**Huan (Sharon) Wang**

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**EDUCATION AND TRAINING**

**2014 ~ 2016: Postdoctoral Associate in Systems Biology, Harvard Medical School, Boston, United States**

Advisor: Prof. Peter Sorger

Project: Single cell network modeling of cancer drug-induced cardiotoxicity

**2013 ~ 2014: Postdoctoral Associate in Chemical and Biological Engineering, University of Colorado at Boulder, Boulder, United States**

Advisor: Prof. Kristi S. Anseth

Project: Design and regulation of poly(ethylene glycol) based hydrogels as cells culture substrates for induced pluripotent stem cells

**2006 ~ 2013: Ph.D. in Molecular, Cellular and Developmental Biology, University of Colorado, Boulder CO**

Advisors: Prof. Leslie A. Leinwand and Prof. Kristi S. Anseth

Ph.D. dissertation: Signaling from matrix elasticity and TGF-β1 to cells of the cardiac valve

**2002 ~ 2006: B.S. in Biotechnology, Zhejiang University, Hang Zhou, China**

Advisors: Dr. Bingyang Ding and Dr. Xiaofeng Jin

Project: Phylogenetic analysis and protective measures proposed for an endangered plant species, *Platycrater arguta* var. *sinensis*

**2004 ~ 2005: Exchange student in Biology, Chinese University of Hong Kong, Shatin Hong Kong**

**RESEARCH DIRECTIONS**

* Molecular mechanisms of calcific aortic stenosis and tissue regeneration
* Molecular mechanisms of cancer drugs induced cardiotoxicity
* Signaling mechanisms and crosstalk between biophysical and biochemical cues in cardiac cells
* Human cardiac tissue engineering using induced pluoripotent stem cells and hydrogels
* Heterogeneity of drug response in single cells

**GRANTS**

1. American Heart Association Postdoctoral Fellowship entitled “Single cell network modeling of drug-induced cardiotoxicity”, **Priority score: 1.3, Percentile: 4.55%, Funded 2015 ~ 2017.**
2. Lead author on a NIH R21 grant entitled “Mechanical dosing effects on mesenchymal stem cells”, with Dr. Kristi Anseth. **Impact score: 20, Percentile: 2.0%, Funded 2014 ~ 2016.**
3. Author in a NIH R01 grant entitled “Reversible and irreversible cell fate of myofibroblasts in response to matrix stiffness”, with Dr. Kristi Anseth. Submitted but not funded, 2014.

**JOURNAL PUBLICATIONS**

1. **Wang H**, Tibbitt MW, Langer SJ, Leinwand LA and Anseth KS. Hydrogels preserve inactivated fibroblast phenotype of valvular interstitial cells through an elasticity-regulated PI3K/AKT pathway. *Proceedings of the National Academy of Sciences USA,* 110 (48): 19336-19341 (2013)*.*

1. **Wang H**, Leinwand LA and Anseth KS. Cardiac valve cells and their microenvironment—insights from *in vitro* studies, *Nature Reviews Cardiology,* doi:10.1038/nrcardio.2014.162 (2014)*.*
2. **Wang H**, Leinwand LA and Anseth KS. Roles of TGF-β1 and OB-cadherin in cardiac valve myofibroblast differentiation, *The FASEB Journal,* 28:4551-4562 (2014).
3. **Wang H**, Haeger SM, Kloxin AK, Leinwand LA and Anseth KS. Redirecting valvular myofibroblasts into dormant fibroblasts through light-mediated reduction in substrate modulus. *PLoS ONE,* 7(7):e39969 (2012).
4. **Wang H**, Sridhar B, Leinwand LA, Anseth KS. Characterization of cell subpopulations expressing progenitor cell markers in porcine cardiac valves. *PLoS ONE*, 8(7): e69667 (2013).

