Scott W. Linderman

Contact Information	Department of Statistics Sequoia Hall, Room 228 390 Jane Stanford Way Stanford University Stanford, CA 94305-4020 email: scott.linderman@stanford.edu web: http://slinderman.web.stanford.edu

Professional Experience

Stanford University — 2019-present
Assistant Professor, Department of Statistics
Assistant Professor (by courtesy), Computer Science Department
Assistant Professor (by courtesy), Electrical Engineering Department
Faculty Scholar, Wu Tsai Neurosciences Institute
Faculty Affiliate, Stanford Bio-X and Stanford AI Lab

Google Research — 2022
Visiting Faculty Researcher, Google Brain Team
Host: Kevin Murphy

Columbia University — 2016-2019
Postdoctoral Fellow, Department of Statistics
Advisors: Liam Paninski and David Blei

Microsoft Corporation — 2008-2011
Software Development Engineer in Test

Education

Harvard University — 2013-2016
Ph.D., Computer Science
Advisors: Ryan Adams and Leslie Valiant

Harvard University — 2011-2013
S.M., Computer Science
Advisor: Leslie Valiant

Cornell University — 2004-2008
B.S., Electrical and Computer Engineering
Magna cum Laude with Honors in Engineering

Honors and Awards

McKnight Scholar Award	2023
Sloan Research Fellowship	2022
Allen Institute Next Generation Leaders Council	2019
Best Paper, 20th International Conference on Artificial Intelligence and Statistics (AISTATS) *With Christian Naesseth, Francisco Ruiz, and David Blei*	2017
Leonard J. Savage Award, International Society for Bayesian Analysis *Outstanding Dissertation in Applied Methodology*	2017
Simons Collaboration on the Global Brain Postdoctoral Fellowship	2016
Siebel Scholarship	2015
National Defense Science and Engineering Graduate Fellowship	2011

PUBLICATIONS   Note: all publications have authors listed in the order as published. Authorship convention in the field: lead senior author is listed last; lead junior author is listed first. (Asterisks denote joint lead or senior authorship).

BOOKS AND THESES

□ **Scott W. Linderman**. *Machine Learning Methods for Neural Data Analysis.* 2024. *In preparation. Available at* `https://slinderman.github.io/ml4nd`

□ **Scott W. Linderman**. *Bayesian methods for discovering structure in neural spike trains.* PhD thesis, Harvard University, 2016.
Received the Savage Award from the International Society for Bayesian Analysis.

PREPRINTS AND MANUSCRIPTS UNDER REVIEW

□ Yixiu Zhao, Jiaxin Shi, Feng Chen, Shaul Druckmann, Lester Mackey, and **Scott Linderman**. Informed correctors for discrete diffusion models. *arXiv preprint arxiv:2407.21243*, 2025.

□ Avanika Narayan, Dan Biderman, Sabri Eyuboglu, Avner May, **Scott Linderman**, James Zou, and Christopher Re. Minions: Cost-efficient collaboration between on-device and cloud language models. *arXiv preprint arXiv:2502.15964*, 2025.

□ **Randolph W Linderman**, Yiran Chen, and **Scott W Linderman**. A Bayesian nonparametric perspective on Mahalanobis distance for out of distribution detection. *arXiv preprint arXiv:2502.08695*, 2025.

□ Christopher Versteeg, Jonathan D McCart, Mitchell Ostrow, David M Zoltowski, Clayton B Washington, Laura Driscoll, Olivier Codol, Jonathan A Michaels, **Scott W Linderman**, David Sussillo, and others. Computation-through-Dynamics benchmark: Simulated datasets and quality metrics for dynamical models of neural activity. *bioRxiv*, pages 2025–02, 2025.

□ Aditya Nair, Amit Vinograd, Mengyu Liu, George Mountoufaris, **Scott W. Linderman**, and David J. Anderson. The neural computation of affective internal states in the hypothalamus: a dynamical systems perspective. 2025.

□ Caleb Weinreb, Lakshanyaa Thamarai Kannan, Alia Newman-Boulle, Winthrop F. Gillis, Alex Plotnikoff, Sofia Makowska, Jonah E. Pearl, Mohammed Abdal Monium Osman, **Scott W. Linderman**, and Sandeep Robert Datta. Spontaneous behavior is a succession of self-directed tasks. 2025.

□ Dana Levy, Winthrop Gillis, Caleb Weinreb, Minhua Mei, David Brann, Nigel Hunter, JKayla Anthis Rockwell Anyoha, **Scott W. Linderman**, and Sandeep Robert Datta. Natural behavior embodies a continuous aging clock. 2025.

