

CURRICULUM VITAE

Personal Data

Name: Terry Kwok Keung, KOO
 Gender: Male
 Office Address: New York Chiropractic College, 2360 State Route 89
 Seneca Falls, NY 13148
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Education

1999 – 2002 **Doctor of Philosophy (Biomedical Engineering)**
The Hong Kong Polytechnic University
Thesis title: Neuromusculoskeletal modeling of the elbow joint in subjects with and without spasticity

1993 – 1995 **Master of Philosophy (Rehabilitation Engineering)**
The Hong Kong Polytechnic University
Thesis title: Effects of sitting posture on interface pressure – Biomechanical evaluation of passive and active seating systems

1989 – 1992 **Bachelor of Engineering (Manufacturing Engineering)**
The Hong Kong Polytechnic University
Final year project title: Design and manufacture of an active seating cushion for pressure relief

Honors

Apr – Jun, 2014 **Top25 Hottest Articles in Clinical Biomechanics, Number 10**
“KooTK, Guo JY, Cohen JH, Parker KJ. Quantifying the passive stretching response of human tibialis anterior muscle using shear wave elastography. Clin Biomech. 2014; 29(1): 33-39”

2010 & 2011 **Excellence in Research and Scholarly Activity Awards (2 consecutive years)**
New York Chiropractic College

2011 **Best Award-Winning Paper**
Association of Chiropractic Colleges and Research Agenda Conference

2010 **Who’s who in America**
Marquis who’s who

2008 & 2013 **Finalist, Excellence in Research and Scholarly Activity Award**
New York Chiropractic College

Jan 05 – Mar 05 **Top25 Hottest Articles in J Electromyography & Kinesiology, Number 14**
“Feasibility of using EMG driven neuromusculoskeletal model for prediction of dynamic movement of the elbow”

<i>Dec 03 –Apr 05 & May 02 – Nov 02</i>	PolyU Post-Doctoral Fellowships <i>The Hong Kong Polytechnic University</i>
<i>Dec 02 –Nov 03</i>	The Croucher Foundation Post-Doctoral Fellowships <i>The Croucher Foundation</i>
<i>Dec 98 –Apr 02</i>	Ph.D. Study Research Studentships <i>The Hong Kong Polytechnic University</i>
<i>Dec 98 – Apr 02</i>	Tuition Scholarships for Ph.D. Study <i>The Hong Kong Polytechnic University</i>
<i>Oct 93 – Sep 95</i>	M.Phil. Study Research Studentships <i>The Hong Kong Polytechnic University</i>
<i>Oct 93 –Sep 95</i>	Tuition Scholarships for M.Phil. Study <i>The Hong Kong Polytechnic University</i>
<i>1994</i>	Sir Edward Youde Memorial Fellowship <i>Sir Edward Youde Memorial Fellowship Council</i>
<i>1992</i>	The Most Innovative Award <i>Final Year Project Work Competition 1991/1992 (Degree Level), The Hong Kong Institution of Engineers - Production Industrial Engineering Division</i>
<i>1992</i>	Graduated with first class honor in Manufacturing Engineering <i>The Hong Kong Polytechnic University</i>

Position Held

<i>Sep 2011 – present</i>	Associate Professor <i>Basic Sciences & Research Departments New York Chiropractic College</i>
<i>Jan 2006 – present</i>	Director <i>Foot Levelers Biomechanics Research Laboratory New York Chiropractic College</i>
<i>Mar 2014 – present</i>	Adjunct Research Fellow <i>Rocky Mountain University of Health Professions</i>
<i>Jan 2006 – Feb 2011</i>	Assistant Professor <i>Basic Sciences & Research Departments New York Chiropractic College</i>
<i>Jul 2005 – June 2006</i>	Overseas Faculty Core Member <i>Research Center for Musculoskeletal Bioengineering (RCMBE) The Hong Kong Polytechnic University</i>
<i>Apr 2005 –Dec 2005</i>	Research Fellow <i>Department of Health Technology and Informatics The Hong Kong Polytechnic University</i> <i>Project title: A computer-aided bone deformity correction system for knowledge-based applications of fracture reduction, dynamization, limb lengthening, and deformity correction</i>

