

CURRICULUM VITAE

NAME:

Ming Pei, M.D., Ph.D.

TITLE:

Associate Professor
Director, Stem Cell and Tissue Engineering Laboratory

DEPARTMENT:

Primary appointment: Orthopaedics
Secondary appointment: Exercise Physiology
Mechanical & Aerospace Engineering

ADDRESS AND PHONE NUMBER:

3943 Health Science Center South, One Medical Center Drive, Morgantown, WV 26506-9196, Phone: (304) 293-1072

EDUCATION

	School	Degree	Year	Field
Baccalaureate	Xuzhou Medical College, Xuzhou, China	M.D.	1991	Medicine
Post Baccalaureate	Fudan University, Shanghai, China	M.S.	1996	Medicine
Post Baccalaureate	Beijing University, Beijing, China	Ph.D.	1999	Molecular Biology
Postgraduate/Post doctoral	M.I.T., Cambridge, MA	Postdoc. Associate	1999- 2002	Tissue Engineering
Postgraduate/Post doctoral	Brown University, Providence, RI	Research Fellow	2002- 2005	Stem cell and Differentiation

APPOINTMENTS

Inclusive Dates	Title	Location
2011-present	Associate Professor (with tenure) Director, Stem Cell and Tissue Eng Lab	Department of Orthopaedics, WVU
2005-2011	Assistant Professor (tenure-track) Director, Stem Cell and Tissue Eng Lab	Department of Orthopaedics, WVU
2006-present	Adjunct Assistant Professor	Exercise Physiology, WVU
2006-present	Adjunct Assistant Professor	Mechanical & Aerospace Engineering, WVU
1993-1996	Orthopaedic Resident (Chief in 1996)	Shanghai Zhongshan Hospital, Shanghai, China
1991-1993	Orthopaedic Resident	Huaian Second People's Hospital, Huaian, China

FELLOWSHIPS AND AWARDS

- Visiting Professor, Zhongshan Hospital, Fudan University, Shanghai, China (since 2009)
- WVU Faculty Travel Grant (2008, 2009, 2010, 2011)
- 2012 Senate Research Grant Award
- Young Investigators Initiative, US Bone and Joint Decade (USBJD, 2006-2007)

PROFESSIONAL SOCIETIES

Membership:

- Orthopaedic Research Society (ORS)
- Tissue Engineering and Regenerative Medicine International Society (TERMIS)
- Osteoarthritis Research Society International (OARSI)
- International Society of Stem Cell Research (ISSCR)

Editorial Boards:

- Invitation as Editorial Board Member (since 2010) and **Executive Editor** (since Jan 2012) for JOURNAL OF TISSUE SCIENCE & ENGINEERING (JTSE)
- Invitation as Editorial Board Member (since 2011) and **Editor-in-Chief** (since June 2012) for MEDICAL ADVANCEMENTS IN GENETIC ENGINEERING (MAGE)
- Invitation as **Editorial Board Member** for
 1. WORLD JOURNAL OF ORTHOPAEDICS (WJO) (since 2010)
 2. WORLD JOURNAL OF STEM CELLS (WJSC) (since 2011)
 3. THESCIENTIFICWORLDJOURNAL (Tissue Engineering Domain) (since 2011)
 4. JOURNAL OF REGENERATIVE MEDICINE AND TISSUE ENGINEERING (since 2011)
 5. JOURNAL OF REGENERATIVE MEDICINE (since May 2012)

Ad hoc Editing or Reviewing:

- *Journal Reviewer* for
 1. BIOTECHNOLOGY PROGRESS (since 2005)
 2. TISSUE ENGINEERING (since 2005)
 3. JOURNAL OF ORTHOPAEDIC RESEARCH (since 2007)
 4. CYTOTHERAPY (since 2007)
 5. BIOTECHNOLOGY AND APPLIED BIOCHEMISTRY (since 2009)
 6. JOURNAL OF BIOMEDICAL MATERIALS RESEARCH (since 2009)
 7. EXPERT REVIEW (since 2009)
 8. JOURNAL OF TISSUE ENGINEERING AND REGENERATIVE MEDICINE (since 2010)
 9. JOURNAL OF HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY [MEDICAL SCIENCE] (since 2010)
 10. CELL AND TISSUE RESEARCH (since 2011)

11. JOURNAL OF TISSUE SCIENCE AND ENGINEERING (since 2011)
 12. PNAS (since 2011)
 13. BIOMATERIALS (since 2011)
 14. LIFE SCIENCE (since 2011)
 15. JOURNAL OF HEALTHCARE AND ENGINEERING (since 2011)
 16. TISSUE AND CELL (since 2011)
 17. SPINE (since 2011)
 18. SPECTROSCOPY LETTERS (since 2011)
 19. ACTA BIOMATERIALIA (since Jan 2012)
 20. JOURNAL OF PINEAL RESEARCH (since Feb 2012)
 21. PAIN MEDICINE (since Apr 2012)
 22. JOURNAL OF TISSUE ENGINEERING (since Apr 2012)
 23. ARTHRITIS RESEARCH & THERAPY (since Apr 2012)
 24. PLOS ONE (since May 2012)
 25. BRITISH JOURNAL OF SURGERY (since May 2012)
 26. DRUG DELIVERY AND TRANSLATIONAL RESEARCH (since June 2012)
 27. CLINICAL ORTHOPAEDICS AND RELATED RESEARCH (since June 2012)
 28. YONSEI MEDICAL JOURNAL (since July 2012)
 29. ACTA BIOCHIMICA ET BIOPHYSICA SINICA (since Aug 2012)
 30. STEM CELL REVIEWS AND REPORTS (since Sept 2012)
 31. JOURNAL OF REGENERATIVE MEDICINE (since Sept 2012)
 32. ADVANCEMENTS IN GENETIC ENGINEERING (since Oct 2012)
 33. JOURNAL OF REGENERATIVE MEDICINE & TISSUE ENGINEERING (since Dec 2012)
 34. STEM CELLS AND DEVELOPMENT (since Dec 2012)
- *Abstract Reviewer* for Annual ORTHOPAEDIC RESEARCH SOCIETY (ORS) meeting (since 2007)
 - *Grant Reviewer* for
 1. Musculoskeletal Transplant Foundation (MTF) research grants (since 2009)
 2. United States-Israel Binational Science Foundation (BSF) research grant (since 2009)
 3. WVU Senate Grants for Public Service (since 2007)
 4. Arthritis Research UK (since 2011)
 5. Russian Governmental Initiative by the Ministry of Education and Science of the Russian Federation (MES RF), Russia (<http://eng.mon.gov.ru/pro/ved/uch/>) (since 2011)
 6. Army Research Office FY12 ILIR Research Proposal, USA (since 2011)
 7. WVU Senate Research Grant (since 2011)
 8. Vidi grant from The Netherlands Organization for Scientific Research (NWO), division applied sciences (STW), Netherlands (since January 2012)
 9. David Sainsbury Fellowship (National Centre for the Replacement, Refinement and Reduction of Animals in Research, NC3Rs), UK (since January 2012)

