

# American Academy of Neurology Annual Meeting

Conference details: April 10-17, Toronto, Canada. Reviewed by: Alasdair Coles, University Lecturer in Neuroimmunology at Cambridge University.

## A 92-year-old rescues a miserable meeting

Even before the volcanic ash cloud trapped European neurologists in Toronto for days, the meeting was not going well. At least in multiple sclerosis research, there was nothing new to learn. The educational sessions were off-puttingly expensive and the plenary sessions failed to thrill. Perhaps the lowest moment was the Presidential address. At this keynote moment of the whole conference, with literally thousands of neurologists in attendance, the President declared emotionally that the principal purpose of the American Academy of Neurology was to protect the remuneration scales of American neurologists. Goodness knows what delegates from developing countries made of that.

It took a 92-year-old English psychologist to save the day. Brenda Milner, who gave her first presentation to the AAN in 1953, was back! Tiny and frail, she spoke fluently, enthusiastically and charmingly about her famous patient 'HM'. When she finished, she got a standing ovation, the crowd delighted to have something unequivocally good to celebrate.

Brenda Milner had studied psychology in Cambridge and then went to do a PhD in Montreal in 1950, with the task of understanding the function of the temporal lobes, working on the epilepsy surgery patients of Wilder Penfield. She explained that Penfield always prohibited bilateral temporal lobe surgery, out of an instinctive concern that this would be harmful. On the other hand, he and his assistant, Dr Rasmussen, regarded unilateral surgery of the anterior temporal lobe as fairly harmless. However, the team had a shock when a 47-year-old engineer suffered devastating working memory loss after a routine unilateral operation. Penfield speculated that he must have had undetected hippocampal damage on the non-operated side. Eight years later, when the patient came to post-mortem, this proved to be true. In the intervening years, though, Brenda Milner publicised the hypothesis that bilateral temporal lobe damage would lead to a devastating amnesic syndrome. This attracted the attention of a neurosurgeon in Hartford, US. Dr Scoville had been performing bilateral hippocampectomies in people with intractable epilepsy. One of these, 'Henry M', had developed a syndrome similar to that reported by Penfield & Milner. So Milner took the night train down to Hartford, "an obscure young psychologist from Montreal" to meet the patient who would make her world-famous. He was 27 at the time and in December 2008 he died at the age of 82. During all that time, he never recognised Milner.



CN Tower, Canada.

Milner's 'breakthrough' came when she found that some aspects of HM's memory were intact. She took down to Hartford the 'mirror drawing task' in which patients (or monkeys!) have to draw around a star, visualising the task in a mirror. HM learnt this task as quickly as any normal person. At the end of the experiment, after performing the task for the 30th time, HM had no memory of previous attempts and said "I thought that was going to be difficult, but I did it rather well".

It is hard for us to understand now the importance of HM. At the time, memory was considered a unitary function and dependent on the mass of the cortex. But his case showed that memory was fractionated (his 'motor memory' was intact) and that working memory was specifically localised to both hippocampi.

## Supermice and the humble astrocyte

A goal of transplantation into the brain has always been restoration of components that are lost or never made. The potential – and the limitations – of this aim were beautifully illustrated by Steve Goldman's work on the shiverer mouse. This animal fails to myelinate its neurons and develops ataxia and dies

young. Goldman's group have worked out a way of generating A2B5 positive human oligodendrocyte precursors from middle trimester spontaneously aborted foetuses (usually due to placental problems). When injected into the shiverer mice, these oligo precursors myelinate neurons nicely, restore normal electrophysiology and even induce the formation of new nodes of Ranvier. So far, so good. Unfortunately, when the embryonic oligo precursors migrate in the brain, they lose their capacity to remyelinate and become astrocytes. So, to achieve a useful therapeutic result, the embryonic cells need to be injected into multiple white matter sites. This really does not sound like a terribly viable option for adults with multiple sclerosis.

