

Full Time MSc Neuroscience Programme 2013 – 2014

Titles for Essay A3

Submission Deadline: Monday 31st March 2014, by 15.00pm

A3.1 Systems Neuroscience

1. Is mouse visual cortex a good model system for understanding visual processing?
2. Evaluate the role of the hypothalamic pituitary adrenal axis in psychiatric disorders.
3. In what ways may pathological and pathophysiological changes in fronto-striatal systems contribute to the executive dysfunction seen in patients with Parkinson's disease?

A3.2 Addiction Biology

4. Discuss animal models of drug addiction and their utility for assessing abuse liability.
5. Why is the endophenotype approach suitable for genetic studies of addictive disorders? What are its limitations?

A3.3 Neuropsychology of Mental Health

6. How has preclinical imaging been informative or has led to improvements in clinical diagnosis or treatment of neurological or psychiatric diseases?
7. Discuss the relevance of the parallel circuits associated with the Basal Ganglia to motor control.

A3.4 Neuroimaging

8. Discuss what we have learned about ADHD from neuroimaging research.
9. Neuroimaging techniques are most commonly applied to understand psychiatric & neurological disorders and cognitive functions. Why is Neuroimaging also of interest to the pharmaceutical and neuromarketing industries?

A3.5 Neurodegeneration

10. Motor neuron disease and frontotemporal dementia represent two ends of a phenotypic spectrum. Discuss the clinical, genetic and pathological basis for their links.
11. Several neurotransmitters are involved in the pathogenesis of Parkinson's disease. Describe their contribution to the neurodegeneration.
12. What is the evidence for astrocyte dysfunction in juvenile NCL and what are the consequences for neurones.