COMMITTEE RESPONSIBILITIES

School or University:

- Public Service Committee, WVU (2006 - 2009)
- Approved Graduate Faculty Member for Biomedical Science PhD Program (since 2006)
- Approved Graduate Faculty Member for Mechanical Engineering Program (since 2006)
- Exercise Physiology Graduate Program Advisory Committee (since 2010)
- Approved Graduate Faculty for Genetics and Developmental Biology Program (since 2011)
- Associate Member of Mary Babb Randolph Cancer Center (MBRCC) (since 2011)
- Mentor in NIH T35 Short-term Institutional Training Program (since 2011)
- Exercise Physiology Faculty Searching Committee (05/11 – 08/11)
- Clinical Mentor in WVCTSI Research Scholar Program (since 2012)
- The Faculty Senate 2012-13 Curriculum Committee
- The Faculty Senate 2012-13 General Education Curriculum Oversight Committee

Regional and National:

- Modulator in Session 17 Cartilage Degeneration and Repair at the 55th Annual Meeting of the Orthopaedic Research Society, February 22-25, 2009 in Las Vegas, Nevada
- Chair Track 4-4: Recent Advances in Tissue Engineering in International Conference and Exhibition on CELL SCIENCE & STEM CELL RESEARCH, 29 Nov – 1 Dec 2011 Philadelphia, USA
- Organizing Committee Members, International Conference & Exhibition on Cell Science & Stem Cell Research 29 Nov - 1 Dec 2011 Philadelphia, USA
- Chair the TM's World Stem & Progenitor Cell Online Symposium, May 2, 2012
- Chair Track 4: Tissue Regeneration (Scientific Advisor), International Conference on Tissue Science & Engineering, Double Tree by Hilton Chicago-Northshore, USA, Oct 1-3, 2012
- Organizing Committee Members, International Conference on Tissue Science & Engineering, Chicago, IL, Oct 1-3, 2012
- Organizing Committee Members, International Conference on Regenerative and Functional Medicine (Regenerative Medicine 2012), San Antonio, TX, Nov 12-14, 2012
- Organizing Committee Members, 2nd World Congress on Cell Science & Stem Cell Research 2012, San Antonio, TX, Nov 12-14, 2012

GRANT SUPPORT

Externally Funded (7)

Resource: AO Research Fund from AO Foundation (CHF120,000 = US\$100,500)

Title: Intraarticular injection of rejuvenated synovium-derived stem cells for the repair of partial-thickness cartilage defects

Period: 01/01/2009-12/31/2010
Role: Principal Investigator (15%)

Resource: Musculoskeletal Transplant Foundation Reviewed Research Grant (\$125,000)
Title: Intraarticular injection of extracellular matrix-rejuvenated allogeneic synovium derived stem cells for the treatment of cartilage defects
Period: 01/01/2009-12/31/2010
Role: Principal Investigator (20%)

Resource: AO Research Fund from AO Foundation (CHF117,000 = US\$119,534)
Title: Mesenchymal Stem Cell as a Co-culture Cell Source for Small Intestinal Submucosa-based Meniscus Tissue Engineering
Period: 01/01/2008-12/31/2010
Role: Principal Investigator (15%)

Resource: AO Research Fund from AO Foundation (CHF110,732 = US\$84,735)
Title: A Pilot Study of Synovium-derived Stem Cell as a Potential Cell Source for Disc Tissue Engineering
Period: 01/01/2007-12/31/2009
Role: Principal Investigator (15%)

Resource: Peer - Reviewed Research Grant from Musculoskeletal Transplant Foundation (\$100,000)
Title: In vitro reconstruction of functional cartilage tissue with synovial derived mesenchymal cells for allo - and xeno - transplantation
Period: 01/01/2006-06/30/2007
Role: Principal Investigator (15%)

Resource: NIDCR R03 Research Grant from NIH (total \$221,250)
Title: Repair of Large Osteoporotic Rat Calvarial Defects with Autologous Adipose Stem Cells
Period: 03/01/2011-02/28/2013 (No. 5 R03 DE021433-02)
Role: Principal Investigator (20%)

Resource: AO Research Fund from AO Foundation (CHF120,000 = US\$127,299)
Title: Decellularized stem cell matrix rejuvenates human nucleus pulposus cells from herniated discs
Period: 01/01/2013 – 12/31/2014 (No. S-12-19P)
Role: Principal Investigator (20%)

Internally Funded (4)

Resource: Faculty Start-up Fund from West Virginia University (\$300,000)
Period: 07/01/2005-6/30/2011
Role: Principal Investigator

Resource: Bridge Grant from West Virginia University (\$23,200)
Title: Melatonin: A Potential Novel Treatment for Osteoarthritic Cartilage Injury

Period: 07/01/2009-6/30/2010
Role: Principal Investigator (15%)

