

## *Curriculum Vitae* **Vinay Parikh, Ph.D.**

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### **Professional Appointments**

2016-present Associate Professor with tenure, Department of Psychology and Neuroscience Program, Temple University, Philadelphia, PA  
2016-present Associate Professor, Center for Substance Abuse Research, Lewis Katz School of Medicine, Temple University, Philadelphia, PA  
2016-2019 Director, Neuroscience Program (College of Liberal Arts), Temple University, Philadelphia, PA  
2009-2016 Assistant Professor, Department of Psychology and Neuroscience Program, Temple University, Philadelphia, PA  
2005-2009 Senior Research Scientist, Department of Psychology, University of Michigan, Ann Arbor, MI  
1998-2001 Group Leader - Drug Discovery Program, Sun Pharmaceutical Industries Ltd., Vadodara, India

### **Education and Postdoctoral Training**

2018-2020 M.B.A., (Concentration: Innovation and Strategic Management)  
Fox School of Business, Temple University, Philadelphia, PA  
2004-2009 Research Fellow, Behavioral Neuroscience (Advisor: Prof. Martin Sarter), University of Michigan, Ann Arbor, MI  
2003-2004 Postdoctoral Associate, Behavioral Neuroscience (Advisors: Prof. Martin Sarter & John P. Bruno), Ohio State University, Columbus, OH  
2001-2003 Postdoctoral fellow, Neurochemistry/Psychopharmacology (Advisors: Prof. Sahebarao P. Mahadik & Alvin V. Terry), Medical College of Georgia, Augusta University, Augusta, GA  
1994-1999 Ph.D., Life Sciences/Pharmacology (Advisor: Prof. Manjeet Singh)  
Punjabi University, Patiala, India  
1992-1994 M. Pharm, Pharmacology  
Gujarat University, Ahmedabad, India  
1988-1992 B. Pharm, Pharmaceutical Sciences  
Dr. Harisingh Gour University, Sagar, India

### **Additional Training and Coursework**

May, 2004 Advanced coursework on Electrochemical Measurements in Biological Systems, Center for Sensor Technology, University of Kentucky, KY

Nov, 1998 National Workshop on Mathematical Modeling of Pharmacokinetic Data, All India Council for Technical Education, Gandhinagar, India

### **Research Interests**

Behavioral/Cognitive Neuroscience, Neuropsychopharmacology, Aging, Alzheimer's disease, Substance Abuse, Mental Illness

### **Honors/Awards**

2021 Inducted into Beta Gamma Sigma  
2020 Dean's Certificate of Excellence, Fox School of Business  
2016 Elected as Associate Member, American College of Neuropsychopharmacology  
2016 Illustrious Alumnus Award, Dr Harisingh Gour University  
2014 Young Investigator Travel Fellowship, American College of Neuropsychopharmacology  
2010 NARSAD Young Investigator Award  
2010 New Investigator Award for Alzheimer's Disease, American Federation for Aging Research  
2008 Research Faculty Recognition Award, University of Michigan  
2006 Rafaelson Young Investigator Award, International College of Neuropsychopharmacology  
2006 Travel Award, Winter Conference on Brain Research, Steamboat Springs, CO  
2003 Young Investigator Award, International Congress of Schizophrenia Research  
1997 Young Scientist Award (Medical and Veterinary Sciences), Indian Science Congress Association  
1996 Achari Award, Indian Pharmacological Society  
1995 Senior Research Fellowship Award and Contingency Grant, Council of Scientific and Industrial Research, India  
1994 Jindal Award, Indian Pharmacological Society (Gujarat Branch)  
1994 G.P. Nair Award, Indian Drugs Manufacturer's Association  
1993 First Prize in B.V. Patel Essay Competition, presented at Indian Pharmaceutical Congress  
1992 Junior Research Fellowship, University Grants Commission, India 1992  
1992 *Summa cum laude*, Dr. Harisingh Gour University, India

### **Publications in Peer-Reviewed Journals** (\*co-author students supervised by Parikh)

- 1) Duggan MR\*, Joshi S\*, Strupp J\*, Parikh V. Chemogenetic inhibition of prefrontal projection neurons constrains top-down control of attention in young but not aged rats. **Brain Structure and Function** 2021; in press.
- 2) Yegla B\*, Joshi S, Strupp J\*, Parikh V. Dynamic interplay of frontoparietal cholinergic innervation and cortical reorganization in the regulation of attentional capacities in aging. **Neurobiology of Aging** 2021; in press.
- 3) Duggan MR\*, Parikh V. Microglia and modifiable life factors: Potential contributions to cognitive resilience in aging. **Behavioral Brain Research** 2021; 405:113207.

- 4) Bongiovanni A, Peer K, Carpenter RE, Ellis AS, Duggan MR\*, Parikh V, Wimmer ME. Aging reduces the sensitivity to the reinforcing efficacy of morphine. **Neurobiology of Aging** 2021; 97: 28-32.
- 5) Duggan MR\*, Ahooyi TM, Parikh V, Khalili K. Neuromodulation of BAG co-chaperones by HIV-1 viral proteins and H<sub>2</sub>O<sub>2</sub>: Implications for HIV-associated neurological disorders. **Cell Death Discovery** 2021; 7: 60.
- 6) Goldberg LR, Zeid D, Kutlu MG, Cole RD\*, Lallai V, Sebastian A, Albert I, Fowler C, Parikh V, Gould TJ. Paternal nicotine enhances fear memory, reduced nicotine self-administration and alters hippocampal genetic and neural function in subsequent generations. **Addiction Biology** 2021; 26: e12859.
- 7) Chawla PA, Parikh V. Alzheimer's disease: The unwanted companion of the elderly. **CNS and Neurological Disorders – Drug Targets** 2020; 19: 646-647.
- 8) Eck S, Xu S-J, Telenson A, Duggan MR\*, Cole RD\*, Wicks B, Bergmann J, Lefebvre H, Shore M, Shepard K, Akins M, Parikh V, Heller EA, Bangasser DA. Stress regulation of sustained attention and the cholinergic attention system. **Biological Psychiatry** 2020; 88: 566-575.
- 9) Cole RD\*, Zimmerman M\*, Kutlu MG\*, Matchanova A\*, Gould TJ, Parikh V. Cognitive rigidity and BDNF-mediated frontostriatal glutamate neuroadaptations during spontaneous nicotine withdrawal. **Neuropsychopharmacology** 2020; 45: 866-876.
- 10) Duggan MR\*, Joshi S, Tan Y, Slifker M, Ross EA, Wimmer M, Parikh V. Transcriptomic changes in the prefrontal cortex of rats as a function of age and cognitive engagement. **Neurobiology of Learning and Memory** 2019; 163: 10735.
- 11) Wickens MM, Deutschmann AU, McGrath AG, Parikh V, Briand LA. Glutamate receptor interacting proteins act within the prefrontal cortex to blunt cocaine seeking. **Neuropharmacology** 2019; 157: 107672.
- 12) Koshy Cherian A, Tronson NC, Parikh V, Blakely RD, Sarter M. Repetitive mild concussion in mice with a vulnerable cholinergic system: lasting cholinergic attentional impairments and brain cytokine expression in CHT +/- mice. **Behavioral Neuroscience** 2019; 133: 448-459.
- 13) Cole RD\*, Wolsh C\*, Zimmerman M\*, Gould TJ, Parikh V. Adolescent nicotine exposure facilitates motivated nicotine but not saccharin self-administration following adult drug re-exposure in mice. **Behavioral Brain Research** 2019; 359: 836-844.
- 14) Zhou L, Fisher ML, Cole RD\*, Gould TJ, Parikh V, Ortinski PI, Turner JR. Neuregulin 3 signaling mediates nicotine-dependent synaptic plasticity in the orbitofrontal cortex and cognition. **Neuropsychopharmacology** 2018; 43: 1343-1354.
- 15) Yegla B\*, Parikh V. Developmental suppression of forebrain trkA receptors and attentional capacities in aging rats: A longitudinal study. **Behavioral Brain Research** 2017; 335: 111-121.

- 16) Koshy Cherian A, Parikh V, Wang Q, Wu Q, Mao-Draayer Y, Blakely RD, Sarter M. Hemicholinium-3 sensitive choline transport in human T lymphocytes: Evidence for use as a proxy for brain choline transporter (CHT) capacity. **Neurochemistry International** 2017; 108: 410-416.
- 17) Koshy Cherian A, Kucinski A, Pitchers K, Yegla B\*, Parikh V, Kim Y, Valuskova P, Gurnan S, Blakely RD, Lindsley CW, Sarter M. Unresponsive choline transporter as a trait neuromarker and a causal mediator of bottom-up attentional biases. **The Journal of Neuroscience** 2017; 37: 2947-2959.
- 18) Wicks B, Waxler DE, White K, Duncan N, Bergmann J, Cole RD\*, Parikh V, Bangasser DA. Method for testing sustained attention in touchscreen operant chambers in rats. **Journal of Neuroscience Methods** 2017; 277: 30-37.
- 19) Sarter M, Lustig C, Berry AS, Gritton H, Howe WM, Parikh V. What do phasic cholinergic signals do ? **Neurobiology of Learning and Memory** 2016; 130: 131-141.
- 20) Parikh V, Naughton SX\*, Yegla B\*, Guzman D\*. Impact of partial dopamine depletion on cognitive flexibility in BDNF heterozygous mice. **Psychopharmacology** 2016; 233: 1361-1375.
- 21) Parikh V, Kutlu MG\*, Gould TJ. nAChR dysfunction as a common substrate for schizophrenia and comorbid nicotine addiction. **Schizophrenia Research** 2016; 171: 1-15.
- 22) Parikh V, Cole RD\*, Patel PJ\*, Poole RL, Gould TJ. Disrupted cognitive control and frontostriatal BDNF imbalance during mecamylamine-precipitated nicotine withdrawal. **Neurobiology of Learning and Memory** 2016; 128: 110-116.
- 23) Cole RD\*, Kawasumi Y, Parikh V, Bangasser DA. Corticotropin releasing factor impairs sustained attention in male and female rats. **Behavioral Brain Research** 2016; 296: 30-34.
- 24) Kutlu M\*, Parikh V, Gould TJ. Nicotine addiction and psychiatric disorders. **International Review of Neurobiology** 2015; 124: 171-208.
- 25) Yegla B\*, Parikh V. Rejuvenating procholinergic treatments for cognition enhancement in AD: current challenges & future prospects. **Frontiers in Systems Neuroscience** 2015; 8: 254.
- 26) Cole RD\*, Poole RL, Guzman D\*, Gould TJ, Parikh V. Contributions of  $\beta 2$  subunit-containing nAChRs to nicotine-induced alterations in cognitive flexibility in mice. **Psychopharmacology** 2015; 232: 1207-1217.
- 27) Parikh V, Bernard CS\*, Naughton SX\*, Yegla B\*. Interactions between A $\beta$  oligomers and presynaptic cholinergic signaling: age-dependent effects on attentional capacities. **Behavioral Brain Research** 2014; 274: 30-42.
- 28) Parikh V, Naughton SX\*, Shi X, Kelley LK, Yegla B\*, Tallarida CS, Rawls SM, Unterwald EM. Cocaine- induced neuroadaptations in the dorsal striatum: glutamate dynamics and behavioral sensitization. **Neurochemistry International** 2014; 75:54-65.
- 29) Yegla B\*, Parikh V. Effect of sustained ProNGF blockade on attentional capacities in aged rats with compromised cholinergic system. **Neuroscience** 2014; 261: 118-132.

