

SINAPSE NEWSLETTER MARCH 2010

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Special points of interest:

- ◆ Tribute to Director (page 3)
- ◆ See all the SINAPSE initiatives (page 4 and 5)
- ◆ SINAPSE to host a range of high profile UK events next year (see page 6)
- ◆ Glasgow is to host the international Neuroreceptor Mapping Congress 2010 (see page 6)

Who should see our brain images?

SINAPSE is pleased to announce that it has been successful in its application to the Institute of Advanced Studies to run a programme of activities called "What are you thinking? Who Has the Right to Know? Brain Imaging and its Impact on Society".

Our partners in this work will be Edinburgh Neuroscience; Dr Burkhard Schafer, Co-Director of the Joseph Bell Centre for Forensic Statistics and Co-Director of the AHRC/SCRIPT centre; plus Robert Rae and Donald Jarvie from Futures Forum of Scottish Parliament.

Research in Neuroimaging has advanced such that functional magnetic resonance imaging can reveal explicitly an individual's thought patterns. This raises ethical and practical questions that society needs to address e.g. Who should see our brain images? Should neuroimaging be used as evidence in court, in commerce, or by governments? The key objectives of this programme will be to explore the ethical

impact of neuroimaging on society. By stimulating debate and gathering opinion between the general public, societal groups (patients, prisoners), scientists, clinicians, ethicists, legal experts and politicians, we will raise awareness of privacy and ethical issues, determine a cross-section of opinion, and through engagement of users and policy makers, publish reports to guide policy outcomes.

The programme will be run in three sections:

Part 1: **6-7th May 2010**: Advances in Neuroimaging and the implications for society

Part 2: **7-8th June 2010**: What is the legal view; a focus on the use of Neuroimaging information; ethical considerations security, privacy and human rights:

Part 3: Dates to be confirmed: Influencing policy, Discussion of ethical guidance and practice: Intellectual Property and Technology.

SINAPSE New Chair - Edinburgh

SINAPSE is pleased to welcome Professor Edwin van Beek to the SINAPSE Chair of Radiology at University of Edinburgh. He joins us from the Iowa Comprehensive Lung Imaging Center where he was a Professor in Radiology since 2004, with secondary appointments in Medicine and Biomedical Engineering.

In 2007, he founded Quantitative Imaging of Iowa which provides drug companies with advice on protocol development, imaging logistics, and surrogate outcomes.

Edwin had moved to Iowa from Sheffield where, from 1999-2004, he held a Senior Clinical Lecturer/Honorary



SINAPSE Professor
Edwin van Beek

Consultant post in Academic Radiology, University of Sheffield with clinical commitments at the Royal Hallamshire Hospital.

Edwin originally studied Medicine at Erasmus University Rotterdam (MD 1987), then Orthopaedics and Trauma in the UK and a PhD in venous thrombo-embolism in Amsterdam. His residency in Diagnostic Radiology was at the Academic Medical Centre, Amsterdam (1994-1999)

Edwin is married to Miriam (a native from Glasgow) and they have two sons, Andrew (17) and Steven (12).

FAREWELL FROM THE DIRECTOR

From Professor Joanna Wardlaw

Farewell from the Director

Its time for me to go folks! On 1st April 2010, Professor David Wyper will take over from me as SINAPSE Director. It has been a real privilege to be the first director of SINAPSE. In its first 2¾ years, SINAPSE has gone from being an ambitious idea to a cohesive, highly effective organisation linking the 6 Universities and bringing considerable added benefits to all participating groups, including the NHS and wider academic activities in Scotland. SINAPSE has become a model organisation emulated by groups elsewhere in the UK. We have shown that sharing of expensive, publicly funded imaging investments and staff expertise is not only the best way forward but is also very enjoyable! SINAPSE has a unique training environment for imaging students. It is striking how we are able to attract absolutely top quality individuals to studentships, post Doctoral positions and chairs by using our group capabilities. There is now a SINAPSE "JISC mail" communication network to speed up finding solutions to imaging acquisition and analysis problems. There are numerous industrial collaborations underway and some major funding has been secured to further enhance SINAPSE developments (but more of that anon). SINAPSE has also initiated a major public engagement activity to discuss the wider societal, legal and ethical implications of the use of brain imaging, later in 2010.

