YIJIA PAN

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EDUCATION

University of California, San Diego Jan, 2013 – Sept. 2018
PhD in Bioengineering

University of Illinois Urbana-Champaign Aug, 2011 – Jan, 2013
Neuroscience PhD program

Tsinghua University Beijing, China 2007 – 2011
B.S. in Biology

RESEARCH EXPERIENCE

University of California, San Diego 2013 – 2018
Graduate research assistant, Dept. of Bioengineering, Supervisor: Yingxiao Wang& Shu Chien

- Development of Remote-controlled mechanogenetics for cancer immunotherapy
- Application and mechanistic study of Laser Induced Shockwave on Piezo1 activation in live cells
- Protein engineering for developing multiple synthetic kinase activators

University of Illinois Urbana-Champaign 2011 – 2013
Graduate research assistant, Dept. of Neuroscience, Supervisor: Yingxiao Wang

- Development and application of EphA4 FRET biosensor.
- Study of MT1-MMP activity in SK-BR-3 cell line during invasion process using MT1-MMP FRET biosensor.

Tsinghua University Beijing, China 2007 – 2011
Thesis research, Learning and memory lab, Supervisor: Yi Zhong

- The behavior study of memory reconsolidation in *Drosophila.*

PEER-REVIEWED JOURNAL PUBLICATIONS

1. **Pan Y**, Yoon S, Sun J, Huang Z, Lee C, Allen M, Wu Y, Chang YJ, Sadelain M, Shung KK, Chien S, Wang Y. (2018) Mechanogenetics for the remote and noninvasive control of cancer immunotherapy. Proc Natl Acad Sci U S A., 115(5):992-997.

2. **Pan Y**, Yoon S, Zhu L, Wang Y. (2018) Acoustic mechanogenetics, Current Opinion in Biomedical Engineering.
3. **Pan Y.,** Wang Y., Lu S, & Wang Y. (Accepted) A genetically encoded FRET biosensor for visualizing EphA4 activity in different compartments of the plasma membrane. ACS Sensors
4. Peng Q, Lu S, Shi Y, **Pan Y**, Limsakul P, Chernov AV, Qiu J, Chai X, Shi Y, Wang P, Ji Y, Li YS, Strongin AY, Verkhusha VV, Belmonte J, Ren B, Wang Y, Chien Shu, Wang Y. (2018) Coordinated histone modifications and chromatin reorganization in a single cell revealed by FRET biosensors. Proc Natl Acad Sci U S A.,
5. Gomez-Godinez V., Preece D., Shi L., Khatibzadeh N., Rosales D., **Pan Y.**, Lei L., Wang Y., Berns MW (2015) Laser-induced shockwave paired with FRET: a method to study cell signaling, Microsc Res Tech 78(3): 195.9
6. Lu S., Wang Y., Huang H., **Pan Y.,** Changey E.J., Boppart S.A., Ozer H., Strongin A.Y., Wang Y. (2013) Quantitative FRET imaging to visualize the invasiveness of live breast cancer cells, PLOS ONE, 8(3):e58569

MANUSCRIPTS

1. **Pan Y.,** Shi L., Gomez-Godinez V., Woo S, Preece D., Lu S., Patapoutian A., Chien S., Berns MW., & Wang Y. (In review) Mechanosensor Piezo1 Displays Different Modes of Activation.
2. Yoon S.*, **Pan Y*.** (***co-first author**), Shung K., & Wang Y. (Submitted) Single cell level calcium monitoring using dual FRET biosensors under high frequency ultrasound stimulation.

PATENTS

Chien S., Wang Y., **Pan Y.,** Lu S., Compositions for remote controlled gene expression and cell activation using acoustic mechanogenetics and methods for making and using them, No. 62/245,849, filed Feb. 2017, Patent Pending.
Wang Y., Chien S., **Pan Y.**, Wu Y., Lu S., Shung K., Acoustic and ultrasound-based mechanogenetics and thermogenetics for immunotherapy, No.62/425,416, filed Nov. 2016

SELECTED HONORS AND AWARDS

- UCSD Gordon Engineering Leadership Center Gordon Scholars, 2014 to 2018.
- Poster award UCSD Institute of Engineering in Medicine 10th Anniversary Symposium, 2018
- Huaying Scholarship of Academic Excellence, City of Changzhou, 2007 to 2011.

LEADERSHIP DEVELOPMENT AND TEACHING EXPERIENCE

- Board member of UCSD Women in Bioengineering graduate student organization, 2014-2015
- Supervising undergraduate senior design project, University of California, San Diego, 2014 to 2015.
- Undergraduate senior design project poster presentation in UCSD Bioengineering Day, Calpain-Activated TdTomato-Dimer-Linked Src Kinase Monitored by ECFP-Ypet FRET Biosensor, April 12, 2014
- Supervising undergraduate senior design project, University of California, San Diego, 2013-2014
- Course: BENG140B bioengineering physiology, University of California, San Diego, March 2013 to June 2013 Leading discussion sessions.
- Course: MCB461 molecular and cellular neuroscience, University of Illinois Urbana-Champaign, August 2012 to January 2013 Leading discussion sessions.

SELECTED ACADEMIC PRESENTATIONS

- Pan Y., Shi. L., Preece D., Gomez-Godinez V., Woo, S., Lu S., Chien S., Berns M. & Wang Y. (2018) Laser induced shockwave elicits the transient mode of the biomodal actions of mechanosensor Piezo1. NanoEngineering for Medicine and Biology (ASME-NEMB), Los Angeles, CA, August 21-24, 2018.

- Pan Y., Wang Y. (2018) Mechanogenetics of the remote and non-invasive control of cancer immunotherapy. 2018 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

- Pan Y., Wang Y. (2018) Mechanogenetics of the remote and non-invasive control of cancer immunotherapy. Experimental Biology, San Diego, CA, April 21-25, 2014.

- Pan Y., Shi. L., Preece D., Gomez-Godinez V., Woo, S., Lu S., Chien S., Berns M. & Wang Y. (2018) Laser induced shockwave elicits the transient mode of the biomodal actions of mechanosensor Piezo1. BMES Cellular and Molecular Bioengineering Conference (BMES-CMBE), Key Largo, FL, January 2-6, 2018.

- Pan Y., Wang Y. (2014) FRET visualizes EphA4 activity at different compartments of the plasma membrane. UCSD Jacobs School of Engineering Research EXPO, La Jolla, CA, January 7-11, 2014.

- Pan Y., Wang Y. (2014) FRET visualizes EphA4 activity at different compartments of the plasma membrane. UCSD Bioengineering Day, La Jolla, CA, April 12, 2014.

- Pan Y., Wang Y. (2014) FRET visualizes EphA4 activity at different compartments of the plasma membrane. BMES Cellular and Molecular Bioengineering Conference (BMES-CMBE), La Jolla, CA, January 7-11, 2014.

- Pan Y., Wang Y. (2013) The differential subcompartmental response of EphA4 activity on cell membrane. 2013 14th UC Systemwide Bioengineering Symposium, La Jolla, CA, June 19-21, 2013.

- Pan Y., Wang Y. (2012) The generation and application of FRET-based EphA4 receptor biosensor. BMES conference, October 24-27, 2012.

REVIEWERS AND JUDGES

- Judge for the student poster session in the U.S. Army, Navy, and Air Force sponsored 55th National Junior Science & Humanities Symposium (JSHS), La Jolla, Apr 2017