Ilana B. Witten, PhD

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Education

2008 Stanford University
- Ph.D. in neuroscience

2002 Princeton University
- A.B. in physics, magna cum laude (certificate in biophysics)

Positions

2025- *Investigator*, Howard Hughes Medical Institute.

2021- *Professor*, Neuroscience Institute, Princeton University.

2018-2021. *Associate Professor*, Neuroscience Institute and Department of Psychology, Princeton University.

2012-2018. *Assistant Professor*, Neuroscience Institute and Department of Psychology, Princeton University.

2008-2012. *Postdoctoral Scholar*, Bioengineering laboratory of Professor Karl Deisseroth, Stanford University.

2003-2008. *Graduate Student*, Neuroscience laboratory of Professor Eric Knudsen, Stanford University.

Honors & Awards

2023-2028	NIH Director's Pioneer Award
2021	Brain Research Foundation Scientific Innovations Award
2019	Grafstein Award in Neuroscience (Cornell Weill)
2017	Daniel X Freedman Prize for Exceptional Basic Research
2017-2022	NYSCF-Robertson Neuroscience Investigator Award
2017-2024	Simons Collaboration on the Global Brain Investigator
2014-2016	McKnight Scholars Award in Neuroscience
2014-2015	NARSAD Young Investigator Award
2013-2017	Pew Scholarship in the Biomedical Sciences
2013-2015	Alfred P. Sloan Research Fellowship
2013	Winter Conference Brain Research Travel Award
2012-2017	NIH Director's New Innovator Award
2009-2012	Helen Hay Whitney Foundation Postdoctoral Fellowship
2008	Swartz Travel Fellowship for CoSyNe 2008
2003-2006	NSF Graduate Research Fellowship
2002	Allen G. Shenstone Prize in physics
2002	High honors awarded by the Princeton Department of Physics
2002	Sigma Xi Research Honor Society nomination
2000	Lucent Technology Prize of the Princeton Dept of Physics
1998	Edward J. Bloustein Scholarship

Other support

2023-2028	NIH BRAIN Connects UM1
2023-2028	NIH BRAIN Initiative U19
2023-2024	PNI Innovation Award
2021-2026	NIH BRAIN Initiative U19
2018-2022	NIH R01 (CRCNS)
2017-2022	NIH BRAIN Initiative U19
2017-2022	ARO grant
2015-2019	NIH R01 (NIMH)
2014-2017	NIH BRAIN Initiative U01
2014	Essig and Enright '82 Innovation Fund

Awards to trainees

2025-2027	Schmidt Fellowship Award to Julie Fabre (postdoctoral fellow)
2025-2028	LSRF Fellowship Award to Jiaxuan Qi (postdoctoral fellow)
2024-2025	CASI BWF Award to Lindsey Brown (postdoctoral fellow)
2024-2025	Proctor fellowship to Addie Minerva (graduate student)
2024-2027	NSF GRFP to Yousuf El-Jayyousi (graduate student)
2023-2024	K99 fellowship to Chris Zimmerman (postdoctoral fellow)
2022-2025	NRSA fellowship to Michael Siniscalchi (postdoctoral fellow)
2022-2025	CV Starr fellowship to Rob Fetcho (postdoctoral fellow)
2022-2024	NRSA fellowship to Lindsey Brown (postdoctoral fellow)
2022-2024	NRSA fellowship to Iris Stone (graduate student)
2019-2021	NSF GRFP to Adelaide Minerva (graduate student)
2021-2025	Sir Henry Wellcome to Alex Pan Vazquez (postdoctoral fellow)
2020-2022	NRSA fellowship to Victoria Corbit (postdoctoral fellow)
2020-2021	K99 fellowship to Ben Engelhard (postdoctoral fellow)
2020-2022	CV Starr fellowship to Ryan Cho (postdoctoral fellow)
2020-2022	HHWF fellowship to Chris Zimmerman (postdoctoral fellow)
2019-2021	NSF GRFP to Rachel Lee (graduate student)
2019-2021	NSF GRFP to Lindsay Willmore (graduate student)
2018-2020	NRSA fellowship to Scott Bolkan (postdoctoral fellow)
2017-2019	NRSA fellowship to Julia Cox (postdoctoral fellow)
2017-2019	NRSA fellowship to Courtney Cameron (postdoctoral fellow)
2017-2019	NSF GRFP to Weston Fleming (graduate student)
2016-2018	SCGB fellowship to Malavika Murugan (postdoctoral fellow)
2016-2017	EMBO fellowship to Ben Engelhard (postdoctoral fellow)
2015-2017	NSF GRFP to Nathan Parker (graduate student)
2015-2017	NSF GRFP to Joel Finkelstein (graduate student)
2013-2015	NSF GRFP to Hessam Akhlaghpour (graduate student)

