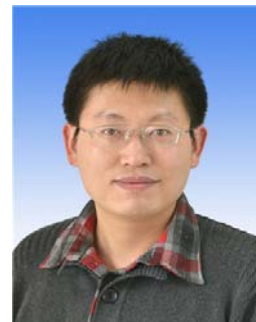# Peng Cao, Ph.D.

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Education

1996-2000	B.Sc.	Peking University, China
2000-2005	Ph.D.	Institute of Biophysics, Chinese Academy of Sciences

Research Experiences

2005-2008	Postdoctoral Associate	Baylor College of Medicine
2008-2012	Research Associate	Stanford University & HHMI
2012-2016	Principal Investigator	Institute of Biophysics, CAS
2016-present	Principal Investigator	National Institute of Biological Sciences, Beijing

Invited Talks

- International Congress of Obesity and Metabolic Syndrome (ICOMES), Symposium 7: Neural Control of Eating, Seoul, South Korea, September 2020
- Department of Biological Sciences, KAIST, Daejeon, South Korea December 2019
- CSH Asia Meeting on "Francis Crick Symposium-Transforming Neurosciences: Questions & Experiments", Suzhou, China, 2019
- SfN, Mini-Symposium "How to Get Out of Harm's Way: New Insight Across Multiple Species Into the Neural Mechanisms of Visually Guided Collision Avoidance", San Diego, CA, United States, 2018
- International Institute for Integrative Sleep Medicine, University of Tsukuba, Japan 2018
- 7th WPI-IIIS Symposium, Tokyo, Japan, 2018
- CSH Asia Meeting on "Francis Crick Symposium-Transforming Neurosciences: Questions & Experiments", Suzhou, China, 2017

- 17th Chinese-American Symposium, "Kavli Frontiers of Science", Irvine, California, United States, 2016
- CSH Asia Meeting on "Development, Function and Disease of Neural Circuits", Suzhou, China, 2016
- Gordon Research Conference on "Molecular and Cellular Neurobiology", Hong Kong, China, 2016

Awards

- The National Science Fund for Excellent Young Scholars, National Natural Science Foundation of China (2015-2017)
- The National Science Fund for Distinguished Young Scholars, National Natural Science Foundation of China (2020-2024)

Selected Publications

1. Congping Shang, Aixue Liu, Dapeng Li, Zhiyong Xie, Zijun Chen, Meizhu Huang, Yang Li, Yi Wang, Wei L. Shen, **Peng Cao**, A subcortical excitatory circuit for sensory-triggered predatory hunting in mice. ***Nature Neuroscience*** 22(6):909-920 (2019)

2. Congping Shang, Zijun Chen, Aixue Liu, Yang Li, Jiajing Zhang, Baole Qu, Fei Yan, Yaning Zhang, Weixiu Liu, Zhihui Liu, Xiaofei Guo, Dapeng Li, Yi Wang, **Peng Cao**, Divergent midbrain circuits orchestrate escape and freezing responses to looming stimuli in mice. ***Nature Communications*** 9(1):1232 (2018)

3. Zhihui Liu, Zijun Chen, Congping Shang, Fei Yan, Yingchao Shi, Jiajing Zhang, Baole Qu, Hailin Han, Yanying Wang, Dapeng Li, Thomas Südhof, **Peng Cao**, IGF1-dependent synaptic plasticity of mitral cells in olfactory memory during social learning. ***Neuron*** 95: 106–122 (2017)

4. Congping Shang, Zhihui Liu, Zijun Chen, Yingchao Shi, Su Liu, Dapeng Li, Qian Wang, **Peng Cao**, A parvalbumin-positive excitatory visual pathway to trigger fear responses in mice. ***Science*** 348: 1472-77 (2015)

5. **Peng Cao**, Xiaofei Yang, and Thomas Südhof, Complexin Activates Exocytosis of Distinct Secretory Vesicles Controlled by Different Synaptotagmins. ***The Journal of Neuroscience*** 33, 1714-27 (2013)

6. **Peng Cao**, Anton Maximov, and Thomas Südhof, Activity-dependent IGF1 exocytosis is controlled by the Ca_{2+}-sensor synaptotagmin 10. ***Cell*** 145, 300–311 (2011).

