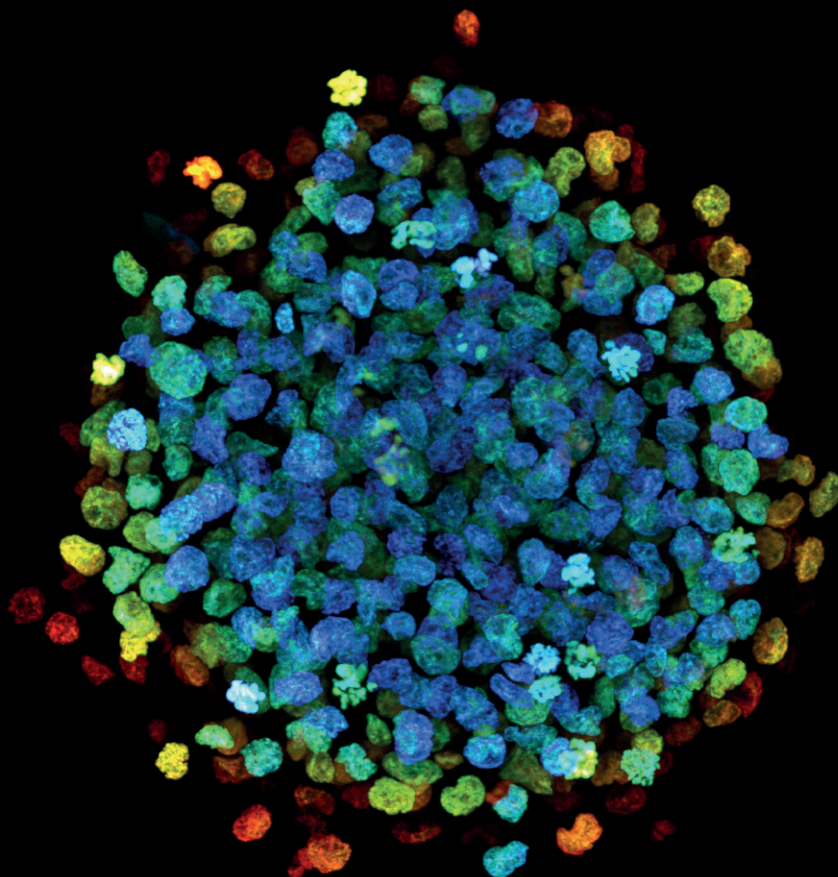
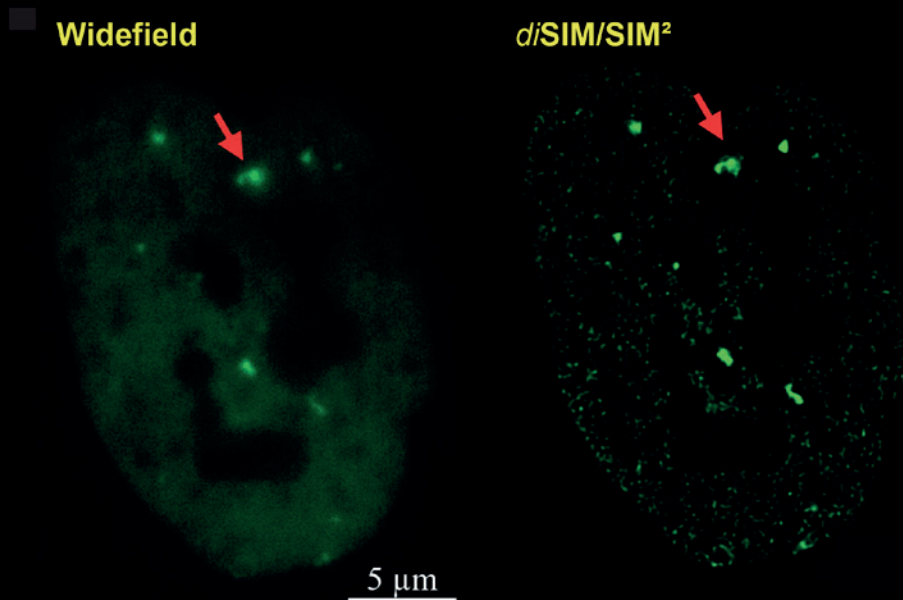
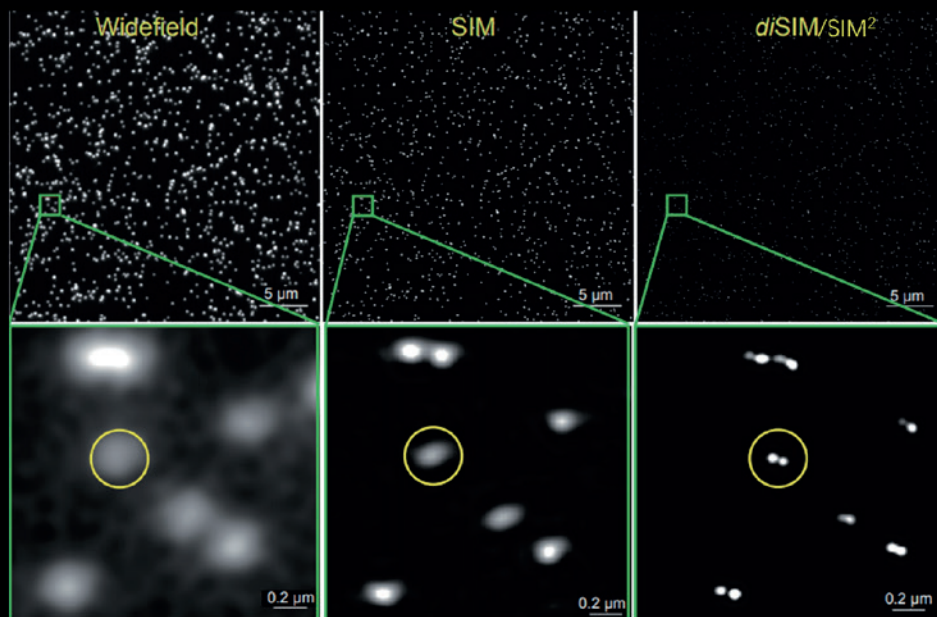


