

'CJDSGN Memorial Award 2019 in Memory of Anne Friswell, Peter Delchau and Pamela Stead' - \$10,000 – awarded in October 2019

'The effect of human strain variation on prevention of prion disease transmission' during 2019/2020

The unconventional nature of the prion poses a challenge to conventional infection control methodologies. Traditionally these methods have been developed using animal derived. However, we and others have reported the unusual resistance of the only commonly used human prion strain to existing decontamination methods that are effective against these animal prions. It is not known whether a common feature of all human prions is this resistance to decontamination or whether this is a prion strain specific feature. To address this concern, we have developed prion strains that represent the most common sporadic forms of human prion disease and therefore those with the greatest risk of covert surgical transmission. In this 2-year project we will establish laboratory-based methods to assess surgical contamination with these prions and test existing and novel decontamination methods with a view to developing a universal infection control protocol that eliminates the challenges faced by those living with or at risk of prion disease.

Ms Yong Qian Koo (Tracy) is a Master of Biomedical Science student who has developed a protocol to facilitate the replication of prions representing the most common prion disease strains. She has further adapted this method to amplify prions from steel wires that represent surgical instruments. As a result of the COVID-19 restrictions on research her lab-based research was suspended for several months at the start of 2020, but she was able to return to the lab, albeit with restricted access in July and has been establishing the sensitivity of the method. In the final 6-12 months of this delayed project (Masters project extended to June 2021) Ms Koo will complete this project by determining whether these prions have different susceptibilities to prion decontamination.