On the other hand, this treatment might be helpful for the inherited leukodystrophies. Transplantation of human embryonic oligo precursors into the developing shiverer had fascinating effects. There was a slow remyelination of the entire neuraxis over weeks, much as in the normal mouse. The human cells also generated astrocytes, pushing the residual mouse astrocytes out of the way towards the cortex. One unexpected effect of this was the generation of 'supermice'. The mice made up of mouse neurons and human oligos and astrocytes actually performed better on memory tasks than normal mice. The explanation for this offered by Goldman is that the human astrocytes have many more processes, and are much more effective at promoting synaptic transmission, than ordinary mouse astrocytes. I have never had much time for astrocytes, but it seems I may have underestimated them!

## The best of the rest

- Mostly children get anti-NMDAR encephalitis. Since Dalmau's description of the first 100 cases in *Lancet Neurology*, his group has collected 240 more patients. The big news is that many of the new cases are children. In total, 40% of all cases are now under age 18. In this younger age group, 25% will have a tumour, whereas the rate is 50% for those aged over 18.
- Tysabri and pregnancy. Of the 125 on the Tysabri Pregnancy Exposure Registry, there have been 20 miscarriages and some terminations, of the 99 live births, eight malformations were reported in six pregnancies – two which involved twin births. The average maternal age in these cases was 29 years. 64,600 patients have been put on Tysabri up to December 2009.
- H1N1 Infection can cause acute cerebellitis.

That is it! I was underwhelmed. ♦

# Association of British Neurologists Conference 2010

**Conference details:** 11-14 May 2010, Bournemouth, UK. **Reviewed by:** Biba Stanton, Chair ABN Trainees Committee (ABNT) and Beth Mallam, ABNT Research Representative.

This year's ABN conference was the largest ever, with over 600 delegates attending. Held at the Bournemouth International Centre, overlooking Bournemouth's miles of sandy beaches, the programme was as impressive as the location.

As at last year's meeting, the format included parallel sessions providing a clinical and scientific teaching programme alongside presentations of high quality original research. Teaching included subjects that have sometimes been under-represented at neurology conferences, such as neuro-oncology, pain and neuro-otology. This provided an excellent opportunity for both trainees and consultants to update their knowledge and hear from national experts in their respective fields. The members' papers were well attended and led to stimulating discussions. Highlights included Dr N Paul presenting data from Oxford on the high early risk of stroke following recurrent 'capsular warning syndrome' TIAs, Dr Simon Mead extending the phenotypic spectrum of familial prion disease to include chronic diarrhoea, and Dr W Brown presenting an impressive array of data suggesting that the recent relaxation of DVLA post-seizure driving rules may be too lenient.

Plenary lectures from invited international speakers included Josep Dalmau on autoimmune encephalitis, Stephen Hauser on multiple sclerosis and Johan Aarli on historical perspectives on hysteria. Yves Agid presented his view of the role of the basal ganglia in sub-conscious motor and emotional processing



with great erudition and panache. The ABN medal was presented to Michael Swash, in recognition of his major contribution to science and clinical practice in motor neurone disease over a long and distinguished career.

For the first time, the conference hosted a half-day 'road-show' for medical students and foundation doctors interested in neurology. By providing practical information and also some inspiration, the ABN hopes that the road-show will help our efforts to continue attracting the very best medical graduates into our specialty. An extremely entertaining CPC discussion by Martin Turner, and a challenging quiz from the President Elect were highlights of this well-attended session. The ABN Research Forum took place later that day, with 20 posters showcasing neurological research from across the country and time for networking by those interested in setting up research projects. This

unique event looks set to become an annual feature, with plans to expand next year to include an overview presentation.

As always, the meeting's social programme provided a valuable opportunity for colleagues from around the country to meet. The gala dinner was made particularly memorable by musical performances from talented members of the association, not least the mellifluous Queen Square Mellow-tonins. The trainees' dinner, held for only the second time, was also a success and will hopefully become a tradition.

