OMB No. 3145-0279 (Expiration Date 10/31/2026)

NIH BIOGRAPHICAL SKETCH COMMON FORM

Name: Wu, Joseph C.

Persistent Identifier (PID) of the Senior/Key Person: https://orcid.org/0000-0002-6068-8041

Position Title: Director of Stanford Cardiovascular Institute, Simon Stertzer Professor of Medicine & Radiology

Organization and Location: Stanford University School of Medicine, Stanford, California, United States

PROFESSIONAL PREPARATION

INSTITUTION AND LOCATION	DEGREE	Start Date	Completion Date	FIELD OF STUDY
UCLA, Los Angeles, California, United States	Doctor of Philosophy (PHD)	09/2001	06/2004	Molecular & Medical Pharmacology
Yale School of Medicine, New Haven, Connecticut, United States	Doctor of Medicine (MD)	09/1993	06/1997	Medicine
UCLA, Los Angeles, California, United States	Bachelor of Science (BS)	09/1989	06/1993	Biology

Appointments and Positions

2013 - present	Director of Stanford Cardiovascular Institute, Simon Stertzer Professor of Medicine & Radiology, Stanford University School of Medicine, Stanford, California, United States
2025 - 2026	President, Association of University Cardiologists, Windsor, Wisconsin, United States
2024 - 2025	Immediate Past President, American Heart Association, Dallas, Texas, United States
2023 - 2024	President, American Heart Association, Dallas, Texas, United States
2022 - 2028	Board of Directors, Keystone Symposia, Keystone, Colorado, United States
2022 - 2027	Board of Directors, American Heart Association, Dallas, Texas, United States
2022 - 2023	President-Elect, American Heart Association, Dallas, Texas, United States
2017 - 2025	Advisory Council, FDA Cell, Tissue, Gene Therapy, Bethesda, Maryland, United States
2017 - 2021	Chair, American Heart Association Research Committee, Dallas, Texas, United States
2010 - 2012	Associate Professor, Dept of Medicine & Radiology, Stanford University, Stanford, California, United States
2007 - 2010	Assistant Professor, Dept of Medicine & Radiology, Stanford University, Stanford, California, United States
2004 - 2006	Instructor, Dept of Medicine & Radiology, Stanford University, Stanford, California, United States

Products

Products Closely Related to the Proposed Project

1. Lee J, Termglinchan V, Diecke S, Itzhaki I, Lam CK, Garg P, Lau E, Greenhaw M, Seeger T, Wu H, Zhang JZ, Chen X, Gil IP, Ameen M, Sallam K, Rhee JW, Churko JM, Chaudhary R, Chour T, Wang PJ, Snyder MP, Chang HY, Karakikes I, Wu JC. Activation of PDGF pathway links LMNA mutation to dilated cardiomyopathy. Nature. 2019 Aug;572(7769):335-340. PubMed Central PMCID: PMC6779479.
2. Wei TT, Chandy M, Nishiga M, Zhang A, Kumar KK, Thomas D, Manhas A, Rhee S, Justesen JM, Chen IY, Wo HT, Khanamiri S, Yang JY, Seidl FJ, Burns NZ, Liu C, Sayed N, Shie JJ, Yeh CF, Yang KC, Lau E, Lynch KL, Rivas M, Kobilka BK, Wu JC. Cannabinoid receptor 1 antagonist genistein attenuates marijuana-induced vascular inflammation. Cell. 2022 May 12;185(10):1676-1693.e23. PubMed Central PMCID: PMC9400797.
3. Zhang H, Thai PN, Shivnaraine RV, Ren L, Wu X, Siepe DH, Liu Y, Tu C, Shin HS, Caudal A, Mukherjee S, Leitz J, Wen WTL, Liu W, Zhu W, Chiamvimonvat N, Wu JC. Multiscale drug screening for cardiac fibrosis identifies MD2 as a therapeutic target. Cell. 2024 Dec 12;187(25):7143-7163.e22. PubMed Central PMCID: PMC11645214.
4. Cho S, Rhee S, Madl CM, Caudal A, Thomas D, Kim H, Kojic A, Shin HS, Mahajan A, Jahng JW, Wang X, Thai PN, Paik DT, Wang M, Mullen M, Baker NM, Leitz J, Mukherjee S, Winn VD, Woo YJ, Blau HM, Wu JC. Selective inhibition of stromal mechanosensing suppresses cardiac fibrosis. Nature. 2025 Jun;642(8068):766-775. PubMed Central PMCID: PMC12176515.

5. Abilez OJ, Yang H, Guan Y, Shen M, Yildirim Z, Zhuge Y, Venkateshappa R, Zhao SR, Gomez AH, El-Mokahal M, Dunkenberger L, Ono Y, Shibata M, Nwokoye PN, Tian L, Wilson KD, Lyall EH, Jia F, Wo HT, Zhou G, Aldana B, Karakikes I, Obal D, Peltz G, Zarins CK, Wu JC. Gastruloids enable modeling of the earliest stages of human cardiac and hepatic vascularization. Science. 2025 Jun 5;388(6751):eadu9375. PubMed Central PMCID: PMC12815606.

