CURRICULUM VITAE

Yi-Xian Qin, Ph.D.
SUNY Distinguished Professor, Chair of Department of Biomedical Engineering
Co-Director, Institute for Engineering-Driven Medicine
State University of New York - Stony Brook University

Summary: Dr. Qin's research and expertise are in biomechanics and mechanobiology, and musculoskeletal tissue adaptation and cellular regulation. His research has been focused on tissue regeneration and translation through physical regulation and characterization of tissue quality, as well as evaluating the mechanisms responsible for tissue remodeling. Yi-Xian is also focused on translational research. He has patented ultrasound diagnostic imaging and therapeutics, as well as mechanical stimulation, technologies for musculoskeletal diseases like osteopenia and fracture with the potential of clinical impacts. He has been extensively serving the Society. He was the Track Chair of the Orthopedic & Rehabilitation Engineering for the BMES Annual Conference, and session chairs for BMES conferences. He helped and initiated the establishing of the 1st BMES Special Interest Group, Cellular and Molecular Bioengineering (CMBE) (2012), and served as its 1st Chair. He is now served as CMBE Treasurer. He has been serving as a member of the BMES Solid Mechanics Committee, and performed regular abstract review and award selections. He is regular reviewer for Annals of BME and Journal of Cellular and Molecular Bioengineering. He is the recipient of the NYSTAR Distinguished Professor - Faculty Development Award, Chancellor's Award for Promising Inventor and Technology, and Iwao Yasuda Award of BMES Cellular and Molecular Engineering. He holds Fellows in American Institute for Medical and Biological Engineering (AIMBE), American Society for Bone and Mineral Research (ASBMR), Biomedical Engineering Society (BMES), International Academy of Medical and Biological Engineering (IAMBE), and International Academy of Astronautics (IAA).

Education

Ph.D.	Mechanical Engineering, State University of New York at Stony Brook, Stony Brook, NY, 1997. Dissertation title: Fluid Flow, Matrix Strain, and Loading Frequency as Interdependent Control parameters in Skeletal Adaptation.
M.S.	Mechanical Engineering, State University of New York at Stony Brook, Stony Brook, NY, 1993. Thesis title: Correlation of Bony Ingrowth to the Distribution of Stress and Strain Parameters Surrounding a Porous-Coated Implant.
B.E.	Biomedical Instrumentation College, the University of Shanghai for Science and Technology, China, 1982

Professional Experience - Academic

2020.10 – present	**Chair** of Department of Biomedical Engineering, Stony Brook University
2020 -	**Co-Director**, Institute for Engineering-Driven Medicine (IEDM)
2019.7- 2020.7	**Acting Vice President/Vice Provost** for Global Affairs, Dean of International Programs and Services, Stony Brook University
2018 - 2020	**Associate Dean** for Academic Affairs and Int'l Programs, College of Engineering and Applied Sciences, Stony Brook University
2007 – present	**Professor** (tenured), Department of Biomedical Engineering, Stony Brook Univ.
1999 - present	**Director**, Orthopaedic Bioengineering Research Laboratory, Stony Brook Univ.
2006 – present	**Adjunct Professor**, Depts. of Biophysics and Physiology, Orthopaedics, Mech Engineering, and Electrical Engineering, Stony Brook University
2003 - 2007	**Associate Professor**, Department of Biomedical Engineering, SUNY Stony Brook
1998 - 2002	**Assistant Professor**, Department of Biomedical Engineering, SUNY Stony Brook
1997 - 1998	**Research Assistant Prof**., Program in Biomedical Engineering, Stony Brook
1991 - 1997	**Research Assistant**, Musculoskeletal Res. Lab., Stony Brook

1986 - 1991	**Research Scientist & Director**, Microstructure Research Lab, School of Dental Medicine, Shanghai Jiaotong University
1983 -1986	**Research Scientist**, Medical Electronics and Medical Acoustics Research Lab, Institute of Biomedical Engineering, Fudan University

Other Professional Positions

2004 - 12	**Associate Team Leader**, National Space Biomedical Research Institute (NSBRI)
2004 - 18	**Adjunct Professor**, Dept of Preventive Med and Community Health, Univ. of Texas Med Branch(UTMB)
2009	**Visiting Prof**., Hong Kong Polytech University, Hong Kong
2009	**Visiting Prof**., Chinese University of Hong Kong, Hong Kong
2015 - 21	**Chair of Board**, Int'l Chinese Musculoskeletal Research Society (ICMRS)
2014 - 17	**Founder and CSO**, QB Sonic, Inc.

Honors, Awards and Experience

2021	Fellow, International Academy of Medical and Biological Engineering (IAMBE)
2019	Fellow, American Society for Biomedical Engineering (BMES)
2019	Fellow, American Society for Bone and Mineral Research (ASBMR)
2018 - present	Associate Editor, Journal of Medicine in Novel Technology and Devices, Elsevier
2013	Iwao Yasuda Award, contribution for Gradient, Interfacial and Spatial Control of Cells and Tissues, Biomedical Engineering Society CMBE SIG
2013	Chair/President, BMES CMBE SIG (Former: Society for Physical Regulation for Biology and Medicine)
2013-14	Guest Editor, BioMed Res International. Special Issue: Bone Tissue Engineering - Cell Motility, Vascularization, Micro-Nano Scaffolding and Remodeling (BMC)
2012	Elected Member, International Academy of Astronautics (IAA)
2011	Elected College Fellow, American Institute for Medical and Biological Engineering (AIMBE)
2012- present	NIH AMS Grant Review Panel (Standing Member, 2013-2017)
2009	Distinguished Service Award, Int'l Hard Tissue Society
2009	Research Advisor of Outstanding PhD Student Award (S. Ferreri), ASME SBC
2008	NYSTAR Distinguished Professor--Development Award
2007	Outstanding Teaching Award, Dept of Biomedical Eng., Stony Brook Univ.
2005 - 2012	Associate Editor (founding), Journal of Orthopedic Surgery and Research
2006 - present	NIH Special Emphasis Review Panel, MOSS
2004 - present	President and Board Director, International Chinese Musculoskeletal Res Society
2003 –present	NIH Musculoskeletal Tissue Eng. (MTE) Grant Review Panel (Standing Member 2006-2010)
2006 - present	NIH Small Business Review Panel
2002	Chancellor's Award for Promising Inventor and Technology, SUNY
1999 - 2003	Whitaker Investigator, The Whitaker Foundation
2000	Recognition Award for Integration of Res. and Integration, SUNY Stony Brook
1997	President's Award to Outstanding Doctoral Students, SUNY Stony Brook
1988	Science and Technology Award, Shanghai High Education Department

Professional and Scientific Society Memberships

Fellow, AIMBE (2011)
Fellow, Int'l Academy of Astronautics (IAA) (2012)
Am Society of Biomechanics, *1994*
Am Society of Mechanical Engineers, *1994*
Fellow, Am Biomedical Engineering Society, *1996*
Am Orthopaedic Research Society, *1993*
Fellow, Am Society for Bone and Mineral Res, *2000*
International Bone and Mineral Society, *2002*
New York Academy of Sciences, *2003*
Int'l Chinese Musculoskeletal Res Society, *2003*
Acoustical Society of America, *2004*
Association for Medical Ultrasound, *2006*
IEEE, 2007
Am Assoc Advancement Science (AAAS),2017

Grants and Funding

Current/Recent:

National Institutes of Health
NIH/NIDDK, R01DK129493-01A1, Qin (MPI) 02/03/2022 – 02/01/2026 Total: $2,518,812
Bioresorbable Zinc Staples for Anastomoses in the Digestive Tract
The major goal of this project is to evaluate a hypothesis that bioresorbable zinc staples have appropriate mechanical strength and biocompatible features to close surgical wound in digestive tract, and shown controlled resorption during the healing. Zhu (PD/MPI)

National Science Foundation
GCR: Programmable Nanorobots Integration with Magnetically-Driven Neuron and Brain Tissue Regeneration
NSF, Qin (PI, SBU), $696,000 (SBU direct, with the total GCR funding of $3.3M), 10/1/20 – 9/30/25
The objective of this study is to bring together researchers and neuroscientists from mechanical and biomedical engineering, neuroscience and experimental therapeutics, as well as the brain institute to quantitatively and qualitatively describe the microvascular transport behavior of nanorobots and their biodynamic integration with neurons and brain tissues in a complex neuron network.

