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Brain research lab opens at MQ

Macquarie University has opened a multi-million dollar brain research laboratory.

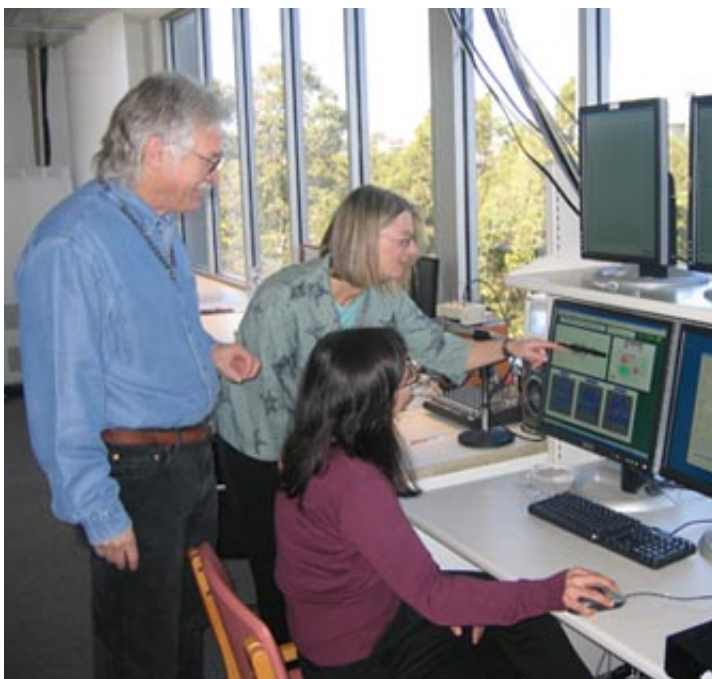
The laboratory contains the southern hemisphere's only magnetoencephalography (MEG) system, and will soon have the world's first child MEG system.

The Macquarie University MEG laboratory will be the world's first laboratory equipped with both adult and child MEG systems, making it a very valuable resource for Australia.

This facility provides research opportunities in brain imaging for scholars in Australasia, and will be instrumental in training the next generation of cognitive neuroscientists in Australia.

MEG detects the faint magnetic fields that are generated in the brain as information is being processed.

This new technology's advantages are explained by Professor Stephen Crain, "Firstly the technology is completely non-invasive so there is nothing in physical contact with the person. It allows us to watch how people understand sentences as they unfold in real time."



Reading temporal activity in real-time is a major technological achievement and is an Australian first.

An example of the MEG laboratory's application is the study of the architecture of language in the brain. "In studying adult minds, we are determining the structure and order of language comprehension. An experiment that we are currently undertaking is monitoring when the brain finds a word in a sentence that doesn't fit."

"For example, 'Nobody at the party ate any fruit' reads fine, but if you change the sentence to 'Everybody at the party ate any fruit' it sounds odd. The structure of the two sentences is the same, but the semantics are different. 'Any' in the second sentence doesn't sound right."

"The MEG laboratory can map with precision the moment that the brain decides when a word is out of place. We hope to further our study by applying the same experiment to children in the future."

For further information about the MEG Laboratory visit the [website](#). For information on research at Macquarie visit the [Higher Degree Research Unit](#)



(HDRU) website.

Professor Stephen Crain with (L-R) Dr Rosalind Thornton and Dr Graciela Tesan at the MEG Laboratory

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