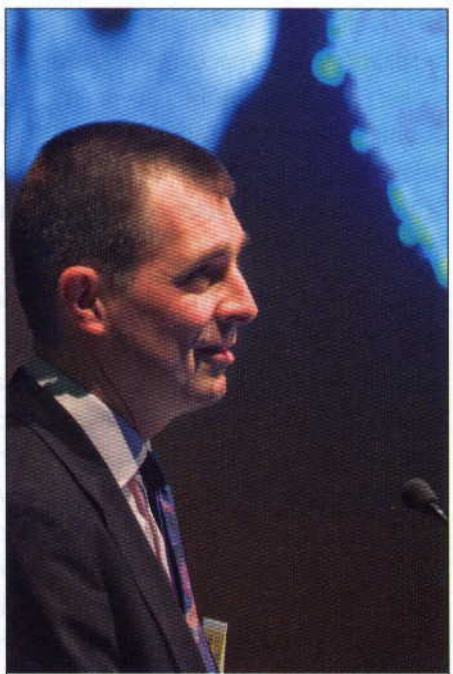
SINAPSE - Scottish Imaging Network: Platform for Scientific Excellence

SINAPSE is the abbreviation for "Scottish Imaging Network - Platform for Scientific Excellence" which focuses on MRI, PET, SPECT, EEG and ERPs technologies. ***Dr Janet De Wilde**, SINAPSE Coordinator, based at the University of Edinburgh,* tells us more about it.

The Network

SINAPSE (Scottish Imaging Network – Platform for Scientific Excellence) is a consortium of six Scottish universities (Aberdeen, Dundee, Edinburgh, Glasgow, St. Andrews and Stirling), that was established in August 2007 with funding from the Scottish Funding Council, the Chief Scientific Office and the universities. The consortium has created a strong dynamic network for a shared multi-centre research environment which aims to lead to advances in brain imaging research. Our focus is primarily on the technologies of magnetic resonance imaging (MRI), positron emission tomography (PET), single photon emission computed tomography (SPECT), electrophysiology (EEG) and event-related potentials (ERPs).

Imaging researchers attending SINAPSE Annual Scientific Meeting 2009.



Professor Keith Muir, SINAPSE Chair, giving a lecture at the SINAPSE Annual Scientific Meeting 2009.

Researchers in imaging

The network has increased the number of key imaging researchers across all levels. Chair appointments have been made in stroke imaging and MRI with further professorial appointments underway. Key post-doctoral appointments have been made in the areas of physics, image acquisition, fMRI paradigm design, image analysis, informatics and radiochemistry. Research radiographers have also been funded by imaging centres. One of the most exciting parts of SINAPSE is for early career research scientists with the appointment of 24 postgraduate research students. The studentships have been very popular with large numbers of very high quality applicants. A key factor for those applying for both studentships and staff posts was the opportunity to be part of a wide well-established network and to join in the activities that this brings.

Imaging skills training across the network

The SINAPSE network provides students with a strong cohesive doctoral training programme between universities, allowing them to develop their careers and effectively establishing a future generation of imaging researchers in Scotland.

Multi-centre research

By cross-centre collaboration, SINAPSE has made progress in research and research support. There has been the implementation of cross-centre standardised quality assurance protocols for imaging systems. Several excellent image processing methods are emerging for brain volume measurement, tractography and tissue segmentation and are being shared across centres. A portal to provide access for all centres to a wide range of image processing

tools is being piloted. SINAPSE has also played a key role in the task of improving data transfer between the NHS and universities. SINAPSE hosted a MIDAS (medical imaging data access and sharing) seminar in March 2009. Attendees were from both the university and NHS sector and an excellent discussion resulted in a report being circulated widely and a follow-on meeting planned with the NHS PACS committee in August. Improving translation between animal and human imaging is also a key aim for the network. A committee has been established to ensure that both animal and human imaging researchers are communicating and working together. Furthermore, joint working between centres has resulted is making systematic literature reviews faster, less burdensome for the individual and more interesting. Publications are accumulating and a central repository for SINAPSE publications is being piloted.

SINAPSE and knowledge exchange

From industry, politicians, policy makers, to the public; SINAPSE has been active in distributing its knowledge and learning from others. For example, a public engagement workshop called "getEmotional" has been developed by SINAPSE students and staff. The activities provide an opportunity for families with young children to find out more about human expressions of emotion and how scientists use imaging tools in their research to see the emotional brain at work. The first public "getEmotional" event was held at the Royal Botanical Gardens in Edinburgh on 7 March 2009. This event was part of the National Science and Engineering Week and was supported with funds from both SINAPSE and Edinburgh Neuroscience. The event was extremely successful with approximately 250 people visiting. The second event we held was at the Sensation Science Centre in Dundee as part of Brain Awareness Week on 21 March 2009. Both SINAPSE staff and students incorporated the emotion-themed activities into the broader scope of Brain Awareness Week which included activities and experiments covering a wide variety of topics such as attention and motor control. SINAPSE PhD students, who helped during these events, gained an enormous amount of experience from explaining the brain in a clear and straightforward manner as well as learning how to be entertaining and engaging.

SINAPSE has also played a key role in the discussions and policies concerning the ethics of brain imaging. The team has secured funding from the Wellcome Trust for a UK-wide seminar on the Ethics of Research Imaging (how to handle incidental findings in research and the expectations of participants). This will take place in London in 2010. Further more, SINAPSE is actively involved in the discussions around ethics of functional brain imaging. We are in discussion with Scotland's Future Forum and the Institute of Advanced Studies to arrange activities to bring this topic to the attention of politicians, policy makers and the public.

Public engagement event at the Botanical Gardens in Edinburgh. SINAPSE students teaching the public about neurons.

Industrial collaborations have been forthcoming particularly in radiochemistry and image processing. Industry has been very interested in talking to a consortium rather than each university separately. SINAPSE has provided researchers with a strong platform from which to engage with a wide range of companies from SME's to multinationals, those that develop imaging scanners or imaging software through to pharmaceutical companies.

To find out more about SINAPSE activities please visit the website

www.sinapse.ac.uk

SINAPSE students and staff at a residential PhD induction 2008.