Queen Mary University of London

Research Facilities

2026/27





Introduction

Welcome to the 2026/27 academic year Queen Mary University of London Research Facilities Network booklet.

The goal of this booklet, and the network in general is to raise awareness of the excellent facilities available to researchers within the University, whatever campus they may be located on.

We've arranged the booklet on broad subject areas, some of these areas are well served with complimentary facilities on each campus, for example imaging. Other areas have a single facility serving all campuses.

Importantly the booklet has up to date details of websites and contact details for each team so arranging consultations is more straightforward.

We hope you find the booklet useful and we look forward to working with you.

Yours,
Queen Mary Research Facility Network

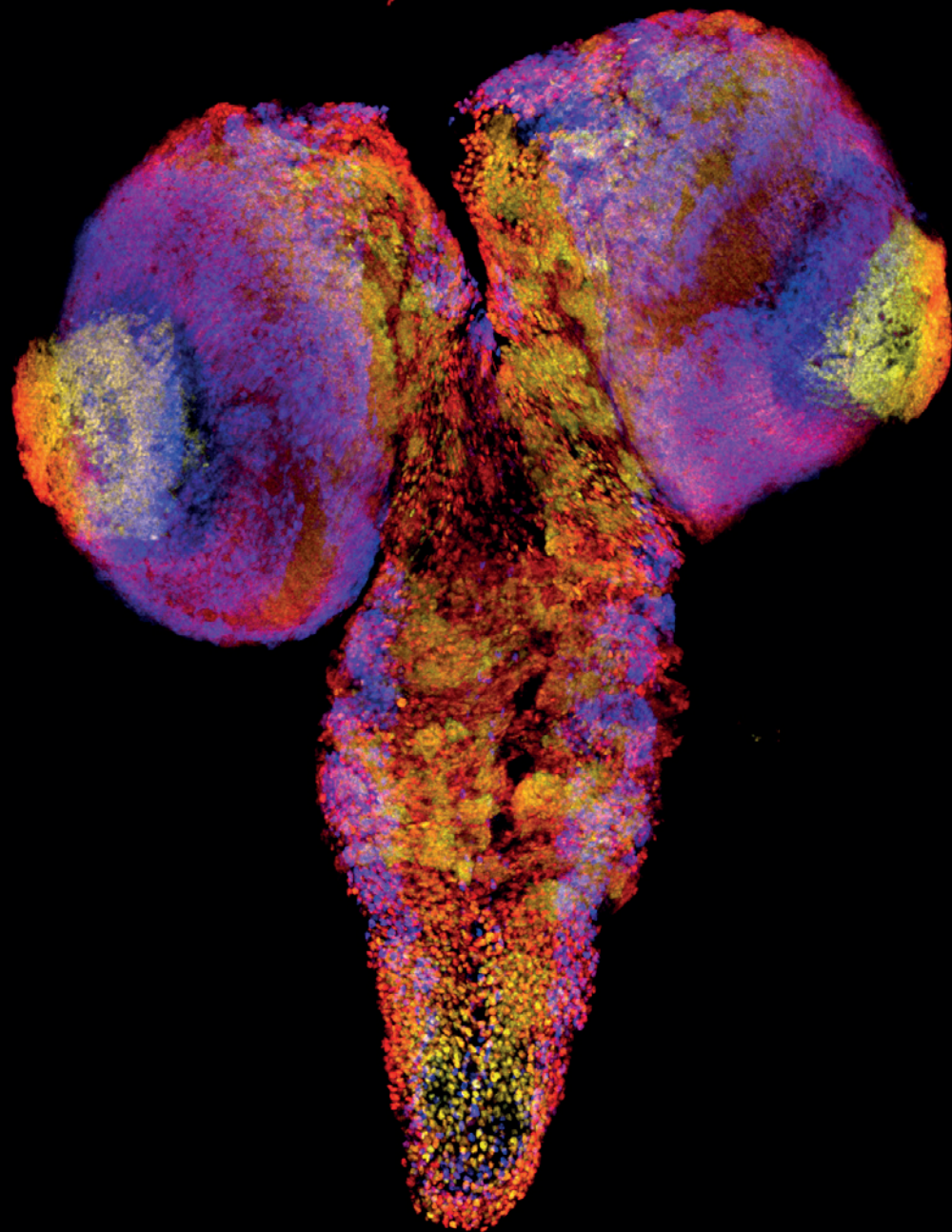


Table of contents

Analytical Services

Analytical Characterisation Facility	6
BCI Mass Spectrometry Facility	7
Environmental Analytical Laboratory	8
Geography and Environmental Science labs	9
Lipid Mediator Unit	10
Mass Spectrometry Laboratory	11
Nuclear Magnetic Resonance Facility	12
Protein Production Facility	13
Surface Plasmon Resonance Facility	14
X-Ray Diffraction and Photoelectron Spectroscopy Facility	15

Cytometry

BCI/CRUK Flow Cytometry Facility	16
Blizard Institute Flow Cytometry Core Facility	17

