

JONATHAN D. COHEN

CURRICULUM VITAE

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BIOGRAPHICAL

Business Address: Department of Psychology
Green Hall
Princeton University
Princeton, New Jersey 08544

Birth Date: 10/5/55
Birth Place: New York City
Citizenship: U.S.A.

Business Phone: (609) 258-2696 (voice)
(609) 258-2549 (fax)

E-mail: jdc@princeton.edu

Home page: <http://www.pni.princeton.edu/ncc/JDC>

EDUCATION and TRAINING

UNDERGRADUATE:

1973-77 Yale University B.A., 1977 Biology and Philosophy

GRADUATE:

1979-83 University of Pennsylvania M.D., 1983 Medicine

1987-90 Carnegie Mellon University Ph.D., 1990 Cognitive Psychology

POST-GRADUATE:

1983-89 Internship in General Medicine, Neurology and Psychiatry
Residency in Psychiatry
Stanford University School of Medicine

1985-87 NIMH Research Training Fellowship,
Department of Psychiatry and Behavioral Sciences
Stanford University School of Medicine

APPOINTMENTS and POSITIONS

ACADEMIC:

- 1989- present Assistant to Full Professor of Psychiatry
Western Psychiatric Institute and Clinic
University of Pittsburgh
- 1990-98 Assistant to Associate Professor of Psychology
Carnegie Mellon University
- 1992- present Director, Clinical Cognitive Neuroscience Laboratory
University of Pittsburgh
- 1998- 2005 Professor of Psychology, Princeton University
- 1999- present Founding Director, Center for the Study of Brain, Mind and Behavior
Princeton University
- 2000- present Director, Program in Neuroscience
Princeton University
- 2005- present Eugene Higgins Professor of Psychology, Princeton University
- 2005- present Founding Director, Princeton Neuroscience Institute

MEDICAL LICENSURE

- 1983-present California
- 1986-present Pennsylvania

HONORS and AWARDS

B.A. Cum Laude
Distinction in the Biology Major
Distinction in the Philosophy Major
Yale University

1977

Miller Foundation Prize for Research in Psychiatry Department of Psychiatry and Behavioral Sciences Stanford University School of Medicine	1986
Annual Resident Research Award Northern California Psychiatric Society	1986
Joseph Zubin Memorial Fund Award for Research in Psychopathology	1993
NARSAD Independent Investigator Award	1997
Kempf Fund Award for Research Development in Psychobiological Psychiatry, American Psychiatric Association	2000
James McKeen Cattell Fund Sabbatical Fellowship Award	2003
Eugene Higgins Chaired Professorship	2005
Salmon Award Lecturer, New York Academy of Medicine	2006
Fellow, Association for Psychological Science	2007
Edward J. Sachar Award, Columbia University School of Medicine	2007

PUBLICATIONS

1. Peer-Reviewed Articles

- Cohen JD, Van Putten T, Marder S, Berger PA & Stahl SM (1987). Treatment of the symptoms of schizophrenia with piquindone, a new atypical neuroleptic. Psychopharmacology Bulletin, 23(3), 514-518.
- Cohen JD, Van Putten T, Marder S, Berger PA & Stahl SM. (1987). The efficacy of piquindone, a new atypical neuroleptic, in the treatment of the positive and the negative symptoms of schizophrenia. Journal of Clinical Psychopharmacology, 7(5), 324-329.
- Cohen JD, Dunbar K & McClelland JL (1990). On the control of automatic processes: A parallel distributed processing model of the Stroop effect. Psychological Review, 97(3), 332-361.
- Servan-Schreiber D, Printz H & Cohen JD (1990). A network model of catecholamine effects: Gain, signal-to-noise ratio, and behavior. Science, 249, 892-895.
- Servan-Schreiber D & Cohen JD (1991). Models of neuromodulation and information processing deficits in schizophrenia. Revue Internationale de Psychopathologie, 1, 113-134
- Cohen JD & Servan-Schreiber D (1992). Context, cortex and dopamine: A connectionist approach to behavior and biology in schizophrenia. Psychological Review, 99, 45-77.

- Cohen JD, Servan-Schreiber D & McClelland JL (1992). A parallel distributed processing approach to automaticity. American Journal of Psychology, 105, 239-269.
- Cohen JD, MacWhinney B, Flatt M & Provost J (1993). PsyScope: A new graphic interactive environment for designing psychology experiments. Behavioral Research Methods, Instruments & Computers, 25(2), 257-271.
- Cohen JD, Noll DC & Schneider W (1993). Functional Magnetic Resonance Imaging: Overview and methods for psychological research. Behavioral Research Methods, Instruments & Computers, 25(2), 101-113.
- Cohen JD & Servan-Schreiber D (1993). A theory of dopamine function and cognitive deficits in schizophrenia. Schizophrenia Bulletin, 19(1), 85-104.
- Forman SD, Cohen JD & Johnson MH (1993). Frontal eye fields: Inhibition through competition. Behavioral and Brain Sciences, 6, 578.
- Schneider W, Noll DC & Cohen JD (1993). Functional topographic mapping of the cortical ribbon in human vision with conventional MRI scanners. Nature, 365, 150-153.
- Cohen JD, Forman SD, Braver TS, Casey BJ, Servan-Schreiber D & Noll DC (1994). Activation of prefrontal cortex in a non-spatial working memory task with functional MRI. Human Brain Mapping, 1, 293-304.
- Cohen JD & Huston TA (1994). Progress in the use of parallel distributed processing models for understanding attention and performance. In Umiltà C. and Moscovitch M. (Eds.), Attention and Performance XV: Conscious and Nonconscious Information Processing. Cambridge, MA: MIT Press, pp. 453-476.
- Cohen JD, Romero RD, Servan-Schreiber, D & Farah MJ (1994). Mechanisms of spatial attention: The relation of macrostructure to microstructure in parietal neglect. Journal of Cognitive Neuroscience, 6(4), 377-387.
- Armony JL, Servan-Schreiber D, Cohen JD & LeDoux JE (1995). An anatomically-constrained neural network model of fear conditioning. Behavioral Neuroscience, 109(2), 246-256.
- Carter CS, Mintun M & Cohen JD (1995). Interference and facilitation effects during selective attention: An [¹⁵O]-H₂O PET study of Stroop task performance. NeuroImage, 2, 264-272.
- Casey BJ, Cohen JD, Jezzard P, Turner R, Noll DC, Trainor R, Giedd J, Pannier L, Kaysen D & Rapoport JL (1995). Activation of prefrontal cortex in children during a non-spatial working memory task with functional MRI. NeuroImage, 2, 221-229.
- Forman SD, Cohen JD, Fitzgerald M, Eddy WF, Mintun MA & Noll DC (1995). Improved assessment of significant activation in functional magnetic resonance imaging (fMRI): Use of a cluster-size threshold. Magnetic Resonance in Medicine, 33, 636-647.
- Noll DC, Cohen JD, Meyer CH & Schneider W (1995). Spiral k-space MR imaging of cortical activation. Journal of Magnetic Resonance Imaging, 45, 49-56.

- Barch D, Cohen JD, Servan-Schreiber D, Steingard S, Steinhauer S & van Kammen D (1996). Semantic priming in schizophrenia: An examination of spreading activation using word pronunciation and multiple SOAs. Journal of Abnormal Psychology, 105, 592-601.
- Cohen JD, Braver TS & O'Reilly RC (1996). A computational approach to prefrontal cortex, cognitive control, and schizophrenia: Recent developments and current challenges. Philosophical Transactions of the Royal Society of London Series B (Biological Sciences), 351(1346), 1515-1527.
- Servan-Schreiber D, Cohen JD & Steingard S (1996). Schizophrenic deficits in the processing of context: A test of a theoretical model. Archives of General Psychiatry, 53, 1105-1112.
- Armony JL, Servan-Schreiber D, Cohen JD & LeDoux JE (1997). Computational modeling of emotion: Explorations through the anatomy and physiology of fear conditioning. Trends in Cognitive Sciences, 1, 28-34.
- Armony JL, Servan-Schreiber D, Romanski LM, Cohen JD & LeDoux JE (1997). Stimulus generalization of fear responses: Effects of auditory cortex lesions in a computational model and in rats. Cerebral Cortex, 7, 157-165.
- Barch DM, Braver TS, Nystrom LE, Forman SD, Noll DC & Cohen JD (1997). Dissociating working memory from task difficulty in human prefrontal cortex. Neuropsychologia, 35, 1373-1380.
- Berns GS, Cohen JD & Mintun MA (1997). Brain regions responsive to novelty in the absence of awareness. Science, 276, 1272-1275.
- Braver, TS, Cohen JD, Jonides J, Smith EE & Noll DC (1997). A parametric study of prefrontal cortex involvement in human working memory. NeuroImage, 5(1), 49-62.
- Carter CS, Mintun M, Nichols T & Cohen JD (1997). Anterior cingulate gyrus dysfunction and selective attention dysfunction in schizophrenia: An ^{15}O PET study during Stroop task performance. American Journal of Psychiatry, 154, 1670-1675.
- Casey BJ, Trainor RJ, Orendi JL, Schubert AB, Nystrom, LE, Giedd J, Castellanos X, Haxby J, Noll DC, Cohen JD, Forman SD, Dahl RE & Rapoport JL (1997). A developmental functional MRI study of prefrontal activation during performance of a Go-No-Go task. Journal of Cognitive Neuroscience, 9, 835-847.
- Cohen JD, Perlstein WM, Braver TS, Nystrom LE, Noll DC, Jonides J & Smith EE (1997). Temporal dynamics of brain activation during a working memory task. Nature, 386, 604-608.
- Genovese CR, Noll DC, Cohen JD & Eddy WF (1997). Estimating test-retest reliability in functional MR imaging I: Statistical methodology. Magnetic Resonance in Medicine, 38, 497-507.
- Goddard N, Hood G, Cohen JD, Eddy WF, Genovese CR & Noll DC (1997). Parallel online analysis of functional MRI datasets. Journal of Supercomputing, 11, 295-318.

- MacWhinney B, Cohen J & Provost J (1997). The PsyScope experiment-building system. Spatial Vision, 11, 99-101.
- Noll DC, Genovese CR, Nystrom L, Vazquez A, Forman SD, Eddy WF & Cohen JD (1997). Estimating test-retest reliability in functional MR imaging II: Application to motor and cognitive activation studies. Magnetic Resonance in Medicine, 38, 508-517.
- Botvinick MM & Cohen JD (1998). Rubber hands 'feel' touch that eyes see. Nature, 391, 756.
- Carter CS, Braver TS, Barch DM, Botvinick MM, Noll DC & Cohen JD (1998). Anterior cingulate cortex, error detection and the on-line monitoring of performance. Science, 280, 747-749.
- Carter CS, Perlstein P, Ganguli R, Brar J, Mintun M & Cohen JD (1998). Functional hypofrontality and working memory dysfunction in schizophrenia. American Journal of Psychiatry, 155(9), 1285-1287.
- Casey, BJ, Cohen JD, O'Craven K, Davidson RJ, Irwin W, Nelson CA, Noll DC, Hu X, Lowe MJ, Rosen BR, Truwitt CL & Turski PA (1998). Reproducibility of fMRI results across four institutions using a spatial working memory task. Neuroimage 8(3), 249-61.
- Cohen JD, Usher M & McClelland JL (1998). A PDP approach to set size effects within the Stroop task: Reply to Kanne, Balota, Spieler, and Faust (1998). Psychological Review, 105.
- Servan-Schreiber D, Bruno R, Carter C & Cohen JD (1998). Dopamine and the mechanisms of cognition. Part I: A neural network model predicting dopamine effects on selective attention. Biological Psychiatry, 43, 713-722.
- Servan-Schreiber D, Carter C, Bruno R & Cohen JD (1998). Dopamine and the mechanisms of cognition. Part II: D-Amphetamine effects in human subjects performing a selective attention task. Biological Psychiatry, 43, 723-729.
- Servan-Schreiber D, Perlstein WM, Cohen JD & Mintun M (1998). Selective pharmacological activation of limbic structures in human volunteers: A positron emission tomography study. The Journal of Neuropsychiatry and Clinical Psychiatry, 10, 148-159
- Aston-Jones G, Rajkowski J & Cohen J (1999). Role of locus coeruleus in attention and behavioral flexibility. Biological Psychiatry, 46, 1309-1320.
- Barch DM, Carter CS, Braver TS, Sabb FW, Noll DC & Cohen JD. (1999). Overt verbal responding during fMRI scanning: Empirical investigations of problems and potential solutions. Neuroimage, 10(6), 642-657.
- Barch DM, Carter CS, Hachten PC and Cohen JD (1999). The "benefits" of distractibility: The mechanisms underlying increased Stroop effects in schizophrenia. Schizophrenia Bulletin, 24(4), 749-762.
- Barch DM, Carter CS, Perlstein WM, Baird J, Cohen JD & Schooler N (1999). Increased Stroop facilitation effects in schizophrenia are not due to increased automatic spreading activation. Schizophrenia Research, 39(1), 51-64.