Other Publications

7. Jing Chen, Mingxiu Cheng, Liang Wang, Lei Zhang, Dan Xu, **Peng Cao**, Fengchao Wang, Herbert Herzog, Sen Song, Cheng Zhan. A Vagal-NTS neural pathway that stimulates feeding. Current Biology, *Online Published on Aug 20, 2020*

8. Zheng-dong Zhao, Zongming Chen, Xinkuan Xiang, Mengna Hu, Hengchang Xie, Xiaoning Jia, Fang Cai, Yuting Cui, Zijun Chen, Lechen Qian, Jiashu Liu, Congping Shang, Yiqing Yang, Xinyan Ni, Wenzhi Sun, Ji Hu, **Peng Cao**, Haohong Li & Wei L. Shen. Zona incerta GABAergic neurons integrate prey-related sensory signals and induce an appetitive drive to promote hunting. *Nature Neuroscience* 22(6):921-932 (2019)

9. Yonglu Tian, Chaojuan Yang, Yaxuan Cui, Feng Su, Yongjie Wang, Yangzhen Wang, Peijiang Yuan, Shujiang Shang, Hao Li, Jizong Zhao, Desheng Zhu, Shiming Tang, **Peng Cao**, Yunbo Liu, Xunli Wang, Liecheng Wang, Wenbo Zeng, Haifei Jiang, Fei Zhao, Minhua Luo, Wei Xiong, Zilong Qiu, Xiang-Yao Li, Chen Zhang, An excitatory neural assembly encodes short-term memory in the prefrontal cortex. *Cell Reports* 22 (7): 1734-1744 (2018)

10. Xiaofei Yang, **Peng Cao** and Thomas Südhof, Deconstructing complexin function in activating and clamping Ca2+-triggered exocytosis by comparing knockout and knockdown phenotypes. *Proceedings of National Academy of Sciences U S A.* 110, 20777-82 (2013)

11. Zhiping Pang, Wei Xu, **Peng Cao** and Thomas Südhof. Calmodulin suppresses synaptotagmin-2 transcription in cortical neurons. *Journal of Biological Chemistry*. 285, 33930-9 (2010)

12. Zhiping Pang, **Peng Cao**, Wei Xu and Thomas Südhof. Calmodulin controls synaptic strength via presynaptic activation of calmodulin kinase II. *The Journal of Neuroscience* 30, 4132-42 (2010)

13. Yan Yang, **Peng Cao**, Yang Yang, and Shu-Rong Wang, Corollary discharge circuits for saccadic modulation of the pigeon visual system. *Nature Neuroscience* 11, 595-602 (2008).

14. Daoying Hu, **Peng Cao**, Edda Thiels, Charleen Chu, Gang-Yi Wu, Tim Oury, Eric Klann. Hippocampal long-term potentiation, memory, and longevity in mice that overexpress mitochondrial superoxide dismutase. *Neurobiology of Learning and Memory* 87, 372-84 (2007)

15. **Peng Cao**, Yan Yang, Yang Yang and Shu-Rong Wang. Differential

modulation of thalamic neurons by optokinetic nuclei in the pigeon. *Brain Research* 1069, 159-65 (2006)

16. **Peng Cao**, Yong Gu, and Shu-Rong Wang, Visual neurons in the pigeon brain encode the acceleration of stimulus motion. *The Journal of Neuroscience* 24, 7690–7698 (2004).

17. Quan Xiao, **Peng Cao**, Yong Gu and Shu-Rong Wang Visual responses of neurons in the pretectal nucleus lentiformis mesencephali to moving patterns within and beyond receptive fields in pigeons. Brain Behavior and Evolution 57, 80-6 (2001)