Jerry L. Chen

Boston University
Department of Biology
5 Cummington Mall, Boston, MA 02215
www.chen-lab.org / jerry@chen-lab.org

Education

2004-2010 PhD., Massachusetts Institute of Technology, Biology.
1999-2003 B.A. with Honors, University of California, Berkeley, Molecular and Cell Biology.

Positions Held

2016-present Assistant Professor of Neurobiology, Department of Biology, Boston University
2016-present Affiliated Assistant Professor, Department of Biomedical Engineering, Boston University
2016-present Faculty Member, Photonics Center, Boston University
2011-2016 Post-Doctoral Fellow, Brain Research Institute, University of Zurich (*Helmchen F*)
2004-2010 PhD Student, Department of Biology, Massachusetts Institute of Technology (*Nedivi E*)
2003-2004 Senior Research Associate II, University of California, Berkeley (*Hellerstein MK*)

Honors and Awards

2017-2020 Whitehall Foundation Research Grant
2017-2020 Smith Family Awards for Excellence in Biomedical Research
2017-2019 NARSAD Young Investigator Grant
2016-2019 Stuart and Elizabeth Pratt Career Development Professorship, Boston University
2016 Cajal Club Krieg Cortical Kudos Explorer Award
2016 Federation of European Neuroscience Societies EJN Young Investigator Prize
2015 Society for Neuroscience Peter and Patricia Gruber International Research Award
2015 Proteintech and Cell Press Society for Neuroscience Travel Award
2012-2014 Forschungskredit Post-Doctoral Fellowship, University of Zurich, Switzerland
2012-2014 International Research Fellowship Program, National Science Foundation, USA

Professional Service

2017-present Associate Editor, *Neurophotonics*
2016-present Review Editor, *Frontiers in Neural Circuits*
2016-present Patent Peer Review Project Expert, Stanford Law School
2017-2018 Faculty Search Committee, Dept. of Biology, Boston University
2016-2017 Faculty Search Committee, Dept. of Psychological and Brain Sciences, Boston University
2014-2017 Next Generation Leaders Advisory Council, Allen Institute for Brain Science
Ad-hoc Review *Neuron, eLife, Nature Methods, Nature Communications, Scientific Reports*, *Cell Reports, CoSyne Abstracts*

Current Funding

2017–2022 NSF NeuroNex Program, *Neurotechnology Hub: Nemonic: Next-Generation Multiphoton Neuroimaging Consortium* (Co-PI)
2017-2020 Whitehall Foundation Research Grant**,** *Role for Inter-Areal Cortical Dynamics during Perception*
2017-2020 Smith Awards Program for Excellence in Biomedical Research, *Circuit Mechanisms for Long-Range Communication in the Neocortex*
2017-2019 NARSAD Young Investigator Grant, *Neural Circuit Basis for Cortical Oscillations as a Biomarker for Neurological Disorders*

Publications

Original Research

1. Bethge P, Carta S, Lorenzo DA, Egolf L, Goniotaki D, Madisen L, Voigt FF, **Chen JL**, Schneider B, Ohkura M, Nakai J, Zeng H, Aguzzi A, Helmchen F. *An R-CaMP1.07 reporter mouse for cell-type-specific expression of a sensitive red fluorescent calcium indicator.* **PLoS One**. 2017 Jun 22;12(6):e0179460.

2. **Chen JL***, Voigt F*, Javadzadeh M, Kruppel R, Helmchen F. *Long-range population dynamics of anatomically defined neocortical networks*. **eLife.** 2016 May 24;5. pii: e14679. *Equal contribution

3. **Chen JL**, Margolis DJ, Stankov A, Sumanovski LT, Schneider BL, Helmchen F. *Pathway-specific reorganization of projection neurons in somatosensory cortex during learning.* **Nat Neurosci.** 2015 Aug;18(8):1101-1108.

4. Wahl AS, Omlor W, Rubio JC, **Chen JL**, Zheng H, Schroter A, Gullo M, Weinmann O, Kobayashi K, Helmchen F, Ommer B, Schwab ME. *Asynchronous therapy restores motor control by rewiring of the rat corticospinal tract after stroke.* **Science**. 2014 Jun 13;344(6189):1250-1255.

5. **Chen JL***, Pfaffli O*, Voigt F, Margolis DJ, Helmchen F. *Online correction of licking-induced brain motion during two-photon imaging with a tunable lens.* **J Physiol.** 2013 Oct 1;591(19):4689-4698**.** *Equal contribution

6. **Chen JL**, Carta S, Soldado-Magraner J, Schneider BL, Helmchen F. *Behaviour-dependent recruitment of long-range projection neurons in somatosensory cortex.* **Nature.** 2013 Jul 18;499(7458):336-380.

7. **Chen JL,** Villa KL, Cha JW, So PT, Kubota Y, Nedivi E. *Clustered inhibitory synapse and dendritic spine dynamics in the adult cortex*. **Neuron.** 2012 Apr 26;74(2):361-373.

