CURRICULUM VITAE

Gabriel M Stine
McGovern Institute for Brain Research
Massachusetts Institute of Technology
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CURRENT POSITION:

2022– Postdoctoral Associate, Jazayeri Lab
McGovern Institute for Brain Research
Massachusetts Institute of Technology

EDUCATION:

2016–2022 Columbia University
Ph.D., Neurobiology & Behavior
Advisor: Michael Shadlen
Thesis title: *Neural mechanisms for forming and terminating a perceptual decision*
Thesis defense date: July 28, 2022

2014 University of Vermont
B.S., Neuroscience

PAPERS AND PREPRINTS:

Trautmann EM, Hesse JK, **Stine GM**, et al., (2025). Large-scale brain-wide neural recording in nonhuman primates. *Nature Neuroscience*, 28, 1562–1575.

Stine GM and Jazayeri M. (2025). Control principles of neural dynamics revealed by the neurobiology of timing. *Annual Review of Neuroscience*, 48.

Monsalve-Mercado MM, **Stine GM**, Shadlen MN, Miller KD. (2025). The geometry of the neural state space of decisions. *BioRxiv*.

Ziemba CM*, Goris RLT*, **Stine GM**, Perez RK, Simoncelli EP, Movshon JA. (2024). Neuronal and behavioral responses to naturalistic texture images in macaque monkeys. *Journal of Neuroscience,* 44(42).

Steinemann NA*, **Stine GM***, Trautmann EM, Zylberberg A, Wolpert DM, Shadlen MN. (2024). Direct observation of the neural computations underlying a single decision. *eLife,* 12:RP90859. **Editor's assessment:** Fundamental/convincing. **Summary article:** https://elifesciences.org/articles/103059.

Stine GM, Trautmann EM, Jeurissen D, Shadlen MN. (2023). A neural mechanism for terminating decisions. *Neuron,* 111(16). **Summary article:** https://zuckermaninstitute.columbia.edu/have-researchers-glimpsed-moment-brain-commits-decision-0.

Stine GM, Zylberberg A, Ditterich J, Shadlen MN. (2020). Differentiating between integration and non-integration strategies in perceptual decision making. *eLife*. 9:e55365. **Summary article:** https://medium.com/the-spike/we-dont-know-how-you-make-a-decision-37d445431388.

Goris RLT*, Ziemba CM*, **Stine GM**, Simoncelli EP, Movshon JA. (2017). Dissociation of choice formation and choice-correlated activity in macaque visual cortex. *Journal of Neuroscience*, 37(20).

* denotes equal contribution

TEXT BOOK CHAPTERS:

Stine GM, Zylberberg A, Ditterich J, Shadlen MN. (2020). Neural mechanisms of perceptual decision making. *The Cognitive Neurosciences VI*, 607-616.

SELECTED CONFERENCE PRESENTATIONS:

Stine GM, Zheng B, Jazayeri M. Cerebellar adjustment of neocortical dynamics during non-motor learning. Gordon Research Conference on the Cerebellum, 2025.

Stine GM, Trautmann EM, Shadlen MN. Parieto-collicular interactions during perceptual decisions. Cosyne Abstracts 2021.

Steinemann NA*, **Stine GM***, Trautmann EM, Zylberberg A, Sanayei M, Shadlen MN. Formerly known as latent: Single-trial decision variables recorded from area LIP using neuropixel probes. Cosyne Abstracts 2021.

Stine GM, Zylberberg A, Shadlen MN. Disentangling evidence integration and memoryless strategies in perceptual decision making. Cosyne Abstracts 2018.

INVITED TALKS:

2025 *Cerebellar-thalamocortical interactions during non-motor learning.* Gordon Research Seminar on the Cerebellum. Les Diablerets, Switzerland. July 2025.

2025 *Neural population analyses: Are we confused?* MIT Brain and Cognitive Sciences "Hot Takes" Seminar Series. Cambridge, MA. February 2025.

2025 *How does the cerebello-thalamocortical pathway support cognition?* Western University "Superlab" meeting.

2024 *A new era for primate neuroscience with neuropixels–NHP*. Workshop on Tools and Methods for Next Generation Electrophysiology. Edinburgh, UK. May 2024.

2023 *A neural mechanism for terminating decisions in the primate superior colliculus.* Johns Hopkins Cerebellum Seminar Series.

2022 *A neural mechanism for terminating decisions.* World Wide Neuro Neurise Seminar Series.

2020 *Differentiating between integration and non-integration strategies in perceptual decision making.* Cosyne workshop on comparative decision making.

GRANTS AND FELLOWSHIPS:

2024– Raynor Cerebellum Project Postdoctoral Research Grant
2023–2025 Simons Center for the Social Brain Postdoctoral Fellowship
2022 UC Berkeley Miller Institute Postdoctoral Research Fellowship (declined)
2021–2022 Ruth L. Kirschstein Predoctoral Individual National Research Service Award (F31)
2018 T32 Vision Sciences Training Grant Awardee
2013 Schmitt Program on Integrative Brain Research Fellowship

AWARDS:

2025 McKnight Foundation Doupe Fellowship Award
2024 MIT Building 46 DEIJ Award
2021 Society for Neuroscience Trainee Professional Development Award
2018 Kavli Institute for Brain Science Travel Scholarship

MENTOREES:

2024 Trang Pham (rotating graduate student)
2024 Sol Markman (graduate student)
2023–2024 Bowen Zheng (research assistant)
2022 Max Pensack (graduate student)
2018 Michael Cohanpour (rotating graduate student)
2018 Angela Ji (high school summer student)

COMMUNITY SERVICE:

2025 MIT Building 46 Summer Retreat (organizer)
2024– Cosyne Networking and Mentorship Committee (member)
2023– MIT Brain and Cognitive Sciences Postdoc Association (co-founder and chair)
Key accomplishments:
MIT BCS "Rising Star" Seminar Series
First-year Postdoc Symposium
Monthly social events
Department policy changes to improve inclusion and quality of life
2023 MIT Brain and Cognitive Sciences Community of Practice (member)
2020-2021 Columbia University Zuckerman Institute Trainee Advisory Committee (member)
2018 Zuckerman Institute Saturday Science Outreach Program (organizer)

TEACHING:

2025 University College London Neuropixels Course (lecturer). Lecture title: *Single trial analyses in decision making.*

2025 Computational Motor Control Course (guest lecturer). Lecture title: *The cerebellum and the control of movement.*

PEER REVIEW:

eNeuro
Journal of Neuroscience
Nature (with supervisor)
Neuron (with supervisor)
PNAS (with supervisor)

PREVIOUS RESEARCH POSITIONS:

2014-2016 Junior Research Scientist, New York University (Advisor: J. Anthony Movshon)
2013 Summer Scholar, University of Rochester (Advisor: Tatiana Pasternak)