From my own prospective, I am now just as likely to contact colleagues in Aberdeen or Glasgow or Dundee, Stirling or St Andrews for advice on new or existing projects as I am to speak to a colleague whose office is in the same corridor as my own.

This success is the result of a lot of hard work, dedication and innovative thinking by numerous people. I am deeply grateful to our Deputy Director, Dr Alison Murray, who has provided essential leadership through these initial years, constant support and wise words; to Dr Janet De Wilde, Executive Manager, for her enormous drive and enthusiasm and constant energy to get things done; Dr Robin Sellar and Prof Peter Sandercock for constant encouragement; to the Centre leads and deputies; the subcommittee chairs; external advisors, Deans and senior university staff who have all helped to bring SINAPSE into being. More than anything, however, this success is down to you, the members of SINAPSE, whose unselfish vision and enthusiasm has enabled SINAPSE to become much greater than the sum of the individual parts. So keep promoting SINAPSE, use the logo at every opportunity, always acknowledge SINAPSE in publications, and use it at all possible opportunities (appropriately!) to leverage new funding. It works! To my successor, Professor David Wyper, the best of luck.



SINAPSE Founding Director
Professor Joanna Wardlaw

Photos below from left to right
 1 Prof Wardlaw Launch Speech
 2 Launch in Playfair Library



The following Universities are charitable bodies, registered in Scotland, with registration numbers as below.

Tribute By Dr Alison Murray

This month marks the end of an era. Professor Joanna Wardlaw has been Director of the Scottish Imaging Network and Platform for Scientific Excellence (SINAPSE) since its inception and is primarily responsible for the existence and success of SINAPSE. Following her original ideas of linking functional magnetic resonance (fMRI) facilities and staff between Edinburgh, Glasgow and Aberdeen, and an SRDG application to the then SHEFC in 2005, the network approach expanded to include six universities and multimodality brain imaging with MRI, molecular imaging and electrophysiology. On 12th February 2008 we received the letter of funding from SFC and on 16th October 2008, after three years gestation, SINAPSE was born – the first of the pooling initiatives to include patients.

Joanna has a formidable track record, with over 300 publications and £29 million current grant income. She is a world expert in stroke imaging, systematic reviews and clinical trial management, as well as having expertise in e-learning, neurophysiology and being an excellent teacher. Having developed the highly successful SFC Brain Imaging Research Centre, she has gone on to develop a national virtual imaging network that has successfully bid for funding from CEP, IAS, SFC and industry and is gaining an international reputation.

Joanna has carried out the role of SINAPSE director with modest brilliance

and a sense of humour. She has developed the structure, ensure appropriate governance, raised our aspirations and tirelessly driven the network towards higher goals. This has not been an easy task and I know, at times, has been immensely frustrating, when colleagues (myself included) fail to deliver, forget to communicate and lose focus of original targets. Running a multidisciplinary network has provided new challenges: persuading psychologists, physicists, radiochemists, radiologists and otherologists that they have a common purpose demands a special kind of diplomacy and has required endless patience, reminding and cajoling. Throughout Joanna has remained a cool and clever leader, who shares her knowledge generously and never misses an opportunity. She has been an example to us all and has brought to us the joys of web-conferencing and how to maximise our academic impact.

I have been amazed by her sheer capacity for hard work – no-one else other than my great uncle in Australian sends me emails after midnight!

SINAPSE is now a world class network that is immeasurably stronger than its component parts and Scottish Imaging is now a credible player on a global scale. The directorship is in safe hands and will be taken over by Professor Dave Wyper on 1st April.



