



Profile

Leanne Williams: fighting stigma through imaging

Leanne Williams' grandfather helped build Australia. He worked on the railways, laying tracks across the vast, mostly unsettled land mass. There is more than a touch of the pioneer to his granddaughter. Leanne Williams is Professor of Psychiatry and Behavioral Sciences and Director of the Center for Precision Mental Health and Wellness at Stanford University School of Medicine (CA, USA). Her trailblazing has been of a different kind—not as much dust, but the territory can be hostile.

As a newly qualified clinical psychologist, Williams watched a man with severe aural hallucinations rest a transistor radio against his ear, tuned into static, as a means of managing the intrusive voices. "I thought, 'this is about modulating the brain'", she recalled. There was no available pathway connecting psychiatry and neuroscience, so Williams set about forging one. She returned to university for a PhD in cognitive neuroscience, before taking up an offer from the University of Sydney to set up a programme to explore a neuroscience-based understanding of psychiatry.

"There has been a lot of resistance—it has been a theme throughout my career", said Williams. "People said the brain was too complicated, there was no way you could identify the specific regions and connections that were implicated in mental illness." Using functional magnetic resonance imaging (fMRI), Williams has identified several biotypes of depression and anxiety with distinct manifestations and responses to therapy.

There seems to be something intrinsically stigma-busting about neuroimaging. "People can see what is happening in their brain that is causing them to feel bad. That can be liberating; they stop blaming themselves for being ill", Williams told *The Lancet Psychiatry*. Destigmatising mental illness has never been merely theoretical for Williams. In the past decade or so, however, it has taken on a profoundly personal meaning. In 2015, Williams' partner, a physician in the emergency room, took his own life. "It feels like you have been hit by a truck", said Williams. "It is brutalising, overwhelming. There is intense guilt. You ask, over and over, 'How did I not recognise that he was at this point?'"

Williams started to put some of the pieces together: the extreme pressure of working in the emergency department and the concern that accepting treatment would go on his medical record and affect his career. "He talked about depression", said Williams. "On a rational level, he knew it was nothing to be ashamed of. But there was also that part of him that thought he should be able to cope."

In retrospect, and without the benefit of fMRI, her partner fitted the profile for the cognitive biotype of depression described by Williams. People with this biotype tend to be high functioning and conscientious. But the exhaustion of managing, and of appearing to manage, eventually comes to a head. "They typically experience high loss of motivation and energy. They start to shut down", explained Williams. "It is not usually responsive to standard treatment. But it is also a dramatic example of a type of depression where showing the patient their brain can work wonders. A lot of people with the cognitive biotype work in professions like engineering or medicine; when they see their brain, they think, 'OK, this makes sense, we can talk about this.'" The tragedy has acted as a spur for Williams. "I always felt like I was on a mission; there is urgency about it now. The best way to honour this man is to make a difference", she said.

It took a while for Williams to speak openly about the circumstances of her partner's death. But she has come to think of it as a responsibility. "Colleagues have told me they have had similar experiences, with a partner, parent, or family member, but because of the field we are in, it is almost like there is even more pressure to keep quiet. We do all this research and yet we do not talk about ourselves", she said. "Every time someone shares their story, we overcome a bit of stigma, and that puts us closer to where we want to be." There are a lot of implements you can use to blaze a trail; words are among the most powerful.

Talha Burki



For more on neural circuit biotypes and mental health see *Biol Psychiatry* 2022; [91:561-71](#)