

# Ying Sun

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## EDUCATION

**Stanford University** 2013 – present  
PhD candidate in Molecular, Cellular, and Developmental Biology  
**University of California San Diego** 2008- 2012  
BS in Biochemistry with Cell Biology focus

## RELEVANT COURSEWORK

Next Generation sequencing, R programming, Python programming, Statistics, Genomics, Technical writing, Public speaking, Successful negotiations, Management

## AWARDS AND FELLOWSHIPS

DARE (Diversifying Academia, Recruiting Excellence) Doctoral Fellowship Alternate 2018  
NSF Graduate Research Fellowship 2014 – 2017  
Best poster award, Carnegie Institution for Science, department retreat 2017  
Cold Spring Harbor fellowship to attend Programming for Biologists 2017  
ICAR travel grant to attend 2017  
Excellence in Teaching Award 2016  
Office of Graduate Education travel fellowship 2015, 2017  
ASPB Travel Grant 2015  
McNair Post Baccalaureate Scholar 1 year fellowship for summer research) 2011 – 2012  
UCSD Summer Research Program (summer fellowship for summer research) 2011  
Faculty Mentor Program (1 year fellowship for summer research) 2010 – 2011  
Provost Honors at UC San Diego 2009, 2012

## ACADEMIC RESEARCH

PhD Candidate present  
Thesis advisor: Dr. José Dinneny  
Thesis committee members: Dr. Ashby Morrison, Dr. Zhiyong Wang, and Dr. Sharon Long  
Stanford  
Department of Biology

TITLE: *Uncovering variation in ABA – mediated gene regulatory networks within the Brassicaceae*

- Plants with adapted abilities to tolerate high concentrations of NaCl are known as halophytes. My approach utilizes halophytes and their salt-sensitive relatives within the Brassicaceae family as a model to profile differences in their response to the plant stress hormone, abscisic acid (ABA). I aim to identify transcriptional signatures associated with differences in ABA sensitivity across plant species and differences in the binding landscape of transcription factors directly mediating ABA signaling (ABFs).
- I generated, processed, and analyzed RNA-Seq and DAP-Seq data across 5 plant species to profile variation in the binding of 20 transcription factors and gene expression associated with stress tolerance. Frequently performed skills at the bench include cloning (Gateway and Golden Gate), western blots, immunoprecipitation, Real-Time qRT-PCR, genotyping, generating CRISPR/cas9 mutants, agrobacterium infiltration, sterile technique for plant tissue culture, phenotyping, image processing and analysis.

Associate Research Scientist II 2012 – 2013  
GENEWIZ Inc  
La Jolla, CA

- Conducted processing of sequencing samples for sanger sequencing, rolling circle amplification, and primer walking sequencing. Frequently performed PCR, DNA purification, primer design and dilution.

## Undergraduate Research Assistant

2009 – 2012

Advisors: Dr. Colleen Doherty and Dr. Steve Kay

University of California, San Diego

Department of Biological Sciences

- Investigated the function and phenotype associated with a transcription cofactor that is important for circadian regulation in plants. Frequently performed DNA/RNA extractions, tissue culture husbandry, greenhouse maintenance, E. coli purification for plasmid and protein.

## **PUBLICATIONS**

Sun Y., Dinneny JR. Q&A: How do gene regulatory networks influence plant abiotic stress? BMC Biology. 2017

## **CONFERENCE PRESENTATIONS**

Poster: *Uncovering variation in ABA-mediated gene regulatory networks within the Brassicaceae*, Carnegie Institution for Science department retreat at Asilomar, California, 2017 (**voted best poster**)

Talk: *The evolution of gene regulatory networks confers stress tolerance within the Brassicaceae*, The 28<sup>th</sup> International Conference on Arabidopsis Research at St. Louis, Missouri, 2017 (**received travel grant**)

Poster: *How the Evolution of Gene Regulatory Networks Confer Stress Tolerance within the Brassicaceae*, Plant and Animal Genome conference at San Diego, California, 2017 (**received travel grant**)

Poster: *bHLH transcription factor DH1 regulates tomato growth and defense against Xanthomonas euvesicatoria*, American Society of Plant Biologist National Conference at Minneapolis, MN, 2015 (**received travel grant**)

Poster: *bHLH transcription factor DH1 regulates tomato growth and defense*, Bay Area Microbial Pathogenesis Symposium at San Francisco, CA, 2015

Attendee, American Society of Plant Biologist Western Conference, Santa Clara, CA, 2014

## **MENTORSHIP AND TEACHING EXPERIENCE**

### **Mentor to Incoming graduate students**

Serve as a resource to the incoming fellow as they transition to graduate life at Stanford. Discuss potential lab rotations, how to set expectations with their advisor, how to keep a well-organized lab notebook, and make the most out of their experience at Stanford.

Mentees: Carin Ragland (Biology), Raymond McKoy (Neuroscience), Vivian Chen (Biology)

2014,  
2017 – present

### **Mentor for current graduate students**

Identify students in graduate school who may need additional support and help them overcome challenges and learn to succeed. Attend their practice talks/ brainstorm science with them/ provide support during tough transitional times (i.e. first-year struggles, post-quals slump, academic probation)

Mentees: Melody Kao (Biology), Akua Nimarko (Neuroscience), Kaisha Benjamin (Bioengineering)

2016 – present

### **Mentor to high school students, undergraduates, and undergraduate researchers**

Gave lab tours and discuss life as a graduate student with undergrad and high school students. Provided mentorship and guidance to undergraduate students in applying to graduate school and discussion strategies for reading research articles. Trained them to design experiments, interpret data, and execute bioinformatics. Supervised students on experimental design and execution

Mentees: Michael Guzman from Santa Clara University, Jen Pulido from Stanford University, Rachel Gates from Barnard College.