Preprints

Pan-Vazquez A*, Zimmerman CA*, McMannon B, Fabre JMJ, Louka M, Jia T, Sagiv Y, West SJ, Faulkner M, International Brain Laboratory, Dayan P, **Witten IB**. VTA dopamine neuron activity produces spatially organized value representations. *bioRxiv*, 2025.

Cho JR*, Bolkan SS*, Brown LS*, Skuza M, El-Jayyousi Y, Midler B, Fetcho RN, Zimmerman CA, PanVazquez A, Schottdorf M, Bondy AG, Sanchez

MA, López Luna JF, Luna A, Eilers T, Kalmbach AS, Lu Y, Lynch LA, **Witten IB**. Striatal pathways oppositely shift cortical activity along the decision axis. *bioRxiv*, 2025.

Publications

Minerva AR, McMannon B, Lin R, Zhukovskaya A, **Witten IB**, Peña CJ. Stress resilience is associated with transcriptional remodeling in the VTA. *Cell Reports*, *Accepted. bioRxiv*, 2025.

Brown LS, Cho J, Bolkan SS, **Witten IB**, Goldman MS. Neural circuit models for evidence accumulation through choice-selective sequences. *Nature Communications,* Accepted*. bioRxiv* 2023.

Sagiv Y, Akam T, **Witten IB**, Daw ND, Prioritizing replay when future goals are unknown. *Neuron. 2025. bioRxiv*. 2024.

The International Brain Laboratory, et al. A brainwide map of neural activity during mouse decision-making. *Nature. 2025. bioRxiv*. 2023.

Finding, et al. Brainwide representations of prior information in mouse decision-making. *Nature. 2025 bioRxiv*. 2023.

The International Brain Laboratory, *et al*. Reproducibility of in-vivo electrophysiological measurements in mice. *eLife. 2025. bioRxiv*. May 2022.

Zimmerman CA, Pan-Vazquez A, Wu B, Keppler EF, Guthman EM, Fetcho RN, Bolkan SS, McMannon B, Lee J, Hoag AT, Lynch LA, Janarthanan SN, López Luna JF, Bondy AG, Falkner AL, Wang SSH, **Witten IB**. A neural mechanism for learning from delayed postingestive feedback. *Nature* Feb 2025.

Zhukovskaya A, Zimmerman CA, Willmore L, Janarthanan SN, Falkner AL, Wang SSH, **Witten IB**. Differences in an aversive teaching signal produce brainwide and behavioral substrates of susceptibility. *Neuron*, Oct 2024.

Pan Vazquez A*, Sanchez Araujo Y*, McMannon B, Louka M, Bandi A, Haetzel L, International Brain Laboratory, Pillow JW, Daw ND, **Witten IB**. Pre-existing visual responses in a projection-defined dopamine population explain individual learning trajectories. *Current Biology*, Oct 2024.

Lee RS, Yotam S, Engelhard B, **Witten IB***, Daw ND*. A feature-specific prediction error model explains dopaminergic heterogeneity. *Nature Neuroscience*. July 2024.

Minakuchi T, Guthman E, Acharya P, Hinson J, Fleming W, **Witten IB**, Oline SN, Falkner AL. Independent inhibitory control mechanisms for aggressive motivation and action. *Nature Neuroscience*. Jan 2024.

Willmore L*, Minerva A*, Engelhard B*, McMannon B, Oak N, Thiberge S, Murugan M, Pena CJ, **Witten IB**. Overlapping representations of food and social stimuli in VTA dopamine neurons. *Neuron*. Aug 2023.

Cox J, Minerva AR, Fleming WT, Zimmerman CA, Hayes C, Zorowitz S, Bandi A, Ornelas S, McMannon B, Parker NF, **Witten IB**. A neural substrate of sex-dependent modulation of motivation by value. *Nature Neuroscience*. Jan 2023.

Willmore L, Cameron C, Yang J, **Witten IB***, Falkner A*. Behavioral and dopaminergic signatures of resilience. *Nature*. Oct 2022.

