The seventh South West Fly meeting was held at University of Bristol on Wednesday 7 November 2018.

The first talk was on how cold-induced period transcription links environmental temperature to the Drosophila molecular clock and was by Dr Akanksha Dafna from Dr Herman Wijnen lab at the University of Southampton. She showed it was possible for flies to entrain their clocks to 2-3^{o}C temperature cycles (TC) in constant darkness (DD). The period clock gene was found to be better at resetting than timeless. They then performed a RNA-seq screen to see which transcripts changed their expression in these flies and looked for which parts of the promoter region of the period gene driving luciferase expression were required to respond to temperature entrainment. Next, Dr Paul Hartley from University of Bournemouth gave an interesting talk on studying aspects of human cardio-renal physiology using *Drosophila.* He went through the development of the fly heart and its potential to model human cardiac function showing a beautiful video of the fly heart. He showed that the fly nephrocytes and cardiac cells interacted with each other and could rescue mutant defects in one another.

After tea, Dr Roberto Feuda from the University of Bristol spoke about a common neurogenic toolkit in Bilateria. He discussed how the the nervous system may have evolved comparing the expression of a network of neurogenetic regulatory genes expression patterns in the urchin, snail and *Drosophila*. He showed that 87% of neural genes in urchin were also in *Drosophila*, however there are only 6 neurons in urchins and 100,000 neurons in flies. Dr Benjamin Kottler from Dr Frank Hirth's lab at KCL talked about the inverse control of turning behaviour by dopamine D1 receptor signalling in columnar-wedge and ring neurons of the central complex in *Drosophila*. He showed how video tracking using the DART system could be used to study motor action selection in *Drosophila*, this was shown to involve the central complex region of the brain, the FoxP gene and dopamine signalling.

As all days begin with circadian rhythms and end with sleep, likewise the meeting started with a talk on circadian rhythms and ended with one on sleep. Dr Alice French from Dr Georgio Gilestro's lab at Imperial discussed stimulus valence and arousal from sleep. She showed that some odours are more arousing than others, and that this could be studied using the Ethoscope computer tracking system and delivery of different concentrations of vinegar odour during sleep and watching how arousing the odours were. She found that 5% acetic acid was attractive and 10% aversive, however starvation could make even 10% acetic acid attractive. She then dissected the neuroanatomy of how the odours interacted with sleep and how the flies could switch their valence. Discussion of all things fly continued over refreshments kindly provided by the Genetics Society and SLS and continued in the pub. The next meeting is on 30 January please contact james.hodge@bristol.ac.uk or visit http://www.bristol.ac.uk/phys-pharm-neuro/events/fly-meetings/ for more details.