□ Francis R Willett, Jingyuan Li, Trung Le, Chaofei Fan, Mingfei Chen, Eli Shlizerman, Yue Chen, Xin Zheng, Tatsuo S Okubo, Tyler Benster, Hyun Dong Lee, Maxwell Kounga, E. Kelly Buchanan, David Zoltowski, **Scott W Linderman**, and Jaimie M Henderson. Brain-to-text benchmark'24: Lessons learned. *arXiv preprint arXiv:2412.17227*, 2024.

□ Claire Bedbrook, Ravi Nath, Elizabeth Zhang, **Scott W. Linderman**, Anne Brunet, and Karl Deisseroth. Life-long behavioral monitoring reveals dynamics that forecast lifespan and discrete transitions defining an architecture of aging. 2024.

- Drew Friedmann, Xavier Gonzalez, Ashley Moses, Tanner Watts, Anthony Degleris, Nicole Ticea, Jun H Song, Sandeep Robert Datta, **Scott W Linderman***, and Liqun Luo*. Concerted modulation of spontaneous behavior and time-integrated whole-brain neuronal activity by serotonin receptors. *bioRxiv*, 2024.

- Robin Vloeberghs, Anne E. Urai, Kobe Desender, and **Scott W. Linderman**. A Bayesian hierarchical model of trial-to-trial fluctuations in decision criterion. *bioRxiv*, 2024.

- Rennie M Kendrick, **Scott Linderman**, and Scott F Owen. Transcriptomically-measured gene expression predicts physiological variation across single neurons in humans and mice. *bioRxiv*, pages 2024–08, 2024.

- Michael Bukwich, Malcolm G Campbell, David Zoltowski, Lyle Kingsbury, Momchil S Tomov, Joshua Stern, HyungGoo R Kim, Jan Drugowitsch, **Scott W Linderman**, and Naoshige Uchida. Competitive integration of time and reward explains value-sensitive foraging decisions and frontal cortex ramping dynamics. *bioRxiv*, 2023.

PEER REVIEWED JOURNAL, CONFERENCE, AND SELECTED WORKSHOP PAPERS

- **Scott W. Linderman**, Peter Chang, Giles Harper-Donnelly, Aleyna Kara, Xinglong Li, Gerardo Duran-Martin, and Kevin Murphy. Dynamax: A Python package for probabilistic state space modeling with JAX. *Journal of Open Source Software*, 10(108):7069, April 2025.

- Amber Hu, David Zoltowski, Aditya Nair, David Anderson, Lea Duncker, and **Scott W. Linderman**. Modeling latent neural dynamics with Gaussian process switching linear dynamical systems. *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.

- Julia C Costacurta, Shaunak Bhandarkar, David M Zoltowski, and **Scott W. Linderman**. Structured flexibility in recurrent neural networks via neuromodulation. *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.

- Xavier Gonzalez, Andrew Warrington, Jimmy T. H. Smith, and **Scott W. Linderman**. Towards scalable and stable parallelization of nonlinear RNNs. *Advances in Neural Information Processing Systems (NeurIPS)*, 2024.

- George Mountoufaris, Aditya Nair, Bin Yang, Dong-Wook Kim, Amit Vinograd, Samuel Kim, **Scott W. Linderman**, and David J. Anderson. A line attractor encoding a persistent internal state requires neuropeptide signaling. *Cell*, 2024.

- Mengyu Liu*, Aditya Nair*, Nestor Coria, **Scott W. Linderman**, and David J. Anderson. Encoding of female mating dynamics by a hypothalamic line attractor. *Nature*, 2024.

- Amit Vinograd*, Aditya Nair*, Joseph Kim, **Scott W. Linderman**, and David J. Anderson. Causal evidence of a line attractor encoding an affective state. *Nature*, 2024.

- Samuel J Gershman, John A Assad, Sandeep Robert Datta, **Scott W Linderman**, Bernardo L Sabatini, Naoshige Uchida, and Linda Wilbrecht. Explaining dopamine through prediction errors and beyond. *Nature Neuroscience*, pages 1–11, 2024.

- Caleb Weinreb, Jonah E. Pearl, Sherry Lin, Mohammed Abdal Monium Osman, Libby Zhang, Sidharth Annapragada, Eli Conlin, Red Hoffmann, Sofia Makowska, Winthrop F. Gillis, Maya Jay, Shaokai Ye, Alexander Mathis, Mackenzie W. Mathis, Talmo Pereira, **Scott W. Linderman***, and Sandeep Robert Datta*. Keypoint-MoSeq: parsing behavior by linking point tracking to pose dynamics. *Nature Methods*, 21(7):1329–1339, 2024.

