**Professors Paul Harrison, John Geddes, Kia Nobre and Catherine Harmer**

**Mood Instability in Bipolar Disorder: Biological, Neural, Mathematical and Therapeutic Investigations.**

As well as the episodes of mania and depression which define bipolar disorder, we hypothesise that people with the disorder also have a chronic mood instability which makes them vulnerable to relapse. We lead a multidisciplinary Wellcome Trust strategic award (with colleagues in other Oxford departments, Cardiff, London, and Baltimore) to investigate the neural, molecular, behavioural, and therapeutic correlates of this mood variability, and also to characterise the instability mathematically. For details, see <http://conbrio.psych.ox.ac.uk/home> . The candidate will have the opportunity to develop a thesis proposal within this broad area, and select supervisors accordingly. For example:

1. Collection and analysis of multidimensional data on mood variability and its correlates. This would involve novel types of data and methods for their collection (eg via smartphones, smartwatches, patches) and analysis (both computational and mathematical), with a view to identifying predictors of clinical relapse.
2. Investigations of the neural correlates of mood instability. This will utilise fMRI, magnetoencephalography (MEG), cognitive/emotional measures, and their inter-relationships.
3. Molecular mechanisms of risk genes underlying bipolar disorder and mood instability.
4. The effects of lithium and other therapeutic agents on mood instability. This would be part of a randomised clinical trial and could focus either on clinical, neural, or molecular outcome measures.

Potential applicants are invited to contact paul.harrison@psych.ox.ac.uk in the first instance.