

# Stanford

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## Casey Gifford

Assistant Professor of Pediatrics (Cardiology) and, by courtesy, of Genetics  
Pediatrics - Cardiology

### Bio

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#### ACADEMIC APPOINTMENTS

- Assistant Professor, Pediatrics - Cardiology
- Assistant Professor (By courtesy), Genetics
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

#### LINKS

- Gifford Lab: <https://www.caseygiffordlab.com/>

### Teaching

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#### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Genetics (Phd Program)

### Publications

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#### PUBLICATIONS

- **Introductions to the Community: Early-Career Researchers in the Time of COVID-19** *CELL STEM CELL*  
Ganesh, K., Patel, J., Orlova, V. V., Gifford, C., Elias, S., Vaughan, A.  
2021; 28 (1): 17–19
- **Network-based screen in iPSC-derived cells reveals therapeutic candidate for heart valve disease.** *Science (New York, N.Y.)*  
Theodoris, C. V., Zhou, P. n., Liu, L. n., Zhang, Y. n., Nishino, T. n., Huang, Y. n., Kostina, A. n., Ranade, S. S., Gifford, C. A., Uspenskiy, V. n., Malaschicheva, A. n., Ding, S. n., Srivastava, et al  
2020
- **Context-Specific Transcription Factor Functions Regulate Epigenomic and Transcriptional Dynamics during Cardiac Reprogramming.** *Cell stem cell*  
Stone, N. R., Gifford, C. A., Thomas, R. n., Pratt, K. J., Samse-Knapp, K. n., Mohamed, T. M., Radzinsky, E. M., Schricker, A. n., Ye, L. n., Yu, P. n., van Bommel, J. G., Ivey, K. N., Pollard, et al  
2019; 25 (1): 87–102.e9
- **Oligogenic inheritance of a human heart disease involving a genetic modifier.** *Science (New York, N.Y.)*  
Gifford, C. A., Ranade, S. S., Samarakoon, R. n., Salunga, H. T., de Soysa, T. Y., Huang, Y. n., Zhou, P. n., Elfenbein, A. n., Wyman, S. K., Bui, Y. K., Cordes Metzler, K. R., Ursell, P. n., Ivey, et al  
2019; 364 (6443): 865–70