- Jakub Smékal, Jimmy T. H. Smith, Michael Kleinman, Dan Biderman, and **Scott W. Linderman**. Towards a theory of learning dynamics in deep state space models. In *ICML 2024 Workshop on Next Generation of Sequence Modeling Architectures*, 2024.
Selected for Spotlight Presentation.

- Jimmy T.H. Smith, Shalini De Mello, Jan Kautz, **Scott Linderman**, and Wonmin Byeon. Convolutional state space models for long-range spatiotemporal modeling. In *Thirty-seventh Conference on Neural Information Processing Systems*, 2023.

- Jay Hennig, Sandra A. Romero Pinto, Takahiro Yamaguchi, **Scott W. Linderman**, Naoshige Uchida, and Samuel J. Gershman. Emergence of belief-like representations through reinforcement learning. *PLoS Computational Biology*, 2023.

- Yixin Wang, Anthony Degleris, Alex H Williams, and **Scott W Linderman**. Spatiotemporal clustering with Neyman-Scott processes via connections to Bayesian nonparametric mixture models. *Journal of the American Statistical Association*, 2023.

- Dieterich Lawson, Michael Y. Li, and **Scott Linderman**. NAS-X: Neural adaptive smoothing via twisting. In *Thirty-seventh Conference on Neural Information Processing Systems*, 2023.

- Hyun Dong Lee, Andrew Warrington, Joshua I Glaser, and **Scott Linderman**. Switching autoregressive low-rank tensor models. In *Thirty-seventh Conference on Neural Information Processing Systems*, 2023.

- Yixiu Zhao and **Scott W Linderman**. Revisiting structured variational autoencoders. *International Conference on Machine Learning (ICML)*, 2023.

- Jimmy TH Smith, Andrew Warrington, and **Scott W Linderman**. Simplified state space layers for sequence modeling. *International Conference on Learning Representations (ICLR)*, 2023.
Selected for Oral Presentation. (1.5% of all submissions).

- Jeffrey Markowitz, Winthrop Gillis, Maya Jay, Jeffrey Wood, Ryley Harris, Robert Cieszkowski, Rebecca Scott, David Brann, Dorothy Koveal, Tomasz Kuila, Caleb Weinreb, Mohammed Osman, Sandra R Pinto, Naoschige Uchida, **Scott W Linderman**, Bernardo Sabatini, and Sandeep R Datta. Spontaneous behavior is structured by reinforcement without exogenous reward. *Nature*, 2023.

- Aditya Nair, Tomomi Karigo, Bin Yang, Surya Ganguli, Mark J Schnitzer, **Scott W Linderman**, David J Anderson, and Ann Kennedy. An approximate line attractor in the hypothalamus encodes an aggressive state. *Cell*, 186(1):178–193, 2023.

- Dieterich Lawson, Allan Raventos, Andrew Warrington, and **Scott Linderman**. SIXO: Smoothing inference with twisted objectives. *Advances in Neural Information Processing Systems*, 2022.
Selected for Oral Presentation. (1.5% of all submissions).

- Julia C Costacurta, Lea Duncker, Blue Sheffer, Winthrop Gillis, Caleb Weinreb, Jeffrey Evan Markowitz, Sandeep R. Datta, Alex H Williams, and **Scott Linderman**. Distinguishing discrete and continuous behavioral variability using warped autoregressive HMMs. *Advances in Neural Information Processing Systems*, 2022.

◻ Ari Beller, Yingchen Xu, **Scott W Linderman**, and Tobias Gerstenberg. Looking into the past: Eye-tracking mental simulation in physical inference. In *Proceedings of the Annual Meeting of the Cognitive Science Society*, volume 44, 2022.

◻ Celia C. Beron, Shay Q. Neufeld, **Scott W. Linderman***, and Bernardo L. Sabatini*. Mice exhibit stochastic and efficient action switching during probabilistic decision making. *Proceedings of the National Academy of Sciences*, 119(15):e2113961119, 2022.

◻ Albert Lin, Daniel Witvliet, Luis Hernandez-Nunez, **Scott W Linderman**, Aravinthan D T Samuel, and Vivek Venkatachalam. Imaging whole-brain activity to understand behaviour. *Nature Reviews Physics*, pages 1–14, March 2022.

◻ **Scott W. Linderman**. Weighing the evidence in sharp-wave ripples. *Neuron*, 110(4):568–570, 2022.

◻ Alex H. Williams and **Scott W. Linderman**. Statistical neuroscience in the single trial limit. *Current Opinion in Neurobiology*, 70:193–205, 2021.

◻ Jimmy T. H. Smith, **Scott W. Linderman**, and David Sussillo. Reverse engineering recurrent neural networks with Jacobian switching linear dynamical systems. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.

