

Mai-Anh T. Vu

Boston University
610 Commonwealth Avenue
Boston, MA 02215

maianhvu@bu.edu
www.mai-anh.com

Education & Training

- 2018 - present **Boston University**
NIH Brain Initiative Postdoctoral Fellow
Mentor: Mark Howe, PhD
- 2018 **Duke University**
PhD, Neurobiology; Certificates: Cognitive Neuroscience, College Teaching
Mentors: R. Alison Adcock, MD, PhD & Kafui Dzirasa, MD, PhD
- 2009 **Yale University**
BA, Cognitive Science

Awards, Fellowships & Funding

- 2019-2022 **NIH Brain Initiative Postdoctoral National Research Service Award (NRSA)**
- 2018 Duke University Dean's Award for Excellence in Teaching
- 2017-2018 Duke University Katherine Goodman Stern Fellowship
- 2015-2016 Duke Scholar in Molecular Medicine
- 2013-2017 **National Science Foundation Graduate Research Fellowship Award (GRFP)**
- 2012-2016 Duke University James B. Duke Fellowship
- 2012 Duke University Chancellor's Fellowship

Research Appointments

- 2018-present NIH Postdoctoral Fellow, Boston University
Howe Lab (Mark Howe, PhD)
- 2012-2018 Graduate Research Assistant, Duke University
Motivated Memory Lab (R. Alison Adcock, MD, PhD)
Lab for Psychiatric Neuroengineering (Kafui Dzirasa, MD, PhD)
- 2009-2012 Research Assistant, Harvard Medical School
Psychiatry Neuroimaging Laboratory, (Martha E. Shenton, PhD)
- 2006-2008 Undergraduate Research Assistant
Arnsten Lab (Amy F. T. Arnsten, PhD), Yale University
Schacter Memory Lab (Daniel L. Schacter, PhD), Harvard University

Publications

1. Brown EH, Zi D, **Vu MT**, Bouabid S, Lindsey J, Godfrey-Nwachukwu C, Attarwala A, Litwin-Kumar A, DePasquale B, Howe MW. [Spatially organized striatal neuromodulator release encodes trajectory errors](#). *bioRxiv*; 2024.

2. Bouabid S, Zhang L, **Vu MT**, Tang K, Graham BM, Noggle CA, Howe MW. [Spatially organized striatum-wide acetylcholine dynamics for the learning and extinction of Pavlovian cues and actions.](#) *bioRxiv*; 2024.
3. **Vu MT**, Brown EH, Wen MJ, Noggle CA, Zhang Z, Monk KJ, Bouabid S, Mroz L, Graham BM, Zhuo Y, Li Y, Otchy TM, Tian L, Davison IG, Boas DA, Howe MW. [Targeted micro-fiber arrays for measuring and manipulating localized multi-scale neural dynamics over large, deep brain volumes during behavior.](#) *Neuron* 2024; 112(6):909-923.e9.
4. Poh J-H, **Vu MT**, Stanek JK, Hsiung A, Egnér T, Adcock RA. [Hippocampal convergence during anticipatory midbrain activation promotes subsequent memory formation.](#) *Nature Communications* 2022; 13: 6729.
5. Chiew KS, Hashemi J, Gans LK, Lerebours L, Clement NJ, **Vu MT**, Sapiro G, Heller NE, Adcock RA. [Motivational valence alters memory formation without altering exploration of a real-life spatial environment.](#) *PLoS One* 2018; 13(3): e0193506.
6. Hultman R*, Ulrich K*, Sachs BD, Blount C, Carlson DE, Ndubuizu N, Bagot RC, Parise EM, **Vu MT**, Gallagher NM, Wang J, Silva AJ, Deisseroth K, Mague SD, Caron MG, Nestler EJ, Carin L+, Dzirasa K+. [Brain-wide electrical spatiotemporal dynamics encode depression vulnerability.](#) *Cell* 2018; 173(1):166-180.e14. *+denote equally contributing authors
7. **Vu MT**, Adali T, Ba D, Buzsáki G, Carlson D, Heller K, Liston C, Rudin C, Sohal VS, Widge A, Mayberg H, Sapiro G, Dzirasa K. [A Shared Vision for Machine Learning in Neuroscience.](#) *The Journal of Neuroscience* 2018; 38(7):1601-1607.
8. Carlson D*, David LK*, Gallagher NM*, **Vu MT***, Shirley M, Hultman R, Wang J, Burrus C, McClung CA, Kumar S, Carin L, Mague SD, Dzirasa K. [Dynamically-timed stimulation of corticolimbic circuitry activates a stress-compensatory pathway.](#) *Biological Psychiatry* 2017; 82(12):904-913. *denotes equally contributing authors
9. Schaich Borg J*, **Vu M***, Badea C, Badea A, Johnson GA, Dzirasa K. [Localization of metal electrodes in the intact rat brain using registration of 3-D micro-computed tomography images to a magnetic resonance histology atlas.](#) *eNeuro* 2015; 2(4). *denotes equally contributing authors
10. Kikinis K, Fitzimmons J, Dunn C, **Vu MA**, Makris N, Bouix S, Goldstein JM, Meshulam-Gately RI, Petryshen T, Del Re EC, Wojcik J, Seidman LJ, Kubicki M. [Anterior commissural white matter fiber abnormalities in first-episode psychosis: a tractography study.](#) *Schizophrenia Bulletin* 2015; 162(1-3):29-34.
11. Hütlova J, Kikinis Z, Kerkovský M, Bouix S, **Vu MA**, Makris N, Shenton M, Kaspárek T. [Abnormalities in Myelination of the Superior Cerebellar Peduncle in Patients with Schizophrenia and Deficits in Movement Sequencing.](#) *The Cerebellum* 2014: 1-10.
12. **Vu MT**, Thermenos HW, Terry DP, Wolfe DJ, Voglmaier MM, Niznikiewicz MA, McCarley RW, Seidman LJ, Dickey CC. [Functional differences during working memory in schizotypal personality disorder: fMRI activation and deactivation differences.](#) *Schizophrenia Research* 2013; 151(1):113-123.
13. Addis DR, Giovanello KS, **Vu MT**, Schacter DL. [Age-related changes in prefrontal and hippocampal contributions to relational encoding.](#) *Neuroimage* 2014; 84:19-26.
14. Clemm von Hohenberg C, Pasternak O, Kubicki M, Ballinger T, **Vu M**, Swisher T, Green K, Giwerc K, Dahlben B, Goldstein JM, Woo TW, Petryshen TL, Meshulam-Gately RI, Woodberry KA, Thermenos HW, Mulert C, McCarley RW, Seidman LJ, Shenton ME. [White Matter Microstructure in Individuals at Clinical High Risk of Psychosis: A Whole-Brain Diffusion Tensor Imaging Study.](#) *Schizophrenia Bulletin* 2014; 40(4):895-903.

