

RECENT EVENTS

The 2011 BHRC Conference

The BHRC's fifth annual conference was held on 8th July at the Mercure Hotel. With an overall registration of 102 people and about 90 people attending all day it proved to be a very successful meeting.



Assoc. Prof. Michelle Glass (left) and Dr Barry Snow (right) speaking at the conference.

Our out-of-town invited speakers were Associate Professor Michelle Glass (University of Auckland) who presented a stimulating talk about targeting cannabinoid receptors to treat Huntington's disease and Dr Barry Snow (Auckland DHB) who provided a thorough review of the current state of Parkinson's medication and challenged us to find an old drug that might be used to treat Parkinson's disease.

The talks were outstanding! Eleven of the talks were from PIs, postdoctoral fellows and postgraduate students from within the Centre. Several speakers from outside the BHRC commented that they



Tea break at the conference, Jon Fox, Dr Jonathan Shemmell and Rebekah Scott.

were impressed with the standard of the science and the presentations. So, a huge thank-you to all of our speakers for doing such a fantastic job this year.

We would like to keep improving future conferences, therefore, please send us your feedback (jleichter@psy.otago.ac.nz) about this year's conference. If you have any speakers that you'd like to recommend for next year, potential venues, or a focus for one of the sessions for next year, please let us know.

We would like to acknowledge sponsorship from the Neurological Foundation of New Zealand and Roche for our conference.

Louise Parr-Brownlie and Margaret Ryan



Dr Margaret Ryan, Dr Lucia Schoderboeck and Dr Kathie Overeem at the conference.

BHRC Postgraduate Retreat

A retreat was held for Otago postgraduate neuroscience students at the Dunedin Public Art Gallery on April 27th, 2011. The BHRC-funded event was organised by Lisa Smith and Melissa Barry from the Department of Anatomy, Chris Roome from the Department of Physiology and Owen Jones from the Psychology Department. The aim of the retreat was to provide new and existing postgraduates with information about the BHRC and neuroscience at Otago, and to provide career advice for emerging neuroscientists. Several speakers from within the BHRC and the wider University gave presentations on topics ranging from writing grant applications to experiences of post-doc work. Students were

also invited to submit questions to a panel of BHRC members.

The event attracted almost 40 attendees and generated overwhelmingly positive feedback, with several students calling for the retreat to become a yearly event. Attendees enjoyed the relaxed atmosphere of the retreat and participated vigorously in question and answer sessions with presenters.



Round table questions from students were fielded by Dr Christine Jasoni, Dr Louise Parr-Brownlie and Professor Cliff Abraham at the Postgraduate Retreat.

The variety and relevance of talks offered was also praised, leaving organisers with the impression of a valuable and successful day. Thanks BHRC!

Owen Jones

Queen's Birthday Honours for Professor Warren Tate

Professor Warren Tate was named Companion of the New Zealand Order of Merit on Queen's Birthday. His honour citation noted that his research had "revolutionised understanding" of how proteins were synthesised in living cells. He was also recognised for



Conference speaker Dr Julia Horsfield, Professor Warren Tate and Dr Andrew Clarkson at the BHRC Conference.

inspiring young scientists.

It has been a very good year for Prof Tate, and his well deserved honours have provided him with the opportunity to speak to a wider audience about his research. This benefits all of the researchers at the BHRC.

Last Wednesday Prof Tate gave his 2011 Rutherford Lecture to a packed Hutton Theatre, *How to Make Life from the Primordial Soup, Why RNA is the key ingredient to human life* to an attentive and responsive audience.

Brain Bee Challenge, 2011

Keep an eye out for Connor Clemett, a 15 year old student at Riccarton High in Christchurch. As the individual winner of the 2011 Brain Bee Challenge, Connor may be sharing your lab space in the not too distant future. Thirteen high schools and 87 students competed in this year's Brain Bee Challenge, the third year in a row that Riccarton has won. Connor's team also won the team competition and were awarded a \$2000 microscope for their school. Dunedin's Kaikōrai Valley High School came third.



