H., Long, J.T., Pohl, P.S. & Duncan, P.W. (2003) Anticipatory postural adjustments and the onset of compensatory stepping reactions. *Neuroscience Letter*, 336(1):1-4.

Pohl, P. S., Duncan, P. W., Perera, S., Long, J., **Liu, W.**, Zhou, J. & Kautz, S. A. (2002) Rate of isometric knee extension strength development and walking speed after stroke. *Journal of Rehabilitation Research and Development*, 39:651-658.

Pohl, P. S., Duncan, P. W., Perera, S., **Liu, W.**, Lai, S. M., Studenski, S., & Long, J. (2002) Influence of stroke-related impairments on performance in 6-minute walk test. *Journal of Rehabilitation and Research*, 39:439-444.

**Liu, W.**, Maitland, M. & Bell, G.D. (2002) A modeling study of partial ACL injury: simulated Lachman's test using an arthrometer. *Journal of Biomechanical Engineering*, 124:1-8.

Schollhorn, W.I., Nigg, B.M., Stefanyshyn, D.J. & **Liu, W.** (2002) Identification of individual walking patterns using time discrete and time continuous data sets. *Gait & Posture*, 15:180-6.

**Liu, W.**, Lipsitz, L., Montero-Odasso, M., Bean, J., Kerrigan, C. & Collins, J.J. (2002) Noise-enhanced vibrotactile sensitivity in older adults, patients with stroke, and patients with diabetic neuropathy. *Archives of Physical Medicine and Rehabilitation*, 83:171-176.

**Liu, W.**, Siegler, S., & Techner, L. (2001) Quantitative measurement of ankle passive flexibility using an arthrometer on sprained ankles. *Clinical Biomechanics*, 16(3):237-44.

**Liu, W.**, Maitland, M. (2000) The effect of hamstring muscle forces on functional instability of the ACL-deficient knee during gait. *Journal of Biomechanics*, 33:871-879.

Miller, J.E., Nigg, B.M., **Liu, W.**, Stefanyshyn, D.J. & Nurse, M.A. (2000) Influence of foot, leg and shoe characteristics on subjective comfort. *Foot & Ankle International*, 21:759-67.

Ahlgren, B.D., **Liu, W.**, Herkowitz, H.N., Panjabi, M.M. & Guiboux, J. (2000) Effect of anular repair on the healing strength of the intervertebral disc. *Spine*, 25:2165-2170.

**Liu, W.**, Maitland, M. & Nigg, B.M. (2000) The effect of axial load on the anterior drawer test of ankle joint complex. *Foot & Ankle International*, 21:420-426.

**Liu, W.** & Nigg, B.M. (2000) A mechanical model to determine the influence of masses and mass distribution on the impact force during running. *Journal of Biomechanics*, 33:219-224.

**Liu, W.**, Miller, J., Stefanyshyn, D. & Nigg, B.M. (1999) Accuracy and reliability of a technique for quantifying foot shape, dimensions and structural characteristics. *Ergonomics*, 42:346-358.

Nigg, B.M. & **Liu, W.** (1999) The effect of muscle stiffness and damping on simulated impact force peaks during running. *Journal of Biomechanics*, 32:849-856.

Panjabi, M.M., Kifune, M., **Liu, W.**, Arand, M., Vasavada, A. & Oxland, T.R. (1998) Graded thoracolumbar spinal injuries of multidirectional instability. *Eur Spine J*, 7:332-339.

Siegler, S., **Liu, W.**, Sennitt, B., Nobilini, R.J., & Dunbar, D. (1997) The three-dimensional passive support characteristics of ankle braces. *The Journal of Orthopaedic and Sports Physical Therapy*, 26:299-309.

Kothe, R., Panjabi, M.M. & **Liu, W.** (1997) Multidirectional instability of the thoracic spine due to iatrogenic pedicle injuries during transpedicular fixation: a biomechanical investigation. *Spine*, 22(16):1836-1842.

**Liu, W.**, Siegler, S., Hillstrom, H., & Whitney, K. (1997) Three dimensional, six-degrees-of-freedom kinematics of the human hindfoot during the stance phase of level walking. *Human Movement Science*, 16:283-298.

Kifune, M., Panjabi, M.M., **Liu, W.**, Arand, M., Vasavada, A., & Oxland, T.R. (1997) Functional morphology of the spinal canal after endplate, wedge, and burst fracture. *J. Spinal Disorder*, 10:457-466.

