

The eighth South West Fly meeting was held at University of Bristol on Wednesday 30 January 2019. The first talk was on how insulin resistance exacerbates tau pathology in *Drosophila* tauopathy models and neuroblastoma cell lines and was given by Dr Shreyasi Chatterjee from Dr. Amritpal Mudher's lab at the University of Southampton. Using the *Drosophila* eye, she performed a modulatory screen and found that chico (IRS insulin receptor) rescued the neurodegeneration caused by overexpression of Alzheimer disease (AD) associated human Tau 2N4R. Loss of function of chico (IRS) insulin receptor also caused increased fly sugar and lipid levels with insulin signalling molecules like GSK3Beta increasing phospho Tau so combining the signalling of AD and type 2 diabetes. Next up, Terrence Trinca from the Dr Joaquín de Navascués lab, Cardiff University lab spoke about his PhD project which was to create a *Drosophila* model for chronic radiation injury. >50% of cancer patients get radiotherapy, and then get late or chronic effects of the treatment, Terrence wants to find the genes involved in the process and has located an effect of the response to the gut.

Dr Benjamin Housden (University of Exeter) gave an interesting talk about his lab's efforts to accelerate drug discovery using *Drosophila* screens. He proposes a novel approach of adding a fly RNAi cell-based screen before the normal human cell screening which precedes mouse studies and human trials, his results with TSC1 and 2 mutants suggest this decreases the rate of attrition through the drug target and development pipeline. He also proposed a new screening approach measuring changes in expression of gene targets using GFP, this allows you to look at gradient effects as a surrogate of dose response analysis. After tea, Dr Herman Wijnen from University of Southampton talked about light-induced plasticity of *Drosophila* central and peripheral clock function. They asked what were the longest and shortest day lengths the fly clock could keep up with? and found this was days of about 21hrs of light then 21hrs of dark and 7.6hrs of light and dark respectively. They determined the clock neurons and genes involved in the extremes of entrainment. The last talk was on investigating a mitochondrial role for Kynurenine 3-monooxygenase (KMO) by Dr Daniel Maddison from Prof. Flav Giorgini's lab at Leicester University. He studied kynurenine pathway metabolism and its interaction with the mitochondrial proteins, Pink and Parkin. He showed he could rescue PINK1 and Park nulls with fly or human KMO and the interaction with a number of genes using an elegant blend of fly genetics, human cell culture and biochemistry. Discussion of all things fly continued over refreshments kindly provided by the Genetics Society and SLS and then continued in the pub. The next meeting is on 8 May please contact james.hodge@bristol.ac.uk or visit <http://www.genetics.org.uk/events/fly-south-west/> for more details.