National Institutes of Health
R01 AR060621, NIH/NIAMS, Qin (PI) 09/01/12 – 08/30/19 Total: $1,950K
Functional Fluid Flow Regulated Bone Regeneration
The major goal of this project is to evaluate a hypothesis that functional mechanotransduction regulated by dynamic bone fluid flow, with optimized intensity and rate, is essential and responsible for *in vivo* tissue regeneration, cellular differentiation, and osteogenic mineralization in critical defect healing. The results will benefit for future translational clinical application for the treatment of regenerative bone repair. An avian model will be used.

National Space Biomedical Research Institute
NSBRI Qin (PI), SMST03401 9/1/13-5/31/17 Total: $1,288,950
Portable Quantitative Ultrasound with DXA/QCT and FEA Integration for Human Longitudinal Critical Bone Quality Assessment
The objectives of this study are to develop a portable broadband SCAN for critical skeletal quality assessment (e.g., hip, knee, wrist, and heel), to longitudinally monitoring bone alteration in disuse osteopenia, and to integrate ultrasound with DXA, QCT and finite element analysis (FEA) for the human subject. In vivo human assessment will be evaluated at Stony Brook CRC Center and the JSC/UTMB bedrest facility. Human cadaver will be used for testing the feasibility of identifying bone loss, microstructural and mechanical strength properties.

National Space Biomedical Research Institute
NSBRI Qin (PI) SMST00007 5/1/15-6/30/17 10%, Total: $218,950
Flexible Ultrasound System for Quantitative Diagnosis and Therapeutic System
The objective of this study is to develop a dual 2-D array ultrasound sensing and transducer system in a flexible ultrasound system (FUS) to be integrated and evaluated in ground and space environment for musculoskeletal tissue quality assessment and tissue regeneration.

NIH REACH LIBH
NIH/LIHUB Qin (PI) 2/1/2017-8/31/2018 5% Total: $50,000
Augment of OA Induced Inflammation and Pain Release by Non-invasive Dynamic Array Ultrasound Generated Fluid Flow in Joints
This project's long-term objective is to provide a safe non-invasive ultrasound medical device for release pain induced by Osteoarthritis (OA) in joints.

NIH REACH LIBH
NIH/LIHUB Qin (PI) 11/24/2015-11/23/2016 5% Total: $50,000
Non-Invasive Acoustic Radiation Force Therapy for OA Induced Pain and Cartilage Regeneration

The objective of this project is to provide a safe non-invasive ultrasound medical device for the treatment of Osteoarthritis (OA). Present treatments provide pain relief but no cure for the mechanism of action, cartilage deterioration. The market potential for a non-invasive and non-pharmacological device that provides cartilage regeneration is greater than $4 billion. The specific aim for this proposal is to determine the parameters needed for an ultrasound stimulator for optimum regeneration of cartilage.

Amgen
Amgen, Inc. Qin (PI) 06/01/12 – 12/31/19 3% effort, Total: $80,000
Effect of Sclerostin Antibody (Scl-Ab) in ovariectomized rats with concurrent hindlimb suspension (HLS)
The major goal of this project is to test the role of dynamic muscle stimulation in inhibition of bone loss and muscle atrophy, a loading duration study.

Completed:

NASA
SBIR Snook (TRS, PI), Qin (Subcontract PI) 05/01/12 - 12/31/15 5% Total: $100,000
Wideband Single Crystal Transducer for Bone Characterization
This project is focusing on developing a transducer for in vivo bone characterization for astronauts during space missions. Relaxor piezoelectric single crystals seem to have significant benefits for fabricating a transducer to provide flexibility for a variety of ultrasound methods.

National Institutes of Health
NIH/NIAMS R01 AR052379, Qin (PI) 08/01/05 – 07/31/12 15% Total: $1,798,000
Role of Muscle-Dynamics in Bone Fluid Flow, Circulation and Adaptation
The major goal of this project is to evaluate interrelationship among muscle dynamics, its induced fluid flow in bone, micro circulation in muscle, and bone adaptation. The results will benefit for future translational clinical application for treatment of muscle atrophy and bone loss. A rat disuse model will be used.

National Space Biomedical Research Institute
NSBRI SMST01603 Qin (PI) 11/1/08-10/31/13 15%, Annual Direct: $200,000
Combined Scanning Confocal Ultrasound Diagnostic and Treatment System for Bone Quality Assessment and Fracture Healing
The objectives of this study are to develop a combined diagnostic and treatment ultrasound technology for early prediction of bone disorder and guided acceleration of fracture healing, using SCAD imaging and low-intensity pulse ultrasound.

NIH: Qin (Co-I), **Harnessing Mechanical Signals to Control Mesenchymal Stem Cell Fate**
The project is emphasizing *in vitro* systems, designed to determine the signal transduction pathways involved in proliferation and differentiation of mesenchymal stem cells. Complements the proposed study by defining specific molecular mechanisms, with particular attention to the AKT-GSK3β-β-catenin pathway which controls the biologic responsiveness of MSC populations. C. Rubin, PI.

National Institutes of Health
NIH/NCCAM/CCCR Palmer College Qin (PI/Co-Leader) 07/01/07 – 06/31/12, 10%Total: $430K
Developmental Center to Study Mechanisms & Effects of Chiropractic Manipulation.
The major goal of this project is to evaluate stresses and strains in human, cadaveric lumbar spine specimens, as well as neuron response in an animal model, undergoing various loads.

New York State Foundation for Science, Technology and Innovation (NYSTAR)
Qin(PI) 11/01/09-10/31/12 10%, Annual Direct: $135,000
Acceleration of fracture healing by diagnostic and therapeutic ultrasound
Developing non-invasive technology for translational research on bone fracture healing.

RS Medical
RS Medical, Inc. Qin (PI) 07/01/07 – 07/31/14 Amount total: $200,000
Spatial Distribution of Dynamic Muscle Contraction in Bone and Muscle Adaptation
The major goal of this project is to test the role of dynamic muscle stimulation in inhibition of bone loss and muscle atrophy, a loading duration study.

U.S. Army
USAMRMC W81 XWH-07-1-0337 Qin (PI) 05/01/07-04/30/11 10%, Total: $288,000
Repetitive Bone Fluid Flow in Stress Fractures and its Therapeutic Potentials for Osteoporotic Diseases

The major goals of this project are: to evaluate the stress fracture mechanism with repetitive mechanobiology effects, and test the potential in fracture healing.

National Institutes of Health
NIH/NIAMS RO1 AR049286, Qin (PI) 09/01/03~08/31/09 15%, Amount total: $1,800K
Bone Fluid Flow and its Regulatory Role in Adaptation
The major goals for this project are to evaluate the dynamic functional loading in bone adaptation in the tissue and cellular level.

National Space Biomedical Research Institute
NSBRI TD00207, TD00405, Qin (PI) 04/01/01~10/31/08 15% effort
A Non-invasive Scanning Confocal Ultrasonic Diagnostic System for Bone Quality.
The major goals of this project are: to confirm the feasibility of concept using scanning confocal ultrasound system for assessment of rapid change of bone quantity and quality during microgravity environment.

U.S. Army
USAMRMC DAMD-17-02-1-0218, Qin (PI) 03/01/02~08/31/07 10% effort
Stress Fracture Etiology as Dependent on Mechanically Induced Fluid Flow
The major goals of this project are: to test the mechanism of stress fracture induced by persistent levels of bone fluid flow in the physiologic magnitude which ultimately compromises bone quantity and quality.

Coulter Foundation & Center for Biotechnology
Coulter Foundation Translational Award Qin (PI) 11/1/06-10/31/08 5% effort
Clinical Assessment of Bone Quality using Scanning Confocal Ultrasound Imaging.
The major goal of this project is: to perform clinical translational study for pediatric musculoskeletal evaluation using non-invasive ultrasound.

Eli Lilly Pharmaceuticals
Lilly Research Laboratories Qin (PI) 02/01/06 – 04/31/08 5% effort
Disuse Osteopenia/atrophy and effects of pharmaceutical treatment for bone and muscle turnover
The major goal of this project is to evaluate protein-based treatment in disuse osteopenia and muscle atrophy.

