

CURRICULUM VITAE
Samuel Sheng-Hung Wang, Ph.D.

Born: May 4, 1967
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Research interests

- 1) Neuroscience – integrative role of the cerebellum in sensory learning and autism
- 2) Optical methods for observing and manipulating living brain tissue
- 3) Analysis of large data sets using statistical aggregation methods

Education and training

1980-1982 Riverside Poly High School, Riverside, California
1982-1986 B.S. with honor, Physics, California Institute of Technology
1986-1993 Ph.D., Neurosciences, Stanford University (advisor: Stuart H. Thompson)
1994-1995, 1996-1997 Postdoctoral fellow, Duke University (with George J. Augustine)
1995-1996 Congressional Science Fellow, Senate Committee on Labor and Human Resources (with Senator Edward M. Kennedy)
1997-1999 Postdoctoral Member of Technical Staff, Biological Computation Res. Dept., Bell Labs Lucent Technologies (with David W. Tank and Winfried Denk)
2000-2006 Assistant Professor, Department of Molecular Biology, Princeton University
2006- Associate Professor, Department of Molecular Biology and Princeton Neuroscience Institute, Princeton University

Honors and memberships

1986 Tau Beta Pi, national engineering honor fraternity
1986- Society for Neuroscience, member
1993 Grass Fellow, Marine Biological Laboratory, Woods Hole, Massachusetts
2000-2002 Alfred P. Sloan Research Fellowship
2000-2002 Rita Allen Foundation Scholar
2004-2009 W.M. Keck Distinguished Young Scholar in Medical Research
2004-2009 National Science Foundation Career Development Award
2009 AAAS/Subaru SB&F Prize for Excellence in Science Books
2012 Eden Autism Services – Emily Cavaliere Puzio and Frank Mauro Puzio Fellow
2012 Washington Post “Wonky” award – Best Election Modeler, 2012
2013-present Faculty associate, Princeton Program in Law and Public Affairs

Grant and fellowship support

1989, 1991 Earl and Ethel Myers Fellowship in Marine Biology
1990 Lerner-Gray Grant in Marine Zoology
1991-1993 NIH predoctoral National Research Service Award
1994-1997 NIH postdoctoral National Research Service Award
1995-1996 Congressional Science and Engineering Fellow, American Association for the Advancement of Science (AAAS)

2001-2004 Whitehall Foundation grant
 2002- NIH R01 NS045193: Synaptic learning rules in the mammalian cerebellum
 2003-2005 National Association for Autism Research predoctoral support for Megan Sullivan
 2004-2009 National Science Foundation Career Development Award
 2004-2008 Human Frontier Science Project grant (Principal Investigator)
 2005-2007 New Jersey Governor's Council on Autism Pilot Grant
 2006 Writing residency at Rockefeller Foundation Study Center, Bellagio, Italy
 2008-2010 Autism Speaks postdoctoral support for Ilker Ozden
 2009-2011 NIH Challenge Grant (Co-investigator; PI Lynn Enquist)
 2009-2011 NIH Challenge Grant (Co-investigator; PI David Tank)
 2010 NIH shared instrumentation grant for multiphoton microscope (Principal Investigator).
 2011-2012 Simons Foundation Autism Research Initiative (SFARI) Explorer grant
 2012-2013 David A. Gardner '69 Magic Project, Princeton Council of the Humanities
 2012-2014 McKnight Technological Innovations in Neuroscience award
 2012-2014 Nancy Lurie Marks Family Foundation grant for autism research

Research publications:

S.S. Wang, G.A. Ricaurte, and S.J. Peroutka (1987) ^3H -3,4-methylenedioxymethamphetamine (MDMA; "Ecstasy") interactions with brain membranes and glass fiber filter paper. *European Journal of Pharmacology* 138:439-443.

S.S.-H. Wang, C.A. Mathis, and S.J. Peroutka (1988) R-2,5-Dimethoxy-4- ^{77}Br -bromoamphetamine (^{77}Br -R(-)-DOB), a novel radioligand [that] labels a 5-HT binding site subtype. *Psychopharmacology (Berlin)* 94:431-432.

S.J. Peroutka, A. Hamik, M.A. Harrington, C.A. Mathis, P.A. Pierce, and S.S.-H. Wang (1988) R-2,5-dimethoxy-4- ^{77}Br -bromoamphetamine [^{77}Br -R(-)DOB] labels a novel 5-hydroxytryptamine binding site in brain membranes. *Molecular Pharmacology* 34:537-542.

S.S. Wang and S.J. Peroutka (1989) Historical perspectives. In *The Serotonin Receptors*. (Ed. E. Sanders-Bush). Humana Press, pp. 3-20.

S.S.-H. Wang and S. Thompson (1992) A-type potassium channel clusters revealed using a new statistical analysis of loose patch data. *Biophysical Journal*, 63:1018-1025.

C.A. Mathes, S.S.-H. Wang, H.M. Vargas, and S.H. Thompson (1992) Intracellular calcium release in N1E-115 neuroblastoma cells is mediated by the M1 muscarinic receptor subtype and is antagonized by McN-A-343. *Brain Research* 585:307-310.

S.S.-H. Wang, C.A. Mathes, and S.H. Thompson (1993) Membrane toxicity of the protein kinase C inhibitor calphostin A by a free-radical mechanism. *Neuroscience Letters*, 157:25-28. (published in error a second time as 156:145-148)

S.S.-H. Wang (1993) Modeling the apparent diffusion constant of calcium ions emanating from a channel: implications for calcium wave propagation. *Biological Bulletin*, 185:297-298.

S.S.-H. Wang and S.H. Thompson (1994) Measurement of changes in muscarinic and histaminergic receptor density in single neuroblastoma cells using calcium release desensitization. *Cell Calcium*, 15:483-496.

