



# CCRN News

Centre for Clinical Research in Neuropsychiatry

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## CCRN in San Diego: Honouring the work of Barbara Fish



L-R: Professor Assen Jablensky, Dr Barbara Fish and Dr Vera Morgan

Among the highlights of the **International Congress on Schizophrenia Research** (ICOSR) in San Diego 28 March – 1 April 2009 were the presentation of the ICOSR Service Award to Dr Barbara Fish, and a symposium held in her honour.

In 1952, Dr Fish began the formal, prospective study of high-risk children of mothers with schizophrenia and in 1957, she published her first paper ('The detection of schizophrenia in infancy') describing abnormal neuromotor development in these high-risk infants. Her work on 'pandysmaturation' lay the ground for the formulation of the neurodevelopmental hypothesis of schizophrenia in the late 1980s, a hypothesis which continues to exert a powerful influence on our understanding of the origins of schizophrenia.

Two CCRN staff (**Dr Vera Morgan** and **Professor Assen Jablensky**) were involved in the symposium. The symposium, chaired by Dr Morgan, reflected on Dr Fish's pioneering contribution to schizophrenia research, with a concluding presentation by Professor Jablensky on 'The future for high risk research'. Appropriately, the audience was reminded of a much earlier symposium on high risk research, organised in Moscow in the early 1980s by Professor Jablensky (then working with WHO) and where Dr Fish was a keynote speaker.

Other CCRN conference highlights included Dr Morgan's presentation on 'Environmental and familial determinants of adverse neuropsychiatric outcomes in high-risk children of mothers with schizophrenia and other psychoses', and the presentation by **Dr Flavie Waters** on 'Clinical and functional correlates of first-rank (passivity) symptoms in patients with first-episode psychosis'.



Department of Health

### CCRN Staff

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**Dr Johana Stefan**  
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**Dr Flavie Waters**  
NHMRC Research Fellow

## Seminars and Speakers at CCRN, February-April 2009

On Friday 6 February, CCRN Deputy Director **Professor Dieter Wildenauer** gave a UWA Psychiatry Research seminar presentation on **'Dissecting the molecular causes of schizophrenia using the "genetics" approach'**.

In 1996 Wildenauer began a collaborative project with the University of Indonesia, the University of Bonn and UWA, which examined 124 families in a linkage calculation using Genehunter, the genetic algorithm software. Genome wide significance for linkage was obtained on chromosome 3 (MLS=3.759), and weaker signals for regions on chromosomes 1, 5, and 10.

Questions concerning the genetics of schizophrenia are always ethically difficult. The lifetime risk in the general population is only 1%, but this risk increases to 13-17% among people with a first-degree relative with schizophrenia, and as high as 48% among monozygotic (identical) twins. If a person's profile indicates that they are at risk, how will they respond? It is important to remember that susceptibility genes do not indicate a definite outcome for the individual: they confer a relative risk only, which may make a modest contribution to the development of future acute illness.



On Friday 3 April, **Dr Adam Brett** gave a UWA Psychiatry Research seminar presentation on **'The kindling theory of arson'**.

Arson is a highly emotive subject; the media is anxious to present psychological profiles of typical arsonists. Yet a review of the literature on the subject shows some surprising gaps. In some studies, a lack of clinical involvement has meant missed opportunities for developing a fuller picture of deliberate fire-lighting. Arsonists are a heterogeneous group; a previous history of firelighting, substance abuse and an antisocial personality disorder are all predictors of repeat offending.

So how can clinicians identify, assess, and treat firefighters, and reduce the risks associated with their activities? Suggestions for research include data

linkage; analysis of bush versus domestic firelighting; a prospective study of firefighters; creating a database of psychological profiles; and intervention studies. It is possible to develop a structured clinical judgement tool as a pragmatic step towards improving the identification, in the clinical setting, of potential firefighters.



On Friday 6 March, **Professor Michael Maes** (left) gave a UWA Psychiatry Research seminar on **'The cytokine hypothesis of depression'**. Cytokines are small secreted proteins which mediate and regulate immunity and inflammation in the body. There are signs of CMI (cell-mediated immunity) activation in depression, with clinically measurable signs such as changes in iron metabolism, and in blood serum levels of zinc and fatty acids. These are all consistent with the body's response to inflammation. It is possible that peripheral immune system changes involving cytokines can induce depression-like symptoms. Unlike the conventional model which argues that low mood leads to physical malaise, the cytokine hypothesis argues that inflammation may be the trigger to a depressive episode. The characteristic symptoms of anhedonia, fatigue and sleep disorders may have a protective function for the body as a whole, as lowered activity will help the body to recover from physical illness.

On Friday 20 March, **Dr Andrew Whitehouse** (right) gave a presentation to CCRN staff on his current research using **functional transcranial doppler (fTCD) techniques to evaluate brain lateralisation**. Whitehouse has a background in autism research, and has collaborated in lateralisation studies with Dorothy Bishop in Oxford (see *CCRN News*, February 2009). In the past, there have been difficulties in measuring hemispheric visuo-spatial activity due to the unreliability of many of the tasks used in experimental settings. Whitehouse has recently developed a visuo-spatial task which seems to produce clearly measurable results indicating lateralisation of visuo-spatial activity. His current interests also include an exploration of the lateralisation of the anxiety response in human beings, based on a hypothesis of diminished right prefrontal cortex activity. This could be relevant for both generalised anxiety disorder and schizophrenia research.





