# BING-XING HUO, Ph.D.

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## ACADEMIC POSITIONS

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| **2022.5 – present** | **Principal Investigator**, **Associate Director** of Data Strategy and Alliances |
| | Data Sciences Platform, BROAD INSTITUTE OF MIT AND HARVARD |
| 2022.5 – 2023.5 | Research Consultant, COLD SPRING HARBOR LABORATORY |
| 2019.1 – 2022.4 | Computational Science Manager, COLD SPRING HARBOR LABORATORY |
| 2015.7 – 2019.1 | Research Scientist, Brain Science Institute, RIKEN, Japan |
| | (*Joint appointment*) Collaborative Scientist, COLD SPRING HARBOR LABORATORY |
| 2015.2 – 2015.6 | Postdoctoral Scholar, Center for Neural Engineering, PENNSYLVANIA STATE UNIVERSITY |
| 2010.8 – 2014.12 | Research Assistant, Center for Neural Engineering, PENNSYLVANIA STATE UNIVERSITY |

## EDUCATION

Ph.D., Neural Engineering, Pennsylvania State University, 2010-2014

M.S., Computational Neuroscience, New York University, 2008-2010

M.A., Economics, Boston University, 2006-2007

B.Sc., Mathematics and Physics (*double major*), The University of Hong Kong, 2003-2006
(*Joint program*) Software Engineering, Tsinghua University, 2002-2003

## ACTIVE RESEARCH SUPPORT

NIH/NIMH RF1MH133777, 8/2023-8/2026
*A scalable cloud-based framework for multi-modal mapping across single neuron omics, morphology and electrophysiology.*
$ 2,415,243. Role: PI (20%).

NIH/NCI 17X149-Q12, 7/2023 – 10/2024
*Cancer Data Aggregator*
$ 2,117,776. Role: PI (10%).

NIH/NCI 17X149-F9, 8/2023 – 10/2024
*Cancer Research Data Commons - Cloud Resources*
$ 500,000. Role: PI (3%).

NIH/NIMH R24MH114788, 1/2024 – 12/2024
*The Neuroscience Multi-omic Data Archive (NeMO)*
$ 346,169. Role: co-I (8%). (Contact PI: Owen White, University of Maryland, Baltimore)

NIH/NHLBI U24HL148865, 9/2024 – 7/2029
*Molecular Atlas of Lung Development Program (LungMAP) Phase 3 – Data Coordinating Center*
$ 800,000. Role: Site PI (10%). (Contact PI: Nathan Salamonis, Cincinnati Children's Hospital Medical Center)

## COMPLETED RESEARCH PROJECTS

NIH/NHLBI U24HL148865, 8/2022-7/2024
*The LungMAP Data Coordination Center for Next Gen Systems Biology of Respiration.*
$ 320,000. Role: Subaward PI (15%). (Contact PI: Bruce Aronow, Cincinnati Children's Hospital Medical Center)

## PUBLICATIONS

Mezias C[*], **Huo B-X**[*], Bota M, Jayakumar J, Mitra PP. (2024) "Establishing neuroanatomical correspondences across mouse and marmoset brain structures." *Under Review*.

Hawrylycz M, *et al*. (2023) "A guide to the BRAIN Initiative Cell Census Network data ecosystem." *PLOS Biol*. *21(6):e3002133*.

Gaddis N, *et al*. (2022) "LungMAP Portal Ecosystem: Systems-Level Exploration of the Lung." *Am J Respir Cell Mol Biol*. *Online ahead of print*.

Ascoli GA, **Huo B-X**[†], Mitra PP. (2022) "Sizing up whole-brain neuronal tracing." *Science Bulletin* 67(9):883-884.

BRAIN Initiative Cell Census Network (BICCN). (2021) "A multimodal cell census and atlas of the mammalian primary motor cortex." *Nature* 598, 86–102.

Muñoz-Castaneda R, *et al*. (2021) "Cellular anatomy of the mouse primary motor cortex." *Nature*. 598:159–66.

Wang D, Magee L, **Huo B-X**, Banerjee S, Li X, Wang Y, Mitra PP. (2020) "Detection and Skeletonization of tracer injections using topological methods.". *arxiv*: 2004.02755

Tward DJ, Li X, **Huo B-X**, Lee BC, Miller MI, Mitra PP. (2020) "Solving the where problem in neuroanatomy: a generative framework with learned mappings to register multimodal, incomplete data into a reference brain." *bioRxiv* 2020.03.22.002618.

Banerjee S, Wang D, Magee L, Li X, **Huo B-X**, Mathos K, Jayakumar J, Lin MK, Huang JZ, Wang Y, Mitra PP. (2020) "Semantic segmentation of microscopic neuroanatomical data by combining topological priors with encoder-decoder deep networks." *Nature Machine Intelligence* **2**, 585–594.

Tward DJ, Lee BC, Li X, **Huo B-X**, Mitra PP, Miller M. (2019). "3D mapping of serial histology sections with anomalies using a novel robust deformable registration algorithm." *MICCAI MFCA 2019* pp. 162-173.

**Huo B-X**[*], Zeater N[*], Lin MK, Takahashi YS, Hanada M, Nagashima J, Lee BC, Grünert U, Miller MI, Rosa MGP, Okano H, Martin PR, Mitra PP. (2019) "Relation of koniocellular layers of dorsal lateral geniculate to inferior pulvinar nuclei in common marmosets." *Eur J Neurosci* 2019; 00: 1– 14.

Lin MK, Takahashi YS, **Huo B-X**, Hanada M, Nagashima J, Hata J, Tolpygo AS, Ram K, Lee BC, Miller MI, Rosa MGP, Sasaki E, Iriki A, Okano H, Mitra PP. (2019). "A High-throughput neurohistological pipeline for brain-wide mesoscale connectivity mapping of the common marmoset." *eLife* 8: 72.

Majka P, Rosa MGP, Bai S, Chan JM, **Huo B-X**, Jermakow N, Lin MK, Takahashi YS, Wolkowicz IH, Worthy KH, Rajan R, Reser DH, Wójcik DK, Okano H, Mitra PP. (2018). "Unidirectional monosynaptic connections from auditory areas to the primary visual cortex in the marmoset monkey." *Brain Structure and Function*, 1-21.

**Huo B-X**, Greene SE & Drew PJ. (2015) "Venous cerebral blood volume increase during voluntary locomotion reflects cardiovascular changes." *NeuroImage* 118: 301-12.

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[*] Joint first author/Equal contribution.
[†] Corresponding author.

**Huo B-X**, Gao Y-R & Drew, PJ. (2015) "Quantitative separation of arterial and venous cerebral blood volume increases during voluntary locomotion." *NeuroImage* 105: 369-79.

Shirey MJ, Smith JB, Kudlik DE, **Huo B-X**, Greene SE & Drew PJ. (2015) "Brief anesthesia, but not voluntary locomotion, significantly alters cortical temperature." *J Neurophys* 114(1): 309-22.

**Huo B-X**, Smith JB & Drew PJ. (2014). "Neurovascular coupling and decoupling in the cortex during voluntary locomotion." *J Neurosci* 34 (33): 10975-81.

## CONFERENCE ORGANIZATION

SCORCH Consortium Meetings, 2023, 2024

INCF Workshop, Neuroinformatics Assembly 2023

Nano-Symposium, Society for Neuroscience, 2018, 2019

U.S.-China Civil Strategic Dialogue, Washington, DC, 2017, 2019

Pacific Health Summit, Seattle, WA, 2009

Healthcare Panel, Harvard China Review Conference, Cambridge, MA, 2008

International Conference for Hospital Presidents, China, 2007