

# Connecting the Hemispheres Initiative



Conference report  
10 – 12 July 2007

Supporting the strategic partnership between  
Monash University Neurosciences, Melbourne, Australia  
and The Institute of Neuroscience, Newcastle University, UK



**MONASH** University  
Medicine, Nursing and Health Sciences

**ION**  
The Institute of Neuroscience

# Background

In June 2005 Newcastle University (UK) and Monash University (Australia) signed a Memorandum of Understanding to establish close collaboration and cooperation on teaching, learning, research and community development. The two universities also signed an agreement to establish collaboration and cooperation in health science, particularly in regenerative medicine, stem cell sciences, healthy ageing, neurosciences, paediatric psychiatric illnesses, and developments in medical and health sciences education.

The Memorandum of Understanding supports:

- research collaboration in areas of mutual interest;
- joint teaching and the development of joint courses of study to be conducted in Australia, Britain and elsewhere;
- exchange of academic and teaching materials;
- exchange of scholars in the course of academic development;
- sponsorship of conferences, seminars, workshops and other academic meetings; and
- cooperation in institutional benchmarking exercises.

Following this agreement a number of senior academic staff from the Faculty of Medicine, Nursing and Health Sciences (Monash) undertook site visits to Newcastle. During these visits it became apparent that there existed some very strong mutual research interests, including healthy ageing/neurosciences and stem cells/regenerative medicine. These were considered the first targets to aim for in establishing meaningful collaboration.

In February 2006 a team of scientists from Monash met with a complimentary team from Newcastle at the Monash Prato Centre. The aim of this meeting was to look for and capture collaborative research and funding opportunities between the two universities. The meeting was very successful, particularly in the area of neuroscience, and a number of projects were identified. To progress this developing relationship between neuroscientists in the two universities, a two day conference was arranged for July 2007 when members of the Institute of Neuroscience in Newcastle ([www.ncl.ac.uk/ion](http://www.ncl.ac.uk/ion)) would be in Melbourne to attend the Congress of the International Brain Research Organisation. This bilateral conference was held under the title *Connecting the Hemispheres*.



(from left to right) Professor Colin Ingram, Senior Deputy Dean for Medicine, Professor Leon Piterman and Professor Anya Hurlbert

# Conference summary

The *Connecting the Hemispheres* conference was held on the 10 to 12 July 2007 and included 26 delegates from the Institute of Neuroscience and 26 delegates from Monash University, all working in the fields of neuroscience and mental health. Delegates included academics, postdoctoral and pre-doctoral researchers. The conference was designed to foster a strategic partnership between the two institutions, and the format enabled the groups to discuss areas of common and complimentary research and ways that these may be implemented. The conference comprised a one-and-a-half day retreat at Marysville with presentations and break out sessions, followed by a one day visit to the Monash Clayton campus and Alfred Hospital in order to visit research facilities and conduct more in-depth discussions. The Directors of the Institute of Neuroscience at Newcastle (Professors Hurlbert and Ingram) also had meetings with the Deputy Vice-Chancellor (research), Professor Edwina Cornish, the Senior Deputy Dean for Medicine, Professor Leon Piterman, and the Professor of Neurosciences, David Reutens. Further one-to-one meetings took place between delegates during the IBRO Congress.

# Post-conference actions

This report summarises potential areas of collaborative working which were discussed at the conference and in correspondence and research visits which have taken place in the period July to December 2007 (page 8). From the feedback provided by delegates initially six areas of potential research collaboration have been identified with which to progress the partnership. These span varied areas of research strength (pages 4 to 7). In addition, opportunities for exchanges involving undergraduate science teaching in areas associated with neuroscientists have been developed (pages 8 and 9). Overall this report illustrates the breadth of potential collaborations between Monash University and the Institute of Neuroscience at Newcastle.

In addition to the continuing programme of visits by researchers, a visit by Monash University Deputy Vice-Chancellor (research), Professor Edwina Cornish, to Newcastle on 20 July reinforced the inter-university cooperation, and the new Vice-Chancellor of Newcastle University, Professor Chris Brink, has visited Monash and met with the vice-chancellor and president, Professor Richard Larkins to reiterate the continuing commitment to the partnership.

