

CURRICULUM VITAE

NAME: **JOSEPH C. WU, MD, PHD, FAHA, FACC**
Director, Stanford Cardiovascular Institute
Simon H. Stertzzer, MD, Endowed Professor
Department of Medicine (Division of Cardiology) & Radiology
Stanford University School of Medicine

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EDUCATION:

1989-1993 B.S. University of California, Los Angeles
1993-1997 M.D. Yale University School of Medicine
2000-2004 Ph.D. UCLA, Department of Molecular and Medical Pharmacology

EMPLOYMENT & POSITIONS

1997-1998 Internship, Internal Medicine, UCLA Medical Center
1998-1999 Residency, Internal Medicine, UCLA Medical Center
1999-2004 Fellowship, Cardiology, UCLA Medical Center
2002-2004 Adult Congenital Heart Disease Fellow, UCLA Medical Center
(Clinical Mentors: John Child, MD & Joseph Perloff, MD)
2003-2004 Chief Fellow, Cardiology, UCLA Medical Center
2004-2006 Instructor, Dept of Medicine (Cardiology) & Radiology, Stanford University
2007-2010 Assistant Professor, Dept of Medicine (Cardiology) & Radiology, Stanford University
2010-2013 Associate Professor, Dept of Medicine (Cardiology) & Radiology, Stanford University
2012-2013 Co-Director, Stanford Cardiovascular Institute
2013- Professor, Dept of Medicine (Cardiology) & Radiology, Stanford University
2013- Director, Stanford Cardiovascular Institute
2015- Simon H. Stertzzer, MD, Endowed Professorship

LICENSES & BOARDS

1999 Physician & Surgeon Certificate, State of California, License # A066551
2000 American Board of Internal Medicine, Internal Medicine (2000 – 2010)
2003 Nuclear Cardiology Board (2003 – 2013)
2004 Echocardiography ASCeXAM Board (2004 – 2013)
2005 ABIM, Cardiovascular Diseases (2005 – 2014; 2015 – 2024)

HONORS & AWARDS

1989 *Salutatorian*, South Pasadena High School
1989-1993 University of California Regents Full Scholarship, UCLA
1989-1993 Dean's List (4 years), UCLA
1990 *Alpha Lambda Delta* Honor Society, UCLA
1993 Departmental Honors Thesis in Biology, UCLA
1993 All-American Scholar Collegiate Award, UCLA
1993 *Phi Beta Kappa* Honor Society, UCLA
1993 *Summa Cum Laude*, UCLA
1993-1997 Yale Scholarship, Yale University School of Medicine

1997 *Alpha Omega Alpha* Honor Society, Yale School of Medicine

2001-2003 AHA Postdoctoral Fellowship Award

2002 Dept of Pharmacology Travel Award, American Society of Gene Therapy

2002 1st place, Oral Presentation, Dept of Pharmacology Graduate Student Research

2002 1st place, Cardiovascular Young Investigator, Society of Nuclear Medicine

2003 ASGT Travel Award, American Society of Gene Therapy

2003 Tibor Fabian Travel Award, Society of Nuclear Medicine

2003 Fujisawa Travel Award, American Society of Nuclear Cardiology

2003 Best Basic Science Abstract, Bristol Myers Squibb Cardiology Fellows Forum

2003 UCLA Cardiology Fellowship Service Award

2003-2005 GlaxoSmithKline Cardiovascular Young Investigator Award

2004 ACCF/BMS Affiliate Travel Award, American College of Cardiology

2005-2008 NHLBI K08 Mentored Clinical Scientist Development Award (Mentor: Sanjiv Gambhir)

