Stanford

Ian Y Chen, MD, PhD

Assistant Professor of Medicine (Cardiovascular) and of Radiology (Veterans Affairs)

Medicine - Cardiovascular Medicine

Bio

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Medicine - Cardiovascular Medicine
- Assistant Professor - University Medical Line, Radiology
- Member, Bio-X
- Member, Cardiovascular Institute

ADMINISTRATIVE APPOINTMENTS

- Director, Outpatient Cardiology Services, Veterans Affairs Palo Alto Health Care System, (2021- present)
- Section Lead (General Cardiology), Clinical Resource Hub for Telecardiology, Veterans Affairs Palo Alto Health Care System, (2022- present)
- Director, Women's Health Cardiology Clinic, Cardiology Section, Veterans Affairs Palo Alto Health Care System, (2021-2022)
- Director, VA/PAVIR Summer Research Program, Veterans Affairs Palo Alto Health Care System, (2023- present)
- Director, Translational Cardiovascular Research Laboratory, Veterans Affairs Palo Alto Health Care System, (2022- present)

HONORS AND AWARDS

- Director's Commendation Award, Veterans Affairs Palo Alto Health Care System (2021)
- Certification of Appreciation for Service and Performance, Department of Veterans Affairs (2021)
- Dorothy Penrose Stout Award, American Heart Association (2007)
- Moncada Award, Society of Computed Body Tomography and Magnetic Resonance (2006)
- Top Basic Science Abstract Award, Academy of Molecular Imaging (2006)
- Young Investigator Travel Scholarship, Academy of Molecular Imaging (2005)
- Cardiovascular Young Investigator Award, Society of Nuclear Medicine (2003)
- Richard J Johns Award for Outstanding Achievement in Biomedical Engineering, The Johns Hopkins University (1999)
- Honorary Member, Tau Beta Pi Engineering Honor Society (1998)
- Howard Hughes Summer Undergraduate Research Award, The Johns Hopkins University (1998)
- Honorary Member, Alpha Eta Mu Beta National Biomedical Engineering Honor Society (1997)
- Honorary Member, Golden Key National Honor Society (1996)
- Dean's List, The Johns Hopkins University (1995)

PROFESSIONAL EDUCATION

- Fellowship, Stanford Hospital and Clinics , Cardiovascular Medicine (2017)

- Residency, Stanford Hospital and Clinics , Internal Medicine (2012)
- MD, Stanford University School of Medicine , Medicine (2010)
- PhD, Stanford University , Bioengineering (2008)
- MSE, The Johns Hopkins University , Biomedical Engineering (2002)
- BS, The Johns Hopkins University , Biomedical Engineering (1999)

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Cardiovascular Medicine (Fellowship Program)

