Thomas M. Morin, Ph.D.

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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** Adjunct 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/publications

Morin, T.M., Cowan, J.L., Chen, H.Y., Parent, J., Crawford, J.L., Ciampa, C.J., Tennant, V., Whitman, A.J., Swinneton, K.N., Hsu, M., Jagust, W.J., & Berry, A.S. (2026). Alzheimer's disease pathologies affect dopaminergic neural mechanisms of memory. *Journal of Neuroscience*. https://doi.org/10.1523/jneurosci.1580-25.2026

*Bargagna, F., ***Morin, T.M.,** Chen, Y., McDougle, C.J., Hooker, J.M, & Zürcher, N.R. (2026). A probabilistic deep learning approach for choroid plexus segmentation in autism spectrum disorder. *Neuropsychopharmacology: Digital Psychiatry and Neuroscience.* https://doi.org/10.1038/s44277-026-00056-1

Ciampa, C.J., **Morin, T.M.**, Parent, J.H., Adornato, A.A., Cowan, J.L., O'Malley, K.E., Marcus, R.E., Gordon, C., Howard, J.D., Tambini, A., Cusin, C., Hooker, J.M., & Berry, A.S. (2026). Dopaminergic mechanisms supporting hippocampal post-encoding dynamics in humans. *PNAS*. https://doi.org/10.1073/pnas.2526799123

Do, Q., **Morin, T.M.**, Stern, C.E., & Hasselmo, M.E. (2025). A feature-based generalizable prediction model for both perceptual and abstract reasoning. *Cognitive Neuroscience*. 1-17. https://doi.org/10.1080/17588928.2025.2599784

Morin, T.M., Allan, N., Hooker, J.M., Berhard, W., Barreto, K., Jett, K.A., Carvalho, J.L.C., Sarafis, K., Geyer, C.R., Wei, Y., Zhu, L., Li, F., Enright, K., & Irving, K. (2025). Olfactory drug delivery in rodents: Deposition and pharmacokinetics. *ACS Pharmacology & Translational Science*. https://doi.org/10.1021/acsptsci.5c00206

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

*Denotes equal contribution

Pending Manuscripts

Ciampa, C.J., **Morin, T.M.**, Parent, J.H., Marcus, R.E., Cusin, C., Hooker, J.M., & Berry, A.S. Methylphenidate preferentially enhances dopamine, memory, and prefrontal cortex activity in older adult women relative to men. (*submitted to journal*).

Isenburg, K.M., Liu, Y., **Morin, T.M.** & Stern, C.E. Connectome fingerprinting predicts prefrontal cortical activation during abstract reasoning. (*in revision*).

Conference Papers

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

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/resources

Morin, T.M. & Berry, A.S. *Brain Health & Alzheimer's: What Everyone Should Know*. 2025. Seniors Helping Seniors. Waltham, MA.

Morin, T.M. *What is BIDS and Why Should I Use it?* Science on Tap. 2025. A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA.

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.

Recent Conference Posters (Within 5 Years)

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

Guma, E., Chen, Y.C., Chu, T., Tseng, C.J., **Morin, T.M.**, Tokala, R., Downey, J.W., McDougle, C.J., Hooker, J.M., & Zürcher, N.R. *In vivo quantification of folate receptors in the human choroid plexus with PET-MRI*. Lurie Center for Autism, Annual Retreat. 2026. Somerville, MA.

Guma, E., **Morin, T.M.**, Chen, Y.C., Chu, T., Birtwell, K., Hooker, J.M., McDougle, C.J., Tseng, C.J., & Zürcher, N.R. *Characterization of the cerebrospinal fluid system in autism spectrum disorder with ultra-high resolution neuroimaging*. Lurie Center for Autism, Annual Retreat. 2026. Somerville, MA.

Aghasoltan S., **Morin, T.M.**, Matulonis, J., Carlson, E., Xikes, K., Chen, H.Y., Ciampa, C.J., Susnjar, A., & Berry, A.S. *Neurochemical and behavioral markers of cognitive aging: a multimodal correlation analysis using BABS data.* Brandeis Sci-Fest. 2025. Waltham, MA.

Morin, T.M., Ciampa, C.J., Chen, H.Y., Crawford, J.L., Parent, J.P., Adornato, A., Cowan, J.L., O'Malley, K., Cusin, C., Hsu, M., Hooker. J.M, Jagust, W.J., & Berry, A.S. *Effects of dopamine and amyloid-beta on rest-to-task network reconfiguration in older adults*. Organization for Human Brain Mapping Annual Meeting. 2025. Brisbane, Australia.

Aghasoltan, S., **Morin, T.M.,** Matulonis, J., Carlson, E., Susnjar, E.C., & Berry, A.S. *Processing magnetic resonance spectroscopy data for the Brandeis Aging Brain Study*. Brandeis Undergraduate Research and Creative Collaborations Symposium. 2025. Waltham, MA.

Morin, T.M., Bargagna, F., Chen, Y.C., McDougle, C.J., Hooker, J.M., & Zürcher, N.R. *Automated segmentation of the choroid plexus*. Martinos Center 25th Anniversary Symposium. 2025. Charlestown, MA.

Morin, T.M., Ciampia, C.J., Parent, J.H., Adornato, A., Cowan, J.L., O'Malley, K., Tambini, A., Cusin, C., Hooker, J.M., & Berry, A.S. *Dopaminergic contributions to functional network reconfiguration and reward memory in aging*. Dallas Aging and Cognition Conference. 2025. Dallas, TX.

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).

Teaching

2022 Fall	**Course Instructor, Tufts University** PSY 195: Senior Seminar in Cognitive & Brain Science (~45 undergraduates)
2018-2026 Spring	**Guest Lecturer, Tufts University** 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

2025	Seminar Organizer, Martinos PET Imaging Meeting
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

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

Ad-hoc Peer Review

Brain Research, Cerebral Cortex, Frontiers in Cognition, Imaging Neuroscience, International Journal of Psychophysiology, Network Neuroscience, Neuropsychopharmacology

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
- 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 brain imaging data

- Kinetic modeling and analysis of functional PET neuroimaging data
- fMRI and PET study design, data collection, and analysis