- Jun 2002 – Apr 2005* **Post-doctoral Fellow**
Orthopaedic Biomechanics Laboratory
Johns Hopkins University
Project title: Developing the knowledge-based external fixator applications for bone fracture fixation and deformity correction using computational simulation
- Jun 1997 – Nov 1998* **Research Associate**
Jockey Club Rehabilitation Engineering Centre
The Hong Kong Polytechnic University
Duties: Manage and maintain the human locomotion laboratory and the seating mobility laboratory, conduct equipment training, involve in research proposal writing, research and teaching activities etc.
- Feb 1996 - May 1997* **Product Manager**
Medical Technology Ltd.
Duties: Involve in sales and marketing, answer technical enquiries, conduct product training and negotiate dealership with manufacturers etc. Responsible products include: Peak motion analysis system, Tekscan pressure mapping system, Hologic X-ray bone densitometer, P&G electrogoniometer, and many other biomechanical/ rehabilitation products etc.
- Nov 1995 - Jan 1996* **Development Manager**
Anchor Medical Services Ltd.
Duties: Product development, marketing, technical support and product training.
- Oct 1994 - Oct 1995* **Research Assistant**
Jockey Club Rehabilitation Engineering Centre
The Hong Kong Polytechnic University
Duties: Responsible for setting up and facilitating a newly developed Interdisciplinary Centre for Musculoskeletal Bioengineering and Rehabilitation Technology.
- Jul 1992 - Oct 1992* **Quality Assurance Engineer**
Stelex Industrial. Ltd.
Duties: Responsible for implementing ISO 9001 in a watch manufacturing company.

Publications

Thesis

1. **T.K. Koo.** Neuromusculoskeletal modeling of the elbow joint in subjects with and without spasticity. Ph.D. Thesis, The Hong Kong Polytechnic University, Hong Kong; 2002, 205pp.
2. **T.K. Koo.** Effects of sitting posture on interface pressure – biomechanical evaluation of passive and active seating systems. M.Phil Thesis, The Hong Kong Polytechnic University, Hong Kong; 1995, 183pp.

Book Chapter

1. E.Y. Chao, **T.K. Koo.** From CAD/CAM to VIMS/CAOS – A true renaissance of musculoskeletal biomechanics. In: N.H.C. Hwang, S.L.Y. Woo, editors. *Frontiers in Biomedical Engineering*. Hardbound, Kluwer Academic/Plenum Publishers; December 2003, p. 71-82.

Patents

1. **T.K. Koo**, A.F. Mak, E.Y. Chao. Bone reposition device, method, and system. United States Patent No: US 7,881,771 B2, (Date of Patent Granted: Feb. 1, 2011)
2. **T.K. Koo**, A.F. Mak, E.Y. Chao. Bone position device, method, and system. Chinese Patent No: ZL200610108683.8. (2010).

Peer-Reviewed Journal (*Corresponding Author)

