Research facilities

The School has major high-technology facilities for research in, amongst others areas, genomics, proteomics, metabolomics, structural biology and optical imaging.

Facilities within the School of Biosciences include:

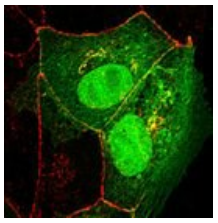
The Advanced Mass Spectrometry facility (/facilities/advanced-mass-spectrometry/index.aspx)

Combining state-of-the-art instrumentation with world-class expertise for biomolecular analysis.

The facility boasts:

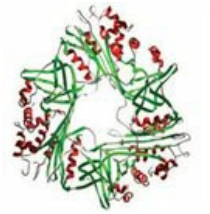
- Thermo Scientific LTQ FT Ultra (http://www.birmingham.ac.uk/facilities/advanced-mass-spectrometry/about/ft-icr.aspx)
- Thermo Scientific Orbitrap Velos ETD (http://www.birmingham.ac.uk/facilities/advanced-mass-spectrometry/about/orbitrap.aspx)
- Thermo Scientific TSQ Vantage (http://www.birmingham.ac.uk/facilities/advanced-mass-spectrometry/about/qqq.aspx)

Birmingham Advanced Light Microscopy facility (BALM) (/facilities/balm/index.aspx)



This facility provides cutting edge microscopy resources to members of the univesity community and beyond. Our microscopes are routinely used for high resolution live-cell imaging, as well as analysis of organisms ranging from Drosophila to zebrafish. In addition to training and technical assistance we also provide data analysis capabilities through our dedicated workstations.

Birmingham Biomolecular Characterisation Facility (BBCF) (/facilities/bbcf/index.aspx)



Based in the School of Biosciences, the BBCF boasts many of the biophysical tools essential for complete biomolecular characterisation.

These tools provide information on:

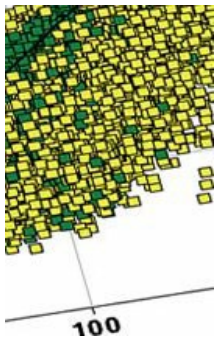
- **Conformation**: Circular Dichroism (CD), Fourier Transformation Infrared Spectroscopy (FTIR) and X-ray Crystallography
- **Size**: Analytical Ultracentrifugation (AUC) Aggregation and
- **Association**: (AUC/DLS) Protein folding and stability: (FTIR/CD/AUC)

Birmingham Drug Discovery Facility (/facilities/bddf/index.aspx)

The Birmingham Drug Discovery Facility contains a number of cutting-edge technologies required to enable Birmingham scientists to conduct translational science.

We offer access to two fully automated drug discovery platforms (http://www.birmingham.ac.uk/facilities/bddf/platforms/index.aspx) housed in the Drug Discovery Facility laboratory which is located in the School of Biosciences at the Institute of Microbiology and Infection (IMI).

Functional Genomics, Proteomics and Metabolomics Facility (/facilities/genomics/index.aspx)



The facility is involved in numerous research efforts in Biosciences, working within areas such as cancer research, cell signalling, microbial gene expression and modulation of plant growth and parasitic resistance.

The facility prides itself on it's ability to provide high throughput, accurate services to the University, external institutions and commercial companies at competitive prices.

Genomics Services Facility (/facilities/genomics-services-facility/index.aspx)

The Genomics Services Facility has recently opened its doors to a wide-range of

collaborators and clients. Using the latest next generation sequencing technology, we aim to deliver high-throughput sequencing results in the most cost effective manner.

Working together with bio-statisticians from the Centre for Computational Biology (also based at the University of Birmingham) we can take your project from raw samples to fully-analysed data. Using our Confluence site we also provide comprehensive feedback on the status of your work, giving you full access to Quality Control and Assurance data throughout the workflow.

Horticultural services (/facilities/horticultural/index.aspx)

Located within the School of Biosciences are six containment glasshouses and two large walk in growth rooms, with lighting, heating, air conditioning, shade screens and watering all individually controlled and fully automated including a growth room with integral humidification. Further facilities include growth cabinets, separate glasshouse unit, plant preparation area and nearby autoclave.

Macromolecular X-Ray Diffraction Facility (/facilities/x-ray/index.aspx)

The facility includes a new-generation microfocus rotating anode generator and a CCD chip-based area detector for rapid data acquisition. Protein crystallisation, largely a trial-and-error process, is often hampered by the scarcity of pure protein. With the aid of a liquid handling robot, capable of dispensing nano-litre volumes, the number of potential growth conditions can be vastly extended, enhancing the chance of success and rendering possible the crystallisation of difficult proteins or protein complexes.

NERC Biomolecular Analysis Facility - NBAF-Birmingham (/facilities/metabolomics/index.aspx)

One of the five nodes of the NERC Biomolecular Analysis Facility (NBAF), the Birmingham node was established in March 2009 to serve the metabolomics research needs of the NERC community. We offer advanced metabolomics methodologies based upon FT-ICR mass spectrometry and 1-D and 2-D NMR spectroscopy, as well as extensive data analysis.

Other centres

Centre for Systems Biology (/research/activity/csb/index.aspx)

Houses a dedicated 128 processor computer cluster, office space and meeting facilities. Staff from the School of Biosciences as well as other Schools (Medicine, Mathematics, Computer Science and Engineering) are seconded to the Centre for varying periods of time.

Centre for Ornithology (/research/activity/ornithology/index.aspx)

We are very grateful for the generosity of the Warwickshire Wildlife Trust who have granted us access to their 100ha **Chaddesley Woods National Nature Reserve (http://www.worcswildlifetrust.co.uk/reserves/chaddesley-woods)** in which we have sited 300 nest boxes for long term work on the breeding biology of a range of passerine species.

The Henry Wellcome Building for Biomolecular NMR (http://www.nmr.bham.ac.uk/)

Administered by the Medical Schoolwhich houses a range of instruments (900MHz, 800MHz, 2x 600MHz, 2x 500MHz).

Centre for Electron Microscopy (/facilities/electron-microscopy/index.aspx)

With 3 transmission and 5 scanning microscopes