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Curriculum Vitae

Earl K. Miller

Picower Professor of Neuroscience
The Picower Institute for Learning and Memory and
Department of Brain and Cognitive Sciences at the
Massachusetts Institute of Technology

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Date of Birth

30 November 1962

Education

1990	Ph.D. in Psychology and Neuroscience, Princeton University
1987	M.A. in Psychology and Neuroscience, Princeton University
1985	B.A. *summa cum laude* with honors in Psychology, Kent State University

Current Positions

2003	Picower Professor of Neuroscience, The Picower Institute for Learning and Memory and Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
2014	Co-founder and Chief Scientist, SplitSage
2023	Co-founder, Neuroblox

Past Positions

2009-2011	Co-Director, Center of Excellence for Learning in Education, Science, and Technology, National Science Foundation Science of Learning Center
2001-2009	Associate Director, The Picower Institute for Learning and Memory, Massachusetts Institute of Technology
2002-2009	Director (Thrust 5), Center of Excellence for Learning in Education, Science, and Technology, National Science Foundation Science of Learning Center
1999-2008	Investigator, RIKEN-MIT Neuroscience Research Center
2002-2003	Professor of Neuroscience, The Picower Center for Learning and Memory and Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
1999-2002	Associate Professor of Neuroscience, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
2000-2006	Director of Graduate Studies in Brain and Cognitive Sciences, Massachusetts Institute of Technology
1996-1999	Associate Member, Center for Learning and Memory, Massachusetts Institute of Technology
1995-1999	Assistant Professor of Neuroscience, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology
1990-1995	Intramural Research Fellow, Laboratory of Neuropsychology, National Institute of Mental Health
1989-1990	Lecturer, Princeton University

1985-1990 Research Assistant, Princeton University
1985-1989 Assistant in Instruction, Princeton University
1983-1985 Research Assistant, Kent State University

Awards and Honors

2025 Graduate Mentoring Award, Department of Brain and Cognitive Sciences, MIT
2020 Doctor of Science (honoris causa), Kent State University
2019 George A. Miller Prize in Cognitive Neuroscience
2018 Excellence in Graduate Teaching, Department of Brain and Cognitive Sciences, MIT
2017 Elected to the American Academy of Arts and Sciences
2017 Miller and Cohen (2001) identified as the 5th most-cited paper in Neuroscience
(Yeung et al., 2017 Front. Hum. Neurosci., 21 July 2017)
2017 Paul and Lilah Newton Brain Science Award
2016 Goldman-Rakic Prize for Outstanding Achievement in Cognitive Neuroscience
2016 Commencement Address, Kent State University
2016 Elected to the Memory Disorders Research Society
2015 Professional Achievement Award, Kent State University Alumni Association
2014 Amar G. Bose Research Fellow
2014 Antzoulatos and Miller (2014) selected as one of Neuron's best papers of 2014-2015
2013 Distinguished Member, National Society of Collegiate Scholars
2010 MERIT Award, National Institute of Mental Health
2008 "An Integrative Theory of Prefrontal Cortex Function" (Miller and Cohen, 2001) designated a *Current Classic* by Thomson Scientific as among the most cited papers in the field of Neuroscience and Behavior
2007 Mathilde Solowey Award in the Neurosciences
2006 Elected to the International Neuropsychological Symposium
2005 Fellow, American Association for the Advancement of Science
2003 Picower Professorship (endowed chair)
2002 Elected to the International Society for Behavioral Neuroscience
2000 Society for Neuroscience Young Investigator Award
2000 National Academy of Sciences Troland Research Award
1999 Tenured at MIT two years ahead of schedule
1999 Class of 1956 Career Development Professorship (endowed chair)
1998 John Merck Scholar Award
1996 Pew Scholar Award
1996 McKnight Scholar Award
1996 Whitehall Foundation Fellowship
1996 Alfred P. Sloan Research Fellow
1987 National Research Service Award Predoctoral Fellowship
1986 National Institutes of Health Predoctoral Training Fellowship
1985 Graduated *summa cum laude* with honors, Kent State University
1985 Phi Beta Kappa

Editorships and Editorial Boards

2020 Associate Editor, Frontiers in Systems Neuroscience
2017 Editorial Board, Current Opinion in Behavioral Sciences
2016 Senior Editor, Oxford Research Encyclopedia of Neuroscience
2016 Editorial Board, Annual Review of Psychology

2011 Advisory Editorial Board, *Trends in Cognitive Science*
2010 Co-Editor, Cognitive Neuroscience 2010, Current Opinion in Neurobiology
2010 Editorial Board, *Neural Systems & Circuits*
2010 Editorial Board, *Neuroscience Research*
2009 Co-Editor, *Experimental Brain Research*
2008 Reviewing Editor, *Frontiers in Systems Neuroscience*
2006 Senior Editor, *Journal of Neuroscience*
2005 Reviewing Editor, *Journal of Neuroscience*
2004 Associate Editor, *New Encyclopedia of Neuroscience*
2003 Action Editor, *Journal of Cognitive Neuroscience*
2002 Editorial Board, Cognitive Sciences, MIT Press
2002 Editorial Board, *Journal of Neurophysiology*
2001 Consulting Editor, *Behavioral Neuroscience*
2000 Editorial Board, *Neuron*
2000 Editorial Board, *Cognitive, Affective, and Behavioral Neuroscience*

Committees, Advisory Boards, Consultant Work, Etc.