- S.S.-H. Wang, A.A. Alousi, and S.H. Thompson (1995) The lifetime of inositol 1,4,5-trisphosphate in single cells. *Journal of General Physiology*, 105:149-171.
- S.S.-H. Wang and S.H. Thompson (1995) Local positive feedback by calcium in the propagation of intracellular calcium waves. *Biophysical Journal*, 69:1683-1697.
- DeBello, W.M., V. O'Connor, T. Dresbach, S.W. Whiteheart, S.S.-H. Wang, F.E. Schweizer, H. Betz, J.E. Rothman, and G.J. Augustine (1995) SNAP-mediated protein-protein interactions essential for neurotransmitter release. *Nature*, 373:626-630.
- S.S.-H. Wang and G.J. Augustine (1995) Confocal imaging and local photolysis of caged compounds: dual probes of synaptic function. *Neuron*, 15:755-760.
- M.E. Burns, S.A. Beushausen, G.J. Chin, D. Tang, W.M. DeBello, T. Dresbach, V. O'Connor, F.E. Schweizer, S.S.-H. Wang, S.W. Whiteheart, H. Betz, J.E. Rothman, and G.J. Augustine (1995) Proteins involved in synaptic vesicle docking and fusion. *Cold Spring Harb. Symp. Quant. Biol.* 60:337-348.
- G.J. Augustine, H. Betz, K. Bommert, M.P. Charlton, W.M. DeBello, T. Dresbach, J.M. Hunt, V. O'Connor, F.E. Schweizer, S.S.-H. Wang, and S.W. Whiteheart (1996) Molecular mechanisms of neurotransmitter secretion: functional studies at the squid giant synapse. In *Basic neuroscience in invertebrates*. (Ed. H. Koike, Y. Kidokoro, K. Takahashi, T. Kanaseki) Japan Scientific Societies Press.
- R. Kupferman, P.P. Mitra, P.C. Hohenberg, and S.S.-H. Wang (1997) Analytical calculation of intracellular calcium wave characteristics. *Biophysical Journal*, 72:2430-2444.
- A.E. Schivell, S.S.-H. Wang, and S.H. Thompson (1997) Behavioral modes arise from a random process in the nudibranch *Melibe*. *Biological Bulletin*, 192:418-425.
- D.L. Pettit*, S.S.-H. Wang*, K.R. Gee, and G.J. Augustine (1997) Chemical two-photon uncaging: a novel approach to mapping glutamate receptors. *Neuron*, 19:465-471.
- G.J. Augustine, E.A. Finch, and S.S.-H. Wang (1998) The spatial range of dendritic signals for cerebellar long-term depression: studies with local photolysis of caged compounds. In *Integrative aspects of calcium signalling*. (Ed. A. Verkhratsky and E.C. Toescu). Plenum Press.
- T. Furuta, S.S.-H. Wang, J.L. Dantzker, T.M. Dore, W.J. Bybee, E.M. Callaway, W. Denk, and R.Y. Tsien (1999) Brominated 7-hydroxycoumarin-4-ylmethyls: novel photolabile protecting groups with biologically useful cross-sections for two photon photolysis. *Proc. Natl. Acad. Sci. USA*, 96:1193-1200.
- S.S.-H. Wang and G.J. Augustine (1999) Calcium signaling in neurons: a case study in cellular compartmentalization. In *Calcium as a cellular regulator*. (Ed. E. Carafoli and C.B. Klee) Oxford University Press, pp. 545-566.
- G.J. Augustine, D.L. Pettit, and S.S.-H. Wang (1999) Spatially resolved flash photolysis via chemical two-photon uncaging. In *Imaging: a laboratory manual*. (Eds. R. Yuste, F. Lanni, A. Konnerth) Cold Spring Harbor Press.
- S.S.-H. Wang, L. Khiroug, and G.J. Augustine (2000) Quantification of spread of cerebellar long-term depression with chemical two-photon uncaging of glutamate. *Proc. Natl. Acad. Sci. USA*, 97:8635-8640.

- S.S.-H. Wang, W. Denk, and M. Häusser (2000) Coincidence detection in single dendritic spines mediated by calcium release. *Nature Neuroscience*, 3:1266-1273.
- D.A. Clark, P.P. Mitra, and S.S.-H. Wang (2001) Scalable architecture in mammalian brains. *Nature*, 411:189-193 (also see News & Views by Kaas and Collins, 411:141-142).
- S.S.-H. Wang, P.P. Mitra, and D.A. Clark (2002) How did brains evolve? *Nature*, 415:135 (also see Communications Arising by Sultan and Barton, 415:133-135).
- K.H. Harrison, P.R. Hof, and S.S.-H. Wang (2002) Scaling laws in the mammalian neocortex: does form provide clues to function? *Journal of Neurocytology*, 30:289-298.
- J. DeFelipe, G.N. Elston, I. Fujita, J. Fuster, K.H. Harrison, P.R. Hof, Y. Kawaguachi, K.A.C. Martin, K.S. Rockland, A.M. Thomson, S.S.-H. Wang, E.L. White, and R. Yuste (2002) Neocortical circuits: Evolutionary aspects and specificity versus non-specificity of synaptic connections. Remarks, main conclusions and general comments and discussion. *Journal of Neurocytology*, 30:387-416.
- S.S.-H. Wang and G. Major (2003) Integrating over time with dendritic wave-fronts. *Nature Neuroscience*, 6:906-908.
- M.J. Burish, H.Y. Kueh, and S.S.-H. Wang (2004) Brain architecture and social complexity in modern and ancient birds. *Brain, Behavior and Evolution*, 63:107-124.
- K.D. Wyatt, P. Tanapat, and S.S.-H. Wang (2005) Speed limits in the cerebellum: constraints from myelinated and unmyelinated parallel fibers. *European Journal of Neuroscience*, 31:2285-2290.
- D.H. O'Connor, G.M. Wittenberg, and S.S.-H. Wang (2005) Initiation of graded bidirectional synaptic plasticity by step-like unitary events. *Proc. Natl. Acad. Sci. USA*, 102:9679-9684. doi:10.1073/pnas.0502332102.
- D.H. O'Connor, G.M. Wittenberg, and S.S.-H. Wang (2005) Dissection of bidirectional synaptic plasticity into saturable unidirectional processes. *Journal of Neurophysiology*, 94:1564-1572. doi:10.1152/jn.00047.2005.
- M.R. Sullivan, A. Nimmerjahn, D.V. Sarkisov, F. Helmchen, and S.S.-H. Wang (2005) *In vivo* calcium imaging of circuit activity in cerebellar cortex. *Journal of Neurophysiology*, 94:1635-1643. doi:10.1152/jn.01013.2004.
- S. Shoham*, D.H. O'Connor*, D.V. Sarkisov, and S.S.-H. Wang (2005) Rapid neurotransmitter uncaging in spatially defined patterns. *Nature Methods*, 3:837-843. doi:10.1038/NMETH793.
- S.M. Thompson, J.P.Y. Kao, R.H. Kramer, K.E. Poskanzer, R.A. Silver, D. Digregorio, and S.S.-H. Wang (2005) Flashy science: controlling neural function with light (Mini-symposium review). *Journal of Neuroscience*, 25:10358-10365.
- G.M. Wittenberg and S.S.-H. Wang (2006) Malleability of spike-timing-dependent plasticity at the CA3-CA1 synapse. *Journal of Neuroscience*, 26:6610-6617. doi:10.1523/JNEUROSCI.5388-05.2006.
- D.V. Sarkisov and S.S.-H. Wang (2006) Alignment and calibration of a focal neurotransmitter uncaging system. *Nature Protocols*, 2:828-832. doi: 10.1038/nprot.2006.124.