Electronic Engineering and Computer Science

6G Research Laboratory, Antennas and Electromagnetics Research Group, LPKF Protolaser U4	18
Electronic Engineering and Computer Science Materials Lab	19
Electronic Engineering and Computer Science MAT Workshop	20

Engineering

Mechanical Engineering Workshop	21
Mechanical Testing Facility	22
The Makerspace	23

Genetics and Genomics

BCI/CRUK Bioinformatics Core Service	24
Queen Mary Genome Centre	25
Queen Mary Nanopore Sequencing Facility	26

Microscopy and Imaging

Advanced Bio-imaging Facility	27
BCI Microscopy Facility	28
BCI Preclinical Imaging Facility	29
Bioimaging Centre	30
Blizard Advanced Light Microscopy Facility	31
Centre for Cell Dynamics	32
NanoVision Centre	33
Phenotypic Screening Facility	34
SBBS Confocal Microscope Facility	35
SBBS Cryo-Electron Microscopy Facility	36
SBBS Transmission Electron Microscopy Facility	37

Whole Cell and Tissue

BCI/CRUK Animal Technician Service	38
BCI Pathology Core Services	39
Bioenergetics Unit	40
Centre for Predictive in vitro Models	41
Tissue Banks at Barts Cancer Institute	42

Additional Facilities

BLOC	43
CREATE Biofabrication Facility	44
Experimental Linguistics Lab	45
Language Acquisition Lab	46
Phonetics Lab	47



Analytical Characterisation Facility

The Materials Characterisation Lab in the School of Engineering and Materials Science provides instruments for structural, thermal, and mechanical analysis, supporting diverse research needs.

