

Gang Chen

Curriculum Vitae

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EDUCATION/DEGREES EARNED

Ph.D., Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China. 2005. Mentor, Chaoyi Li.
Ph.D. candidate, Shanghai Institute of Physiology, Chinese Academy of Sciences, Shanghai, China. 1998-1999.
Mentor, Chaoyi Li
Bachelor of Science, Nanjing University, China. 1998

EMPLOYMENT HISTORY

10/2018-present Zhejiang University, School of Medicine, Second Affiliated Hospital, Hangzhou, China
Adjunct Professor
03/2014-present Zhejiang University, Qiushi Academy of Advanced Science, Hangzhou, China
Professor
03/2014-present Zhejiang University Interdisciplinary Institute for Neuroscience and Technology, Hangzhou, China
Principle Investigator
03/2014-present Key Laboratory of Biomedical Engineering of Ministry of Education, Hangzhou, China
Member
03/2014-present Zhejiang Provincial Key Laboratory of Cardio-Cerebral Vascular Detection Technology and Medicinal Effectiveness Appraisal, Hangzhou, China
Member
03/2014-04/2016 Vanderbilt University, Department of Radiology and Radiological Sciences, Nashville, TN, U.S.A.
Adjunct Instructor
03/2011-02/2014 Vanderbilt University Institute of Imaging Science, Nashville, TN, U.S.A.
Faculty member. Coordinator/director of the 4.7T vertical MR ultra-high field scanner
03/2011-02/2014 Vanderbilt University, Department of Radiology and Radiological Sciences, Nashville, TN, U.S.A.
Instructor
06/2005-02/2011 Vanderbilt University, Department of Psychology, Nashville, TN, U.S.A.
Research Associate

HONORS and AWARDS

2018 Nomination for "Top 10 Advances of Science and Technology at Zhejiang University on 2017"
2015 Zhejiang Provincial Natural Science Funds for Distinguished Young Scientists
2015 Best employee of Qiushi Academy of Advanced Science
2014 Best employee of Qiushi Academy of Advanced Science

PUBLICATIONS

RESEARCH PAPERS IN REFEREED JOURNALS

- Xu G, Qian M, Tian F, Xu B, Friedman R, Wang J, Song X, Sun Y, Chernov M, Cayce J, Jansen E, Mahadevan-Jansen A, Zhang X*, **Chen G***, Roe A*. Focal infrared neural stimulation with high-field functional MRI: A rapid way to map mesoscale brain connectomes. *Science Advances*. 5:eaa07046. (2019). *Corresponding author. *Impact Factor* = 11.5
- Chernov M, Friedman R, **Chen G**, Stoner G, Roe A. Functionally specific optogenetic modulation in primate visual cortex. *Proc Natl Acad Sci U S A*. 115(41):10505-10501. (2018). *Impact Factor* = 9.504
- Yin H, Fu P, Lu H, Tanigawa H, Roe A, **Chen G***. Reply to Doi et al.: Functional architecture matters in the formation of perception. *Proc Natl Acad Sci U S A*. 115(30):E6969-E6971. (2018). *Corresponding author. *Impact Factor* = 9.504
- Chen G***, Lu H, Tanigawa H, Roe A. Solving visual correspondence between the two eyes via domain-based population encoding in nonhuman primates. *Proc Natl Acad Sci U S A*. 114(49): 13024-13029. (2017). *Corresponding author. *Impact Factor* = 9.504
- Lu H, **Chen G**, Cai J, Roe A. Intrinsic signal optical imaging of visual brain activity: tracking of fast cortical dynamics. *Neuroimage*, 148:160-168. (2017). *Impact Factor* = 5.426
- Chernov M, **Chen G**, Torre-Healy L, Friedman R, Roe A. Microelectrode array stimulation combined with intrinsic optical imaging: a novel tool for functional brain mapping. *J Neurosci Meth*, 263:7-14. (2016). *Impact Factor* = 2.668
- Tanigawa H, **Chen G**, Roe A. Spatial Distribution of Attentional Modulation at Columnar Resolution in Macaque Area V4. *Frontiers in Neural Circuits*, 10:102. (2016). *Impact Factor* = 3.131
- Roe A, Chernov M, Friedman R, **Chen G**. In vivo mapping of cortical columnar networks in the monkey with focal electrical and optical stimulation and imaging. *Frontiers in Neuroanatomy*, 9:135. (2015). *Impact Factor* = 3.152
- Chernov M, **Chen G**, Roe A. Histological assessment of thermal damage in the brain following infrared neural stimulation. *Brain Stimul*. 7(3):476-82. (2014). *Impact Factor* = 6.120
- Cayce J, Friedman R, **Chen G**, Jansen E, Mahadevan-Jansen A, Roe A. Infrared neural stimulation of primary visual cortex in non-human primates. *Neuroimage*. 84:181-90. (2014). *Impact Factor* = 5.426
- Chen G***, Wang F, Gore J, Roe A. Layer-specific BOLD activation in awake monkey V1 revealed by ultra-high spatial resolution functional magnetic resonance imaging. *NeuroImage*. 64(1): 147-155. (2013). *Corresponding author. *Impact Factor* = 5.426
- Chen G****, Wang F**, Dillenburger B, Friedman R, Chen L, Gore J, Avison M, Roe A. Functional magnetic resonance imaging of awake monkeys: some approaches for improving imaging quality. *Magn Reson Imaging*. 30(1): 36-47. (2012). **Authors contributed equally. *Impact Factor* = 2.564
- Chen G**, Wang F, Gore J, Roe A. Identification of cortical lamination in awake monkeys by high resolution magnetic resonance imaging. *NeuroImage*. 59(4): 3441-3449. (2012). *Impact Factor* = 5.426
- Lu H, **Chen G**, Tanigawa H, Roe A. A direction map in macaque V2. *Neuron*. 68(5): 1002-13. (2010). Neuron Video Abstract. *Impact Factor* = 14.319