2016 – present

- Mentor for the Stanford Medical Youth Science Program (SMYSP)** 2017  
Coached and counseled high school students from diversity and underprivileged backgrounds. Served as a resource by answering their questions regarding science, college applications, and career aspirations.
- Mentor for Future Advancers of Science and Technology** 2015 – 2016  
Guided a group of 6 – 8 high school students at Andrew P. Hill HS during their preparation for the Santa Clara county science fair. Facilitated discussion of open problems in science. Motivated students in developing ideas and carrying out experiments.
- Mentor for Bioscience mentorship programs** 2013 – 2015  
Instilled confidence in first generation undergrad and graduate students and prepared them for the Stanford environment. Encouraged them to share their experiences with others and find their hype crew. Participated in a college success panel to share my experiences as a first-generation college student and advised students on being ready to pursue meaningful careers (First Graduate Student Panel, 2014)
- Teaching assistant for Bio 44Y: Plant Biology and Ecology lab** 2016  
Served as a teaching assistant in entry level lab in Biology. Worked at Jasper Ridge Biological Preserve to study interactions between humming birds and insects that pollinate the flowering plant (Sticky monkeyflower, *Mimulus aurantiacus*). Help students learn field, laboratory, and statistical hypothesis about plant, environment, hummingbird, and microbial communities in flower nectar. Instructor: Daria Hekmat – Scafe and Tad Fukami
- Teaching assistant for Bio 104: Advance Molecular Biology** 2014  
Served as a teaching assistant for an upper level class with more than 100 students. Helped students understand lecture material, ran discussion sections to go over seminal literature in molecular biology, graded exams, introduced undergrads to research in the biology department. Instructor: Professor Or Gozani,
- Teacher for Stanford SPLASH!** 2015 – 2016  
Organized and taught 2 classes of 20 students each at Stanford's outreach program to bring 2,000 middle/high school students to campus for one weekend to take classes taught by Stanford students. My class discussed plant's relationship with food, sustainable agriculture, and GMOs.

## OUTREACH AND LEADERSHIP EXPERIENCE

- Program leader for ADVANCE** 2018  
(A diversity fellowship and transition program in the summer for incoming bioscience students)  
Organized Journal Club by pairing ADVANCE fellows who are incoming graduate students with a postdoc mentor, so they can learn how to read and present a paper for a journal club, critique each other, and write a lay abstract. Brought students to faculty homes where we talk about grad school, research, successes, and challenges in an intimate setting. Help students define diversity, how they should see it, what they should learn from it, how to find support at Stanford, what does Diversity mean to their peers and to Stanford. Discuss topics of equity, privilege, and identity.
- Coordinator for Asian women graduate students at the Asian American community center** 2017 – present  
Organize events with the Asian American community center to discuss challenges with being an Asian woman in science. i.e. being a model minority, expectations, cultivating confidence.

<p><b>Program leader for ADVANCE II</b>  (A diversity program during the school year for minority students)  Plan and execute student wellness events that focused on community, diversity, and student advocacy. Review applications for undergraduate diversity programs.</p>	2017 – present
<p><b>President of Stanford Tzu Ching</b>  Collaborate with non-profit community building projects to organize volunteering events such as food distributions, sustainable agriculture, and nursing home visits. Promote efforts to promote mindfulness and thoughtful living.</p>	2013 – present
<p><b>Representative of Biology student advocates (BioSA)</b>  Work with administrators, faculty, staff, and students to identify sources of support for students. Initiate focus groups to gather student feedback.</p>	2018
<p><b>Outreach chair and member of BIOAIMS</b>  Arranged outreach opportunities in East Palo Alto and connected graduate students with them. For example, organized one-hour classes involving hands-on activities taught by graduate students at Stanford to motivate at-risk middle school students in the local area to become interested in science. Promote a supportive community and to enrich the opportunities available for minority students pursuing an advanced degree in science</p>	2013 – 2016
<p><b>Biology chair of Stanford Biology Student Association</b>  Actively participate in the graduate student association which connects students with mentoring, career, and educational advance opportunities, and act as a conduit between the graduate students and the administration</p>	2013 – 2015
<p><b>Community Associate for the Graduate life office</b>  Promoted community building by organizing events for graduate students living on campus, student resident assistant for the Graduate Life Office</p>	2014 – 2015

## REFERENCES

Dr. José Dinneny  
Stanford University  
*Thesis advisor*  
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Dr. Zhiyong Wang  
Carnegie Institute for Science  
*Committee member*  
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Dr. Ashby Morrison  
Stanford University  
*Committee member*  
ashbym@stanford.edu

Dr. Gavin Sherlock  
Stanford University  
*Faculty Mentor*  
gsherloc@stanford.edu

Dr. Sharon Long  
Stanford University  
*Committee member*  
srl@stanford.edu

**INTERESTS**

Hobbies	Volunteering, baking, playing with animals, dancing, any outdoor activity, ice skating, and watching TV!
What I believe in	Mentorship, inclusion, equity, diversifying academia, solidarity, promoting the mindset of having gratitude, respect, and love toward one another in academia