- 30) D'Amore DE\*, Tracy BA\*, Parikh V. Exogenous BDNF facilitates strategy shifting by modulating glutamate dynamics in the dorsal striatum. **Neuropharmacology** 2013; 75:312-323.
- 31) Parikh V., Howe WM, Welchko R, Naughton SX\*, Han D, D'Amore DE\*, Turner DL, Sarter M. Diminished trkA receptor signaling reveals cholinergic-attentional vulnerability of aging. **European Journal of Neuroscience** 2013; 37:278-293.
- 32) Parikh V., St. Peters M, Blakely RD, Sarter M. The presynaptic choline transporter imposes limits on sustained cortical acetylcholine release and attention. **The Journal of Neuroscience** 2013; 33:2326-2337.
- 33) Ortega LA\*, Tracy BA\*, Gould TJ, Parikh V. Effect of chronic low- and high-dose nicotine on cognitive flexibility in C57BL/6J mice. **Behavioral Brain Research** 2013; 238: 134-145.
- 34) Howe WM, Ji J, Parikh V., Williams S, Mocaer E, Trocme-Thibierge C, Sarter M. Enhanced shifting from endogenous to exogenous attention by selective stimulation of  $\alpha 4\beta 2$  nAChRs: underlying cholinergic mechanisms. **Neuropsychopharmacology** 2010; 35:1391-1401.
- 35) Parikh V., Ji J, Decker MW, Sarter M. Prefrontal  $\beta 2$  subunit-containing and  $\alpha 7$  nAChRs differentially control glutamatergic and cholinergic signaling. **The Journal of Neuroscience** 2010; 30:3518-3530.
- 36) Sarter M, Parikh V., Howe MW. nAChR-agonist induced cognition enhancement: integration of cognitive and neuronal mechanisms. **Biochemical Pharmacology** 2009; 78: 658-667.
- 37) Sarter M, Parikh V., Howe, MW. Phasic acetylcholine and the volume transmission hypothesis: time to move on. **Nature Reviews Neuroscience** 2009; 10: 383-390.
- 38) Giuliano C, Parikh V., Ward JR, Chiamulera C, Sarter M. Increases in cholinergic neurotransmission measured by using choline-sensitive microelectrodes: enhanced detection by hydrolysis of acetylcholine on recording sites? **Neurochemistry International** 2008; 52: 1343-1350.
- 39) Parikh V., Man K, Decker MW, Sarter M. Glutamatergic contributions to nAChR agonist-evoked cholinergic transients in the prefrontal cortex. **The Journal of Neuroscience** 2008; 28: 3769-3680.
- 40) Parikh V., Sarter M. Cholinergic mediation of attention: the contribution of phasic versus tonic components of prefrontal cholinergic activity. **Annals of the New York Academia of Sciences** 2008; 1129: 225-235.
- 41) Parikh V., Kozak R, Martinez V, Sarter M. Prefrontal acetylcholine release controls cue detection on multiple time scales. **Neuron** 2007; 56: 141-54.
- 42) Sarter M, Bruno JP, Parikh V. Abnormal neurotransmitter release underlying behavior and cognitive disorders: toward concepts of dynamic and function specific dysregulation. **Neuropsychopharmacology** 2007; 32: 1452-1461.
- 43) Pillai A, Parikh V., Terry AV, Mahadik SP. Long term antipsychotic treatments and crossover studies in rats: differential effects of typical and atypical agents on the expression of antioxidant enzymes and membrane lipid peroxidation in rat brain. **Journal of Psychiatric Research** 2007; 41:

372-86.

- 44) Terry AV, Parikh V, Gearhart DA, Pillai A, Nasrallah HA, Mahadik SP. Time dependent effects of haloperidol and ziprasidone on nerve growth factor, cholinergic neurons, and spatial learning in rats. **Journal of Pharmacology and Experimental Therapeutics** 2006; 318: 709-724.
- 45) Parikh V, Apparsundaram S, Kozak R, Richards JB, Sarter M. Reduced expression and capacity of striatal high-affinity choline transporter in hyperdopaminergic mice. **Neuroscience** 2006; 41: 379-389.
- 46) Parikh V, Sarter M. Cortical choline transporter function *in vivo*: equipotent uptake of endogenous and exogenous choline and effects of cholinergic deafferentation. **Journal of Neurochemistry** 2006; 96: 488-502.
- 47) Hernandez CM, Gearhart DA, Parikh V, Hohnadel EJ, Davis LW, Middlemore ML, Waller JL, Terry AV. Comparison of galantamine and donepezil for effects on nerve growth factor, cholinergic markers and memory performance in aged rats. **Journal of Pharmacology and Experimental Therapeutics** 2006; 316:679-694.
- 48) Apparsundaram S, Martinez V, Parikh V, Kozak R, Sarter M. Increased capacity and density of choline transporters situated in synaptic membranes of the right medial prefrontal cortex of attentional task-performing rats. **The Journal of Neuroscience** 2005; 25:3851-3856.
- 49) Martinez V, Parikh V, Sarter M. Sensitized attentional impairments and Fos-immunoreactive cholinergic neurons in the basal forebrain following administration of escalating doses of amphetamine. **Biological Psychiatry** 2005; 57:1138-1146.
- 50) Sarter M, Parikh V. Choline transporters, cholinergic transmission and cognition. **Nature Reviews Neuroscience** 2005; 6:48-56.
- 51) Parikh V, Pomerleau F, Huettl P, Gerhardt GA, Sarter M, Bruno JP. Rapid assessment of in vivo cholinergic transmission by amperometric detection of changes in extracellular choline levels. **European Journal of Neuroscience** 2004; 20: 1545-1554.
- 52) Parikh V, Khan MM, Mahadik SP. Differential regulation of nerve growth factor and choline acetyltransferase expression with antipsychotics in rat cortex and nucleus basalis. **Journal of Psychiatric Research** 2004; 38: 521-529.
- 53) Parikh V, Khan MM, Mahadik SP. Olanzapine counteracts modulatory effects of haloperidol on BDNF and TrkB receptors in rat hippocampus. **Neuroscience Letters** 2004; 356: 135-139.
- 54) Parikh V, Terry AV, Khan MM, Mahadik SP. Modulation of nerve growth factor and choline acetyltransferase expression in rat hippocampus after chronic exposure with haloperidol, risperidone and olanzapine. **Psychopharmacology** 2004; 172:365-374.
- 55) Evans DR, Parikh V, Khan MM, Coussons C, Buckley PF, Mahadik SP. Red blood cell membrane essential fatty acid metabolism in early psychotic patients following antipsychotic drug treatment. **Prostaglandins Leukotrienes Essential Fatty Acids** 2003; 69: 393-399.

- 56) Khan MM, Parikh VV, Mahadik SP. Antipsychotic drugs differentially modulate apolipoprotein D in rat brain. **Journal of Neurochemistry** 2003; 86:1089-1100.
- 57) Terry AV, Hill WD, Parikh V, Waller JL, Evans DR, Mahadik SP. Differential effects of haloperidol, risperidone and clozapine exposure on cholinergic markers and spatial learning performance in rats. **Neuropsychopharmacology** 2003; 28:300-309.
- 58) Parikh V, Evans DR, Khan MM, Mahadik SP. Nerve growth factor levels in never-medicated first-episode psychotic patients and medicated chronic schizophrenic patients. **Schizophrenia Research** 2003; 60:117-123.
- 59) Parikh V, Khan MM, Mahadik SP. Differential effects of antipsychotics on expression of antioxidant enzymes and membrane lipid peroxidation in rat brain. **Journal of Psychiatric Research** 2003; 37:43-51.
- 60) Terry AV, Hill WD, Parikh V, Evans DR, Waller JL, Mahadik SP. Differential effects of chronic haloperidol and olanzapine exposure on brain cholinergic markers and spatial learning in rats. **Psychopharmacology** 2002; 164: 360-368.
- 61) Khan MM, Evans DR, Gunna V, Scheffer RE, Parikh VV, Mahadik SP. Reduced erythrocyte membrane essential fatty acids and increased lipid peroxides in schizophrenia at the never-medicated first-episode of psychosis and after years of treatment with antipsychotics. **Schizophrenia Research** 2002; 58: 1-10.
- 62) Mahadik SP, Khan MM, Evans DR, Parikh VV. Elevated plasma level of apolipoprotein D in schizophrenia and its treatment and outcome. **Schizophrenia Research** 2002; 58: 55-62.
- 63) Doshi U, Salat P, Parikh V. Cytokines in asthma: Current trends and future prospects. **Indian Journal of Pharmacology** 2002; 34: 16-25.
- 64) Parikh V, Singh M. Possible role of nitric oxide release and mast cells in endotoxin-induced cardioprotection. **Pharmacological Research** 2001; 43: 39-45.
- 65) Salat P, Parikh V. Motilin receptor agonists as novel gastrointestinal prokinetic agents. **Indian Journal of Pharmacology** 1999; 31(5): 333-9.
- 66) Parikh V, Singh M. Possible role of adrenergic component and cardiac mast cell degranulation in preconditioning induced cardioprotection. **Pharmacological Research** 1999; 40: 129-37.
- 67) Parikh V, Singh M. Possible role of cardiac mast cell degranulation in norepinephrine induced preconditioning **Methods and Findings in Experimental and Clinical Pharmacology** 1999; 27(4): 269-74.
- 68) Parikh V, Singh M. Possible role of cardiac mast cell degranulation and NO release in ischaemic preconditioned isolated rat heart. **Molecular and Cellular Biochemistry** 1999; 199: 1-6.
- 69) Parikh V, Singh M. Cardiac mast cell stabilization and cardioprotective effect of ischemic preconditioning in isolated rat heart. **Journal of Cardiovascular Pharmacology** 1998; 31: 779-785.

- 70) Parikh V, Singh M. Resident cardiac mast cells and cardioprotective of ischaemic preconditioning in isolated rat heart. **Journal of Cardiovascular Pharmacology** 1997; 30:149-156.
- 71) Kaur H, Parikh V, Sharma A, Singh M. Effect of amiloride a Na<sup>+</sup>/H<sup>+</sup> exchange inhibitor on cardioprotective effect of ischemic preconditioning: Possible involvement of resident cardiac mast cells. **Pharmacological Research** 1997; 36: 95-102.
- 72) Singh M, Parikh V, Sharma A. Fundamentals and future prospects of gene therapy. **Drugs of the Future** 1997; 22: 995-1003.
- 73) Sharma A, Parikh V, Singh M. Pharmacological basis and drug therapy of Alzheimer's disease. **Indian Journal of Experimental Biology** 1997; 35: 1146-1155.
- 74) Parikh V, Shivprakash, Patel RB, Gandhi TP, Santani DD. Effect of aspirin on single and multiple dose pharmacokinetics of ciprofloxacin in rabbits. **Indian Journal of Pharmacology** 1996; 28: 25-28.
- 75) Shah DA, Usgaonkar RS, Pradhan RR, Parikh V. ISO-9000 and its applicability to pharmaceuticals - A pharmacist's perception. **Eastern Pharmacist** 1994 (May): 33-39.