Eli Lilly Pharmaceuticals
Lilly Research Laboratories Qin (PI) 07/01/06 – 10/31/08 3% effort
To Evaluate the Effect of Various Compounds on Skeletal Muscle Mass and Bone Mineral Content/Density in a Hindlimb Suspension Model.
The major goal of this project is to test the role of compounds combined with mechanical loading in inhibition of bone and muscle loss and turnover.

National Institutes of Health
NIH/NCCAM/CCCR Qin (PI-subcontract) 06/01/04 – 05/31/07 5% effort
Effect of Vertebral Loading on Facet Joint Capsule.
The major goal of this project is to evaluate stresses and strains in human, cadaveric lumbar spine specimens, as well as neuron response in an animal model, undergoing various loads.

Brookhaven National Laboratory
Center for Functional Nanomaterials Qin (PI) 01/01/06 – 07/31/06 2% effort
Effects of bone fluid flow on osteoblastic cell growth using a microfluidic device
The major goal of this project is to develop a micro fluidics system for simulation of fluid flow in bone channels.

The Whitaker Foundation
Whitaker Investigator Qin (PI) 9/1/99~2/28/03, 15% effort
Combining Experimental and Analytic Strategies to Determine the Regulatory Role of Intracortical Fluid Flow in Bone Adaptation.
The major goals of this project are: to investigate the mechanism that the magnitude of bone fluid flow, rather than matrix strain, control bone modeling.

The Whitaker Foundation
Qin (PI) 05/01/03-04/30/04.
Intracortical Fluid Flow and its Regulatory Role in Bone Adaptation – Combined Analytical and Experimental Approach.
The major goals of this project are: to investigate the non-invasive determination of porosity and its influence on bone fluid flow.

National Institutes of Health
NIH/NIAMS/NIBIB NIH-R13 Qin (PI) 02/2004-01/2005
6th International Bone Fluid Flow Workshop
The goal of this project is to organize an international conference on bone fluid flow research.

National Institutes of Health
NIH/NCCAM/CCCR AT001701-05 Qin (Co-PI) 01/02 – 12/05
Facet Joint Capsule Strains during Spinal Manipulation.
The major goal of this project is to measure the plane strains in human, cadaveric lumbar spine specimens undergoing impulse loading, which simulate spinal manipulations.

New York Science Technology and Academic Research
Center for Sensor and Center for Biotechnology NYSTAR, Qin (PI) 7/1/02~6/15/03
Development of Scanning Confocal Acoustic Navigation System For Bone Quality..
The project is focused on prototype development and commercialization of the Scanning Confocal Acoustic Navigation (SCAN) system.

New York Science Technology and Academic Research
NYSTAR and Strategic Partnership for Industrial Resurgence (SPIR) Qin (PI) 7/1/01~6/15/03
Scanning Confocal Acoustic Navigation System for Bone Quality.
The major goals of this project are: to aim at initiating a scanning confocal ultrasonic technology and analytic ultrasound-tissue interface modeling.

National Science Foundation
Recognition Award for the Integration of Research and Education (RAIRE), 5/15/00-5/31/01
Integrating Research and Education in Science, Math and Engineering for Undergraduate Course Development in Bioengineering. Qin (PI)
The major goals of this project are: to establish an undergraduate course in introduction to Bioengineering.

National Aeronautics and Space Administration SBIR Program
NASA SBIR, Qin (PI, sub-contract, Luna Innovations) 01/05 – 07/06
Ultrasonic Derivative Measurements of Bone Strain During Exercise.
The major goal of this project is: to develop a method for non-invasively measuring bone strain using ultrasound. This is translational research with the potential of commercialization.

Publications

Peer-Reviewed Journal Papers

1. **Qin, YX**., McLeod, K.J., Guilak, F., Chiang, F-P and Rubin, C.T. (1996): Correlation of Bony Ingrowth to the Distribution of Stress and Strain Parameters Surrounding a Porous-Coated Implant. J. Ortho. Res. 14:862-870.
2. Rubin, C.T., Gross, T., **Qin, YX**., Fritton, S., Guilak, F., and McLeod, K.J. (1996): Differentiation of the Bone Tissue Remodeling Response to Axial and Torsional Loading in the Turkey Ulna. J. Bone Joint Surg. 78-A:1523-1533.
3. **Qin, YX**., Zhu, L., Young, C. and Hsu, W. (1988): PEF-1 Type Occlusal Force Meter and Its Clinical Applications. Chinese J. Stomatology, 8:18-22.
4. **Qin, YX**., Wang, W., and Shao, Q. (1987): The Method of Ultrasonic Convergency for the Blood Flow Measurement with Doppler Ultrasound in the Small Vessel on Oral and Maxillofacial Regions. Chinese J. Biomedic. Eng., 6:132-136.
5. **Qin, Y**., McLeod, K., Otter, M., & Rubin, C. (1997): Intracortical Pore Fluid Pressure and Gradients Generated by Dynamic Loading and Their Potential Role in Bone Adaptation. Annals of Biomed. Eng., 25:449-460
6. Fritton, J.C., Rubin, C.T., **Qin, YX**, and McLeod, K.J. (1997): Vibration in the Skeleton: I. Development of a Resonance-Based Whole Body Vibration Device. Annals of Biomedical Engineering 25:6-12.
7. **Qin, YX**., Rubin, C.T., & McLeod, K.J. (1998): Non-linear Dependence of Loading Intensity and Cycle Number in the Maintenance of Bone Mass and Morphology. J. Orthop. Res. 16:482-489.
8. McLeod, K.J., Rubin, C.T., Otter, M.W. and **Qin, YX**. (1998): Skeletal Cell Stresses and Bone Adaptation. Am. J. Med. Sci., 316:176-183.
9. Otter, M.W., **Qin, YX**., Rubin, C.T. and McLeod, K.J. (1999): Does Bone Perfusion/Reperfusion Initiate Bone Remodeling and the Stress Fracture Syndrome? Medical Hypotheses,53(5):363-368.
10. Khalsa, P.S., Zhang, C., & **Qin, YX**. (2000): Encoding of Location and Intensity of Noxious Indentation into Rat Skin by Spatial Populations of Cutaneous, Mechano-Nociceptors. J. Neurophysiology, 83:3049-3061.
11. Lin, W., **Qin, YX**., and Rubin, C.T. (2001): Ultrasonic Wave Propagation in Trabecular Bone Predicted by the Stratified Model. Annals Biomed Eng, 29(9): 781-790.
12. Rubin, C. T., Sommerfeldt, D. W., Judex, S. and **Qin, YX**. (2001): Inhibition of Osteopenia by Low Magnitude, High