2005 Best Drug Development Award-Young Investigator, Academy of Molecular Imaging

2005 Best Basic Science Poster, American Heart Association

2006-2008 ACCF/GE Career Award in Cardiovascular Imaging

2006 Best Basic Science Manuscript Award (*Circulation* 2006;113:1005-1014)

2006 William Guy Forbeck Scholar Award (focus Stem Cells)

2007 Early Career Authors Award (2nd prize), *Journal of Cellular Molecular Cardiology*

2007-2014 Burroughs Wellcome Foundation Career Award in Medical Sciences

2008 Baxter Foundation Faculty Scholar Award

2008-2011 Edward Mallinckrodt, Jr. Foundation Junior Faculty Award

2008-2013 NIH Director's New Innovator Award

2008 Stanford Division of Cardiology Teaching Award (Innovation)

2009 William Parmley Prize (outstanding paper in *J American College of Cardiology*)

2009 Douglas P. Zipes, MD Distinguished Young Scientist Award

2009-2011 American Heart Association National Innovative Research Grant

2009-2014 NIH Roadmap Transformative R01 Award

2010 Presidential Early Career Award for Scientists & Engineers (PECASE) given out by President Obama at the White House

2011 Bernard and Joan Marshall Research Excellence Prize, British Society of Cardiovascular Research (€5,000 award)

2012 Elected to American Society of Clinical Investigators (ASCI)

2012 Consulting Editor of the Year (*Circulation Research*)

2013 American Heart Association Established Investigator Award

2013 Elected to Association of University Cardiologists (AUC)

2013 Best Manuscript Award (*Circulation Research* 2012;111:882-893)

2014-2017 Council Member American Society of Clinical Investigators

2014 Elected as Academy of Radiology Research Distinguished Investigator Award

2014 Best Basic Science Manuscript Award (*Circulation* 2013;127:1677-1691)

2015 Elected to American Association of Physicians (AAP)

2015-2020 Burroughs Wellcome Foundation Innovation in Regulatory Science Award

2015 The Joseph A. Vita Award (given by AHA for transformative impact in past 5 years)

2017 William Parmley Prize (outstanding paper in *JACC*; trainee Karim Sallam, MD)

2017 American Heart Association George E. Brown Memorial Lecturer

2017 Best Basic Science Manuscript Award (*Circulation Research* 2017;120(10):1561-1571)

2017-2022 American Heart Association Merit Award

2018 Elected to American Institute for Medical and Biological Engineering College of Fellows

2018-2020 Chair, AHA Basic Cardiovascular Science (BCVS) Council

2018 American Heart Association Distinguished Scientist Award

2018 Best Basic Science Manuscript Award (*Circulation Research* 2018;123:443-450)

2018 Highly Cited Researchers from Clarivate Analytics (top 1% in Web of Science from 2006-2016)

EDITORIAL BOARD MEMBER FOR SCIENTIFIC JOURNALS

1993-1997 Student Editor, *Yale Journal of Biology & Medicine*
2008- *Circulation, Cardiovascular Imaging*
2008-2018 *Journal of American College of Cardiology, Cardiovascular Imaging*
2009-2018 *Journal of Nuclear Cardiology*
2009- *Human Gene Therapy*
2010- *Current Cardiovascular Imaging Reports*
2011- *Cytottherapy, Journal of Geriatric Cardiology, Stem Cell Research, Molecular Therapy*
2011- Associate Editor-in-Chief, *American Journal of Nuclear Med and Mol Imaging*
2011-2014 Consulting Editor, *Circulation Research*
2012- *Journal Clinical Investigation, Stem Cell Research*
2013- *Physiological Genomics*
2015- Section Editor (Molecular Imaging), *Current Cardiovascular Imaging Reports*
2015- Associate Editor, *Circulation Research*
2015-2017 *Current Protocols in Stem Cell Research*
2016- *Stem Cell Reviews and Reports, International Journal of Cardiology*
2016- *ScienceMatters*
2017- Advisory Board, *Nature Review Cardiology*
2017- *PeerJ*
2018- Senior Advising Editor, *Cardiovascular Research*

PROFESSIONAL SOCIETY MEMBERSHIP

1995-1997 Committee for Yale Volunteer Activities
2002- Member, Council for AHA Basic Cardiovascular Sciences
2003-2008 Member, American Society of Gene Therapy
2005-2010 Member, International Society for Stem Cell Research
2005-2007 Member, American Society of Nuclear Cardiology
2005-2007 Member, American Society of Echocardiography
2006- Fellow, American College of Cardiology (FACC)
2010- Fellow, American Heart Association (FAHA)