◻ Alex H Williams, Erin Kunz, Simon Kornblith, and **Scott W. Linderman**. Generalized shape metrics on neural representations. *Advances in Neural Information Processing Systems (NeurIPS)*, 2021.

◻ Xinwei Yu, Matthew S Creamer, Francesco Randi, Anuj Kumar Sharma, **Scott W Linderman**, and Andrew Michael Leifer. Fast deep neural correspondence for tracking and identifying neurons in C. elegans using semi-synthetic training. *Elife*, 10:e66410, 2021.

◻ Isabel I C Low, Alex H Williams, Malcolm G Campbell, **Scott W Linderman**, and Lisa M Giocomo. Dynamic and reversible remapping of network representations in an unchanging environment. *Neuron*, August 2021.

◻ Libby Zhang, Jesse D Marshall, Timothy Dunn, Bence Ölveczky, and **Scott. W Linderman**. Animal pose estimation from video data with a hierarchical von Mises-Fisher-Gaussian model. *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2021.

◻ Arunesh Mittal, **Scott W. Linderman**, John Paisley, and Paul Sajda. Bayesian recurrent state space model for rs-fMRI. *Machine Learning for Health (ML4H) Workshop at NeurIPS 2020*, November 2020.

◻ Alex H Williams, Anthony Degleris, Yixin Wang, and **Scott W Linderman**. Point process models for sequence detection in high-dimensional neural spike trains. *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.
Selected for Oral Presentation (1.1% of all submissions).

◻ Joshua I Glaser, Matthew Whiteway, John P Cunningham, Liam Paninski, and **Scott W Linderman**. Recurrent switching dynamical systems models for multiple interacting neural populations. *Advances in Neural Information Processing Systems (NeurIPS)*, 2020.

◻ Wesley Tansey, Kathy Li, Haoran Zhang, **Scott W Linderman**, Raul Rabadan, David M Blei, and Chris H Wiggins. Dose-response modeling in high-throughput cancer drug screenings: An end-to-end approach. *Biostatistics*, 2020.

- David M. Zoltowski, Jonathan W. Pillow, and **Scott W. Linderman**. A general recurrent state space framework for modeling neural dynamics during decision-making. *Proceedings of the International Conference on Machine Learning (ICML)*, 2020.

- Robert Evan Johnson*, **Scott W Linderman***, Thomas Panier, Caroline Lei Wee, Erin Song, Kristian Joseph Herrera, Andrew Miller, and Florian Engert. Probabilistic models of larval zebrafish behavior reveal structure on many scales. *Current Biology*, 30:70–82, 2020.

- Ruoxi Sun*, **Scott W. Linderman***, Ian Kinsella, and Liam Paninski. Scalable Bayesian inference of dendritic voltage via spatiotemporal recurrent state space models. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019. **Selected for Oral Presentation (0.5% of all submissions).**

- Ifigeneia Apostolopoulou, **Scott W. Linderman**, Kyle Miller, and Artur Dubrawski. Mutually regressive point processes. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.

- Aaron Schein, **Scott W. Linderman**, Mingyuan Zhou, David Blei, and Hanna Wallach. Poisson-randomized gamma dynamical systems. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.

- Eleanor Batty*, Matthew Whiteway*, Shreya Saxena, Dan Biderman, Taiga Abe, Simon Musall, Winthrop Gillis, Jeffrey Markowitz, Anne Churchland, John Cunningham, **Scott W. Linderman**[†], and Liam Paninski[†]. BehaveNet: nonlinear embedding and Bayesian neural decoding of behavioral videos. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.

- Josue Nassar, **Scott W. Linderman**, Monica Bugallo, and Il Memming Park. Tree-structured recurrent switching linear dynamical systems for multi-scale modeling. In *International Conference on Learning Representations (ICLR)*, 2019.

- Jeffrey E. Markowitz, Winthrop F. Gillis, Celia C. Beron, Shay Q. Neufeld, Keiramarie Robertson, Neha D. Bhagat, Ralph E. Peterson, Emalee Peterson, Minsuk Hyun, **Scott W. Linderman**, Bernardo L. Sabatini, and Sandeep Robert Datta. The striatum organizes 3D behavior via moment-to-moment action selection. *Cell*, May 2018.

- Anuj Sharma, Robert E. Johnson, Florian Engert, and **Scott W. Linderman**. Point process latent variable models of freely swimming larval zebrafish. *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.

- Gonzalo E. Mena, David Belanger, **Scott W. Linderman**, and Jasper Snoek. Learning latent permutations with Gumbel-Sinkhorn networks. *International Conference on Learning Representations (ICLR)*, 2018.