Competitors psyching themselves up for a day of neuroscience questions.



Tour guide Owen Jones takes students through Professor Cliff Abraham's lab.

Connor will go on to compete in the Australasian final on the Gold Coast in January 2012 and if successful could compete at the International Brain Bee in the USA. Many thanks to Professor Stephen Bunn who ran the Brain Bee and to Chew-Ling Tan who coordinated the neuro student volunteers Prasanta Nayak, Rachel Cheong, Simon de Croft, Marc Matas, Danielle Tranter, YanFeng Zhang, Caine Smith, Simon Fisher, and Greig Joilin. Thanks, also, to those of you who opened up your labs to our future neuroscientists on the day.



Professor Stephen Bunn, Education Officer Sandra Copeland and Professor Cliff Abraham deciding on the winner.



The winning team from Riccarton High with our fabulous neuroscientist volunteers. Overall individual winner, Connor Clemett, is in white. Photos by Chew-Ling Tan.

The BHRC Clinical Issues Seminar Dr John Mottershead: *Multiple Sclerosis*

The BHRC held our first Clinical Issues Seminar on the 25th of May at Dunedin Hospital. The purpose of these seminars is to encourage more dialogue between researchers and clinicians working on the same neurological disorders.

The seminar was well attended by clinicians and BHRC folk, and by the looks of it, we will need more time for questions and answers at the next one.



Dr Graeme Hammond-Tooke, Dr John Mottershead, Assoc Prof John Reynolds and Dr Nick Cutfield following our first Clinical Issues Seminar.

One step closer to new equipment

The Equipment Advisory Committee are recommending to the Vice-Chancellor that a grant-in-aid of \$1 million dollars be awarded towards the purchase of a cryo-TEM with ET capability. This effort was spearheaded by Associate Professor Dorothy Oorschot, and supported by the BHRC.

CONGRATULATIONS

Associate Professor Dorothy Oorschot, and Dr Kathie Overeem were each successful in the latest round of grant applications with the Neurological Foundation of New Zealand.

Associate Professor Oorschot is investigating the anatomy of the GABAergic synaptic innervation to dopaminergic neurons in the circuitry of non-reward.

Dr Kathie Overeem is looking for epigenetic abnormalities associated with increased risk for schizophrenia development by examining microRNA expression abnormalities as a result of maternal immune activation.

Dr István Ábrahám, Department of Physiology, has received a grant from the Health Research Council for his work on a potential treatment for Alzheimer's disease.

NEWS IN BRIEF

Dr Kyoko Koishi

It is with much sadness that the Brain Health Research Centre acknowledges the passing of Dr Kyoko Koishi on 3 July 2011.

Kyoko came to Otago in 1988 and joined the Anatomy Department and Ian McLennan's research group in the early 1990's. Kyoko resigned in March this year from her position as a Senior Research Fellow, after 23 years of service to the University.

Kyoko will be missed by her friends and colleagues. We would like to offer our condolences to Ian and Makoto. Donations can be made in Kyoko's name to the Plunket Society.

Professor Ted Jones

The internationally renowned neuroscientist, UC Davis Professor, Ted Jones, died at a conference in California last month. He began his career at the University of Otago, graduating from the Medical School in 1962 and was a Lecturer and then Associate Professor in Otago's Anatomy Department from 1969-1971. His research focused on the structure and function of the thalamus, and how minute abnormalities in the brain can cause chemical imbalances leading to schizophrenia or other neurological disorders. In

2004, he was elected to membership in the prestigious National Academy of Sciences in the USA.

Please welcome our newest members, Professor Ian Tucker & Dr Lubica Benuskova

Last month we welcomed two new members to the Brain Health Research Centre.

Professor Tucker, former Dean of the School of Pharmacy, is researching drug-delivery across membranes of the blood/brain and blood/milk barriers, delivery strategies/technologies and nanoparticle delivery systems.