#### **Manuscripts submitted or under preparation:**

- 76) Khan MM, Parikh V. Antipsychotic drugs and brain remodeling: Prospects for neurotrophic factor based therapeutic intervention. Submitted.
- 77) Donovan E, Avila C, Parikh V, Fenollar-Ferrer C, Blakely RD, Sarter M. Disrupted neuronal choline clearance in vivo by a choline transporter variant associated with poor attentional control in humans. Submitted.
- 78) Cole RD\*, Wolsh C\*, Harrington E\*, Parikh V. Scavenging endogenous BDNF activity in the dorsal striatum prevents nicotine withdrawal-related cognitive flexibility deficits in mice. In preparation.
- 79) Harrington E\*, Steinberg Z\*, Parikh V. Adolescent nicotine exposure in mice impairs cognitive flexibility in adulthood. In preparation.
- 80) Cole R\*, Parikh V. Neuronal activity-dependent BDNF alterations in corticostriatal circuits during flexible decision-making. In preparation.
- 81) Parikh V, Cole RD. BDNF as a key regulator of cognitive flexibility: new insights and translational implications. In preparation.

#### **Books and Chapters** (\*co-author students supervised by Parikh)

1. Parikh V, Bangasser DA. Cholinergic signaling modes and cognitive control of attention. In: **Current Topics in Behavioral Neuroscience** (Shoaib M and Wallace T, eds), 2020, 45, pp 71-87, Berlin, Heidelberg, Springer.



2. Cole RD\*, Parikh V. Nicotine dependence in schizophrenia: contributions of nicotinic acetylcholine receptors. In: **Neuroscience of Nicotine** (Preedy V, ed), 2019, pp 135-143, Amsterdam, Netherlands, Elsevier.
3. Parikh V, Sarter M. Regulation and functions of forebrain cholinergic systems: new insights based on rapid detection of choline spikes using enzyme-based biosensors. In: **Microelectrode Biosensors** (Dale N, Marinesco S, eds), 2013, Neuromethods: Springer Protocols Vol 80, pp 257-273, Humana Press Inc., New York.
4. Sarter M, Parikh V, Howe MW, Gritton H, Paolone G, Lee TM. Multiple time scales and variable spaces: synaptic neurotransmission in vivo. In: **Monitoring Molecules in Neuroscience**. (Michotte Y, Westerink, B, Sarre G, eds), 2010, PP 7-9, Brussels, Belgium: Vrije Universiteit Brussel.
5. Parikh V, Sarter M. Cognitive decline in laboratory animals: models, measures, and validity. In: **Encyclopedia of Behavioral Neuroscience** (Koob G, Thompson RF, LeMoal M, eds), 2010, Vol 1, pp 294-301, Amsterdam, Netherlands: Elsevier.
6. Sarter M, Howe WM, Parikh V. Cholinergic transients mediating signal detection and processing mode shifts. In: **Monitoring Molecules in Neuroscience** (Phillips, PE, Sandberg, SG, Ahn, S, Phillips A, eds) 2008, pp 312-315, Vancouver, Canada: University of British Columbia Institute of Mental Health.
7. Sarter M, Bruno JP, Parikh V, Martinez V, Kozak R, Richards JB. Forebrain dopaminergic-cholinergic interactions, attentional effort, psychostimulant addiction and schizophrenia. In: **Neurotransmitter interactions and cognitive function** (Levin ED, Butcher L, Decker M, eds) 2006, pp 65-85, Boston, MA: Birkhäuser.
8. Bruno JP, Sarter M, Gash C, Parikh V. Choline- and acetylcholine-sensitive microelectrodes and cholinergic transmission. In: **Encyclopedia of sensors** (Grimes GA, Dickey E, eds) Vol 2, 2006, pp 177-192, Stevenson Ranch, CA: American Scientific Publishers.
9. Mahadik SP, Parikh VV, Khan MM. The role of oxidative stress in modulating the membrane and phospholipid function in schizophrenia. In: **Phospholipid spectrum disorders in psychiatry and neurology** (Peet M, Glen I, Horrobin DF, eds) Second Edition, 2003, pp 277-288, Carnforth: Marius Press.
10. Mahadik SP, Khan MM, Parikh V. Effect of antipsychotics drugs on rat brain and on essential fatty acids in the erythrocytes of schizophrenic patients: Implications and outcome. In: **Phospholipid spectrum disorders in psychiatry and neurology** (Peet M, Glen I, Horrobin DF, eds) Second Edition, 2003, pp 289-298, Carnforth: Marius Press.

### **Scientific Presentations/Published Abstracts** (\*co-author students supervised by Parikh)

1. Kniffin A\*, Targum M\*, Bangasser DA, Parikh V. CRF infusion into the medial septum modulates hippocampal cholinergic transmission in rats. **Society for Neuroscience Meeting**, 2021; submitted.

2. Carmon H, Parikh V, Haley E\*, Tronson NC, Sarter M. Vulnerable for addiction-like behavior: Disrupted cholinergic signaling and exaggerated (neuro)immune response in sign-tracking rats. **Society for Neuroscience Meeting**, 2021; submitted.
3. Donovan E, Avila C, Parikh V, Fenollar-Ferrer C, Blakely RD, Sarter M. Disrupted neuronal choline clearance in vivo by a choline transporter variant associated with poor attentional control in humans. **Society for Neuroscience Meeting**, 2021; submitted.
4. Kniffin A\*, Targum M\*, Bangasser DA, Parikh V. The effect of CRF infusion into the medial septum modulates hippocampal cholinergic transmission in rats. **Philadelphia Chapter Society for Neuroscience** 2021; Philadelphia, PA.
5. Parikh V, Asci I\*, Haley E. Altered Frontoparietal Beta Coherence Dynamics in Visual Discrimination as an Early Biomarker to Predict Alzheimer's Disease. **Neuropsychopharmacology Abstracts** 2020; 45 (Suppl 1): 465-466.
6. Parikh V, Jacob Strupp\*. Frontoparietal network alteration as a possible biomarker to predict Alzheimer's disease. **Neuropsychopharmacology** 2019; 44 (Suppl): 465-466.
7. Peterson T\*, Steinberg Z\*, Duggan MR\*, Asci I\*, Parikh V. Behavioral disinhibition as a cognitive endophenotype for early detection of Alzheimer's disease. **Society for Neuroscience Abstracts** 2019; 49: 783.07.
8. Donovan E, Avila C, Parikh V, Antcliff A, Blakely RD, Sarter M. Reduced choline clearance in vivo in mice expressing a choline transporter subcapacity variant associated with low attentional control in humans. **Society for Neuroscience Abstracts** 2019; 49: 418.14.
9. Peterson T\*, Steinberg Z\*, Duggan MR\*, Asci I\*, Parikh V. Behavioral disinhibition as a cognitive endophenotype for early detection of Alzheimer's disease. **Philadelphia Chapter Society for Neuroscience** 2019; Philadelphia, PA.
10. Ordonez Sanchez, EJ, Eck SR, Duggan M\*, Salvatore M, Wicks B, Cole RD, Parikh V, Bangasser, DA. Chronic stress regulation of sustained attention circuitry. **Society for Neuroscience Abstracts** 2018; 48: 227.24.
11. Sarter M, Koshy-Cherian A, Tronson, NC, Parikh V, Blakely RD. Lasting cholinergic-attentional impairments and brain cytokine expression following mild repeated concussion in mice with a vulnerable cholinergic system. **Society for Neuroscience Abstracts** 2018; 48: 211.27.
12. Parikh V, Harrington E\*, Steinberg ZR\*, Meissler J, Eisenstein TK. Adolescent nicotine exposure alters cognitive flexibility and immune mediators in the PFC of adult mice. **Neuropsychopharmacology** 2018; 43 (Suppl): S147.
13. Lambe E, Dineley KT, Barnes S, Parikh V. Nicotinic cholinergic signaling in neurological and psychiatric disorders: Insights from mouse models. **27<sup>th</sup> Annual International Behavioral Neuroscience Society Meeting** 2018; Boca Raton, FL.

14. Strupp J\*, Parikh V. Alterations in prefrontal-parietal network activity as a biomarker to predict Alzheimer's disease. **Philadelphia Chapter Society for Neuroscience** 2018; Philadelphia, PA.
15. Harrington E\*, Steinberg Z\*, Parikh V. Adolescent nicotine exposure impairs cognitive flexibility in adulthood. **Philadelphia Chapter Society for Neuroscience** 2018; Philadelphia, PA.
16. Strupp J\*, Steinberg Z\*, Parikh V. Alterations in cognitive control and cortical oscillations for early detection of Alzheimer's disease. **Eastern Psychological Association Abstracts** 2018; pp 81.
17. Harrington E\*, Steinberg Z\*, Parikh V. Adolescent nicotine exposure impairs cognitive flexibility in adulthood. **Eastern Psychological Association Abstracts** 2018; pp 39.
18. Parikh V., Cole RD\*, Wolsh C\*, Harrington E\*. Scavenging endogenous BDNF activity in the dorsal striatum prevents nicotine withdrawal-related cognitive flexibility deficits in mice. **Neuropsychopharmacology** 2017; 43 (Suppl): S459-S460.
19. Duggan MR\*, Joshi S, Tan Y, Slifker M, Wimmer M, Parikh V. Impact of cognitive performance and normal aging on transcriptomic changes in the prefrontal cortex of rats. **Society for Neuroscience Abstracts** 2017; 47: 82.09.
20. Joshi S, Duggan MR\*, Strupp J\*, Parikh V. Attentional control in young and aged rats following chemogenetic inhibition of prefrontal projection neurons. **Society for Neuroscience Abstracts** 2017; 47: 335.09.
21. Cole RD\*, Wolsh C\*, Harrington E\*, Parikh V. Inhibition of striatal BDNF-trkB signaling rescues nicotine withdrawal-related deficits in strategy set-shifting. **Society for Neuroscience Abstracts** 2017; 47: 793.12.
22. Kutlu MG\*, Cole RD\*, Tumolo JM, Parikh V., Gould TJ. Paternal nicotine exposure transgenerationally alters gene expression in the cholinergic signaling pathway. **Society for Neuroscience Abstracts** 2017; 47: 465.19.
23. Cole RD\*, Zimmerman, M, Kutlu MG, Gould TJ, Parikh V. Deficits in cognitive flexibility during nicotine withdrawal and underlying mechanisms. **50<sup>th</sup> Annual Winter Conference on Brain Research** 2017; Big Sky, MT.
24. Turner J, Parikh V., Young JD J, Schmidt HD. Emerging insights into the cellular and cognitive substrates of nicotine addiction. **50<sup>th</sup> Annual Winter Conference on Brain Research** 2017; Big Sky, MT.
25. Kutlu MG, Cole RD\*, Tumolo JM, Parikh V., Gould TJ. Paternal nicotine exposure trans-generationally alters fear response and cholinergic function: potential epigenetic mechanisms. **NIDA Genetics Consortium Meeting** 2016; Bethesda, MD
26. Parikh V., Cole R\*, Zimmerman M\*, Kutlu MG\*, Gould TJ. Nicotine withdrawal and deficits in cognitive flexibility: contribution of frontostriatal neurochemical mechanisms. **Neuropsychopharmacology** 2016; 42 (Suppl): S442.