- **Scott W. Linderman**, Gonzalo E. Mena, Hal Cooper, Liam Paninski, and John P. Cunningham. Reparameterizing the Birkhoff polytope for variational permutation inference. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2018.

- Christian A. Naesseth, **Scott W. Linderman**, Rajesh Ranganath, and David M. Blei. Variational Sequential Monte Carlo. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2018.

☐ **Scott W. Linderman***, Matthew J. Johnson*, Andrew C. Miller, Ryan P. Adams, David M. Blei, and Liam Paninski. Bayesian learning and inference in recurrent switching linear dynamical systems. In *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2017.

☐ Christian A. Naesseth, Francisco J. R. Ruiz, **Scott W. Linderman**, and David M. Blei. Reparameterization gradients through acceptance-rejection sampling algorithms. In *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2017.
Received Best Paper Award.

☐ **Scott W. Linderman** and David M. Blei. Comment: A discussion of "Nonparametric Bayes modeling of populations of networks". *Journal of the American Statistical Association*, 112(520):1543–1547, 2017.

☐ **Scott W. Linderman** and Samuel J. Gershman. Using computational theory to constrain statistical models of neural data. *Current Opinion in Neurobiology*, 46:14 – 24, 2017.

☐ **Scott W. Linderman**, Ryan P. Adams, and Jonathan W. Pillow. Bayesian latent structure discovery from multi-neuron recordings. In *Advances in Neural Information Processing Systems (NIPS)*, 2016.

☐ Huseyin Melih Elibol, Vincent Nguyen, **Scott W. Linderman**, Matthew J. Johnson, Amna Hashmi, and Finale Doshi-Velez. Cross-corpora unsupervised learning of trajectories in autism spectrum disorders. *Journal of Machine Learning Research*, 17(133):1–38, 2016.

☐ **Scott W. Linderman**, Matthew J. Johnson, Matthew A. Wilson, and Zhe Chen. A Bayesian nonparametric approach to uncovering rat hippocampal population codes during spatial navigation. *Journal of Neuroscience Methods*, 263:36–47, 2016.

☐ **Scott W. Linderman***, Matthew J. Johnson*, and Ryan P. Adams. Dependent multinomial models made easy: Stick-breaking with the Pólya-gamma augmentation. In *Advances in Neural Information Processing Systems (NIPS)*, pages 3438–3446, 2015.

☐ **Scott W. Linderman**, Christopher H. Stock, and Ryan P. Adams. A framework for studying synaptic plasticity with neural spike train data. In *Advances in Neural Information Processing Systems (NIPS)*, pages 2330–2338, 2014.

☐ **Scott W. Linderman** and Ryan P. Adams. Discovering latent network structure in point process data. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 1413–1421, 2014.

Other preprints

☐ **Scott W. Linderman**, Annika L. A. Nichols, David M. Blei, Manuel Zimmer, and Liam Paninski. Hierarchical recurrent state space models reveal discrete and continuous dynamics of neural activity in C. elegans. *bioRxiv*, 2019.

☐ **Scott W. Linderman** and Ryan P. Adams. Scalable Bayesian inference for excitatory point process networks. *arXiv preprint arXiv:1507.03228*, 2015.

Pending Grants and Awards

☐ **CAREER: State space models for neural and behavioral data**
Funding Agency: NSF
Award Period: 08/01/2025 - 07/31/2030
Contact PI: S. Linderman
Role: PI

Current Grants and Awards

☐ **Understanding sensorimotor control through realistic neuro-biomechanical simulation**
Funding Agency: NIH
Award Period: 04/01/2024 - 03/31/2027
Contact PI: B. Olveczky (Harvard)
Role: MPI

☐ **Unified, Scalable, and Reproducible Neurostatistical Software**
Funding Agency: NIH
Award Period: 07/01/23 - 06/30/2028
Contact PI: A. Williams
Role: MPI

☐ **Machine Learning Methods for Discovering Structure in Neural and Behavioral Data**
Funding Agency: McKnight Foundation
Award Period: 07/01/23 - 06/30/2026
Contact PI: S. Linderman

☐ **Deconstructing the serotonin system in the mouse brain**
Funding Agency: NIH
Award Period: 04/01/23 - 03/31/2028
Contact PI: L. Luo
Role: MPI

☐ **BRAID: DenPro3D Dendritic Processing of Spike Sequences in Biological and Artificial Brains**
Funding Agency: NSF
Award Period: 07/01/2022 - 06/30/2026
Contact PI: K. Boahen
Role: Co-PI