Publications

PUBLICATIONS

- **Generation of three induced pluripotent stem cell lines to model and investigate diseases affecting Hispanics.** *Stem cell research*
  Chen, I. Y., Olshausen, J., Thomas, D., Lai, C., McLaughlin, T. L., Wu, J. C.
  2022; 65: 102969
- **Angiogenic stem cell delivery platform to augment post-infarction neovasculature and reverse ventricular remodeling.** *Scientific reports*
  Shin, H. S., Thakore, A., Tada, Y., Pedroza, A. J., Ikeda, G., Chen, I. Y., Chan, D., Jaatinen, K. J., Yajima, S., Pfrender, E. M., Kawamura, M., Yang, P. C., Wu, et al
  2022; 12 (1): 17605
- **Framework for patient-specific simulation of hemodynamics in heart failure with counterpulsation support.** *Frontiers in cardiovascular medicine*
  Arduini, M., Pham, J., Marsden, A. L., Chen, I. Y., Ennis, D. B., Dual, S. A.
  2022; 9: 895291
- **Cannabinoid receptor 1 antagonist genistein attenuates marijuana-induced vascular inflammation.** *Cell*
  Wei, T. T., Chandy, M., Nishiga, M., Zhang, A., Kumar, K. K., Thomas, D., Manhas, A., Rhee, S., Justesen, J. M., Chen, I. Y., Wo, H. T., Khanamiri, S., Yang, et al
  2022
- **Modeling Effects of Immunosuppressive Drugs on Human Hearts Using Induced Pluripotent Stem Cell-Derived Cardiac Organoids and Single-Cell RNA Sequencing.** *Circulation*
  Sallam, K., Thomas, D., Gaddam, S., Lopez, N., Beck, A., Beach, L., Rogers, A. J., Zhang, H., Chen, I. Y., Ameen, M., Hiesinger, W., Teuteberg, J. J., Rhee, et al
  2022; 145 (17): 1367-1369
- **The Smoking Paradox: A Twist in the Tale of Vasospastic Angina.** *Journal of vascular medicine & surgery*
  Tran, M. V., Marceau, E., Lee, P. Y., Chandy, M., Chen, I. Y.
  2021; 9 (7)
- **Preoperative Computed Tomography Angiography Reveals Leaflet-Specific Calcification and Excursion Patterns in Aortic Stenosis.** *Circulation. Cardiovascular imaging*
  Chen, I. Y., Vedula, V., Malik, S. B., Liang, T., Chang, A. Y., Chung, K. S., Sayed, N., Tsao, P. S., Giacomini, J. C., Marsden, A. L., Wu, J. C.
  1800: CIRCIMAGING121012884
- **Coronary Artery Vasospasm Requiring Cardiac Autotransplantation Yet Controlled With Tobacco.** *JACC. Case reports*
  Tran, M. V., Marceau, E., Liu, Y., Sallam, K., Medina, P., Liu, C., Sayed, N., Muller, M. D., Liang, D. H., Chen, I. Y.
  2021; 3 (9): 1177-1181
- **A protocol for transdifferentiation of human cardiac fibroblasts into endothelial cells via activation of innate immunity.** *STAR protocols*
  Liu, C., Medina, P., Thomas, D., Chen, I. Y., Sallam, K., Sayed, D., Sayed, N.
  2021; 2 (2): 100556
- **Preoperative Computed Tomography Angiography Reveals Leaflet-specific Contribution to Aortic Stenosis Influenced by Local Coronary Factors**
  Chen, I. Y., Vedula, V., Malik, S. B., Liang, T., Chung, K. S., Sayed, N., Tsao, P. S., Giacomini, J. C., Marsden, A. L., Wu, J. C.

LIPPINCOTT WILLIAMS & WILKINS.2020

- **Sanjiv Sam Gambhir, MD, PhD (1962-2020).** *Journal of nuclear cardiology : official publication of the American Society of Nuclear Cardiology*
  Wu, J. C., Wardak, M., Chen, I. Y.
  2020

- **The Regulation of Endothelial Function Through Hmgcr/mevalonate Pathway Mediated Yap Activity**
  Liu, C., Liu, Y., Chen, C., Ameen, M., Yang, H., Shen, M., Rhee, J., Chen, I. Y., Sayed, N., Wu, J. C.
  LIPPINCOTT WILLIAMS & WILKINS.2020

- **HIF1# Regulates Early Metabolic Changes due to Activation of Innate Immunity in Nuclear Reprogramming.** *Stem cell reports*
  Liu, C. n., Ruan, H. n., Himmati, F. n., Zhao, M. T., Chen, C. C., Makar, M. n., Chen, I. Y., Sallam, K. n., Mocarski, E. S., Sayed, D. n., Sayed, N. n.
  2020; 14 (2): 192–200

- **Pathway-specific reporter genes to study stem cell biology.** *Stem cells (Dayton, Ohio)*
  Peterson, K. M., Franchi, F. n., Olthoff, M. n., Chen, I. Y., Paulmurugan, R. n., Rodriguez-Porcel, M. n.
  2020

- **Studying Cardiovascular Effects of Marijuana on Healthy Individuals Using Human Derived Induced Pluripotent Stem Cells**
  Wei, T., Chandy, M., Chen, I. Y., Wo, H., Khanamiri, S., Nishiga, M., Seidl, F., Sayed, N., Liu, C., Rhee, J., Obal, D., Chour, T., Wu, et al
  LIPPINCOTT WILLIAMS & WILKINS.2019

