BIOGRAPHICAL SKETCH

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NAME: Desai, Rajeev Indrajit

eRA COMMONS USER NAME (credential, e.g., agency login): RDESAI

POSITION TITLE: Assistant Professor of Psychiatry, Harvard Medical School
Director, Integrative Neurochemistry Laboratory, McLean Hospital

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Nottingham, Nottingham, UK	B.S.C	07/1995	Neuroscience
University of Birmingham, Birmingham, UK	Ph.D	12/2001	Psychology/Behavioral Pharmacology
National Institute on Drug Abuse/NIH, Baltimore, MD	Research Fellow	11/2005	Psychobiology/ Medications Discovery

A. Personal Statement

My research program focuses on delineating how environmental factors (e.g., stressors, pharmaceuticals) alter brain neurochemical signatures to impact behavior and, based on that understanding, develop new treatment strategies that may nullify their harmful effects. My laboratory uses integrated neurochemical and behavioral techniques in mice, rats, and nonhuman primates to identify the relationship between changes in brain neurochemistry and behavior after acute and chronic exposure to pharmacological stressors (e.g., drugs of abuse) and their co-morbidity with psychiatric diseases. I have pursued these research interests as part of my NIDA/NIH, industrial, and NASA funded research. Recently, I have successfully developed a new approach that combines *in vivo* microdialysis with liquid chromatography mass spectrometry (LC-MS) to analyze dialysate samples collected from brain regions in freely moving mice and rats. This has permitted a within-subject *in vivo* real-time monitoring of environmental stressor-induced changes in multiple neurochemicals (e.g., monoamines, amino acids) in dialysate samples collected from targeted brain regions involved in cognition. I have recently used this approach to study how acute and chronic exposure to pharmacological and spaceflight stressor (space radiation) alters neurochemical signatures to impact complex behavior/cognition.

B. Positions and Honors

Employment

1998-2000 Clinical Scientist, Queen Elizabeth Psychiatric Hospital, Birmingham, UK
2003-2005 Research Fellow, Medications Discovery Research Branch, NIDA/NIH, Baltimore, MD
2006-2009 Instructor of Psychobiology, Dept. of Psychiatry, Harvard Medical School, Boston, MA
2006-2009 Assistant Psychobiologist, McLean Hospital, Belmont, MA
2010- Assistant Professor of Psychiatry, Dept. of Psychiatry, Harvard Medical School, Boston, MA
2010- Associate Psychobiologist, McLean Hospital, Belmont, MA
2018- Associate Professor, Center for Drug Discovery, Northeastern Univ., Boston, MA
2020- Assistant Professor of Psychiatry (Affiliate), Division of Sleep Medicine, Harvard Medical School, Boston, MA
2021- Director, Integrative Neurochemistry Laboratory, McLean Hospital, Belmont, MA

Other Honors, Experience, and Professional Memberships

1998 British Psychological Society Post-graduate Study Abroad Visit Scheme 1998
2001, 2003 European Behavioural Pharmacology Society Travel Award

2003, 2004	Behavioral Pharmacology Division of ASPET Post-Doctoral Paper Award
2012-2013	Program Committee: Society for Research on Nicotine and Tobacco
2015	Ad hoc reviewer, CSR, NIH, BRLE Study Section
2018	Ad hoc reviewer, CSR, NIH, Special Emphasis Panel/SRG 2018/05 ZRG1 BBBP-Y (02) M, Biobehavioral Applications on Substance Abuse and Decision-Making
2019	Ad hoc reviewer, CSR, NIH, Special Emphasis Panel/SRG 2019/01 ZRG1 BBBP-Y (02) Member Conflicts and PAR Biobehavioral Applications in Ethology and Substance Abuse
2020	Chair, Circuits and Biomarkers of the CNS Relating to Astronaut Performance Workshop: Integrated Biomarker and Signaling-Pathway Approaches for Understanding Operational Performance

C. Selected Peer-reviewed Publications (most relevant to the pending application)

1) Puhl MD, **Desai RI (co-first author)**, Takagi S, Presti KT, Doyle MR, Donahue RJ, Landino SM, Bergman J, Carlezon WA Jr, Coyle JT. N-Methyl-d-aspartate receptor co-agonist availability affects behavioral and neurochemical responses to cocaine: insights into comorbid schizophrenia and substance abuse. Addict Biol. 2017 Nov 23. doi: 10.1111/adb.12577. [Epub ahead of print]. PMID: 29168271.
2) Fischer KD, Huston ACW, **Desai RI**, Doyle MR, Bergman J, Mian M, Mannix R, Sulzer DL, Choi SJ, Mosharov EV, Hodgson NW, Bechtholt A, Miczek KA, Rosenberg PA. Behavioral phenotyping and dopamine dynamics in mice with conditional deletion of the glutamate transporter GLT-1 in neurons: resistance to the acute locomotor effects of amphetamine. Psychopharmacology (Berl). 2018, 235:1371-1387.PMID: 29468294.
3) **Desai RI**, Paronis CA, Martin J, Desai R, Bergman J. Monoaminergic psychomotor stimulants: discriminative-stimulus effects and dopamine efflux. J Pharmacol Exp Ther 2010, 333(3):834-843. PMID: 20190012
4) **Desai RI**, Kopajtic TA, French D, Newman AH, Katz JL. Relationship between *in vivo* occupancy at the dopamine transporter and behavioral effects of cocaine, GBR 12909 [1-{2-[bis-(4-fluorophenyl) methoxy]ethyl}-4-(3-phenylpropyl)piperazine], and benztropine analogs. J Pharmacol Exp Ther 2005; 315(1):397-404. PMID: 16014753
5) **Desai RI**, Bergman J. Drug discrimination in methamphetamine-trained rats: effects of cholinergic nicotinic compounds. J Pharmacol Exp Ther 2010, 335(3):807-816. PMID: 20847037
6) **Desai RI**, Grandy DK, Lupica CR, Katz JL. Pharmacological characterization of a dopamine transporter ligand that functions as a cocaine antagonist. J Pharmacol Exp Ther. 2014 Jan;348(1):106-15. PMID: 24194528
7) Slezak JM, **Desai RI**, Katz JL. Further delineation between typical and atypical dopamine uptake inhibitors: effects on food-maintained behavior and food consumption. Behav Pharmacol. 2017 Feb;28(1):74-82. PMID: 27926573
8) **Desai RI**, Kopajtic TA, Koffarnus M, Newman AH, Katz JL. Identification of a dopamine transporter ligand that blocks the stimulant effects of cocaine. J Neurosci 2005; 25(8):1889-1893. PMID: 15728828
9) **Desai RI,** Sullivan KA, Kohut SJ, Bergman J. Influence of experimental history on nicotine self-administration in squirrel monkeys. Psychopharmacology (Berl). 2016b, Jun;233(12):2253-63. PMID: 27040402
10) **Desai RI**, Bergman J. Effects of the nanoparticle-based vaccine, SEL-068, on nicotine discrimination in squirrel monkeys. Neuropsychopharmacology. 2015, 40(9):2207-2216. PMCID: PMC4613610
11) Robble MA, Holloway IL, Ridener E, Webber CJ, Caine SB, Meloni EG, **Desai RI**, Carlezon WA. Differential Effects of Nicotine and Nicotine Withdrawal on Fear Conditioning in Male Rats. Int J Neuropsychopharmacol. 2020 Jul 29;23(7):469-479. PMCID: PMC7387768.

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/pubmed/?term=desai+ri
https://connects.catalyst.harvard.edu/Profiles/display/Person/58067