

# Stanford

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## Gunsagar S. Gulati

- MD Student, expected graduation Spring 2021
- Ph.D. Student in Cancer Biology, admitted Autumn 2017
- MSTP Student

### Bio

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#### BIO

I am an aspiring physician-scientist interested in the crossroads of computer science, cellular biology, and clinical medicine. I am particularly motivated to leverage recent advances in single-cell genomics and epigenomics to study normal and neoplastic stem cell biology, with the ultimate goal of addressing human cancer.

#### HONORS AND AWARDS

- F30 Ruth L. Kirschstein National Research Service Award, NIH/NHLBI (2019-2021)
- Tung's Scholar, Stanford Medical Science Training Program (MSTP) (2019)
- Bio-X Bowes Graduate Student Fellowship, Stanford University (2018-2019)
- Medical Scientist Training Program, Stanford University (2017-2021)
- HHMI Medical Research Fellowship, Howard Hughes Medical Institute (2016-2017)
- Schweitzer Fellowship, The Albert Schweitzer Fellowship (2015-2017)
- Translational Research and Applied Medicine Pilot Grant Award, Stanford University (2015)
- magna cum laude with Highest Honors, Harvard College (2014)

#### PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, American Society of Clinical Oncology (2020 - present)

#### MEMBERSHIP ORGANIZATIONS

- Stanford Oncology Interest Group, Director
- SWEAT: Stanford Wilderness Experience Active Orientation Trip, Group leader

#### EDUCATION AND CERTIFICATIONS

- Doctor of Philosophy, Stanford University , CANBI-PHD (2020)
- Bachelor of Arts, Harvard University , Human Dev. & Regenerative Bio. (2014)

#### SERVICE, VOLUNTEER, AND COMMUNITY WORK

- Stanford Access Health (9/1/2014 - 6/30/2017)

#### LINKS

- CytoTRACE: <https://cytotrace.stanford.edu>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Application of single-cell RNA-sequencing to uncover tumor heterogeneity

### CURRENT CLINICAL INTERESTS

- Internal Medicine - Hematology/Oncology

### RESEARCH PROJECTS

- Cytometric and genomic dissection of normal and neoplastic stem cell hierarchies - Stanford University Cancer Biology PhD Program (June 9, 2017 - July 27, 2020)

### LAB AFFILIATIONS

- Aaron Newman, Newman Lab (6/1/2017 - - 6/19/2020)
- Irving Weissman, Weissman Lab (9/1/2014 - - 6/19/2020)
- Michael Longaker, Longaker Lab (9/1/2014 - - 6/30/2017)

## Publications

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### PUBLICATIONS

- **Single-cell transcriptional diversity is a hallmark of developmental potential.** *Science (New York, N.Y.)*  
Gulati, G. S., Sikandar, S. S., Wesche, D. J., Manjunath, A., Bharadwaj, A., Berger, M. J., Ilagan, F., Kuo, A. H., Hsieh, R. W., Cai, S., Zabala, M., Scheeren, F. A., Lobo, et al  
2020; 367 (6476): 405–11
- **Neogenin-1 distinguishes between myeloid-biased and balanced Hoxb5+ mouse long-term hematopoietic stem cells.** *Proceedings of the National Academy of Sciences of the United States of America*  
Gulati, G. S., Zukowska, M., Noh, J. J., Zhang, A., Wesche, D. J., Sinha, R., George, B. M., Weissman, I. L., Szade, K.  
2019
- **Identification of the Human Skeletal Stem Cell.** *Cell*  
Chan, C. K., Gulati, G. S., Sinha, R., Tompkins, J. V., Lopez, M., Carter, A. C., Ransom, R. C., Reinisch, A., Wearda, T., Murphy, M., Brewer, R. E., Koepke, L. S., Marecic, et al  
2018; 175 (1): 43
- **Isolation and functional assessment of mouse skeletal stem cell lineage** *NATURE PROTOCOLS*  
Gulati, G. S., Murphy, M. P., Marecic, O., Lopez, M., Brewer, R. E., Koepke, L. S., Manjunath, A., Ransom, R. C., Salhotra, A., Weissman, I. L., Longaker, M. T., Chan, C. F.  
2018; 13 (6): 1294–1309
- **Where Hematopoietic Stem Cells Live: The Bone Marrow Niche** *ANTIOXIDANTS & REDOX SIGNALING*  
Szade, K., Gulati, G. S., Chan, C. F., Kao, K. S., Miyanishi, M., Marjon, K. D., Sinha, R., George, B. M., Chen, J. Y., Weissman, I. L.  
2018
- **Articular cartilage regeneration by activated skeletal stem cells.** *Nature medicine*  
Murphy, M. P., Koepke, L. S., Lopez, M. T., Tong, X., Ambrosi, T. H., Gulati, G. S., Marecic, O., Wang, Y., Ransom, R. C., Hoover, M. Y., Steininger, H., Zhao, L., Walkiewicz, et al  
2020
- **LEFTY1 Is a Dual-SMAD Inhibitor that Promotes Mammary Progenitor Growth and Tumorigenesis.** *Cell stem cell*  
Zabala, M., Lobo, N. A., Antony, J., Heitink, L. S., Gulati, G. S., Lam, J., Parashurama, N., Sanchez, K., Adorno, M., Sikandar, S. S., Kuo, A. H., Qian, D., Kalisky, et al  
2020
- **Elucidating the fundamental fibrotic processes driving abdominal adhesion formation.** *Nature communications*

