Scott W. Linderman

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<small>PROFESSIONAL EXPERIENCE</small>

Stanford University — 2019-present
Assistant Professor, Department of Statistics
Assistant Professor (by courtesy), Computer Science Department
Faculty Scholar, Wu Tsai Neurosciences Institute
Faculty Affiliate, Stanford Bio-X and Stanford AI Lab
Co-Director, Stanford Center for Neural Data Science

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

<small>EDUCATION</small>

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

<small>HONORS AND AWARDS</small>

NSF CAREER Award	2025
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)	2017
Leonard J. Savage Award, International Society for Bayesian Analysis	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

- Alisa D. Levin, Donald T. Avansino, Foram B. Kamdar, Nicholas S. Card, Maitreyee Wairagkar, Brandon G. Jacques, Justin J. Jude, Carrina Iacobacci, Bayardo E. Lacayo, Payton H. Bechefsky, Samuel R. Nason-Tomaszewski, Darrel R. Deo, Leigh R. Hochberg, Daniel B. Rubin, Ziv M. Williams, David M. Brandman, Sergey D. Stavisky, Nicholas AuYong, Chethan Pandarinath, **Scott W. Linderman**, Jaimie M. Henderson, and Francis R. Willett. Cross-brain transfer of high-performance intracortical speech and handwriting bcis. *bioRxiv*, 2026. *In submission to Nature Communications Biology.*

- Xavier Gonzalez, E. Kelly Buchanan, Hyun Dong Lee, Jerry Weihong Liu, Ke Alexander Wang, David M. Zoltowski, Christopher Ré, and **Scott W. Linderman**. A unifying framework for parallelizing sequential models with linear dynamical systems. *arXiv preprint arXiv:2509.21716*, 2025. *In press at TMLR.*

- Ari Beller, Yingchen Xu, Max H Siegel, Satchel Grant, Alan S Brown, Jan-Philipp Fränken, Joshua Tenenbaum, **Scott W Linderman**, and Tobias Gerstenberg. Multimodal inference through mental simulation, Sep 2025. *In submission to PNAS.*

- Shuyun Alina Xiao, Che Cherry Chen, Patricia Horvath, Valerie Tsai, Vibiana Marie Cardenas, Dan Biderman, Fei Deng, Yulong Li, **Scott W. Linderman**, Catherine Dulac, and Liqun Luo. Concerted actions of distinct serotonin neurons orchestrate female pup care behavior. *bioRxiv*, 2025. *Under review at Nature.*

- 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. *Under review at PLoS CB.*

- 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. *In revision at Nature Neuroscience.*

- 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.

PEER REVIEWED JOURNAL, CONFERENCE, AND SELECTED WORKSHOP PAPERS

☐ Claire N Bedbrook, Ravi D Nath, Libby Zhang, **Scott W Linderman**, Anne Brunet, and Karl Deisseroth. Lifelong behavioral screen reveals an architecture of vertebrate aging. *Science*, 391(6790):eaea9795, 2026.

☐ **Randolph Linderman**, Noah Cowan, Yiran Chen, and **Scott Linderman**. A Bayesian nonparametric perspective on Mahalanobis distance for out of distribution detection. *Transactions on Machine Learning Research*, 2026.

☐ Caleb Weinreb, Lakshanyaa Thamarai Kannan, Alia Newman-Boulle, Tim Sainburg, 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. *Neuron*, 2026.

☐ Yizi Zhang, Linyang He, Chaofei Fan, Tingkai Liu, Han Yu, Trung Le, Jingyuan Li, **Scott W Linderman**, Lea Duncker, Francis R Willett, Nima Mesgarani, and Liam Paninski. Decoding inner speech with an end-to-end brain-to-text neural interface. In *The Fourteenth International Conference on Learning Representations*, 2026.

☐ Shizhe He, Avanika Narayan, Ishan S Khare, **Scott W Linderman**, Christopher Ré, and Dan Biderman. An information theoretic perspective on agentic system design. In *The Fourteenth International Conference on Learning Representations*, 2026.

☐ 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. *Neuron*, 113(23):3887–3907, 2025.