Resource: 2012 Senate Research Grant Award R-12-010 (\$12,550)
Title: Decellularized stem cell matrix rejuvenates human nucleus pulposus cells from herniated discs

Period: 07/01/2012 – 06/30/2013
Role: Principal Investigator (15%)

Resource: Faculty travel grant
Period: 2008 (\$900), 2009 (\$900), 2010 (\$900), 2011 (\$900)

IN THE NEWS

Highlighted in Scienceness.com on 12/10/2012. <http://www.scienceness.com/php/>

Highlighted for ten times in CARTILAGE CREATION [August 11th, 2012; Vol.182 #3 (p. 22)] in ScienceNews magazine

https://www.sciencenews.org/view/feature/id/342561/title/Cartilage_Creation

Highlighted in GROWING TALLER WITH SYNOVIUM DERIVED STEM CELLS on 8-8-2011. <http://www.heightquest.com/2011/08/growing-taller-with-synovium-derived.html>

MENTORING GRADUATE STUDENTS

1. **Yunbing Tan** (08/2007 – 08/2009) successfully completed his defense for Mechanical Engineering **MS degree** in May 2009.
2. **Fan He** (08/2007 – 12/2010) successfully completed his defense for Biomedical Science **PhD degree** in November 2010.
3. **Mark Shoukry** (01/2009 – 08/2012) successfully completed his defense for Mechanical Engineering **MS degree** in August 2012.
4. **Jingting Li** (08/2010 – present) Biomedical Science **PhD candidate**
5. **Ying Zhang** (01/2011 – present) Mechanical Engineering **PhD candidate**

PUBLICATIONS

Original Papers: (*corresponding author)

2012 (14)

1. Shoukry M, Li JT, **Pei M***. Reconstruction of an in vitro “niche” for the transition from intervertebral disc development to nucleus pulposus regeneration. *Stem Cells Dev* 2012; doi:10.1089/scd.2012.0597. PMID: 23259403

2. **Pei M***, He F, Li JT, Tidwell J, Jones A, McDonough EB. Repair of large animal partial-thickness cartilage defects using matrix rejuvenated synovium-derived stem cells. *Tissue Eng Part A* 2012; doi:10.1089/ten.TEA.2012.0351. PMID: 23216161
3. Campbell D, **Pei M***. Surface markers for chondrogenic determination: A highlight of synovium-derived stem cells. *Cells* 2012;1:1107-1120.
4. **Pei M***, Zhang Y, Li JT, Chen DQ. Antioxidation of decellularized stem cell matrix promotes human synovium-derived stem cell-based chondrogenesis. *Stem Cells Dev* 2012; doi:10.1089/scd.2012.0495. PMID: 23092115.
5. **Pei M***. Can synovium-derived stem cells deposit matrix with chondrogenic lineage-specific determinants? *J Tissue Sci Eng* 2012;3:3. (**editorial**)
6. Li JT, **Pei M***. Decellularized stem cell matrix: a novel approach for autologous chondrocyte-based cartilage repair. E Hayat. *Stem Cells and Cancer Stem Cells: Therapeutic applications in disease and injury*. Springer, 2012. (**invited book chapter**)
7. Li JT, Jones B, Zhang Y, Vinardell T, **Pei M***. Low density expansion rescues human synovium-derived stem cells from replicative senescence. *Drug Deliv Transl Res* 2012;2(5):363-374.
8. Wei F, Zhou J, Wei X, Fleming BC, Terek R, **Pei M**, Chen Q, Liu T, Wei L. Activation of Indian Hedgehog Promotes Chondrocyte Hypertrophy and Upregulation of MMP-13 in Human Osteoarthritic Cartilage. *Osteoarthritis Cartilage* 2012;20(7):755-63. PMID: 22469853.
9. Jones B, **Pei M***. Synovium-derived stem cells: a tissue-specific stem cell for cartilage tissue engineering and regeneration. *Tissue Eng Part B Rev* 2012; 18:301-11. PMID: 22429320 (**featured article**)
10. Guan YJ, Chen Q, Yang X, Haines P, **Pei M**, Terek R, Wei XC, Zhao T, Wei L. Subcellular Relocation of Histone Deacetylase 4 Regulates Growth Plate Chondrocyte Differentiation through Ca²⁺/Calmodulin-Dependent Kinase IV. *Am J Physiol – Cell Physiol* 2012;303(1):C33-40. PMID: 22442139
11. **Pei M***, Shoukry M, Li JT, Daffner S, France J, Emery SE. Modulation of in vitro microenvironment facilitates synovium-derived stem cell-based nucleus pulposus tissue regeneration. *Spine* 2012; 37(18):1538-47. PMID: 22391443.
12. He F, **Pei M***. Rejuvenation of nucleus pulposus cells using extracellular matrix deposited by synovium-derived stem cells. *Spine* 2012;37(6):459-69. PMID: 21540772
13. Li JT, **Pei M***. Cell senescence: a challenge in cartilage engineering and regeneration. *Tissue Eng Part B* 2012;18:270-87. PMID: 22273114.
14. **Pei M***, He F. Extracellular matrix deposited by synovium-derived stem cells delays chondrocyte dedifferentiation and enhances redifferentiation. *J Cell Physiol* 2012;227(5):2163-74. PMID: 21792932

2011 (7)

15. He F, **Pei M***. Extracellular matrix enhances differentiation of adipose stem cells from infrapatellar fat pad toward chondrogenesis. *J Tissue Eng Regen Med* 2011; doi: 10.1002/term.505. PMID: 22095700.
16. **Pei M***, Li JT, Shoukry M, David T. A Review of Decellularized Stem Cell Matrix: a Novel Cell Expansion System for Cartilage Tissue Engineering. *Eur Cell Mater* 2011;22:333-343. PMID: 22116651.
17. **Pei M***, He F, Wei L. Three dimensional cell expansion substrate for cartilage tissue engineering and regeneration: a comparison in decellularized matrix