1. **T.K. Koo***, M.Y. Li. A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *J Chiropractic Medicine*. (Under review).
2. **T.K. Koo***, François Hug. Factors That Influence Muscle Shear Modulus During Passive Stretch. *J Biomech*. 2015; 48(12):3539-3542.
3. **T.K. Koo***, J.Y. Guo, C. Ippolito, J. Bedle. Assessment of Scoliotic Deformity Using Spinous Processes: Comparison of Different Analysis Methods of an ultrasonographic system. *J Manipulative Physiol Ther*. 2014; 37(9): 667-677.
4. **T.K. Koo***, J.Y. Guo, J.H. Cohen, K.J. Parker. Quantifying the passive stretching response of human tibialis anterior muscle using shear wave elastography. *Clin Biomech*. 2014; 29(1): 33-39.
5. **T.K. Koo***, J.Y. Guo, J.H. Cohen, K.J. Parker. Relationship between shear elastic modulus and passive muscle force: An ex-vivo study. *J Biomech*. 2013; 46(12): 2053-2059.
6. **T.K. Koo***, J.Y. Guo, C.M. Brown. Test-retest reliability, repeatability, and sensitivity of an automated deformation-controlled indentation on pressure pain threshold measurement.. *J Manipulative Physiol Ther*. 2013; 36(2):84-90.
7. J.Y. Guo, Y.P. Zheng, H.B. Xie, **T.K. Koo**. Towards the application of one-dimensional sonomyography for powered upper-limb prosthetic control using machine learning models. *Prosthet Orthot Int*. 2013; 37(1):43-9.
8. **T.K. Koo***, J.H. Cohen, Y.P. Zheng. Effects of Nimmo Receptor Tonus Technique on Muscle Elasticity, Pain Perception, and Disability in Subjects with Chronic Low Back Pain. *J Manipulative Physiol Ther*. 2012; 35(1):45-53.
9. **T.K. Koo***, J.H. Cohen, Y.P. Zheng. A mechano-acoustic indenter system for in-vivo measurement of non-linear elastic properties of soft tissues. *J Manipulative Physiol Ther*. 2011; 34(9):584-93.
10. **T.K. Koo***, C.W. Wong, Y.P. Zheng. Reliability of sonomyography for the measurement of pectorialis major muscle thickness. *Journal Manipulative & Physiol Ther*. 2010; 33:386-394.
11. **T.K. Koo***, M.O. Papuga. A computer-aided method for closed reduction of diaphyseal tibial fracture using projection images: a feasibility study. *Comp Aided Surgery*. 2009; 14(1):1-13.
12. **T.K. Koo***. Devices and methods for closed reduction of diaphyseal fracture. *Recent Patents Biomed. Eng*. 2009 June; 2(2): 85-96.
13. L. Li, K.Y. Tong, X.L. Hu, L.K. Hung, **T.K. Koo**. Incorporating ultrasound-measured musculotendon parameters to subject-specific EMG-driven model to simulate voluntary elbow flexion for persons after stroke. *Clin Biomech*. 2009 Jan; 24(1):101-9.
14. L. Li, K.Y. Tong, R. Song, **T.K. Koo**. Is maximum isometric muscle stress the same among prime elbow flexors? *Clin Biomech*. 2007; 22(8):874-83.
15. **T.K. Koo***, A.F. Mak. A knowledge-based computer-aided system for closed diaphyseal fracture reduction. *Clin Biomech*. 2007; 22(8):884-893.
16. **T.K. Koo**, E.Y. Chao, A.F. Mak. Development and validation of a new approach for computer-aided long

