

Curriculum Vitae

Office Address: Woodbury Spine
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Education:

1979-84 MD. First Military Medical University, Guangzhou, China
1987-90 MS. First Military Medical University, Guangzhou, China

Postgraduate Training and Fellowship Appointments:

1984-85 Intern in General Surgery, Zhujiang Hospital, First Military Medical University, Guangzhou, China
1985-90 Resident in Orthopedic Surgery, Zhujiang Hospital, First Military Medical University, Guangzhou, China
1990-91 Chief Resident in Orthopedic Surgery, Zhujiang Hospital, First Military Medical University, Guangzhou, China
1994-98 Fellowship, Spinal disorder and treatment, Spine Center, MCP Hahnemann University and Graduate Hospital, Philadelphia, USA
1998-99 Fellowship, Spinal cord injury and nerve regeneration, Department of Neurobiology and Anatomy, MCP Hahnemann University. Philadelphia, USA
1999-00 Intern in General Surgery (12 months inpatient), MCP Hahnemann University Hospitals. Philadelphia, USA
2000-01 PGY2 Resident in PM&R, Graduate Hospital. Philadelphia, USA
2001-02 Fellowship, Pressure ulcer and chronic wound care and research. Department of PM&R, University of Pennsylvania Health System, Philadelphia, USA
2002-04 PGY 3, 4 Resident in PM&R, University of Pennsylvania Health System, Philadelphia, USA
2004-05 Fellowship, Interventional pain, Department of Anesthesiology, Thomas Jefferson University, Philadelphia, USA

Faculty Appointments:

1991-94 Instructor and Attending Physician, Department of Orthopedic Surgery, Orthopedic Center of Chinese Army, Zhujiang Hospital, First Military Medical University, China
2005-08 Assistant professor and Attending, Jefferson Pain Center, Department of Rehabilitation Medicine and Department of Anesthesiology, Jefferson Medical College, Thomas Jefferson University, Philadelphia, USA

- 2008- Assistant Professor and Attending, Department of Rehabilitation
Medicine, Jefferson Medical College, Thomas Jefferson University,
Philadelphia, USA
- 2010- Clinical Associate Professor, Department of PM&R, Philadelphia College
of Osteopathic Medicine, Philadelphia, USA

Specialty Certification:

- 2005 American Board of Physical Medicine and Rehabilitation (ABPMR)
2006 American Board of Physical Medicine and Rehabilitation (ABPMR)
Subspecialty: Pain Management

Licensure:

Pennsylvania
New Jersey

Awards and Honors:

- 1982 Honor Student, First Military Medical University, China
1992 Excellent thesis, Second Hypothermia Biology Conference of China
1993 Excellent thesis, Medical Science of Chinese Army, China
1993 The Second Prize of the Advancement in Science and Technology of
Chinese Army. China
1993 Favorable comments, The Second Asia-Pacific Congress of Low
Temperature Medicine and Fifth China-Japan Congress of Low
Temperature Medicine, China
1995 The Third Prize of the Advancement in Science and Technology of the
People's Republic of China
1995 Scholarship awarded by Graduate Hospital, Philadelphia, PA, USA
1998 Scholarship awarded by PHI (#T32NS07440-01), USA
2001 Scholarship awarded by NRS (#5-T32-HD 07425), USA
2005 The Pfizer Scholars in Pain Management Award, USA
2006 The Best Presentation Award (Eugene J Nordby, M.D. Award). The 19th
Annual Meeting of International Intradiscal Therapy Society. Phoenix,
AZ, USA

Memberships in Professional Societies:

Chinese Pain Society (Honor Member, 1989-94)
Chinese Orthopedic Society (Member, 1992-94)
North American Spine Society (Member, 1996-)
American Medicine Association (Member, 1999-)
American Academy of Physical Medicine and Rehabilitation
(Member, 2000-)
International Society of Physical Medicine and Rehabilitation
(Member, 2008-)
North American Neuromodulation Society (Member, 2009-)

Local Societies:

Pennsylvania Medical Society (Member, 2002-)
Philadelphia County Medical Society (Member, 2002-)

Professional and Scientific Committees:

Member of Membership Committee of the Philadelphia County Medical Society (2004-)
Member of Anes/Pain Subcommittee, Thomas Jefferson University (2006-08)
Chair of Membership Committee of American Association of Chinese Rehabilitation Physicians (2008-2009)
Member of US-China Exchange Committee of American Association of Chinese Rehabilitation Physician (2008-)
President of American Association of Chinese Rehabilitation Physician (2009-)

Editorial Position:

2010- Reviewer, Neuromodulation

Lectures by Invitation:

