

# Stanford

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## Charles Gawad

Clinical Instructor, Pediatrics - Hematology & Oncology

### Bio

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#### ACADEMIC APPOINTMENTS

- Clinical Instructor, Pediatrics - Hematology & Oncology

#### HONORS AND AWARDS

- Investigator, Chan Zuckerberg Biohub (2019-2024)
- Taube Distinguished Scholar for Pediatric Oncology, Stanford (2019-2024)
- New Innovator Award, Office of Director, National Institutes of Health (2018-2023)
- Career Award for Medical Scientists, Burroughs Wellcome Fund (2015-2020)
- Special Fellow, Leukemia and Lymphoma Society (2013-2016)
- Fellow Basic Research Scholar, American Society of Hematology (2013-2015)
- Advanced Residency Training Program, Stanford (2011-present)
- Fellowship for Medical Students Continued Support Award, HHMI (2003-2005)
- Cloister Scholar, HHMI-NIH (2002-2003)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Founder, Board Director, BioSkryb, Inc. (2019 - present)
- Editorial Board Member, Nucleic Acids Research Cancer (2019 - present)

#### PROFESSIONAL EDUCATION

- PhD, Stanford University , Cancer Biology (2015)
- MD, University of Arizona , Medicine (2006)
- BS, Arizona State University , Chemistry and Microbiology (2001)

#### PATENTS

- Charles Gawad, Veronica Gonzalez-Pena, Robert Carter, Sivaraman Natarajan, Jason West. "United States Patent 62/881,180 Genetic Mutation Analysis"
- Charles Gawad, Jason West. "United States Patent 62/881,183 Single Cell Analysis"
- Charles Gawad, Veronica Gonzalez-Pena, John Easton. "United States Patent WO2019148119A1 Method for Nucleic Acid Amplification"

#### LINKS

- Gawad Lab Website: <http://www.gawadlab.com/>

## Research & Scholarship

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### CLINICAL TRIALS

- Genome, Proteome and Tissue Microarray in Childhood Acute Leukemia, Not Recruiting

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Yakun Pang

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Cancer Biology (Phd Program)

## Publications

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### PUBLICATIONS

- **Resolving medulloblastoma cellular architecture by single-cell genomics.** *Nature*  
Hovestadt, V., Smith, K. S., Bihannic, L., Filbin, M. G., Shaw, M. L., Baumgartner, A., DeWitt, J. C., Groves, A., Mayr, L., Weisman, H. R., Richman, A. R., Shore, M. E., Goumnerova, et al  
2019; 572 (7767): 74–79
- **LC3-Associated Phagocytosis in Myeloid Cells Promotes Tumor Immune Tolerance.** *Cell*  
Cunha, L. D., Yang, M., Carter, R., Guy, C., Harris, L., Crawford, J. C., Quarato, G., Boada-Romero, E., Kalkavan, H., Johnson, M. D., Natarajan, S., Turnis, M. E., Finkelstein, et al  
2018; 175 (2): 429–41.e16
- **Pan-cancer genome and transcriptome analyses of 1,699 paediatric leukaemias and solid tumours.** *Nature*  
Ma, X., Liu, Y., Liu, Y., Alexandrov, L. B., Edmonson, M. N., Gawad, C., Zhou, X., Li, Y., Rusch, M. C., Easton, J., Huether, R., Gonzalez-Pena, V., Wilkinson, et al  
2018; 555 (7696): 371–76
- **A Single-Cell Transcriptional Atlas of the Developing Murine Cerebellum.** *Current biology : CB*  
Carter, R. A., Bihannic, L., Rosencrance, C., Hadley, J. L., Tong, Y., Phoenix, T. N., Natarajan, S., Easton, J., Northcott, P. A., Gawad, C.  
2018; 28 (18): 2910–20.e2
- **Dissecting the clonal origins of childhood acute lymphoblastic leukemia by single-cell genomics.** *Proceedings of the National Academy of Sciences of the United States of America*  
Gawad, C., Koh, W., Quake, S. R.  
2014; 111 (50): 17947-17952
- **Circular RNAs Are the Predominant Transcript Isoform from Hundreds of Human Genes in Diverse Cell Types** *PLOS ONE*  
Salzman, J., Gawad, C., Wang, P. L., Lacayo, N., Brown, P. O.  
2012; 7 (2)
- **Single-cell RNA sequencing reveals the impact of chromosomal instability on glioblastoma cancer stem cells.** *BMC medical genomics*  
Zhao, Y., Carter, R., Natarajan, S., Varn, F. S., Compton, D. A., Gawad, C., Cheng, C., Godek, K. M.  
2019; 12 (1): 79
- **Sequencing the Genomes of Single Cells.** *Methods in molecular biology (Clifton, N.J.)*  
Gonzalez-Pena, V., Gawad, C.  
2019; 1979: 227–34
- **Murine hematopoietic stem cell activity is derived from pre-circulation embryos but not yolk sacs.** *Nature communications*  
Ganuza, M., Chabot, A., Tang, X., Bi, W., Natarajan, S., Carter, R., Gawad, C., Kang, G., Cheng, Y., McKinney-Freeman, S.