Frequency Mechanical Stimuli. Drug Discovery Today, 6:16:848-858.
13. Demes, B., **Qin, YX**., Stern, J. T. Jr., Larson, S. G., Rubin, C.T. (2001): Patterns of strain in the macaque tibia during functional activity. Am J Physcial Anthropology, 116:257-265.
14. **Qin, YX**., Lin, W., and Rubin, C.T. (2002): The Pathway of Bone Fluid Flow as Defined by *In Vivo* Intramedullary Pressure and Streaming Potential Measurements, Annals Biomed Eng, 30:693-702.
15. Rubin, C. T., Turner, S., Muller, R., Mittra, E., McLeod, K., Lin, W., and **Qin, YX**. (2002): Quantity and Quality of Trabecular Bone in the Femur are Enhanced by a Strongly Anabolic, Noninvasive Mechanical Intervention. J Bone Min Res, 17(2): 349-357.
16. Beck, B., **Qin, YX**., McLeod, K.J. and Otter, M (2002): On the relationship between streaming potential and strain in an in vivo bone preparation. Calcif Tiss Intl, 71(4):335-343.
17. Judex, S., Boyd, S., **Qin, YX**, Miller, L., Müller, R., Rubin, C. (2003) Combining High-Resolution MicroCT with Material Composition to Define the Quality of Bone Tissue. Current Osteoporosis Reports. *1:11-19*
18. **Qin, YX**., Kaplan, T., Saldanah, A. and Rubin, C.T. (2003): Fluid Pressure Gradients, Arising from Oscillations in Intramedullary Pressure, is Correlated with the Formation of Bone and Inhibition of Intracortical Porosity. J Biomech, Oct;36(10):1427-37.
19. Judex, S., Boyd. S., **Qin, YX**., Turner, S., Ye, K., Müller, R., Rubin, C. (2003): Adaptation of trabecular bone to low magnitude vibrations result in increased stiffness and more uniform stress and strain under load. Annals Biomed Eng, 31(1), 12-20.
20. Xia, Y., Lin, W. and **Qin, YX**. (2005): The Influence Of Cortical End-Plate On Broadband Ultrasound Attenuation Measurements At The Human Calcaneus Using Scanning Confocal Ultrasound. J Acoustic Soc of Am, 118 (3):1801-1807.
21. Mittra, E., Rubin, C. and **Qin, YX**. (2005): Interrelationship of trabecular mechanical and microstructural properties in sheep trabecular bone. J Biomech, 38(6):1229-37.
22. Busa, B., Miller, L., **Qin, YX**., Rubin, C., Judex, S. (2005): Rapid Establishment of Chemical and Mechanical Properties during Lamellar Bone Formation. Cal Tis Intl', Dec; 77(6):386-94.
23. Mittra, E., Akella, S. and **Qin, YX**. (2006): The effects of embedding material, loading rate and magnitude, and penetration depth in nanoindentation of trabecular bone. J Biomed Mat Res, Part-A, Oct;79(1):86-93.
24. Lin, W. Mittra, E. and **Qin, YX**. (2006): Determination of ultrasound phase velocity in trabecular bone using time dependent phase tracking technique. J Biomech Eng, Feb., 128(1):24-29.
25. **Qin, YX**., Lam, H.Y., Orzechowski, L. (2006): Anabolic Fluid Flow Stimulation is responsible for Bone Formation as a Manner of Specific Frequency and Magnitude. Int'l Proceeding of 5th World Congress of Biomech, Ed. By D. Liepsch. Medimond S.r.l., ISBN 88-7587-270-8, pg: 45-49.
26. Mankani, M.H., Kuznetsov, S.A., Shannon, B., Nalla, R.K., Ritchie, R.O., **Qin, Y**., Robey, P.G. (2006): Canine Cranial Reconstruction Using Autologous Bone Marrow Stromal Cells. Am J Pathology, *Vol. 168, No. 2, Feb*.
27. Rubin, C. T., Judex, S., **Qin, YX**. (2006): Low-level mechanical signals and their potential as a non-pharmacological intervention for osteoporosis. Age and Ageing, 35-S2: ii26–ii30.
28. Xia, Y., Lin, W. and **Qin, YX**. (2007): Bone Surface Topology Mapping and its Role in Trabecular Bone Quality Assessment using Scanning Confocal Ultrasound. Osteoporosis Intl, Jul;18(7):905-13.
29. Ni, Q., De Los Santos, A, Lam, H., **Qin, YX**. (2007): Assessment of Simulated and Functional Disuse on Cortical Bone by Nuclear Magnetic Resonance. Adv in Space Res, 40:1703-10.
30. Mittra, E., Rubin, C., Gruber, B. and **Qin, YX**. (2008): Evaluation of trabecular mechanical and microstructural properties in human calcaneal bone of advanced age using mechanical testing, μCT, and DXA. J Biomech, 41:368-375.
31. **Qin, YX**., Xia, Y., Lin, W., Mittra, E., Rubin, C., Gruber, B. (2008): Noninvasive Ultrasound Imaging for Bone Quality Assessment using Scanning Confocal Acoustic Diagnosis, μCT, DXA Measurements, and Mechanical Testing. LNCS, ISSN:0302-9743 (p)/1611-3349 (online). Dec, 4901:216-233.
32. Ozcivici E, Ferreri S, **Qin YX**, Judex S (2008): Determination of bone's mechanical matrix properties by nanoindentation. Osteoporosis - Methods Mol Biol. 455:323-34
33. Meng Y., **Qin YX**., DiMasi E., Ba X., Rafailovich M., Pernodet N. (2008): Biomineralization of a Self-Assembled Extracellular Matrix for Bone Tissue Engineering. Tis Eng, Part A, 15(2):355-366.
34. Lam H., **Qin YX**. (2008): The effects of frequency-dependent dynamic muscle stimulation on inhibition of trabecular bone loss in a disuse model. Bone, 43(6):1093-100.
35. **Qin YX**., Lam H. (2009): Intramedullary Pressure and Matrix Strain Induced by Oscillatory Skeletal Muscle Stimulation and its Potential in Adaptation. J Biomech, 42(2):140-145. PMID: 19081096.
36. Lin, W., Xia, Y. and **Qin, YX**. (2009): Characterization of the trabecular bone structure using frequency modulated ultrasound pulse. J Acoust Soc Am. Jun;125(6):4071-7
37. Zhang Z, Yan Y, Lim Y, Tang D, Xie R, Chen A, Tai T, Harris SE, Xing L, **Qin YX**, Chen D (2009): BMP-2 Modulates β-Catenin Signaling through Stimulation of *Lrp5* Expression and Inhibition of β-TrCP Expression in Osteoblasts. J Cellular Biochem, Nov 1;108(4):896-905.
38. Ozcivici E., Luu YK, Adler B, **Qin YX**, Rubin J, Judex S, Rubin CT (2010): Mechanical Signals as Anabolic Agents in Bone. Nat Rev Rheum. Jan;6(1):50-9.
39. Lam H., Brink, P., **Qin YX**. (2010): Skeletal Nutrient Vascular Adaptation Induced by External Oscillatory Intramedullary Fluid Pressure Intervention. J Ortho Surg Res, 5(1):18. PMID: 20222973.

