

Curriculum Vitae

Ninglong Xu, Ph.D.

Institute of Neuroscience
Center for Excellence in Brain Science and Intelligence Technology
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Education

- 1999 B.S. Bioengineering, Sichuan University, Chengdu, China
2006 Ph.D. Neurobiology, Institute of Neuroscience, Chinese Academy of Sciences; University of Chinese Academy of Sciences, Shanghai, China 2006.
Advisor: Mu-ming Poo, Chien-ping Wu, Shuming Duan

Postdoctoral Training

- 2006/07 – 2008/01 Cold Spring Harbor Laboratory. Advisor: Zachary Mainen
2008/02 – 2013/07 HHMI Janelia Research Campus. Advisor: Jeffrey Magee

Academic Appointments

- 2013/08 – Principal Investigator, Institute of Neuroscience, Chinese Academy of Sciences
2014/09 – Young Investigator, Center for Excellence in Brain Science and Intelligence Technology, Chinese Academy of Sciences

Grants and Awards

- 1998 Excellent Student Award, Sichuan University, Chengdu, China
2004 The Travel Award of Neuro2004, Japan Neuroscience Society, Osaka, Japan

- 2005 Fellowship from The 13th Jerusalem School in Life Sciences: School of Dendrites, Jerusalem, Israel
- 2006 Liu Yong Ling Scholarship, Chinese Academy of Sciences, Shanghai, China
- 2008 Fudan University Tan Jiazhen Foundation Jiuyuan Scholarship, Shanghai, China
- 2011 Gordon Research Conference “Dendrites: Molecules, Structure & Function”, Best Poster Award. Ventura, CA
- 2015 National Natural Science Foundation of China (General Program), “Neuronal circuit mechanisms of auditory perceptual decision”, 800,000 CNY
- 2015 Strategic Priority Research Program of the Chinese Academy of Sciences, “Neuronal circuit mechanisms of auditory perceptual decision”, 1,700,000 CNY
- 2016 Frontier Science Research Projects of Chinese Academy of Sciences, “Neuronal circuit mechanisms of perceptual decision-making”, 1,900,000 CNY
- 2016 China – Netherlands CAS-NWO Programme – Joint Research Projects: The Future of Brain and Cognition, “Mechanistic understanding of long-range connections in auditory perception: from molecule to circuitry to behavior”, 900,000 CNY
- 2019 NSFC International Cooperation and Exchange Project, NSFC-ISF (China – Israel), 1,900,000 CNY

Professional Services

- Thesis committee member of ION graduate students
- Chair of ION Seminar Committee, 2015 - 2017
- Journal referee for Neuron, eLife, PNAS, Molecular Brain, The Journal of Neuroscience, Scientific Reports, Developmental Neurobiology

Teaching Services

- Teaching “ Voluntary movement: The primary motor cortex”, and “Voluntary movement: The parietal and premotor cortex”, “Membrane potential and the passive electrical properties of the neuron”, “ Propagated signaling: The action potential”, for the Shanghai Institutes for Biological Sciences, University of Chinese Academy of Sciences (UCAS), since 2014.
- Teaching “Electrophysiological Techniques in Neuroscience” and “Application of neuronal signal recording techniques in mammalian brains”, for the School of Future Technology, University of Chinese Academy of Sciences, since 2017.
- Mentoring UCAS students at ION, Lele Cui, Yu Xin, Ruiming Chai, Lin Zhong, Yuan Zhang, Yanhe Liu, Shunhang Tang, Yuxin Pan, Ji Deng, Yachuang Hu.
- Advisor of Postdoctoral Fellows, Chunyu Duan (Ph.D. Princeton University) and Guobin Fu (Ph.D., Tsinghua University).

