



Core Facilities

The Core Facilities at the Cambridge Research Institute provide state-of-the-art services and equipment to support the cutting-edge research of the Institute, as well as working towards applying new technologies to cancer research.

Each facility has a team of scientific staff specialising in one particular technology. These core scientists provide scientific support, advice, and training for all CRI researchers and students in the use of their particular speciality as well as keeping fully up-to-date on developing technologies.

This year the Institute became more established and the facilities have developed closer interactions with the research groups. This has provided the impetus for the continued development of existing technologies and the expansion of services. Several of the facilities have developed new techniques and technologies that have the potential to further enhance the Institute's ongoing and future research.

The CRI core facilities currently offer the following services:

- **Bioinformatics** focuses primarily on the cutting-edge of high-throughput genomic, epigenomic and proteomic analysis as well as the integration of genomic and clinical information.
- The **Biological Resources Unit's** 'mouse hospital' works with transgenic mice that develop cancers very similar to the equivalent human cancer types. Studies undertaken in this facility are helping to improve diagnosis and response times to treatment.
- The **Biorepository** has developed significantly in the past year, covering all aspects of sample management, tracking and storage, and is now widely used by most research groups in the Institute. The service also provides advice and training in all aspects of tissue culture.
- The **Equipment Park** provides access to and support for high-end state-of-the-art instrumentation such as chromatography, 2D gel electrophoresis and molecular biology techniques.
- **Flow Cytometry** offers a wide range of cytometric services using fluorescent probes, lasers and other imaging

techniques to characterise and identify cell functionality for both the treatment and diagnosis of cancer:

- **Genomics** allows researchers access to the state-of-the-art DNA and RNA analysis resources including sequencing and microarray technology to analyse genomic data.
- **Histopathology and ISH** provides routine histological processing of tissue sections as well as immunohistochemistry and *in situ* hybridisation.
- The **Light Microscopy** facility provides training, advice and access to a wide range of advanced imaging techniques such as 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).

The Institute is currently developing a pharmacokinetics and pharmacodynamics core facility that will assist in the study of drug discovery. Its development is a crucial aspect of the work of the Jodrell laboratory, formed this year when Duncan Jodrell joined the CRI as a senior group leader. Preliminary discussions are also ongoing for a proteomics core facility at the CRI.

Facilities and services essential to CRI researchers, but currently unavailable within the Institute, can be accessed by prior arrangement: either internally via other Cancer Research UK Institutes, or externally via the University of Cambridge or Addenbrooke's Hospital.

This year staff changes have included the departure of Greg Veltri, the head of Flow Cytometry, who was instrumental in equipping and establishing the core facility when the Institute first opened. Greg is the current Director of Cytometry at National Jewish Health, Denver, Colorado, US. Richard Grenfell, the new head of CRI Flow Cytometry, joins the Institute in January 2009 from the MRC Laboratory for Molecular Biology in Cambridge.