- Foster, D. S., Marshall, C. D., Gulati, G. S., Chinta, M. S., Nguyen, A., Salhotra, A., Jones, R. E., Burcham, A., Lerbs, T., Cui, L., King, M. E., Titan, A. L., Ransom, et al  
2020; 11 (1): 4061
- **Ageing hallmarks exhibit organ-specific temporal signatures.** *Nature*  
Schaum, N., Lehallier, B., Hahn, O., Pálovics, R., Hosseinzadeh, S., Lee, S. E., Sit, R., Lee, D. P., Losada, P. M., Zardeneta, M. E., Fehlmann, T., Webber, J. T., McGeever, et al  
2020
  - **A single-cell transcriptomic atlas characterizes ageing tissues in the mouse.** *Nature*  
2020
  - **Heme oxygenase-1 deficiency triggers exhaustion of hematopoietic stem cells.** *EMBO reports*  
Szade, K., Zukowska, M., Szade, A., Nowak, W., Skulimowska, I., Ciesla, M., Bukowska-Strakova, K., Gulati, G. S., Kachamakova-Trojanowska, N., Kusienicka, A., Einwallner, E., Kijowski, J., Czauderna, et al  
2019; e47895
  - **Engineered immune cells as highly sensitive cancer diagnostics** *NATURE BIOTECHNOLOGY*  
Aalipour, A., Chuang, H., Murty, S., D'Souza, A. L., Park, S., Gulati, G. S., Patel, C. B., Beinat, C., Simonetta, F., Martinic, I., Gowrishankar, G., Robinson, E. R., Aalipour, et al  
2019; 37 (5): 531-+
  - **A functional subset of CD8+ T cells during chronic exhaustion is defined by SIRPalpha expression.** *Nature communications*  
Myers, L. M., Tal, M. C., Torrez Dulgeroff, L. B., Carmody, A. B., Messer, R. J., Gulati, G., Yiu, Y. Y., Staron, M. M., Angel, C. L., Sinha, R., Markovic, M., Pham, E. A., Fram, et al  
2019; 10 (1): 794
  - **Incidence of temporary mechanical circulatory support before heart transplantation and impact on post-transplant outcomes.** *The Journal of heart and lung transplantation : the official publication of the International Society for Heart Transplantation*  
Ouyang, D., Gulati, G., Ha, R., Banerjee, D.  
2018
  - **Developmental Heterogeneity of Microglia and Brain Myeloid Cells Revealed by Deep Single-Cell RNA Sequencing.** *Neuron*  
Li, Q., Cheng, Z., Zhou, L., Darmanis, S., Neff, N. F., Okamoto, J., Gulati, G., Bennett, M. L., Sun, L. O., Clarke, L. E., Marschallinger, J., Yu, G., Quake, et al  
2018
  - **Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris.** *Nature*  
2018; 562 (7727): 367-72
  - **Optimal timing of same-admission orthotopic heart transplantation after left ventricular assist device implantation.** *World journal of cardiology*  
Gulati, G., Ouyang, D., Ha, R., Banerjee, D.  
2017; 9 (2): 154-161
  - **Pharmacological rescue of diabetic skeletal stem cell niches.** *Science translational medicine*  
Tevlin, R., Seo, E. Y., Marecic, O., McArdle, A., Tong, X., Zimdahl, B., Malkovskiy, A., Sinha, R., Gulati, G., Li, X., Wearda, T., Morganti, R., Lopez, et al  
2017; 9 (372)