Fleming W, Lee J, Briones BA, Bolkan S, **Witten IB**, Cholinergic interneurons mediate cocaine extinction through similar plasticity across medium spiny neuron subtypes. *Cell Reports*, May 2022.

Parker NF*, Baidya A*, Cox J*, Haetzel L, Murugan M, Engelhard B, Zhukovskaya A, Goldman MS, **Witten IB**. Choice-selective sequences dominate in cortical relative to thalamic inputs to the NAc, providing a potential substrate for credit assignment. *Cell Reports*, May 2022.

Bolkan SS*, Stone IR*, …, Pillow JW, **Witten IB**. Strong and opponent contributions of dorsomedial striatal pathways to behavior depends on cognitive demands and task strategy. *Nature Neuroscience*, Mar 2022.

Briones BA, Pitcher MN, Fleming WT, …, **Witten IB**, Gould E. Perineuronal nets in the dorsomedial striatum contribute to behavioral dysfunction in mouse models of excessive repetitive behavior. *Biological Psychiatry Global Open Science.* Nov 2021.

The International Brain Laboratory, … , **Witten IB**, *et al*. Standardized and reproducible measurement of decision-making in mice. *eLife***.** May 2021.

Fleming W*, Jewell S*, Engelhard B, Witten DM, **Witten IB**. Inferring spikes from calcium imaging in dopamine neurons. *PLoS One***.** June 2021.

Choi JY, Jang HJ, Ornelas S, Fleming W, Furth D, Au J, Bandi A, **Witten IB**. A comparison of dopaminergic and cholinergic populations reveals unique contributions of VTA dopamine neurons to short-term memory. *Cell Reports***.** Dec 2020.

Cai LX, Pizano K, Gundersen G, Hayes C, Fleming W, Cox J, **Witten IB**. Distinct signals in medial and lateral VTA dopamine neurons modulate fear extinction at different times. *eLife***.** June 2020.

Engelhard B, Finkelstein J, Cox J, Fleming W, Jang H, Ornelas S, Koay S, Thiberge S, Daw N, Tank DW, **Witten IB.** Specialized and spatially organized coding of sensory, motor and cognitive variables in midbrain dopamine neurons. *Nature.* June 2019.

Cox J, **Witten IB**. Striatal circuits for reward learning and decision making. *Nature Rev Neuro.* June 2019.

Cameron C, Choi JY, Murugan M, Engel, E, **Witten IB**. Increased cocaine motivation is associated with degraded spatial and temporal representations in IL-NAc neurons. *Neuron.* May 2019.

Lee R, Mattar M, Parker NF, **Witten IB**, Daw N. Value representations do not explain movement selectivity in DMS-projecting DA neurons. *eLife*. Apr 2019.

Lohani S, Martig A, Deisseroth K, **Witten IB**, Moghaddam B. Dopamine Modulation of Prefrontal Cortex Activity Is Manifold and Operates at Multiple Temporal and Spatial Scales. *Cell Reports*. April 2019.

L Pinto, SA Koay, B Engelhard, AM Yoon, B Deverett, SY Thiberge, **Witten IB**, Tank DW, Brody C. An accumulation-of-evidence task using visual pulses for mice navigating in virtual reality. *Front Behav Neuro*. Mar 2018.

Murugan M, Park M, Jang HJ, Miller E, Taliaferro J, Cox J, Parker NF, Bhave V, Nectow A, Pillow J, **Witten IB**. Combined social and spatial coding in a descending projection from prefrontal cortex. *Cell.* Dec 2017.

Uematsu A, Tan B, Sulkes J, Ycu E, Junyent F, Koivumaa J, Kremer E, **Witten IB**, Deisseroth K, Johansen J. Modular Organization of the

Brainstem Noradrenaline System Coordinates Opposing Learning States. *Nature Neuroscience.* 2017. doi:10.1038/nn.4642.

Akhlaghpour H, Wiskerke J, Choi JY, Taliaferro J, Au J, **Witten IB**. Dissociated sequential activity and stimulus encoding in striatal neurons during spatial working memory. *eLife***.** 2016. 10.7554/eLife.19507.

Lee J, Finkelstein J, Choi JY, **Witten IB**. Linking cholinergic interneurons, synaptic plasticity, and behavior during the extinction of a cocaine-context association.*Neuron*. 2016 May 18.

