



## Core Facilities and Scientific Services

The Core Facilities at the Cambridge Research Institute provide state-of-the-art equipment and services to support the research of the Institute, as well as working towards applying new technologies to cancer research. They are each run by scientific staff members specialising in one particular scientific technology. These core scientists provide scientific support, advice, and training for all CRI researchers and students in the use of their particular speciality as needed.

Since moving into the Institute the priority of the core facilities has been to organise the physical infrastructure, institute standardised working practices and develop working relationships with each of the research groups.

The core facilities present at the CRI offer the following services. **Bioinformatics** focuses primarily on the analysis of microarrays, helping with gene identification and also on the integration of genomic and clinical information. The **Biological Resources Unit's** 'mouse hospital' works with transgenic mice. These mice develop cancers very similar to the equivalent human cancer types, helping to improve diagnosis and response times to treatment. **Microscopy** provides a wide range of imaging facilities: wide-field multi-point time-lapse imaging; imaging cytometer analysis; spinning disc and spectral confocal fluorescence imaging; FLIM and non-linear microscopy (SHG and multi-photon fluorescence). **Genomics** has access to the latest sequencing and microarray technology to analyse genomic data. **Histopathology and ISH** provide routine histological processing of tissue sections as well as immunohistochemistry and *in situ* hybridisation. **Flow Cytometry** uses fluorescent probes, lasers and other imaging techniques to characterise and identify cell functionality for both the treatment and diagnosis of cancer. Scientific Services available include an **Equipment Park** which has a range of state-of-the-art instrumentation available to researchers such as chromatography, 2D gel electrophoresis

and molecular biology techniques including PCR. The CRI also has a dedicated **Biorepository**, run by Bob Geraghty. The CRI Biorepository is being established as a core research facility and incorporates a central cell bank and the sample tracking and storage of human and murine tissue samples. It also provides expertise and advice on all aspects of cell and tissue culture and in the procedures required to source human tissue samples for research use. The Biorepository operates under the Human Tissue Authority (HTA) Codes of Practice, in accordance with the Human Tissue Act. The facility has state-of-the-art liquid nitrogen storage for up to 400,000 cell and tissue samples and has dedicated -80°C and liquid nitrogen storage for human tissue samples to comply with current HTA regulations. We have introduced a commercial sample tracking data-base to manage cell banking and we are developing a database which will track the movement of human and murine tissue samples throughout the Institute. We have established useful working links with the Addenbrooke's Hospital tissue bank, their research and development department and Oncology research and development, all of which are essential when applying for ethical approval for new projects. We have also established contacts with a number of other research and commercial biorepositories.

In addition to the scientific resources available at the CRI, our researchers have access to Cancer Research UK research services, available at Lincoln's Inn Fields (LIF) and at other Cancer Research UK funded laboratories:

- Bioinformatics and Biostatistics (LIF)
- Cell Services (Clare Hall & LIF)
- DNA Microarray Facility (Sutton)
- Fermentation Services (Clare Hall)
- GeneChip Microarray Facility (Manchester)
- Genotyping Facility (Leeds)
- Histology Service (LIF)
- Library and Information Services (LIF)
- Monoclonal Antibody Service (LIF)
- Mutation Detection Facility (Leeds)
- Protein and Peptide Chemistry (LIF)
- Transgenic Services (Clare Hall)

CRI researchers also have access, with prior arrangement, to a wide range of facilities at the University of Cambridge, Addenbrooke's Hospital and at the Cancer Research UK London Research Institute.