Lu H**, **Chen G****, Ts'o D, Roe A. A rapid topographic mapping and eye alignment method using optical imaging in Macaque visual cortex. *Neuroimage*. 44(3): 636-46. (2009). **Authors contributed equally. *Impact Factor* = 5.426

Chen G, Lu H, Roe A. A map for horizontal disparity in monkey V2. *Neuron*. 58(3): 442-450. (2008). *Impact Factor* = 14.319

Chen G, Dan Y, Li C. Stimulation of non-classical receptive field enhances orientation selectivity. *Journal of Physiology (London)*. 564(1): 233-43. (2005). Cover figure. *Impact Factor* = 4.540

BOOK CHAPTERS

Roe A, **Chen G**, Lu H. Functional architecture of area V2. In Squire L (ed.) *Encyclopedia of Neuroscience*. Elsevier, Oxford, UK

FUNDING

Ministry of National Defense of China. 17-163-12-ZT-001-093-01. Role: co-PI. CNY-1,500,000 (2017-)

Zhejiang Provincial Natural Science Foundation of China. LR15C090001. Role: PI. CNY-300,000 (2015-)

National Natural Science Foundation of China. 31471052. Role: PI. CNY-910,000.00 (2015-)

Fundamental Research Funds for the Central Universities, 2015QN81007. Role: PI. CNY-160,000 (2015-2016)

National Institute of Neurological Disorders and Stroke, U.S.A., R01 NS078680-01A1,
Role: Staff Scientist. USD-452,668 (2012-2017)

National Institute of Mental Health, U.S.A., 1R21 MH095009-01A1,
Role: Collaborator. USD-150,000 (2012-2014)

National Institute of Neurological Disorders and Stroke, U.S.A., 5R01 NS044375-09,
Role: Co-Investigator. USD-1,677,262 (2002-2013)

National Institute of Biomedical Imaging and Bioengineering, U.S.A., 5R01 EB000461-11,
Role: Instructor. USD-1,054,113 (2008-2013)

PUBLISHED ABSTRACTS & CONFERENCE PRESENTATIONS

Invited Presentations

2016 West Lake Ultra-high Field MRI conference

2015 Zhejiang University-Siemens MR R&D Collaboration Workshop

2015 The 6th FAONS Congress and The 11th Biennial Conference of CNS

2014 Annual Meeting of Chinese Society of Magnetic Resonance in Medical

2012 Infrared Neural Stimulation Summit, Nashville, TN

2012 Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

2012 Peking University, School of Life Science, Beijing, China

2012 Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China

2012 Tsinghua University, Department of Biomedical Engineering, Beijing, China

Symposium Organizer

Asia-Pacific Conference on Vision 2018; Binocular depth perception.