15. Dickey CC, **Vu M-A T**, Voglmaier MM, Niznikiewicz MA, McCarley RW, Panych LP. [Prosodic abnormalities in schizotypal personality disorder](#). *Schizophrenia Research* 2012; 142(1-3):20-30.
16. Shenton ME, Hamoda H, Schneiderman J, Bouix S, Pasternak O, Rathi Y, **Vu M-A**, Purohit MP, Helmer K, Koerte I, Lin AP, Westin C-F, Kikinis R, Kubicki M, Stern RA, Zafonte R. [A review of magnetic resonance imaging and diffusion tensor imaging findings in mild traumatic brain injury](#). *Brain Imaging and Behavior* 2012; 6:137-192.
17. Addis DR, Pan L, **Vu MA**, Laiser N, Schacter DL. [Constructive episodic simulation of the future and the past: distinct subsystems of a core brain network mediate imagining and remembering](#). *Neuropsychologia* 2009; 47(11):2222-38.
18. Hains AB, **Vu MA**, Maciejewski PK, van Dyck CH, Gottron M, Arnsten AF. [Inhibition of protein kinase C signaling protects prefrontal cortex dendritic spines and cognition from the effects of chronic stress](#). *Proceedings of the National Academy of Science USA* 2009; 106(42):17957-62.
19. Brennan AR, Dolinsky B, **Vu MA**, Stanley M, Yeckel MF, Arnsten AF. [Blockade of IP3-mediated SK channel signaling in the rat medial prefrontal cortex improves spatial working memory](#). *Learning & Memory* 2008;15(3):93-6.

Recent Talks and Presented Abstracts

1. Spatiotemporal Organization of Striatum-Wide Dopamine and Acetylcholine Signaling During Locomotion in Healthy and Parkinsonian States Revealed by Optical Microfiber Arrays. Poster, *Aligning Science Across Parkinson's (ASAP) annual Celebration of Scientific Achievement*, Virtual, May 2024.
2. Striatal spatiotemporal heterogeneity in learning-related changes in dopamine signals to Pavlovian cues. Conference talk, *Boston University Center for Systems Neuroscience Neuromodulation Symposium "Neurotransmission is lit!: Monitoring acetylcholine and monoamine dynamics during behavior"*, Boston, MA, USA, May 2024.
3. Multi-fiber photometry reveals dynamic changes in the coordination of striatum-wide dopamine and acetylcholine release. Invited talk, *Brandeis University Computational Neuroscience Journal Club*. Waltham, MA, USA, Apr 2024.
4. Multi-fiber photometry reveals dynamic changes in the coordination of striatum-wide dopamine release. Panel talk, *Winter Conference on Brain Research*. Breckenridge, CO, USA, Jan 2024.

Teaching, Mentorship, & Service

I have served as teaching assistant for 2 Duke University undergraduate courses: Cellular & Molecular Neurobiology (~100 students) and Brain & Behavior: Translating Neuroscience (~50 students). I have also given guest lectures for courses at Duke University, Purdue University, and Boston University, on topics such as reinforcement learning and studies on human motivation.

I have formally mentored 14 undergraduate students (3 did senior thesis projects, 6 continued on as lab technicians, 2 continued in the lab as graduate students), 2 lab technicians, and 3 high school students.

My service has included outreach-oriented service such as leading workshops at local schools, graduate student-oriented service such as coordinating an interdepartmental graduate consortium, department-oriented service such as serving on diversity & inclusion and strategic planning committees, and science community-oriented service such as serving on the 2022 Brain Initiative Meeting planning committee.