- deposited by synovium-derived stem cells and chondrocytes. *J Tissue Sci Eng* 2011;2:104. doi:10.4172/2157-7552.1000104.
18. **Pei M***, He F, Kish VL. Expansion on extracellular matrix deposited by human bone marrow stromal cells facilitates stem cell proliferation and tissue-specific lineage potential. *Tissue Eng Part A* 2011;17:3067-76. PMID: 21740327
 19. Li JT, He F, **Pei M***. Creation of an in vitro microenvironment to enhance human fetal synovium-derived stem cell chondrogenesis. *Cell Tissue Res* 2011;345:357-65. PMID: 21805113
 20. Li JT, **Pei M***. Optimization of an in vitro three-dimensional microenvironment to reprogram synovium-derived stem cells for cartilage tissue engineering. *Tissue Eng Part A* 2011;17:703-12. PMID: 20929284
 21. Tidwell J, **Pei M***. (2011) Role of Melatonin in Collagen Synthesis. R.R. Watson. Melatonin in the promotion of health. 2nd edition. Florida: Taylor & Francis Group LLC. pp. 471-477. (K11833_C030) (**Invited book chapter**)

2010 (3)

22. Tan YB, Zhang YY, **Pei M***. Meniscus reconstruction through co-culturing meniscus cells with synovium-derived stem cells on small intestinal submucosa. *Tissue Eng Part A* 2010;16:67-79. PMID: 19619075.
23. Wei L, Kanbe K, Lee M, Wei XC, **Pei M**, Sun XJ, Terek R, Chen Q. Stimulation of chondrocyte hypertrophy by chemokine stromal cell-derived factor 1 in the chondro-osseous junction during endochondral bone formation. *Developmental Biology* 2010;341:236-45. PMID: 20206617
24. **Pei M***, Yan ZQ, Shoukry M, Boyce BM. Failure of xenotransplantation using porcine synovium-derived stem cell-based cartilage tissue constructs for the repair of rabbit osteochondral defects. *J Orthop Res* 2010;28:1064-70. (**JOR COVER**) PMID: 20140938

2009 (5)

25. **Pei M***, He F, Boyce BM, Kish VL. Repair of full-thickness femoral condyle cartilage defects using allogeneic synovial cell-engineered tissue constructs. *Osteoarthritis Cartilage* 2009;17:714-722. PMID: 19128988
26. Chen S, Emery SE, **Pei M***. Co-culture of synovium-derived stem cells and nucleus pulposus cells in serum-free defined medium with supplementation of TGF- β 1. A potential application of tissue specific stem cells in disc regeneration. *Spine* 2009; 34:1272-80. PMID: 19455002
27. Bilgen B, Ren YX, **Pei M**, Aaron RK, Ciombor DM. CD14 negative isolation enhances chondrogenesis in synovial fibroblasts. *Tissue Eng Part A* 2009; 15:3261-70. PMID: 19382853
28. **Pei M***, Chen DM, Li JT, Wei L. Histone Deacetylase 4 promotes TGF- β 1-induced synovium-derived stem cell chondrogenesis but inhibits chondrogenically differentiated stem cell hypertrophy differentiation. *Differentiation* 2009;78:260-8. PMID: 19716643
29. He F, Chen XD, **Pei M***. Reconstruction of an in vitro tissue-specific microenvironment to rejuvenate synovium-derived stem cells for cartilage tissue engineering. *Tissue Eng Part A* 2009;15:3809-21. PMID: 19545204.

2008 (4)

30. **Pei M**, Luo JM, Chen Q. Enhancing and Maintaining Chondrogenesis of Synovial Fibroblasts by Cartilage Extracellular Matrix Protein Matrilins. *Osteoarthritis Cartilage* 2008;16:1110-7. PMID: 18282772
31. **Pei M***, He F, Kish V, Vunjak-Novakovic G. Engineering of Functional Cartilage Tissue Using Stem Cells from Synovial Lining: A Preliminary Study. *Clin Orthop Relat Res* 2008;466:1880-9. PMID: 18512111
32. **Pei M***, He F, Vunjak-Novakovic G. Synovium-derived stem cell-based chondrogenesis. *Differentiation* 2008;76:1044-56. PMID: 18637024
33. **Pei M***, He F, Rawson A, Wei L. Melatonin enhances chondrogenic differentiation of porcine articular chondrocytes. *J Pineal Res* 2008;46:181-7. PMID: 19054299

2007 (1)

34. Qi LF, Dutta P, Pal S, Seehra M, **Pei M***. Morphology Controllable Nanostructured Chitosan Matrix and Its Cytocompatibility. *J Biomed Mater Res Part A* 2007;87A:236-44. PMID: 18092354

2002-2005 (4)

35. Boublik J, Park H, Radisic M, Tognana E, Chen F, **Pei M**, Vunjak-Novakovic G, Freed LE. Mechanical Properties and Remodeling of Hybrid cardiac Constructs made from heart cells, Fibrin, and Biodegradable, Elastomeric, Knitted Fabric. *Tissue Eng* 2005;11:1122-32. PMID: 16144448
36. Seidel JO, **Pei M**, Gray ML, Langer R, Freed LE, Vunjak-Novakovic G. Long-term culture of tissue engineered cartilage in a perfused chamber with mechanical stimulation. *Biorheology* 2004;41: 445-58. PMID: 15299276
37. **Pei M**, Solchaga LA, Seidel J, Zeng L, Caplan AI, Vunjak-Novakovic G, Freed LE. Bioreactors mediate the effectiveness of tissue engineering scaffolds. *FASEB J* 2002;16(12):1691-4. PMID: 12207008
38. **Pei M**, Seidel J, Vunjak-Novakovic G, Freed LE. Growth Factors for sequential cellular de- and redifferentiation in tissue engineering. *Biochem Biophys Res Commun* 2002;294:149-54. PMID: 12054755

