

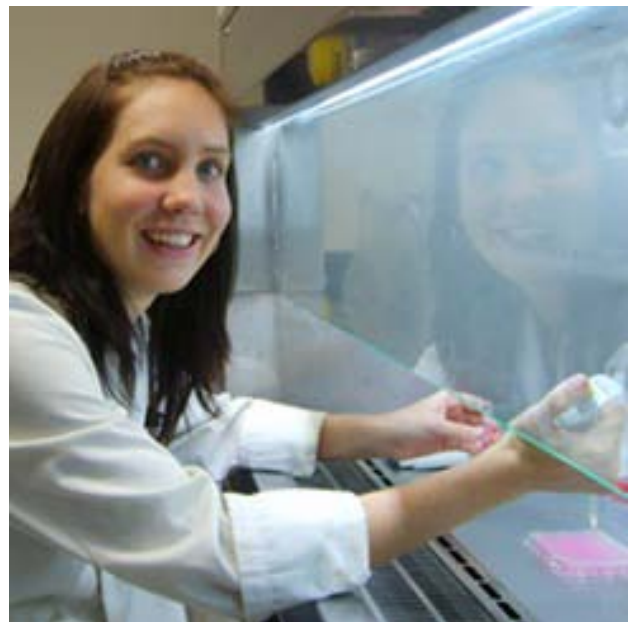
RESEARCH DIRECTIONS

“Helping the helpers” – a key for the prevention of Alzheimer’s disease?

Megan Steele, a PhD student in the School of Medicine and her supervisor Associate Professor Gerald Münch, together with Dr. Gilles Guillemain from the University of New South Wales, are researching the protective capabilities against dementia of certain central nervous system cells. This research has been funded by Alzheimer’s Australia Research.

‘Alzheimer’s disease is a degenerative disease affecting people’s memory, cognition, bodily functions and mental capabilities’ says Miss Steele. ‘Researchers still do not fully understand the disease - how it begins and how it progresses. Likewise, very little has been accomplished in terms of treatment. We are focusing on astroglia, the “liver cells of the brain” which help neurons in their daily life by providing them with energy and protection against toxins. In particular, we want to see if loss of protection by these cells in situations of chronic inflammation makes neurons in our brains more vulnerable to cell death and, therefore, contributes to Alzheimer’s disease. If changes in these cells can be better understood, it will assist in treatment of Alzheimer’s to delay onset of the disease or slow down its progression.

The team will carry out two experiments. In the first, they will activate an inflammatory response in astroglial cell lines and monitor the release of glutathione - an antioxidant that prevents damage to components of the cell. In the second experiment, they will aim to determine if astroglial cells change their consumption of glucose or the production of the energy carrier lactic acid, and to see how these



metabolic changes might compromise neuronal cell viability and function

Understanding Alzheimer’s disease and its causes more clearly will help researchers test already available drugs which may slow the disease process. This will provide better quality of life for the sufferer and their family and have economic benefits if people are able to keep working longer.

Project Title: Glutathione delivery of astrocytes to Neurons as a target for therapeutic intervention in Alzheimer’s disease

Funding has been set at: \$25,000

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<http://www.uws.edu.au/medicine/som>

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