- **Adiponectin Receptor 3 is Associated With Endothelial Nitric Oxide Synthase Dysfunction and Predicts Insulin Resistance in South Asians**
  Chandy, M., Sayed, N., Lau, E., Liu, C., Wei Tzu-Tang, Chen, I. Y., Thomas, D., Rhee, J., Oh, B., Pepic, L., Husain, M., Quertermous, T., Nallamshetty, S., et al
  LIPPINCOTT WILLIAMS & WILKINS.2019

- **Marked Vascular Dysfunction in a Case of Peripartum Cardiomyopathy.** *Journal of vascular research*
  Khanamiri, S. n., Rhee, J. W., Paik, D. T., Chen, I. Y., Liu, C. n., Sayed, N. n.
  2019; 56 (1): 11–15

- **Marked Vascular Dysfunction in a Case of Peripartum Cardiomyopathy** *JOURNAL OF VASCULAR RESEARCH*
  Khanamiri, S., Rhee, J., Paik, D. T., Chen, I. Y., Liu, C., Sayed, N.
  2019; 56 (1): 11–15

- **Large-Scale Single-Cell RNA-Seq Reveals Molecular Signatures of Heterogeneous Populations of Human Induced Pluripotent Stem Cell-Derived Endothelial Cells** *CIRCULATION RESEARCH*
  Paik, D. T., Tian, L., Lee, J., Sayed, N., Chen, I. Y., Rhee, S., Rhee, J., Kim, Y., Wirka, R. C., Buikema, J. W., Wu, S. M., Red-Horse, K., Quertermous, et al
  2018; 123 (4): 443–50

- **Large-Scale Single-Cell RNA-Seq Reveals Molecular Signatures of Heterogeneous Populations of Human Induced Pluripotent Stem Cell-Derived Endothelial Cells.** *Circulation research*
  Paik, D. T., Tian, L., Lee, J., Sayed, N., Chen, I. Y., Rhee, S., Rhee, J., Kim, Y., Wirka, R. C., Buikema, J. W., Wu, S. M., Red-Horse, K., Quertermous, et al
  2018

- **REDUCED CARBOXYLESTERASE 1 IS ASSOCIATED WITH ENDOTHELIAL INJURY IN METHAMPHETAMINE INDUCED PULMONARY ARTERIAL HYPERTENSION.** *American journal of physiology. Lung cellular and molecular physiology*
  Orcholski, M. E., Khurshudyan, A., Shamskhou, E. A., Yuan, K., Chen, I. Y., Kodani, S. D., Morisseau, C., Hammock, B. D., Hong, E. M., Alexandrova, L., Alastalo, T., Berry, G., Zamanian, et al
  2017: ajplung 00453 2016-?

- **Imaging Cardiac Stem Cell Therapy** *Cardiac Regeneration*
  Qin, X., Chen, I. Y., Wu, J. C.
  Springer.2017: 241–258

- **Alternative approaches to generating cardiomyocytes are under development.** *Nature reviews. Cardiology*
  Chen, I. Y., Matsa, E., Wu, J. C.
  2016; 13 (10): 574-?

- **Finding Expandable Induced Cardiovascular Progenitor Cells** *CIRCULATION RESEARCH*
  Chen, I. Y., Wu, J. C.
  2016; 119 (1): 16-20

- **Induced pluripotent stem cells: at the heart of cardiovascular precision medicine** *NATURE REVIEWS CARDIOLOGY*
  Chen, I. Y., Matsa, E., Wu, J. C.
  2016; 13 (6): 333-349

- **Reprogramming and transdifferentiation for cardiovascular development and regenerative medicine: where do we stand?** *EMBO molecular medicine*
  Ebert, A. D., Diecke, S., Chen, I. Y., Wu, J. C.
  2015; 7 (9): 1090-1103

- **A titratable two-step transcriptional amplification strategy for targeted gene therapy based on ligand-induced intramolecular folding of a mutant human estrogen receptor.** *Molecular imaging and biology*
  Chen, I. Y., Paulmurugan, R., Nielsen, C. H., Wang, D. S., Chow, V., Robbins, R. C., Gambhir, S. S.
  2014; 16 (2): 224-234

