

Health  
Sciences  
Postdoctoral  
Fellowship

DR TRACY MELZER

# profile



**Dr Tracy Melzer's** principal area of research is using magnetic resonance imaging (MRI) to investigate cognitive impairments associated with Parkinson's disease.

#### Imaging has revolutionised medicine

"Imaging is amazing," Tracy says, "It has completely revolutionised medicine, and the field continues to advance at a startling rate.

"It took me a while to arrive at brain imaging. I originally came to New Zealand from the USA for the Medical Physics programme at the University of Canterbury. During the course I met one of my future supervisors, Dr Richard Watts, a specialist in the physics of MRI."

The University of Otago's flexible PhD programme enabled Tracy to be co-supervised by Otago's Department of Medicine, and Physics at Canterbury.

"My attraction to the physics evolved into an even greater passion – that of developing and applying new techniques to extract the most amount of information from MRI."

#### Unique patient cohort

Between the University of Otago, Christchurch, and the NZ Brain Research Institute (NZBRI), the multi-disciplinary team has one of the world's largest single-centre MRI databases of well-characterised Parkinson's disease patients.

"What makes this really exciting is that we have continued to follow individuals over regular intervals," Tracy says. "We can start asking very

important questions, such as can we detect markers that signal cognitive decline before it occurs. This allows us to identify candidates most likely to benefit from novel therapeutic trials."

#### Fellowship enabled rapid career progression

"The Fellowship meant that I could remain in New Zealand to follow our unique group of patients. I was able to publish many articles, and join several international collaborations."

These outcomes helped Tracy secure a Canterbury Medical Research Foundation Fellowship, a Lotteries Health Research grant, the Neurological Foundation of New Zealand's Philip Wrightson Fellowship, and most recently a Health Research Council Emerging Researcher First Grant. He is also a named investigator in the Brain Research - Rangahau Roro Aotearoa Centre of Research Excellence.

The Fellowship also coincided with two events that dramatically accelerated his career. Firstly, the imaging community gained momentum with many more investigators showing interest. Secondly, the NZBRI's Director of MRI Research left for the USA and Tracy took over his duties. This was a fantastic opportunity.

"I feel fortunate to be able to work on the number, and calibre, of projects in this field, and I get to live and raise my family in NZ."

#### Junior scientist moment

"I feel quite lucky in that I loved school. I will never forget the day a severed antelope head with maggots arrived..."

## POSTGRADUATE



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