**Carole Harrison** (left) has joined the Clinical Applications Unit (CAU) as their new Senior Research Nurse. Carole will be developing a cardiovascular diseases risk register for people with a serious mental illness.

**Avijit Bose** has taken up the position of Neurophysiology Technologist at CCRN, working with senior electrophysiologist Dr Greg Price on EEG data collection. Avijit will be following up on the rTMS clinical trial.



**Danielle Lowe** (right) has joined CCRN as the new Clinical Assessment Officer. Danielle has recently completed an Honours degree in psychology at UWA, and will be working on the Australian Schizophrenia Research Bank Project.



**Coleman Garrett** (below) has joined CCRN as a part-time Research Assistant until the end of 2009. Coleman is an American neurosciences research student who will be completing some units towards his degree in WA.

While at CCRN, Coleman will be participating in the Centre's program of schizophrenia research, working with Dr Johanna Badcock on intrusions in the RAVLT and possible semantic clusters in list words collected in testing.



CCRN's **Lisa Dawson** (left) has moved to the role of Research Officer. Lisa's former position of Clinical Assessment Officer is now filled by Danielle Lowe.



## Metabolic Syndrome Study

*Improving physical health outcomes for people with mental illnesses*

A team of local mental health researchers, including CCRN's **Dr Milan Dragovic** (pictured on page 4), have carried out the first Australian study to measure the prevalence of metabolic syndrome among people with a range of psychiatric disorders.

The project received considerable local media attention, featuring on the PerthNow website on 16 February, and the next day on the international website PsychCentral.

People with a mental illness may be at a higher risk of developing heart disease and diabetes, due to a medical condition known as Metabolic Syndrome. Metabolic syndrome, also known as "Met\_S" or "insulin resistance syndrome," is associated with obesity, high blood pressure and high cholesterol.

Just over 200 adults who attended the Armadale Mental Health Service were assessed for metabolic syndrome. The most common mental disorder represented was schizophrenia (45%). The incidence of Met\_S was found to be more than double that of the rest of the population (estimated to be around 25%). People with bipolar disorder ranked highest with rates of nearly 67%.

The increased prevalence of Met\_S may be due to factors such as poor diet and lack of exercise, as well as a possible link to some atypical antipsychotic drugs. According to the team's findings, published recently in the *Medical Journal of Australia*, "prevention, monitoring and treatment of cardiovascular disease risk factors should be considered a priority by those involved in the care of the people with major psychiatric disorders."

**PerthNow:** <http://www.news.com.au/perthnow/story/0,21598,25060140-5017008,00.html>

**PsychCentral:** <http://psychcentral.com/news/2009/02/17/mental-illness-and-metabolic-syndrome/4172.html>

Alexander P John, Radhakrishnan Koloth, Milan Dragovic and Stephen C B Lim (2009) Prevalence of metabolic syndrome among Australians with severe mental illness, *Medical Journal of Australia*, 190 (4): 176-179.

## Reduced lateralization in schizophrenia: CCRN study

A recently-published CCRN study has found evidence to support the 'reduced lateralization' hypothesis in schizophrenia.

Researchers **Flavie Waters, Johanna Badcock, Milan Dragovic and Assen Jablensky** (clockwise, right) conducted a broad investigation of neuropsychological functioning in people with schizophrenia who had first-rank (passivity) symptoms.

Using cognitive tests, the team carried out two parallel studies on three groups: people with schizophrenia who show first-rank symptoms (22 people), people with schizophrenia who do not show those symptoms (48 people), and also on a group of people without schizophrenia (131 people).

The results indicated that people with first rank symptoms showed reduced cerebral lateralization—the brain's tendency to allocate certain tasks to one or other hemisphere, or 'side' of the brain. There were no memory deficits or problems with executive function in people without first-rank symptoms.

These findings are important because they support the 'reduced lateralization' hypothesis of first-rank symptoms in schizophrenia. However, the research team also found that a generalized deficit is not an adequate explanation for the appearance of first-rank symptoms in a person with schizophrenia.



F Waters, J Badcock, M Dragovic, A Jablensky (2009) Neuropsychological functioning in schizophrenia patients with first-rank (passivity) symptoms. *Psychopathology*, 2009;42(1):47-58.

## News and Notes



**New students:** CCRN will be welcoming two more honours students, working on projects with **Professor Mathew Martin-Iverson** (Pharmacology, UWA).

**Jarrad Bothe** (left) will be examining the role of the protein RGS5 in schizophrenia. **Kyran Graham** (right) will be studying the effects of dexamphetamine administration on pre-pulse inhibition and time perception in healthy volunteers.

**Conferences:** CCRN staff will be presenting at the following forthcoming conferences:

### Annual meeting, Vision Sciences Society, Naples, Florida, May 2009

- Renata Almeida, E Dickinson, Murray Maybery, **Johanna Badcock** & David Badcock, 'A new step towards understanding Embedded Figures Test performance in the autism spectrum'.

### Australian Historical Association Conference, Sunshine Coast, 30 June-2 July 2009

- Philippa Martyr**, 'Taking Over The Asylum? Rewriting the history of Graylands Hospital, Perth'