Newcastle University

Institute of Cellular Medicine

# PI Seminar Series

**Speaker:** Ewan Pearson, Professor of Diabetic Medicine, University of Dundee
**Venue:** L2.8, 2nd Floor Leech Bldg
**Date:** Monday 27th November 2017
**Time:** 13.00 – 14.00

## *Professor Ewan Pearson will present:*
## *"Targeting therapy in diabetes: insights from genetics?*


**Abstract**

People are all different, and this is no different when we consider people with diabetes, yet the current approaches to management of diabetes tend to treat everyone the same. The field of precision medicine aims to recognise these differences – whether at the level of their or at the molecular level. Faced with multiple, and increasing, treatment options for diabetes as well as increasing healthcare costs there is a clear need to target therapy to maximise benefit and reduce harm for every patient with diabetes.

This talk will discuss advances in precision medicine in diabetes over the last decade. I will initially outline striking examples seen in monogenic diabetes: subtypes of Maturity Onset Diabetes of the Young and for Neonatal Diabetes caused by potassium channel gene mutations, where patients are often able to transfer off insulin injections onto oral treatment. However, patients with monogenic forms of diabetes are rare, and this lecture will move on to how we might begin to tailor treatment in more common forms of diabetes – such as type 2 diabetes. I will outline how the genetics of glycaemic response to metformin reveals novel mechanisms of action for this old drug. We have also identified that 8% of the population are genetically prone to develop gastrointestinal side effects with this drug – a major limitation adverse effect of metformin. I will then describe how the way other diabetes drugs are metabolised differently by different people alters how well other diabetes drugs such as sulphonylureas and thiazolidinediones work. Finally, I will present exciting new data from the EU IMI-DIRECT consortium outlining how genetic variation can alter response to GLP-1 receptor agonists.

There is increasing evidence that genetic and other molecular and clinical characteristics will impact on treatment outcomes. The exciting challenge now is how we incorporate this information into clinical care and establish that this improves patient outcomes.


**Chair: Professor Ann Daly**

Athena SWAN Silver Award