☐ **Dendritic Computation for Knowledge Systems**
Funding Agency: Stanford Institute for Human-Centered Artificial Intelligence
Award Period: 09/01/2022-08/31/2023
Contact PI: K. Boahen
Role: Co-PI

☐ **CRCNS: Deonstructing the time-varying dynamics of motor cortex in freely moving behavior**
Funding Agency: NSF/NIH
Award Period: 07/15/2022 - 04/30/2027
Contact PI: P. Nuyujukian
Role: Co-PI

☐ **Discovering structure in neural and behavioral data**
Funding Agency: Alfred P. Sloan Foundation
Award Period: 09/15/2022 - 09/14/2024 Contact PI: S. Linderman

- **The dynamics of neural representations for distinct spatial contexts and memory episodes**
  Funding agency: NIH – NIMH
  Award number: Pending
  Award period: 04/01/2022 – 03/31/2027
  Contact PI: L. Giocomo
  Role: Co-I

- **Probing the Dorsolateral Prefrontal Cortex and Central Executive Network for Improving Neuromodulation in Depression**
  Funding agency: CRCNS US-France Research Proposal
  Award number: R01MH129018
  Award period: 07/1/2021-06/30/2026
  Contact PI: C. Keller
  Role: Co-I

- **Discovering repeating neural motifs representing sequenced behavior**
  Funding agency: Simons Foundation (Simons Collaboration on the Global Brain)
  Award number: 697092
  Award period: 07/01/2020 – 06/30/2023
  Contact PI: B. Sabatini
  Role: Co-PI

- **Toward a unified framework for dopamine signaling in the striatum**
  Funding agency: NIH NINDS (Natl. Inst. of Neurological Disorders and Stroke)
  Award number: 1U19NS113201
  Award period: 8/15/2019 – 7/31/2024
  Contact PI: B. Sabatini
  Role: MPI

- **Neural representation of mating partners by male C. elegans**
  Funding agency: NIH NINDS (Natl. Inst. of Neurological Disorders and Stroke)
  Award number: 1R01NS113119
  Award period: 8/15/2019 – 7/31/2024
  Contact PI: P. Sternberg
  Role: MPI

Completed Grants and Awards

- **Multi-modal Inference in Brains, Minds, and Machines**
  Total award: $75,000
  Funding Agency: Stanford Institute for Human-Centered Artificial Intelligence
  Award number: N/A
  Award period: 3/13/2019 – 3/12/2020
  Lead PI: T. Gerstenberg
  Role: Co-PI

- **Scalable probabilistic inference for mechanistic models: Bridging the gap between scientific modelling and machine learning**
  Total award: €6,000
  Funding agency: Bavaria–California Technology Center (BaCaTeC)
  Award number: N/A
  Award period: 1/1/2019 – 6/1/2020
  Lead PI: J. Macke *Role: Co-PI*

TEACHING EXPERIENCE	

□ **STATS305B: Applied Statistics II**, Stanford University   2024,2025
Instructor: Scott Linderman

□ **STATS220/320: Machine Learning Methods for Neural Data Analysis**, Stanford University   2023
Instructor: Scott Linderman

□ **STATS305C: Applied Statistics III**, Stanford University   2022,2023
Instructor: Scott Linderman

□ **STATS271/371: Applied Bayesian Statistics**, Stanford University   2021
Instructor: Scott Linderman

□ **STATS220/320: Machine Learning Methods for Neural Data Analysis**, Stanford University   2021
Instructor: Scott Linderman

□ **STATS215: Statistical Models in Biology**, Stanford University   2020
Instructor: Scott Linderman

□ **CS229: Biology and Complexity**, Harvard University   2015
Instructor: Leslie Valiant

□ **CS228: Computational Learning Theory**, Harvard University   2014
Instructor: Leslie Valiant

□ **CS281: Advanced Machine Learning**, Harvard University   2013
Instructor: Ryan Adams

□ **Columbia Advanced Machine Learning Seminar**   2016-2017
web: `https://casmls.github.io`

STUDENT ADVISING

□ Julia Costacurta, Graduate Student, Stanford Electrical Engineering   2021-present

□ Xavier Gonzalez, Graduate Student, Stanford Statistics   2022-present

□ Amber Hu, Graduate Student, Stanford Statistics   2022-present

□ Dieterich Lawson, Graduate Student, Stanford Computer Science   2020-2023
Currently: Research Scientist, Google.