- Botvinick MM, Nystrom L, Fissell K, Carter CS & Cohen JD (1999). Conflict monitoring vs. selection-for-action in anterior cingulate cortex. Nature, 402(6758), 179-181
- Braver TS, Barch DM & Cohen JD (1999). Cognition and control in schizophrenia: A computational model of dopamine and prefrontal function. Biological Psychiatry, 46 (3), 312-328.
- Cohen JD, Barch DM, Carter CS & Servan-Schreiber D (1999). Context-processing deficits in schizophrenia: converging evidence from three theoretically motivated cognitive tasks Journal of Abnormal Psychology, 108, 120-133.
- Condray R, Steinhauer SR, Cohen JD, van Kammen DP & Kasperek A (1999). Modulation of language processing in schizophrenia: Effects of context and haloperidol on the event-related potential. Biological Psychiatry, 45 (10), 1336-55.
- Usher M, Cohen JD, Rajkowski J, Kubiak P & Aston-Jones G (1999). The role of locus coeruleus in the regulation of cognitive performance. Science, 283, 549-554.
- Braver TS & Cohen JD (2000). On the control of control: The role of dopamine in regulating prefrontal function and working memory. In Monsell S & Driver J (Eds.), Attention and Performance XVIII; Control of cognitive processes. Pp.713-737.
- Carter CS, Macdonald AM, Botvinick M, Ross LL, Stenger VA, Noll D & Cohen JD (2000). Parsing executive processes: strategic vs. evaluative functions of the anterior cingulate cortex. Proceedings of the National Academy of Sciences, U S A, 97(4), 1944-1948.
- MacDonald AW, Cohen JD, Stenger VA & Carter CS (2000). Dissociating the role of dorsolateral prefrontal cortex and anterior cingulate cortex in cognitive control. Science, 288, 1835-1837.
- Nystrom LE, Braver TS, Sabb FW, Delgado MR, Noll DC & Cohen JD (2000). Working memory for letters, shapes and locations: fMRI evidence against stimulus-based regional organization of human prefrontal cortex. Neuroimage, 11, 424-446.
- Barch DM, Carter CS, Braver TS, Sabb FW, MacDonald A, Noll DC & Cohen JD (2001). Selective deficits in prefrontal cortex function in medication naïve patients with schizophrenia. Archives of General Psychiatry, 58, 280-8.
- Botvinick, MM, Braver TS, Carter CS, Barch DM & Cohen JD (2001). Conflict monitoring and cognitive control. Psychological Review, 108(3) 624-652.
- Braver TS, Barch DM, Keys BA, Carter CS, Cohen JD, Kaye JA, Janowsky JS, Taylor SF, Yesavage JA, Mumenthaler MS, Jagust WJ & Reed B (2001). Context processing in older adults: Evidence for a theory relating cognitive control to neurobiology in healthy aging. Journal of Experimental Psychology: General, 130, 746-763.
- Braver TS & Cohen JD (2001). Working memory, cognitive control, and the prefrontal cortex: Computational and empirical studies. Cognitive Processing, 2, 25-55.
- Greene JD, Sommerville RB, Nystrom LE, Darley JM & Cohen JD (2001). An fMRI investigation of emotional engagement in moral judgment. Science, 293, 2105-2108

- Perlstein WM, Carter CS, Noll DC & Cohen JD (2001). fMRI evidence of prefrontal cortex dysfunction in schizophrenia during parametric manipulation of working memory load. American Journal of Psychiatry, 158, 1105-1113.
- Organization of Human Brain Mapping, Governing Council (2001). Neuroimaging databases. Science, 292, 1673-1676.
- van Veen V, Cohen JD, Botvinick MM, Stenger VA & Carter CS (2001). Anterior cingulate cortex, conflict monitoring, and levels of processing. Neuroimage, 14, 1302–1308 (2001)
- Usher M, Haarmann H, Cohen JD & Horn D (2001). Neural mechanism for the magical number 4: competitive interactions and non-linear oscillations. Behavioral and Brain Sciences, 24, p. 151.
- Cho R, Nystrom L, Holmes P, Brown E & Cohen JD (2002). Mechanisms underlying performance dependencies on stimulus history in a two-alternative forced choice task. Journal of Cognitive, Affective and Behavioral Neuroscience, 2(4), 283-299.
- Cohen JD, Braver TS & Brown JW (2002). Computational perspectives on dopamine function in prefrontal cortex. Current Opinion in Neurobiology, 12, 223–229.
- Davidson RJ, Lewis DA, Alloy L, Amaral D, Bush G, Cohen JD, Drevets W, Farah M, Kagan J, McClelland JL, Nolen-Hoeksema S & Peterson B (2002). Neural and behavioral substrates of mood and mood regulation. Biological Psychiatry, 52(6), 478-502.
- Fissell K, Tseytlin E, Cunningham D, Karthickeyan I, Carter CS, Schneider W & Cohen JD (2002). Fiswidgets: A graphical computing environment for neuroimaging analysis. Neuroinformatics, 1, 111-125.
- Gilzenrat MS, Holmes BD, Holmes PJ, Rajkowski J, Aston-Jones G & Cohen JD (2002). A modified Fitzhugh-Nagumo system simulates locus coeruleus-mediated regulation of cognitive performance. Neural Networks, 15, 647-663.
- Graziano M, Cohen JD & Botvinick MM (2002). How the brain represents the body. In Prinz W and Hommel B (Eds.), Attention and Performance XIX: Common Mechanisms in Perception and Action. Oxford, UK: Oxford University Press, pp. 136-157.
- Jones AD, Cho R, Nystrom LE, Cohen JD & Braver TS (2002). A computational model of anterior cingulate function in speeded response tasks: Effects of frequency, sequence and conflict. Journal of Cognitive, Affective and Behavioral Neuroscience, 2(4), 300-317.
- Montague PR, Berns GS, Cohen JD, McClure SM, Pagnoni G, Dhamala M, Wiest MC, Karpov I, King RD, Apple N & Fisher RE (2002) Hyperscanning: Simultaneous fMRI during linked social interactions. NeuroImage, 16(4), 1159-64.
- O'Reilly RC, Noelle DC, Braver TS & Cohen JD (2002). Prefrontal cortex in dynamic categorization tasks: Representational organization and neuromodulatory control. Cerebral Cortex, 12, 246-257.

- Barch, DM, Carter CS, MacDonald A, Braver TS & Cohen JD (2003). Context processing deficits in schizophrenia: Diagnostic specificity, longitudinal course, and relationships to clinical symptoms. Journal of Abnormal Psychology, 112, 132-143.
- Condray R, Siegle GJ, Cohen JD, van Kammen DP & Steinhauer SR (2003). Automatic activation of the semantic network in schizophrenia: N400 elicited by a brief inter-stimulus interval. Biological Psychiatry, 54: 1134-48.
- Holroyd CB, Nieuwenhuis S, Yeung N & Cohen JD (2003). Errors in reward prediction are reflected in the event-related brain potential. NeuroReport, 14(18), 2481-2484.
- Perlstein WM, Carter CS, Noll DC & Cohen JD (2003). Prefrontal cortex dysfunction mediates deficits in working memory and prepotent responding in schizophrenia. Biological Psychiatry, 58, 25-38.
- Sanfey AG, Rilling JK, Aronson JA, Nystrom LE & Cohen JD (2003). The neural basis of economic decision-making in the ultimatum game. Science, 300, 1755-1757.
- Bogacz R & Cohen JD (2004). Parameterization of connectionist models. Behavioral Research Methods, Instruments & Computers, 36 (4), 732-741.
- Clayton EC, Rajkowski J, Cohen JD & Aston-Jones G (2004). Phasic activation of monkey locus coeruleus neurons by simple decisions in a forced choice task. Journal of Neuroscience, 24(45).
- Green MF, Nuechterlein KH, Gold JM, Barch DM, Cohen JD, Essock S, Fenton WS, Frese F, Goldberg TE, Heaton RK, Keefe RSE, Kern RS, Kraemer H, Stover E, Weinberger DR, Zalcman S, Marder SR (2004). Approaching a consensus cognitive battery for clinical trials in schizophrenia: The NIMH-MATRICES conference to select cognitive domains and test criteria. Biological Psychiatry, 56(5), 301-7.
- Greene JDC & Cohen JD (2004). For the law, neuroscience changes nothing and everything. Philosophical Transactions of the Royal Society of London Series B, 359(1451), 1775-85.
- Greene JDC, Nystrom LE, Engell AD, Darley JM & Cohen JD (2004). The neural bases of cognitive conflict and control in moral judgment. Neuron, 44(2), 389-400.
- Holroyd CB, Larsen JT & Cohen JD (2004). Context dependence of the event-related brain potential associated with reward and punishment. Psychophysiology 41(2), 245-53.
- Holroyd CB, Yeung N, Nieuwenhuis S, Nystrom LE, Coles MGH & Cohen JD (2004). Dorsal anterior cingulate cortex shows fMRI response to internal and external error signals. Nature Neuroscience, 7(5), 497-498.
- Kerns JG, Cohen JD, MacDonald III AW, Cho RY, Stenger VA & Carter CS (2004). Anterior cingulate conflict monitoring and adjustments in control. Science, 303. 1023-1026.
- Kerns JG, Cohen JD, Stenger VA & Carter CS (2004). Prefrontal cortex guides context-appropriate responding during language production. Neuron, 43(2), 283-91.

- McClure SM, Laibson DI, Loewenstein G & Cohen JD (2004). Separate neural systems value immediate and delayed monetary rewards. Science, 306, 503-507. Reprinted in Recent Developments in Economic Psychology, Maital S (ed.), Cheltenham, UK : Edward Elgar Publishing Ltd., 2006; and in New Developments in Experimental Economics, Carbone E and Starmer C (eds.), Cheltenham, UK: Edward Elgar Publishing Ltd., 2007.
- Montague PR, Hyman SE & Cohen JD (2004). Computational roles for dopamine in behavioural control. Nature 431(7010), 760-767.
- Nieuwenhuis S, Yeung N & Cohen JD (2004). Stimulus modality, perceptual overlap, and the Go/NoGo N2. Psychophysiology, 41, 157-160.
- Nieuwenhuis S, Yeung N, Holroyd CB, Schurger A & Cohen JD (2004). Sensitivity of electrophysiological activity from medial frontal cortex to utilitarian and performance feedback. Cerebral Cortex, 14, 741-747.
- Rilling JK, Sanfey AG, Aronson JA, Nystrom LE & Cohen JD (2004). The neural correlates of theory of mind within interpersonal interactions. Neuroimage 22(4), 1694-703.
- Rilling JK, Sanfey AG, Aronson JA, Nystrom LE & Cohen JD (2004). Opposing BOLD responses to reciprocated and unreciprocated altruism in putative reward pathways. Neuroreport, 15(16), 2539-2243.
- Wager TD, Rilling JK, Smith EE, Sokolik A, Casey KL, Davidson RJ, Kosslyn SK, Rose RM & Cohen JD (2004). Placebo-induced changes in fMRI in the anticipation and experience of pain. Science, 303, 1162-1167.
- Yeung N, Bogacz R, Holroyd C & Cohen JD (2004). Detection of synchronized oscillations in the electroencephalogram: An evaluation of methods. Psychophysiology, 41, 822-832.
- Yeung N, Botvinick MM & Cohen JD (2004). The neural basis of error detection: conflict monitoring and the error-related negativity. Psychological Review, 111(4), 931-959.
- Brown ET, Gao J, Holmes P, Bogacz R, Gilzenrat M & Cohen JD (2005). Simple neural networks that optimize decisions. International Journal of Bifurcation & Chaos, 15(3): 803-826.
- Cohen, JD (2005). The vulcanization of the human brain: A neural perspective on interactions between cognition and emotion. Journal of Economic Perspectives, 19, 3-24.
- Holmes P, Brown E, Moehlis J, Bogacz R, Gao J, Aston-Jones G, Clayton E, Rajkowski J & Cohen JD (2005). Optimal decisions: From neural spikes, through stochastic differential equations, to behavior. IEICE Transactions on Fundamentals of Electronics, Communications and Computer Science, 88 (10), 2496-2503.
- Holroyd CB, Yeung N, Coles MGH & Cohen JD (2005). A mechanism for error detection in speeded response time tasks. Journal of Experimental Psychology: General, 134(2): 163–191.

- Kerns JG, Cohen JD, MacDonald AW, 3rd, Johnson MK, Stenger VA, Aizenstein H & Carter CS (2005). Decreased conflict- and error-related activity in the anterior cingulate cortex in subjects with schizophrenia. American Journal of Psychiatry, 162(10), 1833-9.
- MacDonald III A, Carter CS, Kerns J, Ursu S, Barch DM, Holmes A, Stenger VA & Cohen JD (2005). Specificity of prefrontal dysfunction and context processing deficits to schizophrenia in a never medicated first-episode psychotic sample. American Journal of Psychiatry, 162:475–484.
- Nieuwenhuis S, Aston-Jones G & Cohen JD (2005). Decision making, the P3, and the locus coeruleus-norepinephrine system. Psychological Bulletin, 131(4), 510–532.
- Nieuwenhuis S, Gilzenrat MS, Holmes BD, Cohen JD (2005). The role of the locus coeruleus in mediating the attentional blink: A neurocomputational theory. Journal of Experimental Psychology: General, 134, 291-307.
- Polyn SM, Natu VS, Cohen JD and Norman KA (2005). Category-specific cortical activity precedes retrieval during memory search. Science 310(5756), 1963-6.
- Rougier NP, Noelle DC, Braver TS, Cohen JD & O'Reilly RC (2005). Prefrontal cortex and the flexibility of cognitive control: Rules without symbols. Proceedings of the National Academy of Sciences, U S A., 102(20):7338-7343.
- Yeung N, Holroyd CB & Cohen JD (2005). ERP correlates of feedback and reward processing in the presence and absence of response choice. Cerebral Cortex, 15, 535-544.
- Bishop SJ, Cohen JD, Fossella J, Casey BJ & Farah MJ (2006). COMT genotype influences prefrontal response to emotional distraction. Cognitive, Affective and Behavioral Neuroscience, 6(1), 62-70.
- Bogacz R, Brown ET, Moehlis J, Hu P, Holmes P & Cohen JD (2006). The physics of optimal decision making: A formal analysis of models of performance in two-alternative forced choice tasks. Psychological Review, 113, 700-765.
- Nitschke JB, Dixon GE, Sarinopoulos I, Short SJ, Cohen JD, Smith EE, Kosslyn SM, Rose RM & Davidson RJ (2006). Altering expectancy dampens neural response to aversive taste in primary taste cortex. Nature Neuroscience, 9(3), 435-42.
- Pizzagalli DA, Peccoraro LA, Davidson RJ & Cohen D (2006). Resting anterior cingulate activity and abnormal responses to errors in subjects with elevated depressive symptoms: A 128-channel EEG study. Human Brain Mapping, 27, 185-201.
- Simen P, Cohen JD & Holmes P (2006). Rapid decision threshold modulation by reward rate in a neural network. Neural Networks, 19, 1013-26.
- Yeung N & Cohen JD (2006). The impact of cognitive deficits on conflict monitoring: Predictable dissociations between the ERN and N2. Psychological Science, 17(2), 164-171.
- Yeung N, Nystrom LE, Aronson JA & Cohen JD (2006). Between-task competition and cognitive control in task switching. Journal of Neuroscience, 26(5), 1429-1438.

