Thomas M. Morin, Ph.D.

www.tmmorin.com
tmorin2@mgh.harvard.edu
tommorin@brandeis.edu
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Academic History

July 2022-Present	**A. A. Martinos Center for Biomedical Imaging** **Massachusetts General Hospital** **Department of Radiology** Postdoctoral Research Fellow Mentors: Jacob Hooker, PhD & Nicole Zürcher, PhD
July 2022-Present	**Brandeis University** **Department of Neuroscience** Visiting Research Scientist Mentor*:* Anne Berry, PhD
Fall 2022	**Tufts University** **Department of Psychology** Lecturer
2017-2022	**Boston University** Ph.D., Computational Neuroscience Mentor: Chantal Stern, DPhil
2013-2017	**Tufts University** B.S., *magna cum laude*, Thesis Honors Cognitive & Brain Science, Computer Science

Funding

2024-2027	**National Institute of Aging** F32 AG084259, Ruth L. Kirschstein Postdoctoral National Research Service Award Fellow, *Conjoint Effects of Dopamine and Tau on Cognition in Aging*
2024-2026	**National Institute of Aging** L30 AG089518, National Loan Repayment Program Award *Dopamine, Tau, and Memory in Aging: An Integrative Investigation*

Honors & Awards

2025	Sallie P. Asche Travel Award, Dallas Aging and Cognition Conference
2024	ReproNim/International Neuroinformatics Coordinating Facility (INCF) Fellow
2023	Travel Award, 4th Workshop on Reserve & Resilience in Cognitive Aging & Dementia
2022	First Prize, Russek Student Achievement Award*,* BU Grad. Prog. for Neuro.
2020	Third Prize, BU Grad. Prog. for Neuro. Recruitment Poster Session
2017	Honorable Mention, NSF Graduate Research Fellowship Program
2017	Joanne Mary Sullivan Prize, Tufts University Psychology Department
2017	Barton Term Scholar for Arts and Sciences, Tufts University
2016	People's Choice Award for Best Presentation, Out for Undergrad Conference

2016 Greg Ellenoff Internship Grant, Tufts University Career Center
2016 Psy Chi Honor Society

Publications

Selected manuscript PDFs are available at https://www.tmmorin.com/work

Morin, T.M., Allan, N., Coutts, J., Hooker, J.M., Langille, M., Metcalfe, A., Thamboo, A., Jackson, J., Sharma, M., Rees, T., Enright, K., & Irving, K. (2024). Laminar fluid ejection for olfactory drug delivery: In-vitro and in-vivo tests. *IEEE Journal of Translational Engineering in Health and Medicine*. 12, 727-738. https://doi.org/10.1109/JTEHM.2024.3503498

Ciampa, C.J., **Morin, T.M.**, Murphy, A., La Joie, R., Jagust, W.J., Landau, S.M., & Berry, A.S. (2024). DAT1 and BDNF polymorphisms interact to predict AB and tau pathology. *Neurobiology of Aging*. 133, 115-124. https://doi.org/10.1016/j.neurobiolaging.2023.10.009

Isenburg, K.I., **Morin, T.M.**, Rosen, M.L., Somers, D.C., & Stern, C.E. (2023). Default mode precuneus and its role in long term memory-guided versus stimulus-guided attention. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhad073

Morin, T.M., Moore, K.N., Isenburg, K.I., Ma, W., & Stern, C.E. (2023). Functional reconfiguration of task-active frontoparietal cortex facilitates abstract reasoning. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhac457

Morin, T.M., Chang, A.E., Ma, W., McGuire, J.T. & Stern, C.E. (2021). Dynamic network analysis demonstrates the formation of stable functional networks during rule learning. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhab175

Gilbert, T.M., Zurcher, N.R., Wu, C.J., Bhanot, A., Hightower, B.G., Kim, M., Albrecht, D.S., Wey, H.Y., Schroeder, F.A., Rodriguez-Thompson, A., **Morin, T.M.**, Hart, K.L., Pellegrini, A.M., Riley, M.M., Wang, C., Stufflebeam, S.M., Haggarty, S.J., Holt, D.J., Loggia, M.L., Perlis, R.H., Brown, H.E., Roffman, J.L., Hooker, J.M. (2019). PET neuroimaging reveals histone deacetylase dysregulation in schizophrenia. *The Journal of Clinical Investigation*. https://doi.org/10.1172/JCI123743