Kothe, R., O'Holleran, J.D., **Liu, W.**, & Panjabi, M.M. (1996) The internal architecture of the thoracic pedicle: an anatomical study. *Spine*, 21(3):264-270.

**Liu, W.** & Panjabi, M.M. (1996) On improving the accuracy of instrumented spatial linkage system. *Journal of Biomechanics*, 29:1383-1385.

Panjabi, M.M., Kifune, M., **Liu, W.**, Arand, M., Oxland, T.R., Lin, R.M., Yoon, W-SS., & Vasavada, A. (1995) Dynamic canal encroachment during thoracolumbar burst fractures. *J Spinal Disorders* 8(1):39-48.

Kifune, M., Panjabi, M.M., Arand, M. & **Liu, W.** (1995) Fracture pattern and instability of thoracolumbar injuries. *European Spine J.*, 4:98-103.

Panjabi, M.M., Oxland, T.R., Kifune, M., Arand, M., **Liu, W.** & Chen, A. (1995) Validity of the three-column theory of thoracolumbar fractures: a biomechanics investigation. *Spine*, 20(10):1122-1127.

**Liu, W.** (1990) Dynamic properties of mechanism with joint clearances. *Chinese Journal of Mechanical Engineering (English version)*, No.1:48-55.

### **Book Chapters**

Siegler, S., **Liu, W.** Inverse dynamics in human locomotion. In: *Three-dimensional Analysis of Human Locomotion*. Edited by Allard, P., Cappozzo, A., Lundberg, A., & Vaughan, C., John Wiley & Sons Ltd. New York, 1997.

### **Peer Reviewed Scientific and Professional Presentations**

**Liu, W.**, Mukherjee, M., Tsaur, Y., Kim, S.H., Hongzeng & Liu, H. (2008) Sensory-enhanced motor training for the hemiparetic arm. 16<sup>th</sup> Congress of the European Society of Biomechanics, Lucerne, Switzerland.

Mukherjee, M., Kim, S.H., Decker, L. & **Liu, W.** (2008) Motor learning of reaching movements in randomized force fields in chronic stroke subjects. 16<sup>th</sup> Congress of the European Society of Biomechanics, Lucerne, Switzerland.

Muniz, A.M., Nadal, J., Liu, H., Lyons, K.E., Pahwa, R. & **Liu, W.** (2008) Assessment of the effects of subthalamic stimulation in Parkinson Disease patients by artificial neural network. The 30<sup>th</sup>

Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Vancouver, British Columbia, Canada.

John, E.B., Mukherjee, M., Kim, S.H., **Liu, W.** & Gregory, R.W. (2008) A quantitative method for assessing stroke-impaired sense of motor effort: a preliminary study” the 55th Annual Meeting of the American College of Sports Medicine. Indianapolis, Indiana.

Mukherjee, M.& **Liu, W.** (2007) Electromyographic correlates of internal models of target reaching tasks in randomized force fields. Proceedings of the 31<sup>st</sup> Annual meeting of the American Society of Biomechanics, Stanford, CA.

**Liu, W.** & Santos, M. (2007) Hypersensitivity in unloading reaction in patients with ankle functional instability. Proceedings of the Fifth IASTED International Conference on Biomechanics, Honolulu, Hawaii.

Kim, S.H., Mukherjee, M. & **Liu, W.** (2007) The Influence of Laterality of Brain Lesion on Recovery of Muscle Function after Stroke. The combined Sections Meeting (CSM) of American Physical Therapy Association, Boston, MA.

Gregory, R.W., John, E.B., & **Liu, W.** (2007). Biomechanical measures of muscular effort: validity and reliability. *Medicine and Science in Sports and Exercise*, 39, S256.

McPeak, L., Mukherjee, M., Redford, J. & **Liu, W.** (2006) Functional improvement through a combination of electroacupuncture and strength training in chronic stroke survivors. Annual Conference of Association of American Physical Medicine and Rehabilitation, The President's Citation Award for 2006.

Mukherjee, M., McPeak, L., Redford, J., Sun, C. & **Liu, W.** (2006) The effect of electro-acupuncture on upper limb spasticity in chronic stroke survivors. International Stroke Conference, Kissimmee, FL, February.

Natarajan, P., **Liu, W.**, Oechslin, J. & Agah, A. (2006) A haptic display for robotic rehabilitation of stroke. In Proceedings of the 11<sup>th</sup> International Symposium on Robotics and Applications (ISORA 2006), World Automation Congress (WAC 2006), Budapest, Hungary, ISORA-70, 1-6.

