

# Yirong Peng

## CURRICULUM VITAE

### EDUCATION:

- 2005 B.A. in Biological Sciences, Nankai University, Tianjin, China  
Excellent student fellowship of Nankai University (2001-2005)
- 2011 Ph.D. in Neurobiology, Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China  
Excellent student fellowship of the Graduate School of Chinese Academy of Sciences (2005-2011)

### PROFESSIONAL EXPERIENCE:

- 2011-2012 Assistant Investigator, Institute of Neuroscience, Chinese Academy of Sciences, Shanghai China
- 2012-2017 postdoctoral training in the Laboratory of Dr. Joshua Sanes, Center for Brain Science, Department of Molecular and Cellular Biology, Harvard University
- 2017-2019 Research Associate, Center for Brain Science, Department of Molecular and Cellular Biology, Harvard University
- 2020-present Assistant professor, Department of Ophthalmology and Jules Stein Eye Institute, University of California Los Angeles

### PROFESSIONAL ACTIVITIES:

- 2014-present Society of Neuroscience Membership
- 2018-present Editorial Services for EBioMedicine, Journal of Chemical Neuroanatomy, Journal of Biosciences and Medicines

### PUBLICATION/BIBLIOGRAPHY:

#### RESEARCH PAPERS

#### RESEARCH PAPERS (PEER REVIEWED)

1. **Peng Y.R.\***, James-Esposito R.E.\*, Yan W., Kay J.N., Kolodkin A.L., Sanes J.R. Binary fate choice between closely related interneuronal types is determined by a Fezf1-dependent postmitotic transcriptional switch. *Neuron* 105, 1-11, 2020.
2. **Peng Y.R.\***, Shekhar K.\*, Yan W., Herrmann D., Sappington A., Bryman G.S., Van Zyl T., Do. M.T.H., Regev A., Sanes, J.R. Molecular classification and comparative

taxonomics of foveal and peripheral cells in primate retina. *Cell* 179, 1222-1237, 2019. (\*equal contribution, cover story)

3. Duan X., Krishnaswamy A., Laboulaye M.A., Liu J., **Peng Y.R.**, Yamagata M., Toma K., Sanes J.R. Cadherin Combinations Recruit Dendrites of Distinct Retinal Neurons to a Shared Interneuronal Scaffold. *Neuron* 99, 1145–1154, 2018.
4. **Peng Y.R.**, Tran M.N., Krishnaswamy A., Kostadinov D., Martersteck E.M., Sanes J.R. Satb1 regulates contactin 5 to pattern dendrites of a mammalian retinal ganglion cell. *Neuron* 95 (4): 869-883, 2017. (Recommended by Faculty of 1000)
5. **Peng Y.R.\***, Hou Z.H.\*, Yu X. The kinase activity of EphA4 mediates homeostatic scaling-down of synaptic strength via activation of Cdk5. *Neuropharmacology* 65:232-43, 2013. (\*equal contribution)
6. **Peng Y.R.\***, Zeng S.Y.\*, Song H.L., Li M.Y., Yamada M.K., Yu X. Postsynaptic spiking homeostatically induces cell-autonomous regulation of inhibitory inputs via retrograde signaling. *Journal of Neuroscience* 30(48):16220-31, 2010 (\*equal contribution, cover story).
7. **Peng Y.R.**, He S, Marie H, Zeng S.Y., Ma J, Tan Z.J., Lee S.Y., Malenka R.C., Yu X. Coordinated changes in dendritic arborization and synaptic strength during neural circuit development. *Neuron* 61(1):71-84, 2009. (Recommended by Faculty of 1000)

#### RESEARCH PAPERS (IN SUBMISSION)

1. Yan W.\*, **Peng Y.R.\***, Van Zyl T., Juric D., Sanes J.R. Cell Atlas of the human fovea and peripheral retina (\*equal contribution).
2. Van Zyl T., Yan W., McAdams A., **Peng Y.R.**, Shekhar K., Regev A., Juric D., Sanes J.R. Cell atlas of the trabecular meshwork and aqueous outflow pathways in humans and four model species provides insights into the pathogenesis of glaucoma.

#### HONORS AND SPECIAL AWARDS:

Harvard Brain Science Initiative Young Scientist Travel Award (2018)

GlaxoSmithKline “Tomorrow’s Star Award” (2011)

Chinese Academy of Sciences Dean Award (2011)

Zhang Xiangtong Award for Excellent Graduate Thesis in Neuroscience (2011)

#### LECTURES AND PRESENTATIONS:

##### INVITED TALKS

Peng, Y.R. (2019) NIH rising stars lecture series – Molecular architecture of the retina: from model systems to human vision. Bethesda, MD.

Peng, Y.R. (2019) Molecular architecture of the retina: from model systems to human vision. Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China.