☐ Xavier Gonzalez*, Leo Kozachkov*, David M. Zoltowski, Kenneth L. Clarkson, and **Scott W. Linderman**. Predictability enables parallelization of nonlinear state space models. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ Amber Hu*, Henry Smith*, and **Scott W. Linderman**. SING: SDE inference via natural gradients. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ David M. Zoltowski*, Skyler Wu*, Xavier Gonzalez, Leo Kozachkov, and **Scott W. Linderman**. Parallelizing MCMC across the sequence length. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ Jon Saad-Falcon*, E. Kelly Buchanan*, Mayee F Chen*, Tzu-Heng Huang, Brendan McLaughlin, Tanvir Bhathal, Shang Zhu, Ben Athiwaratkun, Frederic Sala, **Scott W. Linderman**, Azalia Mirhoseini, and Christopher Re. Weaver: Shrinking the generation-verification gap by scaling compute for verification. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ Ian Christopher Tanoh, Michael Deistler, Jakob H. Macke, and **Scott W. Linderman**. Identifying multi-compartment Hodgkin-Huxley models with high-density extracellular voltage recordings. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ Yiqi Jiang, Kaiwen Sheng, Yujia Gao, E. Kelly Buchanan, Yu Shikano, Seung Je Woo, Yixiu Zhao, Tony Hyun Kim, Fatih Dinc, **Scott W. Linderman**, and Mark Schnitzer. Extracting task-relevant preserved dynamics from contrastive aligned neural recordings. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.
Selected for Spotlight Presentation. (3.2% of all submissions.)

☐ Yixiu Zhao, Jiaxin Shi, Feng Chen, Shaul Druckmann, Lester Mackey, and **Scott W. Linderman**. Informed correctors for discrete diffusion models. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.

☐ 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. *Neuron*, 2025.

☐ Robin Vloeberghs, Anne E. Urai, Kobe Desender, and **Scott W. Linderman**. A Bayesian hierarchical model of trial-to-trial fluctuations in decision criterion. *PLoS Computational Biology*, 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. *International Conference on Machine Learning (ICML)*, 2025.

☐ **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.

☐ 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 M. Zoltowski, **Scott W. Linderman**, and Jaimie M. Henderson. Brain-to-text benchmark '24: Lessons learned. *CoRR*, 2024.

☐ 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 W. 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 W. 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 W. 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 W. 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 W. 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.

RESEARCH
SUPPORT

Pending Grants and Awards

- **Dissecting a brain-wide circuit that identifies natural odors and assigns behavioral responses**
  Funding Agency: NIH
  Award Period: 12/01/2025 - 11/30/2030
  Contact PI: A. Samuel (Harvard)
  Role: MPI

- **Neural Dynamics, Neuropeptides and Social Behavior**
  Funding Agency: NIH
  Award Period: 12/01/2025 - 11/30/2030
  Contact PI: D. Anderson (Caltech)
  Role: MPI

- **The brain as a control center for other organs during aging**
  Funding Agency: NIH
  Award Period: 12/01/2025 - 11/30/2030
  Contact PI: A. Brunet (Stanford)
  Role: MPI

- **Rapid neuromodulatory control of network dynamics: reframing dopaminergic modulation of cortical-basal ganglia-thalamic circuits**
  Funding Agency: NIH
  Award Period: 07/01/2025 - 06/30/2030
  Contact PI: S. R. Datta (Harvard Medical School)
  Role: MPI

Current 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

- **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 (NYU)
  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 (Stanford)
  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 (Stanford)
  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 (Stanford)
  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 period: 04/01/2022 – 03/31/2027
  Contact PI: L. Giocomo (Stanford)
  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 period: 07/1/2021-06/30/2026
  Contact PI: C. Keller (Stanford)
  Role: Co-I

- **Discovering repeating neural motifs representing sequenced behavior**
  Funding agency: Simons Foundation (Simons Collaboration on the Global Brain)
  Award period: 07/01/2020 – 06/30/2023
  Contact PI: B. Sabatini (Harvard)
  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 period: 8/15/2019 – 7/31/2024
  Contact PI: B. Sabatini (Harvard)
  Role: MPI

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

Completed Grants and Awards

□ **Multi-modal Inference in Brains, Minds, and Machines**
Funding Agency: Stanford Institute for Human-Centered Artificial Intelligence
Award period: 3/13/2019 – 3/12/2020
Lead PI: T. Gerstenberg (Stanford)
Role: Co-PI

