Stanford

Francisco Galdos

- Affiliate, Department Funds
- Fellow in Pediatrics - Cardiology

Bio

BIO

Francisco earned his undergraduate degree in Human Developmental and Regenerative Biology from Harvard University, graduating magna cum laude. He subsequently completed his MD/PhD at Stanford University School of Medicine. During his doctoral training under the mentorship of Dr. Sean Wu, Francisco published one of the first comprehensive maps of human cardiac cell development using pluripotent stem cell-based models. His research contributed to the development of machine learning tools and genetic tracing systems that identified and characterized human left ventricular cardiomyocytes in vitro, enabling the modeling of left ventricular development in hypoplastic left heart syndrome. Francisco has authored multiple first-author publications and has been awarded funding from both internal sources and the NIH (F30, T32). He has received numerous accolades for his work, including the prestigious Harold Weintraub Award, and has presented his research at various national conferences. As part of the accelerated research pathway at Stanford, Francisco is focused on the genetic and epigenetic mechanisms underlying heart failure and heart development in congenital heart disease, with the ultimate goal of developing novel therapeutics for pediatric patients.

INSTITUTE AFFILIATIONS

- Member (Student), Cardiovascular Institute

HONORS AND AWARDS

- Jacob Goldfield Scholarship, Harvard University (2011 - 2015)
- Amgens Scholars Fellowship, Amgen Scholars Program (2013)
- Detur Book Prize, Harvard University (2013)
- Herschel Smith Harvard Undergraduate Research Fellowship, Harvard University (2014)
- Dorothy Dee and Marjorie Helena Boring Trust iHeart Research Award, Stanford Cardiovascular Institute (2016)
- Stanford Society of Physician Scholars Research Award, The Stanford Society of Physician Scholars (2016)
- Ruth L. Krischstein Predoctoral NRSA F30, National Institutes of Health (2016 - 2021)
- Harold M. Weintraub Graduate Student Award, Fred Hutch Cancer Center (2023)

PROFESSIONAL EDUCATION

- Pediatric Residency, Stanford University , Pediatric Residency (2026)
- M.D., Stanford University , Medicine (2024)
- Ph.D, Stanford University , Stem Cell and Regenerative Biology (2022)
- B.A., Harvard University , Human Developmental and Regenerative Biology (2015)

Research & Scholarship

LAB AFFILIATIONS

- Sean Wu (3/1/2015)

Publications

PUBLICATIONS

- **Benchmarking cell type and gene set annotation by large language models with AnnDictionary.** *Nature communications*
  Crowley, G., Quake, S. R.
  2025; 16 (1): 9511
- **IGFBP2 Mediates Human iPSC-Cardiomyocyte Proliferation in a Cellular Contact-Dependent Manner.** *Circulation research*
  Lee, S., Heinrich, P., Lee, D., Kang, Y., Robinson, H., Humphrey, S. J., Yun, J., Goodyer, W. R., Buikema, J. W., Paik, D. T., Galdos, F. X., Kim, B., Belbachir, et al
  2025
- **IGFBP2 Regulates Human IPSC-Derived Cardiomyocyte Proliferation Beyond Contact Inhibition**
  Lee, S., Heinrich, P., Lee, D., Kang, Y., Goodyer, W., Buikema, J., Galdos, F., Moretti, A., Wu, S.
  LIPPINCOTT WILLIAMS & WILKINS.2025
- **Cardiac Development at a Single-Cell Resolution.** *Advances in experimental medicine and biology*
  Wei, N., Lee, C., Duan, L., Galdos, F. X., Samad, T., Raissadati, A., Goodyer, W. R., Wu, S. M.
  2024; 1441: 253-268
- **Cardiac ACTN2 enhancer regulates cardiometabolism and maturation.** *Nature cardiovascular research*
  Galdos, F. X., Lee, C., Wu, S. M.
  2024; 3 (6): 616-618
- **Cardiac ACTN2 enhancer regulates cardiometabolism and maturation** *NATURE CARDIOVASCULAR RESEARCH*
  Galdos, F. X., Lee, C., Wu, S. M.
  2024
- **Modeling hiPSC-to-Early Cardiomyocyte Differentiation Process using Microsimulation and Markov Chain Models**
  Rajendiran, S., Galdos, F., Lee, C., Xu, S., Harvell, J., Singh, S., Wu, S. M., Lipke, E. A., Cremaschi, S.
  edited by Bassett, M., Cremaschi, S., Adams, T. A., Zanfir, M.
  PSE Press.2024: 344-350
- **Combined lineage tracing and scRNA-seq reveals unexpected first heart field predominance of human iPSC differentiation.** *eLife*
  Galdos, F. X., Lee, C., Lee, S., Paige, S., Goodyer, W., Xu, S., Samad, T., Escobar, G. V., Darsha, A., Beck, A., Bak, R. O., Porteus, M. H., Wu, et al
  2023; 12
- **The Role of Single-Cell Profiling and Deep Immunophenotyping in Understanding Immune Therapy Cardiotoxicity.** *JACC. CardioOncology*
  Huang, Y. V., Waliany, S., Lee, D., Galdos, F. X., Witteles, R. M., Neal, J. W., Fan, A. C., Maecker, H. T., Nguyen, P. K., Wu, S. M., Zhu, H.
  2022; 4 (5): 629-634
- **devCellPy is a machine learning-enabled pipeline for automated annotation of complex multilayered single-cell transcriptomic data.** *Nature communications*
  Galdos, F. X., Xu, S., Goodyer, W. R., Duan, L., Huang, Y. V., Lee, S., Zhu, H., Lee, C., Wei, N., Lee, D., Wu, S. M.
  2022; 13 (1): 5271
- **In vivo visualization and molecular targeting of the cardiac conduction system.** *The Journal of clinical investigation*
  Goodyer, W. R., Beyersdorf, B. M., Duan, L., van den Berg, N. S., Mantri, S., Galdos, F. X., Puluca, N., Buikema, J. W., Lee, S., Salmi, D., Robinson, E. R., Rogalla, S., Cogan, et al
  2022
- **Identification of Pathogenic Immune Cell Subsets Associated With Checkpoint Inhibitor-Induced Myocarditis.** *Circulation*