- Bogacz R, McClure SM, Li J, Cohen JD & Montague PR (2007). Short-term memory traces for action bias in human reinforcement learning. Brain Research, 1153, 111-21.
- Cohen JD, McClure SM & Yu AJ (2007). Should I stay or should I go? How the human brain manages the tradeoff between exploitation and exploration. Philosophical Transactions of the Royal Society of London Series B (Biological Sciences), 362 (1481): 933-42.
- Harris LT, McClure SM, van den Bos W, Cohen JD & Fiske ST (2007). Regions of MPFC differentially tuned to social and non-social affective evaluation. Cognitive, Affective and Behavioral Neuroscience, 7(4), 309-16.
- McClure SM, Ericson KM, Laibson DI, Loewenstein G, & Cohen JD (2007). Time discounting for primary rewards. Journal of Neuroscience, 27(21), 5796-5804.
- van den Bos W, McClure SM, Harris LT, Fiske ST & Cohen JD (2007). Dissociating affective evaluation and social cognitive processes in the ventral medial prefrontal cortex. Cognitive, Affective and Behavioral Neuroscience, 7(4), 337-46.
- Yeung N, Bogacz R, Holroyd CB, Nieuwenhuis S & Cohen JD (2007). Theta phase resetting and the error-related negativity. Psychophysiology, 44, 39-49.
- D'Ardenne K, McClure SM, Nystrom LE & Cohen JD (2008). BOLD responses in the dopaminergic ventral tegmental area during a classical conditioning task. Science, 319(5867), 1264-7.
- Fales CL, Barch DM, Rundle MM, Mintun MA, Snyder AX, Cohen JD, Mathews J & Sheline YI (2008). Altered emotional interference processing in affective and cognitive-control brain circuitry in major depression. Biological Psychiatry, 63(4), 377-384.
- Greene JD, Morelli SA, Lowenberg K, Nystrom LE & Cohen JD (2008). Cognitive load selectively interferes with utilitarian moral judgment. Cognition, 107, 1144-54.
- Kroger JK, Nystrom LE, Cohen JD, & Johnson-Laird PN (2008). Distinct neural substrates for deductive and mathematical processing. Brain Research, 1243, 83-103.
- Liu Y, Holmes P & Cohen JD (2008). A neural network model of the Eriksen task: Reduction, analysis, and data fitting. Neural Computation, 20(2), 345-73.
- Nuechterlein KH, Green MF, Kern RS, Baade LE, Barch D, Cohen JD, Essock S, Fenton WS, Frese FJ, Gold JM, Goldberg T, Heaton R, Keefe RSE, Kraemer H, Mesholam-Gately R, Seidman LJ, Stover E, Weinberger D, Young AS, Zalcman S & Marder SR (2008). The MATRICS Consensus Cognitive Battery: Part 1. Test selection, reliability, and validity. American Journal of Psychiatry, 165(2), 203-13.
- Pochon J-P, Riis J, Sanfey A, Nystrom L, Cohen JD (2008). Functional imaging of decision conflict. Journal of Neuroscience, 28(13), 3468-73.
- Schurger A, Cowey A, Cohen JD, Treisman A & Tallon-Baudry C (2008). Distinct and independent correlates of attention and awareness in a hemianopic patient. Neuropsychologia.

- Shea-Brown ET, Gilzenrat MS, & Cohen JD (2008). Optimization of decision making in multilayer networks: The role of Locus Coeruleus. Neural Computation, 20, 2863-2894.
- van den Bos W, Li J, Lau T, Maskin E, Cohen JD, Montague PR & McClure SM (2008). The value of victory: social origins of the winner's curse in common value auctions. Judgment and Decision Making, 3 (7), 483–492.
- Barch DM, Carter CS, Arnsten A, Buchanan RW, Cohen JD, Geyer M, Green MF, Krystal JH, Nuechterlein K, Robbins T, Silverstein S, Smith EE, Strauss M, Wykes T, & Heinszen R. (2009). Selecting paradigms from cognitive neuroscience for translation into use in clinical trials: Proceedings of the third CNTRICS meeting. Schizophrenia Bulletin, 35, 109-14.
- Cho RY, Orr JM, Cohen JD & Carter CS (2009). Generalized signaling for control: Evidence from post-conflict and post-error performance adjustments. Journal of Experimental Psychology: Human Perception and Performance, 35, 1161-1177.
- Daubechies I, Roussos E, Takerkart S, Benharrosh M, Golden C, D'Ardenne K, Richter W, Cohen JD & Haxby J (2009). ICA for brain fMRI does NOT select for independence. Proceedings of the National Academy of Sciences, U S A, 106, 10415-10422.
- Gao J, Wong-Lin KF, Holmes P, Simen P & Cohen JD (2009). Sequential effects in two-choice reaction time tasks: Decomposition and synthesis of mechanisms. Neural Computation, 21, 2407-2436.
- Greene JD, Cushman FA, Stewart LE, Lowenberg K, Nystrom LE & Cohen JD. (2008). Pushing moral buttons: The interaction between personal force and intention in moral judgment. Cognition, 111, 364-371.
- Yu AJ, Dayan P & Cohen JD (2009). Attentional control: Toward a rational Bayesian account. Journal of Experimental Psychology: Human Perception and Performance, 35(3), 700-17.
- Bogacz R, Hu PT, Holmes P & Cohen JD (in press). Do humans produce the speed-accuracy tradeoff that maximizes reward rate? Quarterly Journal of Experimental Psychology.
- Gilzenrat MS, Nieuwenhuis S & Cohen JD (in press). Pupil Diameter Tracks Changes in Control State Predicted by the Adaptive Gain Theory of Locus Coeruleus Function. Cognitive, Affective and Behavioral Neuroscience.
- Schurger A, Pereira F, Treisman A & Cohen JD (in press). Reproducibility of activity characterizes conscious from non-conscious neural representations. Science.
- Simen P & Cohen JD (in press). Explicit melioration by a neural diffusion model. Brain Research.
- Simen P, Contreras-Ros D, Buck C, Hu P, Holmes P & Cohen JD (in press). Reward rate optimization in two-alternative decision making: Empirical tests of theoretical predictions. Journal of Experimental Psychology: Human Perception and Performance.

2. Invited Reviews, Commentary, Chapters, Edited Volumes & Technical Reports

- Servan-Schreiber D & Cohen JD (1991). Network models of neuromodulation and information processing deficits in schizophrenia. Proceedings of the 12th Annual Meeting of the Cognitive Science Society.
- Servan-Schreiber D, Printz H & Cohen JD (1989). The effect of catecholamines on performance: From unit to system behavior. In D. S. Touretzky (ed.), Advances in Neural Information Processing Systems 2. San Mateo, CA: Morgan Kaufman. [Collected papers of the IEEE Conference on Neural Information Processing Systems - Natural and Synthetic, Denver, Nov. 27-Nov. 30, 1989.]
- Baars BJ, Cohen JD, Bower GH & Berry JW (1992). Some caveats on testing the Freudian slip hypothesis: Problems in systematic replication. In Baars BJ (Ed.), Experimental slips and human error, Exploring the architecture of volition. New York: Plenum Press.
- Cohen JD & Servan-Schreiber D (1992). Introduction to neural networks in psychiatry. Psychiatric Annals, 22(3), 113-118.
- Servan-Schreiber D & Cohen JD (1992). A neural network model of catecholaminergic modulation of behavior. Psychiatric Annals, 22(3), 125-130.
- Servan-Schreiber D & Cohen JD (1992). Issue Editors, Neural network models in Psychiatry. Psychiatric Annals, 22(3).
- Cohen JD, Servan-Schreiber D, Targ E & Spiegel D (1992). The fabric of thought disorder: A cognitive neuroscience approach to disturbances in the processing of context in schizophrenia. In Stein D & Young J (Eds.), Cognitive Science and Clinical Disorders. NY: Academic Press.
- Cohen JD, Forman SD, Braver TS, Casey BJ, Servan-Schreiber D & Noll DC (1993). Activation of prefrontal cortex in a non-spatial working memory task with functional MRI. Technical Report PDP.CNS.93.3, Pittsburgh PA: Carnegie Mellon University.
- Cohen JD, Romero R, Servan-Schreiber D & Farah MJ (1993). Disengaging from the disengage function: The relation of macrostructure to microstructure in parietal attentional deficits. Technical Report PDP.CNS.93.2, Pittsburgh PA: Carnegie Mellon University.
- Braver TS, Cohen JD & Servan-Schreiber D (1995). A computational model of prefrontal cortex function. In Touretzky DS, Tesauro G & Leen TQ (Eds.), Advances in Neural Information Processing Systems, Vol. 7. Cambridge, MA: MIT Press. 141-149.
- Usher M, Cohen JD, Servan-Schreiber D, Rajkowski J, Kubiak P & Aston-Jones G (1995). A computational model of locus coeruleus function and its influence on cognitive performance. Technical Report PDP.CNS.95.1, Pittsburgh PA: Carnegie Mellon University.
- Casey BJ, Cohen JD, Noll D, Schneider W, Giedd J & Rapoport JL (1996). Functional magnetic resonance imaging: Studies of Cognition. In Bigler ED (Ed.) Handbook of Human Brain Function, Neuroimaging II: Clinical Applications. New York: Plenum Press.

- Cohen JD & O'Reilly RC (1996). A preliminary theory of the interactions between prefrontal cortex and hippocampus that contribute to planning and prospective memory. In Brandimonte M, Einstein GO & McDaniel MA (Eds.), Prospective Memory: Theory and Applications. Hillsdale, NJ: Erlbaum. Pages 267-295.
- Keshavan MS & Cohen JD (1996). Magnetic resonance spectroscopy and functional MRI. In Lewis S & Higgins N (Eds.), Brain Imaging in Psychiatry. Oxford, UK: Blackwell Science, Ltd.
- Servan-Schreiber D & Cohen JD (1996). Dopamine, frontal cortex, and schizophrenia: Model and data. In Reggia JA, Ruppin E & Berndt RS (Eds.), Neural Modeling of Brain and Cognitive Disorders. Singapore: World Scientific Publishing Co.
- Cohen JD (1997). Brain Terrain. Nature, 389, 142
- Cohen JD (1997). Dimensions of consciousness: A commentary on Kinsbourne and Hobson. In Cohen JD & Schooler JW (Eds.), Scientific Approaches to Consciousness: 25th Carnegie Symposium on Cognition. New Jersey: Lawrence Erlbaum Associates.
- Cohen JD, Dunbar KO, Barch DM & Braver TS (1997). Reply to Schooler et al: Issues concerning relative speed of processing hypotheses, schizophrenic performance deficits, and prefrontal function in the Stroop task. Journal of Experimental Psychology: General, 126, 37-41.
- Cohen JD & Schooler JW (1997). Science and sentience: Some questions regarding the scientific investigation of consciousness. In Cohen JD & Schooler JW (Eds.), Scientific Approaches to Consciousness: 25th Carnegie Symposium on Cognition. New Jersey: Lawrence Erlbaum Associates.
- Cohen JD & Smith EE (1997). Response to Owen AM, Tuning in to the temporal dynamics of brain activation using functional magnetic resonance imaging (fMRI). Trends in Cognitive Sciences, 1, 125.
- Aston-Jones G, Rajkowski J, Kubiak P, Ivanova S, Usher M & Cohen JD (1998). Neuromodulation and cognitive performance: Recent studies of noradrenergic locus coeruleus neurons in behaving monkeys. In Goldstein D, Eisenhofer G & Mcarty R (Eds.), Catecholamines: Bridging Basic Science with Clinical Medicine (Advances in Pharmacology, Vol. 42). New York: Academic Press, pp. 755-759.
- Botvinick MM, Braver TS, Carter CS, Barch DM & Cohen JD (1998). Toward a non-homuncular account of control: Cognitive neuroscientific evidence for conflict monitoring. Technical Report PDP.CNS.98.1, Pittsburgh PA: Carnegie Mellon University.
- Braver TS, Barch DM, & Cohen JD (1999). Mechanisms of cognitive control: Active memory, inhibition, and the prefrontal cortex. Technical Report PDP.CNS.99.1, Pittsburgh PA: Carnegie Mellon University.
- Braver TS & Cohen JD (1999). Dopamine, cognitive control, and schizophrenia: The gating model. Progress in Brain Research, 121, 327-349.