- D.H. O'Connor, G.M. Wittenberg, and S.S.-H. Wang (2007) Timing and contributions of pre-synaptic and post-synaptic parameter changes during unitary plasticity events at CA3-CA1 synapses. *Synapse*, 61:664-678.
- D.V. Sarkisov, S.E. Gelber, J.W. Walker, and S.S.-H. Wang (2007) Synapse-specificity of calcium release probed by chemical two-photon uncaging of IP₃. *Journal of Biological Chemistry*, 282:25517-25526.
- D.V. Sarkisov and S.S.-H. Wang (2007) Uncaging techniques combined with patch clamp recordings. In *Patch clamp methods: Advanced Techniques (Neuromethods)*, 2nd edition. Editor: W. Walz. Humana Press.
- G.M. Wittenberg and S.S.-H. Wang (2007) Evolution and scaling of dendrites. In *Dendrites*, 2nd edition. Editors: M. Häusser, N. Spruston and G. Stuart. Oxford University Press.
- N.J. Kaslow, A.M. Bollini, B. Druss, L.R. Goldfrank, A.M. La Greca, S.S.-H. Wang, R.L. Glueckauf, K.J. Kelleher, R.E. Varela, L. Weinreb, and L. Zeltzer (2007) Health care for the whole person: Research update. *Professional Psychology - Research And Practice*, 38:278-289.
- D.V. Sarkisov and S.S.-H. Wang (2008) Order-dependent coincidence detection in cerebellar Purkinje neurons at the inositol trisphosphate receptor. *Journal of Neuroscience*, 28:133-142.
- S.S.-H. Wang, J.R. Shultz, M.J. Burish, K.H. Harrison, P.R. Hof, L.C. Towns, M.W. Wagers, and K.D. Wyatt (2008) Functional trade-offs in white matter axonal scaling. *Journal of Neuroscience*, 28:4047-4056.
- I. Ozden*, H.M. Lee*, M.R. Sullivan, and S.S.-H. Wang (2008) Identification and clustering of event patterns from *in vivo* multiphoton optical recordings of neuronal ensembles. *Journal of Neurophysiology*, 100:495-503.
- S.S.-H. Wang (2008) Functional tradeoffs in axonal scaling: implications for brain function. *Brain, Behavior and Evolution*, 72:159-167.
- F. Helmchen, S.S.-H. Wang, and W. Denk (2009) Multiphoton imaging in neuroscience. In *Biomedical Optical Imaging*. Editors: J.G. Fujimoto and D. Farkas. Oxford University Press.
- T.M. Hoogland*, B. Kuhn*, W. Göbel, W. Huang, J. Nakai, F. Helmchen, S.J. Flint, and S.S.-H. Wang (2009) Radially expanding transglial calcium waves in the intact cerebellum. *Proc. Natl. Acad. Sci. USA*, 106:3496-3501.
- I. Ozden*, M.R. Sullivan*, H.M. Lee, and S.S.-H. Wang (2009) Reliable coding emerges from coactivation of climbing fibers in microbands of cerebellar Purkinje neurons. *Journal of Neuroscience*, 29:10463-10473.
- A.E. Granstedt, M.L. Szpara, B. Kuhn, S.S.-H. Wang, and L.W. Enquist (2009) Fluorescence-based monitoring of activity in virally traced neural circuits. *PLoS ONE*, 9:e6923.
- S. Wang (2009) Research highlight: a neuroscientist explores the energetic efficiency of the brain. *Nature*, 461:851.
- A.E. Granstedt, B. Kuhn, S.S.-H. Wang, and L.W. Enquist (2010) Calcium imaging of neuronal circuits *in vivo* using a circuit-tracing pseudorabies virus. *Cold Spring Harbor Protocols*, 2010(4):pdb.prot5410.
- H.Z. Shouval, S.S.-H. Wang, and G.M. Wittenberg (2010) Spike timing dependent plasticity: a consequence of more fundamental learning rules. Invited review, special issue on spike timing

dependent plasticity, *Frontiers in Neuroscience* 4:19, ed. H. Markram, P.J. Sjöström, W. Gerstner. doi:10.3389/fncom.2010.00019

B. Kuhn, T.M. Hoogland, and S.S.-H. Wang (2011) In vivo calcium imaging of cerebellar glia with synthetic and genetic indicators. In *Imaging in neuroscience: a laboratory manual*. (Eds. F. Helmchen, A. Konnerth) Cold Spring Harbor Press. (published in *CSH Protocols* as <http://pubmed.gov/21969619>, <http://pubmed.gov/21969620>, and <http://pubmed.gov/21969621>)

E.F. Civillico, S. Shoham, D.V. Sarkisov, and S.S.-H. Wang (2011) Acousto-optical detector-based patterned ultraviolet-uncaging of neurotransmitter for the study of neuronal integration. In *Imaging in neuroscience: a laboratory manual*. (Eds. F. Helmchen, A. Konnerth) Cold Spring Harbor Press. In press.

E.F. Civillico, J.P. Rickgauer, and S.S.-H. Wang (2011) Targeting and excitation of photoactivatable molecules: design considerations for neurophysiology experiments. In *Photosensitive molecules for controlling biological function*. Editors: J.J. Chambers and R.H. Kramer. New York: Humana Press.

B.C. Campbell and S.S.-H. Wang (2012) Familial linkage between neuropsychiatric disorders and intellectual interests. *PLoS ONE*, 7(1):e30405. doi:10.1371/journal.pone.0030405 (#4 most-viewed in 30 days)

X.R. Sun, A. Giovannucci, A.E. Sgro, and S.S.-H. Wang (2012) SnapShot: Optical control and imaging of brain activity. *Cell*, 149:1650-1652. doi:10.1016/j.cell.2012.06.009

*B. Kuhn, *I. Ozden, Y. Lampi, M.T. Hasan, and S.S.-H. Wang (2012) An amplified promoter system for targeted expression of calcium indicator proteins in the cerebellar cortex. *Frontiers in Neural Circuits*, 6:49, doi:10.3389/fncir.2012.00049.

*I. Ozden, *D.A. Dombeck, T.M. Hoogland, D.W. Tank, and S.S.-H. Wang (2012) Widespread state-dependent shifts in cerebellar activity in locomoting mice. *PLoS ONE*, 7(8):e42650. doi:10.1371/journal.pone.0042650

*J. Akerboom, *T.-W. Chen, T.J. Wardill, L. Tian, J.S. Marvin, S. Mutlu, N. Carreras Calderón, F. Esposti, B.G. Borghuis, X.R. Sun, A. Gordus, M.B. Orger, R. Portugues, F. Engert, J.J. Macklin, A. Filosa, A. Aggarwal, R. Kerr, R. Takagi, S. Kracun, E. Shigetomi, B.S. Khakh, H. Baier, L. Lagnado, S.S.-H. Wang, C.I. Bargmann, B.E. Kimmel, V. Jayaraman, K. Svoboda, D.S. Kim, E.R. Schreiter, L.L. Looger (2012) Optimization of a GCaMP calcium indicator for neural activity imaging. *Journal of Neuroscience*, 32:13819-13840.

E.R. Schneider, E.F. Civillico, S.S.-H. Wang (2013) Regulation of calcium-based dendritic excitability in the deep cerebellar nuclei. *Journal of Neurophysiology*, 109:2282-2292.

*X.R. Sun, *A. Badura, D. A. Pacheco, L.A. Lynch, E.R. Schneider, M.P. Taylor, I.B. Hogue, L.W. Enquist, M. Murthy, S.S.-H. Wang (2013) Fast GCaMPs for improved tracking of neuronal activity. *Nature Communications*, 42167:1-10. doi:10.1038/ncomms3170.

D.D. Shi, F.F. Trigo, M.F. Semmelhack, S.S.-H. Wang (2014) Synthesis and biological properties of bis-CNB-GABA, a photoactivatable neurotransmitter with low receptor interference and chemical two-photon uncaging properties. *Journal of the American Chemical Society*, 36:1976-1981. doi:10.1021/ja411082f.

*F. Najafi, *A. Giovannucci, S.S.-H. Wang, J.F. Medina (2014) Analog stimulus encoding in individual Purkinje cell dendrites of awake mice. *Cell Reports*, in press.