2023 Chair, Advisory Board, Brain Health Research Institute, Kent State University
2022 Advisor, Centre for Technology and Human Agency
2022 Steering Committee, Brain Health Research Institute, Kent State University.
2022 Special Advisor to the Director, Brain Health Research Institute, Kent State University
2021 BrainsCAN International Scientific and Outreach Advisory Board
2021 Scientific Advisory Board, Neurable
2021 Expert Witness, cognition and memory.
2020 External Advisory Committee, COBRE Center for Central Nervous System Function
2020 Consultant, Cognito
2019 Scientific Advisory Board, Ernst Strungmann Institute for Neuroscience
2015 Scientific Advisory Board, Motimatic
2012 Scientific Advisory Board, Thync
2011 Society for Neuroscience Committee on Animals in Research
2011 Advisory Council, International Association for the Study of Attention and Performance
2010 Consultant, BBN Technologies
2010 Advisory Panel, Research Domain Criteria Project, National Institute of Mental Health
2010 College of CSR Reviewers, National Institutes of Health
2010 Consultant, Shire Pharmaceuticals
2010 Selection Committee, Eppendorf and Science Prize for Neurobiology
2009 Advisory Board, National Institutes of Health Program Project, Yale University
2008 National Institute of Neurological Disorders and Stroke Advisory Panel for Basic Research
2006 Scientific Advisory Board, Nielsen Neuroscience.
2006 Scientific Advisory Board, Polimetrica, Inc
2005 National Institutes of Health Cognitive Neuroscience study section
2005 National Institute of Mental Health Workshop on Social Neuroscience
2004 College of Reviewers for Canada Research Chairs
2003 Working Group on Interspecific Chimeric Brains, Phoebe R. Berman Bioethics Institute, Johns Hopkins University
2003 Advisory Council, Department of Psychology, Princeton University

2002	Advisory Board, International Centre for Research on the Biology of Memory, Norwegian Research Council
1999	Advisory Council of the International Association for the Study of Attention and Performance
1997	Steering Committee, Boston Area Neuroscience Group

Patents

Method and Apparatus Accounting for Independent Cognitive Capacities in the Right vs Left Half of Vision. Patent No. 9927940 Inventors: Earl Keith Miller and Timothy J. Buschman

Dynamic Display System and Method for Customizing a Controller in a Display System
Patent No. 10986992 Inventors: Earl Keith Miller, Timothy Joseph Buschman, Simon John Kornblith

Publications

1. Bardon, A.G., Ballesteros, J.J., Brincat, S.L., Roy, J.E., Mahnke, M.M., Ishizawa, Y., Brown, E.N., and Miller, E.K. “Convergent effects of different anesthetics on changes in phase alignment of cortical oscillations”, *Cell Reports*, 2025, in press.

2. Eisen, A.J., Kozachkov, L., Bastos, A.M., Donoghue, J.A., Mahnke, M.K., Brincat, S.L., Chandra, S., Brown, E.N., Fiete, I. and Miller, E.K. “Propofol anesthesia destabilizes neural dynamics across cortex, *Neuron*, 2024, https://doi.org/10.1016/j.neuron.2024.06.011.

3. Xiong, Y., Donoghue, J.A., Lundqvist, M., Mahnke, M. Major, A.J., Brown, E.N., Miller, E.K., and Bastos, A.M. “Propofol-mediated loss of consciousness disrupts predictive routing and local field phase modulation of neural activity”, *Proceedings of the National Academy of Sciences*, 2024, in press.

4. Tye, K.M., Miller, E.K., Taschbach, F.H., Benna, M.K., Rigotti, M., Fusi, S. “Mixed Selectivity: Cellular Computations for Complexity”, *Neuron*, 2024, https://doi.org/10.1016/j.neuron.2024.04.017.

5. Adam, E., Kowalski, M. Akeju, S. Miller, E.K., Brown, E.N., McCarthy, M.M., Kopell, N.J. “Ketamine can produce oscillatory dynamics by engaging mechanisms dependent on the kinetics of NMDA receptors.” *Proceedings of the National Academy of Sciences*, 2024, https://doi.org/10.1073/pnas.2402732121.

6. Miller, E.K., Brincat, S.L., and Roy, J.E. “Cognition is an emergent property”, *Current Opinion in Behavioral Sciences*, 2024, https://doi.org/10.1016/j.cobeha.2024.101388

7. Lundqvist, M., Miller, E.K., Nordmark, J., Liljefors, J., Herman, P. “Beta: Bursts of cognition” *Trends in Cognitive Sciences*, 2024, https://doi.org/10.1016/j.tics.2024.03.010.