- Braver TS & Cohen JD (1999). Dopamine, cognitive control, and schizophrenia: The gating model. In Reggia J, Ruppin E & Glanzman D (Eds.), Disorders of Brain, Behavior and Cognition: The Neurocomputational Perspective. Elsevier.
- O'Reilly RC, Braver TS & Cohen JD (1999). A biologically-based neural network model of working memory. In Shah P & Miyake A (Eds.), Models of Working Memory. Cambridge University Press. Pages 375-411.
- Usher M & Cohen JD (1999). Short term memory and selection processes in a frontal-lobe model. In Heinke D, Humphries GW & Olsen A (Eds.), Connectionist Models in Cognitive Neuroscience. Springer-Verlag.
- Carter CS, Botvinick MM, Cohen JD. (1999) The contribution of the anterior cingulate cortex to executive processes in cognition. Reviews in the Neurosciences, 10, 49-57.
- Aston-Jones G, Rajkowski J & Cohen J (2000). Locus coeruleus and regulation of behavioral flexibility and attention. In Progress in Brain Research.
- Cohen JD (2000), Special Issue: Functional topography of prefrontal cortex. NeuroImage, 11, 378-379.
- Cohen JD, Botvinick MM & Carter CS (2000). Anterior cingulate and prefrontal cortex: who's in control? Nature Neuroscience. 3(5): 421-423.
- Cohen JD (2001). Cognitive control (Executive Functions): Role of Prefrontal Cortex. In Smelser NJ & Baltes PB (Eds.), International Encyclopedia of the Social & Behavioral Sciences, 3, 2089-94. Elsevier: Oxford.
- Cohen JD & Tong F (2001). The face of controversy: Modular vs. distributed representations in the brain. Science, 293, 2405-2407.
- Miller EK & Cohen JD (2001). An integrative theory of prefrontal cortex function. Annual Review of Neuroscience. 24:167-202.
- Aston-Jones G, Rajkowski J & Cohen JD (2002). Role of the locus coeruleus-norepinephrine system in attention and behavioral flexibility. In: Catecholamine Research: From Molecular Insights to Clinical Medicine, Nagatsu T, Nabeshima T, McCarty R & Goldstein D (Eds.). Kluwer Academic/Plenum Publishing: New York, pp. 357-361.
- Bogacz R & Cohen JD (2002). Parameterization of connectionist models. CSBMB.Conte.02.1, Princeton NJ: Princeton University.
- Cohen JD (2002). Neural network models of prefrontal cortex and cognitive control. In Grafman J (ed.), Handbook of Neuropsychology, 2nd Edition, Vol. 7: The Frontal Lobes. Elsevier: New York, pp.195-213.
- Cohen, J. D. (2002). Inhibition and control. In The Dana Guide To Brain Health, Bloom FE, Beal MF, & Kupfer DJ (Eds). New York: Free Press. Pp.185-189.
- Cohen JD & Blum KI (2002). Overview: Reward and decision. Introduction to special issue. Neuron, 36(2), 193-198.

- Cohen JD & Servan-Schreiber D (2002). Context, cortex and schizophrenia: A connectionist approach to behavior and biology in schizophrenia. In: Cognitive Modeling, Polk TA & Seifert CM (Eds.). MIT Press: Cambridge.
- Nieuwenhuis S, Yeung N & Cohen JD (2003). A computational simulation of electrophysiological markers of anterior cingulate function in a go/nogo task. CSBMB. 03.1, Princeton NJ: Princeton University.
- Paus T, Haxby JV & Cohen JD (2003). Special Issue. Neuroimage.
- Botvinick M, Braver TS, Yeung N, Carter CS & Cohen JD (2004). Conflict monitoring: Computational and empirical studies. In Posner MI (Ed.), Cognitive Neuroscience of Attention. New York: Guilford Press
- Botvinick MM, Cohen JD & Carter CS (2004). Conflict monitoring and anterior cingulate cortex: An update. Trends in Cognitive Sciences, 8(12), 539-546.
- Carter CS, Kerns JG & Cohen JD (2004). Cognitive neuroscience: Bridging thinking and feeling to the brain, and its implications for psychiatry. In: Neurobiology of Mental Illness, Charney DS & Nestler EJ (Eds.), Oxford University Press: Oxford.
- Cohen JD, Aston-Jones G & Gilzenrat MS (2004). A systems-level perspective on attention and cognitive control: Guided activation, adaptive gating, conflict monitoring, and exploitation vs. exploration. In Posner MI (Ed.), Cognitive Neuroscience of Attention. New York: Guilford Press. Pp. 71-90.
- Holmes P, Brown E, Moehlis J, Bogacz R, Gao J, Hu P, Aston-Jones G, Clayton E, Rajkowski J & Cohen JD (2004). Optimal decisions: From neural spikes, through stochastic differential equations, to behavior. Proceedings of the International Symposium on Nonlinear Theory and its Applications. NOLTA2004.
- Sanfey AG & Cohen JD (2004). Is knowing always feeling? Proc Natl Acad Sci U S A, 101(48), 16709-10.
- Aston-Jones G & Cohen JD (2005). An integrative theory of locus coeruleus-norepinephrine function: Adaptive gain and optimal performance. Annual Review of Neuroscience, 28, 403-450.
- Aston-Jones G & Cohen JD (2005). Adaptive gain and the role of the locus coeruleus-norepinephrine system in optimal performance. Journal of Comparative Neurology. 493: 999-110.
- Cohen JD & Aston-Jones G (2005). Cognitive neuroscience: Decision amid uncertainty. Nature, 436(7050), 471-2.
- Holmes PJ, Bogacz R, Cohen JD & Gold JJ (2005). Letter to the Editor, in response to Hunter PW (2004), Connections, context, and community: Abraham Wald and the sequential probability ratio test. Mathematical Intelligencer, 27(1), 4-5.

- McClure S, Gilzenrat M and Cohen J (2005). An exploration-exploitation model based on norepinephrine and dopamine activity. Advances in Neural Information Processing Systems, Vol. 18. Cambridge, MA: MIT Press.
- Holroyd CB, Yeung N, Coles MGH & Cohen JD (2006). Internalizing representations of correct behavior from feedback. Princeton Technical Report #06-02.
- Montague PR, King-Casas B & Cohen JD (2006). Imaging valuation models in human choice. Annual Review of Neuroscience, 29, 417-48.
- Sanfey AG, Loewenstein G, McClure SM & Cohen JD (2006). Neuroeconomics: cross-currents in research on decision-making. Trends in Cognitive Sciences, 10(3), 108-16.
- Aston-Jones GS, Iba M, Clayton E, Rajkowski J & Cohen J (2007). The locus coeruleus and regulation of behavioral flexibility and attention: Clinical implications. In Ordway GA, Schwartz MA and Frazer A (Eds.), Brain Norepinephrine: Neurobiology and Therapeutics. Cambridge University Press: Cambridge, UK. Pp. 196-235.
- McClure SM, Botvinick MM, Yeung N, Greene JD & Cohen JD (2007). Conflict monitoring in cognition-emotion competition. In Gross JJ (Ed.), Handbook of Emotion Regulation. New York: Guilford Press.
- Cohen JD & Insel TR (2008). Cognitive neuroscience and schizophrenia: Translational research in need of a translator. Biological Psychiatry, 64(1): 2-3.
- Keyesers C, Boyd R, Cohen J, Donald M, Güth W, Johnson E, Kurzban R, Schooler L, Schooler J, Spelke E & Trommershäuser J (2008). Explicit and implicit strategies in decision making. In Engel C and Singer W (Eds.), Strüngmann Forum Report: Better than Conscious? Decision Making, the Human Mind, and Implications. Cambridge, MA: MIT Press. Pp. 225-258.
- Loewenstein G, Rick S and Cohen JD (2008). Neuroeconomics. Annual Review of Psychology, 59, 18.1-18.26.
- Simen P, Holmes P, & Cohen JD. (2008). On the neural implementation of optimal decisions. In Morsella E, Bargh JA & Gollwitzer PM (eds.), Oxford Handbook of Human Action, (pp. 534-549). Oxford University Press: Oxford, UK.
- Todd M, Niv Y & Cohen JD (2008). Learning to use working memory in partially observable environments through dopaminergic reinforcement. Advances in Neural Information Processing Systems, Vol. 20. Cambridge, MA: MIT Press.
- Yu A & Cohen JD (2008). Sequential effects: Superstition or rational behavior? Advances in Neural Information Processing Systems, Vol. 20. Cambridge, MA: MIT Press.
- Holmes P, Eckhoff P, Wong-Lin KF, Bogacz R, Zacksenhouse M & Cohen JD (in press). The physics of decision making: Stochastic differential equations as models for neural dynamics and evidence accumulation in cortical circuits. Proceeding from the International Conference on Mathematical Physics (ICMP09).

Hyman SE & Cohen JD (in press). Disorders of thought and volition: Schizophrenia. In Kandel ER, Schwartz JH & Jessell TM (Eds.), Principles of Neural Science V. New York: McGraw-Hill.

Hyman SE & Cohen JD (in press). Disorders of mood and anxiety. In Kandel ER, Schwartz JH & Jessell TM (Eds.), Principles of Neural Science V. New York: McGraw-Hill.

3. Books

Cohen JD & Schooler JW (1997). Editors, Scientific Approaches to Consciousness: 25th Carnegie Symposium on Cognition. New Jersey: Lawrence Erlbaum Associates.

4. Published Abstracts

Cohen JD (1989). A network model of schizophrenic language deficits. Book of Abstracts, 142nd Annual Meeting of the American Psychiatric Association.

Cohen JD & Servan-Schreiber D (1991). Computer simulation models of the relationship between disturbances of dopamine, prefrontal cortex and cognitive function in schizophrenia. Abstracts of Panels and Posters, 30th Annual Meeting of the American College of Neuropsychopharmacology.

Halliday R, Callaway E, Naylor H, Herzig K, Yano L, Cohen JD & Servan-Schreiber D (1991). Two empirical findings linked to neural network modeling: Amphetamine speeds reaction time (RT) but not P3. Yohimbine speeds P3 but not RT. Abstracts of Panels and Posters, 30th Annual Meeting of the American College of Neuropsychopharmacology.

Noll DC, Meyer CH, Cohen JD & Schneider W (1991). Spiral-scan imaging of cortical activation. 11th Annual Meeting of the Society of Magnetic Resonance Imaging.

Casey BJ, Cohen JD, Noll DC, Forman SD & Rappoport JL (1993). Activation of the anterior cingulate during the Stroop conflict paradigm using functional MRI. Society for Neuroscience Abstracts, 19, 1285, 1993.

Cohen JD, Forman SD, Casey BJ & Noll DC (1993). Spiral-scan imaging of dorsolateral prefrontal cortex during a working memory task. Twelfth Annual Meeting of the Society of Magnetic Resonance in Medicine.

Noll DC, Cohen JD, Forman SD, Schneider W & Meyers CH (1993). Spiral k-space MRI of brain function. Twelfth Annual Meeting of the Society of Magnetic Resonance in Medicine.

Noll DC, Schneider W & Cohen JD (1993). Artifacts in functional MRI using conventional scanning (1993). Twelfth Annual Meeting of the Society of Magnetic Resonance in Medicine.

Carter CS, Cohen JD & Mintun M (1994). Interference, facilitation and strategy development in Stroop task performance: An ^{15}O PET study. Abstracts of Panels and Posters, 33rd Annual Meeting of the American College of Neuropsychopharmacology.

- Forman SD, Cohen JD, Mintun MA & Noll DC (1994). Improved assessment of significant change in functional magnetic resonance imaging (fMRI): Use of the contiguity threshold. Annual Meeting of the Society for Magnetic Resonance.
- Forman SD, Cohen JD, Noll DC, Mintun MA & Casey BJ (1994). Within subject comparison of PET & fMRI to visualize activation of prefrontal cortex (PFC). Society for Neuroscience Abstracts, 20.
- Huston T & Cohen JD (1994). Stimulus-induced shifts of task attention. Abstracts of the Psychonomic Society, 35th Annual Meeting.
- Servan-Schreiber D, Noll D, Cohen JD, Beuger M, Olga T, Swanson D & Mann JJ (1994). fMRI studies of limbic activation. Abstracts of Panels and Posters, 33th Annual Meeting of the American College of Neuropsychopharmacology.
- Barch DB, Cohen JD, Servan-Schreiber D & Ganguli R (1995). The stability and interrelationships of CPT-AX and Stroop performance in schizophrenia. Schizophrenia Research, 15(1-2), 108.
- Braver TS, Cohen JD & Servan-Schreiber D (1995). Neural network simulations of schizophrenic performance in a variant of the CPT-AX: A predicted double dissociation. Schizophrenia Research, 15(1-2), 110.
- Braver TS, Cohen JD, Jonides J, Smith EE, Awh E, Schumacher E, Lauber E & Noll DC (1995). A parametric study of prefrontal cortex involvement in human working memory using functional MRI. Society for Neuroscience Abstracts, 21, 274.
- Carter CS, Barch D, Pearlstein W., Baird J, Baker R, Cohen JD & Schooler N (1995). A cognitive neuropsychological study of schizophrenia symptoms: Correlates of Stroop and semantic priming performance. Schizophrenia Research, 15(1-2), 111.
- Cohen JD & O'Reilly R (1995). A computational model of prefrontal cortical and hippocampal function, and their interaction in behavioral tasks. Schizophrenia Research, 15(1-2), 112.
- Cohen JD, Ganguli R, Carter C, Brar J, Nichols T, DeLeo M & Mintun M (1995). Hypofrontality and working memory dysfunction in schizophrenia. Biological Psychiatry, 37, 633.
- Cohen JD, Usher M, Servan-Schreiber D & Aston-Jones G (1995). A computational model of the effects of locus coeruleus neuromodulation on attention. Biological Psychiatry, 37, 618.
- Forman SD & Cohen JD (1995). Modeling saccadic eye movements in schizophrenia: Insights into memory mechanisms. Schizophrenia Research, 15(1-2), 175.
- Forman SD, Cohen JD, Braver TS & Orr RJ (1995). Validation of functional magnetic resonance imaging: Application to schizophrenia research. Schizophrenia Research, 15(1-2), 82.
- Aston-Jones G, Kubiak P, Rajkowski J, Ivanova S & Cohen J (1996). Enhancement of locus coeruleus (LC) neuronal responses to visual targets by preceding auditory distractors. Society for Neuroscience Abstracts, 22.