Strebl, M.G., Campbell, A., Zhao, W.N., Riley, M.M., Chindavong, P., **Morin, T.M.**, Haggarty, S.J., Wagner, F.F., Ritter, T., Hooker, J.M. (2017). HDAC6 Brain Mapping with [^{18}F]Bavarostat Enabled by a Ru-Mediated Deoxyfluorination. *ACS Central Science*. 3(9), 1006-1014 http:/dx.doi.org/ 10.1021/acscentsci.7b00274

Placzek, M.S., Zhao, W., Wey, H.Y., **Morin, T.M.**, & Hooker, J.M. (2016). PET neurochemical imaging modes. *Seminars in Nuclear Medicine*, 46(1), 20-27 http://dx.doi.org/10.1053/j.semnuclmed.2015.09.001

Preprints

Do, Q., **Morin, T.M.**, Stern, C.E., & Hasselmo, M.E. (2024). A feature-based generalizable prediction model for both perceptual and abstract reasoning. *arXiv preprint*. https://arxiv.org/abs/2403.05641.

Manuscripts in Preparation

Morin, T.M., Dunne, M.F., Chang, A.E., & Stern, C.E. Hierarchical gradients in prefrontal cortex and hippocampus support context-dependent rule learning *(in prep.)*

Morin, T.M., Cowan, J.L., Chen, H.Y., Parent, J., Crawford, J.L., Tennant, V., Whitman, A.J., Swinneton, K.N., Hsu, M., Berry, A.S., & Jagust, W.J. Dopamine-driven memory effects in healthy aging and preclinical Alzheimer's disease. *(in prep.)*

Conference Papers

Selected papers are available at https://www.tmmorin.com/work

Isenburg, K.M., Liu, Y., **Morin, T.M.**, & Stern, C.E. *Connectome Fingerprinting Predicts Prefrontal Cortical Activation During Abstract Reasoning*. Cognitive Computational Neuroscience. 2024. Boston, MA.

Conference Presentations & Invited Talks

Selected presentation slides are available at https://www.tmmorin.com/work

Morin, T.M. *Aging with a Smile: How Dopamine Synthesis Capacity and Alzheimer's Pathology Shape Memory for Rewards.* Neuroscience Postdoc Symposium. 2024. Brandeis University, Waltham, MA.

Morin, T.M. *Deciphering Dopamine: The Aging Brain's Unsolved Riddle*. Beacon Hill Seminars. 2023. Webinar.

Morin, T.M. *Functional reconfiguration of anterior hippocampus during context-dependent rule learning.* Neuroscience Postdoc Symposium. 2023. Brandeis University, Waltham, MA.

Morin, T.M. *2022 Year in Review: Clinical/Human Research in Neuromodulatory Subcortical Systems and Alzheimer's Disease*. International Society to Advance Alzheimer's Research and Treatment (ISTAART) Neuromodulatory Subcortical Systems Professional Interest Area (NSS PIA). 2023. Webinar.

Morin, T.M. *Brain Network Flexibility and Stability During Higher Order Cognition*. Joint Lab Meeting: Cognitive Aging & Memory Lab (P.I. Ayanna Thomas) and Integrative Cognitive Neuroscience Lab (P.I. Elizabeth Race). 2022. Tufts University. Medford, MA.

Morin, T.M., Isenburg, K., Moore, K., Ma, W., Stern, C.E. *Functional reconfiguration of a task-active frontoparietal control network facilitates abstract reasoning*. Henry I. Russek Student Achievement Day. 2022. Boston University. Boston, MA.

Morin, T.M. *Frontoparietal Control Network Contributions to Abstract Reasoning*. Boston University Graduate Program for Neuroscience Annual Retreat. 2019. Essex, MA.

Morin, T.M. *Branching Out: What a Tree Can Teach You About Your Brain?* Out For Undergrad Engineering Conference. 2016. Stanford University, Palo Alto, CA.

Morin, T.M. *Creating a Computer Simulation Tool for PET Neuroimaging*. Tufts University Undergraduate Research and Scholarship Symposium. 2016. Tufts University, Medford, MA.