Zhu, H., Galdos, F. X., Lee, D., Waliany, S., Vivian Huang, Y., Ryan, J., Dang, K., Neal, J. W., Wakelee, H. A., Reddy, S. A., Srinivas, S., Lin, L. L., Witteles, et al

2022: 101161CIRCULATIONAHA121056730

- **The Tabula Sapiens: A multiple-organ, single-cell transcriptomic atlas of humans.** *Science (New York, N.Y.)*

  Jones, R. C., Karkanias, J., Krasnow, M. A., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., Harper, W., Hemenez, M., Ponnusamy, R., Salehi, et al

  2022; 376 (6594): eabl4896

- **Publisher Correction: Cell types of origin of the cell-free transcriptome.** *Nature biotechnology*

  Vorperian, S. K., Moufarrej, M. N., Tabula Sapiens Consortium, Quake, S. R., Jones, R. C., Karkanias, J., Krasnow, M., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., et al

  2022

- **Cell types of origin of the cell-free transcriptome.** *Nature biotechnology*

  Vorperian, S. K., Moufarrej, M. N., Tabula Sapiens Consortium, Quake, S. R., Jones, R. C., Karkanias, J., Krasnow, M., Pisco, A. O., Quake, S. R., Salzman, J., Yosef, N., Bulthaup, B., Brown, P., et al

  2022

- **The Role of Single-Cell Profiling and Deep Immunophenotyping in Understanding Immune Therapy Cardiotoxicity** *JACC: CardioOncology*

  Huang, Y. V., Waliany, S., Lee, D., Galdos, F. X., Witteles, R. M., Neal, J. W., Fan, A. C., Maecker, H. T., Nguyen, P. K., Wu, S. M., Zhu, H.

  2022; 4 (5): 629–634

- **RNA splicing programs define tissue compartments and cell types at single-cell resolution** *ELIFE*

  Olivieri, J., Dehghannasiri, R., Wang, P. L., Jang, S., de Morree, A., Tan, S. Y., Ming, J., Wu, A., Consortium, T., Quake, S. R., Krasnow, M. A., Salzman, J.

  2021; 10

- **CRISPR/Cas9-based targeting of fluorescent reporters to human iPSCs to isolate atrial and ventricular-specific cardiomyocytes.** *Scientific reports*

  Chirikian, O., Goodyer, W. R., Dzilic, E., Serpooshan, V., Buikema, J. W., McKeithan, W., Wu, H., Li, G., Lee, S., Merk, M., Galdos, F., Beck, A., Ribeiro, et al

  2021; 11 (1): 3026

- **Purification of Pluripotent Stem Cell-Derived Cardiomyocytes Using CRISPR/Cas9-Mediated Integration of Fluorescent Reporters.** *Methods in molecular biology (Clifton, N.J.)*

  Galdos, F. X., Darsha, A. K., Paige, S. L., Wu, S. M.