The facility houses a diverse array of analytical instruments for structural, thermal, and mechanical analysis, offering services to both academic and industrial users.

It features the NOVA 800 and Gemini VII 2390p Surface Area and Pore Size Analysers, as well as the Kruss DSA100 Drop Shape Analyser for contact angle measurement. Among the thermal analysis equipment are: Netzsch 402PC Dilatometer, STA 1500, TGA5500 and DSC25. For mechanical testing DMA 850 as well as Discovery Hybrid Rheometer (DHR3) are used.

The Bruker INVENIO S FTIR spectrometer with multiple accessories, LS55 spectrofluorimeter, Lambda35 and 950 UV-Vis spectrometers are utilized for molecular structure analysis.

Molecular weight distributions are characterized by the Gel Permeation Chromatography (GPC/SEC), and the Nano ZS Zetasizer is used to determine size and zeta potential of particles in the range from nm to μm .

These instruments support a wide range of analytical needs for various research applications.

Contact details

Dr Shoghik Hakobyan
s.hakobyan@qmul.ac.uk



Scan to visit the
facility website

BCI Mass Spectrometry Facility

The BCI Mass Spectrometry Facility provides proteomics, phosphoproteomics, metabolomics, and lipidomics services using high-resolution mass spectrometry (HRMS) platforms and optimised sample preparation workflows.

As part of the CRUK City of London Centre, the facility offers researchers access to advanced mass spectrometry technologies and support across all stages of a project, including experimental design, sample preparation, data acquisition, and downstream data analysis.

Recent advances in mass spectrometry have expanded its applications across molecular and cellular biology. These include the characterisation of protein complexes, label-free quantitative proteomics, metabolomics and isotopic tracing, global lipidomic profiling, and the analysis of post-translational modifications such as phosphorylation and acetylation.

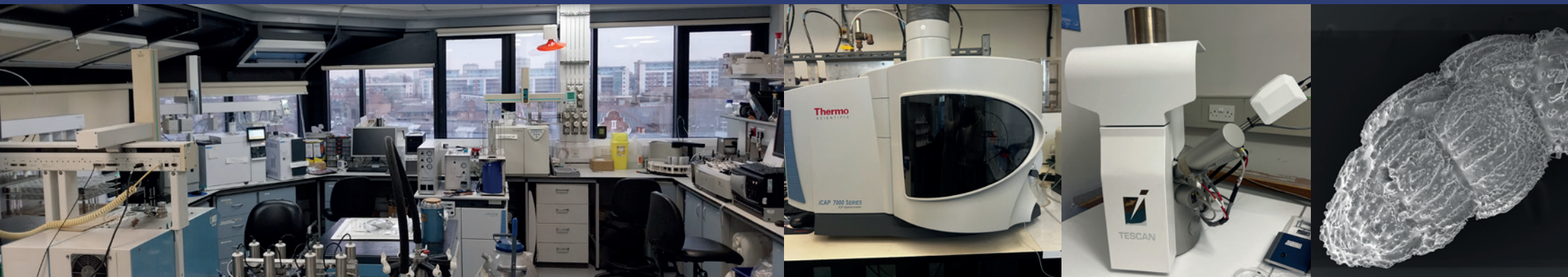
The facility provides a comprehensive range of services, including untargeted proteomics and phosphoproteomics, metabolic analysis, targeted metabolite quantification, and global lipidomic profiling of biofluids, cultured cells, and primary tissues.

Contact details

Dr Vinni Rajeeve
v.rajeeve@qmul.ac.uk



Scan to visit the
facility website



Environmental Analytical Laboratory

The Environmental Analytical Laboratory provides equipment and support for the analysis of stable isotopes, greenhouse gases, dissolved inorganic nitrogen and phosphate and water-soluble anions and cations.