Dr Nick Cutfield and one of our newest members, Professor Ian Tucker at the BHRC Conference.

Dr Luba Benuskova, from Computer Science, is interested in neurobiologically inspired computing and the dynamics of biological and artificial neural networks, learning rules, spiking neural networks, classification and prediction by means of neural networks and computational neurogenetic modelling. Neurogenetic modelling is a new area investigating the dynamic influence of internal gene regulatory networks on neural dynamics.

Brain Day 2011 speakers are available on iTunes University

If you missed our Brain Day speakers, Graeme Hammond-Tooke, Louise Parr-Brownlie, Liana Machado, and Andrew Clarkson, you can catch them now at iTunes University:

<http://www.otago.ac.nz/news/itunesu/podcasts/scienceslectures.html>

or in the Sciences sections of iTunes U:

<http://www.otago.ac.nz/itunesu>

THE LATEST ARTICLES

Ashton, JC. (2011). Reliability of immunolabelling in the determination of Huntington's disease neuropathy. *Brain*. doi: 10.1093/brain/awr091

Ashton, JC. (2011). The use of knockout mice to test the specificity of antibodies for cannabinoid receptors. *Hippocampus*, doi: 10.1002/hipo.20946

Clarkson AN, Overman JJ, Zhong S, Mueller R, Lynch G, & Carmichael ST. (2011). AMPA receptor-induced local brain-derived neurotrophic factor signaling mediates motor recovery after stroke. *The Journal of Neuroscience*, 31(10).

Clarkson, AN, Talbot, CL, Wang, P-Y, MacLaughlin, DT, Donahoe, PK, & McLennan, IS. Müllerian inhibiting substance is anterogradely transported and does not attenuate avulsion-induced death of hypoglossal motor neurons. *Experimental Neurology*, In Press. doi: 10.1016/j.expneurol.2010.12.019

Clearwater, JM, & Bilkey, DK. (2011). Place, space, and taste: Combining context and spatial information in a hippocampal navigation system. *Hippocampus*, doi: 10.1002/hipo.20911

Dejean C, Arbuthnott G, Wickens JR, Le Moine C, Boraud T, & Hyland BI. (2011). Power fluctuations in beta and gamma frequencies in rat globus pallidus: Association with specific phases of slow oscillations and differential modulation by dopamine D1 and D2 receptors. *The Journal of Neuroscience*, 31(16): 6098-6107.

Glue, P, Gulati, A, Le Nedelec, M, & Duffull, S. Dose- and Exposure-Response to Ketamine in Depression. *Biological Psychiatry*, In Press, Corrected Proof. doi: 10.1016/j.biopsych.2010.11.031

Mockett, B, Guévremont, D, Wutte, M, Hulme, S, Williams, J, & Abraham, W. (2011). Calcium/calmodulin-dependent protein kinase II mediates group I metabotropic glutamate receptor-dependent protein synthesis and long-term depression in rat hippocampus. *Journal of Neuroscience*, 31(20), 7380-7391.

Neo, P, Thurlow, J, & McNaughton, N. (2011). Stopping, goal-conflict, trait anxiety and frontal rhythmic power in the stop-signal task. *Cognitive, Affective, & Behavioral Neuroscience*. doi: 10.3758/s13415-011-0046-x

Neo, P, & McNaughton, N. (2011). Frontal theta power linked to neuroticism and avoidance. *Cognitive, Affective, & Behavioral Neuroscience*. doi: 10.3758/s13415-011-0038-x

Rivers JR, Sutherland BA, & Ashton JC. (2011). Characterization of a rat hypoxia-ischemia model where duration of hypoxia is determined by seizure activity. *Journal of Neuroscience Methods*, 197(1), 92-96.

Scarf D, Miles K, Sloan A, Goulter N, Hegan M, Seid-Fatehi A, . . . Colombo M. (2011). Brain cells in the avian 'Prefrontal Cortex' code for features of slot-machine-like gambling. *PLoS ONE*, 6(1), e14589.