Parker NF, Cameron C, Taliaferro J, Choi JY, Lee J, Davidson T, Daw ND, **Witten IB**. Reward and choice encoding in terminals of midbrain dopamine neurons depends on striatal target. *Nature Neuroscience*. 2016 Apr 25. doi: 10.1038/nn.4287.

Bak JH, Choi JY, Akrami A, **Witten IB,** Pillow J. Adaptive optimal training of animal behavior. *Neural Information Processing Systems*. 2016.1947-1955.

Parker NF, **Witten IB**. Gaining on reward prediction errors. *Nature Neuroscience*. 2016 Feb 23;19(3):418-9. doi: 10.1038/nn.4246.

Dautan D, Souza AS, Huerta-Ocampo I, Valencia M, Assous M, **Witten IB**, Deisseroth K, Tepper JM, Bolam JP, Gerdjikov TV, Mena-Segovia J. Segregated cholinergic transmission modulates dopamine neurons integrated into distinct functional circuits. *Nature Neuroscience*. Jun 27 2016. doi: 10.1038/nn.4335.

Ye L, Allen WE, Thompson KR, Tian Q, Hsueh B, Ramakrishnan C, Wang AC, Jennings JH, Adhikari A, Halpern CH, **Witten IB**, Barth AL, Luo L, McNab JA, Deisseroth K. Wiring and molecular features of molecular ensembles representing distinct experiences. *Cell*. 2016 May 25.

Decot HK, Namboodiri VM, Gao W, McHenry JA, Jennings JH, Lee SH, Kantak PA, Jill Kao YC, Das M, **Witten IB**, Deisseroth K, Shih YI, Stuber GD. Coordination of brainwide activity by dopamine neurons. *Neuropsychopharmacology*. 2016 Sep 14. doi: 10.1038/npp.2016.151.

Saddoris MP, Sugam JA, Stuber GD, **Witten IB**, Deisseroth K, Carelli RM. *Biol Psychiatry*. Mesolimbic dopamine dynamically tracks, and is causally linked to, discrete aspects of value-based decision making. 2015 May 15;77(10):903-11. doi: 10.1016/j.biopsych.2014.10.024. Epub 2014 Nov 13.

McCutcheon JE, Cone JJ, Sinon CG, Fortin SM, Kantak PA, **Witten IB**, Deisseroth K, Stuber GD, Roitman MF. Optical suppression of drug-evoked phasic dopamine release. *Front Neural Circuits*. 2014 Sep 17;8:114. doi: 10.3389/fncir.2014.00114. eCollection 2014.

Steinberg EE, Boivin JR, Saunders BT, **Witten IB**, Deisseroth K, Janak PH. Positive reinforcement mediated by midbrain dopamine neurons requires d1 and d2 receptor activation in the nucleus accumbens. *PLoS One*. 2014 Apr 14;9(4):e94771. doi: 10.1371/journal.pone.0094771.

Dautan D, Huerta-Ocampo I, **Witten IB**, Deisseroth K, Bolam JP, Gerdjikov T, Mena-Segovia J. A major external source of cholinergic innervation of the striatum and nucleus accubmens orginates in the brainstem. *J Neurosci*. 2014 Mar 26;34(13):4509-18. doi: 10.1523/JNEUROSCI.5071-13.2014.

Steinberg EE, Keiflin R, Boivin JR, **Witten IB**, Deisseroth K, Janak PH. A causal link between prediction errors, dopamine neurons, and learning. *Nature Neuroscience*. 2013 May 26. doi: 10.1038/nn.3413.

Tye KM, Mirzabekov JJ, Warden MR, Ferenczi EA, Tsai HC, Finkelstein J, Kim SY, Adhikari A, Thompson KR, Andalman AS, Gunaydin LA, **Witten IB**, Deisseroth K. Dopamine neurons modulate neural encoding and expression of depression-related behavior. *Nature*. 2013 Jan 24;493(7433):537-41.

DePuy SD, Stornetta RL, Bochorishvili G, Deisseroth K, **Witten IB**, Coates M, Guyenet PG. Glutamatergic neurotransmission between the C1 neurons and the parasympathetic preganglionic neurons of the dorsal motor nucleus of the vagus. *J Neurosci*. 2013 Jan 23;33(4):1486-97.