- Cohen JD & Usher M (1996). A neural network model of Stroop interference and facilitation effects in schizophrenia. Biological Psychiatry, 39, 568.
- Barch DM, Braver TS, Nystrom L, Noll DC & Cohen JD (1997). Activation of prefrontal cortex by the representation and maintenance of context information. Schizophrenia Research, 24(1,2), 163.
- Barch DM, Carter CS, Braver TS & Cohen JD (1997). The effects of d-amphetamine on working memory and language deficits in schizophrenia. Schizophrenia Research, 24(1,2), 129.
- Barch DM, Carter CS, Cohen JD & Sabb F (1997). The effects of D-amphetamine on language function in schizophrenia. Society for Neuroscience Abstracts, 23, 1952.
- Braver TS & Cohen JD (1997). Driving subjects to distraction: Cognitive control, prefrontal cortex, and schizophrenia. Abstracts of the Psychonomic Society, 2, 23.
- Braver TS, Cohen JD & McClelland JL (1997). An integrated computational model of dopamine function in reinforcement learning and working memory. Society for Neuroscience Abstracts, 23, 775.
- Carter CS, Barch DM & Cohen JD (1997). Disturbed language processing: disorganization, and attentional impairment in schizophrenia. Schizophrenia Research, 24(1,2), 130.
- Carter CS, Mintun M & Cohen JD (1997). Abnormal cortical physiology associated with selective attention dysfunction in schizophrenia. Schizophrenia Research, 24(1,2), 164.
- Carter CS, Barch DM, Cohen JD & Braver TS (1997). CNS catecholamines and cognitive dysfunction in schizophrenia. Schizophrenia Research, 24(1,2), 211.
- Cohen JD, Nystrom LE, Sabb F & Noll DC (1997). Tracking the dynamics of fMRI activation under manipulations of duration and intensity of working memory processes. Society for Neuroscience Abstracts, 23, 1678.
- Casey BJ, Cohen JD, King SW, Franzen PL, Nystrom LE, Badgaiyan RD, Schubert AB & Noll DC (1997). A developmental functional MRI study of cortical activation during a spatial working memory task. NeuroImage, 5(4), S69.
- Casey BJ, Forman SD, Franzen PL, Badgaiyan RD, King SW, Braver TS, Cohen JD & Noll DC (1997). Ventral and dorsolateral prefrontal activation as a function of target probability. NeuroImage, 5(4), S92.
- Condray R, Steinhauer SR, Cohen JD, van Kammen DP, Kasperek A & Kelley ME (1997). Effects of haloperidol on the event-related potential in schizophrenics. Schizophrenia Research, 24(1,2), 232.
- Silakov V, Rajkowski J, Ivanova S, Watanabe T, Cohen JD, Usher M & Aston-Jones G (1997). Correlated impulse activities of locus coeruleus (LC) neurons in monkey: Dependency on level of task performance. Society for Neuroscience Abstracts, 23, 1587

- Usher M & Cohen JD (1997). Interference-based capacity limitations in active memory. Abstracts of the Psychonomic Society, 2, 11.
- Berns GS & Cohen JD (1998). Dissociating brain regions for novel learning from response competition using implicit sequence learning. Society for Neuroscience Abstracts.
- Chein JM, Noll DC, Cohen JD, Fissell K, Nystrom LE, Saab F, Fiez JA (1998). An fMRI study of verbal working memory: Effects of length, lexicality, and phonological similarity. Society for Neuroscience Abstracts.
- McClelland JL, Pollock JA, Cohen JD, Fisher RN & Abdulaziz T (1998). Tracking the human brain: An interactive multimedia presentation. Society for Neuroscience Abstracts.
- Barch DM, Carter CS, Sabb FW, MacDonald III A, Noll DC, Braver TS & Cohen JD (1999). Prefrontal cortex and context processing in medication naïve first episode patients with schizophrenia. Society for Neuroscience Abstracts, 25, 1289.
- Carter CS, MacDonald III A, Botvinick MM, Stenger VA & Cohen JD (1999). Anterior cingulate cortex and executive control: what is it really doing? Society for Neuroscience Abstracts, 25, 2168.
- Wheeler ME, Sabb FW, Graziano MSA & Cohen JD (1999). Imagined movement of real objects in space near the body differentially activates frontal and parietal cortex. Society for Neuroscience Abstracts, 25, 98.
- Kroger JK, Nystrom LE, Li T-Q, Holmes BD & Cohen JD (2000). Differential cortical responses to memory load and representational structure. Journal of Cognitive Neuroscience, S145.
- van Veen V, Cohen JD, Botvinick M, Stenger VA & Carter CS (2000). Conflict related activity and the anterior cingulate: An event-related fMRI analysis of stimulus vs. response based conflict. Journal of Cognitive Neuroscience, S114.
- Aston-Jones G & Cohen JD (2000). Neuromodulation and Cognitive Function: Recent Studies of Noradrenergic Neurons in Behaving Monkeys. Abstracts of Panels and Posters, 39th Annual Meeting of the American College of Neuropsychopharmacology.
- Cho RY, Nystrom LE, Holmes P, Brown E, Casey BJ & Cohen JD (2000). A connectionist model of conflict and control in a forced-choice task. Society for Neuroscience Abstracts. 26, 1317.
- Greene JD, Sommerville RB, Nystrom LE, Darley JM & Cohen JD (2000). An fMRI investigation of emotion in moral judgment. Society for Neuroscience Abstracts, 26, 2022.
- Rajnowski J, Lu W, Zhu Y, Cohen JD & Aston-Jones G (2000). Prominent projections from the anterior cingulate cortex to the locus coeruleus in rhesus monkey. Society for Neuroscience Abstracts, 26, 2230.
- Li T-Q, Skare S & Cohen JD (2001). White matter fiber tracking using the eigenvalue weighted average eigenvector. Proceedings of the International Society for Magnetic Resonance in Medicine, 9.

- Li TQ, Nystrom L & Cohen JD (2001). Ultra-fast trial-based fMRI using amplitude modulated stimuli. NeuroImage.
- Gilzenrat MS, Holmes BD, Holmes PJ, Rajkowski J & Cohen JD (2001). A modified Fitzhugh-Nagumo system simulates locus coeruleus-mediated regulation of cognitive performance. Society for Neuroscience Abstracts, 26, Program No. 851.14.
- Li T, Kroger JK, Kastner S & Cohen JD (2001). The neural substrate of haptic working memory. Society for Neuroscience Abstracts, 26, Program No. 782.1.
- Perlstein WM, Lageman SK, Cole MA, Jones VM, Demery J, Carter CS & Cohen JD (2001). Working memory and inhibition: prefrontal mediation and dysfunction in schizophrenia. Society for Neuroscience Abstracts, 26, Program No. 886.3.
- Yeung N & Cohen JD (2001). The role of anterior cingulate in performance monitoring: response conflict and the error-related negativity. Society for Neuroscience Abstracts, 26, Program No. 849.6.
- Carter CS, van Veen V, Holroyd C, Stenger VA & Cohen JD (2002). Errors and conflict but not error feedback engage the anterior cingulate cortex during event-related fMRI: implications for performance monitoring in the human brain. Neuroimage 16(2), 1002.
- Yeung N, Nystrom L, Kitazono M & Cohen J (2002). An fMRI study of switching attention between tasks. Neuroimage 16(2), 692.
- Aston-Jones G, Rajkowski J, Lu W, Zhu Y, Cohen J & Morecraft R (2002). Prominent projections from the orbital prefrontal cortex to the locus coeruleus (LC) in monkey. Society for Neuroscience Abstracts, Program No. 86.9.
- Clayton E, Rajkowski J, Cohen J & Aston-Jones G (2002). The primate locus coeruleus and discrimination/decision-making in the eriksen flanker task. Society for Neuroscience Abstracts, Program No. 86.8.
- Nystrom LE, Yeung NP, Kitazono MT & Cohen JD (2002). Anterior cingulate activity: From conflict or motor planning? Society for Neuroscience Abstracts, Program No. 180.3.
- Polyn SM, Norman KA & Cohen JD (2002). Connectionist modeling of source memory phenomena. Society for Neuroscience Abstracts, Program No. 582.5.
- Rajkowski J, Majczynski H, Clayton E, Cohen J & Aston-Jones G (2002). Phasic activation of monkey locus coeruleus (LC) neurons with recognition of behaviorally significant stimuli. Society for Neuroscience Abstracts, Program No. 86.1.
- Rilling JK, Sanfey AG, Aronson JA, Nystrom LE & Cohen JD (2002). Mapping the brain's response to reciprocated and unreciprocated social cooperation. Society for Neuroscience Abstracts, Program No. 78.10.
- Sanfey AG, Rilling JK, Aronson JA, Nystrom LE & Cohen JD (2002). An investigation of the neural dynamics of fairness and unfairness? Society for Neuroscience Abstracts, Program No. 78.11.

- Benharrosh M, Takerkart S, Cohen J, Daubechies I & Richter W (2003). Using ICA on fMRI data: does independence matter? Neuroimage, 19(2), 778.
- Bishop SJ, Farah M, Fossella JA, Casey BJ & Cohen JD (2003). The MAOA-LPR polymorphism and prefrontal cortical activation to emotional distractors. Neuroimage, 19(2), 6.
- Bogacz R, Moehlis, Brown E, Holmes P & Cohen JD (2003). Neural mechanisms for decision optimization. Society for Neuroscience Abstracts, Program No. 197.6.
- Carter CS, Kerns J, Sohn M-H & Cohen JD (2003). A conflict over conflict monitoring and the anterior cingulate cortex. Society for Neuroscience Abstracts, Program No. 343.12.
- Gilzenrat MS, Cohen JD, Rajkowski J & Aston-Jones G (2003). Pupil dynamics predict changes in task engagement mediated by locus coeruleus. Society for Neuroscience Abstracts, Program No. 515.19.
- Greene JD, Nystrom LE, Darley JM & Cohen JD (2003). Neural activity correlated with outcome of moral decision. Cognitive Neuroscience Society Annual Meeting Program, E81, p. 166.
- Greene JD, Nystrom LE, Engell AD, Darley JM & Cohen JD (2003). Patterns of neural activity correlated with individual differences in moral judgment. Society for Neuroscience Abstracts, Program No. 443.3.
- Nieuwenhuis S, Holroyd CB, Yeung N, Nystrom LE, Cohen JD, Mars RB & Coles MGH (2003). Neural correlates of reinforcement learning and error processing: A functional magnetic resonance imaging study. Society for Neuroscience Abstracts, Program No. 197.11.
- Rilling JK, Wager TS, Davidson RJ, Kosslyn SM, Rose R, Smith EE & Cohen JD (2003). An fMRI investigation of the neural mechanisms of placebo analgesia. Neuroimage, 19(2), 504.
- Takerkart S, Benharrosh M, Cohen J & Daubechies I (2003). Estimating spatially distributed patterns of brain activity in fMRI datasets by using ICA. Neuroimage, 19(2), 946.
- Wager TD, Smith EE, Sokolik A, Cohen JD, Rilling JK, Davidson RJ, Kosslyn S, Rose RM & Casey KL (2003). Placebo reduces the BOLD fMRI response in the anticipation and experience of thermal pain. Neuroimage, 19(2), 84.
- D'Ardenne McClure K, McClure SM, Richter MC, Cohen JD, and Richter W (2004). Rest Matters: Kinetics of the BOLD response depend on inter-stimulus time. Society for Neuroscience Abstracts, Program No. 694.17.
- Dixon GE, Nitschke JB, Short SJ, Lakshmanan A, Carew ME, Anderle MJ, Schaefer HS, Johnstone T, Cohen JD, Kosslyn SM, Smith EE, Davidson RJ (2004). The neural correlates of anticipation: The functional neurobiology of gustatory expectancy in the human brain. Society for Neuroscience Abstracts, Program No. 179.10.
- Gilzenrat MS, Brown ET, Aston-Jones G & Cohen JD (2004). Locus Coeruleus, adaptive gain, and the optimization of decision tasks. Society for Neuroscience Abstracts, Program No. 899.6.