Sutherland BA, Shaw OM, Clarkson AN, Winburn IC, Errington AC, Dixon CL, . . . Appleton I. (2011). Tin protoporphyrin provides protection following cerebral hypoxia-ischemia: Involvement of alternative pathways. *Journal of Neuroscience Research*, 89(8), 1284-1294.

Tarr GP, Herbison P, de la Barra SL, & Glue P. (2011). Study design and patient characteristics and outcome in acute mania clinical trials. *Bipolar Disorders*, 13(2), 125-132.

Tucker, IG. (2011). Drug delivery to the brain via the blood-brain barrier: A review of the literature and some recent patent disclosures. *Therapeutic Delivery*, 2(3), 311-327.

Wickens, JR, Hyland, BI, & Tripp, G. (2011). Animal models to guide clinical drug development in ADHD: Lost in translation? *British Journal of Pharmacology*, doi: 10.1111/j.1476-5381.2011.01412.x

Zheng Y, Hamilton E, Stiles L, McNamara E, de Waele C, Smith PF, & Darlington CL. (2011). Acoustic trauma that can cause tinnitus impairs impulsive control but not performance accuracy in the 5-choice serial reaction time task in rats. *Neuroscience*, 180, 75-84.

MARK YOUR CALENDARS

Professor Juanita Anders

10 August, Medical Forum, Barnett Theatre 1 pm

Prof Juanita Anders, from the Department of Anatomy, Physiology and Genetics, Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA will be speaking on *Photobiomodulation of CNS injury: Molecular, cellular and functional alterations*. If you'd like to meet with Professor Anders while she is in Dunedin, please contact Sally-Ann Howard (sally-ann.howard@otago.ac.nz).

Professor Etan Markus

16 August, Commerce 2.22, 1.00 pm

Co-sponsored by the Psychology Department and the BHRC, Prof Etan Markus from the University of Connecticut will be speaking on *Memory encoding, retrieval and remapping: A hippocampal "place-field centric"*.

Hot Topic Lecture, Dr Bruce Mockett,

18 August, Hunter Centre, 4.30 pm

Our BHRC 2011 Seminars continue with our Hot Topic Lecture to be given by Dr Bruce Mockett. Dr Mockett will be speaking on the important role of kinase calcium/calmodulin-dependent protein II α in the expression of long-term depression induced by activation of group I metabotropic glutamate recep-

tors in CA1 of rat hippocampus.

FROM THE DIRECTOR

It has been a very busy two months for the Centre, and we owe a great debt of gratitude to all those who have worked to put together our annual Conference and to assist with the Brain Bee challenge. The Brain Bee committee, by the way, has been chaired by Dr Stephen Bunn now for a few years. It would be great to have some new blood coming in to help provide continuing leadership. You can contact Stephen or myself, if you want to learn more. The competitors are bright high school students we want to encourage to come to Otago to study neuroscience. Last year's winner is currently spending a week in my lab during the school holidays to learn more about brain research. How keen is that!?

In other news, we warmly welcome Alzheimer's New Zealand and the MS Society of New Zealand as partner organisations to the BHRC. Our aim is to strengthen ties with our community partners.

We are very pleased that the Ngai Tahu Research Consultation Committee has kindly provided us with a Māori translation of the BHRC, Te Pokapū Ranga-hau Hauora Hinengaro (Pokapū = Centre, Rangahau = Research, Hauora = Health, Hinengaro = Mind). We have incorporated this name into our identifier, and you are welcome to get the updated version from Jill.

Finally, AWCBR is coming up, so please remember that it is an excellent place to advertise the BHRC on your abstracts, posters and powerpoint presentations.

Cliff Abraham

News items? Email addresses? New students?

If you have any BHRC related news, new students associated with the BHRC to add to our mailing list, or announcements, please contact Jill Leichter, jleichter@psy.otago.ac.nz.

We welcome our newest sponsor, the Neurological Foundation of New Zealand.



**NEUROLOGICAL
FOUNDATION
OF NEW ZEALAND**