

PI Seminar Series

Speaker:

Dr Kieren Hollingsworth – Senior Lecturer in Magnetic Resonance Physics

Venue:

Dental Lecture Theatre E

Date:

Wednesday 5th December 2018

Time:

13:00 – 14:00

Dr Kieren Hollingsworth will present:

“Quantitative MRI in clinical research: speeding up acquisition and analysis”

MRI has revolutionised clinical medical imaging, and transformed medical research, by providing repeatable, non-invasive measurements of tissue structure and function. MRI is uniquely flexible as the sensitivity of the image to tissue properties can be varied by altering the way in which MR signals are collected. This is the basis by which contrast is generated in standard anatomical MRI, but also allows measurement of function in both clinical and research settings. Such measurements can reduce the need for invasive techniques and allow longitudinal studies.

However, MRI scanning is also associated with lengthy acquisitions for patients, providing a challenge to some patient groups and limiting the amount of information that can be collected in a scan session. Equally, for some techniques analysis of the data can also be lengthy and involved.

In this seminar, I will describe our continuing work to substantially (i) reduce the length of time required for quantitative MR scan acquisition and (ii) reduce the time taken for data analysis. I will illustrate these with examples relevant to type 2 diabetes, arthritis, sarcopaenia and ageing, neuromuscular disease and lung imaging.