AD HOC REVIEWER FOR SCIENTIFIC JOURNALS

New England Journal of Medicine, Lancet, Journal American Medical Association, Nature, Cell, Science, Nature Biotechnology, Nature Materials, Nature Genetics, Nature Nanotechnology, Nature Cell Biology, Nature Genetics, Nature Methods, Nature Communication, Nature Biomedical Engineering, Nature Review Drug Discovery, Nature Review Genetics, Nature Review Cardiology, Science Translational Medicine, Science Signaling, Science Advances, Cell Stem Cell, Cell Research, Cell Report, Cell Chemical Biology, Proceedings National Academy Science, Physiological Reviews, Journal Clinical Investigation, Circulation, Circulation Research, Circulation: Cardiovascular Imaging, Circulation: Arrhythmia & Electrophysiology, Journal American College Cardiology, JACC Cardiovascular Imaging, European Heart Journal, Development, Stem Cells, Stem Cells & Development, Stem Cell Research, Stem Cell Report, Stem Cell Translational Medicine, Stem Cell Research & Therapy, Scientific Reports, Cell Transplantation, FASEB, EMBO, EMBO Molecular Medicine, Nanomedicine, Medicinal Research Reviews, Journal Molecular Cellular Cardiology, Journal Cellular and Molecular Medicine, Cardiovascular Research, Molecular Therapy, Journal of Nuclear Medicine, Nucleic Acid Research, Gene Therapy, Human Gene Therapy, Human Molecular Genetics, Blood, eLife, PLoS Genetics, PLoS One, BMC Neuroscience, BMC Developmental Biology, BMC Veterinary Research, Congenital Heart Disease, Radiology, American Journal of Cardiology, American Journal Physiology-Heart & Circulatory Physiology, Basic Research in Cardiology, European Journal Nuclear Medicine & Molecular Imaging, Molecular Biology of Cell, Current Protocols, Journal of Nuclear Cardiology, Seminars in Immunopathology, Journal Thoracic & Cardiovascular Surgery, Life Sciences, Acta Biochimica et Biophysica Sinica, Current Protocols, Medicinal Research Reviews, Institute for Laboratory Animal Research, Trends Molecular Medicine, Stanford Journal of Law Science and Policy,

PUBLICATIONS (TOTAL = >350); GOOGLE SCHOLAR H-INDEX: 90

A) MANUSCRIPTS – ORIGINAL RESEARCH (Total = 259)

