

## **PARKINSON'S UK, EDINBURGH BRANCH**

### **VISIT OF RESEARCH INTEREST GROUP TO PARKURE, UNIVERSITY OF EDINBURGH, JANUARY 2015**

On January 7, a group of six members of the Research Interest Group, led by Ken Bowler, took advantage of an invitation to visit the Parkure company project based in the Centre for Integrative Physiology at the University of Edinburgh. We were welcomed by the CEO of Parkure, Lysimachos Zografos, who heads the project, and Professor Douglas Armstrong, who, after supervising Lysimachos' PhD on Parkinson's Disease, is also heavily involved in the work.

Describing their work in layperson's terms was not easy for them, and it is even harder for us. The key fact is that, despite the many obvious differences between humans and fruit flies, the brain of the fruit fly has sufficient similarity to parts of the human brain to allow Parkure to test the impact of specific drugs which are candidates for neuroprotection. These drugs are administered in the food supply of fruit flies with Parkinsonian symptoms, and Parkure can then monitor the impact of the drug on the survival of dopaminergic neurons in the brains of the affected fruit flies, by comparing them to others who have not been given the drug. Lysimachos showed us evidence of how flies previously demonstrating Parkinsonian symptoms, such as stiffness, regained their vitality for a time after feeding on a specific drug. We also had a fascinating opportunity to meet the fruit flies – millions of them, bred with various genetic mutations, fed and carefully tended at controlled temperatures in the laboratories – and to see some of the apparatus they have developed for breeding the flies and for demonstrating the evidence of the impact of drugs.

So why have they formed a company to put these techniques into action? As the downloadable leaflet in the same directory as this account explains, the project aims to let the response of the Parkinson's Disease affected brain tell us which chemicals are effective, by developing a fast and cost effective whole organism assay for PD, based on fruit flies with PD, by testing as many drugs as possible and thus seeking to trigger the pharmaceutical industry's interest and involvement in the co-development of drugs. The methods developed so far already allow for the screening of 10,000 drugs per annum and this figure is expected to increase.

A novel feature of establishing Parkure is the use of crowd funding to raise the necessary capital. You can read more about this, and other aspects of Parkure on their website: <http://parkure.co.uk>

We are very grateful to Lysimachos and Douglas for taking time to explain their work to us and to show us their laboratories.

Sheila Edward and Ken Bowler  
January 2015