27. Yegla B\*, Joshi S\*, Francesconi JA\*, Forde JC\*, Parikh V. Cholinergic compromise on attentional function and cortical reorganization in aging. **Nanosymposium: The role of neuromodulators in attentional processing. Society for Neuroscience Abstracts** 2016; 46: 389.03.
28. Zimmerman M\*, Cole RD\*, Parikh V. Differential modulation of glutamate dynamics in the dorsal striatum and nucleus accumbens during nicotine withdrawal. **Society for Neuroscience Abstracts** 2016; 46: 834.05.
29. Parikh V., Kutlu MG\*, Joshi S\*, Yegla B\*. Chemogenetic inhibition of prefrontal projection neurons and attentional capacities in forebrain trkA-suppressed rats. **Society for Neuroscience Abstracts** 2016; 46: 458.03.
30. Cole R\*, Zimmerman M\*, Kutlu MG\*, Matchanova, A\*, Gould TJ, Parikh V. Frontostriatal BDNF overflow and cognitive control deficits during spontaneous nicotine withdrawal. **Society for Neuroscience Abstracts** 2016; 46: 80.08.
31. Kutlu MG\*, Cole RD\*, Tumolo JM, Parikh V., Gould TJ. Transgenerational effects of paternal nicotine exposure on fear response and cholinergic function. **Society for Neuroscience Abstracts** 2016; 46: 548.27.
32. Wickens MM, Lenz JD, Cole RD\*, Parikh V., Briand LA. A sex-specific role for glutamate trafficking in reversal learning. **Society for Neuroscience Abstracts** 2016; 46: 80.09.
33. Sarter M, Koshy Cherian A, Parikh V., Valuskova P, Yegla B\*, Kucinski A. Sign-tracking as an index of poor cholinergic-attentional control extends to complex motor performance and is associated with attenuated choline transporter function. **Society for Neuroscience Abstracts** 2016; 46: 833.06.
34. Koshy Cherian A, Parikh V., Wu Q, Mao-Draayer Y, Blakely RD, Sarter M. Choline transport in peripheral lymphocytes as a proxy for brain cholinergic activity. **Society for Neuroscience Abstracts** 2016; 46: 833.16.
35. Parikh V., Cole RD\*, Ortega LA\*, Gould TJ. Nicotine dependence and deficits in cognitive flexibility: neurochemical circuit mechanisms. **16<sup>th</sup> International Conference on Monitoring Molecules in Neuroscience** 2016; Gothenburg, Sweden.
36. Cole RD\*, Parikh V. Temporal dissociation of activity-dependent alterations in prefrontal BDNF expression during decision-making shifts. **25<sup>th</sup> Annual International Behavioral Neuroscience Society Meeting** 2016, Budapest, Hungary.
37. Yegla B\*, Francesconi, J\*, Forde J\*, Parikh V. Age-related functional compensation to shifts in cholinergic and attentional capacity. **Eastern Psychological Association Meeting Abstracts** 2016, pp 45.
38. Parikh V., Cole R\*. Altered temporal patterns of prefrontal BDNF during decision making shifts. **Neuropsychopharmacology** 2015; 40: S232-S233.

39. Sarter M, Lustig C, Blakely RD, Koshy-Cherian A, Valuskova P, Parikh V, Kim Y, Tronson N, Ennis E. Super-cholinergic mice and humans: cholinergic-cognitive-affective resiliencies. **Neuropsychopharmacology** 2015; 40: S189-S190.
40. Yegla B\*, Francesconi JA\*, Forde J\*, Parikh V. Cholinergic contributions to PASA and functional compensation in rats. **Society for Neuroscience Abstracts** 2015, 45: 253.11.
41. Cole RD\*, Francesconi JA\*, Yu A, Parikh V. Age-related alterations in decision policy under conditions of uncertain strategy choices in mice. **Society for Neuroscience Abstracts** 2015, 45: 20.02.
42. Bangasser D, Wicks B, White K, Duncan N, Cohen S, Bergmann J, Yegla B\*, Cole R\*, Parikh V, Waxler D. Testing sustained attention in rats in touchscreen operant chambers. **Society for Neuroscience Abstracts** 2015, 45: 253.02.
43. Koshy Cherian A, Tronson NC, Parikh V, Blakely RD, Sarter M. Elevated brain cytokine levels associated with cognitive vulnerability of CHT +/- mice following repeated mild traumatic brain injury. **Society for Neuroscience Abstracts** 2015, 45: 625.06.
44. Yegla B\*, Francesconi J\*, Parikh V. Cholinergic contributions to PASA and cognitive compensation. **24<sup>th</sup> Annual International Behavioral Neuroscience Society Meeting** 2015, Victoria, British Columbia, Canada.
45. Cole, RD\*, Patel P J\*, Poole, RL, Gould, TJ, Parikh V (2015) Disrupted cognitive control during nicotine withdrawal: possible links to BDNF imbalance in the frontostriatal circuits. **Proceedings of the 21<sup>st</sup> Annual Society for Research on Nicotine and Tobacco Meeting**, 2015, Philadelphia, PA.
46. Yegla B\*, Francesconi, J\*, Parikh V. Cholinergic contributions to PASA and cognitive compensation. **Eastern Psychological Association Meeting Abstracts** 2015, pp 53.
47. Parikh V, Patel PJ\*, Poole RL, Cole RD\*, Gould TJ. Disrupted cognitive control during nicotine withdrawal: possible links to BDNF imbalance in the frontostriatal circuits. **Neuropsychopharmacology** 2014; 39: S486.
48. Bangasser DA, Kawasumi Y, Cole RD\*, Van Buskirk G, Parikh V. Corticotropin releasing factor (CRF) impairs sustained attention in male and female rats. **Neuropsychopharmacology** 2014; 39: S280-S281.
49. Yegla B\*, Kelbaugh A\*, Mookhtiar A\*, Parikh V. Prefrontal cholinergic overload and attentional capacities in aging. **Society for Neuroscience Abstracts** 2014; 44: 211.25.
50. Cole RD\*, Patel PJ\*, Osuagwu PN\*, Parikh V. Neuronal activity-dependent BDNF alterations in corticostriatal circuits during flexible decision-making. **Society for Neuroscience Abstracts** 2014; 44: 558.14.
51. Koshy Cherian A, Parikh V, Blakely RD, Sarter M. Repetitive mild traumatic brain injury in mice with a vulnerable cholinergic system: severe and lasting cholinergic-attentional impairments CHT +/- mice. **Society for Neuroscience Abstracts** 2014; 44: 522.12.

52. Kawasumi Y, Cole R\*, Van Buskirk G, Parikh V, Bangasser D. Corticotropin releasing factor (CRF) impairs sustained attention in male and female rats. **Society for Neuroscience Abstracts** 2014; 44: 644.06.
53. Morozov A, Rios M, McGinty J, Parikh V. BDNF modulation of neural circuits and behavior: new insights and translational implications. **47<sup>th</sup> Annual Winter Conference on Brain Research** 2014; Steamboat Springs, CO.
54. Yegla B\*, Pollock CJ\*, Turner DL, Parikh V. Life-long assessment of attentional capacities in rats with developmentally suppressed forebrain trkA receptors. **Society for Neuroscience Abstracts** 2013; 43: 770.12
55. Patel PJ\*, Naughton SX\*, Poole RL, Gould TJ, Parikh V. Impact of withdrawal from chronic nicotine on strategy set-shifting in C57BL/6J mice. **Society for Neuroscience Meeting Abstracts** 2013; 43: 91.08
56. Cole R\*, Poole RL, Guzman D\*, Braak DC, Gould TJ, Parikh V. Contribution of  $\alpha 4\beta 2^*$  nAChRs to chronic nicotine-induced alterations in cognitive flexibility. **Society for Neuroscience Abstracts** 2013; 43: 91.06
57. Naughton SX\*, Tracy B\*, Magan R\*, Yegla B\*, Parikh V. Discrimination learning and flexible cognitive control in BDNF heterozygous mice: effects of striatal dopamine depletion. **Society for Neuroscience Abstracts** 2012; 42:103.07
58. Ortega Murillo LA\*, Tracy BA\*, Guzman D\*, Gould TJ, Parikh V. Nicotine-induced alterations in cognitive flexibility and striatal BDNF expression. **Society for Neuroscience Abstracts** 2012; 42:103.03.
59. Yegla B\*, Zucco A\*, Turner DL, Parikh V. ProNGF blockade partially restores attentional capacities in trkA-silenced aged rats. **Society for Neuroscience Abstracts** 2012; 42:105.27.
60. Koshy Cherian A, Parikh V, Blakely RD, Sarter M. Elevated levels of cholinergic transmission in vivo in mice over-expressing the choline transporter. **Society for Neuroscience Abstracts** 2012; 42:536.12.
61. Parikh V, Yegla B\*, Zucco A\*, Turner DL. ProNGF blockade partially rescues attentional deficits in trkA-silenced aged rats. **AFAR Grantee Meeting** 2012; Santa Barbara, CA.
62. Parikh V, Bernard CS\*, Naughton SX\*. Oligomeric  $\beta$ -AMYLOID disrupts presynaptic cholinergic function. **Transactions of the American Society for Neurochemistry** 2012; 43: PSM10-06.
63. Bernard CS\*, Taylor KM\*, Naughton SX\*, Parikh V. Detrimental effects of soluble oligomeric forms of  $\beta$ -amyloid on presynaptic cholinergic activity and attentional performance. **Society for Neuroscience Abstracts** 2011; 41: 878.07.
64. Naughton SX\*, Shi X, Kelley LK, Rawls SM, Unterwald EM, Parikh V. Glutamatergic contributions to cocaine-induced neuroadaptations in dorsolateral striatum and behavioral sensitization. **Society for Neuroscience Abstracts** 2011; 41: 99.09.

