May 2007
Issue 1

SA Brain Bank

The South Australian Brain Bank

Special Interest Articles:

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The SA Brain Bank - 21 Years On

Welcome to the first issue of the SA Brain Bank Newsletter. In our 21st year of Brain Banking it is only fitting that we publish our first newsletter. We hope you will enjoy the articles, and perhaps even send us a story or two for future issues.

Established in 1986, the SA Brain Bank now has a repository of well preserved neurological tissues from over 180 donors.

Our aim is to support research into the many neurological and psychiatric diseases that cause such suffering in our community, by providing tissue and information to scientists studying these diseases. Since the 1800's, brain tissue has been examined to identify changes that have occurred in the brain as a result of disease. As tissue preservation techniques have improved and new methods of examining the tissue have evolved, the value of ready sources of brain tissue has been recognized. Availability of this resource has contributed greatly to our understanding of many diseases involving the brain and spinal cord.

Whilst much has been learnt, the underlying cause of these diseases is still not understood. Brain Banking therefore will continue to play an important role in providing the neuroscience community with this vital assistance in the ongoing search for answers.

SA Brain Bank Facts and Figures

We currently have:

181 Consented Future Donors	189 Received Brain Donations
114 female, 67 male	109 female, 80 male
74 – no Neurological disease	20 – no Neurological Disease
52 – Parkinson's Disease	20 – Parkinson's Disease
7 – Alzheimer's Disease	47 – Alzheimer's Disease
2 – Motor Neuron Disease	10 – Motor Neuron Disease
1 – Huntington's Disease	6 – Huntington's Disease
2 – Frontal Dementia	4 – Frontal Dementia
3 – Multiple System Atrophy	7 – Multiple System Atrophy
3 – Epilepsy	17 – Diffuse Lewy Body Disease
2 – Multiple Sclerosis	51 – combined or rare diseases
35 – Other Disease	7 – report not yet completed

Flinders University

The Institute of Medical and Veterinary Science

Public Forum 2006

On Saturday 14th October 2006, we hosted a Public Forum on "Motor Neuron Disease, Muscular Dystrophy and Multiple Sclerosis: Research in South Australia". This forum was held at Flinders Medical Centre and we were very fortunate to have several highly esteemed scientists provide stimulating presentations of their research.

Chairperson for the afternoon was Professor Bill Blessing, a co-Director of the SA Brain Bank, a Neurologist at FMC and a scientist at Flinders University. He opened with a discussion about the importance of basic research in the search for clues to the cause of diseases of the brain and spinal cord.

Professor Robert Rush provided us with a wonderful introduction to cell biology for beginners and a discussion about his work at Flinders University on nerve growth factors and their importance in a search for new therapies in MND treatment.

Associate Professor Roger Pamphlett presented a novel and very interesting talk on genetics and possible causes of MND. Dr Pamphlett is a neurologist and scientist from Sydney. He conducts regular MND clinics in Adelaide, and obtains tissue from the SA Brain Bank to help with his research.

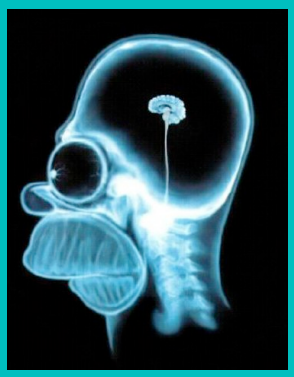
Dr Simon Koblar, a scientist at Adelaide University and a Neurologist and Director of the Stroke Research Programme at the QEH, spoke about his research in the exciting and topical area of Stem Cell therapy. Dr Koblar showed how this may provide a foundation for treatment options in the future for many neurological conditions.

Professor Allan Bretag, Vice-President and Director of the MD Association (SA) and Professor in Pharmacy and Medical Science of the University of SA, provided an informative update on current and proposed therapies for Muscular Dystrophy and other neuromuscular disorders. Dr Bretag's PhD student, Linlin Ma spoke about her work on Myotonia. It was an excellent opportunity for an early career researcher to meet the public, especially those with a personal involvement with the disease.

