

# ICM Research Seminar

Wednesday 13<sup>th</sup> December

**Ben Pippard**

(Dr Peter Thelwall, Prof. John Simpson)

## **Pulmonary ventilation imaging with 19F-MRI of inhaled perfluoropropane gas**

Conventional measures of pulmonary ventilation have a number of limitations. For example, spirometry provides no regional or anatomical information regarding lung function, while CT scans incur ionising radiation doses, restricting serial use. Our work is focussed on developing a new, non-invasive and repeatable approach to ventilation imaging using MRI. Current and future clinical studies will be discussed.

**Dr Henrique De Paula Lemos**

(Prof. Andrew Mellor)

## **Stimulator of interferon genes (STING) as a versatile platform to treat autoimmunity and cancer.**

Stimulator of interferon genes STING induces interferon type I (IFN-I) production that potentiates anti-tumour immunity and autoimmunity. In contrast, STING/IFN-I signaling promotes growth of tumours with relatively low antigenicity and retards systemic lupus erythematosus progression in susceptible mice. Previously, we reported that treatments with DNA nanoparticles (DNPs) or cyclic dinucleotides (CDNs) to activate STING suppressed autoimmune progression in mouse models of rheumatoid arthritis and multiple sclerosis (MS). Such therapeutic responses depended on STING/IFN-I signaling to induce indoleamine 2,3 dioxygenase (IDO) activity, which metabolise tryptophan (Trp) into kynurenines (Kyn). In this talk, I will present pre-clinical data showing that STING activators can be optimized to treat both autoimmunity and cancer.

**Sarah Armour**

(Prof. James Shaw, Dr Michael White)

## **Loss of beta cell phenotype in type 2 diabetes**

Assessing the impact of glucotoxicity on the loss of beta cell phenotype and function in type 2 diabetes with particular focus on the transcription factors involved in these changes

**Chair: Louis Bibby**

**Dental Lecture Theatre F, Medical School**

**1pm - 2pm**