- **Noninvasive imaging of hypoxia-inducible factor-1a gene therapy for myocardial ischemia.** *Human gene therapy methods*
  Chen, I. Y., Gheysens, O., Li, Z., Rasooly, J. A., Wang, Q., Paulmurugan, R., Rosenberg, J., Rodriguez-Porcel, M., Willmann, J. K., Wang, D. S., Contag, C. H., Robbins, R. C., Wu, et al
  2013; 24 (5): 279-288

- **Molecular imaging: The key to advancing cardiac stem cell therapy** *TRENDS IN CARDIOVASCULAR MEDICINE*
  Chen, I. Y., Wu, J. C.
  2013; 23 (6): 201-210

- **Noninvasive Monitoring of Oxidative Stress in Transplanted Mesenchymal Stromal Cells** *JACC-CARDIOVASCULAR IMAGING*
  Psaltis, P. J., Peterson, K. M., Xu, R., Franchi, F., Witt, T., Chen, I. Y., Lerman, A., Simari, R. D., Gambhir, S. S., Rodriguez-Porcel, M.
  2013; 6 (7): 795-802

- **Non-invasive Bioluminescence Imaging of Myoblast-Mediated Hypoxia-Inducible Factor-1 Alpha Gene Transfer** *MOLECULAR IMAGING AND BIOLOGY*
  Gheysens, O., Chen, I. Y., Rodriguez-Porcel, M., Chan, C., Rasooly, J., Vaerenberg, C., Paulmurugan, R., Willmann, J. K., Deroose, C., Wu, J., Gambhir, S. S.
  2011; 13 (6): 1124-1132

- **In vivo Imaging of Oxidative Stress in Mesenchymal Stromal Cells Transplanted After Myocardial Ischemia/Reperfusion Injury**
  Psaltis, P. J., Peterson, K., Xu, R., Franchi, F., Chen, I. Y., Simari, R. D., Lerman, A., Ghambir, S. S., Rodriguez-Porcel, M. G.
  LIPPINCOTT WILLIAMS & WILKINS.2011

- **Cardiovascular Molecular Imaging Focus on Clinical Translation** *CIRCULATION*
  Chen, I. Y., Wu, J. C.
  2011; 123 (4): 425-443

- **Longitudinal, Noninvasive Imaging of T-Cell Effector Function and Proliferation in Living Subjects** *CANCER RESEARCH*
  Patel, M. R., Chang, Y., Chen, I. Y., Bachmann, M. H., Yan, X., Contag, C. H., Gambhir, S. S.
  2010; 70 (24): 10141-10149

- **Indirect imaging of cardiac-specific transgene expression using a bidirectional two-step transcriptional amplification strategy** *GENE THERAPY*
  Chen, I. Y., Gheysens, O., Ray, S., Wang, Q., Padmanabhan, P., Paulmurugan, R., Loening, A. M., Rodriguez-Porcel, M., Willmann, J. K., Sheikh, A. Y., Nielsen, C. H., Hoyt, G., Contag, et al
  2010; 17 (7): 827-838

- **Antioxidants Improve Early Survival of Cardiomyoblasts After Transplantation to the Myocardium** *MOLECULAR IMAGING AND BIOLOGY*
  Rodriguez-Porcel, M., Gheysens, O., Paulmurugan, R., Chen, I. Y., Peterson, K. M., Willmann, J. K., Wu, J. C., Zhu, X., Lerman, L. O., Gambhir, S. S.
  2010; 12 (3): 325-334

- **A Novel Molecular Imaging Sensor of Cellular Oxidative Stress** *82nd National Conference and Exhibitions and Scientific Sessions of the American-Heart-Association*
  Peterson, K. M., Chen, I. Y., Simari, R. D., Gambhir, S. S., Lerman, A., Rodriguez-Porcel, M.
  LIPPINCOTT WILLIAMS & WILKINS.2009: S1025–S1025