8. Mendoza-Halliday, D., Major, A. J., Lee, N., Lichtenfeld, M.J., Carlson, B., Mitchell, B., Meng, P.D., Xiong, Y., Westerberg, J.A., Jia, X., Johnston, K.D., Selvanayagam, J., Everling, S., Maier, A., Desimone, R., Miller, E.K., and Bastos, A. M. “A ubiquitous spectrolaminar motif of local field potential power across the primate cortex”. *Nature Neuroscience*, 2024. https://doi.org/10.1038/s41593-023-01554-7

9. Tauber, J.M., Brincat, S.L., Stephen, E.P., Donoghue, J.A., Kozachkov, L., Brown, E.N., and Miller, E.K. “Propofol mediated unconsciousness disrupts progression of sensory signals through the cortical hierarchy”. *Journal of Cognitive Neuroscience*, 2023. https://doi.org/10.1162/jocn_a_02081

10. Chakravarty, S., Donoghue, J., Waite, A.S., Mahnke, M., Garwood, I.C., Miller, E.K., and Brown, E.N. “Closed-loop control of anesthetic state in non-human primates”, *PNAS Nexus*, 2023.

https://doi.org/10.1093/pnasnexus/pgad293

11. Garwood, I.C., Major, A.J., Antonini, M.J., Correa, J., Lee, Y., Sahasrabudhe, A., Mahnke, M.K., Miller, E.K., Brown, E.N. and Anikeeva, P. “Multifunctional fibers enable modulation of cortical and deep brain activity during cognitive behavior in macaques”, *Science Advances*, in press.

12. Peppercorn, J. Miller, E.K., and Hasselmo, M.E. “Don’t You Worry ‘Bout a Thing: Harnessing the power of music to improve emotional health in oncology” *JCO Oncology Practice,* 2023. https://ascopubs.org/doi/10.1200/OP.23.00555

13. Pinotsis, D.A. and Miller, E.K. “In vivo ephaptic coupling allows memory network formation”. *Cerebral Cortex*, 2023. https://doi.org/10.1093/cercor/bhad25.

14. Pinotsis, D.A., Fridman, G., and Miller, E.K. “Cytoelectric Coupling: Electric fields sculpt neural activity and “tune” the brain’s infrastructure”. *Progress in Neurobiology*, 2023 https://doi.org/10.1016/j.pneurobio.2023.102465.

15. Lundqvist, M. Brincat, S.L., Rose, J. Warden, M.R., Buschman, T.J., Miller, E.K., and Herman, P. “Working memory control dynamics follow principles of spatial computing”. *Nature Communications*, 2023. https://doi.org/10.1038/s41467-023-36555-4

16. Sanchez-Todo, R., Bastos, A.M., Sola, E.L., Mercadal, B., Santarnecchi, E., Miller, E.K., Deco, G. and Ruffini, G. “A physical neural mass model framework for the analysis of oscillatory generators from laminar electrophysiological recordings”. *NeuroImage*, 2023 https://doi.org/10.1016/j.neuroimage.2023.119938

17. Kozachkov, L., Tauber, J., Lundqvist, M., Brincat, S.L., Slotine, J.J., and Miller, E.K. “Robust and brain-like working memory through short-term synaptic plasticity” *PLOS Computational Biology*, 2022. https://doi.org/10.1371/journal.pcbi.1010776

18. Buschman, T.J., and Miller, E.K. “Working memory is complex and dynamic, like your thoughts”. *Journal of Cognitive Neuroscience*, 2022 https://doi.org/10.1162/jocn_a_01940

19. Lundqvist, M., Rose, J., Brincat, S.L., Warden, M.R., Buschman, T.J., Herman, P., and Miller, E.K. “Reduced variability of bursting activity during working memory” *Scientific Reports*, 2022. https://doi.org/10.1038/s41598-022-18577-y

20. Barack, D.L., Miller, E.K., Moore, C.I., Packer, A.M., Pessoa, L. Ross, L.N., and Rust, N.C. “A call for more clarity around causality in neuroscience” *Trends in Neurosciences*, 2022 https://doi.org/10.1016/j.tins.2022.06.003

21. Bhattacharya, S., Donoghue, J.A., Mahnke, M., Brincat, S.L., Brown, E.N., and Miller, E.K. “Propofol anesthesia alters cortical traveling waves”. *Journal of Cognitive Neuroscience*, 2022, https://doi.org/10.1162/jocn_a_01856.

22. Pinotsis, D.A., and Miller, E.K. “Beyond dimension reduction: Stable electric fields emerge from and allow representational drift”. NeuroImage, 2022. https://doi.org/10.1016/j.neuroimage.2022.119058

23. Bhattacharya, S., Brincat, S. L., Lundqvist, M., and Miller, E. K. “Traveling waves in the prefrontal cortex during working memory”. *PLOS Computational Biology*, 2022. https://doi.org/10.1371/journal.pcbi.1009827

24. Garwood, I.C., Chakravarty, S., Donoghue, J., Kahali, P., Chamadia, S., Akeju, O., Miller, E.K., Brown, E.N. “A hidden Markov model reliably characterizes ketamine-induced spectral dynamics in macaque LFP and human EEG”. *PLOS Computational Biology*, 2021, 17(8), e1009280.

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26. Brincat, S.L, Donoghue, J.A., Mahnke, M.K., Kornblith, S., Lundqvist, M. and Miller, E.K. “Interhemispheric transfer of working memories”. *Neuron*, 2021, Published online Feb 8 2021; https://doi.org/10.1016/j.neuron.2021.01.016

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31. Lundqvist, M., Bastos, A.M., and Miller, E.K. “Preservation and changes in oscillatory dynamics across the cortical hierarchy” *Journal of Cognitive Neuroscience*, 2020. https://doi.org/10.1162/jocn_a_01600

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35. Liu, Y., Brincat, S.L., Miller, E.K., and Hasselmo, M.E. “Neural population dynamics in prefrontal cortex and hippocampus during paired-associate learning” *Journal of Cognitive Neuroscience*, in press.