1995-2000 (17)

39. **Pei M**, Yu CL, Qu MY. Expression of collagen type I, II and III in loose body of osteoarthritis. *Journal of Orthopaedic Science* 2000, 5:288-293. PMID: 10982671
40. **Pei M**, Yu CL, Qu MY, et al. Immunohistochemical demonstration of IL-1 receptor antagonist protein and IL-1 during endochondral bone development. *Chinese Journal of Sports Medicine* 2000, 19:118-119.
41. **Pei M**, Yu CL, Qu MY, et al. Expression and effects of basic fibroblast growth factor and transformation growth factor β 1 during endochondral bone development. *Chinese Journal of Sports Medicine* 2000, 19(2): 120-121.
42. **Pei M**, Yu CL, Qu MY, et al. Induced nitric oxide synthase and IL-1 receptor antagonist protein production and effect in synovial and chondral tissue from patients with osteoarthritis. *Chinese Journal of Sports Medicine* 2000, 19(3): 246-248.
43. **Pei M**, Yu CL, Qu MY, et al. The expression and biological function of three kinds of IL-1 receptor antagonist isoforms in synovium from OA and RA. *Chinese Journal of Sports Medicine* 2000, 19(4): 368-370.

44. **Pei M**, Yu CL, Qu MY, et al. Expression of collagens I, II and III in chondrocytes of human osteoarthritic cartilage and loose body. *Chinese Journal of Rheumatoid Arthritis* 2000, 4(2): 85-88.
45. **Pei M**, Qu MY, Yu CL, et al. Reference among apoptosis, nitric oxide and arthritis. *Chinese Journal of Sports Medicine* 2000, 19(3): 299-301.
46. **Pei M**, Yu CL, Qu MY, et al. In situ hybridization study on expression of telomerase during endochondral bone development. *Chinese Journal of Sports Medicine* 1999, 18(1): 12-13.
47. **Pei M**, Yu CL, Qu MY, et al. Study on the mechanism of suppression of experimental arthritis by intra-articular injection of naked plasmid DNA. *Chinese Journal of Sports Medicine* 1999, 18(2): 103-105.
48. **Pei M**, Yu CL, Qu MY, et al. Experimental study of cationic liposome DOTAP-mediated report gene transfection of osteoarthritis synovial cells. *Chinese Journal of Sports Medicine* 1999, 18(2): 106-108.
49. **Pei M**, Yu CL, Qu MY, et al. Effect of apoptosis on pathogenesis of osteoarthritis. *Chinese Journal of Orthopaedics* 1999, 19(3): 167-169.
50. **Pei M**, Yu CL, Qu MY, et al. In situ expression of telomerase in synovium and cartilage as well as pannus of rheumatoid arthritis. *Chinese Journal of Orthopaedics* 1999, 19(12):739-742.
51. **Pei M**, Yu CL, Qu MY, et al. Experimental study of longitudinal stretching to repair nerve defects in peripheral nerves. *Journal of Orthopaedic Surgery* 1998, 6(2): 15-21.
52. **Pei M**, Yu CL, Qu MY, et al. In situ hybridization study on expression of constitutive nitric oxide synthase in human osteoarthritis-affected chondrocytes. *Chinese Journal of Rheumatoid Arthritis* 1998, 2(4): 218-220.
53. **Pei M**, Qu MY, Yu CL, et al. Function of apoptosis in the differentiation of chondrocyte. *Chinese Journal of Surgery* 1998, 36(11): 697-698.
54. **Pei M**, Zhang GJ. Elongation of peripheral nerve. *Chinese Journal of Microsurgery* 1997, 20: 312-314.
55. **Pei M**, Zhang GJ. Allergic reaction of metal implant. *Foreign Medical Science: Basic problems about trauma and surgery* 1995, 16(4): 230-233.

Patents:

1. **Pei M**. Rejuvenation, stemness promotion, and chondrogenesis promotion of mesenchymal synovium derived stem cells. Filed on 2/12/2009 (WVU ref. 439)

Abstracts and Presentation:

2012 (20)

1. **Invited speaker. Pei M**. Contribution of tissue-specific stem cell and stem cell matrix in cartilage engineering and regeneration. World Stem & Progenitor Cell Online Symposium, February 5-8, 2013
2. Li JT, Dong CB, Dinu C, **Pei M**. MicroRNA-Mediated Rejuvenation of Adult Stem Cells through Young Stem Cell Matrix for Chondrogenesis. *59th Annual Meeting of the Orthopaedic Research Society*. Henry B Gonzalez Convention Center, San Antonio, Texas (2013). Jan 26-29. Trans ORS 38:57.
3. **Pei M**, Li JT, Shoukry M, Zhang YY. Decellularized matrix from urine stem cells benefits human bone marrow stromal cell chondrogenesis. *59th Annual Meeting*

