



# Bioscience Technology Facility

THE UNIVERSITY *of* York  
Department of Biology

## Bioscience Technology Facility

is a unique resource, serving leading academic and industrial bioscience customers.

Established in the Department of Biology, University of York in 2002 as a 2,000m<sup>2</sup> purpose-built facility, we are now a team of world-class research scientists and technologists working across six bioscience research capabilities.

Collectively we bring together a unique range of expertise and equipment, and are recognised as a leading example of how to provide research support in the 21<sup>st</sup> Century.

## Our people

The Bioscience Technology Facility is led by a management team comprising the Facility Director, Dr John Pillmoor, and the heads of each of the technology areas.

The heads, who are experts in their fields, also have a broad understanding of the full gamut of bioscience challenges. The labs are staffed by dedicated teams of research scientists and technicians who have deep knowledge of the technologies and equipment we use.

## Our capabilities

We focus our bioscience expertise in six core areas. These are our capability platforms, which are located in adjacent labs:

- Imaging & Cytometry
- Genomics
- Proteomics
- Bioinformatics
- Protein Production
- Molecular Interactions

## Our technologies

Originally set-up as part of a £21m investment in biosciences at York in 2002, we have continued to invest in state-of-the-art research technologies.

Our team has the very best equipment and tools of the trade. Equally importantly we have the expertise and experience to solve your technology challenges.

We have close collaborations with leading equipment manufacturers such as: Applikon, Beckman Coulter, Bruker, Zeiss and JEOL.

## Our services

1. **Access & Support:** we provide access to our research technologies, with support if required
2. **Training:** we train academic and commercial bioscience researchers and technicians
3. **Contract research:** we undertake a wide range of research services on behalf of our customers
4. **Research partnerships:** we advise customers on how best to address complex bioscience challenges and also project manage the work

Ref: 05/12

## Our contact details

Bioscience Technology Facility  
Department of Biology (Area 15)  
University of York  
York, YO10 5DD, UK

+44 (0)1904 328821  
btf-enquiries@york.ac.uk

[www.biosciencetf.com](http://www.biosciencetf.com)

# Bioscience Technology Facility

... integrates six key  
bioscience research  
capabilities



... addresses a  
wide spectrum of  
bioscience needs



... provides a unique set of services:  
access and support, specialist  
training, contract research, and  
research partnerships

## Imaging & Cytometry

Flow Cytometry for whole cell analysis

- Analysis to cell sorting

Confocal and fluorescence microscopy for cellular imaging

- Diverse range — spinning disc to multi-photon

Electron Microscopy for ultra-structural imaging

- Cutting edge scanning EM to transmission EM

**Dr Peter O'Toole**  
peter.otoole@york.ac.uk

## Proteomics

Discovery & expression studies

Phospho-proteomics

Single protein analysis

- Characterisation, quality control and quantification
- Post-translational modifications, including phosphorylation

Glycobiology

- Characterisation of *N*- and *O*-glycans and polysaccharides

Metabolomics

**Dr Jerry Thomas**  
jerry.thomas@york.ac.uk

**Dr David Ashford**  
david.ashford@york.ac.uk

## Protein Production

High throughput cloning and expression screening

- Bespoke and automated molecular cloning for protein expression

Multiple expression and fermentation platforms

- Bacterial, yeast, insect cell, and human cell expression
- Production in shake-flask to bioreactor systems

Tailored protein purification

- Analytical and preparative solutions
- 'One step' multi-dimensional chromatography

**Dr Jared Cartwright**  
jared.cartwright@york.ac.uk

## Genomics

Sequencing

- Routine Sanger sequencing and access to next-generation sequencing platforms

DNA analysis

- Flexible SNP genotyping for whole genome analysis and copy number variation studies

RNA analysis

- Multiple microarray technology platforms (off-the-shelf & custom) plus Real-time (quantitative) PCR

**Dr Peter Ashton**  
peter.ashton@york.ac.uk

## Bioinformatics

Analysis and integration of large scale, disparate data-sets

- Assembly and annotation of DNA sequences from all major platforms
- Annotation of protein and mRNA sequences from transcriptome projects
- Incorporation of expression data from transcript counting, microarrays and qPCR
- Confidential and public database generation, including web databases

Bioinformatics and data analysis support

- From expression analysis data pre-processing to advanced Gene Ontology and pathway analysis

**Dr Peter Ashton**  
peter.ashton@york.ac.uk

## Molecular Interactions

Protein characterisation

- Molecular weight, size and homogeneity by biophysical methods, including mass spectrometry, light scattering, analytical ultracentrifugation (AUC)

Protein-ligand interactions

- A range of direct and indirect techniques, including surface plasmon resonance (Biacore), rapid reaction kinetics, isothermal titration calorimetry (ITC)

**Dr Andrew Leech**  
andrew.leech@york.ac.uk