Stanford

Dilip Thomas

Instructor, Cardiovascular Institute

Bio

ACADEMIC APPOINTMENTS

- Instructor, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- NIH Pathway to Independence Award (K99/R00), The National Institutes of Health (NIH) and National Heart, Lung, and Blood Institute (NHLBI) (2023-2028)
- Postdoctoral Fellowship Award, Tobacco-Related Disease Research Program (TRDRP) (2019-2021)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Heart Association (AHA) (2017 - present)
- Chair, SYIS-EU Council, Tissue Engineering and Regenerative Medicine Society (TERMIS) (2017 - 2019)
- Member, Royal Society of Biology (RSB) (2016 - present)
- Chair-Elect, SYIS-EU Council, Tissue Engineering and Regenerative Medicine Society (TERMIS) (2015 - 2017)
- Member, British Society for Matrix Biology (BSMB) (2012 - present)
- Member, European Society for Biomaterials (ESB) (2011 - present)
- Associate Member, Institution of Chemical Engineers (IChemE) (2010 - present)

PROFESSIONAL EDUCATION

- PhD, National University of Ireland Galway , Regenerative Medicine (2017)
- MSc, University College London , Biochemical Engineering (2010)
- BSc, Mumbai University , Biotechnology (2009)

LINKS

- Linkedin: https://www.linkedin.com/in/dilip-thomas-69b73413/
- ResearchGate: https://www.researchgate.net/profile/Dilip_Thomas
- Google Scholar: https://scholar.google.com/citations?user=slPyUeEAAAAJ&hl=en&oi=ao

Research & Scholarship

LAB AFFILIATIONS

- Joseph Wu, Wu Lab (9/1/2017)

Publications

PUBLICATIONS

- **Modeling ionizing radiation-induced cardiovascular dysfunction with human iPSC-derived engineered heart tissues.** *Journal of molecular and cellular cardiology*
  Cao, X., Thomas, D., Whitcomb, L. A., Wang, M., Chatterjee, A., Chicco, A. J., Weil, M. M., Wu, J. C.
  2024; 188: 105-107

- **Harnessing iPSCs to Dissect Causality in Anthracycline-Induced Cardiotoxicity: All That Fits Are Not Hits.** *JACC. CardioOncology*
  Thomas, D., Manhas, A., Sayed, N.
  2024; 6 (1): 51-54

- **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

- **Looking on the horizon; potential and unique approaches to developing radiation countermeasures for deep space travel.** *Life sciences in space research*
  Bokhari, R. S., Beheshti, A., Blutt, S. E., Bowles, D. E., Brenner, D., Britton, R., Bronk, L., Cao, X., Chatterjee, A., Clay, D. E., Courtney, C., Fox, D. T., Gaber, et al
  2022; 35: 105-112

- **Cellular and Engineered Organoids for Cardiovascular Models.** *Circulation research*
  Thomas, D., Choi, S., Alamana, C., Parker, K. K., Wu, J. C.
  2022; 130 (12): 1780-1802

- **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 effects of xeno-free cryopreservation on the contractile properties of human iPSC derived cardiomyocytes.** *Journal of molecular and cellular cardiology*
  Chirikian, O., Feinstein, S., Faynus, M. A., Kim, A. A., Lane, K., Torres, G., Pham, J., Singh, Z., Nguyen, A., Thomas, D., Clegg, D. O., Wu, J. C., Pruitt, et al
  2022

- **An evidence appraisal of heart organoids in a dish and commensurability to human heart development in vivo.** *BMC cardiovascular disorders*
  Thomas, D., de Jesus Perez, V. A., Sayed, N.
  2022; 22 (1): 122

- **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

- **Method for selective ablation of undifferentiated human pluripotent stem cell populations for cell-based therapies.** *JCI insight*
  Chour, T., Tian, L., Lau, E., Thomas, D., Itzhaki, I., Malak, O., Zhang, J. Z., Qin, X., Wardak, M., Liu, Y., Chandy, M., Black, K. E., Lam, et al
  2021; 6 (7)