S.S.-H. Wang, A.D. Kloth, and A. Badura. The cerebellum, sensitive periods, and autism (Perspective). *Neuron*, in review.

T. Schoenfeld, A.D. Kloth, B. Hsueh, M.B. Runkle, S.S.-H. Wang, E. Gould: Gap junctions in the ventral hippocampal-medial prefrontal pathway are involved in anxiety regulation. *Journal of Neuroscience*, in review.

S.S.-H. Wang. Origins of Presidential poll aggregation: A perspective from 2004 to 2012. *International Journal of Forecasting*, in review.

*The first two authors contributed equally to these works.

Books:

Sandra Aamodt and Sam Wang: *Welcome To Your Brain: Why You Lose Your Car Keys but Never Forget How to Drive and Other Puzzles of Everyday Life*. Bloomsbury USA. In US English (March 2008), paperback, and 24 international translations. Winner of the 2009 AAAS/Subaru SB&F Prize for Excellence in Science Books. <http://welcometoyourbrain.com>.

Sandra Aamodt and Sam Wang: *Welcome To Your Child's Brain: How The Mind Grows From Conception To College*. Bloomsbury USA. In US English (September 2011), paperback, and 15 international translations. <http://welcometoyourbrain.com>.

Popular articles:

Sandra Aamodt and Sam Wang: Exercise on the brain. *New York Times*, November 8, 2007, page A33 (op-ed). (#1/day, #1/7 days)

Sandra Aamodt and Sam Wang: Ten amazing facts about your brain. *London Times*, March 28, 2008.

Sandra Aamodt and Sam Wang: Tighten your belt, strengthen your mind. *New York Times*, April 2, 2008, page A27 (op-ed). (#1/day, #1/7 days)

Sam Wang: Autism myth lives on. *USA Today*, April 16, 2008.

Sam Wang and Sandra Aamodt: Your brain lies to you. *New York Times*, June 27, 2008, page A19 (op-ed). (#1/day, #1/7 days)

Sam Wang and Sandra Aamodt: A vast left-handed conspiracy. *Washington Post*, July 6, 2008, page B02.

Sam Wang and Sandra Aamodt: How unscrupulous campaign strategists are taking advantage of a quirk in our brains – and what reporters can do to stop helping them (commentary). *Nieman Watchdog* online, August 25, 2008.

Sam Wang and Joshua Gold: Your brain's secret ballot. *New York Times*, October 28, 2008, page A23 (op-ed).

Sam Wang: Obama, don't fear secret racism - the Bradley effect is history. *New York Daily News* online, November 3, 2008.

The Princeton Election Consortium, a weblog of polling analysis and commentary at <http://election.princeton.edu>. The site attracted 1.3 million hits in 2008, 4 million hits in 2012, and considerable media coverage.

Sam Wang and Sandra Aamodt: Guest columnist for The Wild Side (<http://judson.blogs.nytimes.com/>), Olivia Judson's weblog at the *New York Times*. March 2009.

Sam Wang and Sandra Aamodt: Mugged by our genes? *International Herald-Tribune*, March 28-29, 2009, page 6 (op-ed).

Sam Wang: Postcards from the brain. *Physics World*, July 2009.

Sandra Aamodt and Sam Wang: The sun is the best optometrist. *New York Times*, June 21, 2011, page A27 (op-ed). (#1/day, #1/7 days, #6/30 days)

Sandra Aamodt and Sam Wang: Five myths about your child's brain. *New York Post*, September 18, 2011, page 25.

Sam Wang and Sandra Aamodt: Delay kindergarten at your child's peril. *New York Times*, September 25, 2011, page SR6 (Sunday Review). (#1/day, #1/7 days, #5/30 days)

Sandra Aamodt and Sam Wang: Building children's minds, the American way. *New York Times*, February 19, 2012, page SR5 (Sunday Review). (#1/day, #5/7 days, #12/30 days)

Sam Wang and Sandra Aamodt: The mother matters more than the milk. *Bloomberg View*, July 2, 2012.

Sam Wang and Sandra Aamodt: Play, stress, and the learning brain. *Cerebrum*, September 2012.

Sandra Aamodt and Sam Wang: Bloomberg invests in growing minds. *New York Post*, October 7, 2012.

Sam Wang: The election prediction game: The winners and the losers (op-ed). *Los Angeles Times*, November 11, 2012.

Sam Wang: The great gerrymander of 2012. *New York Times*, February 3, 2013, page SR1 (Sunday Review). (#11/day)

Sam Wang and Benjamin C. Campbell: Mr. Bayes goes to Washington: a review of *The Signal and The Noise* by Nate Silver. *Science*, February 15, 2013, 339:758-759.

Selected meeting abstracts of work in progress:

E.F. Civillico, D.H. O'Connor, G.M. Wittenberg, S.S.-H. Wang (2008) Spatial and temporal clustering requirements for local summation of excitatory input to Purkinje cell dendrites. Soc. Neurosci. Abstr.

A. Giovannucci, F. Najafi, A.D. Kloth, J.F. Medina, S.S.-H. Wang (2011) Calcium imaging from cerebellar neuronal populations after eyeblink conditioning in head-fixed mice. Soc. Neurosci. Abstr.

A.D. Kloth, R.D. Jones, B.C. Campbell, S.S.-H. Wang (2011) Retrospective reevaluation in delay eyeblink conditioning in head-restrained mice. Soc. Neurosci. Abstr.

P.A. Argüello, L.W. Enquist, S.S.-H. Wang (2012) Long-distance connectivity between prefrontal cortex and cerebellum in mouse. Soc. Neurosci. Abstr. 104.30.

D. Das, S. Ali, J.A. Serpell, S.S.-H. Wang (2012) Quantitative analysis of canine temperament and neuroanatomical variation. Soc. Neurosci. Abstr. 895.01.

A. D. Kloth, L. A. Lynch, A. Li, R. D. Jones, S. G. Connolly, M. A. Bangash, O. Peñagarikano, P. F. Worley, D. H. Geschwind, S.S.-H. Wang (2013): Phenotypic variation in mouse autism

models for delay eyeblink conditioning, a form of cerebellar multisensory learning. Soc. Neurosci. Abstr. 245.04.

A. Giovannucci, A. Badura, S.S.-H. Wang (2013) Chronic calcium imaging of cerebellar network activity in awake sensory processing. Soc. Neurosci. Abstr. 469.09.

A. Badura, X.R. Sun, A. Giovannucci, L.A. Lynch, D.A. Pacheco Pinedo, M. Murthy, S.S.-H. Wang (2013) Rapid response dynamics of Fast-GCaMP calcium indicator proteins in vitro and in vivo. Soc. Neurosci. Abstr. 871.03.