40. Ba X., Rafailovich M., Meng Y., Pernodet N., Wirick S., Füredi-Milhofer H., **Qin YX**, DiMasi E. (2010): Complementary effects of multi-protein components on biomineralization *in vitro*. J Struct Biology. 170(1):83-92.
41. **Qin YX**., Lam H. Ferreri S, Rubin C. (2010): Dynamic Skeletal Muscle Stimulation and its Potential in Bone Adaptation. J Musculoskeletal and Neuronal Interactions. March, 10(1):12-24. PMID: 20190376.
42. Lam H., Hu M., **Qin YX**. (2011): Alteration of Contraction-to-Rest Ratio to Optimize Trabecular Bone Adaptation Induced by Dynamic Muscle Stimulation. Bone, Feb;48(2):399-405, PMID: 20850577.
43. **Qin, YX**. (2010): Challenges to the Musculoskeleton during a Journey to Mars:
Assessment and Counter Measures. J Cosmology, 12:3778-3780.
44. Muir J., Judex S., **Qin YX**., Rubin C. (2011): Postural Instability Caused by Extended Bed Rest Is Alleviated by Brief Daily Exposure to Low Magnitude Mechanical Signals. Gait & Posture, 33:429-435.
45. Uddin S.M.Z., Cheng J., Lin W., **Qin YX**. (2011): Low-Intensity Amplitude Modulated Ultrasound Increases Osteoblastic Mineralization. Cell Molecular Bioeng, 4:81-90.
46. Cheng, J., Lu, J., Lin, W., and **Qin, YX**. (2011): A new algorithm for spatial impulse response of rectangular planar transducers. Ultrasonics, Feb;51(2):229-37. Epub 2010 Sep 4.
47. Ferreri, S., Talish, R., Trandafir, T., **Qin, YX**. (2011): Mitigation of bone loss with ultrasound induced dynamic mechanical signals in an OVX induced rat model of osteopenia. BONE, May 1; 48(5):1095-102, PMID: 21241838.
48. Cheng J, Lu JY, Lin W, **Qin YX** (2011): A new algorithm for spatial impulse response of rectangular planar transducers. Ultrasonics, Feb;51(2):229-37.
49. Cheng J, Lin W, Qin YX (2011): Extension of the distributed point source method for ultrasonic field modeling. Ultrasonics, 5:571-580.
50. Serra-Hsu F, Cheng J, Lynch T, **Qin YX** (2011): Evaluation of a pulsed phase-locked loop system for noninvasive tracking of bone deformation under loading with finite element and strain analysis. Physiol Meas. Aug; 32(8):1301-12. PMID: 21765205.
51. Cheng J, Serra-Hsu F, Tian Y, Lin W, **Qin YX** (2011): Effects of phase cancellation and receiver aperture size on broadband ultrasonic attenuation for trabecular bone in vitro. Ultrasound Med Biol, Dec;37(12):2116-25. Epub 2011 Oct 26. PMID: 22033134.
52. **Qin YX**., Zhang S., Ferreri S, Cheng J. (2012): Therapeutic ultrasound on bone cellular and in vivo adaptation. J Acoust Soc Am, 131(4):3458.
53. Lin L, Cheng J, Lin W, **Qin YX** (2012): Prediction of Trabecular Bone Principal Structural Orientation using Quantitative Ultrasound Scanning. J Biomech, 45(10):1790-5. PMID:22560370.
54. Zhang S, Cheng J, **Qin YX** (2012): Mechanobiological modulation of cytoskeleton and calcium influx in osteoblastic cells by short-term focused acoustic radiation force. PLoS ONE, 7(6):e38343, PMID: 22701628.
55. Lin, W., Serra-Hsu, F., Cheng, J., and **Qin, YX**. (2012): Frequency Specific Ultrasound Attenuation Is Sensitive to Trabecular Bone Structure. Ultrasound Med Biol, 38(12):2198-2207. PMID: 22975035.
56. Hu, M., Cheng, J., **Qin YX**. (2012): Dynamic hydraulic flow stimulation on mitigation of trabecular bone loss in a rat functional disuse model. Bone, Jul 20, 51(4):819-25, PMID: 22820398.
57. Li Z, Zuo L, Luhrs G, Lin L and **Qin YX** (2013): Electromagnetic Energy-Harvesting Shock Absorbers: Design, Modelling and Road Tests. IEEE Transaction on Vehicular Technology. 62(3):1065-74. http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6399623.
58. **Qin, YX**., Lin, W., Mittra, E., Xia, Y., Cheng, J., Judex, S., Rubin, C., Müller, R. (2013): Prediction of trabecular bone qualitative properties using scanning quantitative ultrasound. Acta Astronautics, 92(1):79-88. PMID: 23976803.
59. Uddin, SZ., Hardjiargyou, M., Cheng, J., Zhang, S., Hu, M., and **Qin, YX**. (2013): Reversal of the Detrimental Effects of Simulated Microgravity on Human Osteoblasts by Modified Low Intensity Pulsed Ultrasound. Ultrasound Med Biol, 39(5):804-12, PMID: 23453382.
60. Hu, M., Yeh, R., Lien, M., Teeratananon, M., Agarwal, K., **Qin YX**. (2013): Dynamic Fluid Flow Mechanical Stimulation Modulates Bone Marrow Mesenchymal Stem Cells. Bone Research, 1(1):94-104.
61. Lalwani, G., Henslee, A., Farshid, B., Lin, L., Kasper, F., **Qin, YX**., Mikos, A., Sitharaman, B. (2013): Two-Dimensional Nanostructure- Reinforced Biodegradable Polymeric Nanocomposites for Bone Tissue Engineering. Biomacromolecules, bm-2012-01995s. 14(3):900-9. PMID: 23405887.
62. Lalwani, G., Henslee, A., Farshid, B., Lin, L., Kasper, F., **Qin, YX**., Mikos, A., Sitharaman, B. (2013): Tungsten Disulfide Nanotubes Reinforced Biodegradable Polymers for Bone Tissue Engineering. Acta Biomaterialia 9(9):8365-73. PMID: 23727293.
63. Klein GL, Xie Y, **Qin YX**, Lin L, Hu M, Enkhbaatar P, Bonewald LF (2013): Preliminary Evidence of Acute Bone Resorption in a Sheep Model of Acute Burn Injury: An Observational Study. Journal of Bone and Mineral Metabolism, Jun 20. PMID: 23784552.
64. Ni Q, Dixon H, Gutierrez G, Bi L, **Qin, YX**. (2013): Characterization of Synthesized Nano-encapsulated Drug for Bone Loss on Hind Limb Suspension Rat Model by NMR and Micro-CT. Adv in Bioscience and Bioengineering. 1(1):1-7, doi: 10.11648/j.abb.20130101.11.
65. Hu M, Serra-Hsu F, Bethel N, Lin L, Ferreri S, Cheng J, **Qin YX**. (2013): Dynamic Hydraulic Fluid Stimulations Regulated Intramedullary Pressure. BONE, 57(1): 137-41. PMID: 23895997.

66. Uddin, SZ., and **Qin, YX**. (2013): Enhancement of Osteogenic Differentiation and Proliferation in Human Mesenchymal Stem Cells by a Modified Low Intensity Ultrasound Stimulation under Simulated Microgravity. PLoS ONE, Sep 12:8(9): e73914. PMID: 24069248.
67. Lin L, Lin W, **Qin YX**. (2013): Integrated transmission-reflection quantitative ultrasound noninvasive prediction of trabecular bone principal structural orientation validated with mechanical testing. J Acoust Soc Am, 134(5): 4121. PMID: 24181472.
68. Rubin CT, Seeherman H, **Qin YX**, Gross TS (2013): The mechanical consequences of load bearing in the equine third metacarpal across speed and gait: the nonuniform distributions of normal strain, shear strain, and strain energy density. FASEB J. 27(5):1887-94. PMID: 23355269.
69. Xu K, Ta D, He R, **Qin YX**, Wang W (2014): Axial transmission method for long bone fracture evaluation by ultraonic guided waves: Simulation, phantom and in-vitro experiment. Ultrasound Med Biol, 40(4):817-27. PMID: 24433749.
70. Lin L, Oon HY, Lin W, **Qin YX**. (2014): Principal trabecular structural orientation predicted by quantitative ultrasound is strongly correlated with μFEA determined anisotropic apparent stiffness. Biomech Model Mechanobiol, Jan. 14, PMID: 24419558.
71. Hu M, **Qin YX** (2014): Dynamic Fluid Stimulation on Cortical Bone and Alterations of the Gene Expressions of Osteogenic Growth Factors and Transcription Factors in a Rat Functional Disuse Model. Archives of Biochem and Biophysics, 545:154-61. PMID: 24486201.
72. Wu L, Lin L, **Qin YX** (2014): Enhancement of Cell Ingrowth, Proliferation and Early Differentiation in a 3-D SiC Scaffold using Low-Intensity Pulsed Ultrasound. Tissue Eng Part A. Jun 16, PMID: 24935158.
73. Hu M, Cheng J, Bethel N, Serra-Hsu F, Ferreri S, Lin L, **Qin YX** (2014): Interrelation between External Oscillaroty Muscle Coupling Amplitude and in vivo Intramedullary Pressure Related Bone Adaptation. BONE, Jun 17;66C:178-181. PMID: 24947450.
74. **Qin YX**, Hu M (2014): Mechanotransduction in Musculoskeletal Tissue Regeneration – Effects of Fluid Flow, Loading, and Cellular-Molecular Pathways. BioMed Res International, (*Epub 2014 Aug 18*). PMID: 25215295
75. Pei GX, **Qin YX**, Hutmacher DW, Zhang ZY (2014): Bone Tissue Engineering: Cell Motility, Vascularization, Micro-Nano Scaffolding, and Remodeling. Editorial, BioMed Res International, (*Epub 2014 Aug 19*). PMID: 25210708
76. Wu J, Liu G, **Qin YX**, Meng Y (2014): Effect of low-intensity pulsed ultrasound on biocompatibility and cellular uptake of chitosan-TPP nanoparticles. Biointerphases, 9(3):031016. PMID: 25280857.
77. Lin L, Ambike E, Sahul R., **Qin YX**. (2014): Super wideband quantitative ultrasound imaging for trabecular bone with novel wideband single crystal transducer frequency sweep measurement. J Acoust Soc Am, 135(4): 2372. PMID: 25235881
78. Zhou Y, Mohan A, Moore DC, Lin L, Zhou FL, Cao J, Wu Q, **Qin YX**, Reginato AM, Ehrlich MG, Yang W (2015): SHP2 regulates osteoclastogenesis by promoting preosteoclast fusion. FASEB J. 2015 Jan 1, PMID: 25593124.
79. Li XF, Cai XR, Fan F, Niu HJ, Li SY, Li DY, Fan YB, **Qin YX**. (2015): Observation of sGAG content of human hip joint cartilage in different old age groups based on EPIC micro-CT. Connective Tis Res, Apr;56(2):99-105, PMID: 25602512.
80. Uddin, SZ., and **Qin, YX**. (2015): Dynamic Acoustic Radiation Force Retains Bone Structural and Mechanical Integrity in a Functional Disuse Osteopenia Model. Bone, Jun;75:8-17, PMID: 25661670.
81. Lin L, Lin W, **Qin YX**. (2015): Enhanced correlation between quantitative ultrasound and structural and mechanical properties of bone using combined transmission-reflection measurement. J Acoust Soc Am, Mar;137(3):1144. PMID: 25786930.
82. Hu M, Tian GW, Gibbons DE, **Qin YX** (2015): Dynamic Fluid Flow Induced Mechanobiological Modulation of In Situ Osteocyte Calcium Oscillations. Arch Biochem Biophys, Jun 1;579:55-61. PMID: 26045248.
83. Lalwani, G, Gopalan A, D'Agati M, Srinivas Sankaran J, Judex S, **Qin YX**, Sitharaman, B (2015): Porous three-dimensional carbon nanotube scaffolds for tissue engineering. J Biomed Mater Res A. Mar 18. doi: 10.1002/jbm.a.35449. PMID: 25788440.
84. Patel SC, Lalwani G, Grover K, **Qin YX**, Sitharaman, B (2015): Fabrication and cytocompatibility of in situ cross-linked carbon nanomaterial films. Sci Rep. 2015 May 28;5:10261. doi: 10.1038/srep10261. PMID: 26018775.
85. Grover K, Lin L, Hu M, Muir J, **Qin YX**. (2016): Spatial distribution and remodeling of elastic modulus of bone in micro-regime as prediction of early stage osteoporosis. J Biomech, 49(2):161-6. PMID: 26705110.
86. Zhang D, Hu M, Chu T, Lin L, Wang J, Li X, Ke HZ, **Qin YX** (2016): Sclerostin antibody prevented progressive bone loss in combined ovariectomized and concurrent functional disuse. BONE, 87:161-8. PMID: 26868528.
87. Zhang D, Hu M, Chu T, Lin L, Wang J, Li X, Ke HZ, **Qin YX** (2016): Erratum to Sclerostin antibody prevented progressive bone loss in combined ovariectomized and concurrent functional disuse. BONE, 89:86. PMID: 27262889.
88. Uddin SZ, Richbourgh B, Li YS, Komastu D, **Qin YX**, and Liu C (2016): Chondro-Protective Effects of Low Intensity Pulsed Ultrasound. Osteoarthritis and Cartilage, Nov;24(11):1989-1998. PMID: 27364595.
89. Vojdani S, Fernandez L, Jiao J, Enders T, Ortiz S, Lin L, **Qin YX**, Komatsu DE, Penna J, Ruotolo CJ (2016): Novel Spiked-Washer Repair Is Biomechanically Superior To Suture And Bone Tunnels for Arcuate Fracture Repair. J Orthop Trauma. PMID: 27984448.
90. Patel S, Owais A, Zhang D, Grover K, **Qin YX**, Sitharaman B. (2016): Layer-by-Layer, Ultrasonic Spray Assembled 2D and 3D Chemically Crosslinked Carbon Nanotubes and Graphene. J Materials Res. (*in press*).