SINAPSE Deputy Director
Dr Alison Murray



Succeeding
SINAPSE Director
Professor David Wyper

Thanks to Our Deputy

We all owe a large debt of gratitude to Dr Alison Murray, SINAPSE Deputy Director, who has been instrumental in establishing SINAPSE. She has quietly and assiduously worked to build a cohesive network, to overcome inter-institutional partisan tendencies that inevitably grumble occasionally between high achieving individuals and organisations, and set a superb example of what true collaborative working actually is. On many occasions, she

has represented SINAPSE at local, governmental and UK levels with great pride and skill as a true leader. And always with a smile and grace that do us all proud. She has contributed tirelessly and unselfishly to making our environment for imaging research in Scotland much better, always game to take on new challenges, always finding practical ways to overcome her serious health difficulties. Alison has remained smiling and positive

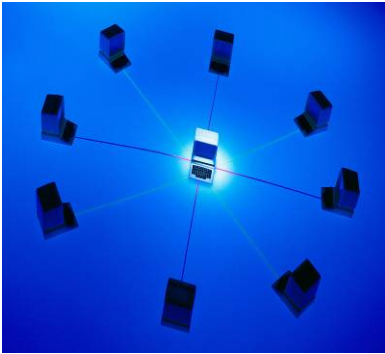
at all times, even in the face of adversity, something which we should all remember when worrying about our own trivial (in comparison) setbacks. She has been a much appreciated source of wisdom and insight on many occasions to me. On behalf of all of SINAPSE, but from myself in particular, thank you Alison, so much.

By Professor Joanna Wardlaw

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SINAPSE Image Data Server



SINAPSE has now deployed a dedicated server in Edinburgh Compute and Data Facilities (ECDF). This server constitutes a fundamental step for establishing an Image Management Infrastructure for SINAPSE accessible from every SINAPSE institution. This basic infrastructure provides a gateway to computing and storage resources in ECDF and at the same time it is used for deploying SINAPSE collaboration wide services including portals and databases. Through these services it enables both data and applications sharing in the collaboration. In particular, the portals will allow non-expert users access many of the image

analysis applications written by SINAPSE staff, and at the same time they provide a web interface for the data catalogue. As well as these generic services there is capacity for running more specialised services developed by SINAPSE collaborators: for instance one of the projects to be included is a centralised EEG data repository that would include a format conversion service. Another example is a prototype for centralised MRI QA data storage analysis and reporting. This possibility of adding application specific services to the server provides flexibility for the future needs of the collaboration.



SINAPSE MRI Technical Mailing List

SINAPSE has created a JISC mailing list, SINAPSE-MRI-TECH @ JISCMAIL.AC.UK

Resonance Imaging (MRI) of the brain, with a focus on technical aspects including data acquisition, data processing, image analysis, experimental design, specific expertise, hardware, ancillary equipment, health & safety, etc. If successful, we can extend the scope to include subsections for radiochemistry, evoked potentials, etc, but we are starting with MR as it encompasses the largest user group at present.

The purpose of this mailing list and discussion forum is to facilitate communication and collaboration related to Magnetic Resonance Imaging (MRI). The mailing list is open to all researchers with an interest in brain MRI at SINAPSE's partner Universities (i.e. Aberdeen, Edinburgh, Dundee, Glasgow, Stirling, and St Andrews). The SINAPSE-MRI-TECH is set up as a closed mailing list, which means that only members will be able to post and receive messages.

To subscribe, visit <http://www.jiscmail.ac.uk/SINAPSE-MRI-TECH> and click on 'Join or Leave the SINAPSE-MRI-TECH List'.

The scope of this forum is Magnetic

Follow us on Twitter
SINAPSECENTRE

New SINAPSE Website

Look out for the new SINAPSE website. This is due to be launched mid-March 2010!!

base of SINAPSE publications.

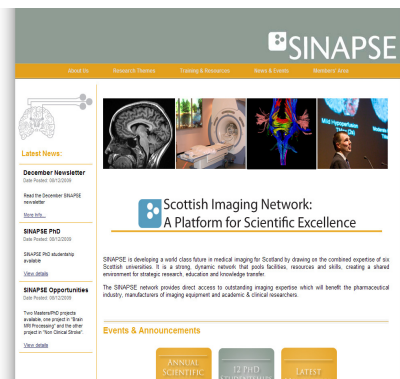
The improvements to the website are aimed at making it easier to find expertise in SINAPSE. Hence to improve the engagement with industry and other outside bodies.

