**Thomas M. Morin, Ph.D.**

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**Academic History**

July 2022- **A. A. Martinos Center for Biomedical Imaging**

Present **Massachusetts General Hospital**

**Department of Radiology**

Postdoctoral Research Fellow

Mentors: Jacob Hooker, PhD & Nicole Zürcher, PhD

July 2022- **Brandeis University**

Present  **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*](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 [18F]Bavarostat Enabled by a Ru-Mediated Deoxyfluorination. *ACS Central Science*. 3(9), 1006-1014 [http:/dx.doi.org/ 10.1021/acscentsci.7b00274](http://dx.doi.org/%2010.1021/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*](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*](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*](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**

SpringPSY 9: Introduction to Cognitive & Brain Sciences

Instructor: Aniruddh Patel, PhD  
 Guest Lecture: “Introduction to Neuroimaging”

2021-2022 **Guest Lecturer, Boston University**

Spring 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