Inside activities

Teaching at Princeton University

Fall 2000 Molecular Biology 508 - Neurobiology (Berry/Tsien/Wang)
 Fall 2001 Molecular Biology 408 - Neurobiology (Berry/Gould/Wang)
 Fall 2001 Molecular Biology 508 - Neurobiology (Berry/Wang)
 Spring 2002 Molecular Biology 549 - Laboratory in Neurophysiology (Gelperin/Tank/Wang)
 Fall 2002 Molecular Biology 408 - Cellular and Systems Neuroscience (Wang/Gould)
 Fall 2003 Molecular Biology 408 - Cellular and Systems Neuroscience (Wang)
 Fall 2004 Molecular Biology 408 - Cellular and Systems Neuroscience (Eggenschwiler/Wang/Haxby)
 Fall 2005 Molecular Biology 408 - Cellular and Systems Neuroscience (Eggenschwiler/Wang)
 Fall 2006 Molecular Biology 408 - Cellular and Systems Neuroscience (Wang)
 Fall 2006 Molecular Biology 90 - Advanced Seminar in Cellular and Systems Neuroscience (Wang)
 Fall 2008 Molecular Biology 408 - Cellular and Systems Neuroscience (Wang/Gould)
 Spring 2009, 2010 Molecular Biology 214 - Introduction to Cellular and Molecular Biology (Bassler/Collier/Hughson/Rose/Shenk/Thieringer/Tilghman/Wang)
 Fall 2009, 2010 Neuroscience 501 - Graduate core course in neuroscience (Tank/Gelperin/Wang/Brody/Ghazanfar/Gould/Eggenschwiler/Berry/Boulanger/Murthy/Enquist)
 Spring 2010, 2011, 2012, 2013, 2014 Neuroscience 101 - Neuroscience and Everyday Life (Wang/Gelperin)
 Spring 2012, 2013 Molecular Biology 451 - Genes, Brain, and the Human Mind (Wang/Leon Rosenberg)

Graduate students and postdoctoral research associates

Dr. Dmitry Sarkisov (2000-2007)	Physics (Ph.D. '06) (now in financial industry)
Dr. Gayle Wittenberg *'03 (2001-2003)	Molecular Biology (Ph.D. '03)
(2003-2006)	Council on Science and Technology, Teaching Fellow (now at Johnson & Johnson Research)
Dr. Shy Shoham (2001-2005)	Lewis Thomas Fellow (now faculty, The Technion, Israel)
Kim Hatch Harrison (2002-Spring 2003)	Molecular Biology (M.A. '01; now teaching)
Dr. Daniel O'Connor (2002-2006)	Psychology / Molecular Biology (Ph.D. '06; now faculty at Johns Hopkins University)
Dr. Megan Sullivan (2002-2006)	Molecular Biology (Ph.D. '06; now at Indiana University)
Dr. Bernd Kuhn (2004-2010)	Group Leader, Okinawa Institute of Science and Technology
Dr. Ilker Ozden (2004-2010)	Autism Speaks postdoctoral fellow (now faculty, Brown University)

Dr. Tycho Hoogland (2005-2009)	Postdoc (now at Netherlands Institute for Neuroscience)
Dr. Eugene Civillico (2006-2009)	Patterson Trust postdoctoral fellow (now at FDA)
Dr. Eve Schneider (2007-2012)	Psychology (Ph.D. '12)
Xiaonan Richard Sun (2007-2012)	Molecular Biology (Ph.D. '12), UMDNJ M.D.-Ph.D. program
Alexander Kloth (2009-present)	Molecular Biology; F31 NRSA award
Dr. Stephen Lin (2010-2011)	Retired
Dr. Andrea Giovannucci (2010-present)	NJCIBR postdoctoral scholar
Dr. P. Alexander Argüello (2010-2012)	Editor, <i>Nature Neuroscience</i>
Benjamin Campbell (2011-present)	
Dr. Aleksandra Badura (2012-present)	

Undergraduate students

Damon Clark '01	Physics	Ph.D. Harvard Univ.; now faculty, Yale MCDB
	Clark's junior independent work was published in <i>Nature</i> .	
Jennifer Shultz '01	Molecular Biology	M.D. Univ. of Iowa
	Shultz's senior year work received a departmental best thesis award and launched a major project.	
Mark Burish '02	Molecular Biology	M.D./Ph.D. Vanderbilt Univ.; now UCSF
	Burish's senior thesis was published in <i>Brain, Behavior and Evolution</i> .	
Hao Yuan Kueh '02	Physics	Went to Harvard Univ. (Ph.D.)
Matthew Wagers '03	Molecular Biology	Ph.D. Univ. of Maryland; now faculty, UCSC
Samuel Hall '03	Molecular Biology	Went to Wall Street / U. Cambridge (Ph.D.)
	Hall's senior thesis received a departmental best thesis award.	
Lily Johnston '05	Psychology	Went to UCSD (M.D.)
Varun Phadke '05	Molecular Biology	Went to Harvard Medical School (M.D.)
	Phadke was the Class of 2005 valedictorian.	
David Matthews '05	Molecular Biology	Went to UCSD (Ph.D.)
Chelsea Meskunas '06	Molecular Biology	Went to Mount Sinai (Ph.D.)
Natalia Balko '07	Molecular Biology	Consultant
Jonathan Charlesworth '07	Molecular Biology	Went to UCSF (Ph.D.)
Justin Huynh '07	Molecular Biology	Consultant
Hyunyoung Megan Lee '08	Independent Concentration, Computational Biology	Went to U.Md. (M.D.)
Andrew Blucher '09	Molecular Biology	Went to U.Md. (M.D.)
Shihab Ali '11	Molecular Biology	Went to Brown University (M.D.)
Charlotte Arlt '11	University of Cologne	Went to University College London (Ph.D.)
David Tsao '11	Physics	
Diya Das '12	Molecular Biology	Going to UC Berkeley (Ph.D.)
	Das's senior thesis received a Neuroscience Institute best thesis award.	
Daniel Chang '13	Molecular Biology	Post-baccalaureate
Sara Connolly '13	Ecology & Evolutionary Biology	New York Psychiatric Institute staff
Tierney Kuhn '13	Computer Science	Microsoft Research
Diana Shi '13	Psychology	Harvard Medical School (M.D.)
	Shi's senior thesis received a best thesis award and was published in <i>Journal of the American Chemical Society</i> .	
Richard D. Jones '13	Psychology	Post-baccalaureate
Amy Li '14	Molecular Biology	
Adriana Cherskov '14	Molecular Biology	
Yekaterina Shulgina '15	Molecular Biology / Computer Science	
Kiran Vodrahalli '15	Computer Science	
Thaddeus Weigel '15	Molecular Biology	

University and departmental service

2000-2011	Department of Molecular Biology Seminar Committee
2001-2002	Fellow, Rockefeller College

2001	Symposium planner, Dynamics in Biological Networks (with S. Tilghman and S. Tavazzoie)
2003-2007	Adviser, Forbes College
2005-2008	University Committee on Committees
2006-2010	University Committee on Public Lectures (chair , 2006-2010)
2006-2008	Curriculum Committee, Undergraduate Certificate in Neuroscience program
2008-2011	Graduate Committee, Department of Molecular Biology
2008-2011	Institutional Animal Care and Use Committee (chair , 2008-2010)
2009-2011	Fellow, Old Dominion
2003-present	Executive Committee, Program in Neuroscience (term expires 6/2016)
2007-present	Fellow, Forbes College
2008-2012	Curriculum Committee, Neuroscience Institute
2008-2012	Graduate Admissions Committee, Neuroscience Ph.D. Program
2010-present	C.V. Starr Fellowship Committee, Neuroscience Institute
Fall 2013	University Committee on Committees (one term only, vacancy substitution)
2013-2014	Neuroscience Institute, junior faculty search committee
2013-2014	Graduate Admissions Committee, Neuroscience Ph.D. Program
2014	Animal Research Communications Working Group, Office of the Dean for Research