Other Significant Products Highlighting Contributions to Science

1. Burridge PW, Li YF, Matsa E, Wu H, Ong SG, Sharma A, Holmström A, Chang AC, Coronado MJ, Ebert AD, Knowles JW, Telli ML, Witteles RM, Blau HM, Bernstein D, Altman RB, Wu JC. Human induced pluripotent stem cell-derived cardiomyocytes recapitulate the predilection of breast cancer patients to doxorubicin-induced cardiotoxicity. Nat Med. 2016 May;22(5):547-56. PubMed Central PMCID: PMC5086256.
2. Sayed N, Liu C, Ameen M, Himmati F, Zhang JZ, Khanamiri S, Moonen JR, Wnorowski A, Cheng L, Rhee JW, Gaddam S, Wang KC, Sallam K, Boyd JH, Woo YJ, Rabinovitch M, Wu JC. Clinical trial in a dish using iPSCs shows lovastatin improves endothelial dysfunction and cellular cross-talk in LMNA cardiomyopathy. Sci Transl Med. 2020 Jul 29;12(554) PubMed Central PMCID: PMC7557117.
3. Liu C, Shen M, Liu Y, Manhas A, Zhao SR, Zhang M, Belbachir N, Ren L, Zhang JZ, Caudal A, Nishiga M, Thomas D, Zhang A, Yang H, Zhou Y, Ameen M, Sayed N, Rhee JW, Qi LS, Wu JC. CRISPRi/a screens in human iPSC-cardiomyocytes identify glycolytic activation as a druggable target for doxorubicin-induced cardiotoxicity. Cell Stem Cell. 2024 Dec 5;31(12):1760-1776.e9. PubMed Central PMCID: PMC11646563.
4. Cao X, Manhas A, Chen YI, Caudal A, Mondejar-Parreño G, Zhu W, Liu W, Kong X, Zeng W, Liu L, Zhao SR, Jahng JWS, Utz PJ, Nadeau KC, Nishiga M, Wu JC. Inhibition of CXCL10 and IFN-γ ameliorates myocarditis in preclinical models of SARS-CoV-2 mRNA vaccination. Sci Transl Med. 2025 Dec 10;17(828):eadq0143. PubMed Central PMCID: PMC13101539.
5. Wu X, Wu MA, Zou J, Kleinstreuer N, Wu JC. Reimagining human-centric drug development with new approach methodologies. Science. 2026 Apr 23;392(6796):371-378. PubMed Central PMCID: PMC13155199.

Certification:

I certify that the information provided is current, accurate, and complete. This includes, but is not limited to, information related to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

In accordance with Section 10632 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19232), each individual identified as a senior/key person must certify that they are not a party to a malign foreign talent recruitment program.

Research Security Training Requirement for Federal Award Personnel: In accordance with Section 10634 of the CHIPS and Science Act of 2022 (42 U.S.C. § 19234), each individual identified as a senior/key person must certify that they have completed the requisite research security training that meets the requirements specified in Item 2 of Important Notice No. 149 within 12 months prior to proposal submission.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§3729-3733 and 3802.

Certified by Wu, Joseph C. in SciENcv on 2026-05-09 21:51:57

NIH BIOGRAPHICAL SKETCH SUPPLEMENT

Name: Wu, Joseph C.

Persistent Identifier (PID) of the Senior/Key Person: https://orcid.org/0000-0002-6068-8041

Position Title: Director of Stanford Cardiovascular Institute, Simon Stertzer Professor of Medicine & Radiology

Organization and Location: Stanford University School of Medicine, Stanford, California, United States

Personal Statement

I am the Director of Stanford Cardiovascular Institute and Simon Stertzer Professor of Medicine and Radiology at Stanford University. As a physician-scientist, my research career over the past 20+ years has been dedicated to making fundamental discoveries in cardiovascular medicine. My scholarly work consists of >700 publications with an H-index of 153 on Google Scholar and recognition as a top 0.1% of highly cited researchers in Web of Science for the past 8 years (2018-2025).

My laboratory uses a combination of genomics, stem cells & organoids, and AI/ML platforms to answer key questions in human-centric biology. To date, we have made several seminal discoveries in the areas of (i) disease modeling, (ii) genomics-epigenomics, (iii) precision medicine, (iv) regenerative medicine, and (iv) new alternative methodologies (NAMs) and clinical trial-in-a-dish (CTiD) (see “Contribution to Science”).

For professional contributions, I was the past president of the American Heart Association (AHA) from 2023 to 2024, the largest voluntary organization dedicated to advancing cardiovascular healthcare. I served on the FDA Cellular, Tissue, and Gene Therapies Advisory Committee from 2017 to 2025. I currently serve on the Board of the American Heart Association and Keystone Symposia. I am an elected member or fellow of the American Society of Clinical Investigation (ASCI), Association of University Cardiologists (AUC), American Institute for Medical and Biological Engineering (AIMBE), American Association of Physicians (AAP), American Association for Advancement of Science (AAAS), Asian American Academy of Science and Engineering (AAASE), American Academy of Arts & Sciences (AAA&S), National Academy of Inventors (NAI), and National Academy of Medicine (NAM).

