ICMR-International Travel Support for Non-ICMR Scientists

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- **Name & Designation** : Dr. Deepika Bagga, SRF
- **Address** : NMR Research Centre, INMAS, DRDO, Timarpur, Delhi
- **Name of the International Conference/ Seminar/Symposium/ Workshop** : 12th International Conference on Cognitive Neuroscience 2014
- **Title of the abstract accepted** : Metabolic aberrations in fronto-parietal brain regions in recently detoxified alcohol dependent individuals: contribution to impaired abstract reasoning abilities.
- **Venue & Date** : Brisbane, Australia, 27-31st July, 2014.
- **Money sanctioned** : ₹ 82,789/-
- **Money reimbursed** : ₹ 89,632/- **(Due to hike the fare of air travel an additional ₹ 6,873/- were sanctioned)**

Participation Report

12th International Conference on Cognitive Neuroscience (ICON) 2014 was hosted by Australian Cognitive Neuroscience Society (ACNS) at Brisbane, Australia. The ICON 2014 brought together researchers from diverse backgrounds, all with a focus on the relationships between the brain, mind, and behaviour. ICON had exciting speaking programme with nine Keynote Speakers and over 90 presenters all over the world in the symposium programme covering a broad range of topics in Cognitive Neuroscience. Around 600 people attended this meeting. The conference was divided into morning and evening sessions, each for 3 hours /day and topics related to fMRI, DTI, EEG and MEG were discussed in detail.

- **Academic highlights of the training/ workshop**

New developments presented at training/workshop

At ICON 2014, I presented the MR spectroscopy studies on alcohol use disorders. The research was based on previous literature on impaired cognitive abilities. I focused on abstract reasoning abilities and considering this a co relational study (psychological testing and in vivo spectroscopy) was performed with an aim to explore the structural functional relationship. We suggested that impaired reasoning abilities might be in part due to altered metabolism in the brain regions governing these domains. These results would help in a better insight to the brain damage caused by alcohol abuse and would add to the rehabilitation planning and management.

New developments resulting from training/workshop

ICON 2014 was focused on the scientific study of the biological or brain foundations of mental processes and behaviour. Researchers from disciplines such as psychology, neuroscience, cognitive science, psychiatry, neurology, linguistics, computer science, and philosophy, all with an interest in the relationships between the brain, mind, and behavior presented their work at ICON 2014.Various new methodologies focusing on studying the functional brain were discussed at the conference during different sessions. Techniques such as EEG,MEG and trans stimulation methods and their implementation to study various neurodegenerative and neuro developmental disorders were discussed. These techniques are beneficial because of their noninvasiveness and the new post processing techniques would help in saving our time due to their efficient processing modules. These studies will help me in future to plan my research project.The keynote speakers discussed the significance of resting state fMRI studies in mind disorders. Also, mind time wandering, ERP studies and time based gaming studies were a topic of discussion.Overall, ICON shed a light on new development techniques that would help in a better understanding of brain structure and function.

Participant's contribution to the training

With more than half of all alcohol drinkers in India falling into the criteria for hazardous drinking, alcohol abuse is emerging as a major public-health problem not in our country but globally as well. My research work is focused on Neuroimaging studies on alcohol abuse to look for the impaired cognitive domains. At ICON 2014, I presented one of such study,which was aimed at exploring the impaired metabolic ratios which underlie the impaired cognitive abilities in abstract reasoning domain. These studies provide significant insight into the nature of brain damage by alcohol abuse and integration of these results will spur further advances in the diagnosis and treatment of alcohol related damage.