36. Klein, N., Orellana, J., Brincat, S.L., Miller, E.K., Kass, R. “Torus graphs for multivariate phase coupling analysis” *Annals of Applied Statistics*, Volume 14, Number 2, 635-660, 2020.

37. Trainto, C., Nicolai, C., Miller, E.K., and Siegel, M. “Extracellular spike waveform dissociates four functionally distinct cell classes in primate cortex”. *Current Biology*, Aug 22, 2019. https://doi.org/10.1016/j.cub.2019.07.051

38. Pinotsis, D.A., Siegel, M. and Miller, E.K. “Sensory processing and categorization in cortical and deep neural networks”. *NeuroImage*, 2019. https://doi.org/10.1016/j.neuroimage.2019.116118.

39. Sandhaeger, F., Nicolai, C., Miller, E.K., and Siegel, M. “Monkey EEG links neuronal color and motion information across species and scales” *eLife* 2019;8:e45645 DOI: 10.7554/eLife.45645.

40. Miller, E.K. and Desimone, R. “Charles Gordon Gross (1936-2019)” *Neuron*, 2019. https://doi.org/10.1016/j.neuron.2019.05.010

41. Widge, A.S., Zorowitz, S., Basu, I. Paulk, A., Cash, S., Eskandar, E., Deckersbach, T., Miller, E.K., and Dougherty, D. “Deep brain stimulation of the internal capsule enhances human cognitive control and prefrontal cortex function.” *Nature Communications*, 2019. https://doi.org/10.1038/s41467-019-09557-4

42. Widge, A.S. and Miller, E.K. “Next-generation clinical brain stimulation: Targeting cognition and networks through neural oscillations” JAMA Psychiatry, 2019. doi:10.1001/jamapsychiatry.2019.0740

43. Miller, E.K., Lundqvist, L., and Bastos, A.M. “Working Memory 2.0” *Neuron*, 2018, https://doi.org/10.1016/j.neuron.2018.09.023.

44. Brincat, S.L., Siegel, M, Nicolai, C., and Miller, E.K. “Gradual progression from sensory to task-related processing in cerebral cortex.” *Proceedings of the National Academy of Sciences*, 2018. https://doi.org/10.1073/pnas.1717075115

45. Widge, A.S., Boggess, M. Mullen, A, Sheopory, S., Loonis, R. Freeman, D.K., and Miller, E.K. “Altering alpha-frequency brain oscillations with rapid analog feedback-driven neurostimulation” PLOS ONE, in press.

46. Wasmuht, D.F., Spaak, E., Buschman, T.J., Miller, E.K. and Stokes, M.G. “Intrinsic neuronal dynamics predict distinct functional roles during working memory.” *Nature Communications*, Volume 9, Article number: 3499, 2018. http://doi.org/10.1038/s41467-018-05961-4

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49. Villagrasa, F., Baladron, J., Vitay, J., Schroll, H., Antzoulatos, E., Miller, E.K., and Hamker, F. “On the role of cortex-basal ganglia interactions for category learning: A neuro-computational approach.” *Journal of Neuroscience*, 18 September 2018, 0874-18; DOI: https://doi.org/10.1523/JNEUROSCI.0874-18.2018.

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52. Tiganj, Z., Cromer, J. A., Roy, J. E., Miller, E. K., & Howard, M. W. “Compressed Timeline of Recent Experience in Monkey Lateral Prefrontal Cortex.” Journal of Cognitive Neuroscience, 1-16, 2018

53. Lundqvist, M., Herman, P. Warden, M.R., Brincat, S.L., and Miller, E.K. “Gamma and beta bursts during working memory read-out suggest roles in its volitional control” *Nature Communications* 9: 394, 2018

54. Wutz, A., Loonis, R., Roy, J.E., Donoghue, J.A., and Miller, E.K. “Different levels of category abstraction by different dynamics in different prefrontal areas” *Neuron*, 97:,1-11, 2018.

55. Bastos, A.M., Loonis, R., Kornblith, S., Lundqvist, M., and Miller, E.K. “Laminar recordings in frontal cortex suggest distinct layers for maintenance and control of working memory” *Proceedings of the National Academy of Sciences*, 2018.

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58. Pinotsis, D. Brincat, S.L., and Miller, E.K. “On memories, neural ensembles and mental flexibility” *NeuroImage*, 2017.

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63. Brincat, S.L. and Miller, E.K “Prefrontal networks shift from external to internal modes during learning” *Journal of Neuroscience.* 36(37): 9739-9754, 2016 doi: 10.1523/JNEUROSCI.0274-16.2016.

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66. Fusi, S., Miller, E.K., and Rigotti, M. “Why Neurons Mix: High Dimensionality for Higher Cognition” Current Opinion in Neurobiology, 37:66-74, 2016.

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77. Miller, E.K. and Buschman, T.J. “Neural mechanisms for the executive control of attention” In: The Oxford Handbook of Attention. Nobre, K. and Kastner, S. Oxford University Press, 2014 ISBN: 9780199675111

78. Puig, M. V., Antzoulatos, E. G., & Miller, E. K. Prefrontal dopamine in associative learning and memory. Neuroscience, 282, 217-229, 2014.