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

Teaching
Experience

□ **STATS305B: Applied Statistics II** 2024,'25
Stanford University
Instructor: Scott Linderman

□ **STATS320: ML Methods for Neural Data Analysis** 2021, '23, '25
Stanford University
Instructor: Scott Linderman

□ **STATS305C: Applied Statistics III** 2022,'23
Stanford University
Instructor: Scott Linderman

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

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

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

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

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

STUDENT ADVISING	□ Julia Costacurta, PhD Student, Stanford Electrical Engineering *Currently: Visiting Assistant Professor of Statistics, Haverford College.*	2021-2025
	□ Noah Cowan, PhD Student, Stanford Statistics	2024-present
	□ Xavier Gonzalez, PhD Student, Stanford Statistics	2022-present
	□ Amber Hu, PhD Student, Stanford Statistics	2022-present
	□ Etaash Katiyar, PhD Student, Stanford Statistics	2024-present
	□ Dieterich Lawson, PhD Student, Stanford Computer Science *Currently: Research Scientist, Google.*	2020-2023
	□ Hyun Dong Lee, PhD Student, Stanford Computer Science *Co-advised with Prof. Emily Fox*	2022-present
	□ Alisa Levin, PhD Student, Stanford Computer Science *Co-advised with Prof. Jaimie Henderson*	2022-present
	□ Matthew MacKay, PhD Student, Stanford Statistics *Currently: Software Engineer, Anthropic*	2021-2023
	□ Blue Sheffer, PhD Student, Stanford Computer Science *Currently: Founder, School of Song.*	2019-2021
	□ Jakub Smékal, PhD Student, Stanford Applied Physics	2024-present
	□ Henry Smith, PhD Student, Stanford Statistics *Co-advised with Prof. Brian Trippe*	2024-present
	□ Jimmy Smith, PhD Student, Stanford ICME *Currently: Founding Scientist, Liquid AI*	2019-2024
	□ Ian Christopher Tanoh, PhD Student, Stanford Statistics	2022-present
	□ Libby Zhang, PhD Student, Stanford Electrical Engineering *Currently: Shanahan Postdoctoral Fellow, Allen Institute for Brain Science.*	2019-2025
	□ Yixiu Zhao, PhD Student, Stanford Applied Physics *Currently: Research Scientist, Basis Research Institute.*	2020-2025
POSTDOCTORAL ADVISING	□ Dan Biderman, Postdoctoral Resarcher, Stanford Statistics and CS *Co-advised with Prof. Chris Ré.*	2024-2025
	□ E. Kelly Buchanan, Postdoctoral Resarcher, Stanford Statistics *Co-advised with Prof. Chris Ré.*	2024-present
	□ Lea Duncker, Postdoctoral Researcher, Stanford Statistics and EE *Co-advised with Prof. Krishna Shenoy.* *Currently: Assistant Professor, Columbia University.*	2021-2023
	□ Elizabeth DuPre, Postdoctoral Researcher, Stanford Psychology *Co-advised with Prof. Russ Poldrack*	2022-present
	□ 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

□ Nicolas Zucchet, Postdoctoral Researcher, Stanford Statistics   2026-present

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.   2024-25
  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:**
  Co-Organizer, Statistical Analysis of Neural Data (SAND) Workshop   2025
  Program Committee, Bernstein Conference on Theoretical Neuroscience   2024-25
  Program Committee, Comp. and Sys. Neuro. Conference (COSYNE)   2022-2024
  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)   2019-25
  International Conference on Learning Representations (ICLR)   2021-23
  International Conference on Machine Learning (ICML)   2021-23
  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

- Neuroscience Theory Center, Columbia University. January 23, 2026.
- Redwood Center for Theoretical Neuroscience, UC Berkeley. November 12, 2025.
- Wharton Statistics Seminar, University of Pennsylvania. October 15, 2025.
- Statistics Department, Duke University. September 19, 2025.
- Neurobiology Department, Duke University. September 16, 2025.
- 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. Septemper 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.
- Neuroscience Seminar, UCSD. September 27, 2022.
- Neuroscience Seminar, University of Chicago. October 25, 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.
- Mind, Brain, Computation, and Technology Seminar, Stanford University. October 12, 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.
- 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.
- 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.
- 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.
- 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.