Dr Mark Slee, a Neurologist at FMC, has just commenced research studies looking at the molecular basis of the progression of Multiple Sclerosis. He presented an overview of his proposed project, and we look forward to hearing more about his progress in the coming years.

Robyn Flook, Coordinator of the SA Brain Bank, finished the day with a presentation on the importance of the Brain Bank in providing tissue to scientists studying diseases of the nervous system. Without the generosity of Brain Donors and their families, this work would not be possible.

Special thanks are extended to the MND Association of SA, the MD Association and the MS Society for providing afternoon tea for the speakers and audience. This break between sessions provided an excellent opportunity for the audience to talk to the scientists in an informal environment, as well as providing an opportunity for the scientists to see how much their efforts are appreciated. The support agencies also provided information leaflets and posters to promote their activities within the South Australian community. Without their support, these events would not be possible.



The Senility Prayer ...

Grant me the senility to forget the people I never liked anyway, the good fortune to run into the ones I do, and the eyesight to tell the difference.

Flinders University

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http://www.nnf.com.au/platforms/nntrc

Some current research projects

Dr Weiping Gai, a Scientist at Flinders University is working on determining the mechanisms of nerve degeneration in **Parkinson's Disease** and **Alzheimer's Disease**. Part of his work is to isolate abnormal proteins from brain tissue affected by these diseases, identify the nature of these abnormalities and determine their potential role in the development of the disease. Another part of his work is to examine the role of antioxidant enzymes in neurodegenerative disease.

Prof Roger Pamphlett, a Neurologist, Neuropathologist and Scientist from Sydney, is studying somatic mutations in **Motor Neuron Disease.** He is analyzing DNA samples from the blood, brain and spinal cords of people who have died with sporadic MND, to compare any gene changes that may have occurred. He is comparing the results from the brain tissue to the blood samples, and between MND tissues and "normal" tissues.

Serendipity

The term serendipity, means "to make desirable but unsought-for discoveries". It was first used by Horace Walpole in reference to the Persian fairy tale "*the Three Princes of Serendip*", who had this ability. Many Nobel Prizes have been awarded to scientists who have made their discoveries with "chance" playing a major role. However as Louis Pasteur noted, "in the field of observation, chance favours only the prepared mind".

Penicillin

In 1945 the Nobel Prize in Physiology or Medicine was awarded to Alexander Fleming, Ernst Chain and Australia's own Howard Florey for "the discovery of penicillin and it's curative effect in various infectious diseases".

Serendipity had a role in it's discovery. In 1928 Alexander Fleming went on two weeks holiday, leaving unwashed bacterial plates stacked in a corner of his laboratory at St Mary's Hospital in London. On his return, he noticed that a mould contamination in one plate was causing the bacteria to die. He knew immediately that this was significant but it would take many more years to purify the mould and produce it in useful quantities. With the help of Chain and Florey, penicillin was finally developed as a life saving drug.

This chance discovery of penicillin is credited with saving tens of thousands of lives in late WWII and changing the course of history forever.

What's news?

At the end of May, representatives of the Australian Brain Bank Network (ABBN) will attend the International Society for Biological and Environmental Repositories Annual Meeting in Singapore. This meeting will discuss International Biobanking Standards.

In July, Robyn Flook (SA Brain Bank) will represent the ABBN at the International Brain Research Organization Conference in Melbourne. This meeting is the most significant neuroscience conference to be held in Australia this year. Over 4,000 participants from the International Neuroscience community will attend.

August: The SA Brain Bank will participate in "Science Alive! 2007" (part of Australia Science Week). This is a free community event at the Adelaide Showgrounds.

If you have a story that might be suitable to include in a future newsletter, please send it to me at the following address:

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