Invited Seminars and Meeting Talks

- 2019/03 Gordon Research Conference, *Dendrites: Molecules, Structure & Function*, Ventura, CA, USA
- 2017/06 Cold Spring Harbor Asia Conference, *Primate Neuroscience: Perception, Cognition & Disease Models*, Suzhou, China
- 2017/05 Cold Spring Harbor Asia Conference, *Primate Neuroscience: Perception, Cognition & Disease Models*, Suzhou, China
- 2016/11 International Workshop on Decision Making in Rodents, NYU Shanghai, Suzhou, China
- 2016/10 Cold Spring Harbor Asia Conference, *Probing Neural Networks with Light: Imaging Structure & Function in the Living Brain*, Suzhou, China
- 2016/09 Frontiers in Interdisciplinary Neuroscience and Technology, *International Workshop on Auditory Neuroscience*, Hangzhou, China
- 2013/11 Society For Neuroscience Minisymposium, *Imaging Neuronal Populations in Behaving Rodents: Paradigms for Studying Neural Circuits of Behavior in the Mammalian Cortex*. San Diego, CA, USA

- 2013/08 Cold Spring Harbor Asia Conference, *New Advances in Optical Imaging of Live Cells and Organisms*, Suzhou, China
- 2012/11 *Earl Stadtman Investigator Search Symposium*, National Institutes of Health, Bethesda, MD, USA
- 2012/03 Cold Spring Harbor Conference on *Neuronal Circuits*, Cold Spring Harbor, NY, USA.
- 2012/03 Janelia Conferences, *Dendrites: Substrates for Information Processing*, Janelia Farm Research Campus, Ashburn, VA, USA
- 2012/02 *COSYNE* (Computational and Systems Neuroscience), Salt Lake City, Utah, USA
- 2011/03 Gordon Research Seminar, *Dendrites: Molecules, Structure & Function*, Ventura, CA, USA
- 2004/09 Neuro2004, *27th Annual Meeting of the Japan Neuroscience Society*, Osaka, Japan

Publications

Xu NL* (2020) Deciphering Pyramidal Neuron Diversity: Delineating Perceptual Functions of Projection-Defined Neuronal Types. *Neuron* (Preview), 105, 209-211.

Xin Y, Zhong L, Zhang Y, Zhou T, Pan J, **Xu NL*** (2019) Sensory-to-category transformation via dynamic reorganization of ensemble structures in mouse auditory cortex. *Neuron*, 103, 909-921.

Zhong L, Zhang Y, Duan CA, Deng J, Pan J, **Xu NL*** (2019) Causal contributions of parietal cortex to perceptual decision-making during stimulus categorization. *Nature Neuroscience*, 22, 963–973.

Ranganathan GN, Apostolides PF, Harnett MT, **Xu NL**, Druckmann S, Magee JC* (2018) Active dendritic integration and mixed neocortical network representations during an adaptive sensing behavior. *Nature Neuroscience*, 21 (11):1583-1590.

Xu NL* (2015) Learning to memorize: Shedding new light on prefrontal functions. *Neurosci. Bull.* 31: 242-244. (Review)

Chen JL*, Andermann ML, Keck T, **Xu NL**, and Ziv Y, (2013) Imaging Neuronal Populations in Behaving Rodents: Paradigms for Studying Neural Circuits Underlying Behavior in the Mammalian Cortex. *J. Neurosci.*, 33(45): 17631-17640.

Harnett MT, **Xu NL**, Magee JC*, Williams SR*, (2013) Potassium Channels Control the Interaction between Active Dendritic Integration Compartments in Layer 5 Cortical Pyramidal Neurons. *Neuron*, 79: 516-529.

Xu NL, Harnett MT, O'Connor DH, Huber D, Williams SR, Svoboda K., Magee JC*, (2012) Nonlinear dendritic integration of sensory and motor input during an active sensing task. *Nature*, 492: 247-251.

Petreaanu L, Gutnisky DA, Huber D, **Xu NL**, O'Connor DH, Tian L, Looger L, and Svoboda K*, (2012) Activity in motor-sensory projections reveals distributed coding in somatosensation. *Nature*, 489: 299–303.

Xu NL, Ye CQ, and Poo MM*, Zhang XH* (2006) Coincidence detection of synaptic inputs is facilitated at the distal dendrites after long-term potentiation induction. *J. Neurosci.*, 26: 3002-3009.

Wang Z, **Xu NL**, Wu CP, Duan S*, and Poo MM*, (2003) Bidirectional changes in spatial dendritic integration accompanying long-term synaptic modifications. *Neuron*, 37: 463-72.