Project Title:	Cognitive mechanisms underlying addiction

Project Number   **HSS0766**

Monash Main Supervisor (Name, Email Id, Phone)	Prof. Murat Yucel murat.yucel@monash.edu	*Full name, Email*
Monash Co-supervisor(s) (Name, Email Id, Phone)	Naomi Kakoschke Naomi.kakoschke@monash.edu Lucy Albertella lucy.albertella@monash.edu	
Monash Head of Dept/Centre (Name,Email)	Professor Kim Cornish psych.hos@monash.edu	*Full name, email*
Monash Department:	School of Psychological Sciences, MONASH University	
Monash ADRT (Name,Email)		*Full name, email*
IITB Main Supervisor (Name, Email Id, Phone)	Prof. Rashmi Gupta r.gupta@iitb.ac.in	*Full name, Email*
IITB Co-supervisor(s) (Name, Email Id, Phone)		*Full name, Email*
IITB Head of Dept (Name, Email, Phone)	Prof. Pushpa Trivedi trivedi@hss.iitb.ac.in	*Full name, email*
IITB Department:	Humanities and Social Sciences	

Research Clusters:		Research Themes:	
Highlight which of the Academy's CLUSTERS this project will address? *(Please nominate JUST __one.__ For more information, see www.iitbmonash.org)*		**Highlight which of the Academy's Theme(s) this project will address?** *(Feel free to nominate more than one. For more information, see www.iitbmonash.org)*	
1	*Material Science/Engineering (including Nano, Metallurgy)*	*1*	*Advanced computational engineering, simulation and manufacture*
2	*Energy, Green Chem, Chemistry, Catalysis, Reaction Eng*	2	
3	*Math, CFD, Modelling, Manufacturing*	3	*Infrastructure Engineering*
4		4	*Clean Energy*
5	*CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control*	5	*Water*
6	*Earth Sciences and Civil Engineering (Geo, Water, Climate)*	6	*Nanotechnology*
7	*Bio, Stem Cells, Bio Chem, Pharma, Food*	7	*Biotechnology and Stem Cell Research*
8		8	==*Humanities and social sciences*==
	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng HSS, Design, Management		Design

The research problem

Define the problem

"Attentional capture by valuable but task-irrelevant stimuli could also confer adaptive advantages in many circumstances, leading the perceiver to orient to inconspicuous and/or unexpected reward-related stimuli. At the same time, however, attentional capture by reward-related stimuli (e.g., drugs of abuse, excessive food, or even irrelevant but rewarding information like an e-mail chime) can be maladaptive when it conflicts with contextually appropriate goals (e.g., intended abstinence from a drug or food)" (Andersin et al., 2011, p. 1). According to World Health Organization, substance abuse and obesity is a major worldwide health concern. The processing of reward-related stimuli is directly relevant to some of India's and Australian's biggest societal and health problems, most notably drug addiction, obesity and problem gambling. Examination of the neurocognitive mechanisms underlying drug-related stimuli under different attentional loads in drug abusers will contribute to the understanding the mechanisms underlying attentional biases for drug-related stimuli in drug abusers, and this will be valuable for doctors and psychiatrists hoping to develop the better intervention program for their patients.

Project aims

Define the aims of the project

To study the role of attention in the processing of drug-related stimuli in drug abusers and their neural correlates.

Expected outcomes

Highlight the expected outcomes of the project

1. The project will produce several outcomes regarding the development of theoretical framework and intervention program for health and mental problems, capacity building, knowledge transfer, training of students in cognitive neuroscience and scientific publications, etc.

2. The present project will be highly helpful to understand the cognitive-neural mechanisms underlying the pathology of drug-abusers, which will help to develop better intervention program of these disorders.

3. The present project will be helpful to develop a neurocognitive theoretical model of drug-abusers.

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.
The proposed research is highly interdisciplinary and sits at the disciplines of the humanities and social sciences and intersection of Neuroscience, Cognitive and health Psychology. The project has important clinical applications for the assessment and treatment of conditions such as drug abuse and obesity.

Capabilities and Degrees Required

Students who have completed a Master program in Cognitive/Behavioural Sciences or related disciplines including Psychology, Neuroscience, Sciences, Engineering (e.g., Computer Science, Electronics & Communication, Electrical Engineering), are eligible to apply for admission to the Doctoral Program. Applicants familiar with the knowledge of eye-tracker, EEG/ERP/fMRI/TMS and/or cognitive/ neuropsychology/ would be encouraged.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.
Antonio Verdejo-Garcia, School of Psychological Sciences and the Monash Institute of Cognitive and Clinical Neurosciences (MICCN), MONASH University
Prof. Nilli Lavie, Institute of Cognitive Neuroscience, University College London, UK
Prof. Jane E. Raymond, Birmingham University, UK
Prof. Steven B. Most, School of Psychology, University of New South Wales, Australia
Prof. Mike Le Pelley, School of Psychology, University of New South Wales, Australia

Select up to **(4)** keywords from the Academy's approved keyword list **(available at http://www.iitbmonash.org/becoming-a-research-supervisor/)** relating to this project to make it easier for the students to apply.

Attention, emotion, motivation, reward and punishment processing, perceptual load, drug-abuse, obesity, addiction