91. Hu M, Lam H, Yeh R, Teeratananon M, **Qin YX** (2017): Comparison of Morphological Changes of Muscle Fibers in Response to Dynamic Electrical Muscle Contraction and Dynamic Hydraulic Stimulation in a Rat Hindlimb Disuse Model. Physiological Res. (*Epub*). PMID: 28248540.
92. Meng Y., Faillace ME, Dorst K, Palmaccio SJ, Miller L, **Qin YX** (2017): In situ examination of osteoblast biomineralization on sulfonated polystyrene-modified substrates using Fourier transform infrared microspectroscopy. Biointerphases. (*Epub*). PMID: 28693327.
93. Yuan M, Wang Y, **Qin YX** (2017): SPIO-Au core-shell nanoparticles for promoting osteogenic differentiation of MC3T3-E1 cells: concentration-dependence study. J Biomed Materials Res: Part A. (*Epub).* PMID: 28869707
94. Gadomski B, McGilvray KC, Easley JT, Palmer RH, **Qin YX**, Puttlitz C (2017): An Investigation of Shock Wave Therapy and Low-Intensity Pulsed Ultrasound on Fracture Healing Under Reduced Loading Conditions in an Ovine Model. J Orthop Res. (*Epub*). PMID: 28762588.
95. Yuan M, Wang Y, Longtin J, Hwang D, **Qin YX** (2017): Tunable SPIO-Au core-shell nanoparticles with high photothermal efficiency: thermocouple-tip-exposing temperature assessment and biocompatibility study. Journal of Biomedical Materials Research: Part A. 105(12):3350-3359. PMID: 28869707
96. Zhang ZK, Guo X, Lao J, **Qin YX** (2017): Effect of capsaicin-sensitive sensory neurons on bone architecture and mechanical properties in the rat hindlimb suspension model. J Orthop Translat. July 2017. PMID: 29662756
97. Zhu D, Su Y, Zheng Y, Fu B, Tang L, **Qin YX** (2018): Zinc regulates vascular endothelial activities through zinc-sensing receptor ZnR/GPR39. Am J Physiology – Cell Physiology. 1;314(4):C404-C414. PMID: 29351417
98. Moonga S, **Qin YX** (2018): MC3T3 Infiltration and Proliferation in Bovine Trabecular Scaffold Regulated by Dynamic Flow Bioreactor and augmented by Low-Intensity Pulsed Ultrasound. J Orthop Translation, 2018 Mar 15;14:16-22, PMID: 30035029.
99. Yuan M, Wang Y, **Qin YX** (2018): Promoting neuroregeneration by applying dynamic magnetic fields to a novel nanomedicine: superparamagnetic iron oxide (SPIO)-gold nanoparticles bounded with nerve growth factor (NGF. Nanomedicine: Nanotechnology, Biology, and Medicine. 5;14(4):1337-1347. PMID: 29627520
100. Chen XJ, Yang F, Chen ZQ, He MC, Hong GJ, Huang JY, Zhou YC, **Qin YX**, Wei QS, He W (2018): Association of reduced sclerostin expression with collapse process in patients with osteonecrosis of the femoral head. Int Orthop. Jul;42(7):1675-1682, PMID: 29785591.
101. Richardson MW, Tsouris ND, Hassan CR, Elbayar JH, **Qin YX**, Komatsu D, Rizzi AV, Paci JM (2019): A Biomechanical Comparison of Alternative Graft Preparations for All-Inside Anterior Cruciate Ligament Reconstruction. Arthroscopy. May;35(5):1547-1554. PMID: 30987907
102. Su Y, Cockerill I, Wang Y, **Qin YX**, Chang L, Zheng Y, Zhu D (2018): Zinc-Based Biomaterials for Regeneration and THerapy. Trends in Biotechnology, TIBTEC 1720 (*Epub*)
103. Zhang D, Miranda M, Li X, Han J, Sun Y, Rojas N, He S, Hu M, Lin L, Li X, Ke HZ, and **Qin YX** (2019): Retention of osteocytic micromorphology by sclerostin antibody in a concurrent ovariectomy and functional disuse model. Annals NY Academy Sci, Special Issue: Musculoskeletal Repair and Regeneration. NYAS 13991 (E-pub). Apr;1442(1):91-103, PMID: 30644553
104. Li X, Sun Y, Zhou Z, Zhang D, Jiao J, Hu M, Hassan CR, and **Qin YX** (2019): Mitigation of articular cartilage degeneration and subchondral bone sclerosis in osteoarthritis progression using low-intensity ultrasound stimulation. Ultrasound Med & Biol, https://doi.org/10.1016/j.ultrasmedbio. 2019 Feb 20;11(7):6809-6819. PMID: 30693753
105. **Qin YX**, Xia Y, Muir J, Lin W, Rubin CT (2019): Quantitative ultrasound imaging monitoring progressive disuse osteopenia and mechanical stimulation mitigation in calcaneus region through a 90-day bedrest human study. J Orthop Translation, https://www.sciencedirect.com/science/article/pii/S2214031X18300275. 2018 Dec 24;18:48-58. PMID: 31508307
106. Liu J, Li X, Zhang D, Jiao J, Wu L, Hao F, and **Qin YX** (2018): Acceleration of Bone Defect Healing and Regeneration by Low-Intensity Ultrasound Radiation Force in a Rat Tibial Model. Ultrasound Med & Biol, Dec;44(12):2646-2654. PMID: 30286949
107. Zhu D, Cockerill I. Su Y, Zhang Z, Fu J, Lee K-W, Ma J, Okpokwasili C, Tang L, Zheng Y, **Qin YX**, Wang Y (2019): Mechanical Strength, Biodegradation, and In Vitro and In Vivo Biocompatibility of Zn Biomaterials. ACS Applied Mat & Interfaces. 2019 Feb 20;11(7):6809-6819. PMID: 30693753
108. Zhu D, Cockerill I. Su Y, Zhang Z, Fu J, Lee K-W, Ma J, Okpokwasili C, Tang L, Zheng Y, **Qin YX** (2019): Interfacial zinc phosphate is the key controlling biocompatibility of metallic zinc implants. Adv Sci. (accepted).
109. He M, Gong SD, Chen XJ, Yang F, Pang FX, Chen ZQ, Huang JY, Zhou YC, **Qin YX,** He W, Wei QS (2018): Plasma C-terminal cross-linking telopeptide of type II collagen as a biomarker in advanced stages of femoral head osteonecrosis. Biomed Pharmacother. 111:1213-1220. PMID: 30841434.
110. Su Y, Chang L, Cockerill I, Zheng Y, Tang L, **Qin YX**, Zhu D (2019): Biofunctionalization of metallic implants by calcium phosphate coatings. Bioact Mater. 2019 May 20;4:196-206. Doi: 10.1016/j.bioactmat.2019.05.001. PMID: 31193406
111. Gong SD, Chen XJ, Chen ZQ, He XM, Pang FX, Huang JY, Zhou YC, **Qin YX**, Liu SJ, Wei QS (2019): Elevated plasma cartilage oligomeric matrix protein (COMP) level are associated with the progression of non-traumatic osteonecrosis of femoral head. Clin Chim Acta. Mar;490:214-221, PMID: 30217750
112. Su Y, Wang K, Gao J, Yang Y, **Qin YX**, Zheng Y, Zhu D (2019): Enhanced Cytocompatibility and Antibacterial Property of Zinc Phosphate Coating on Biodegradable Zinc