1. September 26-28, 1989 “Deep cryotherapy treatment of cervicoscapulalgia” - The First East/West Pain Conference. Beijing, China
2. October 11-14, 1989 “The clinical application of deep-freezing technique in orthopedic surgery” - The Seventh International Cryosurgery Congress. Beijing, China
3. October 11-14, 1992 “Mechanism of cryoanalgesia” - The Second East/West Pain Conference. Beijing, China
4. October 11-14, 1992 “Mechanism of low back pain” - The Second East/West Pain Conference. Beijing, China
5. October 11-14, 1993 “Mechanism research of cryoanalgesia” - The Second Asia/Pacific Congress of Low Temperature Medicine. Xian, China
6. October 11-14, 1993 “Effect on electrophysiology of rabbit's sciatic nerves with various low temperatures” - The Second Asia/Pacific Congress of Low Temperature Medicine. Xian, China
7. August 21-26, 1994 “Mechanism research of cryoanalgesia” - The Thirty-first Annual Meeting of the Society for Cryobiology. Kyoto, Japan
8. October 18-21, 1995 “Arthroscopic microdiscectomy: Postoperative imaging study” - The 10th Annual Meeting of North American Spine Society. Washington DC
9. October 18-21, 1995 “Transforaminal-arthroscopic decompression of lateral recess stenosis” - The 10th Annual Conference of North American Spine Society. Washington DC
10. November 1-2, 1996 “Diagnostic and therapeutic endoscopic pain management” - New Horizons in Spinal Surgery: Minimally Invasive Spinal Surgery. MCP Hahnemann University. Philadelphia

11. October 23-28, 1999 “Bcl-2 gene overexpression protects red nucleus neurons from retrograde death after cervical hemisection in mice” - Society for Neuroscience. Florida
12. December 4-5, 2001 “Analysis of apoptotic skin cells in fuzzy rat pressure ulcers using a computer-controlled pressure system: the TUNEL assay and near-infrared inspection”- Training Workshop. NIH, Washington DC
13. June 2-3, 2001 “Whole spinal epidural abscess: A case report. –The Pennsylvania Academy of PM&R Annual Academy Meeting. Hershey, Pennsylvania
14. April 5-9, 2006 “The Spinal Dorsal Ramus and Low Back Pain” - The 19th Annual Meeting of International Intradiscal Therapy Society. Phoenix, AZ
15. April 5-9, 2006 “Spinal Dorsal Ramus Mediated Lower Back Pain” - The 19th Annual Meeting of International Intradiscal Therapy Society. Phoenix, AZ
16. June 2, 2006 “Interventional pain management in the Orthopedic Practice” - Department of Orthopedics, General Hospital of Beijing Military Command, Beijing, China
17. June 23, 2006 “Interventional pain management” -The Anesthesiology Society and the Pain Society of Guangdong Province. Guangzhou, China
18. June 24, 2006 “Interventional pain management in the Physical Medicine and Rehabilitation” -The Annual Meeting of the Physical Medicine and Rehabilitation Society of Guangdong Province. Guangzhou, China
19. June 24-26, 2006 “Interventional pain management”- The Annual Meeting of the Physical Medicine and Rehabilitation Society of Guangdong Province. Guangzhou, China
20. June 17, 2008 “Pain and pain management”- Internal Medicine Division. Jefferson Medical College of Thomas Jefferson University, Philadelphia, USA
21. December 19, 2009 “Pain and Interventional Pain” Philadelphia Chinese Physician Associate. Philadelphia
22. March 12, 2009 “Interventional Pain Management for Cervicogenic Headache”- Jefferson Headache Center, Jefferson Medical College of Thomas Jefferson University, Philadelphia
23. July 23, 2009 “Neurostimulation Therapy and Pain Management”. The Pain Seminar and Workshop, Zhujiang Hospital, Nanfan Medical University, Guangzhou, China
24. August 5, 2009 “Interventional Pain Management and Cervicogenic Headache” – Fuzhou Medical Society Meeting, The Second Hospital of the Fujian Medical University, Fuzhou, China
25. January 14-17, 2010 “Diagnosis and Treatment of Lower Back Pain Induced by Single Spinal Dorsal Ramus Dysfunction (Spinal Dorsal Ramus Syndrome): a Retrospective Study” - The 2010 APSAS –The International Society for the Advancement of Spine Surgery-2nd Asia Pacific Conference, Sanya, China

Publications, peer reviewed:

1. Zhou Linqiu, Shao Zhenhai and Ou Shihuan. Somatosensory evoked potentials of healthy rabbits. Academic Journal of First Military Medical University (Chinese) 10(2): 151-153, 1990.

