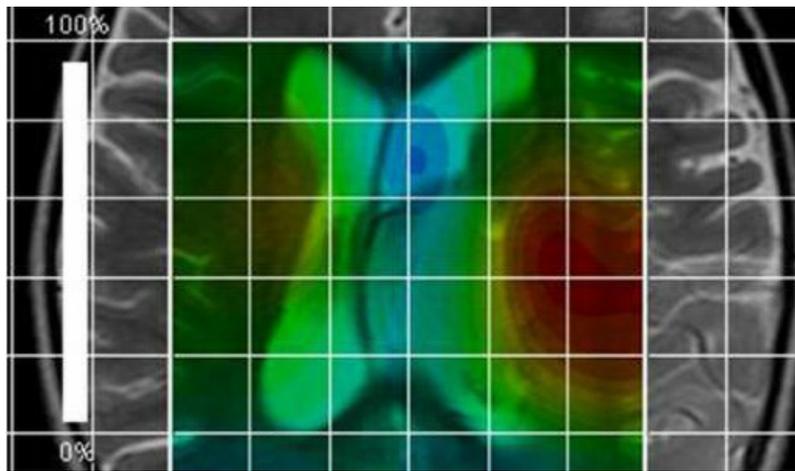


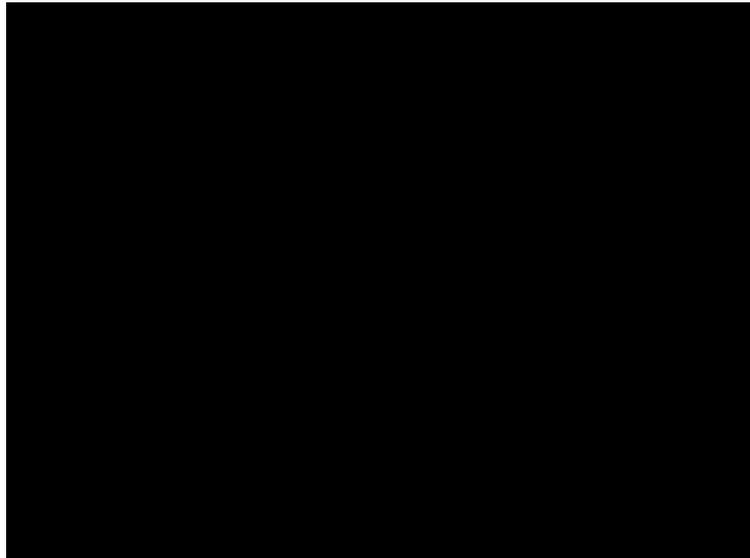
## Brain Tumour Research



Group lead: **Andrew Peet** (</staff/profiles/cancer/peet-andrew.aspx>)

### Overview

The brain tumour research group is developing functional imaging for the diagnosis, management and understanding of childhood brain tumours. It is a translational group working from the physics of imaging to clinical trials, developing new magnetic resonance based imaging techniques and applying them in a clinical environment.



### Our Research Group

Although part of Cancer Sciences, the group is largely based at the Birmingham Children's Hospital site maximising the opportunity for translation and will benefit from the opening of the National Institute for Health Research 3T Magnetic Resonance Research Facility at Birmingham Children's Hospital in 2011.

The major technique which has been used by the group is magnetic resonance spectroscopy which provides a metabolite profile of the tumour in vivo but techniques such as diffusion tensor imaging, tractography and perfusion imaging are also being investigated. The group has developed magnetic resonance spectroscopy as a non-invasive diagnostic aid and as an early indicator of treatment response. In addition several biomarkers of prognosis have been discovered and evaluated. The clinical imaging research is backed up by a laboratory programme of magnetic resonance spectroscopy metabolomics studies on tumour tissue and cell lines including studies of drug response.

A key technique used by the group is high resolution Magic Angle Spinning NMR which allows the study of intact tissue and cells and is performed at the Henry Wellcome Building, University of Birmingham. Elucidation of the underlying molecular pathways by relating the metabolite profiles to studies of molecular genetics is a key aim. The group is particularly active in the development of novel techniques for magnetic resonance signal processing and pattern recognition techniques and has an active collaboration with the School of Electrical, Electronic and Computer Engineering in this area.

### Staff

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