- of the Orthopaedic Research Society*. Henry B Gonzalez Convention Center, San Antonio, Texas (2013). Jan 26-29. Trans ORS 38:773.
4. Li JT, Dong CB, Dinu C, **Pei M**. MicroRNA-Mediated Engineering a Tissue-Specific Microenvironment for Reprogramming Synovium-Derived Stem Cell Chondrogenesis. *59th Annual Meeting of the Orthopaedic Research Society*. Henry B Gonzalez Convention Center, San Antonio, Texas (2013). Jan 26-29. Trans ORS 38:673.
 5. Zhang Y, Li JT, **Pei M**. Decellularized Matrix Benefits Expanded Human Stem Cell Chondrogenesis in Resistance to an Inflammatory Environment. *59th Annual Meeting of the Orthopaedic Research Society*. Henry B Gonzalez Convention Center, San Antonio, Texas (2013). Jan 26-29. Trans ORS 38:470.
 6. Li JT, McConda D, Clovis N, Smith S, **Pei M**. Repair of Osteoporotic Rat Calvarial Defects using Poly(lactic-co-glycolic acid) with Adipose Stem Cells. *59th Annual Meeting of the Orthopaedic Research Society*. Henry B Gonzalez Convention Center, San Antonio, Texas (2013). Jan 26-29. Trans ORS 38:780.
 7. **Keynote speaker. Pei M**. Decellularized stem cell matrix and cell-based cartilage regeneration. International Conference on Regenerative & Functional Medicine, Hilton San Antonio Airport, San Antonio, USA NOV 12, 2012
 8. **Invited speaker. Pei M**. Decellularized stem cell matrix rescues human synovium-derived stem cells from oxidative stress and enhances expanded stem cell chondrogenesis. 2nd World Congress on Cell Science & Stem Cell Research, Hilton San Antonio Airport, San Antonio, USA NOV 13, 2012
 9. **Invited speaker. Pei M**. Young microenvironment promotes synovium-derived stem cell chondrogenesis. International Conference on Regenerative & Functional Medicine, Hilton San Antonio Airport, San Antonio, USA NOV 12-14, 2012
 10. **Invited speaker. Pei M**. Decellularized stem cell matrix: a novel cell expansion system for cartilage tissue engineering. International Conference on Tissue Science & Engineering, DoubleTree by Hilton Chicago-Northshore, USA Oct 1-3, 2012
 11. **Invited speaker. Pei M**. Decellularized stem cell matrix: a novel cell expansion system for cartilage tissue engineering. Target Meeting (TM)'s Stem & Progenitor Cell Online Symposium, May 2, 2012
 12. Li JT, Zhang Y, Kish VL, **Pei M**. Decellularized Stem Cell Matrix: A "Fountain of Youth" for Human Adult Stem Cell-Based Cartilage Regeneration. *2012 E. J. Van Liere Convocation and Research Day*, WVU, March 9. (**second place in basic science poster presentation**)
 13. Zhang Y, Li JT, Kish VL, **Pei M**. Decellularized Stem Cell Matrix Protects Adult Stem Cell-Based Chondrogenesis from Oxidative Stress. *2012 E. J. Van Liere Convocation and Research Day*, WVU, March 9. (Poster presentation)
 14. Jones B, Li JT, Zhang Y, **Pei M**. Low density monolayer expansion rescues human synovial stem cells from replicative senescence. *2012 E. J. Van Liere Convocation and Research Day*, WVU, March 9. (Oral presentation)
 15. Li JT, Zhang Y, Kish VL, **Pei M**. Young microenvironment rejuvenates aged human synovium-derived stem cells toward chondrogenesis. *58th Annual Meeting of the Orthopaedic Research Society*. Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:1748.
 16. Zhang Y, Li JT, Kish VL, **Pei M**. Extracellular matrix rescues human synovium-derived stem cells from oxidative stress and enhances expanded stem cell chondrogenesis. *58th Annual Meeting of the Orthopaedic Research Society*.

- Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:1747.
17. Li JT, He F Y, Kish VL, **Pei M**. True or false: a tissue-specific microenvironment favors human synovium-derived stem cell chondrogenesis. *58th Annual Meeting of the Orthopaedic Research Society*. Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:1749.
 18. **Pei M**, He F, Li JT, Tidwell JE, Jones AC, McDonough EB. Decellularized stem cell matrix rejuvenates synovium-derived stem cells for cartilage regeneration and repair of partial-thickness cartilage defects. *58th Annual Meeting of the Orthopaedic Research Society*. Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:671.
 19. **Pei M**, Shoukry M, Li JT. Modulation of an in vitro tissue-specific microenvironment to facilitate nucleus pulposus tissue regeneration. *58th Annual Meeting of the Orthopaedic Research Society*. Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:2101.
 20. Li JT, Jones B, Zhang Y, **Pei M**. Low seeding density favors human synovium-derived stem cell proliferation and multi-lineage differentiation capacity. *58th Annual Meeting of the Orthopaedic Research Society*. Moscone West Convention Center, San Francisco, CA (2012). Feb 4-7. Trans ORS 37:1750.

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21. **Invited speaker. Pei M**. Reconstruction of a 3-D microenvironment for cartilage tissue engineering. International Conference & Exhibition on Cell Science & Stem Cell Research Nov 30 – Dec 1 2011 Philadelphia, USA
22. **Invited speaker. Pei M**. Intraarticular injection of extracellular matrix-rejuvenated allogeneic synovium-derived stem cells for the treatment of cartilage defects. *2011 Musculoskeletal Transplant Foundation 6th International Symposium* September 22-24, 2011. Drake Hotel, Chicago, IL
23. Li JT, **Pei M**. Decellularized matrices modulate human synovium-derived stem cell chondrogenesis. ISSCR 9th Annual Meeting 2011 Toronto, Ontario Canada (Poster Presentation)
24. **Pei M**, He F, Kish KL. Extracellular matrix deposited by human bone marrow stromal cells facilitates stem cell expansion and tissue-specific lineage differentiation potential. ISSCR 9th Annual Meeting 2011 Toronto, Ontario Canada (Poster Presentation)
25. Li JT, He F, Kish VL, **Pei M**. Does decellularized matrix provide a tissue-specific microenvironment to enhance human synovium-derived stem cell chondrogenesis? *2011 E. J. Van Liere Convocation and Research Day*, WVU, March 10-11. (Poster presentation)
26. **Pei M**, He F. Extracellular Matrix Reprograms Adipose Stem Cells from Infrapatellar Fat Pad toward Chondrogenesis. *57th Annual Meeting of the Orthopaedic Research Society*. Long Beach, CA (2011). Trans ORS 36:1770. (Poster presentation)
27. **Pei M**, He F. Does tissue-specific ECM determine cell proliferation and chondrogenic differentiation? *57th Annual Meeting of the Orthopaedic Research Society*. Long Beach, CA (2011). Trans ORS 36:2067. (Poster presentation)
28. **Pei M**, He F. Three-dimensional extracellular matrix enhances human bone marrow stem cell proliferation and chondrogenesis by activation of cyclin D and TGF- β receptor through integrin/Src/ERK signaling pathway. *57th Annual Meeting*

of the Orthopaedic Research Society. Long Beach, CA (2011). Trans ORS 36:1769. (Poster presentation)