- 1) **Wu JC**, Yun JY, Heller E, Dione DP, DeMan P, Liu YH, Zaret BL, Wackers FJ, Sinusas AJ. Limitation of dobutamine for enhancing flow heterogeneity in the presence of single coronary stenosis: Implication for technetium-99m-sestamibi imaging. *Journal Nuclear Medicine* 1998;39(3):417-425. PMID: 9529285
- 2) **Wu JC**, Yun JY, Dione DP, Heller EN, Decklebaum LI, Sinusas AJ. Severe regional ischemia alters coronary flow reserve in the remote perfusion area. *Journal Nuclear Cardiology* 2000;7(1):43-52. PMID: 10698234
- 3) **Wu JC**, Sundaresan G, Iyer M, Gambhir SS. Noninvasive optical imaging of firefly luciferase reporter gene expression in skeletal muscles of living mice. *Molecular Therapy* 2001;4:297-306. PMID: 11592831
- 4) **Wu JC**, Inubushi M, Sundaresan G, Schelbert HR, Gambhir SS. Positron emission tomography imaging of cardiac reporter gene expression in living rats. *Circulation* 2002;106:180-183. PMID: 12105155. PMCID: 4154807 (*Journal cover)
- 5) **Wu JC**, Inubushi M, Sundaresan G, Schelbert HR, Gambhir SS. Optical imaging of cardiac reporter gene expression in living rats. *Circulation* 2002;105:1631-1634. PMID: 11940538
- 6) Inubushi M, **Wu JC**, Gambhir SS, Sundaresan G, Satyamurthy N, Namavari M, Yee S, Barrio JR, Stout D, Chatzioannou AF, Wu L, Schelbert H. PET reporter gene expression imaging in rat myocardium. *Circulation* 2003;107: 326-332. PMID: 12538436. PMCID: 4141557
- 7) **Wu JC**, Chen IY, Sundaresan G, Min JJ, De A, Qiao JH, Fishbein MC, Gambhir SS. Molecular imaging of cardiac cell transplantation in living animals using optical bioluminescence and positron emission tomography. *Circulation* 2003;108:1302-1305. PMID: 12963637. PMCID: 4154815 (*Journal cover)
- 8) Chen IY, **Wu JC**, Min JJ, Sundaresan G, Lewis X, Liang Q, Herschman HR, Gambhir SS. MicroPET imaging of cardiac gene expression in rats using bicistronic adenoviral vector-mediated gene delivery. *Circulation* 2004;109:1415-1420. PMID: 15007006. PMCID: 4154818
- 9) Boecker W, Bernecker OY, **Wu J**, Zhu X, Sawa T, del Monte F, Grazette L, Schmidt U, Hajjar RJ. Cardiac specific gene expression facilitated by an enhanced myosin light chain promoter. *Molecular Imaging* 2004;3:69-75. PMID: 15296671
- 10) **Wu JC**, Chen IY, Wang Y, Tseng JR, Chhabra A, Salek M, Min JJ, Fishbein MC, Crystal R, Gambhir SS. Molecular imaging of the kinetics of VEGF gene expression in ischemic myocardium. *Circulation* 2004;110:685-691. PMID: 15302807. PMCID: 4154794
- 11) Porcel-Rodriguez M, Chen IY, Ghysens O, **Wu JC**, Gambhir SS. Image guided cardiac cell delivery using high resolution small animal ultrasound. *Molecular Therapy* 2005;12(6):1142-1147. PMID: 16111921
- 12) Cao F, Lin S, Xie X, Ray P, Patel M, Zhang X, Drukker M, Dylla SJ, Connolly AJ, Chen X, Weissman IL, Gambhir SS, **Wu JC**. In vivo visualization of embryonic stem cell survival, proliferation, and migration after cardiac delivery. *Circulation* 2006;113(7):1005-14. PMID: 16476845. PMCID: 4701384 (*Best Basic Science paper in *Circulation* 2006)
- 13) Xiong Z, Cheng Z, Zhang X, Patel M, **Wu JC**, Gambhir SS, Chen X. Imaging chemically modified adenovirus for targeting tumor expressing integrin $\alpha v \beta 3$ in living mice with mutant herpes simplex virus type 1 thymidine kinase PET reporter gene. *Journal Nuclear Medicine* 2006;47(1):130-139. PMID: 16391197. PMCID: 4154793