We have Isotope ratio mass spectroscopy analysers for carbon and nitrogen isotopes in both solid and gaseous samples. A gas chromatography analysers fitted with FID and ECD, for atmospheric gas analysis. An automated wet chemistry analyser for the determination of NH_4 , NO_2 , NO_3 and PO_4^{3-} in aquatic samples.

We can provide advice and training on the use of this equipment. Also, are happy to discuss your requirements and possible solutions to your analytical needs.

Contact details

Ella Considine
e.considine@qmul.ac.uk

Geography and Environmental Science Labs

We are available on a consultancy basis to support your projects or research using a variety of analytical techniques, from elemental analysis to imaging.

The Department of Geography and Environmental Science labs are dedicated to providing high-quality analysis at every academic level.

We specialise in the following:

- ICP-OES for elemental analysis in liquid samples.
- Elemental Analysis for CHNS in solid samples.
- CT scanning (X-ray tomography) to produce high-resolution 3D images of various objects.
- Electron Microscopy (SEM) for the detailed study of small objects.

Contact details

Dr Tom Kelly
t.kelly@qmul.ac.uk



Scan to visit the
facility website



Lipid Mediator Unit

We offer state of the art methodologies for the identification and quantitation of bioactive lipid mediators in a range of biological systems from experimental systems to human tissues

We offer a comprehensive service that includes sample pre-processing using C18 solid-phase extraction methodologies.

Lipid mediators are identified and quantified using Sciex Triple Quadrupole Liquid Chromatography Tandem Mass Spectrometry techniques.

Our approach is specifically designed to identify classic eicosanoids derived from arachidonic acid, as well as specialized pro-resolving mediators derived from arachidonic acid, eicosapentaenoic acid, n-3 docosapentaenoic acid, and docosahexaenoic acid.

Additionally, we use various methodologies, including AI-driven approaches, to investigate the relative regulation of different lipid mediators and their biosynthetic pathways across experimental groups.

Contact details

Prof Jesmond Dalli
j.dalli@qmul.ac.uk



Scan to visit the
facility website

Mass Spectrometry Laboratory

Departmental mass spectrometry laboratory within the School of Physical of Chemical Sciences (SPCS).

The laboratory is equipped with advanced mass spectrometry platforms, offering a range of analytical tests such as structural analysis of small molecules, protein identification, peptide and protein sequencing, as well as lipidomics and metabolomics analysis. It also supports absolute and relative quantification of biomolecules in complex matrices.

The primary mission of the analytical laboratory at Queen Mary is to support research groups by offering access to a broad range of analytical instruments while providing services with the state-of-the-art Waters Synapt G2Si ESI qTOF HDMS. This service lab offers assistance in sample preparation, method development, and strategic planning for analytical projects.

The SPCS Mass Spectrometry Laboratory collaborates extensively with Queen Mary researchers and external academic investigators on targeted and untargeted -omics research. Research grants can be used to fund work conducted at the SPCS Mass Spectrometry Laboratory.

For more information, please contact the laboratory.

Contact details

Dr Roberto Buccafusca
r.buccafusca@qmul.ac.uk



Scan to visit the
facility website



Nuclear Magnetic Resonance Facility

The Nuclear Magnetic Resonance (NMR) Facility at Queen Mary University of London consists of two Bruker NMR spectrometers operating at 400 MHz and one at 600 MHz. We provide both solution and solid-state NMR services for a wide range of nuclei.

Nuclear Magnetic Resonance (NMR) Spectroscopy is a non-destructive analytical technique used to examine the properties and characteristics of molecules. NMR has applications in various fields, including synthetic chemistry, materials science, drug discovery, pharmaceutical analysis, proteomics, biomolecular studies, and metabolomics.

The NMR Facility at the School of Physical and Chemical Sciences is housed on the ground floor of the Joseph Priestly building. We provide expert support and expertise to users conducting a wide variety of research. Researchers from across the Queen Mary can access the facility. We also offer commercial services for both solution and solid-state NMR to external users.

All three instruments are equipped with 60-position automatic sample changers and auto-tuning multinuclear (BBO) probes. The 400 MHz instruments operate a walk-up service where users run their own samples using Bruker's IconNMR software whereas the 600 MHz instrument can be booked through our online booking system.