- bone fracture reduction using unilateral external fixator. *J. Biomech.* 2006; 39: 2104-12.
17. **T.K. Koo**, A.F. Mak. A neuromusculoskeletal model to simulate the constant angular velocity elbow extension test of spasticity. *Med Eng Phys.* 2006; 28(1):60-9.
 18. **T.K. Koo**, E.Y. Chao, A.F. Mak. Fixation stiffness of Dynafix unilateral external fixator in neutral and non-neutral configurations. *Bio-Medical Materials and Engineering* 2005; 15(6):433-44.
 19. **T.K. Koo**, A.F. Mak. Feasibility of using EMG driven neuromusculoskeletal model for prediction of dynamic movement of the elbow. *J Electromyography & Kines* 2005, 15:12-26.
 20. R.W. Liu, Y.H. Kim, D.C. Lee, N. Inoue, **T.K. Koo**, E.Y.S. Chao. Computational simulation of axial dynamization on long bone fractures. *Clin Biomech.* 2005; 20: 83-90.
 21. E.Y. Chao, N Inoue, **T.K. Koo**, Y.H. Kim. Biomechanical consideration of fracture treatment and bone quality maintenance in elderly patients and patients with osteoporosis. *Clinical Orthopaedics and Related Research* 2004; 425:12-25.
 22. E.Y. Chao, N Inoue, Y.H. Kim, **T.K. Koo**. Application of simulation technology in external fixator adjustment for fracture reduction, deformity correction, & dynamization. *Japanese Journal of Bone Fracture* 2003; 25(1): 16-29.
 23. **T.K. Koo**, A.F. Mak, L.K. Hung, J.P. Dewald. Joint position-dependence of weakness during maximum isometric voluntary contractions in subjects with hemiparesis. *Arch Phys Med Rehabil.* 2003; 84:1380-6.
 24. **T.K. Koo**, A.F. Mak, L.K. Hung. In-vivo determination of subject-specific musculotendon parameters: applications to the prime elbow muscles in normal and hemiparetic subjects. *Clin Biomech.* 2002; 17:390-399.
 25. J. Feng, A.F. Mak, **T.K. Koo**. A surface EMG driven musculoskeletal model of the elbow flexion-extension movement in normal subjects and in subjects with spasticity. *J Musculoskeletal Research* 1999; 3(2), 109-123.
 26. **T.K. Koo**, A.F. Mak., Y.L. Lee. Posture effect on seating interface biomechanics: comparison between two seating cushions. *Arch Phys Med Rehabil* 1996; 77(1), 40-47.
 27. **T.K. Koo**, A.F. Mak, Y.L. Lee. Evaluation of an active seating system for pressure relief. *Assist Technol* 1995; 7(2), 119-128.

Abstracts and Conference Proceedings

1. M. Budavich, G.D. Cramer, P. Bora, **T.K. Koo**, D. Madigan, K Ross. Reliability and Validity of Accelerometry Methods used to Assess Zygapophyseal Joint Vibrations during Motion and Spinal Manipulation. The regional meeting of the American Association of Anatomists, October 3, Milwaukee, WI.
2. W.C. Kwok, **T.K. Koo**. 3D ultra-short TE imaging of the spine for vertebral segmentation. International Society for Magnetic Resonance in Medicine 23rd Annual Meeting, May 30 – June 5, 2015, Toronto, Canada.
3. **T.K. Koo**, J.Y. Guo, J.H. Cohen, K.J. Parker. Direct Measurement of Muscle Forces Using Supersonic Shear Wave Elastography. 7th World Congress of Biomechanics, July 6-11, 2014, Boston, MA (Invited podium presentation).
4. **T.K. Koo**, J.Y. Guo, J.H. Cohen, K.J. Parker. Direct Measurement of Muscle Forces Using Supersonic Shear Wave Elastography. UNYTE Face-to-Face meeting. May 16, 2014, Rochester, NY.
5. **T.K. Koo**, J.Y. Guo, J.H. Cohen, K.J. Parker. Characterization of Passive Elastic Properties of the Human Tibialis Anterior Muscle Using Supersonic Shear Wave Elastography. Proceedings of the ASME 2013 Summer Bioengineering Conference, June 26-29, 2013, Sunriver, Oregon, USA. SBC2013-14284.