- 14) Krishnan M, Park JM, Cao F, Wang D, Paulmurugan R, Tseng JR, Gonzalgo ML, Gambhir SS, **Wu JC**. Effects of epigenetic modulation on reporter gene expression: implications for stem cell imaging. *FASEB Journal* 2006;20(1):106-108. PMID: 16246867. PMCID: 3625424
- 15) Zhang X, Cao F, Cai W, Schreiber E, Wu Y, **Wu JC**, Xing L, Chen X. 18F-labeled bombesin analogs for tracing GRP receptor-expressing prostate cancer. *Journal Nuclear Medicine* 2006;47(3):492-501. PMID: 16513619
- 16) **Wu JC**, Spin JM, Cao F, Lin S, Xie X, Gheysens O, Chen IY, Sheikh AY, Robbins RC, Tsalenko A, Gambhir SS, Quertermous T. Transcriptional profiling of reporter genes used for molecular imaging of embryonic stem cell transplantation. *Physiologic Genomics* 2006;25:29-38. PMID: 16390873
- 17) Gheysens O, Lin S, Cao F, Chen IY, Rodriguez-Porcel M, Min JJ, Gambhir SS, **Wu JC**. Noninvasive evaluation of immunosuppressive drug efficacy on acute donor cell survival. *Molecular Imaging & Biology* 2006;8(3):163-170. PMID: 16555032. PMCID: 4161130
- 18) **Wu JC**, Cao F, Dutta S, Xie X, Kim E, Chungfat N, Gambhir SS, Mathewson S, Connolly AJ, Brown M, Wang EW. Proteomic analysis of reporter genes for molecular imaging of transplanted embryonic stem cells. *Proteomics* 2006;6(23):6234-49. PMID: 17080479. PMCID: 3683542
- 19) Min JJ, Ahn Y, Moon S, Kim YS, Park JE, Kim SM, Le UN, **Wu JC**, Joo SY, Hong MH, Yang DH, Jeong MH, Song CH, Jeong YH, Yoo KY, Kang KS, Bom HS. In vivo bioluminescence imaging of cord blood derived mesenchymal stem cell transplantation in rat myocardium. *Annals Nuclear Medicine* 2006;20(3):165-70. PMID: 16715945
- 20) Yue P, Arai T, Terashima M, Sheikh AY, Cao F, Charo DN, Hoyt G, Robbins RC, Ashley EA, **Wu JC**, Yang PC, Tsao PS. Magnetic resonance imaging of progressive cardiomyopathic changes in the db/db mouse. *American Journal Physiology Heart Circulatory Physiology* 2007;292(5):H2106-18. PMID: 17122193
- 21) Chang GY, Cao F, Krishnan M, Huang M, Li Z, Xie X, Sheikh AY, Hoyt G, Robbins RC, Hsiai T, Schneider MD, **Wu JC**. Positron emission tomography imaging of conditional gene activation in the heart. *Journal Molecular & Cellular Cardiology* 2007;43(1):18-26. PMID: 17467733. PMCID: 2727602 (*Journal cover & Editorial by R Beanlands & R Roberts)
- 22) Cao F, Drukker M, Lin S, Sheikh AY, Xie X, Li Z, Weissman IL, **Wu JC**. Molecular imaging of embryonic stem cell misbehavior and suicide gene ablation. *Cloning & Stem Cells* 2007;9(1):107-17. PMID: 17386018
- 23) Cao F, Sadrzadeh AH, Abilez OJ, Blundo J, Wang H, Pruitt B, Zarins C, **Wu JC**. In vivo imaging and evaluation of biomatrices for improvement of stem cell engraftment in vivo. *Tissue Engineering & Regenerative Medicine* 2007;1(6):465-8. PMID: 18163533. PMCID: 3657504
- 24) Xie X, Cao F, Sheikh A, Li Z, Connolly A, Pei X, Li RK, Robbins RC, **Wu JC**. Genetic modification of embryonic stem cells with VEGF enhances cell survival and improves cardiac function. *Cloning & Stem Cells* 2007;9(4):549-563. PMID: 18154515. PMCID: 3657514
- 25) Cao F, van der Bogt KE, Sadrzadeh A, Xie X, Sheikh AY, Wang H, Connolly AJ, Robbins RC, **Wu JC**. Spatial and temporal kinetics of teratoma formation from murine embryonic stem cell transplantation. *Stem Cells & Development* 2007;16:883-891. PMID: 17896868
- 26) Sheikh AY, Lin SA, Cao F, Cao YA, van der Bogt KE, Chu P, Chang CP, Contag CH, Robbins RC, **Wu JC**. Molecular imaging of bone marrow mononuclear cell homing and engraftment in ischemic myocardium. *Stem Cells* 2007;25(10):2677-84. PMID: 17628019. PMCID: 3657503