- **Visualizing Implanted Tumors in Mice with Magnetic Resonance Imaging Using Magnetotactic Bacteria** *CLINICAL CANCER RESEARCH*
  Benoit, M. R., Mayer, D., Barak, Y., Chen, I. Y., Hu, W., Cheng, Z., Wang, S. X., Spielman, D. M., Gambhir, S. S., Matin, A.
  2009; 15 (16): 5170-5177

- **Imaging Gene Expression in Human Mesenchymal Stem Cells: From Small to Large Animals** *RADIOLOGY*
  Willmann, J. K., Paulmurugan, R., Rodriguez-Porcel, M., Stein, W., Brinton, T. J., Connolly, A. J., Nielsen, C. H., Lutz, A. M., Lyons, J., Ikeno, F., Suzuki, Y., Rosenberg, J., Chen, et al
  2009; 252 (1): 117-127

- **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 AND BIOLOGY*
  Chen, I. Y., Greve, J. M., Gheysens, O., Willmann, J. K., Rodriguez-Porcel, M., Chu, P., Sheikh, A. Y., Faranesh, A. Z., Paulmurugan, R., Yang, P. C., Wu, J. C., Gambhir, S. S.
  2009; 11 (3): 178-187

- **In Vivo Serial Evaluation of Superparamagnetic Iron-Oxide Labeled Stem Cells by Off-Resonance Positive Contrast** *MAGNETIC RESONANCE IN MEDICINE*
  Suzuki, Y., Cunningham, C. H., Noguchi, K., Chen, I. Y., Weissman, I. L., Yeung, A. C., Robbins, R. C., Yang, P. C.
  2008; 60 (6): 1269-1275

- **Imaging of VEGF receptor in a rat myocardial infarction model using PET** *JOURNAL OF NUCLEAR MEDICINE*
  Rodriguez-Porcel, M., Cai, W., Gheysens, O., Willmann, J. K., Chen, K., Wang, H., Chen, I. Y., He, L., Wu, J. C., Li, Z., Mohamedali, K. A., Kim, S., Rosenblum, et al
  2008; 49 (4): 667-673

- **Monitoring of the biological response to murine Hindlimb ischemia with Cu-64-labeled vascular endothelial growth factor-121 positron emission tomography** *CIRCULATION*
  Willmann, J. K., Chen, K., Wang, H., Paulmurugan, R., Rollins, M., Cai, W., Wang, D. S., Chen, I. Y., Gheysens, O., Rodriguez-Porcel, M., Chen, X., Gambhir, S. S.
  2008; 117 (7): 915-922

- **Reporter gene imaging following percutaneous delivery in swine - Moving toward clinical applications** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY*
  Rodriguez-Porcel, M., Brinton, T. J., Chen, I. Y., Gheysens, O., Lyons, J., Ikeno, F., Willmann, J. K., Wu, L., Wu, J. C., Yeung, A. C., Yock, P., Gambhir, S. S.
  2008; 51 (5): 595-597

- **US imaging of tumor angiogenesis with microbubbles targeted to vascular endothelial growth factor receptor type 2 in mice** *RADIOLOGY*
  Willmann, J. K., Paulmurugan, R., Chen, K., Gheysens, O., Rodriguez-Porcel, M., Lutz, A. M., Chen, I. Y., Chen, X., Gambhir, S. S.
  2008; 246 (2): 508-518

- **In vivo optical bioluminescence imaging of collagen-supported cardiac cell grafts** *JOURNAL OF HEART AND LUNG TRANSPLANTATION*
  Kutschka, I., Chen, I. Y., Kofidis, T., von Degenfeld, G., Sheikh, A. Y., Hendry, S. L., Hoyt, G., Pearl, J., Blau, H. M., Gambhir, S. S., Robbins, R. C.
  2007; 26 (3): 273-280

- **Adenoviral human BCL-2 transgene expression attenuates early donor cell death after cardiomyoblast transplantation into ischemic rat hearts** *78th Annual Scientific Session of the American-Heart-Association*
  Kutschka, I., Kofidis, T., Chen, I. Y., von Degenfeld, G., Zwierzchoniewska, M., Hoyt, G., Arai, T., Lebl, D. R., Hendry, S. L., Sheikh, A. Y., Cooke, D. T., Connolly, A., Blau, et al
  LIPPINCOTT WILLIAMS & WILKINS.2006: I174–I180