65. D'Amore DE\*, Parikh KN\*, Tracy BA\*, Parikh V. BDNF signaling modulates striatal glutamatergic transmission and facilitates cognitive flexibility. **Society for Neuroscience Abstracts** 2011; 41: 512.07.
66. Taylor KM\*, Sarter M, Parikh V. Viability of  $\alpha 4\beta 2^*$  nAChRs as a target for treating the cognitive symptoms of schizophrenia in the presence of chronic nicotine and risperidone. **Society for Neuroscience Abstracts** 2011; 41: 681.05.
67. Parikh V., Howe WM\*, Welchko R, Naughton SX\*, Han D\*, D'Amore DE\*, Turner DL, Sarter M. Recombinant adeno-associated viral vectors expressing TrkA shRNA reveal functional vulnerability of the aging cholinergic system. **Society for Neuroscience Abstracts** 2011; 41: 55.14.
68. St. Peters MM\*, Taylor KM\*, Parikh V., Blakely RD, Sarter M. Choline transporter hemizygosity as a model of limited cholinergic and attentional capacities. **Society for Neuroscience Abstracts** 2011; 41: 197.01.
69. Parikh V., Naughton SX\*, Howe WM\*, Welchko R, D'Amore DE\*, Turner DL, Sarter M. Forebrain TrkA receptor silencing reveal functional vulnerability of the aging cholinergic system. **AFAR Grantee Meeting**, 2011; Santa Barbara, CA.
70. Gerhardt G, Parikh V., Hascup E. Hitchhiker's guide to the phasic brain. Subsecond measures of glutamate and acetylcholine neurotransmission. 44<sup>th</sup> **Annual Winter Conference on Brain Research** 2011; Keystone, CO.
71. Rehmann C\*, D'Amore DE\*, Naughton (Calkin) S\*, Parikh V. Acute effects of BDNF on striatal glutamatergic transmission: Is dopamine involved? **Society for Neuroscience Abstracts** 2010; 40: 548.13.
72. Parikh V., Howe WM\*, Welchko RM, D'Amore DE\*, Turner DL, Sarter M. Basal forebrain TrkA receptor knockdown produces attenuated cortical cholinergic transmission and enduring impairments in attentional performance. **Society for Neuroscience Abstracts** 2010; 40: 506.16.
73. Sarter M, Parikh V., Howe MW\*, Gritton H, Paolone G, Lee TM. Multiple time scales and variable spaces: synaptic neurotransmission in vivo. **13<sup>th</sup> International Conference on In Vivo Methods** 2010; Brussels, Belgium.
74. Parikh V., Welchko R, Cheema AA\*, Turner DL, Sarter M. Silencing of rat TrkA receptor expression using vector based RNAi: a novel tool to study trophic regulation of the developing and aging forebrain cholinergic system. **Society for Neuroscience Abstracts** 2009; 39: 831.10.
75. Sarter M, Cheema A\*, Young D, St. Peters M, Blakely RD, Parikh V. Molecular limits on cholinergic and cognitive capacities: exhausting intracellular choline transporter reserves. **Society for Neuroscience Abstracts** 2009; 39: 134.8.
76. Howe WM\*, Parikh V., Decker MW, Sarter M. Cognition enhancement by nAChR agonists: facilitation of cue detection based on augmented cholinergic transients in prefrontal cortex. **Society for Neuroscience Abstracts** 2009; 39: 873.20.

77. Ji J\*, Parikh V, Decker MW, Sarter M. Beta2- and alpha7-subunit containing nAChRs differentially control prefrontal cholinergic and glutamatergic signaling. **Society for Neuroscience Abstracts** 2009; 39: 873.24.
78. Paolone G, Ji J\*, Williams S, Howe MW\*, Ward J\*, Parikh V, Sarter M. Effects of the selective alpha 7 nAChR agonist ABT-107 on prefrontal glutamatergic and cholinergic activity and attentional performance. **Society for Neuroscience Abstracts** 2009; 39: 227.5.
79. Wescott SA, Gritton H, Parikh V, Bruno JP, Sarter M. Nicotine-evoked recruitment of prefrontal, signal detection-mediating mechanisms, are attenuated in the neonatal ventral hippocampal lesion model of schizophrenia. **Society for Neuroscience Abstracts** 2009; 39: 839.12.
80. Parikh V, Young D, Cheema A\*, Blakely RD, Sarter M. A model of cognitive dysfunction: constrained demands on cholinergic transmission and attentional capacities in CHT +/- mice. **Journal of Neurochemistry** 2009; 108(Suppl 1):71-72.
81. Parikh V, Sarter M. New approaches toward the preclinical screening of cognition enhancers: Modulation of cognition-evoked alterations in synaptic neurotransmission. **International Journal of Neuropsychopharmacology** 2008; 11:78.
82. Parikh V, Young D, Cheema A\*, Blakely RD, Sarter M. Molecular constraints on attentional capacities: failure to sustain cortical acetylcholine release and attentional performance by CHT +/- mice. **Society for Neuroscience Abstracts** 2008; 38: 134.2.
83. Ji J\*, Parikh V, Decker MW, Sarter M. nAChR agonist-evoked glutamatergic and cholinergic transients in the prefrontal cortex of mice lacking the beta2- or alpha7-nAChR receptor subunit. **Society for Neuroscience Abstracts** 2008; 38: 290.19.
84. Howe WM\*, Parikh V, Giuliano C\*, Gritton H, Ward J\*, Sarter M. Prefrontal cholinergic transients indicating cue detection as a target for cognition enhancers. **Society for Neuroscience Abstracts** 2008; 38: 388.26.
85. Sarter M, Howe M, Parikh V. Cholinergic transients mediating signal detection and processing mode shifts. Monitoring Molecules in Neuroscience. **12<sup>th</sup> International Conference on *In Vivo* Methods** 2008 Vancouver, Canada.
86. Parikh V. New approaches toward the preclinical screening of cognition enhancers: Modulation of cognition-evoked alterations in synaptic transmission. **26<sup>th</sup> CINP Meeting** 2008, Munich, Germany.
87. Sarter M, Parikh V, Man K\*, Decker MW. Glutamatergic mediation of the "Cholinergic footprints" evoked by nicotine and the cognition enhancer ABT-089, an alpha 4 beta 2 nAChR-selective partial agonist. **Biochemical Pharmacology** 2007; 74: SMA23-SMA24.
88. Parikh V, Blakely RD, Sarter M. A model of cholinergic dysfunction: failure to maintain elevated levels of cortical cholinergic neurotransmission in mice with a heterozygous deletion of the choline transporter gene. **Society for Neuroscience Abstracts** 2007; 37: 579.19.



89. Giuliano C\*, Parikh V, Chiamulera C, Sarter M. Measuring cholinergic neurotransmission with enzyme-selective microelectrodes: effects of differential coating combinations and neuropharmacological implications. **Society for Neuroscience Abstracts** 2007; 37: 144.1.
90. Howe M\*, Parikh V, Martinez V, Sarter M. Prefrontal cholinergic switching from associational processing to cue detection: evidence from sub-second measures of prefrontal cholinergic neurotransmission, using choline-sensitive microelectrodes, in animals performing an operant sustained attention task. **Society for Neuroscience Abstracts** 2007; 37: 741.8.
91. Sarter M, Parikh V, Kozak R, Martinez V. Prefrontal acetylcholine release controls cue detection on multiple time scales. **Society for Neuroscience Abstracts** 2007; 37: 741.15.
92. Man K\*, Parikh V, Decker MW, Sarter M. Differential prefrontal "cholinergic footprints" evoked by the nicotine and the cognition enhancer ABT-089, an  $\alpha_4\beta_2$  nAChR-selective ligand. **Society for Neuroscience Abstracts** 2007; 37: 746.12.
93. Parikh V, Kozak R, Martinez V, Sarter M. Phasic and tonic changes in cortical cholinergic neurotransmission evoked by attention-demanding cues and associated cognitive operations. **Society for Neuroscience Abstracts** 2006; 36: 369.14.
94. Man K\*, Parikh V, Decker MW, Sarter M. Differential cholinergic "footprints" evoked by nicotine and the  $\alpha_4\beta_2$ -selective partial agonist ABT-089 in prefrontal cortex. **Society for Neuroscience Abstracts** 2006; 36:163.7.
95. Parikh V, Apparsundaram S, Kozak R, Richards JB, Sarter M. Dysregulated choline transporter function in hyperdopaminergic mice. **25<sup>th</sup> Annual CINP Meeting** 2006 Chicago, IL.
96. Sarter M, Parikh V, Kozak R, Martinez V, Dagenbach E. New insights into the functions of cortical cholinergic inputs based on studies using microdialysis or enzyme-selective microelectrodes. Monitoring Molecules in Neuroscience. **11<sup>th</sup> International Conference on *In Vivo* Methods** 2006 Sardinia, Italy.
97. Parikh V, Sarter M. Regulation and function of cortical high-affinity choline transporters measured in vivo using choline-selective microelectrodes. **39<sup>th</sup> Annual Winter Conference on Brain Research** 2006 Steamboat Springs, CO.
98. Parikh V, Apparsundaram S, Richards JB, Sarter M. Choline transporter regulation in hyperdopaminergic mice. **Society for Neuroscience Abstracts** 2005; 35: 270.8.
99. M. Sarter, Parikh V, Martinez V, Kozak R. Phasic and tonic increases in cortical cholinergic neurotransmission in rats performing a conditioned appetitive response and detected by the amperometric measurement of extracellular choline. **Society for Neuroscience Abstracts** 2005; 35: 644.5.
100. Man K\*, Parikh V, Sarter M. Characterization and modulation of cortical high-affinity choline transporter function assessed in vivo. **Society for Neuroscience Abstracts** 2005; 35: 270.7.

101. Sarter M, Apparsundaram S, Parikh V, Connor JM, Dalley JW, Bentley P, Yu A. New insights into the cellular regulation and cognitive functions of the forebrain cholinergic neurotransmission. **Society for Neuroscience Abstracts** 2005; 35: 809.
102. Kozak R, Brown H, Parikh V, Martinez V, Bruno JP. What does acetylcholine do in the posterior parietal cortex (PPC)? Attentional performance-associated increases in PPC ACh efflux. **Society for Neuroscience Abstracts** 2005; 35: 644.1.
103. Martinez V, Parikh V, Sarter M. Sensitized attentional performance and fos-immunoreactive cholinergic neurons in the basal forebrain. **International Behavioral Neuroscience Society Meeting** 2005; 14: 51.
104. Apparsundaram S, Martinez V, Parikh V, Sali A, Bruno JP, Sarter M. Choline transporter regulation in cognition: attention performance-induced increases in maximal choline transporter velocity in the right, but not left, frontal cortex. **Society for Neuroscience Abstracts** 2004; 34: 949.7.
105. Martinez V, Parikh V, Swinney KA, Werner CE, Bruno JP, Sarter M. Repeated amphetamine exposure impairs attention performance and induces Fos-like immunoreactivity in the nucleus basalis of Meynert. **Society for Neuroscience Abstracts** 2004; 34: 780.2.
106. Parikh V, Johnson B, Pomerleau F, Huettl P, Gerhardt GA, Sarter M, Bruno JP. Amperometric measurement of extracellular choline: a method for the detection of rapid changes in cholinergic transmission. **Society for Neuroscience Abstracts** 2004; 34: 949.6.
107. Terry AV, Parikh V, Nasrallah H, Mahadik SP. Time dependent effects of haloperidol and ziprasidone on nerve growth factor, cholinergic neurons and spatial learning in rats. **Biological Psychiatry** 2004; 55:14S.
108. Terry AV, Hernandez CM, Hohnadel B, Parikh V, Mahadik S. Comparison of galantamine and donepezil for effects of nerve growth factor, cholinergic markers and behavioral performance in aged rats. **Society for Neuroscience Abstracts** 2003; 33: 681.15.
109. Parikh V, Khan MM, Brogdon S, Salat P, Buckley PF, Mahadik SP. Risperidone prevented and restored the haloperidol-induced reduction in expression of nerve growth factor and choline-acetyltransferase in basal forebrain-cortical projections in rat. **43<sup>rd</sup> Annual New Clinical Drug Evaluation (NCDEU) Meeting** 2003, Session I-106, 130.
110. Nasrallah HA, Mahadik SP, Parikh V. Effects of chronic exposure with ziprasidone versus haloperidol on nerve growth factor levels and choline-acetyltransferase immunoreactivity in rats: A controlled study. **156<sup>th</sup> Annual Meeting of the American Psychiatric Association** 2003, San Francisco, CA.
111. Parikh V, Khan MM, Buckley PF. Differential effects of antipsychotics on antioxidant enzymes and membrane lipid peroxidation in rat brain. **156<sup>th</sup> Annual Meeting of the American Psychiatric Association** 2003, San Francisco, CA.
112. Terry AV, Parikh V, Mahadik SP. Differential effects of haloperidol and risperidone on nerve growth factor, cholinergic neurons and spatial learning in rats. **Schizophrenia Research** 2003; 60:117.