Kim, S.H., Maletsky, R., Zahner, L., Mukherjee, M. & **Liu, W.** (2005) Effects of stroke symptoms on gait performance. 2005 American Stroke Association international Stroke Conference, New Orleans, LA.

**Liu, W.**, Kim, S.H., Maletsky, R., Zahner, L. & Mukherjee, M. (2005) Effects of a postural feedback training on gait for stroke patients. 2005 American Stroke Association international Stroke Conference, New Orleans, LA.

McIntire, K., Asher, M., Burton, D. & **Liu, W.** (2004) Quantified rotational strength training: preliminary study of an alternative method for idiopathic scoliosis management. Biennial Meeting of International Research Society of Spinal Deformities. Vancouver, British Columbia, Canada.

McIntire, K., Asher, M., Burton, D., Liu, H. & **Liu, W.** (2004) Patterns of trunk rotational strength in healthy adults. Biennial Meeting of International Research Society of Spinal Deformities. Vancouver, British Columbia, Canada.

**Liu, W.**, Nathan, L., Kim, S.H., McIntire, K., Zhang, J., Dascalos, S., Lyons, K.E. & Pahwa, R. (2004) Three-dimensional gait analysis of the effect of bilateral sub-thalamic stimulation for patients with Parkinson's disease. Eighth International Symposium on the 3-D Analysis of Human Movement.

Tampa, Florida, April.

Santos, M., McIntire, K., Foecking, J. & **Liu, W.** (2004) Effects of ankle bracing on knee motions during trunk rotational tasks. Eighth International Symposium on the 3-D Analysis of Human Movement. Tampa, Florida.

**Liu, W.**, McIntire, K., Kim, S.H., Zhang, J., Dascalos K.E., Lyons, K.E. & Pawha, R. (2004) Quantitative assessment of functional improvement of deep brain stimulation for patients with Parkinson's disease. XV International Congress on Parkinson's Disease, Beijing, China.

**Liu, W.** McIntire, K., Bowman, K., Noland, S., Spourlock, S. & Thompson, C. (2002) Movement synergy between the ankle and hip joints during single leg stance. Proceedings of the IV World Congress of Biomechanics, Calgary, Canada.

**Liu, W.** & Maitland, M. (2002) Individual variation in anthropometric and mechanical parameters may affect functional instability of the ACL-deficient knee. Banff Symposium on Skeletal Muscle. Banff, Canada.

Hsiao-Wecksler, E.T., Katadare, K., McKillop, J., **Liu, W.**, Lipsitz, L.A. & Collins J.J. (2001) Quiet-stance behavior can predict the dynamic postural control response. Proceedings of the 24<sup>th</sup> Annual meeting of the American Society of Biomechanics, San Diego.

**Liu, W.** & Maitland, M. (2000) The influence of individual anthropometric and mechanical variations on functional instability in the ACL-deficient knee during gait. XVIII International Symposium of Biomechanics in Sports, Hong Kong.

**Liu, W.**, Richardson, K., Lipsitz, L.A., & Collins, J.J. (1999) Using electrical noise to reduce vibrotactile thresholds in human. Proceedings of the 23<sup>rd</sup> Annual meeting of the American Society of Biomechanics, Pittsburgh,

**Liu, W.**, Maitland, M. & Bell, G.D. (1999) Assessment of methods to diagnose ACL-injuries using simulated knee arthrometer tests. Proceedings of the 17<sup>th</sup> Congress of the International Society of Biomechanics, Calgary, Canada.

Schollhorn, W.I., Nigg, B.M., Stefanyshyn, D.J., **Liu, W.** (1999) The effect of shoe heel height on walking patterns of females. Proceedings of the 17<sup>th</sup> Congress of the International Society of Biomechanics, Calgary, Canada.

Maitland, M. & **Liu, W.** (1999) The effect of hamstring muscle forces on instability of the ACL-deficient knee during gait. Proceedings of the 13<sup>th</sup> International Congress of the World Confederation of Physical Therapists, Yokohama, Japan. p. 175.

**Liu, W.**, Siegler, S. & Hillstrom, H. (1998) Increased translations in the injured ankle joint complex during human gait. Fifth International Symposium on 3-D Analysis of Human Movement, Chattanooga, Tennessee.

**Liu, W.**, Siegler, S., Whitney, K. & Hillstrom, H. (1997) Six-degree-of-freedom hindfoot kinematics of rectus and planus foot types during gait. 2nd Annual Conference of the Podiatric Research Society, Palm Springs, California.