Outside activities

Invited scientific meetings (talk given unless otherwise indicated)

1997	Southern California Optical Biology Users Group, University of California, Irvine, CA.
2000	Neural Information and Coding Meeting, Grindelwald, <i>Switzerland</i> .
2001	Gordon Research Conference on Calcium Signaling, Oxford University, Oxford, <i>England</i> .
2002	Workshop on Single Cell Computation, University College London, London, <i>England</i> .
2003	Workshop on Constraints in Neural Systems Design, Computational Neuroscience (CNS 2003) Meeting, Alicante, <i>Spain</i> .
2003	Banbury Workshop, Optimization and Constraints in the Evolution of Brain Design, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
2003	Keck Foundation/National Academy of Sciences Futures Initiative, Decisions, Signals and Meaning in Biology, Chemistry, Physics and Engineering, Beckman Center, Irvine, CA. (no talk)
2004	Monte Verità Workshop on Spike-Timing Dependent Plasticity (STDP), Monte Verità, Ascona, <i>Switzerland</i> .
2004	Third Astrobiology Science Conference, NASA Ames Research Center, Moffett Field, CA.
2004	Symposium on Optical Methods in Neuroscience, Microscopy and Microanalysis meeting, Savannah, GA.
2004	Workshop on Optimization and Neural Coding, Institute for Theoretical Physics, Santa Barbara, CA.
2004	Meeting on Brain Development, National Alliance for Autism Research, Fort Lauderdale, FL. (no talk)
2005	Keck Foundation Annual Meeting, Los Angeles, CA. (also 2007, 2008, 2009, 2010)
2005	Invited retreat speaker, Department of Neurobiology, University of California, Los Angeles, CA.
2005	Mini-symposium on controlling neural function with light. Chair, Scott M. Thompson. Society for Neuroscience meeting, Washington, DC.
2005	Session moderator, Gordon Research Conference on Neuroethology. Chairs, Nicholas Strausfeld and Catherine Carr. Magdalen College, Oxford University, Oxford, <i>England</i> .
2005	US National Academy of Science Frontier of Science Symposium. Principles of Brain Design. Beckman Center, University of California, Irvine, CA.
2006	Rita Allen Foundation 30 th Anniversary Symposium, Institute for Advanced Study, Princeton NJ.
2006	Human Frontier Science Project Awardees Annual Meeting, Institut Pasteur, Paris, <i>France</i> . (poster)

- 2007 Karger Workshop on brain evolution, Society for Neuroscience meeting, San Diego, CA.
- 2008 Mini-School and Workshop on Multiple Time Scales in the Dynamics of the Nervous System, Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, *Italy*.
- 2008 Conference on Perceptual Learning, Motor Learning, and Automaticity, Netherlands Institute for Neuroscience, Amsterdam, *Netherlands*. (commemoration of the 200th anniversary of the Royal Netherlands Academy of Sciences)
- 2009 Banbury meeting on Searching for Principles Underlying Memory in Biological Systems, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
- 2009 Meeting on Computational Cell Biology, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
- 2009 Psi Chi Invited Speaker, Midwestern Psychological Association meeting, Chicago, IL.
- 2009 Society for Research on the Cerebellum, second annual meeting, Chicago, IL.
- 2010 McGovern Institute for Brain Research Symposium: Cells, circuits & behavior, MIT, Cambridge, MA.
- 2010 Symposium on Photons and Neurons, University of Rochester, Rochester, NY.
- 2010 Symposium on in vivo cerebellar imaging, Federation of European Neuroscience Societies, Amsterdam, *Netherlands*.
- 2010 Barcelona Cognition, Brain and Technology summer school, Barcelona, *Spain*.
- 2011 W.M. Keck Foundation Scholars Program final meeting, Beckman Center, Irvine, CA (co-organizer).
- 2011 Gordon Research Conference on Dendrites, Ventura Marriott, Ventura, CA.
- 2011 First Gordon Research Conference on the Cerebellum, Colby-Sawyer College, New London, NH.
- 2012 Conference, Dendrites: Substrates for Information Processing, Janelia Conference, Ashburn, VA.
- 2012 Eden Foundation 18th Annual Princeton Lecture Series (keynote address), Princeton, NJ.
- 2012 Conference, Fluorescent Proteins and Biological Sensors III, Janelia Conference, Ashburn, VA (attendance cancelled due to Hurricane Sandy).
- 2013 National Academy of Sciences, 150th Annual Meeting, break-out session on The New Science Of Elections, Washington, DC (chair: Douglas Massey).
- 2013 McKnight Foundation Annual Meeting, Aspen, CO.
- 2013 Opening symposium, Quantitative Collaborative program, College of Arts and Sciences, University of Virginia, Charlottesville, VA.
- 2013 Annual research symposium (keynote speaker), Delaware chapter, Society for Neuroscience, Newark, DE.
- 2014 McKnight Foundation Annual Meeting, Aspen, CO.
- 2014 Conference, Fluorescent Proteins and Biological Sensors IV, Janelia Conference, Ashburn, VA

Invited talks (Research departments)

- 1994 Department of Physiology, University of Colorado Health Sciences Center, Denver, CO.
- 1995 Department of Theoretical Physics, AT&T Bell Laboratories, Murray Hill, NJ.
- 1995 Laboratory of Theoretical and Physical Biology, National Institutes of Health, Bethesda, MD.
- 1999 Department of Neurobiology, Duke University Medical Center, Durham, NC.
- 1999 Department of Biomedical Engineering, Boston University, Boston, MA.
- 1999 Department of Developmental and Cell Biology, University of California, Irvine, CA.
- 1999 Department of Molecular Biology, Princeton University, Princeton, NJ.
- 1999 Department of Neurobiology and Behavior, University of California, Irvine, CA.
- 2000 Department of Neurology, Stanford University Medical Center, Stanford, CA.
- 2000 Department of Physiology, University College, London, *England*.
- 2000 Division of Neurophysiology, National Institute for Medical Research, London, *England*.
- 2000 Department of Biology, Morehouse College, Atlanta, GA.
- 2000 Max Planck Institute for Medical Research, Dept. Biomedical Optics, Heidelberg, *Germany*.
- 2000 Karolinska Institutet, Stockholm, *Sweden*.
- 2001 Sloan Center for Theoretical Neurobiology, Caltech, Pasadena, CA.