2010 (11)

29. **Pei M**, He F, Chen S. Engineering of an in vitro tissue-specific microenvironment for enhancing nucleus pulposus cell proliferation and redifferentiation capacity. *56th Annual Meeting of the Orthopaedic Research Society*. New Orleans (2010). Trans ORS 35:1432. (Poster presentation)
30. Li JT, **Pei M**. Optimization of an in vitro 3-D microenvironment to reprogram synovium-derived stem cells for chondrogenesis. *56th Annual Meeting of the Orthopaedic Research Society*. New Orleans (2010). Trans ORS 35:774. (Poster presentation)
31. Zhou FH, **Pei M**, Luo J, Chen Q. Matrilin-3 binds to TGF- β and enhance chondrogenesis induced by TGF- β . *56th Annual Meeting of the Orthopaedic Research Society*. New Orleans (2010). Trans ORS 35:841 (Poster presentation)
32. **Pei M**, He F. Extracellular matrix rejuvenates porcine adult adipose stem cells toward chondrogenesis. ISSCR 8th Annual Meeting 2010 San Francisco, CA (Poster Presentation #1300)
33. **Pei M**, Li JT. Sequential application of extracellular matrix and low oxygen to improve human synovium-derived stem cell chondrogenesis. *TERMIS-EU 2010*, Galway, Ireland, 13th – 17th June 2010. (Oral presentation)
34. **Pei M**, He F. Extracellular matrix delays articular chondrocytes dedifferentiation and enhances redifferentiation. *TERMIS-EU 2010*, Galway, Ireland, 13th – 17th June 2010. (Poster presentation)
35. **Pei M**, Li JT, He F. Reconstruct an in vitro 3-D microenvironment to reprogram synovium-derived stem cells for chondrogenesis. *TERMIS-EU 2010*, Galway, Ireland, 13th – 17th June 2010. (Poster presentation)
36. **Pei M**, He F, Daffner S, France J. Synovial stem cell-derived extracellular matrix: an ideal in vitro microenvironment for the rejuvenation of nucleus pulposus cells. World Forum for Spine Research 2010 – The Intervertebral Disc, Montreal, Ca, July 5-8, 2010. (Oral presentation, B3-02)
37. **Pei M**, He F, Daffner SD, France JC. Reconstruction of a tissue-specific extracellular matrix for enhancing nucleus pulposus cell proliferation and redifferentiation capacity. NASS 25th Annual Meeting 2010, Orlando, FL (ePoster presentation)
38. He F, **Pei M**. Extracellular Matrix deposited by synovium-derived stem cells improves porcine articular chondrocyte self-renewal and redifferentiation. *2010 E. J. Van Liere Convocation and Research Day*, WVU, April 20-21. (Oral presentation) (**first place in poster presentation, \$500 prize**)
39. Li JT, **Pei M**. Optimization of an in vitro 3-D microenvironment to reprogram synovium-derived stem cells for chondrogenesis. *2010 E. J. Van Liere Convocation and Research Day*, WVU, April 20-21. (Poster presentation)

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40. He F, Rawson A, **Pei M**. Melatonin enhances cartilage matrix synthesis of articular chondrocytes in an in vitro serum-containing pellet culture system. *55th Annual Meeting of the Orthopaedic Research Society*. Las Vegas (2009). Trans ORS 34:979. (Poster presentation)

41. Chen S, He F, Emery SE, **Pei M**. Supplementation of the nucleus pulposus cell population using synovium-derived stem cells. *55th Annual Meeting of the Orthopaedic Research Society*. Las Vegas (2009). Trans ORS 34:1352. (Poster presentation)
42. Tan YB, Zhang YY, Kish VL, **Pei M**. Meniscus tissue Engineering using synovium-derived stem cells and small intestinal submucosa. *55th Annual Meeting of the Orthopaedic Research Society*. Las Vegas (2009). Trans ORS 34:1207. (Poster presentation)
43. **Pei M**, Chen DM. HDAC4 enhances synovium-derived stem cell-based chondrogenesis induced by TGF- β 1. *55th Annual Meeting of the Orthopaedic Research Society*. Las Vegas (2009). Trans ORS 34:11. (Oral presentation)
44. He F, Tan YB, Chen S, **Pei M**. Reconstruction of an in vitro microenvironment to rejuvenate synovial stem cells for chondrogenesis. *2009 E. J. Van Liere Convocation and Research Day, WVU*, April 28-29. (Poster presentation)
45. **Pei M**, He F, Tan YB, Chen S. Reconstruction of an in vitro tissue-specific microenvironment to restore porcine synovium-derived stem cell proliferation ability and chondrogenic differentiation capacity. *International Society for Stem Cell Research (ISSCR) 7th Annual Meeting*, July 8- 11, 2009 in Barcelona, Spain. (Poster presentation, 1378)
46. **Pei M**, He F, Chen S, Tan YB. Reconstruction of an in vitro microenvironment to restore stem cell stemness toward chondrogenesis. *Tissue Engineering and Regenerative Medicine International Society (TERMIS) World Congress 2009*, Seoul, Korea, August 31-September 3, 2009 (Oral presentation: OR S14 161)

2008 (7)