113. Parikh V, Terry AV, Mahadik SP. Modulation of brain nerve growth factor and choline-acetyltransferase expression by chronic exposure to haloperidol, risperidone and olanzapine in rats. **Schizophrenia Research** 2003; 60:113.
114. Evans DR, Parikh V, Khan MM, Buckley PF, Mahadik SP. Nerve growth factor in never-medicated first episode psychotic and medicated-schizophrenic patients: possible implications for treatment outcome. **Schizophrenia Research** 2003; 60:99.
115. Evans D, Khan MM, Parikh V, Coussons C, Brogdon S, Buckley PF, Mahadik SP. Membrane essential polyunsaturated fatty acid metabolism in first episode of psychosis and after treatment with antipsychotics. **Biological Psychiatry** 2003; 53:180S.
116. Mahadik SP, Khan MM, Parikh V. Atypical antipsychotics trigger neuronal remodeling in adult rat brain. **Biological Psychiatry** 2003; 53:109S.
117. Parikh V, Khan MM, Salat P, Kalla A, Mahadik SP. Effects of risperidone, olanzapine and clozapine vs. haloperidol on nerve growth factor and cholinergic activity in rat brain. **Biological Psychiatry** 2003; 53:26S.
118. Khan MM, Parikh V, Mahadik SP. Risperidone but not haloperidol enhanced olfactory GABAaminergic neuroplasticity in rat. **Biological Psychiatry** 2003; 53:142S.
119. Khan MM, Parikh V, Salat P, Mahadik SP. Risperidone but not haloperidol triggers neurogenesis in the subventricular zone and migration to the olfactory bulb in rats: possible implications for improved olfaction. **Schizophrenia Research** 2003; 60:109.
120. Khan MM, Parikh V, Salat P, Mahadik SP. Risperidone but not haloperidol triggers neurogenesis in the subventricular zone and migration to the olfactory bulb in rats: possible implications for improved olfaction. **Biological Psychiatry** 2003; 53:87S.
121. Khan MM, Parikh V, Mahadik SP. Prevention and restoration of haloperidol-induced reduction of apolipoprotein D by risperidone or clozapine paralleled the GABAaminergic changes in rat brain. **Biological Psychiatry** 2003; 53:88S.
122. Mahadik S, Parikh V, Khan MM, Salat P, Kalla A, Buckley F. Risperidone prevents and restore haloperidol-induced oxidative stress mediated brain injury **Biological Psychiatry** 2003; 53:44S.
123. Mahadik S, Parikh V, Khan MM, Salat P, Kalla A, Buckley F. Risperidone prevents and restore haloperidol-induced oxidative stress mediated brain injury **Schizophrenia Research** 2003; 60:112.
124. Khan MM, Parikh V, Salat P, Mahadik SP. Risperidone but not haloperidol triggers neurogenesis in the subventricular zone and migration to the olfactory bulb in rats: possible implications for improved olfaction. **Proceedings of the 41<sup>st</sup> American College of Neuropsychopharmacology (ACNP) Meeting** 2002; p 101.
125. Parikh V, Terry AV, Mahadik SP. Antipsychotics differentially affect the expression of growth factors in rat brain. **Society for Neuroscience Abstracts** 2002; 32: 893.10.

126. Mahadik SP, Parikh V, Khan MM, Buckley PF. Differential effects of antipsychotics on nerve growth factor in rat brain. **42<sup>nd</sup> Annual New Clinical Drug Evaluation (NCDEU) Meeting** 2002; Session II-8.
127. Khan MM, Evans DR, Parikh VV, Harrison S, Chiu F, Buckley PF, Mahadik SP. Elevated levels of apolipoprotein D (Apo D) in never-medicated first-episode psychotic patients and medicated schizophrenic patients. **Biological Psychiatry** 2002; 51:116S.
128. Khan MM, Parikh VV, Mahadik SP. Effects of chronic exposure of antipsychotics on apolipoprotein D in rat brain. **Biological Psychiatry** 2002; 51:168S.
129. Parikh VV, Khan MM, White JR, Buckley PF, Mahadik SP. Atypical antipsychotics such as risperidone and clozapine do not induce the oxidative stress and the lipid peroxidation similar to haloperidol in rats. **Biological Psychiatry** 2002; 51:184S.
130. Salat P, Parikh V, Udawadia BP. Protective effect of progesterone in strychnine induced convulsions: Possible involvement of its neuroactive steroid metabolite. **Indian Journal of Pharmacology** 2000; 32:128.
131. Singh M, Parikh V. Role of nitric oxide and cardiac mast cells in cardioprotective effect of endotoxin-induced myocardial preconditioning. **Naunyn-Schmiedeberg's Archives of Pharmacology** 1998; 358(1):P36115.
132. Parikh V, and Singh M. Role of nitric oxide in the protective effect of endotoxin induced myocardial preconditioning. **Indian Journal of Pharmacology** 1998; 30: 112-113.
133. Parikh V, Singh M. Degranulation of resident cardiac mast cells as a possible target for cardioprotective effect of ischaemic preconditioning. **Proceedings of the 84<sup>th</sup> Annual Meeting of the Indian Science Congress Association**, New Delhi, 1997; p 51.
134. Parikh V, Singh M. Degranulation of resident cardiac mast cells as a possible target for cardioprotective effect of ischaemic preconditioning. **Indian Journal of Pharmacology** 1997; 29:25.
135. Parikh V, Singh M. Role of resident cardiac mast cells in the cardioprotective effect of ischaemic preconditioning. **Indian Journal of Pharmacology** 1996; 28:42.

### **Invited Talks/Presentations, Colloquia and Seminars**

- Neural underpinnings of resilience and vulnerability in cognitive aging. International Expert Lecture, Nirma University, Ahmedabad, India (2021).
- Neurochemical circuit mechanisms underlying cognitive inflexibility in nicotine dependence. 27<sup>th</sup> Annual International Behavioral Neuroscience Society Meeting, Boca Raton, FL (2018).
- Neurobiological underpinnings of cognitive resilience and vulnerability in aging and pathological aging. Annual American Federation for Aging Research Meeting, Santa Barbara, CA (2018)

- Neurobiological underpinnings of cognitive resilience and vulnerability in aging and pathological aging. Annual American Federation for Aging Research Meeting, Santa Barbara, CA (2017)
- Cognitive inflexibility during nicotine withdrawal: possible links to frontostriatal BDNF signaling. 50<sup>th</sup> Annual Winter Conference on Brain Research, Panel: Emerging insights into the cellular and cognitive substrates of nicotine addiction, Big Sky, MT (2017)
- Emerging insights into the cellular and behavioral substrates of nicotine dependence. All India Institute of Medical Sciences, New Delhi, India (2017)
- Emerging insights into the Cellular and Behavioral Substrates of Nicotine Dependence. Delhi Pharmaceutical Sciences and Research University, New Delhi, India (2017)
- Neural mechanisms of cognitive resilience and vulnerability in aging and pathological aging. Annual American Federation for Aging Research Meeting, Santa Barbara, CA (2016)
- Neural mechanisms of vulnerability and resilience in cognitive aging. Iowa State University, Ames, IA (2015)
- Understanding resilience to age-related decline in cognitive capacities: a systems neuroscience approach. Annual New Investigator Award in AD Meeting, Santa Barbara, CA (2015)
- Altered cognitive control following chronic nicotine exposure: receptor mechanisms and beyond. Center for Neurobiology and Behavior, University of Pennsylvania, Philadelphia, PA (2014)
- Disrupted cognitive control during nicotine withdrawal: possible links to BDNF imbalance in the frontostriatal circuits. 53<sup>rd</sup> ACNP Meeting, Phoenix, AZ (2014).
- Aging cholinergic system and attention: trophic regulation and compensatory changes. Department of Psychology, Villanova University, Villanova, PA (2014)
- Striatal BDNF modulation of flexible cognitive control. 47<sup>th</sup> Winter Conference on Brain Research, Panel: BDNF modulation of neural circuits and behavior: new insights and translational implications, Steamboat Springs, CO (2014)
- Trophic regulation of aging cholinergic system and cognition. Department of Psychology, University of Delaware, Newark, DE (2013)
- ProNGF blockade partially rescues attentional deficits in trkA-silenced aged rats. American Federation for Aging Research Annual Meeting, Santa Barbara, CA (2012)
- Striatal BDNF and flexible cognitive control: implications for psychiatric disorders. University of Pennsylvania School of Medicine, Stress Neurobiology Seminar Series, Philadelphia, PA (2012)
- Forebrain trkA receptor silencing reveal functional vulnerability of the aging cholinergic system. American Federation for Aging Research Annual Meeting, Santa Barbara, CA (2011)

- Regulation and cognitive functions of phasic cholinergic transmission. Winter Conference of Brain Research, Panel: Hitchhiker's guide to the phasic brain: sub-second measures of glutamate and acetylcholine neurotransmission, Keystone, CO, (2011)
- Cholinergic-glutamatergic interactions in space and time: new insights and functional implications. Center for Substance Abuse Research, Temple University School of Medicine, Philadelphia, PA (2010)
- Molecular basis of cholinergic mediation of attention: focus on CHTs. Neuroscience Colloquium; Temple University, Philadelphia, PA, (2009)
- A model of cognitive dysfunction: constrained demands on cholinergic transmission and attentional capacities in CHT +/- mice. 40<sup>th</sup> American Society for Neurochemistry Meeting, Session: Aging and Neurodegenerative Disorders, Charleston, SC (2009)
- Brain circuits mediating attention: focus on prefrontal cholinergic transients and nicotinic receptors. School of Medicine and Biomedical Sciences, SUNY, Buffalo, NY (2009)
- Glutamatergic contributions to nicotinic modulation of phasic cholinergic transients and attention: implications for neuropsychiatric disorders. Department of Psychiatry, University of Alabama School of Medicine, Birmingham, AL (2008)
- Multiple cholinergic signaling modes and cue detection: implications for psychiatric disorders. Department of Psychiatry, Yale University School of Medicine, CT (2008)
- New approaches toward the preclinical screening of cognition enhancers: Modulation of cognition-evoked alterations in synaptic transmission. 26<sup>th</sup> Annual CINP Meeting, Interactive Scientific Symposium: Preclinical detection and characterization of cognition enhancers: New targets, research approaches and challenges, Munich, Germany (2008).
- Multiple cholinergic signaling modes and cue detection: implications for psychiatric disorders. Department of Pharmacology, University of Tennessee College of Medicine, Memphis, TN (2008)
- Dual modes of cortical cholinergic transmission for signal detection and attention. Medical University of South Carolina, Charleston, SC (2008)
- Phasic and tonic modes of cortical cholinergic transmission and cognition: new insights and translational implications. University of Georgia, Athens, GA (2008)
- Phasic and tonic cholinergic signaling modes and attention. Department of Psychology University of Colorado, Boulder, CO (2008).
- Phasic and tonic modes of cortical cholinergic transmission and cognition: new insights and translational implications. Department of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX (2008)
- Prefrontal acetylcholine operates on multiple time scales to control cue detection. Department of Physiology and Pharmacology, Saint Louis University School of Medicine, St. Louis, MO (2007)