- 27) Li Z, Wu JC, Sheikh AY, Kraft D, Cao F, Xie X, Patel M, Gambhir SS, Robbins RC, Cooke JP, **Wu JC**. Differentiation, survival, and function of embryonic stem cell-derived endothelial cells. *Circulation* 2007;116:I46-I54. PMID: 17846325. PMCID: 3657509
- 28) Lin S, Xie X, Patel MR, Yang YH, Li Z, Cao F, Gheysens O, Zhang Y, Gambhir SS, Rao JH, **Wu JC**. Quantum dot imaging for embryonic stem cells. *BMC Biotechnology* 2007;7:1-10. PMID: 17925032. PMCID: 2174930
- 29) Rodriguez-Porcel M, Cai W, Gheysens O, Willmann JK, Chen K, Wang H, Chen IY, He L, **Wu JC**, Li ZB, Mohamedali KA, Kim S, Rosenblum MG, Chen X, Gambhir SS. Imaging of VEGF receptor in a rat myocardial infarction model using PET. *Journal Nuclear Medicine* 2008;49(4):667-73. PMID: 18375924. PMCID: 2853914
- 30) Hendry SL, van der Bogt KE, Sheikh AY, Arai T, Dylla SJ, Drukker M, McConnell MV, Kutschka I, Hoyt G, Cao F, Weissman IL, Connolly AJ, Pelletier MP, **Wu JC**, Robbins RC, Yang PC. Multimodal evaluation of in vivo magnetic resonance imaging of myocardial restoration by mouse embryonic stem cells. *Journal Thoracic Cardiovascular Surgery* 2008;136(4):1028-37. PMID: 18954646
- 31) Chen MQ, Xie X, Hollis WR, Kovacs GT, **Wu JC**, Giovangrandi L. Cardiac differentiation of embryonic stem cells with point-source electrical stimulation. *Conf Proc IEEE Eng Med Biol Soc* 2008;1:1729-1732. PMID: 19163013
- 32) Li Z, Yoriyasu S, Huang M, Cao F, Xie X, Connolly AJ, Yang P, **Wu JC**. Comparison of reporter gene and iron particle labeling for tracking fate of human embryonic stem cells and differentiated endothelial cells in living subjects. *Stem Cells* 2008;26(4):864-73. PMID: 18218820. PMCID: 3638035
- 33) Ai L, Rouhanizadeh M, **Wu JC**, Takabe W, Yu H, Alavi M, Li R, Chu Y, Miller JD, Heistad DD, Hsiai T. Shear stress influences spatial variations in vascular Mn-SOD expression: implications for LDL nitration. *American Journal of Physiology: Cell Physiology* 2008;294(6):C1576-85. PMID: 18434620. PMCID: 3008554
- 34) Wilson KD, Li Z, Wagner R, Yue P, Tsao P, Nestorova G, Huang M, Hirschberg DL, Yock PG, Quertermous T, **Wu JC**. Transcriptome alteration in the diabetic heart by rosiglitazone: implications for cardiovascular mortality. *PLoS One* 2008;3(7):e2609. PMID: 18648539. PMCID: 2481284
- 35) Swijnenburg RJ, Schrepfer S, Cao F, Pearl JI, Xie X, Connolly AJ, Robbins RC, **Wu JC**. In vivo imaging of embryonic stem cells reveals patterns of survival and rejection following transplantation. *Stem Cells & Development* 2008;17(6):1023-9. PMID: 18491958. PMCID: 2657199 (*Editorial by PWM Fedak)
- 36) Kutschka I, Sheikh AY, Sista R, Hendry SL, Chun HJ, Hoyt G, Kutschka W, Pelletier MP, Quertermous T, **Wu JC**, Robbins RC. A novel platform device for rodent echocardiography. *ILAR Journal* 2008;49:E1-7. PMID: 18506056
- 37) Cao F, Wagner RA, Wilson KD, Xie X, Fu J, Drukker M, Lee A, Li RA, Gambhir SS, Weissman IL, Robbins RC, **Wu JC**. Transcriptional and functional profiling of human embryonic stem cell-derived cardiomyocytes. *PLoS One* 2008;3(10):e3474. PMID: 18941512. PMCID: 2565131
- 38) Xie X, Chan KS, Cao F, Huang M, Li Z, Lee A, Weissman IL, **Wu JC**. Imaging of STAT3 signaling pathway during mouse embryonic stem cell differentiation. *Stem Cells & Development* 2009;18(2):205-14. PMID: 18576943. PMCID: 3133564 (*Editorial by GI Gallicano)
- 39) Huang M, Chan DA, Jia F, Xie X, Li Z, Hoyt G, Chen X, Giaccia AJ, Robbins RC, **Wu JC**. Novel treatment of ischemic heart disease using short hairpin RNA interference. *Circulation* 2008;118:S226-S223. PMID: 18824759
- 40) van der Bogt K, Sheikh AY, Schrepfer S, Hoyt G, Cao F, Ransohoff K, Swijnenburg RJ, Pearl J, Fischbein M, Contag CH, Robbins RC, **Wu JC**. Comparison of different adult stem cell types for treatment of myocardial ischemia. *Circulation* 2008;118:S121-S129. PMID: 18824743. PMCID: 3657517