- 2001 Program in Neuroscience, Columbia University, New York, NY.
- 2001 Wyeth-Ayerst Research Laboratories, Princeton, NJ.
- 2002 Center for Neurobiology, Mount Sinai School of Medicine, New York, NY.
- 2002 Systems neuroscience seminar, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
- 2002 Department of Physiology, New York Medical College, Albany, NY.
- 2003 Department of Physiology and Biophysics, University of Washington, Seattle, WA.
- 2003 Center for Cognitive Neuroscience, Duke University, Durham, NC.
- 2004 Baylor Medical College, Houston, TX. (Distinguished Neuroscientist Lecture Series)
- 2004 Max Planck Institute for Medical Research, Dept. Cell Physiology, Heidelberg, *Germany*.
- 2004 University of California, San Diego, CA.
- 2004 Salk Institute for Biological Studies, La Jolla, CA.
- 2004 Mathematical Biosciences Institute, Ohio State University, Columbus, OH.
- 2004 Neuroscience Program, University of Michigan, Ann Arbor, MI.
- 2004 Rowland Institute for Physics, Harvard University, Cambridge, MA.
- 2004 Department of Molecular and Cell Biology, Harvard University, Cambridge, MA.
- 2005 Center for Statistics in the Social Sciences, University of Washington, Seattle, WA.
- 2005 Department of Physiology and Biophysics, University of Washington, Seattle, WA.
- 2005 Department of Brain and Cognitive Sciences, MIT, Cambridge, MA.
- 2005 Learning and Memory Seminar, Dept. Neurobiology, University of California, Los Angeles, CA.
- 2005 Redwood Neuroscience Institute, Menlo Park, CA.
- 2005 Department of Neurobiology, Stanford University School of Medicine, Stanford, CA.
- 2005 Hopkins Marine Station, Stanford University, Pacific Grove, CA.
- 2005 Neuroscience Colloquium, Brown University, Providence, RI.
- 2005 CIMA, University of Navarra, Pamplona, *Spain*.
- 2006 Biological Chemistry Seminar Series, University of Pennsylvania, Philadelphia, PA.
- 2006 Vollum Institute, Oregon Health Sciences University, Portland, OR.
- 2006 Interdepartmental science seminar series, Delaware State University, Dover, DE.
- 2006 Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, *England*.
- 2006 Instituto de Neurociencias de Alicante, Universidad Miguel Hernandez, Alicante, *Spain*.
- 2006 Max Planck Institute for Medical Research, Dept. Cell Physiology, Heidelberg, *Germany*.
- 2006 Mahoney Institute of Neurological Sciences colloquium, Univ. Pennsylvania, Philadelphia, PA.
- 2006 Translational Neuroscience Seminar Series, Mount Sinai School of Medicine, New York, NY.
- 2007 Neuroscience program, University of California San Diego, San Diego, CA.
- 2007 Biophysics seminar series, Rockefeller University, New York, NY.
- 2007 Keynote speaker, Robert Wood Johnson MD/PhD program retreat, UMDNJ, Piscataway, NJ.
- 2007 Seminars in Neuroscience series, West Virginia University, Morgantown, WV.
- 2008 Janelia Farm, Howard Hughes Medical Institute, Ashburn, VA.
- 2008 Department of Physiology, University College, London, *England*.
- 2009 Origins Institute, McMaster University, Toronto, *Canada*.
- 2009 Neuroscience Graduate Program seminar, McMaster University, Toronto, *Canada*.
- 2009 SUNY Downstate Medical Center, Brooklyn, NY.
- 2009 Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD.
- 2010 Department of Neurobiology, University of Chicago, Chicago, IL.
- 2011 University of Paris Descartes, Paris, *France*.
- 2011 Department of Neurology, University of Texas Southwestern Medical Center, Dallas, TX.
- 2011 University of Southern California, Los Angeles, CA.
- 2012 Google Research, Mountain View, CA.
- 2012 Hopkins Marine Station, Stanford University, Pacific Grove, CA.
- 2012 Seaver Autism Research Center, Mount Sinai School of Medicine, New York, NY.
- 2013 Dept. Neuroscience, Robert Wood Johnson Medical School, UMDNJ, Piscataway, NJ.
- 2013 Roundtable on elections and public opinion, CENTRA Technology, Arlington, VA.
- 2013 Physics colloquium, Rutgers University, New Brunswick, NJ.

- 2014 Department of Neurology, University of California Los Angeles, Los Angeles, CA.
- 2014 Dept. Biochemistry and Molecular Medicine, George Washington University, Washington, DC.

Invited public outreach (selected)

- 1997 National Association of Graduate-Professional Students, 12th annual meeting, New Orleans, LA.
- 2001 World Congress of Science Producers, Washington, DC.
- 2002 Policy Fellows' retreat, American Association for the Advancement of Science, Washington DC.
- 2002 Science on Saturdays lecture, Princeton Plasma Physics Laboratory, Princeton, NJ.
- 2004 Phi Beta Kappa induction dinner, Princeton University.
- 2005 Nassau Club, Princeton, NJ.
- 2005 Discussion panelist. Blurry vision: bridging the gap between science and the public. Princeton Dept. Molecular Biology and New York Academy of Sciences meeting. November 8, 2005.
- 2006 Princeton Alumni Council outreach trip, Seattle, WA.
- 2006 Princeton Tiger Talk for high school students, Princeton, NJ.
- 2007 Discussant, panel on career development, Society for Neuroscience, San Diego, CA.
- 2007 Princeton Alumni Council outreach trip, Los Angeles, CA.
- 2008 Smithsonian Associates, Washington, DC.
- 2008 Princeton Alumni Council outreach trip, Hong Kong, China.
- 2008 Brainwave series, discussion of creativity and the brain with Sandra Aamodt and director Julie Taymor, Rubin Museum of Art, New York, NY.
- 2008 authors@google, Mountain View, CA.
- 2008 Panel discussion on science writing: "Crystals, Quarks, Biomes and Genomes: How to Make Complex Science Compelling." Princeton University, Princeton, NJ.
- 2008 Conference on Learning and the Brain, MIT, Cambridge, MA.
- 2008 Panel discussion on the Challenges of the Brain, sponsored by *Discover* magazine/NSF/Franklin Institute. Philadelphia, PA.
- 2008 Renaissance Weekend, Charleston, SC.
- 2009 Princeton Regional Chamber of Commerce, Princeton, NJ.
- 2009 Brainwave series, discussion of science and Buddhism with Donald S. Lopez Jr., Rubin Museum of Art, New York, NY.
- 2009 Adventures of the Mind mentoring summit, Institute for Advanced Study, Princeton, NJ.
- 2009 TEDxSF talk, San Francisco, CA. www.tedxsf.org.
- 2010 Speaker, freshman address, Princeton University.
- 2011 Annual David Wilkinson Lecture, Harold R. Medina Seminar for State and Federal Judges, Princeton, NJ.
- 2011 Adventures of the Mind mentoring summit, Missoula, MT.
- 2012 Conference on Learning and the Brain (keynote address), Columbia University, New York, NY.
- 2012 Annual David Wilkinson Lecture, Harold R. Medina Seminar for State and Federal Judges, Princeton, NJ.
- 2012 Common Ground (local K-12 schools consortium), Princeton, NJ.
- 2013 Parents and Science lecture series, Rockefeller University, New York, NY.
- 2013 Riverside Elementary School, Princeton, NJ.
- 2013 Annual David Wilkinson Lecture, Harold R. Medina Seminar for State and Federal Judges, Princeton, NJ.
- 2013 AAAS Science and Technology Fellowship Year-End Summit, Silver Spring, MD.
- 2013 Conference on Active, Engaged Minds (Learning And the Brain), Boston, MA.
- 2014 The Science Behind The Science Behind The News, discussion of neuroscience with Joe Palca, Smithsonian Institution, Washington, DC.