2018; 9 (1): 5405

- **High-resolution transcriptional dissection of in vivo Atoh1-mediated hair cell conversion in mature cochleae identifies Isl1 as a co-reprogramming factor.** *PLoS genetics*  
Yamashita, T., Zheng, F., Finkelstein, D., Kellard, Z., Carter, R., Rosencrance, C. D., Sugino, K., Easton, J., Gawad, C., Zuo, J.  
2018; 14 (7): e1007552
- **Residual Disease Monitoring By High Throughput Sequencing Provides Risk Stratification in Childhood B-ALL and Identifies a Novel Subset of Patients Having Poor Outcome**  
Wood, B. L., Wu, D., Kirsch, I. M., Crossley, B., Williamson, D., Gawad, C., Borowitz, M. J., Devidas, M., Maloney, K. W., Larsen, E., Winick, N., Raetz, E., Carroll, et al  
AMER SOC HEMATOLOGY.2016
- **Early somatic mosaicism is a rare cause of long-QT syndrome** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Priest, J. R., Gawad, C., Kahlig, K. M., Yu, J. K., O'Hara, T., Boyle, P. M., Rajamani, S., Clark, M. J., Garcia, S. T., Ceresnak, S., Harris, J., Boyle, S., Dewey, et al  
2016; 113 (41): 11555-11560
- **Single-cell genome sequencing: current state of the science** *NATURE REVIEWS GENETICS*  
Gawad, C., Koh, W., Quake, S. R.  
2016; 17 (3): 175-188
- **Dynamic ASXL1 Exon Skipping and Alternative Circular Splicing in Single Human Cells.** *PloS one*  
Koh, W., Gonzalez, V., Natarajan, S., Carter, R., Brown, P. O., Gawad, C.  
2016; 11 (10)
- **Noninvasive in vivo monitoring of tissue-specific global gene expression in humans.** *Proceedings of the National Academy of Sciences of the United States of America*  
Koh, W., Pan, W., Gawad, C., Fan, H. C., Kerchner, G. A., Wyss-Coray, T., Blumenfeld, Y. J., El-Sayed, Y. Y., Quake, S. R.  
2014; 111 (20): 7361-7366
- **A quantitative comparison of single-cell whole genome amplification methods.** *PloS one*  
de Bourcy, C. F., De Vlaminck, I., Kanbar, J. N., Wang, J., Gawad, C., Quake, S. R.  
2014; 9 (8)
- **COMPARISON OF HIGH-THROUGHPUT SEQUENCING AND FLOW CYTOMETRY FOR MEASURING MINIMAL RESIDUAL DISEASE IN PEDIATRIC ACUTE LYMPHOBLASTIC LEUKEMIA: A CHILDREN'S ONCOLOGY GROUP COHORT**  
Gawad, C., Borowitz, M., Dahl, G., Devidas, M., Faham, M., Moorhead, M., Wood, B., Zheng, J., Loh, M., Lacayo, N.  
SPRINGER.2013: S23-S24
- **Massive evolution of the immunoglobulin heavy chain locus in children with B precursor acute lymphoblastic leukemia** *BLOOD*  
Gawad, C., Pepin, F., Carlton, V. E., Klinger, M., Logan, A. C., Miklos, D. B., Faham, M., Dahl, G., Lacayo, N.  
2012; 120 (22): 4407-4417
- **Towards molecular medicine - A case for a biological periodic table** *AMERICAN JOURNAL OF PHARMACOGENOMICS*  
Gawad, C.  
2005; 5 (4): 207-211