Peng, Y.R. (2019) Molecular specialization of cell types in the retinae of mice and primates. ARVO Mini-symposium "Of mice and men: Comparing primate and rodent retina." Vancouver, Canada.

Peng, Y.R. (2018) Molecular specialization of primate retinal cells – A step toward understanding primate central vision. LMU-Harvard Young Scientists' Forum, Cambridge, MA.

Peng Y.R. (2018) Molecular specification of cells in the primate fovea and peripheral retina. Sixth Annual Broad-ISF Symposium, Cambridge, MA.

Peng Y.R. (2018) Molecular specification of cells in the primate fovea and peripheral retina. FASEB SRC: Retinal Neurobiology and Visual Processing, St Bonaventure, NY.

Peng Y.R. (2016) Mechanisms underlying the dendritic patterning of retinal ganglion cells. LMU-Harvard Young Scientists' Forum, Cambridge, MA.

Peng Y.R. (2008) Rapid activity-dependent increases of quantal inhibitory synaptic strength are mediated by changes in postsynaptic neuronal excitability. Institute of Neuroscience (ION), Shanghai, China.

Peng Y.R. (2007) The role of EphA4/ephrin signaling in regulating quantal synaptic strength following increases of neural activity. Joint ION and USTC (University of Science and Technology of China) Retreat. Shanghai, China.

#### POSTER PRESENTATIONS

Peng, Y.R., Yan W., Shekhar K., Laboulaye M., Yamagata M., Zhang Q., Feng G., Regev A., Sanes J.R. (2019) Using cell atlases to investigate the evolution and development of retinal cell types in multiple vertebrate species. Society for Neuroscience 575.18, Chicago, IL.

Peng, Y.R. Shekhar K., Yan W., Herrmann D., Bryman G.S., Liu A., Van Zyl T., Do M.T.H., Regev A., Sanes J.R. (2018) Molecular specification of cells in the primate fovea and peripheral retina. Society for Neuroscience 395.05, San Diego, CA.

Peng, Y.R. Shekhar K., Yan W., Herrmann D., Bryman G.S., Sappington A., Van Zyl T., Do M.T.H. Regev A. Sanes J.R. (2018) Molecular specification of cell types underlying central and peripheral vision in primates. Cold Spring Harbor meeting: Molecular Mechanisms of Neuronal Connectivity, NY.

Peng Y.R., Shekhar K., Yan W., Herrmann D., Bryman G.S., Van Zyl T., Do M.T.H. Regev A. Sanes J.R. (2018) Molecular specification of cells in the primate fovea and peripheral retina. Sixth Annual Broad-ISF Symposium (poster award), Cambridge, MA.

Peng Y.R., Shekhar K., Yan W., Herrmann D., Bryman G.S., Do M.T.H., Regev A., Sanes J.R. (2018) Molecular specification of cells in the primate fovea and peripheral retina. FASEB SRC: Retinal Neurobiology and Visual Processing. St Bonaventure, NY.

Peng Y.R., Tran N.M., Krishnaswamy A., Kostadinov D., Martersteck E.M., Sanes J.R. (2017) A Transcriptional program directing the dendritic pattern and function of a retinal ganglion cell. Society for Neuroscience 684.08, Washington D.C., MD.

Shekhar K., Whitney I.E., Peng Y.R., Tran N., Benhar I., Hermann D., Martersteck E.M., Regev A., Sanes J.R. (2017) A cell atlas of the retina. Society for Neuroscience 56.12  
Peng Y.R., Zhang Xu, Shalek A.K., Haas B., Park H., Regev A., Xie S.X., Sanes J.R. (2014) Using single-cell RNAseq to classify retinal cell types. Society for Neuroscience 96.16. Washington D.C., MD.

Peng Y.R., Zeng S.Y., Song H.L., and Yu X. (2011) Cell-autonomously homeostatic up-regulation of inhibitory synaptic transmission through BDNF-dependent retrograde signaling. Gordon Research Conferences-Neurotrophic Factors, Newport, RI.

Peng Y.R., Zeng S.Y., Song H.L., and Yu X. (2009) Rapid increases of inhibitory synaptic strengths mediated by changes in the firing activity of individual neurons. Gordon Research Conferences-Inhibition in the CNS, Waterville, ME.

Peng Y.R., Tan Z.J., Peng Y., Song H.L., and Yu X. (2007) Manipulation of N-cadherin level and function through different methods results in distinct functional changes in hippocampal neurons. 211. Proceedings of the 7th Biennial Meeting of the Chinese Society for Neuroscience, Neuroscience Bulletin, Vol 23, Suppl. 1, p274. Zhejiang, China.

Peng Y.R., He S., Tan Z.J., and Yu X. (2006) Activity-dependent regulation of dendritic morphology and synaptic function. Joint ION and HKUST (Hong Kong University of Science and Technology) Retreat. Shanghai, China