- McClure SM, Laibson DI, Loewenstein G & Cohen JD (2004). Separate neural systems represent immediate and delayed rewards. Society for Neuroscience Abstracts, Program No. 548.1.
- Polyn SM, Cohen JD & Norman KA (2004). Detecting distributed patterns in an fMRI study of free recall. Society for Neuroscience Abstracts, Program No. 79.14.
- Rilling JK, Sanfey AG, Aronson JA, Nystrom LE & Cohen JD (2004). Neural correlates of theory of mind within interpersonal interactions. NeuroImage, 22S(1), TH129.
- Cohen JD, McClure SM, Gilzenrat MS & Aston-Jones G (2005). Dopamine-norepinephrine interactions: Exploitation vs. Exploration. Neuropsychopharmacology, 30, S1, S28.
- Greene JD, Lowenberg K, Nystrom LE, Darley JM & Cohen JD (2005). Saving lives versus keeping promises: An fMRI investigation of consequentialist and deontological moral judgment. Society for Neuroscience Abstracts, Program No. 12.7.
- McClure, S.M., Laibson, D.I., Loewenstein, G., Ericson, K., McClure, K.D., Cohen, J.D. (2005) Neural mechanisms of time discounting for primary reward. Society for Neuroeconomics, online abstracts.
- Polyn SM, Detre G, Takerkart S, Natu V, Benharrosh M, Singer B, Cohen JD, Haxby JV & Norman KA (2005). A Matlab-based toolbox to facilitate multi-voxel pattern classification of fMRI data. Neuroimage, 26, S1, 728.
- Simen PA, Holmes P & Cohen J (2005). Threshold adaptation in decision making. Society for Neuroscience Abstracts, Program No. 768.15.
- Snitz BE, Cho RY, Archer G, Cohen JD & Carter CS (2005). Lateral and medial hypofrontality in first-episode psychosis: Diagnostic specificity to schizophrenia. Neuroimage, 26, S1, 1274.
- Detre GJ, Polyn SM, Moore CD, Natu VS, Singer BD, Cohen JD, Haxby JV & Norman KA (2006). The Multi-Voxel Pattern Analysis (MVPA) toolbox. Neuroimage, 31, S1, 128.
- McClure SM, Ericson KM, Laibson DI, Loewenstein G & Cohen JD (2006) Time discounting for primary reward. Neuroimage, 31, S1, 2749.
- McClure KD, McClure SM, Nystrom LE & Cohen JD (2006) Functional MRI of midbrain dopamine nuclei. Neuroimage, 31, S1, 2796.
- D'Ardenne K, McClure SM, Nystrom LE, & Cohen JD (2007). BOLD responses in the dopaminergic ventral tegmental area. Society for Neuroscience Abstracts, Program No. 704.21.
- Greene JD, Paxton JM, Nystrom LE & Cohen JD (2007). Dissociation between affective and cognitive moral disapproval. Society for Neuroscience Abstracts, Program No. 126.4.
- Simen PA & Cohen JD (2007). A diffusion-based neural network model of interval timing and temporal discounting. Society for Neuroscience Abstracts, Program No. 637.13.

- Todd MT, Wong K-F, & Cohen JD (2007). Competition, gating, and learning: A new computational model of task switching. Society for Neuroscience Abstracts, Program No. 634.10.
- Nedic A, Tomlin D, Holmes P, Prentice DA and Cohen JD (2008) A simple decision task in a social context: Preliminary experiments and a model. Proceedings of the 47th IEEE Conference on Decision and Control.
- Cho RY, Forster SE, Cohen JD & Carter CS (in press). Impairments in prefrontal cortical gamma-band synchrony and cognitive control in first-episode schizophrenia. Neuroimage.
- Forster SE, Cho RY, Cohen JD & Carter CS (in press). Effects of parametric manipulations of conflict on N2 amplitude and cognitive control adjustments. Neuroimage.
- van den Bos W, Li J, Lau T, McClure SM, Cohen JD & Montague PR (in press). Social influences on bidding in common value auctions and the Winner's Curse. Society for Neuroeconomics, online abstracts.
- Yu AJ & Cohen JD (in press). Sequential Effects: Annoying Quirk or Adaptive Behavior? Computational and Systems Neuroscience 2008.
- Simen PA, Nystrom LE, van Vugt M, Krueger P & Cohen JD (in press). Event-related fMRI during slow decision making can reveal temporal structure in neural activity. Society for Neuroscience Abstracts.
- Tomlin D, Nedic A, Holmes P & Cohen JD (in press). Neural and behavioral responses to social feedback during group decision-making. Society for Neuroscience Abstracts.
- Getz SJ, Tomlin D, Nystrom LE, Cohen JD & Conway ARA (in press). Executive control of intertemporal choice: Effects of cognitive load on impulsive decision-making. Abstracts of the Psychonomic Society.

5. Manuscripts Under Review / In Preparation

- Eshel N, Lenartowicz A, Luka J, Nystrom L & Cohen JD (under review). Transiently disrupting right prefrontal cortex interferes with updating of working memory contents.
- Forster SE, Carter CS, Cohen JD & Cho RY (under review). Parametric manipulations of the conflict signal and control-state adaptation.
- Lenartowicz A, Escobedo-Quiroz R & Cohen JD (under review). Updating working memory for context in prefrontal cortex: An event related potential study.
- Liu Y, Holmes P & Cohen JD (under review). A Bayesian inference model for sequential effects in the Eriksen task.
- Wong-Lin KF, Eckhoff P, Holmes P & Cohen JD (under review). Optimal control of countermanding saccades.

D'Ardenne K, McClure SM, Field BA, Nystrom LE & Cohen JD (in preparation). Universal compassion meditation modulates subjective experience of reward and BOLD responses in the ventromedial prefrontal cortex.

Field BA, Buck CL, McClure SM, Nystrom LE, Kahneman D & Cohen JD (in preparation). Influence of distraction on brain responses to appetitive and aversive stimuli.

Greene JD, Lowenberg K, Paxton JM, Nystrom LE, Darley JM & Cohen JD (in preparation). Duty vs. the greater good: dissociable neural bases of deontological and utilitarian moral judgment in the context of keeping and breaking promises.

Simen P, Balci F, Holmes P & Cohen JD (in preparation). Adaptive interval timing by a noisy integrate-and-fire model.

Usher M & Cohen JD (in preparation). A connectionist model of the Stroop task revisited: Reaction time distributions and differential effects on facilitation and interference captured by a single set of mechanisms.

PROFESSIONAL ACTIVITIES

TEACHING:

1. Courses

- 1989-96 Introduction to Cognitive Psychology (undergraduate survey course)
Department of Psychology, Carnegie Mellon University
- 1989-96 Cognitive Neuroscience section of Cognitive Core (graduate survey course).
Department of Psychology, Carnegie Mellon University
- 1990-93 Co-coordinator, Fellowship Training Program in Schizophrenia Research. Western Psychiatric Institute and Clinic, University of Pittsburgh
- 1992-93 Research Methods in Cognitive Neuroscience (advanced undergraduate seminar).
Department of Psychology, Carnegie Mellon University
- 1992-93 Functional Neural Circuits (graduate and advanced undergraduate seminar).
Department of Psychology, Carnegie Mellon University
- 1994-95 Neural and Psychological Mechanisms of Working Memory (graduate and advanced undergraduate seminar). Department of Psychology, Carnegie Mellon University
- 1996-97 Advanced Topics in Cognitive Neuroscience (graduate and advanced undergraduate seminar). Department of Psychology, Carnegie Mellon University.

- 97 Biological and Psychological Mechanisms of Attention (graduate and advanced undergraduate seminar). Department of Psychology, Carnegie Mellon University; co-taught with Gary Aston-Jones.
- 1999-00 Neural Bases of Cognitive Control (undergraduate course). Department of Psychology, Princeton University.
- 1999-01 Topics in Molecular and Cognitive Neuroscience (graduate seminar). Departments of Psychology and Molecular Biology, Princeton University.
- 01 Introduction to Neural Networks (undergraduate course). Department of Psychology, Princeton University.
- 2001-02 Advanced Topics in Neural Network Models of Psychological Function (advanced undergraduate / graduate seminar). Department of Psychology, Princeton University.
- 2002-03 Statistical Methods in Psychological Research (advanced undergraduate / graduate course). Department of Psychology, Princeton University.
- 2004-07 Graduate Proseminar in Cognitive Psychology. Department of Psychology, Princeton University.

2. Tutorials and Workshops

- May, 1990-93 — Cohen JD, Servan-Schreiber D. Course co-directors, A primer on neural modeling in psychiatry. 144-7th Annual Meetings of the American Psychiatric Society, New York.
- July, 1991 — Invited faculty member. James S. McDonnell Summer Institute in Cognitive Neuroscience, Dartmouth College, Hanover.
- October, 1993 — Applications of Functional MRI to Studies of Human Memory. Invited tutorial, Memory Disorders Research Society, Boston.
- November, 1993 — Functional neuroimaging. Invited tutorial, Neural Information Processing Society, Boulder.
- August, 1996 — Neuroimaging and Behavior. Invited workshop, XXVI International Congress of Psychology, Montreal.
- January, 1997 — The Role of Neuromodulation in Cognition: Physiological and Computational Approaches. Panel organizer, 30th Winter Conference on Brain Research, Breckenridge, Colorado.
- July, 1997 — Invited faculty member. James S. McDonnell Summer Institute in Cognitive Neuroscience, Dartmouth College, Hanover.

September, 2000 — International Workshop on Neural Bases of Executive Functions and Performance Monitoring, Jena, Germany.

July, 2001 — Invited faculty member. James S. McDonnell Summer Institute in Cognitive Neuroscience, Dartmouth College, Hanover.

3. Trainees

Graduate advisees:

Therese Huston, Ph.D. (1990-1995)

CMU Department of Psychology

Behavioral and computational modeling studies of selective attention

Director, Center for Excellence in Teaching & Learning, University of Seattle

Todd Braver, Ph.D. (1992- 97)

CMU Department of Psychology

Computational and neuroimaging studies of prefrontal cortex and cognitive control

Associate Professor of Psychology, Washington University, St. Louis

Matthew Botvinick, M.D., Ph.D. (1995-2001)

CMU Department of Psychology

Computational modeling and fMRI studies of the role of anterior cingulate cortex in conflict monitoring and control

Assistant Professor of Psychology and Neuroscience, Princeton University

Mark Gilzenrat, Ph.D. (1996-2006)

CMU Department of Psychology (1996-1998)

Princeton Department of Psychology (1998-2006)

Computational models and pupillometric studies of neuromodulatory influences on selective attention

Software architect, Navaraga Corporation

Raymond Cho, M.D. (1999-2003)

Department of Psychology, Princeton University

Assistant Professor of Psychiatry, University of Pittsburgh

Eric Brown, Ph.D. (1999-2004)

Program in Applied and Computational Mathematics, Princeton University

Co-advisor with Philip Holmes

Neural oscillators and integrators in the dynamics of decision tasks

Assistant Professor of Applied Mathematics, University of Washington, Seattle

Sean Polyn (2000-2005)

Department of Psychology, Princeton University
Computational modeling of context updating, reinforcement learning and dopamine function
Postdoctoral Fellow, Kahana Lab, University of Pennsylvania

Aaron Schurger (2001-2008)

Department of Psychology, Princeton University
Electrophysiological and fMRI studies of perceptual awareness

Agatha Lenartowicz (2002-2008)

Department of Psychology, Princeton University
Behavioral, electrophysiological and fMRI studies of task switching

Susan Robison (2005-present; co-advised with Ken Norman)

Department of Chemistry, Princeton University
Behavioral and fMRI studies of cognitive control and episodic memory

Kimberly D'Ardennee McClure (2005-2008)

Department of Chemistry, Princeton University
fMRI studies of brainstem neuromodulatory nuclei

Michael Todd (2006-present)

Department of Psychology, Princeton University
Computational modeling studies of cognitive control

Emily Chakwin (2006-present)

Department of Psychology, Princeton University
Behavioral and fMRI studies of moral reasoning

Adam Moore (2006-present; co-advised with Andy Conway)

Department of Psychology, Princeton University
Behavioral and fMRI studies of moral reasoning

John White (2008-present)

Department of Psychology, Princeton University
Behavioral and fMRI studies of economic decision making

Ph.D. Committees:

Cliona Golden (2004, Ingrid Daubechies), PACM, Princeton University

Adi Livnat (2005, Simon Levin), Ecology and Evolutionary Biology, Princeton University

Ilya Fischhoff (2006, Daniel Rubenstein), Ecology and Evolutionary Biology, Princeton
University

Juan Gao (2007, Phil Holmes), Program in Applied and Computational Mathematics, Princeton
University

Yuan (Sophie) Liu (2007, Phil Holmes), Physics, Princeton University

Caitlin Newberry (2007, Wolf Richter), Chemistry, Princeton University

Phil Eckoff (2008, Phil Holmes), Program in Applied and Computational Mathematics, Princeton University

Andrea Nedic (Phil Holmes), Electrical Engineering, Princeton University

Postdoctoral trainees:

Steve Forman, M.D., Ph.D. (1992-1994)

University of Pittsburgh Department of Psychiatry

fMRI studies of prefrontal function

Associate Professor of Psychiatry, University of Pittsburgh

Medical Director of the Center for Treatment of Addictive Disorders, Pittsburgh VA

Marius Usher, Ph.D. (1993-1995)

CMU Department of Psychology

Computational models of catecholaminergic neuromodulation and selective attention

Reader in Psychology, Birbeck College, University of London

Deanna Barch, Ph.D. (1993-1995)

University of Pittsburgh Department of Psychiatry

Associate Professor of Psychology, Washington University, St. Louis

William Perlstein, Ph.D. (1993-1996)

University of Pittsburgh Department of Psychiatry

Electrophysiological and fMRI studies of working memory in schizophrenia

Associate Professor of Clinical and Health Psychology and Psychiatry, University of Florida, Gainesville

Gregory Berns, M.D., Ph.D. (1995-1998)

University of Pittsburgh Department of Psychiatry

Functional neuroimaging studies of novelty detection

Associate Professor of Psychiatry and Behavioral Sciences, Emory University

Associate Professor of Biomedical Engineering, Georgia Institute of Technology

Randy Gobbel, Ph.D. (1997-1998)

Carnegie Mellon University Department of Psychology

Computational modeling studies of basal ganglia function in control of sequential action

Computer Scientist, Artificial Intelligence Center, SRI International

James Kroger (1998-2001)

Princeton University Department of Psychology

fMRI studies of prefrontal cortex organization

Assistant Professor, Dept. of Psychology, New Mexico State University

Nicholas Yeung, Ph.D. (1999-2004)

Princeton University Department of Psychology

Modeling, ERP and fMRI studies of conflict monitoring and cognitive control

Assistant Professor of Psychology, Oxford University

Gesine Dreisbach, Ph.D. (2000-2001)

Princeton University Department of Psychology

fMRI studies of tasking switching

Research Scientist, Dresden University of Technology

Clay Holroyd, Ph.D. (2001-2004)

Princeton University Department of Psychology

Neural network modeling, ERP, and fMRI studies of performance monitoring and reinforcement learning

Assistant Professor of Psychology, University of Victoria

James Rilling, Ph.D. (2001-2003)

Center for the Study of Brain, Mind & Behavior, Princeton University

Neural mechanisms of economic decision making; neural mechanisms in placebo responding.