Materials. ACTA Biomaterials. Oct 15;98:174-185, PMID: 30930304

113. Grover K, Hu M, Lin L, Muir J, **Qin YX**. (2019): Functional disuse initiates medullary endosteal micro-architectural impairment in cortical bone characterized by nanoindentation. J Bone and Mineral Metabolism. 2019 Nov;37(6):1048-1057, PMID: 31292723
114. Wang Y, Xue Y, Wang J, Zhu Y, Zhu Y, Zhang X, Liao J, Li X, Wu X, **Qin YX**, Chen W (2019): A composite hydrogel with high mechanical strength, fluorescence, and degradable behavior for bone tissue engineering. Polymers. 2019 Jul 1;11(7):1112. doi: 10.3390/polym11071112. PMID: 31266178
115. Yuan M, Wang Y, **Qin YX** (2019): Engineered nanomedicine for neuroregeneration: Light emitting diode-mediated superparamagnetic iron oxide-gold core-shell nanoparticles functionalized by nerve growth factor. Nanomedicine: Nanotech, Biol, & Med. Oct;21:102052. PMID: 31349088
116. Su Y, Yang H, Gao J, **Qin YX**, Zheng Y, Zhu D (2019): Interfacial zinc phosphate is the key controlling biocompatibility of metallic zinc implants. Adv Science. May 17;6(14):1900112. PMID: 31380203
117. Sun S, Sun L, Kang Y, Tang L, **Qin YX**, Ta D (2019): Therapeutic effects of low-intensity pulsed ultrasound with different intensities on osteoporosis in ovariectomized rats – intensity dependent study. Ultrasound Med & Biol. 2020 Jan;46(1):108-121. PMID: 31587953
118. Su Y, Cockerill I, Wang Y, **Qin YX**, Chang L, Zheng Y, Zhu D (2019): Zinc-based biomaterials for regeneration and therapy. Trends Biotechnol. 2019 Apr;37(4):428-441, PMID: 30470548
119. Gurevich M, Hassan CR, Denney BS, **Qin YX**, Penna J, Komatsu DE (2019): Effect of 1.5 mm biter-width meniscectomy on cadaveric knee pressures. J Orthop Surg Res (in review).
120. Hassan CR, **Qin YX**, Komatsu D, Uddin SZ (2019): Utilization of Finite Element Analysis for Articular Cartilage Tissue Engineering. Materials. Oct 12;12(20), PMID: 31614845
121. Hu M, Lee W, Jiao J, Li X, Gibbons DE, Hassan CR, Tian GW, **Qin YX** (2019): Mechanobiological modulation of *in situ* and *in vivo* osteocyte calcium oscillation by acoustic radiation force. Physiological Res. Ann NY Acad Sci. Oct 23, doi: 10.1111/nyas.14262. PMID: 31646646
122. Wang HH, Wang K, Deng Z, Li XF, **Qin YX**, Zhan HS, Niu WX (2019): Effects of facet joint degeneration on stress alterations in cervical spine C5-C6: A finite element analysis. Math Biosci Eng. Physiological Res. Aug 14;16(6):7447-7457. PMID: 31698622
123. Su Y, Cockerill I, Zheng Y, Tang L, **Qin YX**, Zhu D (2019): Interfacial zinc phosphate is the key controlling biocompatibility of metallic zinc implants. Bioact Mater. 2019 May 20;4:196-206, PMID: 31193406
124. Fu J, Su Y, **Qin YX**, Zheng Y, Wang Y, Zhu D (2020): Evolution of metallic cardiovascular stent materials: A comparative study among stainless steel, magnesium and zinc. Biomaterials. 2020 Feb;230:119641. PMID: 31806406
125. Yi X, Wu L, Liu J, Li B, Zhou Q and **Qin YX** (2020): Low-intensity pulsed ultrasound protects subchondral bone in rabbit temporomandibular joint osteoarthritis by suppressing TGF-β1/Smad3 pathway. J Ortho Res. 2020 Feb 15. doi: 10.1002/jor.24628. PMID: 32060941
126. Cockerill I, Su Y, Sinha S, **Qin YX**, Zheng Y, Young ML, Zhu D (2020): Porous zinc scaffolds for bone tissue engineering applications: A novel additive manufacturing and casting approach. Mater Sci Eng C Mater Biol Appl. 2020 May;110:110738. doi: 10.1016/j.msec.2020.110738. PMID: 32204047
127. Wang Y, Zhu Y, Xue Y, Wang J, Li, X, Wu X, **Qin YX**, Chen W (2020): Sequential in-situ route to synthesize novel composite hydrogels with excellent mechanical, conductive, and magnetic responsive properties. Material Design. 193 (2020) 108759, https://doi.org/10.1016/j.matdes.2020.108759
128. Yu W, Wu XG, Cen HP, GuoY, Li CX, Wang Y, **Qin YX**, Chen W (2020): Study on the biomechanical responses of the loaded bone in macroscale and mesoscale by multiscale poroelastic FE analysis. BioMed Eng Online. (2019) 18:122, https://doi.org/10.1186/s12938-019-0741-3
129. Hassan CR, Lee W, Komatsu D, **Qin YX** (2020): Evaluation of Nucleus Pulposus Fluid Velocity and Pressure Alteration Induced by Cartilage Endplate Sclerosis using a Poro-elastic Finite Element Analysis. Biomech Model Mechanobio. https://doi.org/10.1007/s10237-020-01383-8
130. Gao J, Su Y, **Qin YX** (2020): Calcium pohosphate coatings enhance biocompatibility and degradation resistance of magnesium alloy: Correlating *in vitro* and *in vivo* studies. Bioactive Materials. 6 (2021) 1223-1229. PMID: https://doi.org/10.1016/j.bioactmat.2020.10.024
131. He MC, Zhang J, Chen XJ, Shen YS, Fang B, **Qin YX**, He W, Wei QS (2020): Osteoclastic activity was associated with the development of steroid-induced osteonecrosis of femoral head. Artificial Cells, Nanomed, Biotech. 48:1, 1036-1046, DOI: 10.1080/21691401.2020.1774596 https://doi.org/10.1080/21691401.2020.1774596
132. Wang JH, Xue YN, Wang YQ, An MW, **Qin YX**, Chen W (2021): High-strength and tough composite hydrogels reinforced by the synergistic effect of nano-doping and triple-network structures. European Polymer J. Online Nov. 2020, 110122. https://doi.org/10.1016/j.eurpolymj.2020.110122
133. Wang JH, Xue YN, Wang YQ, An MW, **Qin YX**, Chen W (2021): Fe3+, NIR light and thermal responsive triple network composite hydrogel with multi-shape memory effect. Composites Science and Technology (*accepted*).
134. Zhang G, Li X, Wu L, and **Qin YX** (2021): Piezo1 Channel Activation in Response to Mechanobiological Acoustic Radiation Force in Osteoblastic Cells. Bone Res 9, 16 (2021). https://doi.org/10.1038/s41413-020-00124-y
135. Sun S, Tang L, Zhao T, Kang Y, Sun L, Liu C, Li Y, Xu F, **Qin YX**, Ta D (2021): Longitudinal effects of low-intensity pulsed ultrasound on osteoporosis and osteoporotic bone defect in ovariectomized rats. Ultrasounics. May