As Heather Angus-Leppan ends her term as chair of the ABN's meetings committee, her successor has a lot to live up to. The 2011 meeting is to be held in October, in another stunning waterside location in Newcastle-Gateshead. But if you can't wait that long, look out for details of an international meeting to be held in Cuba in April. ♦

## The ABN Second Annual Research Forum: May 2010, Bournemouth

The 2nd Annual Research Forum was held at the May ABN Meeting in Bournemouth. The format this year was a poster fair, displaying the research interests and opportunities of all the major neurology centres in the UK. We were delighted with the response to the invitation to present at the forum: 17 academic centres were represented, in addition to presentations by the Academy of Medical Sciences, the Wellcome Trust and the National Institute of Health Research (NIHR).

The event was advertised via email through the ABN to all neurology trainees, posters put up by the ABNT Regional Representatives in neurology departments and junior doctors' messes, and on the Doctors.net neurology forum. Attendance for the event was difficult to assess as people were free to come and go due to the open setting of the poster session. Having the Research Forum on the same day

as the medical students/FY doctors neurology road show was a definite plus: a number stayed on to find out more about research opportunities as well. Some centres have reported that they have since received interest from trainees wishing to set up research projects. We will be contacting all the presenters for feedback on this event in due course.

The opportunity and potential of this event cannot be underestimated: a showcase of UK neurology research bringing together those in research and those who would like to be. Looking to the future, it is felt that an overview presentation might bring attention and focus to the event and help improve the number of people attending. Other useful talks could be commissioned, for example the Wellcome Trust has offered to give an insider's guide to grant applications and fellowship interviews. A brief introduction of those presenting the posters has also been suggested as some atten-

dees commented that they weren't sure who to speak to. The highlight of the event will remain the unique opportunity for informal networking and information gathering from representatives of the various societies promoting research in the UK.

The ABNT is contributing to the ongoing revamp of the ABN website, in particular we are working on establishing the Research Network. The Research Network is hoped to be a permanent resource containing much of the information that was available at the Research Forum. Please look for the Research Network on the ABN website over the coming months.

We would like to hear any comments that people have – whether they were presenters, attendees, or are future participants – regarding the Annual Research Forum: please email us at [josieshew@theabn.org](mailto:josieshew@theabn.org)

## ABN continued: List of Poster Presentations and Contact Details:

### The ABN Clinical Research Training Fellowships

Contact: Josie Shew, [Josie.shew@theabn.org](mailto:Josie.shew@theabn.org)

### The Academy of Medical Sciences

Contact: <http://www.acmedsci.ac.uk/>

### Neurology/Neuroscience Research at University of Birmingham,

Contact: Prof Karen E. Morrison, [k.morrison@bham.ac.uk](mailto:k.morrison@bham.ac.uk)

### Institute of Clinical Neurology at Bristol

Contact: Professor Neil Scolding, [n.j.scolding@bristol.ac.uk](mailto:n.j.scolding@bristol.ac.uk)

### Research Opportunities in the Department of Clinical Neurosciences, University of Cambridge

Contact: Professor Alastair Compston, [kd203@medschl.cam.ac.uk](mailto:kd203@medschl.cam.ac.uk)

### Research in the academic department of Neurology, Cardiff University and the University Hospital of Wales

Contact: AE Rosser, [CaffynMR1@cf.ac.uk](mailto:CaffynMR1@cf.ac.uk)

### Neurology research training opportunities in Edinburgh

Contact: Siddharthan Chandran, [siddharthan.chandran@ed.ac.uk](mailto:siddharthan.chandran@ed.ac.uk)

### Glasgow Neurosciences

Contact: Professor Hugh J Willison, [h.j.willison@clinmed.gla.ac.uk](mailto:h.j.willison@clinmed.gla.ac.uk)

### Liverpool Brain Infection Group

Contact: Professor Tom Solomon, [tsolomon@liv.ac.uk](mailto:tsolomon@liv.ac.uk)

### Neuroscience at King's College London

Contact: Ms Sophie Morris, [sophie.morris@kcl.ac.uk](mailto:sophie.morris@kcl.ac.uk)