  2021; 2158: 223–40

- **Single-cell Transcriptomic Analysis Reveals Developmentally Impaired Endocardial Population in Hypoplastic Left Heart Syndrome**

  Miao, Y., Tian, L., Martin, M., Paige, S., Galdos, F. X., Lee, S., Grossfeld, P. D., Mital, S., Wu, J. C., Rabinovitch, M., Nelson, T. J., Nie, S., Wu, et al

  LIPPINCOTT WILLIAMS & WILKINS.2020

- **Patient-Specific Induced Pluripotent Stem Cells Implicate Intrinsic Impaired Contractility in Hypoplastic Left Heart Syndrome.** *Circulation*

  Paige, S. L., Galdos, F. X., Lee, S., Chin, E. T., Ranjbarvaziri, S., Feyen, D. A., Darsha, A. K., Xu, S., Ryan, J. A., Beck, A. L., Qureshi, M. Y., Miao, Y., Gu, et al

  2020; 142 (16): 1605–8

- **Intrinsic Endocardial Defects Contribute to Hypoplastic Left Heart Syndrome.** *Cell stem cell*

  Miao, Y., Tian, L., Martin, M., Paige, S. L., Galdos, F. X., Li, J., Klein, A., Zhang, H., Ma, N., Wei, Y., Stewart, M., Lee, S., Moonen, et al

  2020

- **Immune Profiling and Causal Antigen Discovery in Mouse and Human Models of Immune Checkpoint Inhibitor-induced Myocarditis**

  Zhu, H., Lee, D., Sarah, W., Galdos, F. X., D'Addabbo, J., Fowler, M. B., Reddy, S., Heather, W., Neal, J. W., Witteles, R., Maecker, H. T., Davis, M., Nguyen, et al

  LIPPINCOTT WILLIAMS & WILKINS.2020

- **Wnt Activation and Reduced Cell-Cell Contact Synergistically Induce Massive Expansion of Functional Human iPSC-Derived Cardiomyocytes.** *Cell stem cell*

  Buikema, J. W., Lee, S. n., Goodyer, W. R., Maas, R. G., Chirikian, O. n., Li, G. n., Miao, Y. n., Paige, S. L., Lee, D. n., Wu, H. n., Paik, D. T., Rhee, S. n., Tian, et al

2020; 27 (1): 50–63.e5

- **Levitating Cells to Sort the Fit and the Fat.** *Advanced biosystems*
  Puluca, N. n., Durmus, N. G., Lee, S. n., Belbachir, N. n., Galdos, F. X., Ogut, M. G., Gupta, R. n., Hirano, K. I., Krane, M. n., Lange, R. n., Wu, J. C., Wu, S. M., Demirci, et al
  2020: e1900300

- **Single-Cell Delineation of Who's on First and Second Heart Fields During Development** *CIRCULATION RESEARCH*
  Galdos, F. X., Wu, S. M.
  2019; 125 (4): 411–13

- **Single-Cell Delineation of Who's on First and Second Heart Fields During Development.** *Circulation research*
  Galdos, F. X., Wu, S. M.
  2019; 125 (4): 411-413

- **Hypoplastic Left Heart Syndrome Patient-Derived Induced Pluripotent Stem Cells Exhibit Impaired Ventricular Cardiomyocyte Formation and Contractile Function**
  Paige, S. L., Galdos, F. X., Lee, S., Beck, A., Dzilic, E., Lahm, H., DreBen, M., Laugwitz, K., Moretti, A., Krane, M., Wu, S. M.
  LIPPINCOTT WILLIAMS & WILKINS.2018

- **Apolipoprotein E is a pancreatic extracellular factor that maintains mature β-cell gene expression.** *PloS one*
  Mahmoud, A. I., Galdos, F. X., Dinan, K. A., Jedrychowski, M. P., Davis, J. C., Vujic, A., Rachmin, I., Shigley, C., Pancoast, J. R., Lee, S., Hollister-Lock, J., MacGillivray, C. M., Gygi, et al
  2018; 13 (10): e0204595

- **Cardiac Regeneration Lessons From Development** *CIRCULATION RESEARCH*
  Galdos, F. X., Guo, Y., Paige, S. L., VanDusen, N. J., Wu, S. M., Pu, W. T.
  2017; 120 (6): 941-959

- **Nkx2.5+ Cardiomyoblasts Contribute to Cardiomyogenesis in the Neonatal Heart.** *Scientific reports*
  Serpooshan, V. n., Liu, Y. H., Buikema, J. W., Galdos, F. X., Chirikian, O. n., Paige, S. n., Venkatraman, S. n., Kumar, A. n., Rawnsley, D. R., Huang, X. n., Pijnappels, D. A., Wu, S. M.
  2017; 7 (1): 12590