- 41) Rodriguez-Porcel M, Brinton TJ, Chen IY, Gheysens O, Lyons J, Ikeno F, Willmann JK, Wu L, **Wu JC**, Yeung AC, Yock P, Gambhir SS. Reporter gene imaging following percutaneous delivery in swine: moving toward clinical applications. *Journal American College of Cardiology* 2008;51(5):595-7. PMID: 18237691. PMCID: 2853907 (*Journal cover)
- 42) van der Bogt KE, Schrepfer S, Yu J, Sheikh AY, Hoyt G, Govaert JA, Velotta JB, Contag CH, Robbins RC, **Wu JC**. Comparison of transplantation of adipose tissue- and bone marrow-derived mesenchymal stem cells in the infarcted heart. *Transplantation* 2009;87(5):642-52. PMID: 19295307. PMCID: 2866004
- 43) Li Z, Lee A, Huang M, Chun H, Chung J, Chu P, Hoyt G, Yang P, Rosenberg J, Robbins RC, **Wu JC***. Imaging survival and function of transplanted cardiac resident stem cells. *Journal American College Cardiology* 2009;53(14):1229-40. PMID: 19341866. PMCID: 2878762 (*JACC William Parmley Prize)
- 44) Swijnenburg RJ, Schrepfer S, Govaert JA, Cao F, Ransohoff K, Shiekh AY, Haddad M, Connolly AJ, Davis MM, Robbins RC, **Wu JC**. Immunosuppressive therapy mitigates immunological rejection of human embryonic stem cell xenografts. *Proceedings National Academy of Science* 2008;105(35):12991-2996. PMID: 18728188. PMCID: 2529073 (*Editorial in *Cell Stem Cell* by A Chidgey & R Boyd)
- 45) Chen IY, Greve JM, Gheysens O, Willmann JK, Rodriguez-Porcel M, Chu P, Sheikh AY, Faranesh AZ, Paulmurugan R, Yang PC, **Wu JC**, Gambhir SS. Comparison of optical bioluminescence reporter gene and superparamagnetic iron oxide MR contrast agent as cell markers for noninvasive imaging of cardiac cell transplantation. *Molecular Imaging & Biology* 2009;11(3):178-87. PMID: 19034584. PMCID: 4155941
- 46) Li SH, Lai TY, Sun Z, Han M, Moriyama E, Wilson B, Fazel S, Weisel RD, Yau T, **Wu JC**, Li RK. Tracking cardiac engraftment and distribution of implanted bone marrow cells: comparing intra-aortic, intravenous, and intramyocardial delivery. *Journal Thoracic & Cardiovascular Surgery* 2009;137(5): 1225-1233. PMID: 19379996
- 47) Cao F, Li Z, Lee A, Chen K, Wang H, Cai W, Chen X, **Wu JC**. Noninvasive imaging of human embryonic stem cell-derived teratoma formation. *Cancer Research* 2009;69(7):2709-13. PMID: 19318556. PMCID: 2866177
- 48) Huang M, Chen ZY, Hu S, Jia F, Li Z, Hoyt G, Robbins RC, Kay M, **Wu JC**. Novel minicircle vector for gene therapy in murine myocardial infarction. *Circulation* 2009;120:S230-S237. PMID: 19752373. PMCID: 3163107
- 49) Wilson KD, Venkatasubrahmanyam S, Jia F, Sun N, Butte AJ, **Wu JC**. MicroRNA profiling of human induced pluripotent stem cells. *Stem Cells & Development* 2009;18(5):749-58. PMID: 19284351. PMCID: 3135181
- 50) Daadi M, Li Z, Arac A, Grueter BA, Sofilos M, Malenka RC, **Wu JC**, Steinberg GK. Molecular and magnetic resonance imaging of human embryonic stem cell-derived neural stem cell grafts in ischemic rat brain. *Molecular Therapy* 2009;17(7):1282-91. PMID: 19436269. PMCID: 2835224
- 51) Govaert JA, Swijnenbrug RJ, Schrepfer S, Xie X, van der Bogt K, Hoyt G, Stein W, Ransohoff K, Robbins RC, **Wu JC**. Poor functional recovery after transplantation of diabetic bone marrow stem cells in ischemic myocardium. *Journal Heart Lung Transplantation* 2009;28(11):1158-1165. PMID: 19782602. PMCID: 3163601
- 52) Wang H, Cao F, De A, Cao Y, Contag C, Gambhir SS, **Wu JC**, Chen X. Trafficking mesenchymal stem cell engraftment and differentiation in tumor-bearing mice by bioluminescence imaging. *Stem Cells* 2009;27(7):1548-58. PMID: 19544460. PMCID: 4161123
- 53) Willmann JK, Paulmurugan R, Rodriguez-Porcel M, Stein W, Brinton TJ, Connolly AJ, Nielsen CH, Lutz AM, Lyons J, Ikeno F, Suzuki Y, Rosenberg J, Chen IY, **Wu JC**, Yeung AC, Yock P, Robbins RC, Gambhir SS. Imaging gene expression in human mesenchymal stem cells: from small to large animals. *Radiology* 2009;252(1):117-27. PMID: 19366903. PMCID: 2702468 (*Editorial by PL Choyke)