2021, Vol 113. https://doi.org/10.1016/j.ultras.2021.106360

136. Maiorino L, Shevik M, Adrover JM, Han X, Georgas E, Wilkinson JE, Seidner H, Foerschner L, Tuveson D, **Qin YX**, Egeblad M (2022): Longitudinal intravital imaging through clear silicone windows. JoVE Journal. https://www.jove.com/v/62757?status=a64763k
137. Gan Z, Guo B, Cheng J, **Qin YX** (2022): Design and simulation of a 2-D array flexible ultrasound transducer system for tissue characterization – A pilot study. Med Novel Tech Device. Vol 13, March 2022, 100106. https://doi.org/10.1016/j.medntd.2021.100106
138. Wang Y, Liao J, Wu X, Zhu F, **Qin YX**, Chen W, Zheng Q (2022): Thermal and NIR controlled flexible switching devices using a smart conductive composite hydrogel approach. Composites Sci and Tech. Vol 222, 3 May 2022. https://doi.org/10.1016/j.compscitech.2022.109371
139. Macaluso B, Hassan CR, Swanson DR, Nazemi A, Zaverukha E, Paulus M, Komatsu D, **Qin YX** (2022): Biomechanical Comparison of Krackow Repair and Percutaneous Achilles Repair Systen for Achilles Tendon Rupture Fixation - A Cadaveric and Finite Element Analysis (FEA) Study. Foot & Ankle Orthop. Mar 31;7(1):24730114221088502. doi: 10.1177/24730114221088502
140. Su Y, Fu J, Lee W, Du S, **Qin YX**, Zheng Y, Wang Y, Zhu D (2022): Improved mechanical, degradation, and biological performances of Zn-Fe alloys as bioresorbable implants. Bioact Mater. doi: 10.1016/j.bioactmat.2021.12.030. PMID: 35386444
141. Georgas E, Yuan M, Chen J, Wang Y, **Qin YX** (2022): Regulation of Ca^{2+} flux activities and action potential by noninvasive dynamic magnetic field with superparamagnetic iron oxide-gold nanoparticles. Nanomaterials.
142. Yuan M, Harmett MC, Yan TH, Georgas E, **Qin YX**, Zhou HC, Wang Y (2022): Progress, opportunities, and challenges of magneto-plasmonic nanoparticles under remote magnetic and light stimulation for brain-tissue and cellular regeneration. Nanomaterials. 2022, *12*(13), 2242; https://doi.org/10.3390/nano12132242
143. Maiorino L, Shevik M, Adrover JM, Han X, Georgas E, Wilkinson JE, Seidner H, Foerschner L, Tuveson DA, **Qin YX**, Egeblad M (2022): Longitudinal Intravital Imaging Through Clear Silicone Windows. Cancer Res, Jan 5, 2022, doi: 10.3791/62757
144. Wang Y, Zhu Y, Zhang X, Zhu F, **Qin YX**, Chen W, Zheng Q (2022): Luminescent composite organohydrogels with Fe^{3+}, pH, and glucose-dependent shape memory behavior accompanied with diverse fluorescence variation. Chem Eng. Vol 450, 26 May 2022. https://doi.org/10.1016/j.cej.2022.137930
145.

Books & Chapters (More than 20 chapters)

Peer-Reviewed Conference Proceedings and Abstracts (More than 400 proceeding abstracts)

Invited Lectures (more than 40 invited lectures)

Patents and Disclosures (3 issued US patents, 6 disclosures)

BME Programs and Course Development (founding faculty of Stony Brook BME Programs)

Service

Departmental Service

2020 - Department Chair

College and University Service

College of Engineering and Applied Sciences

2000-2016 Committee on Academic Standing and Appeals (CASA).

2017-2020 Assoc Dean for Academic Affairs and Int'l Programs, CEAS

University

2014-2020 University Senate

2017 Director Search Committee, Long Island High Technology Incubator

2018 COACHE Committee

2019-2020 University Council

2019-2020 Acting Vice President/Vice Provost for Global Affairs, and Dean of International Academic Programs

Professional Activities Outside University

National & International Scientific Conferences

- Organizer, The 6th International Bone Fluid Flow Workshop, Seattle, 2004.
- Annual meetings for Biomedical Engineering Society
- Annual meetings for American Society of Mechanical Engineers
- Bi-annual meetings for ASME Bioengineering
- Organizer, The 8th International Bone Fluid Flow Workshop, New York, 2007.
- Track Chair, Orthopedic & Rehabilitation Engineering, Biomedical Engineering Society Annual Conference, Los Angeles, 2007
- Organizer, Musculoskeletal Research Workshop, Beijing, November, 2006
- Co-Organizer, International Bone and Mineral Research Conference, Beijing, 2008
- Co-Organizer, International Bone and Mineral Research Conference, ShenZhen, 2010
- 2nd BMES-SPRBM Cellular and Molecular Bioengineering, Puerto Rico, 2012
- Category Chair, Genetic Disorders of Bone and Mineral Metabolism, ASBMR 2012
- Executive Chair, International Bone and Mineral Research Conference, Xi'An, 2012
- Chair, BMES CMBE-SIG, 2013
- Category Poster Chair, Muscle and Bone Interactions (Basic) Category, ASBMR 2013
- Co-Organizer, International Osteoporosis and Bone and Research Conference, Xiamen, China, 2014
- Co-Organizer, International Osteoporosis and Bone and Research Conference, Chongqing, China, 2016
- Co-Organizer, 9th International Osteoporosis and Bone and Research Conference, Suzhou, China, 2018
- Advocacy Committee, Orthopaedic Research Society, 2016-2019

Grant Review Panel

- National Institute of Health – MTE (Standing Member), MOSS, SBIR/STTR
- NIAMS AMS, Training grant review panel (Standing Member)
- NIAMS P30, P50 Center Grant Review Panels
- National Institute of Bioengineering and Bioimaging
- NIH/NIAMS SBIR/STTR Review Panel
- Natural Sciences and Engineering Research Council (NSERC) of Canada
- NASA
- National Space Biomedical Research Institute
- CUNY
- Hong Kong Research Council
- Singapore National Research Council
- Japan Aerospace Exploration Agency (JAXA)

Journal Editor and Board

- Associate Editor, Journal of Orthopedic Surgery and Research
- Associate Editor, Journal of Blood Disorders & Transfusion

- Sector Senior Editor, Journal of Orthopaedic Translational
- Board Member, Austin Journal of Biomedical Engineering, Austin Publishing Group

Society Services

- President, International Hard Tissue Society, 2007-2009
- Chair, Biomedical Engineering Society, Cellular and Molecular Bioengineering Special Interests Group (CMBE SIG), 2011
- Board Chair, ICMRS, 2015-2019
- Advocacy Committee, ORS, 2016-2019
- Advocacy and Scientific Policy Committee, ASBMR, 2019-2022
- Nomination Committee, AIMBE, 2020-2023

Scientific Journal Review

- American Journal of Physical Anthropology
- Journal of Orthopaedic Research
- Journal of Biomechanics
- Bone
- Journal of Applied Physiology
- Annals of Biomedical Engineering
- Journal of Anthropology
- Clinical Orthopaedics and Related Research
- National Institute of Health
- National Aeronautics and Space Administration
- Journal of Acoustic Society of America
- Tissue Engineering A, C
- J of Tissue Engineering