Conference Posters

Selected poster PDFs are available at https://www.tmmorin.com/work

Morin, T.M., Hooker, J.M., Allan, N., Irving, K., Enright, K., Oxley, P., Metcalfe, & A. Langille, M. *Pilot evaluation of a targeted olfactory insulin delivery compared to standard intranasal spray delivery.* 5th Annual CNS Drug Delivery Summit in Neurology and Neuro-Oncology. 2023. Boston, MA.

Morin, T.M., Ciampa, C., Parent, J., Cowan, J. L., Adornato, A., O'Malley, K., Hooker, J., & Berry, A. *D2/3 receptor occupancy measured with [11C]-raclopride and functional brain network reconfiguration in healthy older adults.* Society for Neuroscience. 2023. Washington, D.C.

Morin, T.M., Dunne, M.F., Chang, A.E., & Stern, C.E. *Hierarchical gradients in prefrontal cortex and hippocampus support context-dependent rule learning*. Society for Neuroscience. 2022. San Diego, CA.

Dunne, M.F., Ling, S., Moore, K.E., **Morin, T.M.**, Chrastil, E., & Stern, C.E. *Exploring egocentric boundary sensitivity in humans using a virtual open field foraging paradigm with fMRI*. Society for Neuroscience 2022. San Diego, CA.

Isenburg, K., **Morin, T.M.**, Rosen, M.L., Somers, D.C., & Stern, C.E. *Network interactions during long-term memory guided versus stimulus-guided attention in humans*. Society for Neuroscience. 2021. (Online Meeting, Due to COVID-19)

Liapis, S.S.P., **Morin, T.M.**, McGuire, J.T., & Stern, C.E. *The dimensionality of representational space calibrates to abstract reasoning complexity.* Organization for Human Brain Mapping. 2021. (Online Meeting, Due to COVID-19)

Morin, T.M., Ma, W., Chang, A.E., & Stern, C.E. *Dynamic functional connectivity during context-dependent rule learning*. Organization for Human Brain Mapping. 2020. (Online Meeting, Due to COVID-19)

Morin, T.M., Moore, K.N., & Stern, C.E. *An fMRI investigation of functional network connectivity during abstract reasoning*. Henry I. Russek Student Achievement Day. 2020. Boston University, Boston, MA. (Online Meeting, Due to COVID-19).

Morin, T.M., Moore, K.N., & Stern, C.E. *An fMRI investigation of functional network connectivity during abstract reasoning*. Cognitive Neuroscience Society Annual Meeting. 2020. (Online Meeting, Due to COVID-19).

Morin, T.M., Chang, A.E., & Stern, C.E. *Cortical contributions to perceptual and symbolic reasoning using a one-dimensional raven's progressive matrices task.* Society for Neuroscience. 2019. Chicago, IL.

Ma, W., **Morin, T.M.**, Chang, A.E., & Stern, C.E. *An fMRI investigation of medial prefrontal network dynamics during a context-dependent rule learning task.* Society for Neuroscience. 2019. Chicago, IL.

Morin, T.M., Chang, A.E., & Stern, C.E. *An fMRI investigation of symbolic processing using a one-dimensional raven's progressive matrices task*. Henry I. Russek Student Achievement Day. 2019. Boston University, Boston, MA.

Cohen, J.E., **Morin, T.M.**, & Stern, C.E. *Theta oscillations at critical junctures of overlapping mazes*. Cognitive Neuroscience Society Annual Meeting. 2018. Boston, MA. [Poster]

Morin, T.M. & Wey, H.Y. *Optimizing fPET-FDG*. Cognitive & Brain Science Senior Symposium. 2017. Tufts University, Medford, MA.