6. **T.K. Koo**, J.Y. Guo, J.H. Cohen, K.J. Parker. Relationship Between Supersonic Shear Wave Elastography Measurement And Passive Muscle Force: An Ex-vivo Chicken Study. Proceedings of the ASME 2013 Summer Bioengineering Conference, June 26-29, 2013, Sunriver, Oregon, USA. SBC2013-14269.
7. **T.K. Koo**, J.Y. Guo. An ultrasound-kinematic based system for spinal deformity assessment. ACC-RAC conference, Washington, DC, March 14-16, 2013. In: Journal of Chiropractic Education 27[1], 71-72. 3-16-2013.
8. **T.K. Koo**, J.H. Cohen, L. Papenbrock, Y.P. Zheng. A mechano-acoustic indenter System for In-vivo measurement of non-linear elasticity of soft tissues: Its Development, Reliability, and Application. The WFC's 11th Biennial Congress, Rio de Janeiro, April 6-9, 2011.
9. **T.K. Koo**, J.H. Cohen, L. Papenbrock, Y.P. Zheng. A mechano-acoustic indenter system for in-vivo measurement of non-linear elastic properties of soft tissues. ACC-RAC conference, Las Vegas, NV, March 17-19, 2011. In: J Chiropractic Education 25(1), 86. 3-18-2011.
10. **T.K. Koo**, Y.P. Zheng. Identification of hyperelastic properties of lumbar multifidus. The 34th Annual Meeting of the American Society of Biomechanics. August 18 -21, Providence, RI, p.848-849 (2010).
11. **T.K. Koo**, Y.P. Zheng; Andrea A. Nalli, Edward F. Owens, Jr. Feasibility of using the Tissue Ultrasound Palpation System (TUPS) to measure elasticity of segmental lumbar multifidus. ACC-RAC conference, Las Vegas, NV, March 18-20, 2010, In: J Chiropractic Education, 24(1): 133, 2010.
12. **T.K. Koo**, Y.P. Zheng, X. Chen, A. Wong, L. Ford, M. Zumpano. Continuous measurement of muscle morphology using sonomyography: a new technique to quantify chiropractic treatment efficacy. ACC-RAC conference, Las Vegas, NV, March 12-14, 2009, In: J Chiropractic Education, 23(1): 76, 2009.
13. **T.K. Koo**, M.O. Papuga, J.A. Taylor, A.F. Mak. X-ray based computer-aided correction of fracture deformity. International Society of Biomechanics XXI Congress Taipei, July 1-5, 2007. In: J Biomech, 40 Suppl 2: S563, 2007.
14. **T.K. Koo**, A.F. Mak. A bone reposition device for execution of CT-based diaphyseal fracture reduction. International Society of Biomechanics XXI Congress Taipei, July 1-5, 2007. In: J Biomech, 40 Suppl 2: S283, 2007.
15. **T.K. Koo**, E.Y. Chao, A.F. Mak. Biomechanical performance of the standard Dynafix external fixator in different configurations. The 4th CSOS Scientific Congress, Beijing, PR China September 22 - 26, 2004.
16. **T.K. Koo**, E.Y. Chao, A.F. Mak. Determination of spatial relationship between fracture fragments: a critical step towards computer aided long bone fracture reduction using external fixator. The 2nd Annual World Congress of Chinese Biomedical Engineers, Beijing, China September 27-29, 2004.
17. **T.K. Koo**, A.F. Mak. Quantification of spasticity in the elbow flexor muscles using constant angular velocity elbow extension perturbation. BME 2004 Conference On Biomedical Engineering, Hong Kong. PRC, September 23-25, 2004, p. 82-86.
18. **T.K. Koo**, E.Y. Chao, A.F. Mak. Determination of fixator configuration to facilitate controlled axial dynamization on long bone fractures. The 11th World Congress of the International Society for Prosthetics and Orthotics, Hong Kong, PRC, August 1-6, 2004, p.218-219.
19. **T.K. Koo**, B.T. Leong, E.Y. Chao, A.F. Mak. A new approach for computer-aided long bone fracture reduction using unilateral external fixator. The Fourth Annual Conference of the International Society for Computer Assisted Orthopaedic Surgery, Chicago, USA, June 16-19, 2004, p.376-377.
20. **T.K. Koo**, Y.H. Kim, A.F. Mak, E.Y. Chao. Effects of external fixator configurations and joint properties on fracture stiffness: a finite element analysis. First Asia Pacific Conference on Biomechanics, Osaka, Japan, March 25-28, 2004.
21. E.Y. Chao, B.T. Liong, **T.K. Koo**, K.G. Hua, J. Fetto. Hip contact area & pressure distribution in activities

of daily living. The American Hip Society 2003 Summer Meeting. Sept 11-13, 2003.