The aim is also to demonstrate the training that SINAPSE can now offer and the wide range of events that we put on.

We hope you like our new look website. If you have any comments or suggestions to further improve the website please send them to Dr Janet De Wilde, SINAPSE Executive Manager by emailing her on janet.dewilde@ed.ac.uk

The website will be developed over time to include a searchable database of experts, expertise. It will also include a data-

www.sinapse.ac.uk



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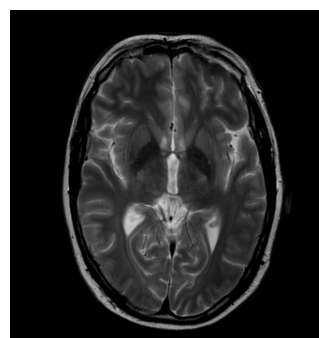
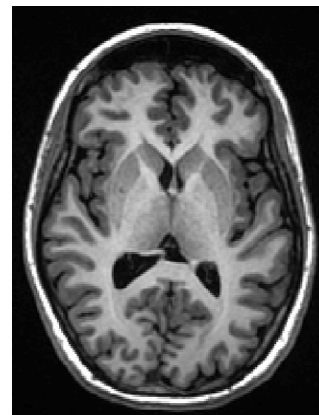
A Network Systematic Review of comparing MR imaging at 1.5 T versus 3 T

It used to be that 1.5T MR scanners were the main field strength for diagnostic as well as research imaging. However, recently, increasing numbers of 3T MR scanners have been installed in both research and clinical diagnostic departments. There are theoretical advantages as to why imaging at 3T should provide “more” information, either by giving greater detail, reducing scan times, or enhancing contrast differences between different tissues, all by virtue of the improved signal to noise that is achievable at higher field strengths. However, as with so many things, it’s not quite that simple. Wider use of 3T systems has revealed that the advantages may be subtle. The signal to noise increase does not just apply to the wished for improved diagnostic capabilities but also applies to artefacts which may obscure key areas of interest.

SINAPSE is fortunate to have access to a mixture of 1.5 and 3T research and clinical diagnostic MR scanners. SINAPSE also has the advantage of considerable expertise amongst its members in undertaking systematic reviews of scientific evidence, including diagnostic tests. A group of us have therefore initiated what may be the first ever “network systematic review” where the job of assessing papers for methodological quality and extracting key data is being

shared across participants in SINAPSE centres. The work is being lead by Dr Janet De Wilde, Dr Katherine Lymer and myself, with assistance from Mrs Moira Henderson and Ms Kirsten Shuler. So far we have identified a total of 171 papers potentially relevant to neuro-imaging of which 128 have been assessed by 13 individuals in 4 SINAPSE centres.

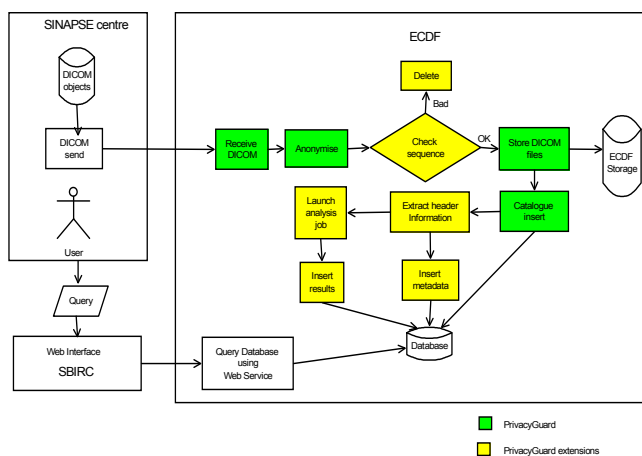
We have collected data on other organ systems (cardiac, musculoskeletal), but at present are focussing on neuro papers. We would be very keen to have further offers of assistance from other interested people across the SINAPSE network. The work is not difficult. Participation will help you learn to look very critically at quality and methodology as well as results of imaging studies (which will help in your own research work) and all contributors will be listed as authors of when this collaborative project is published. There are still 43 neuro papers to assess, so you are interested, please contact Professor Joanna Wardlaw (Joanna.wardlaw@ed.ac.uk) for further details. Anyone interested in taking the lead on another organ system – please step forward!