**Liu, W.**, Siegler, S. & Hillstrom, H. (1996) The accuracy of a technique to measure the three-dimensional motion of hindfoot complex. Fourth International Symposium on 3-D Analysis of Human

Movement, Grenoble, France.

**Liu, W.**, Siegler, S., Hillstrom, H. & Whitney, K. (1996) Three dimensional kinematics of hindfoot during level walking. Fourth International Symposium on 3-D Analysis of Human Movement, Grenoble, France.

**Liu, W.**, Siegler, S., Sennitt, B. & Dunbar, D. (1996) A three dimensional quantitative evaluation of ankle brace. 1st Annual Conference of the Podiatric Research Society, New Orleans,

Panjabi, M.M., Kothe, R., **Liu, W.** (1995) Multidirectional instability of the thoracic spine related to iatrogenic pedicle injuries during transpedicular fixation: a biomechanical investigation. The 19th Annual Meeting of the American Society of Biomechanics, California,

**Liu, W.**, Panjabi, M.M., Kifune, M. & Arand, M. (1995) Bone graft and thoracolumbar fixations XVth Congress of the International Society of Biomechanics, Jyvaskyla, Finland.

**Liu, W.**, Panjabi, M.M., Kifune, M., Oxland, T.R. & Arand, M. (1994) The mechanism of thoracolumbar fractures. Annual Meeting of the International Society for the Study of the Lumbar Spine, Seattle.

Panjabi, M.M., Kifune, M., **Liu, W.**, Arand, M., Oxland, T.R., Lin R, Yoon W, Vasavada A: The mechanism of canal encroachment during the thoracolumbar burst fracture. Annual Meeting of the International Society for the Study of the Lumbar Spine, Seattle, 1994.

Kifune, M., Panjabi, M.M., **Liu, W.**, Arand, M., Vasavada, A. & Oxland, T.R. (1994) Reposition of the burst fracture fragment: the effect of loads. Annual Meeting of the International Society for the Study of the Lumbar Spine, Seattle,

**Liu, W.**, Panjabi, M.M., Kifune, M., Arand, M. & Vasavada, A. (1994) Dynamic properties of canal encroachment during burst fracture. 41st Annual Meeting of the Orthopaedics Research Society, Finalist for New Investigator's Recognition Award, New Orleans.

## **Funded/In Review Grant Activity**

### **Grant In Review**

**Liu, W.** (PI), Co-I: Ladesich, L., Gajewski, B. direct cost \$1,000,000  
 "The effect of acupuncture on muscle spasticity and motor function in stroke rehabilitation"  
 NIH; 2009-2013.

**Liu, W.** (PI) direct cost \$140,000  
 "Maximal effort may be avoided for stroke survivors with moderate or severe symptoms"  
 American Heart Association; 2009-2011.

### **Current Grant Funding**

**Liu, W.** (PI) direct cost \$140,000.  
 "A pilot study of electro-acupuncture and strengthening exercise for spastic wrist joint in post-stroke patients"  
 American Heart Association (#0555637Z); 2005-2007 (no cost extension for 2008)

**Liu, W.** (PI) direct cost \$35,000  
 "Objective evaluation of functional ankle instability and exercise treatment"  
 Research Institute of KUMC, Clinical Pilot Award; 2007-2008.

Wright, D. (PI), Co-I: **Liu, W.**, Kludding, P. direct cost \$38,000  
 "Role of myelinated cutaneous axons in diabetes-induced proprioceptive and balance deficits"

K-INBRE Pilot Grant; 2007-2008.

**Liu, W.** (PI), Co-I: Bhattacharya, S. direct cost \$53,295  
 “Identifying compensatory driving strategies for adults with mild dementia”  
 KUTRI research award; 2008-2009.

### **Completed Grant Funding**

**Liu, W.** (PI) direct cost \$326,598  
 “Development of a robot-aided motor training with enhanced sensory inputs for stroke rehabilitation”.  
 National Science Foundation (NSF), Division of Bioengineering & Environ Systems (BES-0302466);  
 2003-2007.

**Liu, W.** (PI), Co-I: Asher, M., Burton, D. direct cost \$112,000  
 “Quantified torsional strength training for management of idiopathic scoliosis”.  
 Scoliosis Research Foundation; 2002-2006.

**Liu, W.** (PI) direct cost \$25,000  
 “Electro-acupuncture and strengthening exercise for hemiplegic elbow and wrist joints”.  
 Clinical Pilot Award, Research Institute of University of Kansas Medical Center; 2003-2004.