2. Shao Zhenhai, Zhou Linqiu, Jin Anmin. Cryotherapy in treatment of low back pain. *Chinese Journal of Surgery (Chinese)* 29(12): 721-723, 1991.
3. Shao Zhenhai, Jin Anmin, Zhou Linqiu, Zhong Qin. Posterior spinal rami in localization of low back pain. *Chinese Journal of Surgery (Chinese)* 30(4): 205-207, 1992.
4. Zhou Linqiu, Shao Zhenhai and Ou Shihuan. Effect on somatosensory evoked potential and sensory conduction velocity of rabbits with various lower temperatures. *Chinese Journal of Experimental Surgery (Chinese)* 9(2): 75-76, 1992.
5. Zhou Linqiu, Shao Zhenhai and Ou Shihuan. Basic research for cryoanalgesia. *Medical. Journal of Chinese Army (Chinese)* 17(2): 95-98, 1992.
6. Zhou Linqiu, Shao Zhenhai and Ou Shihuan. Ultrastructure pathological bases of cryoanalgesia. *Chinese Journal of Experimental Surgery (Chinese)* 10(3): 141, 1993.
7. Zhou Linqiu, Shao Zhenhai and Ou Shihuan. Pathological research of cryoanalgesia. *Academic Journal of First Military Medical University (Chinese)* 13(4): 326-328, 1993.
8. Li Zhonghua, Zhou Linqiu, Zhong Shizeng, Shao Zhenhai. Applied anatomy on percutaneous nucleotomy of lumbervertebral disc. *Chinese Journal of Clinical Anatomy (Chinese)* 11(3): 174-176, 1993.
9. Zhou Linqiu, Shao Zhenhai, Zhong Qin. Cryoanalgesia for cervicoscapulalgia. *Journal of Cervicolumbago (Chinese)* 15(2): 85-86, 1994.
10. Parviz Kambin, Jonathan L. Schaffer and Linqiu Zhou. Incidence of complications and failures following percutaneous posteriolateral arthroscopic disc surgery. *Orthopedic Transactions* 19(2): 404-405, 1995.
11. Linqiu Zhou, Parviz Kambin, Kenneth Casey, Francis Bonner, Evan O'Brien, Zhenhai Shao, and Shihuan Ou. Mechanism research of cryoanalgesia. *Journal of Neurological Research* 17(8): 307-311, 1995.
12. Parviz Kambin, Linqiu Zhou. History and current status of percutaneous arthroscopic disc surgery. *Spine* 21 (24 Suppl): 57S-61S, 1996.
13. Parviz Kambin and Linqiu Zhou. Arthroscopic Discectomy. *Current Opinion in Orthopedics* 7(11): 25-30, 1996.
14. Shao Zhenhai, Chen Zhong, Zhou Linqiu, Jin Anmin and Li Qi. Spinal Dorsal Ramus Syndrome. *Chinese Medical Journal* 109(4): 317-321, 1996.
15. Parviz Kambin, Kenneth Casey, Evan O'Brien and Linqiu Zhou. Transformational arthroscopic decompression of lateral recess stenosis. *Journal of Neurosurgery* 84: 462-467, 1996.
16. Parviz Kambin, Linqiu Zhou. Arthroscopic discectomy of the lumbar spine. *Clinical Orthopedics & Related Research* 337: 49-57, 1997.
17. Parviz Kambin, Evan O'Brien, Linqiu Zhou, Jonathan L. Schaffer. Arthroscopic microdiscectomy and selective fragmentectomy. *Clinical Orthopedics & Related Research* 347:150-67, 1998.
18. Linqiu Zhou, Theresa Connors, Dong Feng Chen, Marion Murray, Alan Tessler, Parviz Kambin and Raul A Saavedra. Red nucleus neurons of Bcl-2 overexpressing mice are protected from cell death induced by axotomy. *Neuro Report* 10(16): 3417-3421, 1999.