22. H.T. Lin, F.C. Su, **T.K. Koo**, A. Yokota, J. Hashimoto, N. Inoue, M. Nakamura, K. Nobuhara, E.Y.S. Chao. Biomechanical functions of latissimus dorsi muscle in baseball pitching. 2003 ASME Summer Bioengineering Conference, Miami, USA, June 25-29, 2003.
23. **T.K. Koo**, Y.H. Kim, D.B. Choi, K.G. Hua, J. Lim, N. Inoue, E.Y. Chao. Stiffness analysis of Dynafix external fixator system. 2003 ASME Summer Bioengineering Conference, Miami, USA, June 25-29, 2003.
24. Y.H. Kim, T.S. Kang, **T.K. Koo**, B.T. Liong, K.G. Hua, N. Inoue, E.Y. Chao. Simulation of tibial osteotomy execution under unilateral external fixation. 2003 ASME Summer Bioengineering Conference, Miami, USA, June 25-29, 2003.
25. M. Kumagai, Y.H. Kim, N. Inoue, E. Genda, K. Hua, B.T. Liong, **T.K. Koo**, E.Y.S. Chao. 3-D hip contact pressure distribution in daily activities. 2003 ASME Summer Bioengineering Conference, Miami, USA, June 25-29, 2003
26. **T.K. Koo**, A.F. Mak, L.K. Hung. In-vivo estimation of muscle optimal angles using electrical stimulation. The 1st Annual World Congress of Chinese Biomedical Engineers - Taipei, Taiwan 2002, p.63.
27. Y.H. Kim, **T.K. Koo**, N. Inoue, E.Y. Chao. Computer-aided planning and execution of external fixation in osteoporotic bone. Proceedings of the 21st Southern Biomedical Engineering Conference. Sept 28-29, 2002. p.339-340.
28. **T.K. Koo**, A.F. Mak. A neuromusculoskeletal model for quantification of spasticity. Conference on biomedical engineering, Hong Kong, 2002.
29. **T.K. Koo**, A.F. Mak, L.K. Hung. A musculoskeletal model for estimation of the musculotendon parameters of the prime elbow flexors. In: Muller R, Gerber H, Stacoff A eds. Proceeding of the XVIIIth Congress of the international society of biomechanics, Zurich, Switzerland, 2001, P219.
30. A.F. Mak, W.C. Tam, C.Y. Tang, **T.K. Koo**. Joint biomechanics – tissues, structures and functions. Plenary Lecture, the 3rd National Conference in Rehabilitation Medicine for the Young, 1999.
31. **T.K. Koo**, A.F. Mak.. An interactive graphics-based model of the upper extremity. Hong Kong Orthopaedic Association 19th Annual Congress, 1999.
32. D.H. Chow, E.W. Tam, **T.K. Koo**, K. Ng, S. Naumann. A simple decomposition method for analyzing ground reaction force in gait analysis, Proceedings of RESNA'98, Minneapolis, USA, 1998.
33. **T.K. Koo**, A.F. Mak. Measurement of pelvic orientations during sitting. In: J.C.H. Goh, A. Nather, Editors. Proceedings of 8th International Conference on Biomedical Engineering. Singapore: National University of Singapore, 1994, p.357-9.
34. **T.K. Koo**, A.F. Mak. The Feasibility of using force sensing resistor (FSR) for comparative seating evaluation. Proceedings of International Conference on Biomedical Engineering, Hong Kong, 1994, p.420-423.

Invited Presentations

1. **T.K. Koo**. Effects of sitting posture on interface pressure – biomechanical evaluation of passive and active seating systems. The Second Asia-Pacific Symposium on Rehabilitation Technology, 1996.
2. **T.K. Koo**. Development and validation of a new approach for computer-aided long bone fracture reduction using unilateral external fixator. The 1st Symposium on Automation and Computer-aided Orthopaedic Surgery, November, 2004.
3. **T.K. Koo**. Direct Measurement of Muscle Forces Using Supersonic Shear Wave Elastography. 7th World Congress of Biomechanics, July 6-11, 2014, Boston, MA.