**Liu, W.** (PI) direct cost \$237,500  
 “Sensory-enhanced motor training for paretic arm/hand”.  
 National Institute of Health (NIH), NINDS (R21 NS043331-01 A1); 2002-2004.

**Liu, W.** (PI) direct cost \$110,000  
 “A novel feedback training program to improve postural control of chronic stroke patients”.  
 American Heart Association (#0160477Z); 2001-2003.

**Liu, W.** (PI) direct cost \$25,000  
 “Sensory enhanced motor training for stroke patients”.  
 Bridge grant, Research Institute of University of Kansas Medical Center; 2001-2002

**Liu, W.** (PI), Co-I: Chertoff, M., Loudon, J. direct cost \$19,900  
 “Shared equipment award for biomedical research”.  
 Research Institute of University of Kansas Medical Center; 2000-2001

**Liu, W.** (PI), Co-I: Rajesh, P. direct cost \$34,998  
 “The effect of subthalamic stimulation for Parkinson’s disease using quantitative gait analysis”.  
 Clinical Program Enhancement Award, Research Institute of University of Kansas Medical Center;  
 2000-2001

**Liu, W.** (PI) direct cost \$29,202  
 “A combined neuro-functional posture feedback training program to improve postural control in stroke patients”.  
 Kansas Claude D. Pepper Center Pilot Award (NIH); 1999-2000

### **Continuing Education Workshops Conducted/Organized**

President of Sigma Xi KUMC chapter in 2006, organize monthly research seminar with continuing education credits provided to attendees.

### **Membership in Scientific/Professional Organizations**

1. Member, American Society of Biomechanics, 1995-present
2. Member, Orthopedic Research Society, 2000-present
3. Member, American Heart Association, 2004-present

### **Positions Held**

Panel member, Scientific Merit Review panel, Department of Veterans Affairs Rehabilitation Research and Development Service, Washington, D.C., 2008-present

Panel member, NSF Biomedical Engineering Career Award review panel, NSF, Washington, D.C., 2007 – 2008

Panel member, Field Initiated Research Program Grand Review Panel, National Institute of Disability Rehabilitation Research, Department of Education, Washington, D.C., 2005 – 2007

Panel member, Rehabilitation Engineering Research Centers Program, Review Panel, National Institute of Disability Rehabilitation Research, Department of Education, Washington, D.C., 2002-2004

President-elect, Sigma Xi KUMC Chapter, 2005

President, Sigma Xi KUMC chapter, 2006

Reviewer, *Journal of Clinical Biomechanics*, 1997-present

Reviewer, *Journal of Biomechanical Engineering*, 1999-present

Reviewer, *Journal of Biomechanics*, 2000-present

Reviewer, *Computer Methods in Biomechanics and Biomedical Eng.*, 2000-present

Reviewer, *Journal of Orthopaedic & Sports Physical Therapy*, 2001-present

A team leader for “2008 Heart Walk” organized by American Heart Association, Kansas City branch, Kansas,

### **Services to the University/College/School on Committees/Councils/Commissions University Of Kansas Medical Center**

Member, Human Subject Committee of University of Kansas Medical Center, 2002-2004

Member, Research Committee, 2003-2004.

### **School of Allied Health**

Member, Diversity committee 2005-present

Member, Election Committee 2005-2007

Chair, Election Committee, 2005-2006

Chair, Research Committee, 2003-2004

Member, Faculty Development Committee of School of Allied Health, 2001-2003.

### **Departmental Committees**

Research Committee, Member 2000 – present, Chair, 2001 – 2002

Ph.D. Committee, Member 2000 – present, Chair, 2003 – 2004

Academic Review Committee, Member 2000 – 2005

Program Evaluation Committee, Member 2001 – 2002

Ad Hoc Faculty Search Committee, Member 2001 – 2002

### **Honors and Awards**

President's Citation Award, Annual conference of Association of American Physical Medicine and Rehabilitation, 2006

Investigator Research Award, University of Kansas Medical Center, 2004

Final list for New Investigator's Recognition Award, 41st Annual Meeting of the Orthopaedics Research Society, New Orleans, 1994

### **Current Teaching Responsibilities in the Entry-Level DPT Program**

Semester 3	PTRS 750	Research in Evidence-based PT Practice	Course Coordinator
Semester 5	PTRS 860	Evidence-based Research Practicum I	Course Coordinator
Semester 6	PTRS 861	Evidence-based Research Practicum II	Course Coordinator