# Implementation plan

This report sets the framework for an inter-university strategic research partnership in neuroscience and represents an important milestone in this process. Operating under the current agreement and MOU, the neuroscience communities in Monash and Newcastle will establish an Implementation Group with representation across both sites. From the information summarised in this report, it is clear that appropriate funding is the main obstacle to move this partnership forwards. Thus, whilst seed funding has been identified to initiate some projects, the main challenge for the Implementation Group will be to secure a more substantial level of support. Funding may come from the universities (and respective faculties), industry, government, philanthropic sources, and grant agencies. In January 2008 the Implementation Group will draw up a plan for project funding and a review of implementation will be conducted in December 2008 for submission to the respective faculties. A further bilateral conference (*Connecting the Hemispheres 2*) will be planned as part of the consideration of renewal of the universities MOU in 2010.



# Participants

## Conference organisers

### Monash

Dr James Bourne  
Professor Ian Smith  
Ms Mandy Curd (administration)

### Newcastle

Professor Anya Hurlbert  
Professor Colin Ingram  
Ms Umbereen Rafiq (administration)

## Institute of Neuroscience, Newcastle University, United Kingdom

Dr Christopher Adams  
Dr Mike Carroll  
Dr Mark Cunningham  
Ms Karen Fisher  
Dr Andrew Jackson  
Dr Hamish McAllister-Williams  
Dr Steven Middleton  
Ms Amy Reeve  
Dr Evelyne Sernagor  
Dr Demetris Soteropoulos  
Dr Quoc Vuong  
Ms Victoria Wing

Dr Mark Baker  
Mr Francois Chabrol  
Professor Nicol Ferrier  
Mr Daniel Haggerty  
Dr Fiona LeBeau  
Dr Richard McQuade  
Ms Fiona Randall  
Dr Anita Roopun  
Dr Mohammed Shoaib  
Professor Alexander Thiele  
Ms Elizabeth Williams  
Dr Claire Witham

## Monash University, Melbourne, Australia

Dr James Armitage  
Professor Iain Clarke  
Dr Adrian Dyer  
Professor Paul Fitzgerald  
Dr William Hart  
Dr Kate Hoy  
Ms Charlotte Keating  
Professor Brian Oldfield  
Associate Professor Helena Parkington  
Associate Professor Stephen Robinson  
Ms Bobbi Slattery  
Dr Sarah Spencer  
Ms Claire Warner  
Dr Andrew Milner – Neurosciences Victoria

Associate Professor Ben Canny  
Professor David Copolov  
Dr Peter Enticott  
Dr Caroline Gurvich  
Dr Belinda Henry  
Ms Juliane Kampe  
Dr Jerome Maller  
Professor Ishwar Parhar  
Dr David Reser  
Professor Marcello Rosa  
Dr Jeremy Smith  
Professor Julie Stout

# Conference program

Tuesday, 10 July 2007

9 am	Pick up from Monash University (outside faculty offices, building 64)
10 am	Pick up from city locations
12 pm	Welcome lunch and wine tasting at De Bortoli Winery (wine tasting – first session: 1:30 pm, second session 2 pm)
2:45 pm	Depart for Marysville
4 pm	Arrival at Kooringa Resort, Marysville
5:30 – 7 pm	<b>Introduction: all delegates (theatrette)</b> Opening address – James Bourne (including introduction to Melbourne)  <b>15 minute presentations:</b> Ian Smith            Monash technology platforms Anya Hurlbert        Institute of Neuroscience overview Colin Ingram         Newcastle Institute of Neuroscience Future directions and research initiatives Ishwar Parhar        Neuroscience: Monash Malaysia Andrew Milner        Neurosciences Victoria
7 pm	Dinner – Tulips Restaurant
8:30 – 11:30 pm	Mystic Lounge Bar