8. Fujino T, Leslie JH, Eavri R, **Chen JL**, Lin WC, Flanders GH, Borok E, Horvath TL, Nedivi E. *CPG15 regulates synapse stability in the developing and adult brain*. **Genes Dev.** 2011 Dec 15;25(24):2674-2685.

9. **Chen JL,** Flanders GH, Lee WC, Lin WC, Nedivi E. *Inhibitory dendrite dynamics as a general feature of the adult cortical microcircuit***. J Neurosci.** 2011 Aug 31;31(35):12437-12443.

10. **Chen JL**, Lin WC, Cha JW, So PT, Kubota Y, Nedivi E. *Structural basis for the role of inhibition in facilitating adult brain plasticity.* **Nat Neurosci.** 2011 May;14(5):587-594.

11. Lee WC, **Chen JL,** Huang H, Leslie JH, Amitai Y, So PT, Nedivi E. *A dynamic zone defines interneuron remodeling in the adult neocortex.* **Proc Natl Acad Sci U S A.** 2008 Dec 16;105(50):19968-19973.

12. **Chen JL**, Peacock E, Samady W, Turner SM, Neese RA, Hellerstein MK, Murphy EJ. *Physiologic and pharmacologic factors influencing glyceroneogenic contribution to triacylglyceride glycerol measured by mass isotopomer distribution analysis.* **J Biol Chem.** 2005 Jul 8;280(27):25396-25402.

Invited Reviews and Book Chapters

13. Helmchen F, Gilad A, **Chen JL.** *Neocortical dynamics during whisker-based sensory discrimination in head-restrained mice*. **Neuroscience.** 2018 Jan 1;368:57-69.

14. Ni J, **Chen JL.** *Long-range cortical dynamics: a perspective from the mouse sensorimotor whisker system.* **Eur J Neurosci.** 2017 Oct;46(8):2315-2324.

15. Helmchen F, **Chen JL**. *Imaging the cortical representation of active sensing in the vibrissa system.* **Sensorimotor Integration in the Whisker System***.* Springer, 2015:109-128.

16. **Chen JL**, Andermann ML, Keck T, Xu NL, Ziv Y. *Imaging neuronal populations in behaving rodents: paradigms for studying neural circuits underlying behavior in the mammalian cortex.* **J Neurosci.** 2013 Nov 6;33(45):17631-40.

17. **Chen JL**, Nedivi E. *Highly specific structural plasticity of inhibitory circuits in the adult cortex.* **Neuroscientist.** 2013 Aug;19(4):384-393.

18. **Chen JL**, Nedivi E. *Neuronal structural remodeling: is it all about access?* **Curr Opin Neurobiol**. 2010 Oct;20(5):557-62.

Invited Talks

2018 **Computation and Systems Neuroscience (Cosyne) Workshop.** Breckenridge, CO.
2017 **Annual Meeting of the Japanese Neuroscience Society.** Tokyo, Japan.
2017 **National Institute of Physiological Sciences.** Okazaki, Japan.
2017 **Nagoya University.** Nagoya, Japan.
2016 **Institute of Neuroscience, Chinese Academy of Sciences.** Shanghai, China.
2016 **Cold Spring Harbor Asia Meeting, Probing Circuits with Light: Imaging Structure and Function in the Living Brain.** Suzhou, China.
2016 **FENS Forum of Neuroscience.** Copenhagen, Denmark.
2015 **Janelia Meeting, Emerging Tools for Acquisition and Interpretation of Whole-Brain Functional Data.** Ashburn,Virginia.
2015 **Ohio State University.** Columbus, OH.
2015 **Columbia University.** New York, NY.
2015 **University of Chicago.** Chicago, IL.
2015 **Boston University.** Boston, MA.
2015 **Harvard Medical School.** Boston, MA.
2015 **Max Planck Research Group Leader Symposium.** Berlin, Germany.
2015 **Ernst Strungmann Institute.** Frankfurt, Germany.
2015 **Washington University in St. Louis.** St. Louis, MO.
2014 **National Institute of Health.** Bethesda, MD.
2014 **Barrels Meeting XXVII.** Washington, DC.
2014 **University College London.** London, UK.
2014 **Munich Cluster for Systems Neurology.** Munich, Germany.
2014 **Allen Institute for Brain Science Showcase Symposium.** Seattle, WA.
2014 **Bernstein Conference on Computational Neuroscience.** Goettingen, Germany.
2014 **Princeton University.** Princeton, NJ.
2014 **University of Basel.** Basel, Switzerland.
2014 **University of Cambridge.** Cambridge, UK.
2014 **Massachusetts Institute of Technology.** Cambridge, MA.
2014 **Salk Institute for Biological Studies.** San Diego, CA.
2014 **Northwestern University.** Evanston, IL.
2014 **California Institute of Technology.** Pasadena, CA.
2013 **Ludwig Maximilian University of Munich.** Munich, Germany.
2013 **Society for Neuroscience Annual Conference*:* Imaging Neuronal Populations in Behaving Rodents: Paradigms for Studying Neural Circuits of Behavior in the Mammalian Cortex Minisymposium.** San Diego, CA. (Chair & Speaker)
2013 **Barrels Meeting XXVI.** San Diego, CA.
2013 **Max Planck Institute for Biological Cybernetics.** Tuebingen, Germany.
2013 **Janelia Meeting, The Neural Basis of Vibrissa-Based Tactile Sensation.** Ashburn,Virginia.
2012 **Zurich Center for Imaging Science and Technology.** Zurich, Switzerland.
2009 **Gordon Research Conference, Dendrites: Molecules, Structure & Function.** Barga, Italy.