Assistant Professor of Anthropology, Emory University

Alan Sanfey, Ph.D. (2001-2003)

Center for the Study of Brain, Mind & Behavior, Princeton University

Neural mechanisms of economic decision making; neural mechanisms in placebo responding.

Assistant Professor of Psychology, University of Arizona

Rafal Bogacz, Ph.D. (2002-2004)

Princeton University Department of Psychology

Neural network modeling and ERP studies of task switching and performance monitoring.

Lecturer in Computer Science, University of Bristol

Sander Nieuwenhuis, Ph.D. (2002-2003)

Princeton University Department of Psychology

ERP studies and neural network modeling of performance monitoring, task switching and the attentional blink.

Assistant Professor, Cognitive Psychology Unit, Leiden University

Joshua Greene, Ph.D. (2001-2006)

Princeton University Department of Psychology

Neural bases of moral reasoning

Assistant Professor of Psychology, Harvard University

Samuel McClure, Ph.D. (2003-2007)

Princeton University Department of Psychology

Neural network modeling and neuroimaging studies of reinforcement learning and decision making

Assistant Professor of Psychology, Stanford University

Jean-Baptiste Pochon, Ph.D. (2003-2005)

Princeton University Department of Psychology

Neuroimaging studies of decision making, conflict monitoring and cognitive control

Postdoctoral Fellow, L'Hôpital de la Salpêtrière in Paris

Patrick Simen, PhD. (2003-present)

Princeton University Program in Applied & Computational Mathematics

Computational modeling, mathematical analysis, behavioral and neuroimaging studies of decision making and cognitive control

Jason Chein, Ph.D. (2004-2005)

Princeton University Department of Psychology

Neuroimaging studies of prefrontal cortex organization and function

Assistant Professor of Psychology, Temple University

Brent Field, Ph.D. (2004-present)

Center for Study of Brain, Mind and Behavior, and Center for Health and Well-Being, Woodrow Wilson School of Public Policy

Behavioral and neuroimaging studies of attention and emotional regulation among meditation practitioners

Angela Yu, Ph.D. (2004-2008)

Princeton University Department of Psychology

Computational modeling and mathematical analysis studies of decision making and cognitive control

Assistant Professor of Cognitive Science, University of California, San Diego

Damon Tomlin, Ph.D. (2006-present)

Princeton University Department of Psychology and Princeton Neuroscience Institute

Neuroimaging studies of economic and social decision making and cognitive control

Kong-Fat Wong, Ph.D. (2006-present)

Princeton University Department of Mechanical and Aerospace Engineering

Computational modeling and mathematical analysis studies of decision making and cognitive control

Yael Niv, Ph.D. (2007-2008)

Princeton University Department of Psychology

Neuroimaging and computational modeling studies of decision making and cognitive control

Assistant Professor of Psychology and Neuroscience, Princeton University

Benjamin Eppinger, Ph.D. (2007-present)

Princeton University Department of Psychology and Center for Health and Well Being of the
Woodrow Wilson School for Public Policy
Neuroimaging studies of age-related differences in economic decision making and cognitive
control

Marieke van Vugt, Ph.D. (2008-present)
Princeton University Department of Psychology
Neuroimaging and computational modeling studies of decision making and cognitive control

Fuat Balci, Ph.D. (2008-present)
Princeton University Department of Psychology
Theoretical and behavioral studies of interval timing and decision making

Robert Wilson, Ph.D. (2009-present)
Princeton University Department of Psychology and Princeton Neuroscience Institute
Theoretical, behavioral and neuroimaging studies of cognitive control & locus coeruleus function

RESEARCH ACTIVITIES:

1. Scientific Interests

Research in my laboratory focuses on the neurobiological mechanisms underlying cognitive control, and their disturbance in psychiatric disorders such as schizophrenia and depression. Cognitive control is the ability to guide attention, thought and action in accord with internally represented goals or intentions. One of the fundamental mysteries of neuroscience is how this capacity for coordinated, purposeful behavior arises from the distributed activity of many billions of neurons in the brain. Several decades of cognitive and neuroscientific research have focused on the mechanisms by which control influences processing (e.g., attentional effects in sensory processing, goal directed sequencing of motor output, etc.), and the brain structures upon which these functions depend, such as the prefrontal cortex, anterior cingulate cortex, basal ganglia and brainstem neuromodulatory systems. However, we still have a poor understanding of *how* these systems give rise to cognitive control. Our work seeks to develop formally explicit hypotheses about the functioning of these systems, and to test these hypotheses in empirical studies. An important motivation for this work is the development of a theoretically sound foundation for research on the relationship between disturbances of brain function and their manifestation as disorders of thought and behavior in psychiatric illness.

Theoretical work. Neural network models are developed as a way of articulating precise hypotheses about the function of particular brain systems, and their role in cognitive control. This work seeks to bridge between the traditionally disparate levels of analysis of neurophysiology, systems neuroscience, and cognitive psychology. Projects focus on the function of systems considered to be critical for cognitive control, including: a) the role of prefrontal cortex in biasing attention and response selection in posterior structures; b) the role of

brainstem dopamine systems in regulating learning and updating of representations in prefrontal cortex; c) the role of the anterior cingulate cortex in monitoring performance, and its influence on adaptations in control; and d) the influence of locus coeruleus and norepinephrine on attentional state and the balance between exploration and exploitation. In many cases, modeling work has led to novel predictions about neurophysiological mechanisms underlying systems-level function, such as: a) gain control as a mechanism for dopaminergic and noradrenergic neuromodulation; b) the role of dopamine in coordinating reinforcement learning and the gating of information into prefrontal cortex; c) the influence of electrotonic coupling on population dynamics within the locus coeruleus; and d) the effects of changes in locus coeruleus physiological state on attentional mode. In other cases, this work has led to novel hypotheses about system level function, such as the response of anterior cingulate cortex to conflict in processing and its influence on adaptive changes in cognitive control, and the role of locus coeruleus in regulating the balance between exploration and exploitation. This work has also predicted, and led to the discovery of new anatomic relationships, such as projections from the anterior cingulate cortex to locus coeruleus. Current studies have begun to explore the relationship between neural network models and simpler, but analytically tractable mathematical models (such as the drift diffusion model) that have been developed for understanding simple forms of decision making at both the neural and behavioral levels.

Empirical work. Experimental studies within the laboratory make use of behavioral testing and neuroimaging (using functional magnetic resonance imaging and scalp electrical recordings) in humans. Collaborations with neurophysiologists also involve direct neuronal recordings in awake behaving animals, and detailed anatomic studies. Experiments are designed to test predictions made by neural network models, and to provide data needed to guide their further development. An important focus of this work is the generation and testing of hypotheses about the neurobiological mechanisms underlying disturbances of behavior in psychiatric disorders. By manipulating variables of biological interest in our models, we are able to explore the effects that disturbances in these variables have on behavior, and then test these in empirical studies. Empirical findings emerging from this work include: a) the first demonstration in humans of sustained activity in prefrontal cortex associated with working memory performance; b) the correlation of prefrontal cortex activity with parametric manipulations of working memory load; c) the dissociation of frontal responses to working memory load from task difficulty; d) the effects of dopamine manipulation on selective attention and working memory tasks; e) selective deficits both in behavioral and prefrontal activity among patients with schizophrenia in these tasks; f) the response of the anterior cingulate to processing conflict in the absence of performance errors; g) the co-localization of event-related potentials associated with errors (ERN) and processing conflict (N₂C); g) the first demonstration of responses in the human ventral tegmental area to reward prediction errors.

New directions. A focus of increasing interest within the laboratory is the interaction between cognitive and emotional processing. This stems from an appreciation of the close interactions between executive (e.g. prefrontal) and evaluative (e.g., anterior cingulate) functions evident in our work on cognitive control, and an equal appreciation of the fact that few, if any, aspects of

real world behavior are governed exclusively by one form of processing or the other. Recent studies in the laboratory have begun to explore interactions between cognitive and emotional processes in a variety of behavioral domains, including economic choice (e.g., gambling tasks and intertemporal choice), social interaction (e.g., ultimatum and bargaining games), and moral decision making. Initial findings, using both behavioral and neuroimaging methods, have provided clear evidence for the prevalent engagement of emotional systems in tasks traditionally considered to be predominantly cognitive. This work has set the stage for more detailed studies that examine the interaction between the systems involved in such decision making tasks, with the goal of developing a more accurate understanding of real world behavior. It is also likely to have direct relevance to our understanding of psychiatric disorders, which invariably involve complex interactions between disturbances of thought and feeling.

2. Grants (active in boldface)

Scottish Rite Fndtn.	Context Disturbance in Schizophrenia	PI	1986-88	
NIMH Physician Scientist Award	Context Disturbance in Schizophrenia: Models and Measures	PI	1987-92	MH00673
NIMH P50	Cortical Circuitry and Cognition in Schizophrenia (Edward Stricker, PI) Project 4 (1990-96), Project 7 (1997-02): The Role of Prefrontal Cortex in the Cognitive Dysfunctions of Schizophrenia; Project ?? (2003-07): Neuroendophenotypes and the expression of illness liability in schizophrenia	PI, Project 4,7	1990-07	MH45156
NIMH FIRST Award; RO1	Mechanisms of Context Processing in Schizophrenia	PI	1991-2012	MH47073
NIMH Program Project	Toward Models of Normal and Disordered Cognition (James L. McClelland, PI) Project 2 (1991-96): Neuromodulation and the Processing of Context in Schizophrenia; Project 4 (1997-02): Mechanisms of Cognitive Control	PI, Project 2,4	1991-2002	MH47566
NIMH P50	Center for Functional Brain Imaging (Robert Moore & Mark Mintun, Co-PIs) Cognitive Studies Core	Co-Direct., Cognitive Core	1992-97	MH49815

McDonnell Foundation	Neural Bases of Rehearsal and Maintenance in Working Memory	PI	1994-96	JSMF 94-32
NSF CRI	Computational and Statistical Methods for the Analysis of Neuroimaging Datasets	PI	1995-96	IBN9418982
NIMH RO1	fMRI Studies of Prefrontal Cortex	PI	1996-2008	MH52864
NIMH Program Project	Toward Models of Normal and Disordered Cognition (James L. McClelland, PI)	PI, Project 4	1997-02	MH47566
NIDA/HBP RO1	Advanced Methods for Neuroimaging Data Analysis	PI	1997-99	DA11469
NSF ESI	Tracking the Human Brain: An Interactive Planetarium Exposition (Bryan Rogers, PI)	Co-Invest.	1997-99	ESI9705491
NARSAD Independent Investigator Award	An fMRI Study of the Role of Anterior Cingulate in Working Memory Dysfunction in Schizophrenia	PI	1997-99	
NIMH RO1	Neurophysiological and Modeling Studies of Locus Coeruleus (Gary Aston-Jones, Co-PI)	Co-PI	1998-2001	MH33194
NSF MRI	Acquisition of Core Equipment for Princeton Cognitive and Behavioral Neuroscience Initiative (Marcia Johnson and Charles Gross, Co-PIs)	Co-PI	1998-2001	MRI/OST19871186
NJCST	New Jersey Brain Imaging Consortium: Acquisition of high field MRI scanner	PI	1999	
NIMH/HBP RO1	Usability and Interoperability of Neuroimaging Software	PI	2000-03	MH62006
NIMH RO1	Pathophysiology of Cognitive Disability in Schizophrenia (Cameron Carter, PI)	Co-Invest.	2000-04	MH59883
NIMH P50	Conte Center for Neuroscience Research: Cognitive and Neural Mechanisms of Conflict and Control	PI	2000-10	MH62196
Seaver Institute	Neural Economics: Understanding the brain mechanisms underlying cognitive-emotional interactions in decision making	PI	2001-02	
NIDA R21	Hyperscan: Simultaneous fMRI Across the Internet (Emory University; Greg Berns, PI)	Co-Invest.	2001-03	DA014883
MacArthur Foundation	Neural Bases of Placebo Effect and the Expectation of Pain	PI	2001-03	

NIMH P50	IBSC: Toward a Neurobiologically Constrained Framework for Modeling Human Cognition (James L. McClelland, PI) Project 4: Mechanisms of Cognitive Control	PI Project 4	2002-07	MH64445
NIMH RO1	New Wavelet-Based and Source Separation Methods for fMRI (Ingrid Daubechies, PI)	Co-Invest.	2002-07	MH067204
NIMH T32	Training Program in Quantitative Neuroscience	PI	2002-13	MH65214
NJCST	Center for Molecular and Biomolecular Imaging (Warren Warren, PI)	Co-Invest.	2002-09	
DURIP-ONR	Computing Environment for Computational Modeling of Brain Functions	PI	2003	
NSF BCS	Social Cognitive Neuroscience of Category-based Responses (Susan Fiske, PI)	Co-Invest.	2004-05	
NIDA RO1	Neural Mechanisms and Social Influence in Delay Discounting and Impulsive Behavior	PI	2006-11	DA022564
NIDA T90	Training Program in Quantitative and Computational Neuroscience	Co-PI	2006-11	DA022770
MURI	Dynamic Decision Making in Complex Task Environments: Principles and Neural Mechanisms (James L. McClelland, PI)	Co-Invest.	2006-09	AFOSR
MURI	Behavioral Dynamics in the Cooperative Control of Mixed Human/Robotic Teams (John Baillicul, PI)	Co-Invest.	2006-09	AFOSR
DURIP	A Second Generation Flexible Computing Environment for Computational Modeling of Brain Function and Neuroimaging Data Analysis	PI	2008	AFOSR