I have received several prestigious awards, including the NIH Director’s New Innovator Award, NIH Roadmap Transformative Award, Presidential Early Career Award for Scientists and Engineers (PECASE) given at the White House by President Obama, Burroughs Wellcome Foundation Innovation in Regulatory Science Award, AHA Merit Award, and AHA Distinguished Scientist Award. In addition, I am a past recipient of the Gill Heart & Vascular Institute Cardiovascular Research Award (University of Kentucky), Louis and Artur Lucian Award (McGill University), Schottenstein Prize in Cardiovascular Sciences (The Ohio State University), and Stanley J. Korsmeyer Award (ASCI).

Finally, I have a significant commitment in promoting STEM (science, technology, engineering, and medicine) to the younger generation and serve as the PI of NIH T32 and R38 grants dedicated toward training future researchers and clinicians. To date, more than 60 of my former postdoctoral fellows are now faculty in the US and abroad.

Honors

2026	Stanley J Korsmeyer Award , American Society of Clinical Investigation (ASCI)
2026	Elected Member, American Academy of Arts and Sciences (AAA&S)
2026	Distinguished Scientist Award, American College of Cardiology (ACC)
2025	Schottenstein Prize in Cardiovascular Sciences, The Ohio State University
2024	Louis and Artur Lucian Award, McGill University
2024	Elected to Fellow, Asian American Academy of Science and Engineering (AAASE)
2022	Elected to Academician, Academia Sinica (Taiwan)
2022	Elected Member, National Academy of Inventors (NAI)
2021	Honorary Lifetime Member, Society of Toxicology (SOT)

2019	Elected to Fellow, American Association for Advancement of Science (AAAS)
2019	Elected Member, National Academy of Medicine (NAM)
2018	Distinguished Scientist Award, American Heart Association (AHA)
2018	Elected to Fellow, American Institute for Medical and Biological Engineering (AIMBE)
2018 - 2025	Top 0.1% of Highly Cited Researchers in Web of Science, Web of Science
2015	Elected Member, American Association of Physicians (AAP)

Contributions to Science

1. Disease Modeling: My lab has made seminal discoveries on how human induced pluripotent stem cells (iPSCs) can be used to model mechanisms of inherited cardiomyopathies, channelopathies, and other acquired cardiovascular diseases. iPSCs can also be used to identify loci or pathways related to disease predisposition via genome editing techniques (e.g., CRISPR/Cas9), thus enabling genotype-phenotype correlations, and improve risk stratification and disease management. Representative publications include: (1) Burridge et al. (2016) Nature; (2) Davis et al. (2016) Cell; (3) Guo et al. (2023) Sci Transl Med; (4) Cho et al. (2025) Nature.

2. Genomics & Epigenomics: My lab has been working on human iPSCs since 2008. We have made several seminal contributions to the field. We are interested in understanding the genomic and epigenetic landscape changes during reprogramming, differentiation, development, and in response to various stress factors or environmental stimuli. Representative publications include: (1) Churko et al. (2017) Nature Biomed Eng; (2) Lee et al. (2018) Cell Stem Cell; (3) Ameen et al. (2022) Cell; (4) Abilez et al. (2025) Science.

3. Precision medicine seeks to link molecular data with the clinical disease phenotypes and to identify patient subpopulations that differ in their disease susceptibility, progression, and prognosis. Instead of a one-drug-fits-all model, the ultimate goal is to tailor prevention and treatment to individual patients. My lab has been integrating genomics, transcriptomics, proteomics, metabolomics, bioinformatics, and imaging to exactly answer this question. Representative publications include: (1) Lee et al. (2019) Nature; (2) Wei et al. (2022) Cell; (3) Liu et al. (2024) Cell Stem Cell; (4) Cao et al. (2025) Science Transl Med.

4. Regenerative Medicine: The challenges for using ESC- or iPSC-based cardiovascular therapies are significantly greater than adult stem cells given the hurdles of tumorigenicity, immunogenicity, safety monitoring, and cost-effectiveness. Over the past 10 years, we have performed several seminal studies addressing these specific areas ranging from basic to clinical arenas. Representative publications include: (1) Lee et al. (2018) Nature Biomed Eng; (2) Zhang et al. (2019) Cell Stem Cell; (3) Tu et al. (2024) Nature Biomed Eng; (4) Kutschka et al. (2025) Nature.

5. New Alternative Methodologies & Drug Discovery: Drug discovery is an arduous and expensive process. On average, new drug requires more than $2 billion and 12 years from the time of discovery to commercial launch. Taking a cue from the Precision Medicine Initiative and FDA Modernization Act 3.0 with emphasis on New Alternative Methodologies (NAMs), my lab has been focusing on how we can use iPSCs, combined with AI/ML and human genomics, to better understand clinical pharmacogenomics and hence accelerate drug discovery. Representative publications include: Matsa et al. (2016) Cell Stem Cell; (2) Sharma et al. (2017) Science Transl Med; (3) Sayed et al. (2020) Science Transl Med; (4) Zhang et al. (2024) Cell.

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