47. **Pei M**, He F, Kish VL. Negatively isolated synovium-derived stem cell-based cartilage tissue engineering. *54th Annual Meeting of the Orthopaedic Research Society*. San Francisco (2008). Trans ORS 33:584.
48. **Pei M**, He F, Boyce BM, Kish VL. Allogeneic cartilage repair using synovial cell-based tissue constructs. *54th Annual Meeting of the Orthopaedic Research Society*. San Francisco (2008). Trans ORS 33:583.
49. **Pei M**, He F, Boyce BM, Kish VL. Xenogenic transplantation: an alternative for cartilage tissue engineering? *54th Annual Meeting of the Orthopaedic Research Society*. San Francisco (2008). Trans ORS 33:540.
50. Rawson A, He F, **Pei M**. Melatonin: a promising hormone for chondrogenesis. *2008 E. J. Van Liere Convocation and Research Day, WVU*, April 22-23. (Oral presentation) (**first place in poster presentation, \$500 prize**)
51. Chen S, Chen DM, He F, Tan YB, **Pei M**. Synovium-derived stem cell: a potential candidate for intervertebral disc tissue engineering. *2008 E. J. Van Liere Convocation and Research Day, WVU*, April 22-23. (Poster presentation)
52. He F, **Pei M**. Negatively isolated synovium-derived stem cell-based cartilage tissue engineering. *2008 E. J. Van Liere Convocation and Research Day, WVU*, April 22-23. (Poster presentation)
53. **Pei M**. Synovium-derived stem cell-based cartilage tissue engineering for cartilage repair. *5th International Meeting of Gene Therapy of Arthritis and Related Disorders*, Seattle, WA, April 29 – May 1, 2008 (Invited Speaker)

2007 (9)

54. Qi LF, Dutta P, Pal S, Seehra M, **Pei M**. Preparation and Characterization of Chitosan Nanocrystal. *NSTI Nanotech 2007, Bio Nano Materials & Tissues Symposium*, Santa Clara, California, May 20-24, 2007, abstract number 755. (Oral Presentation)
55. Qi LF, Dutta P, Pal S, Seehra M, **Pei M**. Chitosan Nanocrystal: A Potential Biomaterial for Tissue Engineering Application. *NSTI Nanotech 2007, Bio Nano Materials & Tissues Symposium*, Santa Clara, California, May 20-24, 2007, abstract number 770. (Oral Presentation)
56. **Pei M**, Boyce B, Kish V. *In Vitro* Reconstruction of Functional Cartilage Tissue With Synovium-derived Stem Cells. (2007) *Keystone Symposia Conference-Tissue Engineering and Development Biology (D4)*, Snowbird Resort, Snowbird, Utah, April 12-17. (Poster number: 232)
57. **Pei M**, Boyce B, Kish V. *In Vitro* Reconstruction of Functional Cartilage Tissue With Synovium-derived Stem Cells. (2007) *Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America (NA) 2007 Conference*, Westin Harbour Castle, Toronto, Canada, June 13-16. (Poster number: 45)
58. **Pei M**, Qi LF, Dutta P, Pal S, Seehra M. Preparation and Characterization of Chitosan Nanocrystal As A Novel Biomaterial. (2007) *Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America (NA) 2007 Conference*, Westin Harbour Castle, Toronto, Canada, June 13-16. (Poster number: 238)
59. **Pei M**, Boyce B, Kish V. Inhibition of Macrophage in the Chondrogenic Differentiation of Synovium-derived Stem Cell. (2007) *Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America (NA) 2007 Conference*, Westin Harbour Castle, Toronto, Canada, June 13-16. (Poster number: 25)
60. **Pei M**, Qi LF, Yang ML, Wu NQ. Chitosan-Polylysine-DNA Nanocomplexes: A Promising Non-Viral Gene Delivery Approach. *Tissue Engineering and Regenerative Medicine International Society (TERMIS) North America (NA) 2007 Conference*, Westin Harbour Castle, Toronto, Canada, June 13-16. (Poster number: 102)
61. **Pei M**. In vitro reconstruction of functional cartilage tissue with synovial-derived stem cells. The 5th *Musculoskeletal Transplant Foundation (MTF) Symposium*, Vancouver, Canada, October 11-13, 2007
62. **Pei M**, Boyce B, Kish V. In Vitro Reconstruction of Functional Cartilage Tissue. *2007 E. J. Van Liere Convocation and Research Day*, WVU, April 24-25.

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63. **Pei M**, Luo JM, Chen Q. Matrilin-1 and -3 Enhance Chondrogenic Differentiation of Synovial Fibroblast. (2006) *World Congress on Tissue Engineering and Regenerative Medicine*. Pittsburgh, April 24-27. (Poster Number: 119)
64. **Pei M**, Aaron RK, Ciombor Dmck. Does any mitogenic growth factor always benefit the chondrogenesis of mesenchymal stem cells? 52th Annual Meeting of the Orthopaedic Research Society Chicago (2006). *Trans ORS* 31:782.

2005 (2)

65. **Pei M**, Aaron RK, Ciombor Dmck. *TGF- β 1-dependent chondrogenic effect of IGF-I and FGF-2 on synovial fibroblast*. 51th Annual Meeting of the Orthopaedic Research Society Washington, DC (2005). *Trans ORS* 30:1452.

66. **Pei M**, Aaron RK, Ciombor Dmck. Modulation of chondrogenesis in synovial fibroblast engineered cartilage by sequential growth factors. 51th Annual Meeting of the Orthopaedic Research Society Washington, DC (2005). Trans ORS 30:136 (Oral presentation).

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67. **Pei M**, Aaron RK, Ciombor DM. Engineered cartilage from synovium-A developmental approach. 50th Annual Meeting of the Orthopaedic Research Society San Francisco (2004) Trans ORS 29:720.
68. **Pei M**, Seidel J, Vunjak-Novakovic G, Freed LE. Differential effects of growth factors (TGF beta1, FGF-2, IGF-I) on engineered cartilage cellularity, structure, and function. 48th Annual Meeting of the Orthopaedic Research Society Dallas (2002). Trans ORS 27:484.
69. **Pei M**, Seidel J, Zeng L, Solchaga LA, Caplan AI, Vunjak-Novakovic G, Freed LE. Modulation of tissue engineered cartilage by scaffold structure and bioreactor culture. 47th Annual Meeting of the Orthopaedic Research Society, San Francisco (2001) Trans ORS 26:598.