19. Robert Goldman, Barbara Brewley, Linqiu Zhou, and Michael Golden. Electrotherapy reverses inframalleolar ischemia: A retrospective, observation study. *Advance Wound Care* 16(2): 79-89, 2003.
20. Linqiu Zhou, Zhenhai Shao, Shihuan Ou. Cryoanalgesia: Electrophysiology at different temperature. *Cryobiology* 46:26-32, 2003.
21. Anjali Dalal, Linqiu Zhou. Gabapentin and sexual dysfunction: two cases report. *Neurologist* 14(1):50-51, 2008.
22. Linqiu Zhou, Alan Turtz, Galit Levy. Pan spinal epidural abscess in a young healthy male – a case report. *Scholarly Research Exchange* ID 613402, 2008.
23. James Craig, Linqiu Zhou. Revision of a Superficially Migrated Percutaneous Occipital Nerve Stimulator Electrode Using a Minimally Invasive Technique. *Neuromodulation* 12(3): 50-53, 2009.
24. Linqiu Zhou, John Villanueva, Mehul Desai and Michael Pacon. Exacerbation of porphyria Mimics Early Infection after Pump Implant. *Neuromodulation*, Jan 7, 2010.
25. Linqiu Zhou, Zarinah Hud-Shakoor, Christopher Hennessey, Abraham Ashkenazi Upper Cervical Facet Joint and Spinal Rami Blocks for the Treatment of Cervicogenic Headache. *Headache: The Journal of Head and Face Pain* 50(4): 657-663, 2010.

Editorials, Reviews and Chapters:

1. Shao Zhenhai, Zhou Linqiu, Ou Shihuan. Cryoanalgesia. *Chinese Journal of Surgery (Chinese)* 30(12): 764-766, 1992.
2. Gregory Pharo, Linqiu Zhou. Pharmacologic management of cancer pain. *JAOA* 105(11, Suppl 5):21S-28S, 2005.
3. Gregory Pharo, Linqiu Zhou, Pharmacologic Management of Cancer Pain. *JAOA* 107 (7):22-32, 2007.

Publication, non-peer reviewed

1. Linqiu Zhou, Alan Miller, Lawrence King, Zvi Grunwald. Selected Spinal dorsal ramus injections for low back pain: a retrospective study. Jianan Li (Ed). 1st conference of the Asian Oceania Society of Physical and Rehabilitation Medicine. *Medimond International Proceedings Nanjing, China*, PP 260-265, May 16-19, 2008.

Abstracts:

1. Linqiu Zhou, Avi Ashkenazi. Cervical C1/2, C2/3 facet and dorsal rami injections for the diagnostic and therapeutic tools for cervicogenic headache (CeH). *Arch Phys Med Rehabil* 88(9):E68, 2007. (Presented at the American Academy of Physical Medicine and Rehabilitation 68th Annual Assembly and Technical Exhibition, Boston, 2007)
2. Linqiu Zhou, Avi Ashkenazi, Azi Granwald. Cervical C1/2, C2/3 facet and dorsal rami injections for the diagnostic and therapeutic tools for cervicogenic headache. *European Spinal Journal* 16 (S1):S89, 2007. (Presented at the Annual Meeting of the Spine Society of Europe, Brussels, 2007)

3. Linqiu Zhou, Michael Picone, Mehul Desai. Acute exacerbation of intermittent porphyria mimics early surgical infection following intrathecal pump implantation: A case report. <http://www.asra.com/education/abstracts-fall-2007.php> (Presented at the ASRA 2007 Annual Pain Medicine Meeting, Florida, 2007)
4. Justin Winas, Mehul Desai, Linqiu Zhou. Preliminary results of spinal cord stimulation trial for treatment of chronic abdominal pain following lumbar sympathectomy: A case report. <http://www.asra.com/education/abstracts-fall-2007.php> (Presented at the ASRA 2007 Annual Pain Medicine Meeting, Florida, 2007)
5. Justin Winas, Mehul Desai, Linqiu Zhou. Preliminary results of spinal cord stimulation trial for chronic nephrolithiasis: A case report. <http://www.asra.com/education/abstracts-fall-2007.php> (Presented at the ASRA 2007 Annual Pain Medicine Meeting, Florida, 2007)
6. Mehul Desai, Ronnen Abramaov. Linqiu Zhou, Dajie Wang. Predictive value of final needle-tip position of interlaminar epidural steroid injection for contrast flow. <http://www.asra.com/education/abstracts-fall-2007.php> (Presented at the Annual Pain Medicine Meeting, Florida, 2007)
7. Linqiu Zhou, Avi Ashkenazi, Ronnen Abramov, Zvi Grunwald. Cervical C1-2, C2-3 spinal injections as a diagnostic and therapeutic tool for cervicogenic headache. *J Rehabil Med* S46: 122, 2008. (Presented at the 1st Conference of the Asian Oceania Society of Physical and Rehabilitation Medicine. Nanjing, China, 2008)
8. Linqiu Zhou, Gregory H. Pharo. Pharmacologic Management of Cancer Pain. *J Rehabil Med* S46:121, 2008. (Presented at the 1st Conference of the Asian Oceania Society of Physical and Rehabilitation Medicine. Nanjing, China, 2008)
9. Linqiu Zhou, Alan E Miller, Dajie Wang, Lawrence King, Zvi Grunwald. Selected Spinal dorsal ramus injections for low back pain: a retrospective study. *J Rehabil Med* S46:122, 2008. (Presented at the 1st Conference of the Asian Oceania Society of Physical and Rehabilitation Medicine. Nanjing, China, 2008)
10. Linqiu Zhou, Galit Levy, Zvi Grunwald. Retrospective study of comprehensive therapies including sympathetic ganglion injection for complex regional pain syndrome (CRPS). *Arch Phys Med Rehabil* 89(11):E104, 2008. (Presented at the American Academy of Physical Medicine and Rehabilitation 69th Annual Assembly and Technical Exhibition, San Diego, 2008)
11. Linqiu Zhou, Avi Ashkenazi Ronnen Abramov. The role of Cervical C1/2, C2/3 spinal injections in the diagnosis of cervicogenic headache. *Arch Phys Med Rehabil* 89(11):E106, 2008. (Presented at the American Academy of Physical

