

**School of Health Sciences
Honours Research Project**

Title:

Schizophrenia-related neurotransmission in freely moving mice – a microdialysis study

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Project Details:

Schizophrenia is a psychiatric disorder that affects up to 1% of the worldwide population. While various factors have been implicated in schizophrenia aetiology, its cause is still unknown. Several neurotransmitter systems within the brain, including the glutamatergic, GABAergic and dopaminergic systems, have been strongly hypothesised to be involved in the course of schizophrenia. Still, little is known about their real time pattern in relation to behaviour, their interactions or their final relevance to the disease.

The aim of this project is to measure *in vivo* neurotransmission in the Neuregulin-1 knockout mouse model for schizophrenia. Using the microdialysis probe implantation technique, we will monitor glutamate, GABA and dopamine transmission in the brain in freely moving animals. This will allow us to correlate schizophrenia-related behavioural changes to *in vivo* neurotransmission.

Number of Students: 1

Special requirements:

- readiness to work with animals (mice/rats)
- readiness to potentially travel several times to Sydney (UNSW) for sample analysis

Skills required:

- basic knowledge in neuroscience
- team-work abilities

What will be provided:

- Intense training and supervision in every stage of the experiment
- Training in up-to-date animal surgery and lab techniques
- Guidance on scientific problem framing
- Guidance on data analysis and statistics
- Guidance on the logistics for writing the thesis
- Time for critical discussion and feedback
- Regular lab meetings and seminars about research, up-to-date techniques and literature