### UCL Institute of Neurology

Contact: Professor Alan Thompson, [a.thompson@ion.ucl.ac.uk](mailto:a.thompson@ion.ucl.ac.uk)

### Clinical Neurodegeneration Research in Manchester: Linking Genotypes and Cognitive Phenotypes

Contact: Professor Karl Herholz, [Karl.Herholz@manchester.ac.uk](mailto:Karl.Herholz@manchester.ac.uk)

### Poster presentation by the National Institute for Health Research Trainees Coordinating Centre (NIHR TCC)

Contact: <http://www.nihr.ac.uk/Pages/default.aspx>

### Research training opportunities in Newcastle and the North East of England

Contact: Professor Patrick Chinnery, [p.f.chinnery@ncl.ac.uk](mailto:p.f.chinnery@ncl.ac.uk)

### Research in Nottingham

Contact: Dr Cris Constantinescu, [Cris.Constantinescu@nottingham.ac.uk](mailto:Cris.Constantinescu@nottingham.ac.uk)

### Opportunities For Neuroscience Research In Oxford, Department Of Clinical Neurology, University Of Oxford

Contact: Professor Christopher Kennard, [chris.kennard@cneuro.ox.ac.uk](mailto:chris.kennard@cneuro.ox.ac.uk)

### Research Opportunities in Plymouth

Contact: Professor C Oliver Hanemann, [Oliver.Hanemann@pms.ac.uk](mailto:Oliver.Hanemann@pms.ac.uk)

### Academic Neurology Unit, University of Sheffield: Current research activities and opportunities.

Contact: Professor Pamela Shaw, [pamela.shaw@sheffield.ac.uk](mailto:pamela.shaw@sheffield.ac.uk)

### Poster presentation by the Wellcome Trust

Contact: <http://www.wellcome.ac.uk/>

## Headache Disorders in Focus – The Migraine Trust and the 2nd EHMTIC

**Conference details:** October 29-31, Nice, France. **Reviewed by:** Peter J Goadsby, Medical Trustee, The Migraine Trust, Russell Square London, UK.

PREVIEW

Since the inception of *ACNR* the editors have recognised headache as an important topic in clinical neuroscience, addressing the problem of migraine management in the very first issue.<sup>1</sup> From October 29th until 31st this year the 2nd European Headache and Migraine Trust International Conference will be held in Nice, France. The programme will cover the latest advances in the understanding and management of headache disorders. It will feature invited lectures and teaching courses ranging from primary care and allied health professionals to scientific methods. There will be discussion and debate, and I expect, indeed hope, disagreements, for it is robust interaction that is the stuff of good science. The marriage of the two meetings has been a happy one for the couple and we hope for our constituency.

This is the 18th International Congress that has borne the name of the Migraine Trust and a very special one it is, since it is the first time the Symposium has been held off-shore in its now 34 year uninterrupted history. The trust meetings were first held at Queen Square under the leadership of MacDonald Critchley who once told me as I prepared for a lecture

bearing his name that what was known about migraine in his time could be written on the back of a postage stamp...with space left over. Much has changed, perhaps most importantly the increasing recognition of the very significant disability that attends migraine, and thus the crucial acknowledgement through the meeting of the need for research. By combining the meeting of the European Headache Federation and the Migraine Trust concentrate and focus the presentation of headache research every two years in what is always a meeting, where advances are presented and issues vigorously discussed.

Despite the multi-billion euro cost of migraine in Europe,<sup>2</sup> and the very clear realisation of that cost by a recent All-Party Parliamentary Group in the UK,<sup>3</sup> research spending on headache remains at an all-time low. The latest estimates from the National Institutes of Health are now below \$8m dollar per annum in the US for all headache disorders, the successful European Union funding program that spawned EuroHead, and drove the first migraine aura mouse model,<sup>4</sup> lapsed for want of political will to continue its funding, and in the UK the funding situation was

reflected accurately when the All-Party Parliamentary Group held a meeting on research at the House of Commons and neither the Medical Research Council, nor the National Institute for Health Research bothered to attend. Only a concerted effort between patients, doctors and researchers interested in headache will break the funding drought and give the EHMTIC its next 34 years in which to redouble our efforts to refine the understanding and treatment of headache disorders. ♦