- Neurochemical mediation of attention: contributions of phasic and tonic increases in prefrontal cholinergic activity. Department of Psychiatry, Maryland School of Medicine, Baltimore, MD, (2007)
- Prefrontal acetylcholine operates on multiple time scales to control cue detection. University of Missouri, Kansas City, MO (2007)
- Prefrontal acetylcholine operates on multiple time scales to control cue detection. Department of Pharmacology and Toxicology, School of Pharmacy, University of Kansas, Lawrence, KS, (2007).
- Dysregulated choline transporter function in hyperdopaminergic mice. 25<sup>th</sup> Annual CINP Meeting, Chicago, IL (2006).
- Regulation and function of cortical high-affinity choline transporters measured in vivo using choline-sensitive microelectrodes. 39<sup>th</sup> Annual Winter Conference of Brain Research, Steamboat Springs, CO (2006)
- New insights into the regulation of cholinergic transmission based on real-time detection of choline spikes. Society for Neuroscience Meeting, Minisymposium: New insights into the cellular regulation and cognitive functions of forebrain cholinergic neurotransmission, Washington, DC, (2005)
- Choline transporters, cholinergic transmission and cognition. Biopsychology Colloquium, University of Michigan, Ann Arbor, MI (2005)
- Modulation of brain nerve growth factor and choline-acetyl transferase expression by chronic exposure to haloperidol, risperidone and olanzapine in rats. International Congress of Schizophrenia Research, Colorado Springs, CO (2003)
- Atypical antipsychotics and neuroprotection. Department of Psychology, Ohio State University, Columbus, OH (2003)
- Differential modulation of growth factors by antipsychotic exposure in rat brain. Institute of Molecular Medicine and Genetics, Medical College of Georgia, Augusta, GA (2003)
- Neuropharmacology of ionotropic and metabotropic glutamate receptors. Department of Pharmaceutical Sciences, MS University, Baroda, India (2000)

### **Funding/Grant Support**

- 1) National Science Foundation (#1929829) Bangasser (PI) 03/01/20-02/28/25  
Sex differences in corticotropin releasing factor regulation of the septohippocampal memory circuit  
Role: Co-PI
- 2) National Institute of Health (R01DA045063-01) Sarter (PI) 09/15/18-06/30/23  
Addiction liability, poor attentional control, and cholinergic deficiency.  
Role: Subcontract PI
- 3) National Institute of Health (3R01AT010778-02S1) Ward (PI) 09/01/2020-08/31/2021

Analgesic efficacy of single and combined minor cannabinoids and terpenes (Alzheimer's-focused administrative supplement)

Role: Co-I

- 4) PA Department of Health (#4100077087) Bangasser (PI) 07/01/2017-06/30/2018  
Chronic stress regulation of attention circuits  
Role: Co-I
- 5) National Institute of Health (1R21AG046580-01) Parikh (PI) 09/01/15-05/31/18  
Cholinergic overload and resilience to attentional capacities in aging.
- 6) National Institute of Health (1R03DA037421-01) Parikh (PI) 03/15/15-02/28/18  
Cognitive control and corticostriatal BDNF signaling during nicotine withdrawal.  
Role: PI
- 7) National Institute of Health (1R01MH086530-01A1) Sarter (PI) 07/09/2010-02/28/2016  
Choline transporter capacity limits motivated behavior in mice, rats, and humans.  
Role: Subcontract PI
- 8) Brain and Behavior Research Foundation (NARSAD) Parikh (PI) 07/15/2011-07/14/2014  
Functional interactions between BDNF and glutamatergic signaling in fronto-striatal circuits.
- 9) PA Department of Health (#4100050909) Parikh (PI) 01/01/2011-12/31/2013  
Role of dorsostriatal glutamatergic signaling in the regulation of cocaine-induced synaptic and behavioral plasticity.
- 10) American Federation for Aging Research Parikh (PI) 07/01/2010-06/30/2012  
Interactions between trkA signaling and APP processing in aging: impact on forebrain cholinergic circuits and cognition.
- 11) National Institute of Health (1R03AG029592-01A2) Parikh (PI) 09/01/2008-08/31/2011  
Cholinergic and cognitive decline in response to trkA knockdown using RNAi
- 12) National Institute of Health (1R01MH080332-01A1) Sarter (PI) 07/01/2007-06/30/2012  
Nicotinic regulation of cortical ACh release and behavioral function.  
Role: Co-I
- 13) National Institute of Health (1R21MH080426) Sarter (PI) 09/01/2007-08/31/2009  
*In vivo* screening of cholinergic cognition enhancers  
Role: Co-I

### **Professional Affiliations**

2017 – Present: Associate Member, American College of Neuropsychopharmacology

2008 – Present: Member, Molecular and Cellular Cognition Society

2006 – Present: Member, American Society for Neurochemistry

2006 – Present: Member, International College of Neuropsychopharmacology

2005 – Present: Member, International Behavioral Neuroscience Society



2004 – Present: Member, Society for Neuroscience  
1995 – 1998: Member, Indian Pharmacological Society  
1996 – 1997: Member, Indian Science Congress Association

### **Editorial/Reviewing Activities**

#### **Associate Editor:**

2018 - present: Frontiers in Integrative Neuroscience

#### **Editorial Board Member**

2010 – present: European Journal of Neuroscience  
2014 – 2016: Annals of Neuroscience and Psychology  
2008 – 2018: Frontiers in Integrative Neuroscience

#### **Ad hoc Journal Reviewer:**

Aging, Analytical Chemistry, Behavioral Brain Research, Biological Psychiatry, BMC Neuroscience, Brain Research, Brain Research Bulletin, Brain Structure and Function, British Journal of Pharmacology, Cerebral Cortex, Experimental and Clinical Psychopharmacology, European Journal of Neuroscience, European Neuropsychopharmacology, Frontiers in Neuroscience, Journal of Neuroscience, Journal of Neuroscience Methods, Journal of Neuroscience Research, Life Science, Journal of Physiology (Paris), Naunyn-Schmeideberg's Archives of Pharmacology, Neurobiology of Aging, Neurobiology of Stress, Neurochemistry International, Neurochemical Research, Neuropharmacology, Neuropsychologia, Neuropsychopharmacology, Neuroscience, Nicotine and Tobacco Research, Pharmacology Biochemistry and Behavior, PLoS One, Prostaglandins Leukotrienes & Essential Fatty Acids, Psychiatry Research, Psychopharmacology, Science, Synapse, Translational Psychiatry

#### **Book Reviewer:**

2017: Neurobiology of Learning and Memory,  
2014: Learning and Memory: From Molecules to Behavior, Worth Publishers

#### **Ad hoc Grant Reviewer:**

2020: Member, NIH Special Emphasis Panel, (2021/01 ZRG1 BBBP-T-02-M)  
2019: Member, NIH Study Section, ZAT1 AJT (12)  
2019: CUNY Research Foundation Program  
2016: Member, NIH Special Emphasis Panel (ZRG1 IFCN-T-02-M)  
2015: Member, NIH Special Emphasis Panel (ZRG1-IFCN-T-02-M)  
2015: Biotechnology and Biological Sciences Research Council (UK)  
2013-2014: Michael J. Fox Foundation  
2011-2014: Alzheimer's Association International Research Grant Program  
2009- 2011: Netherlands Organization for Scientific Research

### **Department/University Service**

2020-present Member, SWOT Working Group, Department of Psychology  
2020-present Member, Space Committee, Department of Psychology  
2019-present Member, Temple University, Pre-professional Health Evaluation Committee  
2019-present Member, Undergraduate Neuroscience Committee, Department of Psychology

|              |  |
|--------------|--|
| 2017-present | Member, Temple University Institutional Animal Care and Use Committee (IACUC)                |
| 2020-2021    | Member, Research and Service Awards Committee, CLA   |
| 2019-2020    | Member, Faculty Search Committee, Clinical Area, Department of Psychology                    |
| 2014-2020    | Member, Students Award Committee, Department of Psychology                                   |
| 2017-2019    | Member, Operations Committee, Department of Psychology                                       |
| 2016-2019    | Member, Graduate Committee, Department of Psychology   |
| 2016-2017    | Chair, Neuroscience Planning Committee, Department of Psychology                             |
| 2014-2016    | Member, Search Committee, Behavioral Neuroscience faculty position, Department of Psychology |
| 2010-2015    | Faculty Mentor, Minority Access to Research Career Program, Temple University                |
| 2012-2015    | Member, Alumni Committee, Department of Psychology   |
| 2011-2014    | Member, Diversity Committee, Department of Psychology  |
| 2011-2013    | Member, Undergraduate Committee, Department of Psychology                                    |
| 2010-2011    | Member, Colloquium Committee, Department of Psychology                                       |

### **Doctoral Committee Service**

#### **Department of Psychology**

Jamileyn Samper, B.A., Dissertation Committee Member

Thesis: TBD

Samantha Eck, B.A., Dissertation Examination Committee

Thesis: Impact of early life adversity on reproductive behaviors and the sexually dimorphic nucleus of the preoptic area.

Michael Duggan, Ph.D., Dissertation Advisory Chair

Thesis: The Role of HIV Proteins in Mediating Neuronal Mechanisms Implicated in Age-Related Cognitive Dysfunction; awarded 2020

Megan Wickens, B.A., Dissertation Committee Member

Thesis: Deletion of glutamate receptor trafficking proteins in the medial prefrontal cortex and their sex-specific effects on cocaine addiction; awarded 2020

Chicora Oliver, Ph.D., Dissertation Examination Committee Chair

Thesis: Chemokine modulation of MDPV-induced behavior and neuroplasticity; awarded 2018

Kim Wierselis, Ph.D., Dissertation Committee Member

Thesis: Corticotropin release factor in the medial septum and its effects on cognition; awarded 2018

Kylie Hower, Ph.D., Dissertation Committee Member

Thesis: Hippocampal representations of targeted memory reactivation and reactivated temporal Sequences; awarded 2017

Gail Rosenbaum, Ph.D., Dissertation Committee Member

Thesis: The influences of information acquisition and heightened arousal on adolescent risk; awarded 2017

Robert D. Cole, Ph.D., Dissertation Advisory Chair

Thesis: Nicotine withdrawal and deficits in cognitive flexibility: Possible ties to aberrations in frontostriatal BDNF signaling, awarded 2017

Brittney Yegla, Ph.D., Dissertation Advisory Chair

Thesis: The forebrain cholinergic system and age-related decline in and compensation of attentional capacities; awarded 2016

David Conner, Ph.D., Dissertation Committee Member

Thesis: Acute nicotine-dependent alterations in associative learning interfere with backwards trace conditioned safety; awarded 2016

Erica Holliday, Ph.D., Dissertation Committee Member

Thesis: Storm, stress and nicotine: Exploring the interactive effects of adolescent stress and adolescent nicotine on the development of long term nicotine effects, awarded 2015.