3. Invited Lectureships

American Association for the Advancement of Science (2002)
 American College of Neuropsychopharmacology, Panels (1994, 1995, 1997, 1998, 1999, 2005)
 American Economic Association, Symposia (2003, 2005, 2006)
 American Psychological Society (1994, 1998)
 ARVO (2000)
 Association for Research in Nervous and Mental Disease, Annual Conference Special Lecture (2006)
 Attention and Performance XV, XVIII (1992, 1998)

Baylor College of Medicine, Neuroscience Colloquium (1999); Keynote speaker, Annual Neuroscience Retreat and Rush and Helen Record Forum (2008)

Beckman Institute for Advanced Science and Technology, University of Illinois, Smith, Hinchman & Grills Distinguished Lecture (2003)

Behavioral Neurology Society, Keynote Address (1998)

Biological Psychiatry Society, Presidential Symposium (2002, 2008)

Boston University, Department of Cognitive and Neural Systems Colloquium (2001)

Brandeis University, Department of Biology, Colloquium (1997, 2003)

Cambridge University and the Royal Society, Symposium on Executive and Cognitive Functions of Prefrontal Cortex (1996)

Cardiff University, Cardiff Cognitive Neuroscience Seminar Series (2005)

Carmel Conference XV (1997)

Carnegie Mellon University, Psychology Department Colloquium (1994, 2009)

Cognitive Neuroscience Society (1995, 1996, 2000, 2002, 2006)

Cognitive Neuroscience Treatment Research to Improve Cognition in Schizophrenia Meeting, Invited Talk (2007)

Cold Spring Harbor Laboratory, Computational and Systems Neuroscience Workshop (2004)

College de France, Colloque de Rentrée, Invited Talk (2007)

Columbia Presbyterian Hospital, Joseph Zubin Memorial Fund Award Lecture (1994)

Columbia University, College of Physicians and Surgeons, Department of Psychiatry, Grand Rounds (1990)

Cornell Medical School, Sackler Institute Colloquium (2002)

CUNY, Department of Psychology Colloquium (2000)

Dynamical Systems in Neuroscience, Annual Meeting (1999)

Eden Institute Foundation, Lecture Series Fellow (2001)

Emory School of Medicine, Department of Psychiatry, Grand Rounds (1999)

Ellison Medical Foundation, Workshop of the Biological Assessment of Mental Processes (2006)

Eunice Kennedy Shriver Center for Developmental Cognitive Neuroscience, Colloquium (2000)

Florida State University, Department of Psychology, Colloquium (1998)

Frankfurt Institute for Advanced Studies, Ernst Strüngmann Forum (2007)

Harvard University, Department of Psychology, Colloquium (1996, 2002)

Harvard University, Department of Economics, Labor Economics Seminar (2003)

Human Brain Project, Annual Conference (1998, 1999)

Indiana University, William Lowe Bryan Memorial Lecture on Cognitive Science (1992)

Institute for Advanced Studies, Department of Mathematics, Symposium (2003)

Interface 95 - The 27th Symposium on the Interface: Computing Science and Statistics (1995)

International Conference on Cognitive and Neural Systems, 10th Annual Meeting (2006), Invited Address

International Conference on Cognitive Neuroscience, Keynote Address (1996)

International Congress on Schizophrenia Research (1997), Invited Address

International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine (1997)

International Neuropsychological Society (1992), Invited Address

James S. McDonnell Summer Institute in Cognitive Neuroscience (1995, 1997, 2001)
Japanese Neuropsychological Association, Keynote Address (1997)
Jena International Workshop on Executive Functions and the Brain (2000)
Library of Congress / NIMH Annual Decade of the Brain Public Program (1999)
McGill University, Department of Psychiatry, Grand Rounds (1991)
Memory Disorders Research Society (1994, 1997, 1999)
Mind-Life Institute / M.I.T. (2003)
National Foundation for Functional Brain Imaging 1st Annual Meeting (1999)
New York Academy of Medicine, Annual Salmon Lecture (2006)
New York Academy of Sciences, Imaging Discussion Group Meeting (2005)
NINDS, Cognitive Neuroscience Section, Grand Rounds (1993)
NIMH, St. Elizabeth's Hospital, Grand Rounds (1997)
NIMH Extramural program, Colloquia and Workshops (1999, 2000, 2001)
NIMH Intramural program, Neuroscience Colloquium (1999)
Nordic Center of Excellence and the Stockholm Brain Institute, Invited Talk (2007)
Northern California Psychiatric Society, Award Address (1986)
Northwestern University, Department of Psychology, Colloquium (1998)
NYU, Departments of Psychology and Neuroscience, Colloquia (1999, 2000)
Ohio State University, Mathematical Biosciences Institute Workshop on Systems Level Modeling (2002)
President's Council on Bioethics (2004)
Princeton Conference on Cerebral Vascular Disease (1994)
Princeton Plasma Physics Laboratory, Colloquium (2004)
Princeton University, Department of Psychology, Colloquium (1996)
Princeton University, Council on Science and Technology Public Lecture Series (2000)
Psychonomic Society, Invited Symposium Lectures (1996, 2002)
Queens College, CUNY, Annual Neuropsychology Symposium, Keynote Address (2007)
Research Society on Alcoholism, Plenary Address (2002)
Rockefeller University, Neuroscience Colloquium (1999)
Rotman Research Institute, 10th Annual Conference on the Frontal Lobes (2000)
Royal Society, UK, Mental Processes in the Human Brain (2006)
Rutgers University, Department of Psychology & Center for Molecular and Behavioral Neuroscience Colloquium (1999, 2000)
SISA, Trieste Encounters in Cognition (1992)
Smithsonian Institute Public Lecture Series (1999)
Society for Psychophysiological Research, Invited Address (2006)
Society for Research on Psychopathology (1993)
Stanford University, Neurobiology Department, Frontiers in Neuroscience Lecture Series (2009)
TPG Annual Retreat, Featured Speaker (2007)
University of California, Berkeley, Helen Wills Neuroscience Institute Inaugural Lecture (2000)
University of California, Davis, Keynote Address, Opening of Brain Imaging Center (2005)
University of California, Davis, Department of Psychiatry Grand Rounds (2005)
University of California, San Francisco, Department of Psychiatry Grand Rounds (2001)

University College London and Wellcome Functional Imaging Laboratory (1997, 2000)
University of Colorado, Department of Psychology, Symposium, Colloquium (1997, 2002)
University of Illinois, Program in Neuroscience, Colloquium (1998)
University of Michigan, Departments of Psychology and Psychiatry Colloquia (1994, 2000)
University of Maryland, Psychiatric Research Center, 25th Anniversary Symposium (2002)
University of Medicine and Dentistry of New Jersey, Graduate Program in Physiology and Neurobiology, Special Lecture (1999)
University of Medicine and Dentistry of New Jersey, Dept. of Neurology Grand Rounds (2002)
University of North Carolina at Greensboro, Kendon Smith Annual Lecture Series (2004)
University of Oregon, Institute of Cognitive and Decision Sciences, Symposia (1990, 1996)
University of Pennsylvania, Department of Psychology, Cognitive Science Program, and Institute for Neural Sciences Colloquia (1996, 2001)
University of Pennsylvania, Institute of Neurological Sciences, James M. Sprague Annual Lecture (2006)
University of Pennsylvania and Philadelphia Psychoanalytic Center, Evening Program (2006)
University of Rochester, Department of Brain and Cognitive Sciences, Colloquium (2006)
University of Texas Southwestern Medical Center, Dept. of Psychiatry, Colloquium (2003)
University of Vermont, Department of Psychiatry, Grand Rounds (1992)
University of Wisconsin, Department of Psychology, Colloquium (1987, 2002)
University of Wisconsin Medical School, 5th Annual Symposium on Emotion (1999)
Vanderbilt University, Annual Neuroscience Retreat Keynote Address (2001)
Vanderbilt University, Stroopfest (2002)
Washington University, Department of Psychiatry, Grand Rounds (2003)
Winter Conference on Brain Research (1993, 1996, 1997, 1998)
Workshop on Neural Modeling of Brain and Cognitive Disorders (1995, 1998)
Yale University School of Medicine, Department of Neurobiology, Colloquium (2002)
Yale University School of Medicine, Department of Psychiatry, Abraham Ribicoff Annual Lecture (2004)

4. Other research-related activities

Advisory Boards and Councils

Allegheny County Neuropsychiatric Survey, Executive Advisory Board (1996-8)
University of Michigan, Department of Psychology, External Advisory Board (1997)
National Alliance for Research on Schizophrenia and Depression (NARSAD), Scientific Council (1998-present)
NIMH Board of Scientific Counselors, Advisory Panel on Intramural Research Program (1999)
Yale-New Haven VAMC Schizophrenia Research Center, Scientific Advisory Board (1999)
International Organization of Human Brain Mapping, Governing Council (1998-2002), Treasurer (2000-2001), Chair of Neuroinformatics Committee (1998-2001), Chair, Nominations Committee (2001)
National Foundation for Functional Brain Imaging, Advisory Board (1999-2004)

Center for Magnetic Resonance Research, University of Minnesota, Advisory Board (2000)
Harvard Initiative in Systems Neuroscience, Advisory Board (2000)
American Psychiatric Association / NIMH DSM-V Workgroup on Neuroscience (2000-2002)
NIMH Workgroup on Strategic Plan for Mood Disorders (2000-2002).
International Association for the Study of Attention and Performance, Advisory Council (2001-present)
University of Pennsylvania Silvio O. Conte Center, “The Neurobiology of Stimulus Encoding in Schizophrenia,” External Advisory Board (2003, 2008)
Harvard University, Department of Psychology, External Advisory Board (2003-6)
NIMH Measurement and Treatment Development Activities on Cognition in Schizophrenia (MATRICS), Neurocognition Committee (2002-2006)
Council of Princeton University, Executive Committee (2004-5)
National Advisory Mental Health Council (NAMHC) (2004-8)
The Society for Neuroeconomics, Board of Directors (2004-2005)
Gatsby Computational Neuroscience Unit, UCL, Quinquennial Review Panel (2005)
National Advisory Mental Health Council Workgroup on MRI Safety (2005-2007)
Brookhaven National Laboratory, Science and Technology Steering Committee (2005-present)
Institute for Advanced Studies, Princeton, Decadal Visiting Committee for School of Social Sciences (2007)
National Advisory Mental Health Council Workgroup on Neuroscience Training (2007-2008)

Editorial Boards

American Journal of Psychiatry, Consulting Editor (2001-present)
Biological Psychiatry, Board of Editors (1999-present)
Brain Research, Senior Editor for Computational Neuroscience (2005-present)
Cognitive Neuropsychology, Advisory editor (1997-present)
Journal of Experimental Psychology: General, Consulting Editor (1996-present)
Journal of Neurophysiology (2003-2004)
Neuroimage, Board of Editors (2002-2003)
Neuroinformatics, Board of Editors (2002-present)
Neuropsychopharmacology, Board of Editors (1999-present)
Neuroscience, Board of Editors (1999-2003)
NMR in Biomedicine, Board of Editors (2003-present)
Proceedings of the Royal Society, Biological Sciences, Board of Editors (2003-2008)
Science, Board of Reviewing Editors (1998-present)
Trends in Cognitive Science, Advisory Editorial Board (2004-present)

Grant Review

Member, Integrative Cognitive Functional Neuroscience (IFCN-8), NIH Study Section (1998-2003)

Ad hoc reviews for:

Alzheimer's Association

Behavioral Science Division, NSF
Clinical Psychopathology Study Section, NIMH
Human Development and Aging Study Section, NIH
International Human Frontier Science Program
National Center for Research Resources, NIH
NIMH Intramural Research Program, NIH
Wellcome Trust

Conference Organization

New Directions in Health Care and Education Annual Colloquium. University of Pennsylvania Medical School, May, 1980. Founder and Co-organizer.

25th Annual Carnegie Symposium on Cognition: Scientific Approaches to the Question of Consciousness. Carnegie Mellon University, May, 1993. Co-organizer.

Center for Neuroscience and Mental Disorders bi-annual workshop: Cognitive Neuroscience Approaches to Schizophrenia. University of Pittsburgh, May, 1994. Organizer.

International Congress on Schizophrenia Research. Colorado Springs, April, 1997. Program Consultant.

Society for Research in Psychopathology. Palm Springs, October, 1997. Program Committee.

Neural Processes and Economics Workshop, Woodrow Wilson School, Princeton University. Co-organizer, 2000.

Organization for Human Brain Mapping, New York City, 2003, Chair, Local Organizing Committee.

Computational Cognitive Neuroscience Conference, Co-Founder (with Randall O'Reilly); 2005-2008, Program Committee.

Membership in Professional Organizations

American Psychological Society
American College of Neuropsychopharmacology
Biological Psychiatry
Organization for Human Brain Mapping
Psychonomic Society
Society for Neuroscience
Society for Research on Psychopathology
Society for Neuroeconomics

Software Development

PsyScope, Designer and Co-Producer — this is a graphical, interactive program for the design and implementation of cognitive experimental tasks on MacIntosh computers. It provides the ability to present stimuli in text, graphic, and acoustic form, and can be used to record manual or voice responses with millisecond accuracy. It incorporates a fully general scripting language, as well as a graphic interface, and is extensible through the use of plug-and-play add-on modules. *PsyScope* is available for free via anonymous ftp, and is currently being used for experimental research and as a teaching instrument in over 500 centers internationally. A new program called *E-Prime*, based largely on *PsyScope* and MEL, its PC analog, has been developed in collaboration with Psychology Software Tools (PST) Inc, and version 1.0 was recently released. This is a cross-platform program (Windows and Macintosh), and significantly extends the functionality of both *PsyScope* and MEL.