

Guanghan MENG, Ph.D.

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Education and Training

Postdoc, University of California Berkeley 2021 – present

Department of Electrical Engineering and Computer Science

Center for Innovation in Vision and Optics (CIVO)

Advisor: Laura Waller; Co-advisors: Martin S. Banks, Austin Roorda

Research projects:

“Depth-multiplexing spectral domain optical coherence tomography for full eye length imaging”

‘The predictions of perceived motion artifacts on modern displays’

Ph.D., University of California Berkeley 2017 – 2021

Major: Molecular and Cell Biology - Neurobiology

Advisor: Na Ji

Thesis title: *“High-throughput volumetric imaging of neural dynamics in vivo”*

Other project: *“Two-photon fluorescence imaging of the mouse cerebral blood circulation at 1MHz”*

Ph.D. student, Johns Hopkins University & Janelia Research Campus 2015 – 2017

Thesis Advisor: Na Ji; Rotation advisors: Dwight Bergles, King-Wai Yau

B.S., Shanghai Jiao Tong University, P.R. China 2011 – 2015

Major: Biomedical Engineering

Publications

Submitted Preprints:

Meng, G.*, Zhang, A. *, Feroldi, F., Roorda, A., Waller, L. “Depth-multiplexing spectral domain OCT for full eye length imaging with a single modulation unit” doi.org/10.48550/arXiv.2311.17824 (Meng G. and Waller, L. on provisional patent BK-2024-019) (2023) **These authors contributed equally*

Meng, G.*, Galor, D. *, Waller, L., Banks, M., “BiPMAP: A toolbox for predictions of perceived motion artifacts on modern displays” doi.org/10.48550/arXiv.2212.03854 (under revision at *ACM Transactions on Graphics*) (2022) **These authors contributed equally*

Published journal articles:

Meng, G., Zhong, J., Zhang, Q., Wu, J., Ji, N. “Ultrafast two-photon fluorescence imaging of cerebral blood circulation in the mouse brain *in vivo*”. *Proceedings of the National Academy of Science* (2022).

Lu, R. *, Liang, Y. *, Meng, G.*, Zhou, P., Svoboda, K., Paninski, L., Ji, N. “Rapid mesoscale volumetric imaging of neural activity with synaptic resolution”. *Nature Methods* (2020) **These authors contributed equally*

Meng, G., Liang, Y., Sarsfield, S., Jiang, W. C., Lu, R., Dudman, J. T., Aponte, Y. & Ji, N. High-throughput synapse-resolving two-photon fluorescence microendoscopy for deep-brain volumetric imaging *in vivo*. *Elife* (2019)

Broussard, G. J., Liang, Y., Fridman, M., Unger, E. K., Meng, G., Xiao, X., Ji, N., Petreanu, L. & Tian, L. In vivo measurement of afferent activity with axon-specific calcium imaging. *Nature Neuroscience* (2018).

Book chapter:

Meng, G.*, Zhang, Q. *, Ji, N., ‘Chapter 10: High-speed neural imaging with synaptic resolution: Bessel focus scanning two-photon microscopy and optical-sectioning widefield microscopy’ in ‘All-optical methods to study neuronal function’, *Neuromethods*, Humana Press (2023) **These authors contributed equally*

Teaching and Mentoring Experiences

Graduate student mentor	Spring 2023 - present
Mentees: Zahra Khodabakhshi Fard (PhD student in Applied Physics) Leo Han (Rotation PhD student in Computational Biology)	
Undergraduate Research Apprentice Program (URAP) mentor	Spring 2023 - present
Mentees: Andrew Zhang (co-author on a submitted preprint), William Xu	
CIVO undergraduate mentor	2021 – 2023
Mentees: Dekel Galor (co-author on a preprint under revision, current UC Berkeley PhD student in EECS) Ryan Mei (current MIT PhD student in EECS)	
Strobe Summer Undergraduate Research Scholar (SURS) program mentor	Summer 2022
Mentee: Clara Hung (first author and presenting author - poster in Strobe SURS meeting, intern at Apple)	
Graduate Teaching Assistant: Biophysical Neurobiology	Fall 2018
Training certificate: ‘Scientists Teaching Science’, instructor: Barbara Houtz	2017

Diversity, Equity & Inclusion (DEI)

DEI Co-Chair, Berkeley Postdoc Association (BPA)	2022 – 2023
Bay Area Scientists Inspiring Students (BASIS) outreach teacher	2021 – 2023

Selected Honors and Awards

Invited lecturer, 17 th Summer School Frontiers in Neuromics, Québec City, Canada	2024
Meet the Faculty Candidate Forum, BME Society (BMES) annual meeting	2023
CIVO postdoc fellowship	2021-2023
SPIE Photonics West BIOS nac Image Technology Best Presentation Award	2021
Best poster award, Berkeley Advanced Imaging Methods (AIM) Workshop	2020
Best undergraduate thesis, SJTU school of BME, China	2015
National Scholarship, SJTU, China	2012

Conference Presentations and Invited Talks

‘Depth-multiplexing spectral domain OCT for full eye length imaging’, Oral presentation, Computational Optical Sensing and Imaging (COSI), Optica Imaging Congress, Boston, MA, 2023
‘Kilohertz full-frame two-photon imaging of cortical hemodynamics <i>in vivo</i> ’, Poster presentation, BRAIN Initiative Annual Investigator Meeting (virtual), 2021
‘Kilohertz full-frame two-photon imaging of cortical hemodynamics <i>in vivo</i> ’, Oral presentation, SPIE Photonics West BIOS High-Speed Biomedical Imaging and Spectroscopy (virtual), 2021
‘High-throughput two-photon fluorescence imaging of brain dynamics <i>in vivo</i> ’, Invited talk, UC Santa Cruz NeuroClub (virtual), 2020
‘Two-photon fluorescence imaging of brain dynamics <i>in vivo</i> at high temporal resolution’, Invited talk, Berkeley Center for Computational Imaging Lunch Seminar Series (virtual), 2020
‘Rapid mesoscale volumetric imaging of neural activity with synaptic resolution’, Poster presentation, Berkeley Advanced Imaging Methods (AIM) Workshop, Berkeley, CA, 2020
‘Rapid mesoscale volumetric imaging of neural activity with synaptic resolution’, Poster presentation, BRAIN Initiative Annual Investigator Meeting, North Bethesda, MD, 2019
‘Rapid mesoscale volumetric imaging of neural activity with synaptic resolution’, Oral presentation, UC Berkeley Biophysics Annual Meeting, Berkeley, CA, 2019
‘High-throughput synapse-resolving two-photon fluorescence microendoscopy for deep-brain volumetric imaging <i>in vivo</i> ’, Invited talk, MCB Departmental Neurodinner, Berkeley, CA, 2019
‘High-throughput synapse-resolving two-photon fluorescence microendoscopy for deep-brain volumetric imaging <i>in vivo</i> ’, Poster presentation, BRAIN Initiative Annual Investigator Meeting, North Bethesda, MD, 2018