Witten IB*, Steinberg E*, Lee SY, Davidson TJ, Zalocusky KA, Brodsky M, Yizhar O, Cho SL, Gong S, Ramakrishnan C, Stuber GD, Tye K, Janak P, Deisseroth K. Recombinase-driver rat lines: tools, techniques, and optogenetic application to dopamine-mediated reinforcement. *Neuron*. 2011 Dec 8;72(5):721-33.

Anikeeva P*, Andalman AS*, **Witten IB**, Warden MR, Goshen I, Grosenick L, Gunaydin LA, Frank LM, Deisseroth K. Optetrode: a multichannel readout for optogenetic control in freely moving mice. *Nature Neuroscience*. 2011 Dec 4. doi: 10.1038/nn.2992.

Witten IB*, Lin S*, Brodsky M*, Prakash R*, Diester I, Anikeeva P, Gradinaru V, Ramakrishnan C, Deisseroth K. Cholinergic interneurons control local circuit activity and cocaine conditioning. *Science*. 2010. 330(6011):1677-81.

Witten IB, Knudsen PF, Knudsen EI. A dominance hierarchy of auditory spatial cues in barn owls. *PLoS ONE*. 2010; 5(4): e10396.

Witten IB, Knudsen EI, Sompolinsky H. A Hebbian learning rule mediates asymmetric plasticity in aligning sensory representations. *Journal of Neurophysiology.* 2008; 100(2): 1067-79.

Witten IB*, Bergan JF*, Knudsen EI. Dynamic shifts in the owl's auditory space map predict moving sound location. *Nature Neuroscience*. 2006; 9(11):1439-45.

Why seeing is believing: merging auditory and visual worlds. **Witten IB**, Knudsen EI. *Neuron*. 2005; 48(3):489-96.

Selected Seminars

Neurotheory, Columbia University. Oct 2025.
Center for Brain Science, Harvard University. Apr 2024.
Columbia University Biology Seminar Series. Oct 2023.
University of Washington Neuroscience Seminar. April 2023.
Institute of Neuroinformatics Zurich. Dec 2022.
WashU Neuroscience. Dec 2022.
NYU Swartz Seminar. Dec 2022.
Allen Institute Distinguished seminar. March 2022.
Sainsbury Wellcome Centre. UCL. April 2022.
Neuroscience seminar. Northwestern. Dec 2021.
Neuroscience Seminar. MUSC. Dec 2021.
Adrian Seminar. University of Cambridge. Nov 2021.
Salk Institute Friday Seminar. Nov 2021.
Scripps Neuroscience Seminar. Nov 2021.
Conte Seminar. Mclean Hospital, Harvard. Nov 2021.
World Wide Theoretical Neuroscience Seminar (online seminar). Apr 2021.

Joint seminar in Neuroscience (online seminar). UCLA. Jan 2021.
Neuroscience seminar (online seminar). Vollum Institute. Oct 2020.
Neuroeconomics colloquium (online seminar). NYU. Oct 2020.
ELSC (online seminar). Hebrew University. Oct 2020.
Inscopix webinar. June 2020.
Oxford Cortex Club (online seminar). June 2020.
Champalimaud Center for the Unknown (online seminar). Dec 2019.
BCH/HMS Neurobiology. Harvard U. Cambridge, MA. Dec 2019.
Stanford Neuroscience Institute. Stanford U. Stanford, CA. Mar 2019.
Department of Neuroscience. Einstein. New York, NY. Mar 2019.
Neuroscience Seminar. Cornell Weill. New York, NY. Jan 2019.
Simons Center. MIT. Cambridge, MA. Nov 2018.
Neuroscience Seminar. Boston University. Boston, MA. Nov 2018.
Emory/Georgia Tech Kavli Brain Forum. Atlanta, GA. Oct 2018.
Neuroscience Seminar. ICM Institute. Paris, France. May 2018.
Neurobiology Seminar Series. Duke. Durham, NC. Mar 2018.
Department of Physiology. Northwestern. Chicago, IL. Jan 2018.
Neuroscience Center. UNC. Chapel Hill, NC. Nov 2017.
Neuroscience Department. Johns Hopkins. Baltimore, MD. Oct 2017.
Neuroscience Department. U Penn. Philadelpia, PA. Sept 2017.
Neuroscience Department. UC Davis. Davis, CA. May 2017.
Center for Brain Science. Harvard University. May 2017.
Neuroscience Department. Columbia University. May 2017.
Gladstone Institute. San Francisco, CA. Apr 2017.
Neurobiology Department. U Chicago. Apr 2017.
Psychology Department. Cornell University. Feb 2017.
Center for Neural Systems. NYU. Jan 2017.
NIMH Intramural Research Program. Washington, DC. Jan 2017.
Penn Center for Cognitive Neuroscience. U Penn. Nov 2016.
NIDA Intramural Research Program. Baltimore, MD. Nov 2016.
Psychology Department. Rutgers University. May 2016.
Department of Neurobiology seminar. Weizmann Institute. Jan 2016.
Neuroscience seminar. Jenalia Farms Research Campus. July 2015.
Neuroscience seminar. Rockefeller. June 2015.
Behavior, Genetics, and Neuroscience @ Yale. New Haven. Mar 2015.
Neuroscience Seminar. CSHL. Dec 2014.
NIDA Intramural Research Program. Baltimore, MD. June 2012.
Department of Biology. Pasadena, CA. March 2011.
Princeton Neuroscience Institute. Princeton, NJ. March 2011.
Departments of Biology & Physics. Columbia University. March 2011.
Department of Cell & Mol Physiology. Yale. Feb 2011.
Keck Center & Dept of Otolaryngology. UCSF. Feb 2011.
Neuroscience Dept. Columbia. Feb 2011.
Neurobiology Dept. Northwestern. Feb 2011.
Department of Biology. Stanford. Jan 2011.
Department of Biological Sciences. Carnegie Mellon. Jan 2011.
McGovern Institute. MIT. Jan 2011.
Department of Neurobiology. U Chicago. Dec 2010.
Redwood Center. UC Berkeley. March 2008.
Keck Center. UCSF. March 2008.