79. Lindsay, G., Rigotti, M., Warden, M. R., Miller, E. K., & Fusi, S. Hebbian-inspired rewiring of a random network replicates pattern of selectivity seen in PFC. BMC Neuroscience, 15(1), 1, 2014.

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Distinguished Lectures

Keynote Address – Gordon Conference on Frontal Cortex, 2024

Keynote Address - The Science of Consciousness, Tuscon, 2024

Keynote Address – Simian Collective Meeting, Chicago, 2023

Plenary Lecture - Bhaktivedanta Institute, 2023

Grand Rounds - University of California Riverside, School of Medicine, 2022

Keynote Address – Opening of The Brain Health Research Institute at Kent State University, 2021

Grand Rounds - Boston University School of Medicine Clinical Neuroscience, 2019

George A. Miller Award Lecture - San Francisco, 2019

Panelist - Cell Press “The State of the Mind 2018”, San Diego, 2018

Panelist - Boston Book Festival, “Twitter Ate My Brain”, 2018

Distinguished Lecture Series - University of Pittsburgh, Department of Psychiatry, 2018

Plenary Speaker - International Neuropsychological Society Conference, 2018

Goldman-Rakic Prize Memorial Lecture - Yale University, 2017

Commencement Address - Kent State University, 2016

Keynote Address - Annual Alumni College, Kent State University, 2014
Keynote Address - Eastern Psychological Association Annual Meeting, 2014
Biomed Distinguished Lecturer - University of Leuven, Belgium, 2011
Plenary Lecture - International Conference on Cognitive and Neural Systems, Boston University, 2010
Carlson Lecture - University of Chicago, 2009
Keynote Speaker - Meeting of the Comparative Cognition Society, 2009
Engineering Distinguished Lecture - National Science Foundation, Washington, DC, 2009
Keynote Speaker - Yale University Science Day, 2008
Jeffrey Lecture in Cognitive Neuroscience - UCLA, 2007
Mathilde Solowey Lecture in the Neurosciences - National Institutes of Health, 2007
Plenary Lecture - Japanese Society for Neuroscience Meeting, Yokohama, Japan, 2007
Grass Lecture - University of Illinois at Urbana-Champaign, 2006
Keynote Address - Human Brain Mapping Meeting, Toronto, Canada, 2005
Keynote Address, Motivational Neuronal Network meeting, Clearwater, Florida, 2005
Fred Attneave Lecture - Department of Psychology, University of Oregon, 2004
Swammerdam Lecture - Vrije Universiteit and University of Amsterdam, The Netherlands, 2002

Invited Lectures

2024

Seminar, University of California at San Diego
Seminar, Martinos Center at MGH
Seminar, Georgia Tech
Seminar, University of Illinois at Urbana-Champaign
Seminar, Columbia University
Seminar, Carnegie Mellon University

2023

Seminar, Northwestern University
Seminar, Queen Mary University
Seminar, University of Lisbon
Seminar, Cognitive Neuroscience Society Meeting, San Francisco
Seminar, University of Trento
Seminar, University of Texas at Austin
Workshop, National Institute on Aging
Seminar, Naval Undersea Warfare Centers
Seminar, Yale University
Seminar, Carnegie Mellon University
Seminar and Interview, The Learning Salon
Interview, Brain Inspired Podcast

2022

Kavli Summer Brain Workshop

10th Anniversary of the Kent State Brain Health Research Institute

Seminar, Ernst Strüngmann Institute (ESI) for Neuroscience

Gordon Research Conference on the Neurobiology of Cognition

Seminar, Tufts University

Seminar, Center for Brain, Behavior, and Cognition, Pennsylvania State University

Seminar, Research Unit 5159, German Research Foundation

2021

Seminar, Bar-Ilan University

Transatlantic Systems Neuroscience Seminar

Brains, Minds, and Machines Seminar, MIT

Frontiers in Cognitive Neuroscience, Karolinska Institutet

2020

Seminar, University of California at Berkeley

Seminar, Medical Research Council Cognition Unit, Cambridge, UK

EEG Core Initiative Seminar, Brown University

Neuroscience Seminar, Boston University

Gordon Conference on the Neurobiology of Cognition

2019

Seminar, University of Western Ontario

Cognitive Lunch Seminar, Massachusetts Institute of Technology

3rd Control Processes Meeting, Brown University

Seminar, University of California at Berkeley

2018

Plenary Speaker, International Neuropsychological Society Conference

Office of Naval Research Workshop

Memory Disorder Research Society

ECoG Workshop, Society for Neuroscience Annual Meeting

2017

Goldman-Rakic Memorial Lecture, Yale University

Big Questions in Neuroscience, Arlington, VA

Seminar, Brown University

Seminar, New York University

Symposium, Memory Disorders Research Society Meeting, Chicago, Il

ONR Computational Neuroscience Program

2016

Symposium, Memory Disorders Research Society Meeting, Princeton, NJ

Seminar, Boston University

28th Annual International Mental Health Research Symposium, Brain and Behavioral Research Foundation, NYC

2015

Brain Stimulation Based Neural Circuit Modeling: Linking Levels of Analysis, Chicago