- **Human iPSCs in Cardiovascular Research: Current Approaches in Cardiac Differentiation, Maturation Strategies, and Scalable Production.** *Cardiovascular research*
  Thomas, D., Cunningham, N. J., Shenoy, S., Wu, J. C.
  2021

- **Fabrication of 3D Cardiac Microtissue Arrays using Human iPSC-Derived Cardiomyocytes, Cardiac Fibroblasts, and Endothelial Cells.** *Journal of visualized experiments : JoVE*
  Thomas, D., Kim, H., Lopez, N., Wu, J. C.

2021

- **Elastin-like hydrogel stimulates angiogenesis in a severe model of critical limb ischemia (CLI): An insight into the glyco-host response.** *Biomaterials*
  Marsico, G., Jin, C., Abbah, S. A., Brauchle, E. M., Thomas, D., Rebelo, A. L., Orbani#, D., Chantepie, S., Contessotto, P., Papy-Garcia, D., Rodriguez-Cabello, C., Kilcoyne, M., Schenke-Layland, et al
  2021; 269: 120641

- **Building Multi-Dimensional Induced Pluripotent Stem Cells-Based Model Platforms to Assess Cardiotoxicity in Cancer Therapies.** *Frontiers in pharmacology*
  Thomas, D. n., Shenoy, S. n., Sayed, N. n.
  2021; 12: 607364

- **Generation of Human iPSCs by Protein Reprogramming and Stimulation of TLR3 Signaling.** *Methods in molecular biology (Clifton, N.J.)*
  Liu, C., Ameen, M., Himmati, S., Thomas, D., Sayed, N.
  2021; 2239: 153–62

- **Pathogenic LMNA variants disrupt cardiac lamina-chromatin interactions and de-repress alternative fate genes.** *Cell stem cell*
  Shah, P. P., Lv, W. n., Rhoades, J. H., Poleshko, A. n., Abbey, D. n., Caporizzo, M. A., Linares-Saldana, R. n., Heffler, J. G., Sayed, N. n., Thomas, D. n., Wang, Q. n., Stanton, L. J., Bedi, et al
  2021

- **Temporal changes guided by mesenchymal stem cells on a 3D microgel platform enhance angiogenesis in vivo at a low-cell dose.** *Proceedings of the National Academy of Sciences of the United States of America*
  Thomas, D. n., Marsico, G. n., Mohd Isa, I. L., Thirumaran, A. n., Chen, X. n., Lukasz, B. n., Fontana, G. n., Rodriguez, B. n., Marchetti-Deschmann, M. n., O'Brien, T. n., Pandit, A. n.
  2020

- **Modeling Secondary Iron Overload Cardiomyopathy with Human Induced Pluripotent Stem Cell-Derived Cardiomyocytes.** *Cell reports*
  Rhee, J. W., Yi, H. n., Thomas, D. n., Lam, C. K., Belbachir, N. n., Tian, L. n., Qin, X. n., Malisa, J. n., Lau, E. n., Paik, D. T., Kim, Y. n., Choi, B. S., Sayed, et al
  2020; 32 (2): 107886

- **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

- **Allogeneic Mesenchymal Stromal Cells (MSCs) are of Comparable Efficacy to Syngeneic MSCs for Therapeutic Revascularization in C57BKSdb/db Mice Despite the Induction of Alloantibody.** *Cell transplantation*
  Liew, A., Baustian, C., Thomas, D., Vaughan, E., Sanz-Nogués, C., Creane, M., Chen, X., Alagesan, S., Owens, P., Horan, J., Dockery, P., Griffin, M. D., Duffy, et al
  2018: 963689718784862

- **Cell Carriers for Bone and Cartilage Repair In Vivo** *Biomaterials for Cell Delivery: Vehicles in Regenerative Medicine*
  Thomas, D., Biggs, M., O'Brien, T., Pandit, A.
  CRC Press Taylor & Francis.2018; 1: 139–164

