

# Stanford

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## Amy Fan

Ph.D. Student in Immunology, admitted Autumn 2016

 Curriculum Vitae available Online

### Bio

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#### BIO

Amy Fan is an Immunology PhD candidate in Dr. Ravi Majeti's lab, with research interests in immunology, stem cell biology, and cancer. Her thesis work investigates the mechanism of blood cancer progression in patients with inherited mutations in the RUNX1 gene. Prior to joining Stanford in 2016, she earned her B.S. in Biology from MIT and worked for two years at the Broad Institute of MIT & Harvard. Outside of lab, she devotes time to teaching, mentoring, and diversity advocacy, and she likes to relax by dancing, hiking, and painting.

#### HONORS AND AWARDS

- Amgen Scholar, Amgen Foundation (Jun - Aug 2014)
- Gene Brown Prize for Teaching, MIT Department of Biology (June 2015)
- Stanford Graduate Fellowship, Stanford University
- NSF Graduate Research Fellowship, National Science Foundation
- Stanford Biosciences Travel Grant, Stanford Biosciences (Aug 2018)
- Excellence in Advocacy, Stanford Diversity & Advocacy Committee (May 2019)
- Community Impact Award, Stanford Alumni Association (May 2019)
- Excellence in Service to Grad Students, Stanford Biosciences (June 2019)

#### PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, International Society of Experimental Hematology (2018 - present)

#### MEMBERSHIP ORGANIZATIONS

- Biomedical Association for the Interest of Minority Students (BioAIMS), President

#### EDUCATION AND CERTIFICATIONS

- BS, Massachusetts Institute of Technology, Biology (2015)

#### STANFORD ADVISORS

- Ravindra Majeti, Doctoral Dissertation Advisor (AC)

#### LINKS

- Majeti Lab Website: <http://med.stanford.edu/majetilab.html>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Germline mutations in RUNX1 cause an autosomal dominant disorder characterized by lifelong thrombocytopenia and increased risk of progression to acute myeloid leukemia (AML). Indeed, unlike sporadic AML, which commonly presents in the elderly, the average age of onset for RUNX1 familial AML cases is 35, with over one-third of patients developing leukemia as a child. While megakaryocyte defects have been shown to be a cell-autonomous effect of RUNX1 mutations in hematopoietic stem and progenitor cells (HSPCs), the mechanisms by which germline RUNX1 mutations progress to leukemia remains unclear. Interestingly, RUNX1 is also expressed in bone marrow mesenchymal stromal cells (BM-MSCs), which have been shown to contribute to the pathogenesis of some hematopoietic malignancies. The goal of my thesis research is to determine how RUNX1 mutations may be contributing to leukemogenesis through both cell autonomous and non-autonomous mechanisms.

### LAB AFFILIATIONS

- Ravindra Majeti (6/1/2017)

## Professional

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### WORK EXPERIENCE

- Academic Research Technician - Broad Institute of MIT & Harvard (January 2015 - May 2016)

## Publications

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### PUBLICATIONS

- **Azacitidine and Ascorbate Inhibit the Competitive Outgrowth of Human TET2 Mutant HSPCs in a Xenograft Model of Pre-Leukemia**  
Nakauchi, Y., Thomas, D., Sharma, R., Corces, M., Reinisch, A., Cruz, D., Koehnke, T., Karigane, D., Fan, A., Majeti, R.  
AMER SOC HEMATOLOGY.2018
- **scDual-Seq: mapping the gene regulatory program of Salmonella infection by host and pathogen single-cell RNA-sequencing** *GENOME BIOLOGY*  
Avital, G., Avraham, R., Fan, A., Hashimshony, T., Hung, D. T., Yanai, I.  
2017; 18: 200
- **A highly multiplexed and sensitive RNA-seq protocol for simultaneous analysis of host and pathogen transcriptomes.** *Nature protocols*  
Avraham, R., Haseley, N., Fan, A., Bloom-Ackermann, Z., Livny, J., Hung, D. T.  
2016; 11 (8): 1477-1491

### PRESENTATIONS

- Single-cell RNA-Seq for simultaneous transcriptome analysis of host and pathogen - MICROBIAL PATHOGENESIS & HOST RESPONSE: CSHL MEETING (9/1/2015)
- Cell Autonomous and Non-Autonomous Effects of RUNX1 Deficiency in Inherited AML Predisposition Syndromes - International Society of Experimental Hematology (August 2018)