Session Chair

Asia-Pacific Conference on Vision 2018; Neural Mechanism

Conference presentations

- Chen G**, Cayce JM, Ye X, Jansen ED, Mahadevan-Jansen A, Roe AW “Optical control the visual perception of awake non-human primate with infrared neural stimulation.” Talk delivered at SPIE Photonics West Annual Meeting. San Francisco, CA. (2013)
- Chernov M, **Chen G**, Roe AW “Histological assessment of thermal damage thresholds for infrared neural stimulation of the brain.” Talk delivered at SPIE Photonics West Annual Meeting. San Francisco, CA. (2013)
- Chen G**, Cayce JM, Friedman RM, Wang F, Tang C, Jansen ED, Mahadevan-Jansen A, Gore JC, Roe AW “Functional tract tracing in non-human primates using pulsed infrared laser light with optical imaging and fMRI.” Poster delivered at the Society for Neuroscience Annual Meeting. New Orleans, LA. (2012)
- Chen G**, Wang F, Gore JC, Roe AW “The spatial and temporal limits of brain mapping in awake subjects: an alert primate MRI study.” Poster delivered at the Organization for Human Brain Mapping Annual Meeting. Beijing, China. (2012)
- Chen, G**, Cayce, J., Friedman, R.M., Mahadevan-Jansen A, Jansen ED, Roe AW “fMRI mapping of cortical networks in primates with laser stimulation.” Talk delivered at the International Society for Optics and Photonics-Photonics West Annual Meeting. San Francisco, CA. (2012)
- Chen G**, Wang F, Gore JC, Roe AW “Layer-specific BOLD activation in V1 revealed by ultra-high spatial resolution functional magnetic resonance imaging in awake monkeys.” Poster delivered at the Society for Neuroscience Annual Meeting. Washington, DC. (2011)
- Chen G**, Wang F, Gore JC, Roe AW “Ultra high resolution MRI in vivo histology visualizes cortical layers of visual cortex in awake monkeys. (2011).” Poster delivered at the Frontiers of Biomedical Imaging Science III conference. Nashville, TN. (2011)
- Chen G**, Wang F, Dillenburger BC, Chen LM, Gore JC, Avison MJ, Roe AW “Extensive training and multi-shot sequences improve the image quality of functional MRI from awake no-human primates at a 4.7 Tesla high-field vertical scanner.” Poster delivered at the Society for Neuroscience Annual Meeting. San Diego, CA. (2010)
- Chen G**, Lu HD, Roe AW “Energy model with population extension explains the achievement of binocular correspondence.” Poster delivered at the Society for Neuroscience Annual Meeting. Chicago, IL. (2009)
- Lu HD, **Chen G**, Roe AW “What’s motion doing in V4?” Poster delivered at the Society for Neuroscience Annual Meeting. Chicago, IL. (2009)
- Chen G**, Lu HD, Roe AW “Why maps for horizontal disparity exist in V2 not in V1.” Poster delivered at the Society for Neuroscience Annual Meeting. Washington, DC. (2008)
- Lu HD, **Chen G**, Roe AW “The positive component of the intrinsic optical signal is not domain-specific.” Poster delivered at the Society for Neuroscience Annual Meeting. Washington, DC. (2008)
- Tanigawa H, Lu HD, **Chen G**, Roe AW “Functional subdivisions in macaque V4 revealed by optical imaging in the behaving Macaque monkey.” Talk delivered at the Vision Sciences Society Annual Meeting. Sarasota, FL. (2008)
- Chen G**, Lu HD, Tanigawa H, Roe AW “Stereo matching problem is resolved at population level in the early stage of extrastriate visual cortex.” Poster delivered at the Vision Sciences Society Annual Meeting. Sarasota, FL. (2008)
- Tanigawa H, Lu HD, **Chen G**, Roe AW “Functional organization of foveal V4 revealed by optical imaging in the behaving Macaque monkey.” Talk delivered at the Society for Neuroscience Annual Meeting. San Diego, CA. (2007)
- Lu HD, **Chen G.**, Roe AW “A map for motion streaks in V1 and V2.” Talk delivered at the Society for Neuroscience Annual Meeting. San Diego, CA. (2007)
- Roe AW, Tanigawa H, Lu HD, **Chen G** “Functional organization of foveal V4 revealed by optical imaging in the behaving Macaque monkey.” Talk delivered at Vision Down Under. Cairns, Australia. (2007)
- Chen G**, Lu HD, Roe AW “Functional architecture of macaque cortical area V2 for depth surfaces revealed by optical imaging.” Talk delivered at the Society for Neuroscience Annual Meeting. Atlanta, GA. (2006)
- Roe AW, **Chen G**, Lu HD “A rapid topographic mapping and eye convergence method by optical imaging of