- 54) Sun N, Lee A, **Wu JC**. Long term non-invasive imaging of embryonic stem cells using reporter genes. *Nature Protocols* 2009;4(8):1192-201 PMID: 19617890. PMCID: 3683546
- 55) Lee AS, Tang C, Cao F, Xie X, van der Bogt K, Hwang A, Connolly AJ, Robbins RC, **Wu JC**. Effects of cell number on teratoma formation by human embryonic stem cells. *Cell Cycle* 2009;8(16):2608-12. PMID: 19597339. PMCID: 2866168
- 56) Yu J, Huang NF, Wilson KD, Velotta JB, Huang M, Li Z, Lee A, Robbins RC, Cooke JP, **Wu JC**. nAChRs mediate human embryonic stem cell-derived endothelial cells: proliferation, apoptosis, and angiogenesis. *PLoS One* 2009;4(9):e7040. PMID: 19753305. PMCID: 2737633
- 57) Chen MQ, Yu J, Whittington R, **Wu JC**, Kovacs GT, Giovangrandi L. Modeling conduction in host-graft interactions between stem cell grafts and cardiomyocytes. *Conf Prof IEEE Eng Med Biol Soc* 2009;1:6014-7. PMID: 19964687
- 58) Deuse T, Peter C, Fedak PW, Doyle T, Reichenspurner H, Zimmermann WH, Eschenhagen T, Stein W, **Wu JC**, Robbins RC, Schrepfer S. Hepatocyte growth factor or vascular endothelial growth factor gene transfer maximizes mesenchymal stem cell-based myocardial salvage after acute myocardial infarction. *Circulation* 2009;120:S247-S254. PMID: 19752375
- 59) Li Z, Wilson KD, Smith B, Kraft DL, Jia F, Huang M, Xie X, Robbins RC, Gambhir SS, Weissman IL, **Wu JC**. Functional and transcriptional characterization of human embryonic stem cell-derived endothelial cells for treatment of myocardial infarction. *PLoS One* 2009;4(12):e8443. PMID: 20046878. PMCID: 2795856.
- 60) Chen MQ, Xie X, Wilson KD, Sun N, **Wu JC**, Giovangrandi L, Kovacs GTA. Current-controlled electrical point-source stimulation of embryonic stem cells. *Cellular and Molecular Bioengineering* 2009;2(4):625-635. PMID: 20652088. PMCID: 29051819
- 61) Swijnenburg RJ, Govaert JA, van der Bogt KE, Pearl JI, Huang M, Stein W, Hoyt G, Vogel H, Contag CH, Robbins RC, **Wu JC**. Timing of bone marrow cell delivery has minimal effects on cell viability and cardiac recovery following myocardial infarction. *Circulation: Cardiovascular Imaging* 2010;3(1):77-85 PMID: 19920031. PMCID: 3075469
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