**CONFERENCE PAPERS:**

1. **Wang H,** Sorger PK. “Molecular signatures of cardiotoxicity induced by tyrosine kinase inhibitors ⎯ from *in vitro* cell culture”, August 18-19 2016, FDA workshop in Building Systems Pharmacology Model for Adverse Events. White Oak Campus, Silver Spring, MD 20993 (Podium Presentation).
2. **Wang H,** Palmer A, Boswell S, Everley R, Ron-Harel N, Jenney A, Sorger PK. “Molecular network modeling of drug-induced cardiotoxicity in space of dose and time”, Systems Biology of Human Disease, June 14-16 2016, Broad Institute, Cambridge USA (Poster)
3. **Wang H,** Palmer A, Boswell S, Everley R, Ron-Harel N, Jenney A, Sorger PK. “Molecular network modeling of drug-induced cardiotoxicity in space of dose and time”, Gordon Research Conference on Cardiac Regulatory Mechanisms, June 5-10 2016, New London, NH USA (Poster)
4. **Wang H,** Lin JR, Sorger PK **“**Single cell network modeling of drug-induced cardiotoxicity”, Keystone Symposium on Cell Biology of the Heart: Beyond the Myocyte-Centric View, March 1-6 2015, Copper Mountain, CO USA (Poster)
5. **Wang H**, Tibbitt MW, Langer SJ, Leinwand LA and Anseth KS. “Hydrogels preserve native phenotypes of valvular fibroblasts through an elasticity-regulated PI3K/AKT pathway”, Annual meeting of Society For Biomaterials, April 2014, Denver, CO USA (Podium Presentation)
6. **Wang H**, Tibbitt MW, Langer SJ, Leinwand LA and Anseth KS. “Hydrogels preserve inactivated fibroblast phenotype of valvular interstitial cells through an elasticity-regulated PI3K/AKT pathway”, HHMI Scientific Meeting, September 2013, Janelia Farm Research Campus**,** Ashburn, VA USA (Poster)
7. **Wang H**, Leinwand LA and Anseth KS, “Lowering Substrate Stiffness *in situ* through Photodegradable Hydrogels Promotes Quiescence of Cardiac Valvular Fibroblast”, 9th World Biomaterial Congress, June 2012, Chengdu, China (Podium Presentation).
8. **Wang H**, Leinwand LA and Anseth KS, “Global Effects of TGF-β1 on Porcine Valvular Interstitial Cells (VICs)”, [4th Biennial Heart Valve Biology and Tissue Engineering Meeting](http://hiltonhead.gatech.edu/), March 2010, Hilton Head Island, SC USA (Podium Presentation).
9. **Wang H**, Leinwand LA and Anseth KS, “OB-Cadherin, A Novel Cell Surface Marker for Valvular Myofibroblasts”, 5th Biennial Meeting of the Society for Heart Valve Disease (SHVD), June 2009, Berlin, Germany (Podium Presentation).

**TEACHING EXPERIENCE**

**2006/09 – 2007/03:** Teaching Assistant (25 students), Introduction to Molecular and Cellular Biology Laboratory, Department of Molecular, Cellular and Developmental Biology, University of Colorado at Boulder

**2007/01 – 2007/06:** Teaching Assistant (20 students), Genetics Laboratory, Department of Molecular, Cellular and Developmental Biology, University of Colorado at Boulder

**PROFESSIONAL SKILLS**

**Cell Culture**: mammalian primary cell and cell line culture, fluorescence activated cell sorting, transient transfection and stable lentiviral-mediated infection, retrovirus production and infection

**Molecular Techniques:** molecular cloning, real-time PCR, luciferase reporter assays, protein expression, Western blot, immunofluorescence

**Animal Work:** mouse colony maintenance and breeding, subcutaneous implantation of biomaterials in mice, porcine heart valve dissection.

**Data Analysis**: RNAseq and proteomics analysis, gene set enrichment analysis, KEGG pathway enrichment analysis, statistical modeling, proficient in Matlab and R, knows Mathematica and Python.

**Chemistry**: peptide synthesis, poly(ethylene glycol) functionalization, hydrogel synthesis for cell culture

**Microscopy**: Bright field and fluorescent microscopy, high throughput screening microscopy, high resolution live cell imaging.

**SCHOLARSHIPS & HONORS**

1. **Fellowship for exchange student to the Chinese University of Hong Kong, 2004~2005.** This fellowship was awarded to 2 persons in the College of Life Sciences in Zhejiang University.
2. **First-class fellowship for excellent student awarded by Zhejiang University for two consecutive years, 2002~2004.** This honor is awarded annually to the students ranked top 3% in the department (~150 students).
3. **Excellent student cadre honor awarded by Zhejiang University, 2002—2003.**
4. **One-star volunteer prize awarded by College of Life Sciences, 2002—2003.** I was awarded for being a volunteer interpreter at the Natural Museum of Zhejiang Province.
5. **National Grade 10 Certificate on playing Pipa (Lute) awarded by Chinese Music Association, 2001.** The national certificate on Pipa ranges from Grade 1 to 10, with 10 as the highest level.

**REFERENCES**

Leslie Leinwand

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