Workshop on Advances in Electrocorticography, Chicago

Computational Neuroscience Seminar, Brandeis University

Computational Properties of the Prefrontal Cortex, Bethesda

Neurobiology Seminar, Yale University

Pfizer Neuroscience Seminar Series

2014

Workshop on Neural Oscillations, Oxford University

Keynote Address, Annual Alumni College, Kent State University

Keynote Address, Eastern Psychological Association Annual Meeting

Symposium on Categorization, Eastern Psychological Association Annual Meeting

Gordon Conference on Cognitive Neuroscience

Seminar, Dartmouth College

2013

Symposium on Attention, 20th Annual Meeting of the Cognitive Neuroscience Society

Cognitive Rhythms Collaborative Conference: Rhythmic Dynamics and Cognition, Cambridge, MA

Neural Circuits for Adaptive Control of Behavior, Paris, France

Affective Brain Lab Talk, University College London

Seminar, University of New Hampshire

Working Memory Conference, University of Oregon

2012

Working Group of the Pontifical Academy of Sciences on “Human Activities, Neurosciences, and the Person”, The Vatican

Reprogramming the Brain, University of Texas at Dallas

Biomedical Engineering Seminar, Tufts University

“Rewards, Habits, and Learning: Towards an Integrative View of Frontostriatal Function”, Columbia University

“Measuring and Interpreting Cognitive Changes in Early Huntington’s Disease”, CHDI Foundation, New York

Workshop on Categorization, Cosyne Meeting, Salt Lake City

Workshop on Working Memory, Cosyne Meeting, Salt Lake City

Center for Mind/Brain Medicine Seminar Series, Brigham and Women's Hospital

2011

International Conference on Cognitive Neuroscience, Mallorca, Spain

Biomed Distinguished Lecturer, University of Leuven, Belgium

International Neuropsychological Symposium, Mondsee, Austria

Meet-the-Expert Event, Society for Neuroscience Annual Meeting, Washington, DC

Helen Wills Neuroscience Institute, University of California at Berkeley

Interdisciplinary Graduate Conference on Consciousness, Boston University

Neuroscience Seminar, Brandeis University

Neuroscience Seminar, Columbia University

Cognitive Rhythms Collaborative, Cambridge, MA

Visual Attention Seminar, Brigham and Women's Hospital, Cambridge, MA

2010

Center for Brain Science Seminar, Harvard University

Cognitive Brain and Behavior Seminar, Department of Psychology, Harvard University

"Lunch and Learn" seminar, Shire Pharmaceuticals, Philadelphia

Workshop on Working Memory, National Institute of Mental Health, Bethesda, MD

Symposium at the annual meeting of the American Psychiatric Association, New Orleans

Plenary Lecture, International Conference on Cognitive and Neural Systems, Boston University

Homewood Brain and Cognition Lecture Series, Johns Hopkins University

The Frontal Lobes 2010, Toronto, Canada

Adler Symposium, Salk Institute for Biological Studies

2009

Carlson Lecture, University of Chicago

Keynote Speaker, Meeting of the Comparative Cognition Society

Engineering Distinguished Lecture, National Science Foundation, Washington, DC

Ernst Strungmann Forum on Dynamic Coordination in the Brain, Frankfurt, Germany

Neuroscience Seminar, University of California at San Diego

Banbury Workshop: "Searching for principles underlying memory in biological systems", Cold Spring Harbor

Invited address, Computational and Systems Neuroscience meeting, Salt Lake City, Utah

University of Minnesota Department of Neuroscience seminar

Charles River Association for Memory seminar, Cambridge, MA

2008

Conference on Memory and Neural Networks, Longyearbyen, Svalbard, Norway

Netherlands Neuroscience Institute Conference on Perceptual Learning, Motor Learning, and Automaticity, Amsterdam, Netherlands

Keynote Speaker, Yale University Science Day

Shire Biopharmaceuticals Advisory Board Meeting – Guanfacine Mechanism of Action in ADHD, New York City

Seminar, Merck &Co., Inc., Philadelphia

Neuroscience Seminar, Brown University

Cognitive Neuroscience Seminar Series, Columbia University

Seminar, Princeton University

"Emotions, Memories, Consciousness, and Attention: Biological Approaches to Cognitive Problems" , Columbia University

Symposium in honor of Brenda Milner, Montreal Neurological Institute

Cognitive, Computational and Systems Neuroscience Seminar, Washington University, St. Louis

BrainMap Seminar, Martinos Center, Massachusetts General Hospital

2007

Mathilde Solowey Lecture in the Neurosciences, National Institutes of Health

Plenary Lecture, Japanese Society for Neuroscience Meeting, Yokohama, Japan

Jeffrey Lecture in Cognitive Neuroscience, UCLA

Cambridge Neuroscience Symposium, Cambridge, UK

Meeting on Executive Functions, Leiden, Netherlands

Neuroscience Seminar, University of California at Irvine

Wisconsin Symposium on Emotion, University of Wisconsin

"Neurons, brains and models: crossing levels of analysis in cognitive brain research", University of Michigan

"The cognitive science of semantics", Tufts University

Neuroscience Seminar, University of Maryland

2006

"Memories: Molecules and Circuits", IPSEN Foundation, Paris, France

Invited Address, Annual Meeting, American Psychological Society, New York City

Symposium on "Prefrontal cortex, Working Memory, Flexible behavior", Yale University