□ Hyun Dong Lee, Graduate Student, Stanford Computer Science   2022-present
Co-advised with Prof. Emily Fox

□ Alisa Levin, Graduate Student, Stanford Computer Science   2022-present
Co-advised with Prof. Jaimie Henderson

□ Matthew MacKay, Graduate Student, Stanford Statistics   2021-2023 *Currently: Software Engineer, Anthropic*

□ Blue Sheffer, Graduate Student, Stanford Computer Science   2019-2021 *Currently: Founder, School of Song.*

□ Jakub Smékal, Graduate Student, Stanford Applied Physics   2024-present

□ Jimmy Smith, Graduate Student, Stanford ICME   2019-2024 *Currently: Founding Scientist, Liquid AI*

□ Ian Christopher Tanoh, Graduate Student, Stanford Statistics	2022-present
□ Libby Zhang, Graduate Student, Stanford Electrical Engineering	2019-present
□ Yixiu Zhao, Graduate Student, Stanford Applied Physics	2020-present

POSTDOCTORAL ADVISING

□ Dan Biderman, Postdoctoral Resarcher, Stanford Statistics and CS   2024-present
Co-advised with Prof. Chris Ré.

□ E. Kelly Buchanan, Postdoctoral Resarcher, Stanford Statistics   2024-present

□ Lea Duncker, Postdoctoral Researcher, Stanford Statistics and EE   2021-2023
Co-advised with Prof. Krishna Shenoy.
Currently: Assistant Professor, Columbia University.

□ Elizabeth DuPre, Postdoctoral Researcher, Stanford Psychology   2022-present
Co-advised with Prof. Russ Poldrack

□ Aditi Jha, Postdoctoral Researcher, Stanford Statistics   2024-present

□ Andrew Warrington, Postdoctoral Researcher, Stanford Statistics   2021-2023
Currently: Research Scientist at GE Healthcare

□ Alex Williams, Postdoctoral Researcher, Stanford Statistics   2019-2021
Currently: Assistant Professor, NYU and Group Leader, Flatiron Institute.

□ David Zoltowski, Postdoctoral Researcher, Stanford Statistics   2022-present
Co-advised with Dr. David Sussillo

PROFESSIONAL SERVICE

□ **Summer School Organization and Teaching:**

Allen Institute Summer Workshop on the Dynamic Brain, Lecturer.	2021-2024
Woods Hole Methods in Computational Neuroscience Course, Lecturer.	2024
Neuromatch Academy, Executive Committee (Co-Chair of Projects).	2022-23
JAX Short Course on Machine Learning for Quantifying Behavior, Lecturer.	2022-24

□ **Conference and Workshop Organization:**

Program Committee, Comp. and Sys. Neuro. Conference (COSYNE)	2022-2024
Program Committee, Bernstein Conference on Theoretical Neuroscience	2024
Co-Organizer, The Dynamic Brain Wkshp. at COSYNE	2025
Co-Organizer, ML Interp. for Scientific Discovery Wkshp. at ICML	2020
Co-Organizer, Learning Meaningful Repr. of Life Wkshp. at NeurIPS	2019
Co-Organizer, Automated Neuro-behavioral Analysis Wkshp at COSYNE	2017
Co-Organizer, Discovering Structure in Neural Data Wkshp at COSYNE	2014

□ **Conference Area Chair:**

Neural Information Processing Systems (NeurIPS)	2019-22
International Conference on Learning Representations (ICLR)	2021
International Conference on Machine Learning (ICML)	2021
International Conference on Artificial Intelligence and Statistics (AISTATS)	2021-23

- **Journal and Conference Reviewing:**
  Annals of Applied Statistics
  Biometrika
  AAAI Conference on Artificial Intelligence (AAAI)
  eLife
  IEEE Transactions on Signal Processing
  International Conference on Machine Learning (ICML)
  International Conference on Artificial Intelligence and Statistics (AISTATS)
  Journal of the American Statistical Association (JASA)
  Journal of Computational Neuroscience
  Nature
  Nature Methods
  Nature Communications
  Neural Computation
  Neural Information Processing Systems (NeurIPS)
  PLoS Computational Biology
  SIAM Journal on Applied Dynamical Systems (SIADS)

SELECTED TALKS

- Princeton Neuroscience Institute, Princeton University. October 24, 2024.

- Jackson Laboratory. October 18, 2024.

- Kempner Institute, Harvard University. October 11, 2024

- Chen Institute for Neuroscience Director's Seminar, Caltech. June 4, 2024.

- University of Washington CoNectome Annual Symposium. May 13, 2024.

- Two Sigma Investments. May 8, 2024.

- Simons Collaboration on the Global Brain Annual Meeting. May 6, 2024.

- International Winter Neuroscience Conference. April 9, 2024.

- Cosyne Workshop on Reconstructing Dynamical Systems from Neural Data. March 4, 2024.

- Statistics Seminar, Harvard University. November 27, 2023.

- Neuroscience Seminar, Cold Spring Harbor Laboratory. November 20, 2023.