Selected Conference Talks

Lake conference on Neural Dynamics. Seattle, WA. Oct 2025.
Amygdala GRC. Barcelona, Spain. July 2025
McKnight Annual Meeting. Aspen, CO. June 2025.
SCGB Annual Meeting. NYC, NY. May 2025.
Cosyne workshops. Mont Tremblanc, CA. March 2025.
Caltech's Chen Institute Symposium. Pasadena, CA. Feb 2025.
Ascona Neural Circuits Meeting. Ascona, Switzerland. Sept 2024.
Methods in Computational Neuroscience. Woods Hole, MA. Aug 2024.
Optogenetics GRC, Keynote talk. Barga, Italy. July 2024.
Lake Conference. Seattle WA. Sept 2023.
Cosyne Workshops. Montreal CA. April 2023.
Ascona Neural Circuits Meeting. Ascona, Switzerland. Sept 2022.
NYSCF annual meeting. Montauk, New York. April 2022.
SCGB annual meeting. NYC, New York. April 2022.
Stanford Mind Brain Computation & Technology Symposium. March 2022.
Dual Perspective Symposium, SFN virtual. Nov 2021
Talking Science Symposium Keynote Speaker. Munich. Oct 2021.
NIH-DOE Workshop: Mapping complete neural circuits. Feb 2021.
Virtual Dopamine (ViDA). Online conference. May 2020.
CRCNS Investigator Meeting. Austin, TX. Sept 2019.
Catecholamine GRC 2019. Sunday River, ME. Aug 2019.
CIFAR Azrieli Brain, Mind & Consciousness. London, ON. June 2019.
Cosyne Main Meeting 2019. Lisbon, Portugal. Feb 2019.
Kavli Workshop. Society for Neuroeconomics. Philadelphia, PA. Oct 2018.
Center for Neuroscience U Pittsburgh Retreat. Wheeling, WV. Sept 2018.
FENS 2018. Berlin, Germany. July 2018.
Giessbachmeeting 2018. Giessbach, Switzerland. May 2018
IBL Annual Meeting. Paris, France. June 2018.
Brain Conference (plenary talk). Rungstedgaard, Denmark. Apr 2018.
Basal Ganglia GRC. Ventura, CA. March 2018.
Symposium at SFN 2017. Washington, DC. Nov 2017.
Neural coding, computation, and dynamics. Capberton, France. Sept 2017.
SCGB Annual Meeting. NYC, NY. Sept 2017.
OptoDBS. Geneva, Switzerland. June 2017.
McKnight Conference. Aspen, CO. June 2017.
Pew Conference. Santa Barbara, CA. March 2017.
BRAIN Initiative Investigator meeting. Washington, DC. Dec 2016.
Knudsen Festschrift Symposium. Stanford, CA. Sept 2016.
Dopamine 2016. Vienna, Austria. Sept 2016.
Optogenetics GRC. Sunday River, ME. July 2016.
Cosyne Workshop. Feb 2016.
ELSC annual retreat (keynote speaker). Hebrew University. Jan 2016.
Panel speaker at ACNP 2015 annual conference. Dec 2015.
RLDM2015. Edmonton, CA. June 2015.
FENS 2014. Milan, Italy. June 2014.
2014 Genetics Society. Royal Society, London. Dec 2014.
Minisymposium at SfN 2013. San Diego. Nov 2013.
Optogenetics & Chemogenetics. Short Course. SfN. San Diego. Nov 2013.