Learning Sciences Institute seminar, Vanderbilt University

Grass Lecture, University of Illinois at Urbana-Champaign

Neuroscience Seminar Series, University of California at Berkeley

Neuroscience Colloquium, Boston University School of Medicine

"New Frontiers in Brain Science: from molecules to mind", Massachusetts Institute of Technology

2005

Keynote Address, Human Brain Mapping Meeting, Toronto, Canada

International Conference on Cognitive Neuroscience, Havana, Cuba

Fudan University Institute of Neurobiology Seminar, Shanghai, China

International Neuropsychology Symposium, Sardinia, Italy

Helmholtz Lecture Series, Helmholtz Research Institute, Universities of Utrecht, Amsterdam, and Rotterdam, The Netherlands

Colloquium, Max Planck Institute, Berlin, Germany

Symposium on Executive Functions and the Frontal Lobe, Tuebingen, Germany

Keynote Address, Motivational Neuronal Network meeting, Clearwater, Florida

Computational Neuroscience Seminar Series, University of Chicago

Neuroscience Seminar, University of California at San Diego

Mind and Brain Colloquium, University of California at Davis

Psychology Seminar, Stanford University

Seminar, California Institute of Technology

Seminar, Harvard Mind, Brain, and Behavior Initiative, Harvard University

Course on the Biology of Memory, Cold Spring Harbor

Workshop on Schizophrenia, Cold Spring Harbor

2004

Munich Encounters in Cognition and Action Symposium, Max Planck Institute, Munich, Germany

International Congress of Psychology, Beijing, China

American College of Neuropsychopharmacology Meeting, Puerto Rico

Neurons and Memory, a satellite meeting of the Society for Neuroscience Annual Meeting, San Diego

Neural Control of Behavior Meeting, University of California, Los Angeles

Center for Visual Science Symposium, University of Rochester

Neuroscience Symposium, University of Western Ontario

Mind, Brain and Behavior Distinguished Lecture, Duke University

Symposium, Cognitive Neuroscience Meeting, San Francisco

Course on Brain Science for Knight Science Journalism Fellows, M.I.T.

Working Group on Interspecific Chimeric Brains, Phoebe R. Berman Bioethics Institute, Johns Hopkins University

Interdisciplinary Program in Neuroscience Seminar, Georgetown University

Seminar, University of Texas Medical School

Seminar, Harvard Medical School

Seminar, Johns Hopkins University

Summer Institute in Cognitive Neuroscience, Dartmouth College

Fred Attneave Lecture, Department of Psychology, University of Oregon

2003

Fyssen Colloquium, St Germain en Laye, France

Department of Psychology Colloquium, Cornell University

Center for Neural Science Seminar, New York University

International Joint Conference on Neural Networks, Portland, Oregon

Symposium at the Cognitive Neuroscience Society Meeting, New York

Department of Neuroscience Seminar, University of Connecticut Health Center

NIDA Workshop on Developing Behavioral Treatments for Cognitively Impaired Drug Abusers, Bethesda

NIH Workshop on Executive Functions, New York City

Roche Pharmaceuticals, Palo Alto

RIKEN Brain Sciences Institute Retreat, Shinrin-Koen, Japan

John Merck Summer Course in Cognitive Neuroscience, Princeton University

Cognitive Science Seminar, University of Quebec in Montreal

Neuroscience Seminar Series, Mount Sinai School of Medicine, New York

Neuroscience Formal Seminar Series, University of California, San Francisco

Neuroscience Retreat, University of Pittsburgh

Department of Psychology Seminar, Stanford University

Seminar, Columbia University

2002

UCLA Neuroscience Seminar Series
F.C. Donners Lecture, University of Nijmegen, The Netherlands
Swammerdam Lecture, Vrije Universiteit and University of Amsterdam, The Netherlands
Symposium at the European Conference on Visual Perception, Glasgow, Scotland
Seminar, Honda Research and Development Co., Wako-shi, Japan
Meeting of the American Association for the Advancement of Science (symposium organizer), Boston
University of Illinois Neuroscience Seminar Series
Emory University Neuroscience Colloquium
Institute for Cognitive Science Colloquium Series, University of Colorado at Boulder
Helmholtz Club, University of California at Irvine
Sloan Seminar, California Institute of Technology
Neurobiology and Behavior Seminar Series, Columbia University
Cognitive Neuroscience Seminar, National Institutes of Health
Department of Psychology Seminar, University of Pennsylvania
Neuroscience Seminar, Wake Forest University School of Medicine

2001

Society for Research in Child Development, Minneapolis
Winter Conference on Neural Plasticity, Antigua, West Indies
Gordon Research Conference on Neural Plasticity, Newport, Rhode Island
International Society for Behavioral Neuroscience, Marrakech, Morocco
Royal Society Meeting, London, UK
Association for the Study of Consciousness Meeting, Duke University
Rotman Research Institute Seminar, Toronto, Canada
University of Rochester Colloquium Series
Cold Spring Harbor Summer Course
Kennedy Shriver Center Colloquium Series, Waltham, MA
Memory Research and Disorders Society Meeting, Boston
Department of Psychology Colloquium, Harvard University

