**SI2-008 Wells**

**Lay Title**
Insight into the mechanisms linking the metabolism of fat to prostate cancer progression

**Scientific Title**
The FAS/AMPK axis as a determinant of prostate cancer progression

**Summary**
This project will fund a PhD student to work for three years on research that focuses on telling the difference between aggressive and indolent prostate tumours. The researchers will study the link between fat metabolism and the development of aggressive cancer and attempt to find a marker that can be used to predict how aggressive a cancer will be. It is hoped that by increasing our understanding of the difference between aggressive and indolent tumours we will be better able to treat each case appropriately.

**Project Description**
This study aims to improve our understanding of what makes prostate cancer either aggressive or indolent by learning how fat metabolism can drive prostate cancer progression. The scientists will start by monitoring the migration and invasive ability (measurements to test aggressiveness) of prostate cancer cells in which they have altered the fat metabolism pathway. The researchers also hope to understand if and how fat metabolism is linked to disease outcome, with the eventual goal of providing new tools to improve diagnosis. To do this they will identify any specific fat metabolism markers (expression of genes or proteins involved in this process) in prostate cancer tissue taken at diagnosis. They will then analyse this data to find out if any of the markers of fat metabolism are particularly linked to a high risk of a tumour becoming aggressive.

This research is important because if we can develop better ways to define whether a tumour will be aggressive or indolent, we will be able to avoid giving men any unnecessary treatment and make sure that those with a higher risk of developing aggressive disease get the best treatment.