



Academy of the Social Sciences in Australia

The Academy of the Social Sciences in Australia, in conjunction with The University of Queensland, is pleased to present the 2013 Paul Bourke Lecture:

Training the Multitasking Brain

Dr Paul E. Dux, The University of Queensland

Despite the immense processing power of the human brain, severe 'bottlenecks' of information processing are revealed when individuals attempt to perform two, even simple, tasks concurrently – that is, multitasking. Under such conditions, performance of one or both tasks is impaired relative to when the tasks are performed in isolation. This performance impairment is exacerbated as humans age and in many psychiatric and neurological conditions. It is thus vital to understand how these multitasking limitations arise and how they can be alleviated. It has previously been shown that multitasking limitations can be drastically reduced with cognitive training. However, the neural basis for these training effects has not been elucidated.

In this lecture Dr. Dux will present behavioural, brain imaging and brain stimulation data which shows that a network of frontal brain regions (including posterior lateral prefrontal cortex, superior medial frontal cortex, and bilateral insula) is associated with capacity limits in perception and decision making. He will also provide evidence that training can reduce multitasking impairments by increasing the processing efficiency of the posterior lateral prefrontal cortex rather than by funnelling information away from this bottleneck region.

Dr Paul E. Dux is a cognitive neuroscientist who trained in both Australia and the US. Since 2009 he has been faculty in the School of Psychology at The University of Queensland, where he is currently an ARC Future Fellow. Dr Dux leads a group that uses cutting edge techniques (e.g., brain stimulation and imaging) to understand the cognitive and neural underpinnings of human information-processing capacity limitations in both health and disease.



One particular focus of Dr Dux's research is the efficacy of cognitive training and how it changes the brain to improve performance. Understanding the failures of perception and decision-making that occur when individuals multitask and how these limitations can be alleviated is a related area of interest. Dr Dux has published widely on these topics, has received several early career research awards and has attracted four competitive research grants from the ARC and NHMRC totaling over \$2 million worth of funding.

Dr Paul E. Dux was the 2012 recipient of the Academy of the Social Sciences in Australia's **Paul Bourke Award for Early Career Research**. The award honours the late Professor Paul Bourke (1938-1999), a past President of the Academy.

EVENT DETAILS

Date: Tuesday 23 April 2013

Time: 6pm - 8pm, with light refreshments from 7pm

Venue: Level 7 Auditorium, QBI Building (#79), UQ St. Lucia Campus

View map, parking and Public transport arrangements at:

<http://www.uq.edu.au/maps/directions.html?menu=1>

FREE ADMISSION, RSVP by cob Friday, 19 April 2013

Email: assa.secretariat@anu.edu.au

Phone: 02 62491788



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AUSTRALIA

Professor Peter Høj, Vice-Chancellor, on behalf of The University of Queensland and Professor Debbie Terry, President, Academy of the Social Sciences in Australia, cordially invite guests to stay for refreshments at the conclusion of the lecture.

PAUL BOURKE LECTURE