Research Support

Funded

Région Pays de la Loire (www.paysdelaloire.fr/)

“Quantification of the elasticity of biological tissues: toward a better prediction and management of neurological and musculoskeletal conditions” PI: Nordez & Hug 9/2015
Role: International Collaborator

Nimmo® Educational Foundation

“An electrogoniometry system for Biomechanics Research” 6/2012
Role: Applicant

Nimmo® Educational Foundation

“Visualization of Myofacial Trigger Points using Ultrasound Elastography” 6/2012 - 12/2012
Role: Principal Investigator

Nimmo® Educational Foundation

“Effects of Nimmo Treatment on Hypertonic Gluteal Muscle Containing Trigger Points” 5/2010 – 5/2011
Role: Principal Investigator

Foot Levelers Inc.

“Applications of Sonomyography and Tissue Ultrasound Palpation system in Chiropractic Research” 1/2008-12/2011
Role: Principal Investigator

Foot Levelers Inc.

“X-ray based Computer-Aided Correction of Fracture Deformity with Novel Unilateral Fixator System” 1/2006 – 12/2007
Role: Principal Investigator

Industry Guided Applied Research and Development Grant, Hong Kong

“A Computer-Aided Bone Deformity Correction System for Knowledge-Based Applications in Fracture Reduction, Dynamization, Limb Lengthening, and Deformity Correction” 6/2005-12/2005
Role: Principal Investigator

The Croucher Foundation

“Developing the knowledge-based external fixator applications for bone fracture fixation and deformity correction using computational simulation” 2002-2003
Role: Applicant

Central research Grant, Hong Kong Polytechnic University

“Reference Inertial and Anthropometric Data of Hong Kong Adults for Human Movement Biomechanics” 1998-1999
Role: Co-investigator

Central Research Grant for Large Equipment/Facility, Hong Kong Polytechnic University

“A new sophisticated three-dimensional motion analysis system for the human locomotion laboratory” 1997
Role: Co-applicant

Unfunded

ERC Consolidator Grant, European Research Council

“A deeper understanding of human movement in health and disease: Toward a better prediction of physical disability” 2015

Role: Co-investigator; PI: Francois Hug

National Institutes of Health/NCCAM, R21 2015

“Assessment of Spinal Manipulation Using Vibration and Sound”

Role: Consultant; PI: Gregory Cramer

General Research Fund, University Grant Council, Hong Kong 2015

“Exercise effects on muscle mechanics and control strategy of quadriceps”

Role: Co-Principal Investigator; PI: Amy Fu

National Institutes of Health/National Institutes of Aging, R21 2014

“In vivo Quantification of Force Transmission in Compromised Muscles”

Role: Principal Investigator

Priority Score: 50

National Sciences Foundation of China 2012

“The biomechanical mechanism of spasticity to affect the motor control of upper limb”

Role: Co-investigator

Global Gateway Foundation 2012

“Locating Cavitation Site During Spinal Manipulation”

Role: Principal Investigator

NCMIC Foundation Research Grant 2011

“Validation of a Translational Tool to Accurately Locate Cavitation Site during High-Velocity-Low-Amplitude Manipulative Procedures”

Role: Principal Investigator

National Institutes of Health 2009

“Muscle Elasticity: An objective outcome measure in Manual Therapy”

Role: Principal Investigator

Wave Manufacturing Inc. 2009

“Effective use of whole-body vibration in patients with multiple sclerosis”

Role: Principal Investigator

National Institutes of Health 2007

“Intervertebral Motion and Mechanical Load Transmission During Lumbar HVLA Manipulations”

Role: Principal Investigator

U.S. Department of Health and Human Services 2003

“Biomechanical Model of Knee Instability & Rehabilitation”

Role: Co-investigator

Teaching Experience

1998	Teaching Assistant	Basic Engineering Studies
1998	Teaching Assistant	REC 85003: Biomechanics II: Movement Analysis
2004	Assistant Instructor	REC 2804: Mechanics of Tissues & Biomaterials
2004	Assistant Instructor	REC 481: Introduction to Transport Processes in Living Systems
2005	Assistant Instructor	REC 521: Mechanics of Living Tissues & Systems
2005	Guest Lecture	HTI 5123: Mechanics of Living Tissues and Systems
Spring 2006 - present	Assistant Instructor	ANA6015L: Gross Anatomy I Laboratory