Teaching

2022	**Course Instructor, Tufts University**
Fall	PSY 195: Senior Seminar in Cognitive & Brain Science
2018-2025	**Guest Lecturer, Tufts University**
Spring	PSY 9: Introduction to Cognitive & Brain Sciences
	Instructor: Aniruddh Patel, PhD
	Guest Lecture: "Introduction to Neuroimaging"

2021-2022 Spring	**Guest Lecturer, Boston University** NE 742: Neural Systems: Cognition and Behavior Instructor: Chantal Stern, DPhil Guest Lecture: "Cognitive Neuroscience of Reasoning"
2017	**Teaching Assistant, Tufts University** PSY 9: Introduction to Cognitive & Brain Science (~100 undergraduates) Instructor: Aniruddh Patel, PhD
2016	**Teaching Assistant, Tufts University** CD 124, 125, 126: American Sign Language I, II, and III (~60 undergraduates)

Service & Additional Experience

2023	Seminar Organizer, Science on Tap, MGH Martinos Center
2023	Mentor, Neuromatch Academy
2022	Seminar Organizer, Cog. & Brain Science Seminar Series, Tufts Psychology Department
2021-2022	Volunteer Editor, Application Statement Feedback Program
2020-2022	Graduate Coach, InGenius Prep | College Admissions Consulting
2020-2022	Volunteer Mentor, BU Graduate Mentors
2018-2019	Volunteer, Visiting Prospective Student Days, BU Graduate Program for Neuroscience
2017-2019	Volunteer Mentor to a High School Student, Big Brothers Big Sisters
2015-2017	Class of 2017 Representative, Tufts Psychology Society

Mentorship

2024-	Shaian Aghasoltan, Brandeis University, Undergraduate Research Assistant
2024	Filippo Bragagna, MGH Martinos Center, Visiting PhD Student
2023	Ryan O'Leary, Brandeis University, Graduate Student
2022	Carolyn Kinsella, Boston University, Undergraduate Research Assistant
2020-2021	Bliss Cui, Boston University, Neuroscience Student Organization Mentee *Current Position: PhD Student, Northeastern University*
2020-2021	Jiahe Nu, Boston University, High School RA, Undergraduate Research Assistant *Current Position: Undergraduate, Boston University*
2019-2020	Roberto Luis-Fuentes, Boston University, BME Senior Thesis Project *Current Position: Software Engineer, Broad Institute*
2019-2020	Vincent Chang, Boston University, BME Senior Thesis Project *Current Position: Technical Program Manager, Google*
2019	Sheila Yee, Boston University, Undergraduate Directed Study Student *Current Position: Graduate Student in Bioinformatics, Boston University*
2018-2020	Weida Ma, Boston University, Undergraduate Research Assistant, BME Senior Thesis *Current Position: Medical Student, University of Vermont*
2018	Neoreet Braha, Boston University, Undergraduate Research Assistant

Additional Training

Summer 2023 **Neurohackademy**, **eScience Institute, University of Washington**
Summer school in neuroimaging and data science

Spring 2020 **MIT IMPACT Program**
Fellow

2017-2018 **Department of Psychological & Brain Sciences, Boston University**
Attention & Perception Neuroimaging Lab
Lab Rotation & Collaborating PhD Student
Mentor: David Somers, PhD

2015-2017 **A. A. Martinos Center for Biomedical Imaging,**
Massachusetts General Hospital, Harvard Medical School
Hooker Research Group
Research Intern
Mentors: Hsiao-Ying Wey, PhD, and Jacob Hooker, PhD

2014-2015 **Department of Psychology, Tufts University**
Memory and Cognition Lab
Undergraduate Research Assistant
Mentor: Richard Chechile, PhD

Professional Membership

- International Society to Advance Alzheimer's Research and Treatment (ISTAART)
- Society for Neuroscience
- Cognitive Neuroscience Society
- Organization for Human Brain Mapping
- Psy Chi Honor Society

Skills

Programming Languages
- Fluent in Python, R, MATLAB, Shell Scripting (bash)
- Comfortable with C, C++
- Experience with HTML/CSS

Neuroimaging & Experimental Software
- AFNI, FSL, Freesurfer, CONN Toolbox, PMOD
- BIDS-compatible pipelines including fMRIprep and NiBetaSeries
- PsychoPy; some experience with ePrime

Key Concepts
- Age-related changes in cognition, brain network connectivity, and neuromodulator systems
- Cognitive neuroscience of abstract reasoning, learning, and memory
- Network science and graph-based analysis of functional connectivity data
- Kinetic modeling and analysis of functional PET neuroimaging data

- fMRI and PET study design, data collection, and analysis