- **Single-cell analysis of cardiogenesis reveals basis for organ-level developmental defects.** *Nature*  
de Soysa, T. Y., Ranade, S. S., Okawa, S. n., Ravichandran, S. n., Huang, Y. n., Salunga, H. T., Schricker, A. n., Del Sol, A. n., Gifford, C. A., Srivastava, D. n.  
2019; 572 (7767): 120–24
- **Genetic determinants and epigenetic effects of pioneer-factor occupancy** *NATURE GENETICS*  
Donaghey, J., Thakurela, S., Charlton, J., Chen, J. S., Smith, Z. D., Gu, H., Pop, R., Clement, K., Stamenova, E. K., Karnik, R., Kelley, D. R., Gifford, C. A., Cacchiarelli, et al  
2018; 50 (2): 250–+
- **Differentiation of V2a interneurons from human pluripotent stem cells.** *Proceedings of the National Academy of Sciences of the United States of America*  
Butts, J. C., McCreedy, D. A., Martinez-Vargas, J. A., Mendoza-Camacho, F. N., Hookway, T. A., Gifford, C. A., Taneja, P. n., Noble-Haeusslein, L. n., McDevitt, T. C.  
2017; 114 (19): 4969–74
- **Transcriptional and Chromatin Dynamics of Muscle Regeneration after Severe Trauma** *STEM CELL REPORTS*  
Aguilar, C. A., Pop, R., Shcherbina, A., Watts, A., Matheny, R. W., Cacchiarelli, D., Han, W. M., Shin, E., Nakhai, S. A., Jang, Y. C., Carrigan, C. T., Gifford, C. A., Kottke, et al  
2016; 7 (5): 983–97
- **Heart disease modelling adds a Notch to its belt.** *Nature cell biology*  
Gifford, C. A., Srivastava, D. n.  
2016; 18 (1): 3–5
- **A qPCR ScoreCard quantifies the differentiation potential of human pluripotent stem cells** *NATURE BIOTECHNOLOGY*  
Tsankov, A. M., Akopian, V., Pop, R., Chetty, S., Gifford, C. A., Daheron, L., Tsankova, N. M., Meissner, A.  
2015; 33 (11): 1182-U117
- **In vivo Monitoring of Transcriptional Dynamics After Lower-Limb Muscle Injury Enables Quantitative Classification of Healing** *SCIENTIFIC REPORTS*  
Aguilar, C. A., Shcherbina, A., Ricke, D. O., Pop, R., Carrigan, C. T., Gifford, C. A., Urso, M. L., Kottke, M. A., Meissner, A.  
2015; 5: 13885
- **Integrative Analyses of Human Reprogramming Reveal Dynamic Nature of Induced Pluripotency** *CELL*  
Cacchiarelli, D., Trapnell, C., Ziller, M. J., Soumillon, M., Cesana, M., Karnik, R., Donaghey, J., Smith, Z. D., Ratanasirintraoot, S., Zhang, X., Sui, S., Wu, Z., Akopian, et al  
2015; 162 (2): 412–24
- **Targeted disruption of DNMT1, DNMT3A and DNMT3B in human embryonic stem cells** *NATURE GENETICS*  
Liao, J., Karnik, R., Gu, H., Ziller, M. J., Clement, K., Tsankov, A. M., Akopian, V., Gifford, C. A., Donaghey, J., Galonska, C., Pop, R., Reyon, D., Tsai, et al  
2015; 47 (5): 469–U64
- **Dissecting neural differentiation regulatory networks through epigenetic footprinting** *NATURE*  
Ziller, M. J., Edri, R., Yaffe, Y., Donaghey, J., Pop, R., Mallard, W., Issner, R., Gifford, C. A., Goren, A., Xing, J., Gu, H., Cacchiarelli, D., Tsankov, et al  
2015; 518 (7539): 355–59
- **Transcriptional and Epigenetic Dynamics during Specification of Human Embryonic Stem Cells** *CELL*  
Gifford, C. A., Ziller, M. J., Gu, H., Trapnell, C., Donaghey, J., Tsankov, A., Shalek, A. K., Kelley, D. R., Shishkin, A. A., Issner, R., Zhang, X., Coyne, M., Fostel, et al  
2013; 153 (5): 1149–63
- **Epigenetic obstacles encountered by transcription factors: reprogramming against all odds** *CURRENT OPINION IN GENETICS & DEVELOPMENT*  
Gifford, C. A., Meissner, A.  
2012; 22 (5): 409–15
- **Epigenomics and chromatin dynamics.**  
Akopian, V., Chan, M. M., Clement, K., Galonska, C., Gifford, C. A., Lehtola, E., Liao, J., Samavarchi-Tehrani, P., Sindhu, C., Smith, Z. D., Tsankov, A. M., Webster, J., Zhang, et al  
2012: 313
- **Threonine phosphorylation post-translationally regulates protein secretion in Pseudomonas aeruginosa** *NATURE CELL BIOLOGY*  
Mougous, J. D., Gifford, C. A., Ramsdell, T. L., Mekalanos, J. J.

2007; 9 (7): 797–U121

● **A virulence locus of *Pseudomonas aeruginosa* encodes a protein secretion apparatus** *SCIENCE*

Mougous, J. D., Cuff, M. E., Raunser, S., Shen, A., Zhou, M., Gifford, C. A., Goodman, A. L., Joachimiak, G., Ordonez, C. L., Lory, S., Walz, T., Joachimiak, A., Mekalanos, et al

2006; 312 (5779): 1526–30