- Biostatistics Seminar, University of North Carolina, Chapel Hill. September 7, 2023.

- IDEAS Seminar Series in Theoretical Neuroscience, Georgia Tech. March 28-29, 2023.

- Cosyne Workshop on Generative Models for Neural/Behavioral Data Analysis. March 14, 2023.

- Machine Learning Seminar, Memorial Sloan-Kettering Cancer Center. December 6, 2022.

- NeuroTheory Seminar, Columbia University. December 5, 2022.

- Gaze Meets ML Workshop, NeurIPS. December 3, 2022.

- Neuroscience Seminar, UCSD. September 27, 2022.

- Neuroscience Semianr, University of Chicago. October 25, 2022.

- Short Course on Machine Learning Methods for Quantifying Behavior, JAX Laboratories. October 12, 2022.

- Joint Statistics Meeting (JSM), Contributed Talk. August 1, 2022.

- International Society for Bayesian Analysis, Contributed Talk. July 1, 2022.

- Stanford-Berkeley Joint Statistics Colloquium, UC Berkeley. April 19, 2022.

- Statistics Seminar, University of Connecticut. April 13, 2022.

- External Seminar Series, Gatsby Unit, UCL. January 12, 2022.

- Neuroscience Seminar, Boston University. November 3, 2021.

- SymPOSEium, University of Minnesota. October 14, 2021.

- CRCNS Workshop on Large Scale Neuroscience, NYU. October 9, 2021.

- Bernstein Conference on Theoretical Neuroscience, Berlin. September 22, 2021.

- Biostatistics Seminar, University of California, Berkeley. April 12, 2021.

- Statistics Seminar, University of California, Los Angeles. March 4, 2021.

- Statistics Seminar, University of British Columbia. November 3, 2020.

- Biostatistics Seminar, Duke University. October 23, 2020.

- Online Workshop on Linking Behavior and Neural Dynamics, LMU München. October 16, 2020.

- Mind, Brain, Computation, and Technology Seminar, Stanford University. October 12, 2020.

- Bernstein Workshop on Inferring and Testing Optimality in Perception and Neurons. September 29, 2020.

- SIAM Minisymposium on Machine Learning and Control Theory for Whole Brain Activity. June 26, 2020.

- ML Tea, Gatsby Computational Unit, University College London. April 24, 2020.

- Statistics Seminar, University of California, Davis. April 23, 2020.

- Cosyne Workshop on Interpretable Computational Neuroscience. March 1, 2020.

- Information Systems Laboratory (ISL) Colloquium, Stanford University. February 13, 2020.

- Chan Zuckerberg Institute. January 31, 2020.

- Google Brain. January 22, 2020.

- Institute of Neuroscience Seminar. University of Oregon. November 21, 2019.

- Allen Institute for Brain Science. Seattle, WA. November 12, 2019.

- Biostatistics Workshop. Stanford University. October 24, 2019.

- Society for Neuroscience Virtual Conference on Machine Learning in Neuroscience. June 26,, 2019.

- □ Cosyne Workshop on Social Behavior. Lisbon, Portugal. March 5, 2019.
- □ Cosyne Workshop on Data, dynamics, and computation: Using data driven methods to ground mechanistic theory. Lisbon, Portugal. March 4, 2019.
- □ Theoretical and Computational Neuroscience Annual Conference, Gulf Coast Consortium. February 1, 2019.
- □ NeuroNex Workshop, Rice and Baylor University. January 31, 2019.
- □ Applied Math Seminar, Yale University. January 29, 2019.
- □ Artificial Intelligence Seminar, Cornell University. September 28, 2018.
- □ Center for Neuroengineering and Computation Seminar, Columbia University. September 24, 2018.
- □ Simons Collaboration on the Global Brain, New York Area Postdoc Meeting. September 20, 2018.
- □ Air Force Research Laboratory, Rome, NY. August 27, 2018.
- □ IACS Seminar, Stony Brook University. July 13, 2018.
- □ Simons Workshop on Manifold Discovery. April 6, 2018.
- □ Statistics Department, Stanford University. April 5, 2018.
- □ Allen Institute for Brain Science. March 28, 2018.
- □ Paul Allen School of Computer Science and Engineering, University of Washington. March 26, 2018.
- □ Janelia Farm Research Campus. February 28, 2018.
- □ Stanford Neurosciences Institute, Stanford University. February 20, 2018.
- □ Zuckerman Institute, Columbia University. February 13, 2018.
- □ Statistics Department, Columbia University. February 12, 2018.
- □ Biophysics Department, University of Washington. February 5, 2018.
- □ Center for Brain Science, Harvard University. January 30, 2018.