small spots in anesthetized Macaque visual cortex.” Talk delivered at the Society for Neuroscience Annual Meeting. Atlanta, GA. (2006)

Lu HD, **Chen G**, Kaskan P, Roe AW “Comparison of color and luminance contrast response in V2 thin stripes.” Poster delivered at the Vision Sciences Society Annual Meeting. Sarasota, FL. (2006)

GRADUATE STUDENTS and POSTDOCTORAL RESEARCHERS under my supervision

Current:

- Yin, Hong (2014 – present, PhD student) Functional organization of binocular vision (two-photon imaging in anesthetized macaque monkeys).
- Tian, Feiyan (2015 – present, PhD student) Optical control of functional organization of binocular vision in anesthetized and awake, behaving macaque monkeys.
- Yu, Yuan (2016 – present, PhD student) Functional organization of binocular vision (long-term two-photon imaging in awake macaque monkeys).
- Fu, Peng (2016 – present, PhD student) Functional optical imaging in awake macaque monkeys.
- Meilan Liu (2017 - present, PhD student) Attending classes.

Post-doc Review Committees

- Xu, Xinxiu (Qiushi Academy for Advanced Studies, Zhejiang University)
Hu, Jiaming (Qiushi Academy for Advanced Studies, Zhejiang University)

Graduate Dissertation Committees

- Yang, Hongbin (Medical School, Zhejiang University)
Yang, Junhua (Medical School, Zhejiang University)
Sheng, Weida (Medical School, Zhejiang University)
Wang, Shaowei (College of Optical Science and Engineering, Zhejiang University)
Zhu, Zhengfeng (College of Optical Science and Engineering, Zhejiang University)

Graduate Mid-term Review Committees

- Mekbib, Destraw B. (Qiushi Academy for Advanced Studies, Zhejiang University)
Gao, Yang (Qiushi Academy for Advanced Studies, Zhejiang University)
Qian, Meizhen (Qiushi Academy for Advanced Studies, Zhejiang University)
Zhai, Yuying (Qiushi Academy for Advanced Studies, Zhejiang University)

SERVICE

2016 – present Zhejiang University Institutional Animal Care and Use Committee (NHP)

PROFESSION

Review Committees

- 2018 Zhejiang Provincial Natural Science Foundation of China
2018 Asia-Pacific Conference on Vision
2017-present Chinese National Science Foundation
2011 National Science Foundation, EAPSI Panel, ad hoc

Journal Reviewer

2007 – present Ad hoc reviewer for PLoS Biology, Neuroimage, Neuroreport, Neuroscience Letter, Brain Research Bulletin, Ophthalmic and Physiological Optics, Magnetic Resonance Imaging

Professional Organizations

Society for Neuroscience

International Society for Optics and Photonics

Organization for Human Brain Mapping

Vision Science Society

TEACHING

COURSES

System Neuroscience. Instructor. 2015 - present.

Seminar: Techniques and Methods in Neurobiological Research (Beijing Normal University). Instructor. 2015.