- **Collagen matrices enhance survival of transplanted cardiomyoblasts and contribute to functional improvement of ischemic rat hearts** *78th Annual Scientific Session of the American-Heart-Association*
  Kutschka, I., Chen, I. Y., Kofidis, T., Arai, T., von Degenfeld, G., Sheikh, A. Y., Hendry, S. L., Pearl, J., Hoyt, G., Sista, R., Yang, P. C., Blau, H. M., Gambhir, et al
  LIPPINCOTT WILLIAMS & WILKINS.2006: I167–I173

- **Noninvasive evaluation of immunosuppressive drug efficacy on acute donor cell survival** *MOLECULAR IMAGING AND BIOLOGY*
  Gheysens, O., Lin, S., Cao, F., Wang, D., Chen, I. Y., Rodriguez-Porcel, M., Min, J. J., Gambhir, S. S., Wu, J. C.
  2006; 8 (3): 163-170

- **Transcriptional profiling of reporter genes used for molecular imaging of embryonic stem cell transplantation** *PHYSIOLOGICAL GENOMICS*
  Wu, J. C., Spin, J. M., Cao, F., Lin, S. A., Xie, X. Y., Gheysens, O., Chen, I. Y., Sheikh, A. Y., Robbins, R. C., Tsalenko, A., Gambhir, S. S., Quertermous, T.
  2006; 25 (1): 29-38

- **Image-guided cardiac cell delivery using high-resolution small-animal ultrasound** *MOLECULAR THERAPY*

Rodriguez-Porcel, M., Gheysens, O., Chen, I. Y., Wu, J. C., Gambhir, S. S.
2005; 12 (6): 1142-1147

- **Collagen matrices enhance survival of embryonic cardiomyoblasts following transplantation into ischemic rat hearts**
  Kutschka, Kofidis, T., Chen, I. Y., Arai, T., Sheikh, A. Y., Hendry, S. L., Pearl, J., Hoyt, G., Connolly, A., Yang, P. C., Gambhir, S. S., Robbins, R. C.
  LIPPINCOTT WILLIAMS & WILKINS.2005: U805

- **Adenoviral human BCL-2 attenuates early cell death following cardiomyoblast transplantation into ischemic rat hearts**
  Kutschka, Chen, I. Y., Kofidis, T., Zwierzchoniewska, M., Arai, T., von Degenfeld, G., Sheikh, A. Y., Hendry, S. L., Lebl, D. R., Cooke, D. T., Gambhir, S. S., Robbins, R. C.
  LIPPINCOTT WILLIAMS & WILKINS.2005: U504

- **Molecular imaging of the kinetics of vascular endothelial growth factor gene expression in ischemic myocardium** *CIRCULATION*
  Wu, J. C., Chen, I. Y., Wang, Y. L., Tseng, J. R., Chhabra, A., Salek, M., Min, J. J., Fishbein, M. C., Crystal, R., Gambhir, S. S.
  2004; 110 (6): 685-691

- **Micro-positron emission tomography imaging of cardiac gene expression in rats using bicistronic adenoviral vector-mediated gene delivery** *CIRCULATION*
  Chen, I. Y., Wu, J. C., Min, J. J., Sundaresan, G., Lewis, X., Liang, Q. W., Herschman, H. R., Gambhir, S. S.
  2004; 109 (11): 1415-1420

- **Molecular imaging of cardiac cell transplantation in living animals using optical bioluminescence and positron emission tomography** *CIRCULATION*
  Wu, J. C., Chen, I. Y., Sundaresan, G., Min, J. J., De, A., Qiao, J. H., Fishbein, M. C., Gambhir, S. S.
  2003; 108 (11): 1302-1305

- **Regulatory proteins alter nucleotide binding to acto-myosin of sliding filaments in motility assays** *BIOPHYSICAL JOURNAL*
  Homsher, E., Nili, M., Chen, I. Y., Tobacman, L. S.
  2003; 85 (2): 1046-1052