MRI Brain Images

Multicentre QA

SINAPSE is working hard to ensure that all its centres are working to the same high quality assurance standards in MR imaging. It has set up a project team which includes physicists and a computer scientists and programmers who are working together to standardise protocols, collect images on the SINAPSE server and to have centralised processing and storage of results. The aim is to ensure that research results from the centres are comparable.



Flow Diagram for Automated QA process.



MR Test Objects

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Edinburgh Training and
Conference Venue



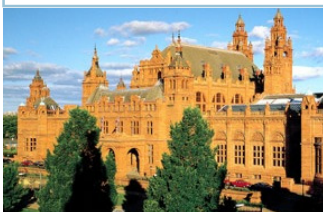
SFC Brain Research
Imaging Centre



Royal Society, Edinburgh



Wellcome Trust, London



Kelvingrove Art Gallery and
Museum, Glasgow

We're on the web
www.sinapse.ac.uk

MULTICENTRE MRI RESEARCH DAY

On **26th March 2010**, SINAPSE is hosting, jointly with IPEM and BIR, a workshop on "Experiences and Optimisation of Multicentre MRI Research Studies" at the Edinburgh Training and Conference Venue, St Mary's Street, Edinburgh. Multicentre MRI is an increasingly popular approach for acquiring large datasets from diverse geographical populations yet technical issues in combining data from multiple sites need to be addressed. Please see SINAPSE website for full programme details.

EDINBURGH MEET THE LEAD 2010

On **7th April 2010**, Edinburgh SINAPSE centre is showcasing its imaging sites and sharing of interdisciplinary knowledge. Come and see SFC Brain Imaging Centre and the Clinical Research imaging Centre, Edinburgh. See SINAPSE web site for details

SINAPSE SPM COURSES 2010

From April **26-29 2010**, SINAPSE and Centre for Cognitive and Neural Systems, University of Edinburgh are hosting a four-day Statistical Parametric Mapping course. It offers comprehensive coverage of all MRI-related aspects of SPM. See SINAPSE website for details under events.

SINAPSE ASM 2010

On **16th June 2010**, SINAPSE will be hosting its Annual Scientific Meeting at the Royal Society in Edinburgh. The keynote speaker is Professor Jeff Bulte from John Hopkins University, Baltimore, USA. The day will also be a showcase of the imaging research undertaken across Scotland. Invited speakers include Prof van Beek, Edinburgh, Dr Muckli, Glasgow, and Prof Schwarzbauer, Aberdeen.

ETHICAL MANAGEMENT OF RESEARCH IMAGING

On **1st July 2010**, at the Wellcome Trust in London, Professor Joanna Wardlaw (SINAPSE) and the RCR are hosting a one day seminar with other Professional and Regulatory bodies and representatives from all research imaging centres to discuss the ethical issues related to findings in imaging research both in normal subjects and in other participants. This will lead to a report and guidance for imaging researchers in the UK.

NRM 2010 in GLASGOW

On **22nd-24th July 2010**, the 8th International Symposium on Functional Neuroreceptor Mapping Congress (NRM2010) will be hosted by the University of Glasgow, Scotland. Professor David Wyper, Dr Jonathan Owens and Professor Andy Welch from the SINAPSE Executive are on the organising committee. The meeting is to enable scientists and clinicians who are exploring neurotransmission in normal and pathological states to discuss their findings. The conference will be held at the Glasgow Hilton Hotel; the Welcome Reception and Dinner at the Glasgow City Chambers; the Conference Dinner at the Kelvingrove Art Gallery and Museum. www.nrm2010.org

TRANSLATIONAL IMAGING

On **23rd September 2010**, SINAPSE will be hosting a Translational Imaging workshop in University of Edinburgh, Playfair Library. See SINAPSE website for details.

Any Comments on this Newsletter please send to Dr Janet De Wilde, SINAPSE Executive Manager, 0131 537 3093, janet.dewilde@ed.ac.uk

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