Winter Conference in Brain Research. Breckenridge, CO. Jan 2013.
The 10th Intl Catecholamine Symposium. Monterey, CA. Sept 2012.
Society of Biological Psychiatry. Philadelphia, PA. May 2012.
Mathematical Biology Institute, Workshop on Neural Development (Ohio State University). Columbus, OH. April 2009.
Spotlight Presentation at COSYNE. Salt Lake City, UT. Feb 2008.

University and departmental service

2024-	Postdoc and ARS Unionization Advisory Group member
2024	Committee member for PNI Instrumentation engineer search
2023-	Committee member of Princeton IACUC
2023-	Faculty advisor for graduate lab (NEU 501B) modernization
2016-	Faculty advisor for PNI viral core
2020	Committee member for PNI faculty search
2019	Committee member for PNI Code of Conduct
2012-2018	Committee member for PNI graduate student admissions
2016-2018	Faculty co-organizer of the PNI retreat
2015-2017	Participant in lecture series for PNI summer program
2014-	Committee member to select CV Starr candidates
2014-2018	Committee member to organize PSY colloquium series
2015	Chair of committee to oversee PNI viral core
2015	Participant in Rutgers-Princeton Seminar Series
2014-2015	Committee member to select URMs for PNI summer program
2014	Committee member to update PNI graduate curriculum
2013	Committee member to select molecular equipment for PNI
2013	Oral presentation for the PSY Graduate Student Reunion

Service to research community

2025	NIH/NSF CRCNS reviewer
2024-	Life Science Research Foundation Selection Committee
2024	Basal Ganglia GRC Chair
2023-	Stage 1 reviewer for NIH New Innovator Award
2023-	EAB for NIH U01 at UW (BRAIN).
2022	Basal Ganglia GRC Vice-chair
2018-2022	EAB for NIH U19 at Columbia (BRAIN Initiative).
2018	General Chair for Cosyne 2018
2017-	EAB for NIH P30 at UW (NIDA)
2017	Program Chair for Cosyne 2017
2014	Program committee member for Cosyne 2015
2013-	Ad-hoc reviewer for NIH study sections
2012	Reviewer for Cosyne 2012

Thesis students

Graduate students: Hessam Akhlaghpour ’17 (PNI), Joel Finkelstein ’18 (PSY), Clare Choi ’19 (PSY), Nathan Parker ’19 (PNI), Lili Cai ’20 (PNI), Weston Fleming ‘22 (PNI), Lindsay Willmore ‘22 (PNI), Iris Stone ‘23 (PNI), Rachel Lee ‘23 (PNI), Anna Zhukovskaya ‘23 (PNI), Yotam Sagiv ‘24 (PNI), Adelaide Minerva ‘25 (PNI), Bichan Wu (PNI), Yousuf El-Jayyousi (PNI), Vanessa Roser (PNI), Yunchang Zhang (PNI), Brenna McMannon (PNI), Ben Midler (PNI), Lingwei Cao (PNI)

Committee member for the following graduate students: Miriam Bocarsly ’12 (PSY), Ann Duan ’15 (PNI), Maya Opendak ’15 (PSY), Kevin Miller ’17 (PNI), Gary Kane ’18 (PSY), Tom Pisano ’19 (MOL), Nick Roy ’20 (PNI), Brandy Briones ’20 (PSY), Diksha Gupta ‘22 (PNI), Tyler Boyd-Meredith ‘22 (PNI), Blake Laham ‘23 (PSY), Sarah Jo Venditto ‘24 (PNI), Jess Breda ‘25 (PNI), Jorge Garcia (PNI), Emma Diethorn (PSY), Yoel Sanchez Araujo (PNI)