- **Toward Customized Extracellular Niche Engineering: Progress in Cell-Entrapment Technologies.** *Advanced materials (Deerfield Beach, Fla.)*
  Thomas, D., O'Brien, T., Pandit, A.
  2018; 30 (1)

- **The Functional Response of Mesenchymal Stem Cells to Electron-Beam Patterned Elastomeric Surfaces Presenting Micrometer to Nanoscale Heterogeneous Rigidity.** *Advanced materials (Deerfield Beach, Fla.)*
  Biggs, M. J., Fernandez, M., Thomas, D., Cooper, R., Palma, M., Liao, J., Fazio, T., Dahlberg, C., Wheadon, H., Pallipurath, A., Pandit, A., Kysar, J., Wind, et al
  2017

- **Stimulation of 3D Osteogenesis by Mesenchymal Stem Cells Using a Nanovibrational Bioreactor** *Nature Biomedical Engineering*
  Tsimbouri, P. M., Childs, P. G., Pemberton, G. D., Yang, J., Jayawarna, V., Orapiriyakul, W., Burgess, K., González-García, C., Blackburn, G., Thomas, D., Vallejo-Giraldo, C., Biggs, M. ., Curtis, et al
  2017

- **Scaffold and scaffold-free self-assembled systems in regenerative medicine** *BIOTECHNOLOGY AND BIOENGINEERING*
  Thomas, D., Gaspar, D., Sorushanova, A., Milcovich, G., Spanoudes, K., Mullen, A. M., O'Brien, T., Pandit, A., Zeugolis, D. I.

2016; 113 (6): 1155-1163

- **Variability in Endogenous Perfusion Recovery of Immunocompromised Mouse Models of Limb Ischemia** *TISSUE ENGINEERING PART C-METHODS*
  Thomas, D., Thirumaran, A., Mallard, B., Chen, X., Browne, S., Wheatley, A. M., O'Brien, T., Pandit, A.
  2016; 22 (4): 370-381

- **Co-transfection of decorin and interleukin-10 modulates pro-fibrotic extracellular matrix gene expression in human tenocyte culture** *SCIENTIFIC REPORTS*
  Abbah, S. A., Thomas, D., Browne, S., O'Brien, T., Pandit, A., Zeugolis, D. I.
  2016; 6

- **An injectable elastin-based gene delivery platform for dose-dependent modulation of angiogenesis and inflammation for critical limb ischemia** *BIOMATERIALS*
  Dash, B. C., Thomas, D., Monaghan, M., Carroll, O., Chen, X., Woodhouse, K., O'Brien, T., Pandit, A.
  2015; 65: 126-139

- **Three-Dimensional Microgel Platform for the Production of Cell Factories Tailored for the Nucleus Pulposus** *BIOCONJUGATE CHEMISTRY*
  Fontana, G., Srivastava, A., Thomas, D., Lalor, P., Dockery, P., Pandit, A.
  2015; 26 (7): 1297-1306

- **Microgel Microenvironment Primes Adipose-Derived Stem Cells Towards an NP Cells-Like Phenotype** *ADVANCED HEALTHCARE MATERIALS*
  Fontana, G., Thomas, D., Collin, E., Pandit, A.
  2014; 3 (12): 2012-2022

- **A shape-controlled tuneable microgel platform to modulate angiogenic paracrine responses in stem cells** *BIOMATERIALS*
  Thomas, D., Fontana, G., Chen, X., Sanz-Nogues, C., Zeugolis, D. I., Dockery, P., O'Brien, T., Pandit, A.
  2014; 35 (31): 8757-8766

- **Stem Cell Microencapsulation for Therapeutic Angiogenesis** *Biomaterials for Stem Cell Therapy State of Art and Vision for the Future*
  Sanz Nogués, C., Thomas, D., Pandit, A., O'Brien, T.
  CRC Press.2013: 386–424