Rachel Poole, Ph.D., Dissertation Examination Committee Chair

Thesis: An examination of the effects of chronic caffeine and withdrawal from chronic caffeine on fear conditioning in pre-adolescent, adolescent and adult C57BL/6J mice; awarded 2014.

Prescott Leach, Ph.D. Dissertation Committee Member

Thesis: Nicotine modulation of thyroid hormone signaling and its contribution to cognition; awarded 2013

Derek Wilkinson, Ph.D., Dissertation Committee Member

Thesis: Examination of tolerance to the cognitive enhancing effect of nicotine on contextual conditioning; awarded 2012

John Kennard, Ph.D., Dissertation Examination Committee Chair

Thesis: Age sensitivity of the Barnes Maze and the Morris Water Maze: Associations with cerebellar cortical Purkinje neurons; awarded 2012

Michael Tobia, Ph.D., Dissertation Examination Committee Co-Chair

Thesis: The effects of concurrent timed-interval finger tapping on trace eyeblink conditioning in college students; awarded 2010

Justin Kenney, Ph.D., Dissertation Committee Member

Thesis: Nicotine and learning interact to alter transcription factor activity at the c-jun N-terminal kinase 1 gene promoter in the hippocampus; awarded 2010

### **Department of Pharmacology, Lewis Katz School of Medicine**

Yash B. Joshi, Ph.D., Dissertation Committee Member

Thesis: The role of 5-lipoxygenase in the stress-mediated exacerbation of the Alzheimer's disease phenotype, awarded 2015

Phillip F. Giannopoulos, Ph.D., Dissertation Committee Member

Thesis: The role of 5-lipoxygenase in the development of tau-neuropathology and behavioral phenotype, awarded 2015

### **Other Professional Service**

2019-present Member, Education and Training Committee, ACNP

2021 Poster Session Judge, Annual Philadelphia Chapter SFN Meeting, Philadelphia, PA

2020 Co-Moderator, Roundtable Discussion – How to get your paper published, ACNP Meeting

2018 Symposium Chair, IBNS Meeting, Boca Raton, FL

2018 Poster Session Judge, Annual IBNS Meeting, Boca Raton, FL

2017 Chair, Scientific Panel, Winter Conference on Brain Research, Big Sky, MT

2017 International Doctoral Thesis Examiner (Vishnu Thakare: Nirma University, India)

2017 International Doctoral Thesis Examiner (P Rajamalar: Bharathiyar University, India)

2016-2018 Faculty Advisor, Cure Alliance for Mental Illness (Temple Chapter)

2014 Chair, Scientific Panel, Winter Conference on Brain Research, Steamboat Springs, CO

2014 Advisory Committee (New Horizons in Pharmacy and Pharmacology, Indian Pharmacological Society, North Zone Meeting)

- 2014            Doctoral Dissertation External Examiner (Kevin Snyder: University of Pennsylvania)
- 2012-2013      Doctoral Dissertation External Examiner (Nizam Ali Khan: Gautam Buddha Technical University, India)
- 2008            Chair, Interactive Scientific Symposium, 26<sup>th</sup> CINP Meeting, Munich, Germany
- 2000            Member, Local Organizing Committee, International Symposium on Molecular Biology, Allergy and Immunology, Vadodara, India
- 1996            Member, Local Organizing Committee, Indian Science Congress Association, Patiala, India
- 1995            Member, Local Organizing Committee, Indian Pharmacological Society, Patiala, India

### **Teaching Activities (Fall 2009 - current)**

Cellular Neuroscience (NSCI 2122)  
 Collaborative Research in Psychology I & II (PSY 3791 & 3891)  
 Independent Study in Neuroscience I & II (NSCI 4281 & 4282)  
 Neurobiology of Learning and Memory (PSY 3566)  
 Neurochemistry (NSCI 5002)  
 Psychopharmacology (PSY 3561)  
 Readings in Neuroscience (NSCI 9381)  
 Techniques in Neuroscience (NSCI 3087)  
 Topical Seminar in Cognitive Psychology (PSY 8310)  
 Writing-Intensive Capstone in Neuroscience (NSCI 4187)

### **Students Awards (selected)**

- Miranda Targum (undergraduate)  
 - Liberal Arts Undergraduate Research Award (2021)
- Evan Haley (undergraduate)  
 - Temple University Creative Arts and Research Grant (2020)
- Michael Duggan (graduate)  
 - Travel Scholarship from NIA, Workshop on Research Definitions for Resilience and Resilience in Cognitive Aging and Dementia (2019)
- Evelynn Harrington (graduate)  
 - 2<sup>nd</sup> Prize for Best Poster, Philadelphia Chapter for the Society for Neuroscience (2018)
- Robert D. Cole (graduate)  
 - Travel Fellowship, Winter Conference on Brain Research (2017)  
 - Temple University Dissertation Completion Grant (2017)  
 - American Psychological Association Dissertation Research Award (2016)  
 - Graduate Travel Award, International Behavioral Neuroscience Society (2016)  
 - Thomas E. Shipley Jr. Research Prize in Psychology (2016)
- Brittney Yegla (graduate)  
 - Temple University Dissertation Completion Grant (2016)
- Evan Haley (undergraduate)  
 - Temple University Creative Arts, Research, and Scholarship Award (2020)
- Tara Peterson (undergraduate)  
 - Temple University Creative Arts and Research Travel Award (2019)
- Tara-Jade Francois (undergraduate)

- Liberal Arts Undergraduate Research Award (2018)
- Zoe Steinberg (undergraduate)
- Liberal Arts Undergraduate Research Award (2017)
- Matty Zimmerman (undergraduate)
- Best Poster Award, Thomas Jefferson University Sigma Xi Research Day (2017)
  - Temple University Creative Arts and Research Scholarship Project Grant (2017)
  - Temple University Creative Arts and Research Travel Award (2013)
- Jasmine Forde (undergraduate)
- Diamond Research Scholarship (2016)
  - Psychology Department Service Recognition Award (2016)
- Jennifer Ann Francesconi (undergraduate)
- Temple University Creative Arts and Research Scholarship Project Grant (2014)
  - Psi Chi Undergraduate Research Grant
- Purav (Jay) Patel (undergraduate)
- Temple University Creative Arts and Research Travel Award (2013)
- Sean X. Naughton (undergraduate)
- Temple University Creative Arts and Research Scholarship Project Grant (2014)
  - Temple University Creative Arts and Research Travel Award (2013)

### **Former undergraduate advisees (2009 – onwards)**

2019-2021: Evan Haley, B.S. (University of California, Davis)  
 2018-2019: Kevin Cordova, B.S. (High School Counselor)  
 2017-2019: Tara Peterson, B.S. (AvroBio Inc.)  
 2017-2019: Tara-Jade Francois, B.S. (Temple University)  
 2017-2019: Jane Gaisinsky, B.S. (University of Pennsylvania School of Medicine)  
 2017-2018: Meghna Bhattacharya, B.S. (Cooper Medical School of Rowan University)  
 2016-2018: Zoe Steinberg, B.S. (University of Pennsylvania School of Medicine)  
 2015-2017: Cassandra Wolsh, B.S. (University of Texas at San Antonio)  
 2014-2017: Matty Zimmerman, B.S. (Thomas Jefferson University)  
 2014-2016: Asal Matchanova, B.A. (University of Houston)  
 2014-2016: Jasmine Forde, B.S. (University of Pennsylvania)  
 2014-2016: Roslyn DeVassey, B.S.  
 2014-2016: Jennifer Ann Francesconi, B.A. (Rutgers University)  
 2013-2014: Patrick Osuagwu, B.A. (University of the Sciences, Philadelphia)  
 2013-2014: Adnan Mookhtiyar, B.S. (University of Miami School of Medicine)  
 2013-2014: Aubrey Kelbaugh (Temple University)  
 2012-2014: Purav Patel, B.S. (University of Wisconsin)  
 2012-2013: Cameron Pollock, M.Ph. (Maryland Department of Health)  
 2011-2013: Dawn Guzman, B.S. (University of Texas at Austin)  
 2010-2013: Sean Naughton, B.S. (Georgia Regents University)  
 2011-2012: Rashi Magan, B.S. (First Hospital Commonwealth Health)  
 2011-2012: Avery Zucco, Ph.D. (Wistar Institute)  
 2010-2012: Carcha Bernard, B.S., PA-C (Licensed Medical Professional)  
 2009-2012: Kevin Taylor, B.S. (Tegra Analytics)  
 2010-2012: Brittany Tracy, B.S.  
 2010-2011: Khushali Parikh, B.A.  
 2009-2010: Cheryl Rehmann, B.A.

### **Former Master's/doctoral students, post-doc fellows and research staff supervised (2009 – onwards)**

2016-2021: Michael R. Duggan, Ph.D. (National Institute on Aging)  
2018-2020: Irem Asci, M.S. (Temple University, College of Engineering)  
2016-2018: Jacon Strupp , M.S. (Bilateral Tech, Inc.)  
2016-2018: Evelynn Harrington, M.S. (University of South Carolina School of Medicine)  
2015-2017: Surbhi Joshi, B.S. (Wistar Institute)  
2012-2017: Robert D. Cole, Ph.D. (Medical University of South Carolina)  
2015-2016: Munir Gunes Kutlu, Ph.D. (Vanderbilt University School of Medicine)  
2011-2016: Brittney Yegla , Ph.D.(Supernus Pharmaceuticals Inc)  
2011-2012: Leonardo Ortega, Ph.D. (Universidad Autónoma de Bucaramanga, Colombia)  
2009-2012: Drew D'Amore, M.A. (The College of New Jersey)

### **Research Highlights / Media Coverage (selected)**

- Recognized as a world expert in Acetylcholine by *Expertscape* (June 2019)  
<http://www.expertscape.com/au/acetylcholine/Parikh%2C+V>
- Research highlighted on the cover page of *Neuroscience* (March 2014 issue)  
<http://www.sciencedirect.com/science/journal/03064522/261>
- Ground breaking research featured in *Global Medical Discovery* [ISSN 1929-8536] (February 2013)  
<https://globalmedicaldiscovery.com/key-scientific-articles/diminished-trka-receptor-signaling-reveals-cholinergic-attentional-vulnerability-of-aging/>
- Interview on pathbreaking research in aging; EJM blog (February, 2013)  
<http://www.ejmnews.org/tag/vinay-parikh>
- Paying attention with the latest technology; commentary by Parastu Hashemi and R. Mark Wightman in *Neuron* (Cell Press), 2007  
[http://www.cell.com/neuron/abstract/S0896-6273\(07\)00721-0](http://www.cell.com/neuron/abstract/S0896-6273(07)00721-0)