## Wednesday, 11 July 2007

7:30 – 9 am	<p>Breakfast – Tulips Restaurant</p> <p><b>Session one – theatrette</b>            Research themes:            15 minute presentations by representatives of major research themes at Monash and Newcastle – highlighting the expertise in the each institute and strengths and scope for collaboration.</p>
9 am	'Sensory neuroscience' (Monash) – Marcello Rosa
9:15 am	'Systems neuroscience: imaging and psychophysics' (IoN) – Alex Thiele
9:30 am	'Neural networks: electrophysiology and modelling' (IoN) – Fiona LeBeau
9:45 am	'Metabolic neuroscience' (Monash) – Iain Clarke
10 am	15 minute open discussion
10:15 am	Morning tea – Alpine Room
10:45 am	'Clinical imaging and cognitive' (Monash) – Paul Fitzgerald
11:00 am	'Psychobiology: Animal models and clinical studies' (IoN) – Hamish McAllister-Williams
11:15 am	'Motor and somatosensory function' (IoN) – Andrew Jackson
11:30 am	Open discussion – William Hart (facilitator)
12 – 1 pm	<p>Brainstorming lunch – Tulips Restaurant</p> <p>Identify areas of overlap of goals, techniques and research questions. Identify potential collaborators and collaborations. Newcastle and Monash to break out into groups by theme. Postgraduates and postdoctorates individually to choose between themed groups of unthemed young researchers group, which will consider generic questions of opportunities for young researchers.</p>
1 – 1:30 pm	<p><b>Session two – theatrette</b>            Confirm break-out and discussion groups and assign facilitators. Discuss requirement of outcomes.</p>
1:30pm – 3:30pm	<p>Break-out rooms (Summer Room, Autumn Room, Mystic Lounge Area, Fireplace Lounge)            Assigned groups with facilitator – brainstorming</p> <p>Facilitators: Ben Canny            William Hart            Andrew Milner            Ian Smith</p>
3:30 – 4 pm	Afternoon tea – Alpine Room
4 – 5 pm	<p><b>Session three – theatrette</b>            Summary of break-out sessions            10 minute oral presentations by facilitators</p> <p>Outcomes will be documented and formalised with a written report prepared and distributed to delegates, senior staff and Monash University and IoN.</p> <p>All delegates are to prepare a one-page bullet-point list of potential outcomes and/or ideas from the meeting. These will feed into the final outcomes document. Please email these to Dr James Bourne.</p>
5 – 5:30 pm	General discussion – The way forward
6:30 pm	<p>Formal dinner – Tulips Restaurant</p> <p>After dinner presentation by Professor George Fink (Director: Mental Health Research Institute, Melbourne)</p>
8:30 – 11:30 pm	Disco

Thursday, 12 July 2007

7:30 – 9 am	Breakfast – Tulips Restaurant
9 am	Depart Koorringa Resort to Clayton campus
11:30 am	Arrival at Monash, tea and coffee <b>Session four – building 25, theatre S2</b> Monash presentations
12 pm	Professor Edwina Cornish (DVC Research) / Professor Ian Smith (Associate Dean, Biotech)
12:15 pm	Professor Leon Piterman (Acting Dean: Faculty of Medicine, Nursing and Health Sciences)
12:30 pm	Professor James Whisstock (Senior Research Fellow: Department of Biochemistry)
12:45 pm	Final summary – Dr James Bourne
12:55 pm	Group photograph
1 pm – 2 pm	Lunch in foyer
2 pm – 3:30 pm	Visit to laboratories – meet with other members of the Faculty of Medicine, Nursing and Health Sciences
3:30 pm	Bus departs Monash for city locations

## Identified research strengths

Six areas have been identified as the basis for the initial partnership, which build on the unique strengths of the two institutions:

### 1. Sensory neuroscience (visual and auditory)

- (i) Visual processing in the honeybee brain
- (ii) Development of visual systems
- (iii) Effects of GABA on retinal development
- (iv) Anatomical connectivity data
- (v) Joint Monash-IoN laboratories for recording brain activity
- (vi) Automated behaviour analysis

### 2. Mental health

- (i) Development of Transcranial Magnetic Stimulation (TMS) technology
- (ii) TMS as a treatment and experimental tool
- (iii) PET ligands (see also research area 5)
- (iv) Neurotransmitter systems and adrenoreceptors
- (v) Interactions between neuroleptics and nicotine
- (vi) Evaluation of etomidate on nicotine self-administration
- (vii) Anxiolytic effects of oxytocin
- (viii) Newcastle Psychobiology Research Group and Monash Metabolic Neuroscience Group collaborations

### 3. Neuroplasticity following brain damage

- (i) Functional connectivity and cortical reorganisation following lesions
- (ii) Long term reversible inactivation of primary motor cortex using botulinum toxin

### 4. Primate neuroinformatics and tissue resources

- (i) Creating tools for an atlas of the connectivity in the marmoset brain
- (ii) Tissue and electronic communication exchange for development of the visual system

### 5. Generation of imaging ligands

### 6. Sharing of data and techniques

