**Application number/Title:** 25515 - Understanding the genetics of malignant mesothelioma susceptibility and prognosis

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**Keywords provided by the Applicant PI to describe the research project:**  
mesothelioma, genetics, cancer, pedigrees

**Application Lay Summary:**

1a: Mesothelioma is an aggressive, incurable tumour of the lining of the lungs. There has been little consistency in the published findings from genetic studies of mesothelioma. Our overall aim is to understand the genetic epidemiology of malignant mesothelioma.

More specifically, our aims are to: (1) estimate the genetic correlation between mesothelioma and other cancers and lung function measures; (2) identify genetic variants (using genome-wide genotype data) that are associated with mesothelioma susceptibility and prognosis.

1b: This proposed study aims to help us understand why individuals develop mesothelioma and whether mesothelioma shares genes with other cancers and lung function measures. We will also investigate why some individuals survive longer than others. This will benefit the public as the full legacy of asbestos use and ongoing exposure is still to be realised, and it is important to further understand how mesothelioma develops and progresses.

1c: For Aim 1, we will estimate the relatedness of the samples and examine whether mesothelioma shares genetic variants with other cancers and measures of lung function.

For Aim 2, we will conduct a genome-wide association study of mesothelioma cases and controls to identify genetic variants associated with mesothelioma risk. We will also perform a genome-wide survival analysis to identify genetic variants
associated with mesothelioma prognosis. These studies will then be meta-analysed along with an Australian study of mesothelioma.

**1d:** We are requesting the full cohort who have been linked to the cancer registries and who have individual level genotype SNP data.