

Full Time MSc Neuroscience Programme 2011 – 2012

Titles for Essay A2

Submission Deadline midday on 28th November 2011

1. How will the new next generation sequencing methods be applied to human genetics? - John Powell
2. How have genome-wide association studies provided insight into the genetics of schizophrenia? - David Collier
3. Describe mouse models used to study genes and the different ways in which genes can be altered in these model systems, including both quantitative genetics approaches (e.g. breeding strategies) and single gene manipulations (e.g. targeted knockout). - Cathy Fernandes
4. Describe the different stem/progenitor cell types within the embryonic and adult forebrain. Include their lineage relationships and function. - Brenda Williams
5. What are the general mechanisms by which axons navigate to find a target area, including the different activities they might encounter. - Robert Hindges
6. Discuss the role of organisers in brain development. - Clemens Kiecker
7. Discuss the function of protein kinases in the induction and maintenance of long-term potentiation (LTP) – Peter Giese
8. Discuss biological plausibility in artificial neural networks using Hebbian and Backpropagation networks as examples. - Mike Coleman
9. How are microglial activity, form and functions regulated by the CNS microenvironment? - Payam Rezaie
10. Describe the mechanisms which prevent many potentially-useful drugs from entering the CNS, giving specific examples of drugs and drug-transporters and the methods that may be used to overcome these problems. - David Male