2000

The Frontal Lobes: In the Forefront of the Millennium, Rotman Research Institute, Toronto Canada
Symposium on the Cognitive Neuroscience of Attention and Awareness, London, UK
Neuroscience Seminar, Washington University
RIKEN Brain Institute Summer Program, Japan
Workshop on Executive Functions of Attention, New York University
University of Minnesota Center for Cognitive Sciences Colloquium
Mini-Symposium on Visual Working Memory, ARVO Meeting
Neuroscience Colloquium, Massachusetts General Hospital
Towards Animal Models of Attention and Consciousness, Cold Spring Harbor

Harvard Psychology Seminar

Boston University Psychology Seminar

Baylor University Neuroscience Seminar

Department of Physiology Seminar, University of Montreal

Neuroscience Seminar Series, National Institutes of Health

1999

Department of Psychology Seminar, Princeton University

Neuroscience Seminar Series, Boston University

Attentional Processes in Selective Perception and Working Memory, Satellite Symposium of the Cognitive Neuroscience Society Meeting, Washington, DC

Department of Psychiatry, Harvard Medical School

Neuroscience Seminar, University of California at Berkeley

Summer Institute in Cognitive Neuroscience, Dartmouth College

RIKEN Brain Institute Summer Program, Japan

Brain and Machines Lecture Series, MIT

Stanford Neurosciences Program Annual Retreat, Monterey, CA

Department of Psychology Seminar, University of Iowa

Conference in Cognitive Science, Vancouver, Canada

Brandeis Summer Lecture Series in Neuroscience

1998

Workshop on Visuospatial Working Memory, Executive Control and The Frontal Lobes, Delmenhorst, Germany

International Symposium on Learning and Memory, University of Otago, New Zealand

Attention and Performance 18, The Great Park, Windsor, England

Symposium at the Annual Society for Neuroscience Meeting: Neural Basis of Working Memory

RIKEN Symposium, Tokyo, Japan

Cognitive Neuroscience Society Meeting, San Francisco

McKnight Foundation Meeting, Aspen

Neuroscience Seminar Series, Princeton University

Winter Conference on Brain Research, Snowbird, Utah

Winter Conference on Neural Plasticity, St. Lucia, West Indies

Institute for Research in Cognitive Science Seminar, University of Pennsylvania

Neuroscience Seminar Series, Rockefeller University

Zanvyl Krieger Mind/Brain Institute Seminar Series, Johns Hopkins University

Developmental Neuroscience Seminar, Eunice Kennedy Shriver Center, Waltham

Neuroscience Seminar Series, Center for Neuroscience, Rutgers University

Department of Neuroanatomy Seminar, Boston University

Second International Conference on Cognitive and Neural Systems, Boston University

Center for Neuroscience Seminar, University of California at Davis

Laboratory of Neuropsycholgy Symposium, National Institute of Mental Health

1997

Novartis Foundation Meeting on Functions of the Prefrontal Cortex, London, UK

Colloquium Series, MRC Applied Psychology Unit, Cambridge, UK

ONR Workshop on Cognitive Neuroscience, Marine Biology Lab, Woods Hole

Department of Psychology Colloquium, Carnegie Mellon University

Neuroscience Colloquium Series, Brown University

Bowman Gray Medical School Neuroscience Colloquium Series

Neurocomputation Seminar, Brandeis University

Pew Scholars Annual Meeting, San Jose, Costa Rica

Department of Neurobiology Seminar, Harvard University

Department of Psychology Seminar, Boston University

Department of Neuroanatomy Seminar, Boston University

Imaging Center Seminar, Massachusetts General Hospital

Brain and Cognitive Sciences Colloquium Series, MIT

1996

Department of Neurobiology Seminar, Weizmann Institute of Science, Israel

Department of Psychology Seminar, University of Connecticut

1995

Winter Conference on the Neurobiology of Learning and Memory, Park City

The Helmholtz Club, University of California, Irvine

Vision Center Laboratory Seminar, The Salk Institute for Biological Studies

Harvard Undergraduate Neuroscience Society

1994

Cooperation Forum for Multi-Disciplinary Researches, Hiroshima, Japan

Department of Neurobiology Seminar, Harvard Medical School

Third Appalachian Conference on Behavioral Neurodynamics, Center for Brain Research and Informational Sciences, Radford University

Neural Systems, Memory, and Aging Seminar, University of Arizona

Third Workshop on Neural Networks, Elba International Physics Center, Italy

Department of Psychology Seminar, Carnegie Mellon University

Joint Vision Laboratory - Cognitive Brain and Behavior Seminar, Harvard University

Department of Brain and Cognitive Sciences Seminar, Massachusetts Institute of Technology

Department of Neurobiology Seminar, Emory University

Department of Physiology and Biophysics Seminar, University of Washington

1992

Section on Neurobiology Seminar, Yale University

Vision Center Laboratory Seminar, The Salk Institute for Biological Studies

Neural Systems Seminar, National Institute of Neurological Disorders and Stroke

Teaching (MIT):

Systems Neuroscience (9.011)
Brain and Behavior Laboratory (9.02)
Survey of Cognitive Science (9.401)
Cognitive Neuroscience (9.10)
Neural Plasticity (9.30/7.98)
Brain and Cognitive Sciences (9.012)