

# Where Disease Fits into the Nature vs. Nurture Argument



Jimmie  
Ye



Activation



## CURRENT RESEARCH

### Large datasets glean breakthroughs in neurodegenerative and autoimmune disease

Genetics and the environment both play important roles in disease pathology. Dr. Jimmie Ye, of the University of California, San Francisco, is interested in mapping how our cells respond under genetic and environmental perturbations at the level of molecular phenotypes. Mapping the cellular circuitry underlying genome function is fundamental for understanding human variation and complex diseases, specifically autoimmune disorders and neurodegenerative disorders. Identifying genetic and environmental perturbations that disrupt the circuitry in disease may have implications for both rational therapeutic design and potentially public policy.

To study these interactions, Dr. Ye couples high-throughput sequencing approaches to "read" genome function across large patient cohorts and genome-editing techniques to "write" the genome at precise locations. Through the development of experimental approaches that enable the large-scale collection of functional genomic data under environmental challenges and computational approaches that translate the data into novel biological insights, he and his team are making strong connections between fundamental research and practical applications. His approaches have revealed how the healthy human immune response circuitry is wired to mount resistance to foreign pathogens while maintaining tolerance to self antigens. Increasingly, his lab is moving towards applied work to study the importance of immune response in diseases ranging from autoimmunity to neurodegenerative conditions such as Parkinson's.

Current research includes:

- Immune Variation: Dr. Ye and his team took hundreds of healthy patients and isolated primary immune cells which they...

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## AFFILIATION



University Of California, San Francisco

## EDUCATION

- Ph.D., in Bioinformatics and Systems Biology, 2009 , University of California, San Diego
- B.S., in Electrical Engineering and Computer Sciences, 2002 , University of California, Berkeley
- B.S., in Bioengineering, 2002 , University of California, Berkeley

## AWARDS

- 2011-2014 Extramural NIH Loan Repayment Program Award in Clinical Research
- 2013 ASHG/Charles J. Epstein Trainee Award - Semifinalist
- 2009 March of Dimes General Scholarship
- 2005 National Science Foundation East Asian and Pacific Summer Institutes Scholarship (EAPSI)
- 2003-2005 NIH NIGMS Training Grant

## RESEARCH AREAS

Health & Wellness, Wellness, Aging Research

## FUNDING REQUEST

Your contributions will support the continued research of Dr. Jimmie Ye, of the University of California, San Francisco, as he develops a fundamental understanding of how our genes and environment both contribute to variation in human traits. Donations will fund the necessary \$50K/year required to support each student and experimental projects ranging from \$50-150K/year. Be a part of research that will have implications for rational therapeutic design and public policy; donate to Dr. Ye today.