### References

1. Boes CJ, Matharu MS, Goadsby PJ. *Management of difficult migraine*. *Advances in Clinical Neuroscience and Rehabilitation* 2001;1:5-8.
2. Andlin-Sobocki P, Jonsson B, Wittchen HU, Olesen J. *Cost of disorders of the brain in Europe*. *Eur J Neurol* 2005;12(Suppl 1):1-27.
3. A Report of the All-Party Parliamentary Group on Primary Headache Disorders (APPGPHD). *Headache Disorders- not respected, not resourced*. House of Commons, London UK, 2010.
4. van den Maagdenberg AMJM, Pietrobon D, Pizzorusso T, Kaja S, Broos LAM, Cesetti T, et al. *A *Ca<sub>v</sub>1* knock-in migraine mouse model with increased susceptibility to cortical spreading depression*. *Neuron* 2004;41:701-10.

# 2nd Parkinson's UK Research Conference

*Conference details:* 1-2 November, 2010; Royal York Hotel, York.

PREVIEW

**PARKINSON'S<sup>UK</sup>**  
CHANGE ATTITUDES.  
FIND A CURE.  
JOIN US.

Following the great success of the first Parkinson's UK research conference 'Progress: Advancing Parkinson's Research' in 2008, and we're delighted to be hosting this event again in 2010.

## Conference aims

"We aim to bring researchers working in fields from molecular biology to physiotherapy and everything in between together to share ideas, discuss challenges and develop new collaborative projects. Through international keynote speakers, poster sessions, short oral presentations and plenary lectures we can work together to advance Parkinson's research in the UK."

*Dr Kieran Breen,*

*Director of Research and Development.*

## Keynote speakers

Our line up of international keynote speakers reflects the diversity and breadth of Parkinson's research that is happening in the UK.

### **Dr Mark Cookson**

Dr Cookson is an investigator in the Laboratory of Neurogenetics at the National Institute of Ageing in Washington. His group uses cellular and molecular biology tools to

study inherited neurodegenerative disorders such as Parkinson's, attempting to understand the mechanisms leading to nerve cell damage.

### **Dr Deniz Kirik**

Dr Kirik is the Head of the Brain Repair and Imaging in Neural Systems (BRAINS) Unit, and co-director of the Bioimaging Center at Lund University in Sweden. Dr Kirik has over 15 years' experience in the field of cell and gene therapy. His more recent work in this field focuses on using PET and MR imaging techniques to track disease progression and treatment related changes in the brain.

### **Dr Valerie Voon**

Dr Voon has been based at the National Institutes of Health in the US until she recently made the move to join Cambridge University. Her research focuses on the neuropsychiatric symptoms that can affect many people with Parkinson's, such as impulse control disorders and depression, what causes them and how they can be treated.

## Success of our 2008 Conference

Two years ago 172 delegates from around the UK gathered in York for the first Parkinson's UK

research conference. Keynote speeches on the advances in gene therapy, clinical studies and physiotherapy set the tone for 27 stimulating presentations and 82 scientific posters.

"The best thing the charity has done for years! It was an excellent meeting which was truly representative of the Parkinson's research community in the UK. A great opportunity for networking and should be essential for any PhD student in the UK working on Parkinson's." ♦

## Find out more about the 2010 Conference

For further details please visit our website: [www.parkinsons.org.uk/researchconference](http://www.parkinsons.org.uk/researchconference)

During the conference you'll be able to:

- follow us on twitter: [www.twitter.com/parkinsonsuk](http://www.twitter.com/parkinsonsuk)
- or read our conference blog at <http://talkparkinsons.blogspot.com/>

And after the conference you'll be able to download the full abstract booklet, see keynote presentations online and listen to our conference podcast.

Hope to see you all in York!