

PI Seminar Series

Speaker:

Dr Philip Manning - Institute of Cellular Medicine

Venue:

Ridley 2 – 1.65

Date:

Wednesday 14th November 2018

Time:

13:00 – 14:00

Dr Philip Manning will present:

‘Investigating the Biochemical Basis of Chronic Fatigue Syndrome.’

Chronic fatigue syndrome (CFS) is a highly debilitating disease of unknown aetiology. There is currently no cure for this disease and clinical intervention is limited to palliative care. Several factors may contribute to the origins of CFS including viral infection, hormonal imbalances and abnormalities in cellular energetics.

In this work we have studied the potential biochemical basis of bioenergetic abnormalities in myoblasts, myocytes and peripheral blood mononuclear cells (PBMCs) derived from patients with CFS. We have used novel, pH responsive nanosensors to establish a potential link between intracellular acidosis and cellular energetic dysfunction. We have further used extracellular flux analysis to assess abnormalities in oxidative phosphorylation and glycolytic function that are present in cells derived from CFS patients but not in disease free controls.

The use of these novel analytical approaches has enabled the identification of previously unknown abnormalities in the bioenergetic pathways of cells derived from patients with CFS. Intracellular acidosis in muscle cells and impaired mitochondrial function in PBMCs offer clear evidence of the importance of biochemical abnormalities in this disease pathway. Further, advancing understanding of the biochemical basis of CFS could allow for improvements in current intervention strategies used in the care of patients.

Chair: Dr Neil Keegan