Media appearances (selected)

- 2001 National Public Radio, *Morning Edition*, interview with Joe Palca on brain evolution.
- 2004 Fox News, October 31, 2004, on meta-analysis of polls for the 2004 Presidential race.

- 2008 *Coast to Coast AM*, February 25, 2008, with George Noory on the brain.
- 2008 XM Satellite Radio, *Oprah and Friends*, April 7, 2008, with Dr. Mehmet Oz and Lisa Oz.
- 2008 National Public Radio, *Talk Of The Nation*, interview with Neal Conan on willpower.
- 2008 National Public Radio, *All Things Considered*, interview with Rick Kleffel on Welcome To Your Brain.
- 2008 BBC, *World Service NewsHour*, interview with Lyse Doucet on false beliefs.
- 2009 ABC, *Good Morning America Weekend*, January 25, 2009, on left-handed presidents.
- 2009 CNN, *Situation Room*, February 18, 2009, on left-handed presidents.
- 2009 Big Think, <http://bigthink.com>, May 2009.
- 2009 National Public Radio, *Talk Of The Nation*, interview with Neal Conan on false beliefs about Barack Obama's citizenship.
- 2010 *New York Times*, question and answer with Claudia Dreifus, February 9, 2010.
- 2011 National Public Radio, Fresh Air, interview with Terry Gross on child brain development, September 14, 2011.
- 2011 KPCC, The Madeleine Brand Show, on child brain development, November 2011.
- 2012 Bloomberg EDU, Sirius XM radio, with Jane Williams on child brain development, April 2012.
- 2012 CNNI, BBC, KPCC, NPR, Sirius XM radio, and other venues on political poll analysis, October-November 2012.
- 2012 National Public Radio, *Science Friday*, interview with Flora Lichtman and Nate Silver on analysis of political polls, October 2012.
- 2013 MSNBC, discussion with Melissa Harris-Perry on the BRAIN Initiative, April 2013.
- 2013 MSNBC, discussion with Karen Finney on the U.S. 2014 Congressional elections, October 2013.

Advisory committee and peer review service

ScienceCentral, consultant on neuroscience-related stories

National Association for Autism Research, Medical Affairs Committee

Marine Biological Laboratory, Methods in Computational Neuroscience course (admissions)

Ad hoc proposal reviewer, Netherlands Organization for Scientific Research

American Association for the Advancement of Science, Congressional Science and Engineering Fellowship Program (prescreening)

Grant proposal reviewer, Human Frontier Science Project

Task force member, American Psychological Association, report on Mental Health And The Whole Person, August 2005

Grant proposal reviewer, Autism Speaks (Pilot Study Grant Panel Meeting), February 2008

Advisory board, National Laboratory for Education Transformation, Santa Fe, NM, 2010-present.

Rita Allen Foundation, Board of Directors, 2010-present (current term expires in 2013).

Chappaqua School District, Chappaqua, New York, scientific advisor on educational practices, 2012-2013.

NIH, ad hoc review: National Institute for Mental Health (Centers for Intervention Development and Applied Research, ZMH1 ERB-L, October 2007), NIMH (March 2009), National Institutes on Drug Abuse (CEBRA, May 2009), Special Emphasis Panel for Brain Disorders and Clinical Neuroscience (BDCN) (ZRG1 BDCN-W (02), April 2013).

NIH standing study section member, Molecular Neurogenetics (MNG) January 2011-June 2014.

Peer reviewing for *Biophysical Journal*, *Brain Behavior and Evolution*, *Brain Research*, *Chemical Biology*, *Current Biology*, *Frontiers in Neuroscience*, *J. Cell Biology*, *J. Comparative Neurology*, *J. Neurophysiology*, *J. Neuroscience*, *J. Neuroscience Methods*, *J. Physiology*, *Mol. Cell. Neuroscience*, *Nature*, *Nature Biotechnology*, *Nature Communications*, *Nature Methods*,

Nature Neuroscience, Nature Reviews Neuroscience, Neuron, PLoS ONE, PNAS, Phil. Trans. Roy. Soc. B, Science.
Society for Neuroscience, 2013, review of newsworthy abstracts for advance dissemination.

External teaching activities

1985-1986 *Teaching section leader*, partial differential equations. Instructors: Dr. Herbert Keller and Dr. Philip Saffman, Department of Applied Mathematics, Caltech.
Summer 1989 *Teaching assistant, video microscopy and image processing course*. Instructors: Dr. Stuart Thompson and Dr. Stephen Smith.
Spring 1990 *Teaching assistant, undergraduate marine biology research projects*. Advised undergraduates on their research projects in physiology, ethology, and marine ecology. Instructors: Dr. Mark Denny and other Hopkins Marine Station faculty.
Feb. 2000 *Invited lecturer, Karolinska Institutet, Stockholm, Sweden*. Gave graduate-level lectures on synaptic plasticity. Course organized by Dr. Abdel El Manira.
Summer 2000, 2001 *Invited lecturer, Cold Spring Harbor Laboratory*. Summer course, Imaging Structure and Function in the Nervous System, organized by Dr. Karel Svoboda, Dr. Venkatesh Murthy, and Dr. Kerry Delaney.
Mar.-Apr. 2008 *Workshop co-organizer, Kavli Institute for Theoretical Physics*. Program on Anatomy, Development, and Evolution of the Brain.
Summer 2009 *Invited lecturer, Marine Biological Laboratory*. Summer course, Neurobiology, organized by Dr. Hollis Cline.
Summer 2012 *Invited lecturer, summer course, Biophysics and Computation in Neurons and Networks*, organized by Dr. Alan Gelperin, Dr. David Tank, and Dr. Michael Berry.
Summer 2013 *Invited lecturer, summer course, Biophysics and Computation in Neurons and Networks*, organized by Dr. Alan Gelperin, Dr. David Tank, and Dr. Michael Berry.

Additional experience and activities

1984, 1985 *Physics and engineering research at Xerox Special Information Systems, Pasadena, California*. Anti-counterfeiting technology using thin-film materials. Supervisor: Dr. Paul F. Jacobs, Chief Scientist.
1995-1996 *Legislative assistant, Rep. Lloyd Doggett (D-TX)*. Advised on matters coming before the House Science Committee; energy; and environment issues.
1996 *Legislative fellow, Senator Edward M. Kennedy (D-MA)*. Advised Senate Committee on Labor and Human Resources on higher education, research policy, and K-12 education technology issues. Speechwriting, reauthorization of the National Science Foundation and coordination of NetDay96, a day of wiring Massachusetts schools to the Internet.
2004, 2008, 2012 *Modeling the Presidential race using state polls*. Created a probabilistic model of the Electoral College using state-level polls. These calculations were published on line at <http://election.princeton.edu> and were able to predict the outcome of the 2004 election. In 2004 the site received up to 100,000 visitors per day and was covered in the *Wall Street Journal*. The 2008-2012 site, the Princeton Election Consortium, received extensive media coverage for its tracking and accurate prediction of Presidential, Senate, and House elections. In 2012, the Princeton Election Consortium received over 4 million visits and correctly forecast 49 of 50 state Presidential races, 10 of 10 key Senate races, and the House seat change.