

Angela H. Chau

angichau@gmail.com
650.799.7213

EDUCATION **UC Berkeley- UCSF Graduate Program in Bioengineering** | Aug 2004 - Dec 2011

University of California San Francisco and University of California Berkeley

PhD in Bioengineering

Dissertation: "Design Principles of Self-Organizing Cell Polarity"

Stanford University | Sep 2002 - Jun 2004

MS in Electrical Engineering, with specialization in image processing

Rice University | Aug 1995 - May 1999

BS in Electrical Engineering, *magna cum laude*

TEACHING EXPERIENCE **Director of Bourn Idea Lab & Engineering Faculty**

Castilleja School | Aug 2012 - present

I direct the school's maker space/digital fabrication lab, collaborate with teachers of all disciplines to integrate making and engineering into their curricula, and design a variety of opportunities for students and teachers to engage with various aspects of the lab. I also teach engineering electives and serve as the faculty advisor for our school's robotics teams.

Lecturer - Molecular Microbiology, Neurobiology

California State University East Bay | Spring 2012

I taught courses in the post-baccalaureate pre-professional health academic program.

Lecturer - Science Concepts in Cell Biology

San Francisco State University, Center for Mathematics & Science Education | Spring 2012

I taught a supplemental instruction course which provides students with an interactive environment for learning cell biology.

Guest Lecturer - Introduction to Bioinformatics

City College of San Francisco, Biotechnology Program | Spring 2011

I developed a four-hour class, combining lecture and hands-on activities, on the topic of single-nucleotide polymorphisms.

Scientific Mentor - SMART Team, Abraham Lincoln High School

UCSF Science & Health Education Partnership | Oct 2007 - Apr 2008

I mentored a team of 12 students in building physical models of signaling proteins, using 3D printing technology developed at the Center for Biomolecular Modeling at Milwaukee School of Engineering. The team presented a poster at the 2008 ASBMB meeting in San Diego.

Graduate Student Instructor - Introduction to Computational Biology

University of California Berkeley, Dept. of Bioengineering | Fall 2005

I served as the teaching assistant for a class of 40 upper-level undergraduate and incoming graduate students with varying programming backgrounds. By designing a set of online lessons for the laboratory sessions, I was able to address the needs of both novice and experienced programmers. I received two teaching awards for this class (see Honors).

Lab Lecturer - Principles of Computing & Programming

Rice University, Dept. of Computer Science | Jan 1997 - May 1999

As an undergraduate, I served as a lecturer for the laboratory sessions (~15 students) of an introductory-level computer science course intended for both majors and non-majors.

ADDITIONAL TRAINING

SFSU-UCSF Instructor Training Program
San Francisco State University & University of California San Francisco | Summer 2011

Preparing Future Faculty Teaching Apprenticeship Program
University of California San Francisco | Jan 2011 - May 2011

Short Course: "Becoming an Effective Science Teacher: Theory and Practice"
University of California San Francisco | Jan 2011

PALM (Proteins in Active Learning Modules) workshop
Center for Biomolecular Modeling, Milwaukee School of Engineering | Jun 5-8, 2007

BioMaPs/DIMACS Short Course: Molecular Mechanisms and Models of Bacterial Signal Transduction
Center for Discrete Mathematics & Theoretical Computer Science
Rutgers University | Jun 6-10, 2005

RESEARCH EXPERIENCE

Systems Design Principles for Cell Polarity

Advisor: Prof. Wendell A. Lim

UCSF, Dept. of Cellular & Molecular Pharmacology | Jun 2005 - Dec 2011

We implemented a stochastic model and used it in a large-scale, computational screen to understand how polarization (the generation of front and back in a cell) is a self-organizing phenomenon. We further investigated how different sets of rules (corresponding to interactions between proteins) can lead to different polarization behavior.