- Medicine and Rehabilitation 69th Annual Assembly and Technical Exhibition, San Diego, 2008)
12. Jeffrey Gehret, William Morrison, Linqiu Zhou. Retrospective Study of the Role of Lumbar Transforaminal Epidurogram and MRI in Predicting Clinical Outcome of Epidural Steroid Injections. *Arch Phys Med Rehabil* 89(11):E104-e105, 2008. (Presented at the American Academy of Physical Medicine and Rehabilitation 69th Annual Assembly and Technical Exhibition, San Diego, 2008)
 13. Linqiu Zhou, Christopher Hennessey, Michael Marmura. Occipital and Supraorbital Peripheral Nerve Stimulator Therapy for Refractory Cervicogenic Headache. *Am J Phys Med Rehabil* 89(4S): 25, 2010. (Presented at the 2010 AAP Annual Meeting, Florida, April 6-10, 2010)
 14. Linqiu Zhou, Carson D Schneck, Zhenghai Shao. Selective Spinal Dorsal Ramus Dysfunction Causing Lower Back Pain (Spinal Dorsal Ramus Syndrome). *Am J Phys Med Rehabil* 89(4S): 25, 2010. (Presented at the 2010 AAP Annual Meeting. Florida, April 6-10, 2010)
 15. Kamal Fetouh, Nick Kaffl, Linqiu Zhou. The Significance of Percutaneous Aspiration of the Zygapophysial Facet Joint Synovial Cyst: A Case Series. *Am J Phys Med Rehabil* 89(4S): 31, 2010. (Presented at the 2010 AAP Annual Meeting, Florida, April 6-10, 2010)
 16. Garrett Helber, Linqiu Zhou. Allergic Reaction to Peripheral Nerve Stimulator. *Am J Phys Med Rehabil* 89(4S): 32, 2010. (Presented at the 2010 AAP Annual Meeting, Florida, April 6-10, 2010)
 17. Linqiu Zhou. Occipital Nerve Stimulator Therapy for a Refractory Cervicogenic Headache. *J Rehabil Med* 48(S): 79, 2010.
<http://www.aocprm2010.com/download/FinalAbstractbook.pdf> (presented at the 2nd Asia-Oceanian Conference of Physical and Rehabilitation Medicine, Taipei, Taiwan, April 29 – May 2, 2010)
 18. Linqiu Zhou. Individual Spinal Dorsal Ramus Dysfunction Causing Lower Back Pain (Spinal Dorsal Ramus Syndrome). *J Rehabil Med* 48(S): 144, 2010.
<http://www.aocprm2010.com/download/FinalAbstractbook.pdf> (presented at the 2nd Asia-Oceanian Conference of Physical and Rehabilitation Medicine, Taipei, Taiwan, April 29 – May 2, 2010)

Community Service:

MDA (Muscular Dystrophy Association) Summer Camp (2004)
WMCN VT guest: Sports Doctor, February 26, 2009, November 19, 2009

Supports:

1988-1989 Chinese Natural Science Foundation (38807783): Cryotherapy and its Application for low back pain (¥20,000), co-investigator

- 1990-1991 Chinese Natural Science Foundation (39170731): Cryotherapy and its Clinical Application (¥15,000), co-investigator
- 1991-1992 Dean's Grant, First Military Medical University, China: Animal Study of Cryoanesthesia (¥15,000), investigator

Patents:

1. Double-Layer Cryotherapy Needle, Chinese Patent Number ZL 93-2-19961, 1993
2. Cryoneedle and Cryotherapy System. U. S. Patent Number WO/2008/054487, 2007 (<http://www.wipo.int/pctdb/en/wo.jsp?WO=2008054487>)