Why we focus on Breast Cancer

Breast cancer is one of the most common cancer of females in the western world. Recent molecular analysis has revealed that the traditional, morphological categorisation has underestimated the variety of breast cancer types which exist. Many of these molecular sub-types vary in terms of their clinical behaviour (such as tendency to metastasise) and their responses to therapy. Furthermore, it is clear that pre-invasive breast cancer is similarly heterogeneous, with only ~50% progressing to invasive cancer. Extending these studies offers great hope in terms of being able to predict tumour behaviour and patient outcome with greater accuracy, and also for the development of novel therapies targeted specifically against particular subtypes.

What we do

- Engage in a variety of investigations which range in scope from basic molecular biology through to epidemiological studies on incidence and types of cancer in different patient and ethnic groups.
- Maintain a breast cancer tissue bank which is unique in including isolated and characterised cell populations from different tumours.
- Identify genetic variations that predispose to LCIS or DCIS and establish which genetic changes cause these pre-malignant lesions to progress.
- Examine the role of the microenvironment in modifying breast cancer behaviour, focusing specifically on transition of pre-invasive DCIS to invasive disease.
- We are affiliated with the Centre for Cancer Prevention, directed by Professor Jack Cuzick, who lead on several international trials in breast cancer prevention, which have been pivotal in the introduction of new prevention regimes for breast cancer patients.
Key Publications
• Elosegui-Artola *et al.* Rigidity sensing and adaptation through regulation of integrin types. *Nature Materials* 2014; 10.1038/nmat3960
• Ménard *et al.* Receptor tyrosine kinase c-Met controls the cytoskeleton from different endosomes via different pathways. *Nature Communications* 2014; 5, 3907

Who does the Research
Prof. Louise Jones Pathology & Microenvironment
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Major Funders
• Association for International Cancer Research • MRC
• Breast Cancer Campaign • Cancer Research UK

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