DNA Supercoiling in *Caulobacter crescentus*

Advisors: Prof. Harley McAdams & Prof. Lucy Shapiro

Stanford University, Dept. of Developmental Biology | Jan 2004 - Aug 2004

We investigated the role of DNA supercoiling as a mechanism for genetic regulation in the bacterium *Caulobacter crescentus*. Through the use of microarray experiments and bioinformatics analysis, we analyzed the spatial distribution on the chromosome of genes affected by changes in supercoiling and observed that supercoiling-sensitive genes are localized in discrete clusters.

High Dynamic-Range Display System

Advisor: Prof. Brian Wandell

Stanford University, Dept. of Electrical Engineering | Mar 2003 - Dec 2003

We implemented a prototype for a high dynamic-range display system, including software for registering images, estimating geometric transformations, and measuring properties of the device such as gamma and color gamut. Device was used in Xiao, F., Farrell, J., Wandell, B. "Psychophysical thresholds and digital camera sensitivity: the thousand photon limit." *Proc. SPIE Int. Soc. Opt. Eng.* 5678, p.75-84 (2005).

Online Lessons for Civil Engineering

Advisor: Prof. Michael Terk

Rice University, Computer & Information Technology Institute | Summer 1999

We designed and developed web-based lessons for a course in civil engineering using Java. The test version of the software was deployed at the end of the summer.

PUBLICATIONS

Chau, A.H.*, Walter, J.M.*, Gerardin, J., Tang, C., and Lim, W.A. "Designing synthetic regulatory networks capable of self-organizing cell polarization." *Cell*, 151(2):320-32 (Oct 2012).

Zhu, J.W., Doan, K., Park, J., **Chau, A.H.**, Zhang, H., Lowell, C.A., and Weiss, A. "Receptor-like tyrosine phosphatases CD45 and CD148 have distinct functions in chemoattractant-mediated neutrophil migration and response to *S. aureus*." *Immunity*, 35(5):757-69 (Nov 2011).

INDUSTRY EXPERIENCE **Summer Intern - Palo Alto Research Center, Palo Alto, CA** | Summer 2003
I updated existing imaging software to run on Linux, wrote low-level support code to interface with a new camera, and designed a graphical user interface for system calibration.

Technology Associate - Sapient, San Francisco, CA | Apr 2000 - Jun 2002
I participated actively on all phases of software development on multiple projects, interacted with clients on a daily basis, and managed a team of engineers during an off-site project.

TALKS & POSTERS Center for Systems & Synthetic Biology Scientific Advisory Board Meeting (talk)
San Francisco, CA | Sep 28, 2011

NIH Nanomedicine Development Center Annual Meeting (talk and poster)
Bethesda, MD | Apr 5 - 7, 2009

Gordon Research Conference on Gradient Sensing and Directed Cell Migration (poster)
Galveston, TX | Mar 29 - Apr 3, 2009

Synthetic Biology 4.0 Student Ambassador to China, Taiwan, and Singapore
(talks at multiple universities and research centers)
various cities | May 30 - Jun 10, 2008

NIH Nanomedicine Development Center Annual Meeting (talk and poster)
Bethesda, MD | Feb 28 - Mar 3, 2007

AWARDS & HONORS Achievement Rewards for College Scientists (ARCS) Foundation Scholarship | 2008-2009
UC Berkeley Teaching Effectiveness Award | 2006-2007
UC Berkeley Outstanding Graduate Student Instructor Award | 2005-2006
Bill and Kay Craven Fellowship | 2004-2005

Emma S. McGree Scholarship
W. L. Moody Jr. Engineering Scholarship
Walter Loewenstern Jr. Engineering Scholarship
Louis J. Walsh Scholarship in Engineering
Robert C. Byrd Scholarship
Tau Beta Pi (engineering honor society)
Eta Kappa Nu (electrical engineering honor society)

COMMUNITY Kitchen Volunteer - Project Open Hand, San Francisco | Mar 2006 - Aug 2008
Cat Volunteer - San Francisco SPCA | Oct 2007 - Aug 2008