Poster Presentations

2015 **Society for Neuroscience Annual Conference.** Chicago, IL.
2014 **Society for Neuroscience Annual Conference.** Washington, DC.
2014 **FENS Forum of Neuroscience.** Milan, Italy.
2013 **The Assembly and Function of Neural Circuits.** Ascona, Switzerland.
2012 **Society for Neuroscience Annual Conference.** New Orleans, LA.
2012 **FENS Forum of Neuroscience.** Barcelona, Spain.
2012 **CNRS Conference, Imaging Neuronal Circuits: From Molecules to Circuits.** Roscoff, France.
2012 **International Conference on Brain Dynamics and Decision Making.** Ascona, Switzerland.
2011 **Society for Neuroscience Annual Conference.** Washington, DC.
2010 **Society for Neuroscience Annual Conference.** San Diego, CA.
2010 **Janelia Meeting, Structural Plasticity of the Mammalian Brain.** Ashburn, VA.
2009 **Society for Neuroscience Annual Conference.** Chicago, IL.
2008 **Society for Neuroscience Annual Conference.** Washington, DC.

2007 **Society for Neuroscience Annual Conference.** San Diego, CA.

Teaching Experience

Fall, 2017	Instructor, Cellular and Systems Neurobiology (BI755), Boston University
Fall, 2017	Guest Lecturer, Topics in Biomedical Engineering (BE 790), Boston University
Fall, 2017	Guest Lecturer, Frontiers in Neuroscience (NE 500), Boston University
Spring, 2017	Guest Lecturer, Neural Systems I: Functional Circuit Analysis (BI741), Boston University
Fall, 2016	Instructor, Cellular and Systems Neurobiology (BI755), Boston University
Fall, 2016	Guest Lecturer, Topics in Biomedical Engineering (BE 790), Boston University
Fall, 2016	Guest Lecturer, Frontiers in Neuroscience (NE 500), Boston University
Fall, 2014	Guest Lecturer, Molecular and Cellular Neurobiology, University of Zurich
Fall, 2013	Guest Lecturer, Functional Anatomy of the Rodent Brain, University of Zurich
Fall, 2012	Guest Lecturer, Neuroscience: From Networks to Systems, University of Zurich
September, 2011	Teaching Assistant, EMBO Two-Photon Imaging of Brain Circuits, TU Munich
January, 2008	Teaching Assistant, Neuroscience Module, Instituto Gulbenkian de Ciência
Fall, 2007	Teaching Assistant, Introductory Biology (7.013), MIT
Spring, 2006	Teaching Assistant, Introductory Biology (7.014), MIT

Supervised Post-Doctoral Fellows

2017-present	Eric Lowet
2017-2018	Jianguang Ni

Supervised PhD Students

2018-present	Caroline Habjan – Dept. of Biology, Boston University
2017-present	Xin Ye – Dept. of Biomedical Engineering, Boston University
2017-present	Mitchell Clough – Dept. of Biomedical Engineering, Boston University
2017-present	Cameron Condylis – Dept. of Biomedical Engineering, Boston University

Supervised Masters or Undergraduate Students

2017-2018	Koral Cohen – Dept. of Psychological and Brain Sciences, Boston University
2016-2017	Gavin Lagani – Dept. of Biology, Boston University
2014-2015	Kushagra Alankar – Electrical Engineering and Information Technology, ETH
2014-2015	Mitra Javadzadeh – Institute for Neuroinformatics, ETH
2014	Petar Ivanov – Institute for Neuroinformatics, ETH
2014	Karlis Kanders – Institute for Neuroinformatics, ETH
2013-2014	Sievi Lombriser – Electrical Engineering and Information Technology, ETH
2013-2014	Atanas Stankov – Institute for Neuroinformatics, ETH
2013-2014	Asim Iqbal – Institute for Neuroinformatics, ETH
2012	Oliver Pfaffli – Masters of Medicine, University of Zurich
2012	Saray Soldado-Magraner – Institute for Neuroinformatics, ETH
2012	Joana Soldado-Magraner – Institute for Neuroinformatics, ETH
2009	Sonia Afroz – MIT Summer Research Program
2008-2009	Mariel Kolzerg – MIT Undergraduate Research Opportunities Program
2008	Isabelle Hutchings – Amgen Scholars Program
2007	Christopher Jackson – Amgen Scholars Program