Winter 2006 - present	Assistant Instructor	ANA6204L: Gross Anatomy II Laboratory
Fall 2010 – present	Assistant Instructor	ANA6304L: Gross Anatomy III Laboratory
Fall 2007	Lead Instructor	PRI6550: Principles of Human Movement Analysis
Fall, 2008 - present	Lead Instructor	DIR7000: Research Project Direct Study

Supervision Experience

Post-doctoral Fellow:

Dr. Jingyi Guo, New York Chiropractic College, 2011-2013)

Ph.D. student:

Dr. Kirby Janke, Rocky Mountain University of Health Professions (2013-current)

D.C. student:

Yee Lam Li, New York Chiropractic College
 Cameron Brown, New York Chiropractic College
 Andrea Nalli, New York Chiropractic College
 Mattaw DiMond, New York Chiropractic College
 Antonio Wong, New York Chiropractic College

Undergraduate student:

Christopher Kirby, Biomedical Engineering, Rochester Institute of Technology

Journal & Conference Reviewer/Editorial Board Member

Editorial Board Member

- SpringerPlus (Active)
- International Scholarly Research Notices (Active)
- Dataset Papers in Science, Orthopedics section (Active)
- Journal of Medical Engineering (Active)
- ISRN Orthopedics (Inactive)

Program Committee member

- International Conference on BioMedical Engineering and Informatics, 2010

Ad-Hoc Journal Peer Reviewer

- Journal of Biomechanics
- Journal of Orthopedic Research
- Archives of Physical Medicine and Rehabilitation
- PLOS ONE
- Muscle & Nerve
- Ultrasound Imaging
- Journal of Rehabilitation Research and Development
- Journal of Manipulative Physiology & Therapeutics
- Medical Engineering & Physics
- Journal of Musculoskeletal Research
- BioMedical Engineering OnLine

- IEEE Transactions on Information Technology in BioMedicine
- Neuroscience letters
- Medical Engineering & Physics
- Current Medical Imaging Reviews
- Journal of Neurological Disorders
- Computers Methods and Programs in Biomedicine
- Scandinavian Journal of Medicine and Science in Sports
- European Radiology
- SpringerPlus
- Computational and Mathematical Methods in Medicine

Conference Reviewer

- ACC-RAC, 2010, 2011, 2013, 2014
- IEEE International Conference on Robotics and Automation, 2010
- IEEE International Conference on Biomedical Robotics and Biomechatronics, 2010
- The 4th International Conference on Biomedical Engineering and Biotechnology, 2015.

External Reviewer for Funding Agency

Research Grants Council, Hong Kong SAR, China
Competitive Research Funding for the Local Self-financing Degree Sector

2015

Professional Training

May 2000	Sensory Motor Performance Program, Rehabilitation Institute of Chicago, Northwestern University (5 weeks)
Jan 2002	Orthopaedic Biomechanics Laboratory, Johns Hopkins University (6 weeks)
Jun 2002 – Nov 2003	Orthopaedic Biomechanics Laboratory, Johns Hopkins University (18 months)

Research Interests

Ultrasound imaging and elastography, bioinstrumentation, musculoskeletal modeling, orthopedic biomechanics, stroke rehabilitation, and chiropractic-related research

Languages

Spoken: Fluent in Cantonese, English, and Mandarin

Written: Chinese, English

Computer Knowledge

Programming languages: Matlab, LabVIEW, C++, Fortran, Basic, Bodybuilder language, Python

Finite element analysis: Abaqus

Musculoskeletal modeling: SIMM, VIMS, OpenSim

CAD: Solidworks, Vismodel; AutoCAD

Computer animation: Vislab, Matlab 3D animation toolbox

Imaging processing and reconstruction: Analyze, 3D-Doctor, Image J

Statistics: SPSS, SAS