Contact details

Dr Nasima Kanwal
n.kanwal@qmul.ac.uk



Scan to visit the
facility website

Protein Production Facility

Providing services and support to those using proteins in their research.

We offer protein production and purification from *E. coli* and insect cells. Yeast and mammalian cell expression coming soon!

We can provide training in all aspects of protein purification, from cloning design to analysis of the protein. If you don't have the time to carry out all or some of the stages yourself, we have the expertise and equipment to do it for you. Alternatively, we'll teach you, so you can do it yourself in the future.

Protein analysis equipment:

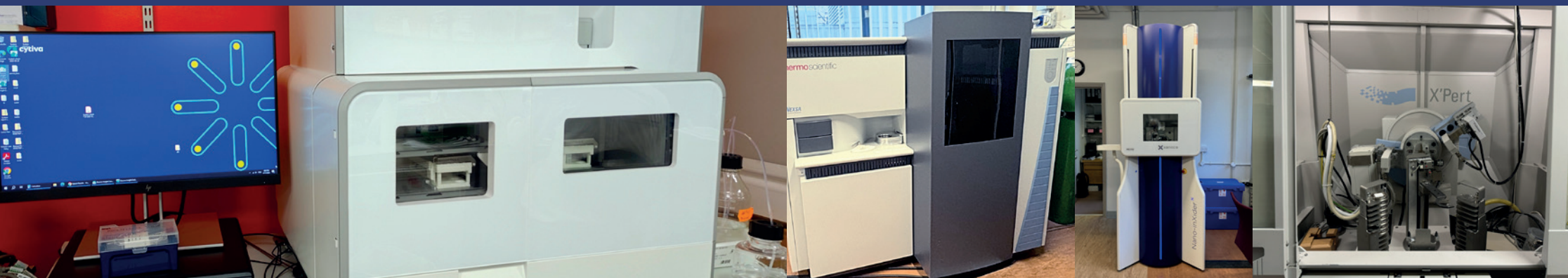
- iBright imager: suitable for imaging fluorescent labelled proteins
- SEC-MALS: determine the oligomeric state of your purified protein complex
- Analytical ultracentrifuge: perform density gradient separations
- ITC: analyse protein-protein and protein-ligand interactions

Contact details

Dr Charlotte Millership
c.millership@qmul.ac.uk



Scan to visit the
facility website



Surface Plasmon Resonance Facility

The SPR Facility at Queen Mary, based within the William Harvey Research Institute, offers advanced support for biomolecular characterisation. Equipped with the state-of-the-art Biacore 1K+ (Cytiva), the platform enables precise, label-free analysis of biomolecular interactions in real time using minimal sample volumes.

Biacore 1K+ allows detailed characterisation of binding events without the need for labelling, providing high-quality data on:

- Kinetics (association and dissociation rates)
- Affinity and avidity
- Concentration and active binding levels
- Epitope binning and mapping

The system supports a wide range of applications, including antibody characterisation, antigen-antibody interactions, protein-protein interactions, small molecule binding, and fragment screening, making it a versatile tool across immunology, oncology, and drug development pipelines.

The instrument can be booked via iLabs – Core Facilities - Centre for Experimental Medicine & Rheumatology – Schedule Equipment - Biacore 1K+. A quick training can be provided for unexperienced SPR users.

Contact details

Dr Elisa Corsiero
e.corsiero@qmul.ac.uk



Scan to visit the
facility website

X-Ray Diffraction and Photoelectron Spectroscopy Facility

The X-Ray Diffraction and Photoelectron Spectroscopy Facility at Queen Mary offers advanced analysis for materials science and structural chemistry. With state-of-the-art instruments, it enables detailed structural characterisation for innovative research.

The facility provides unparalleled analysis in materials science, structural chemistry, structural biology, and solid-state science. This cutting-edge facility features state-of-the-art X-ray analysis equipment, including Panalytical X'Pert Pro, CubiX3, and Empyrean high-performance X-ray powder diffractometers.

Recently, its capabilities expanded with the Xenocs Nano-inXider SAXS/WAXS system for advanced material characterization. The Bruker Apex II diffractometer, equipped with dual Cu and Mo sources, a cryo-cooler, and a high-pressure cell, enables precise small molecule diffraction and protein crystallography.

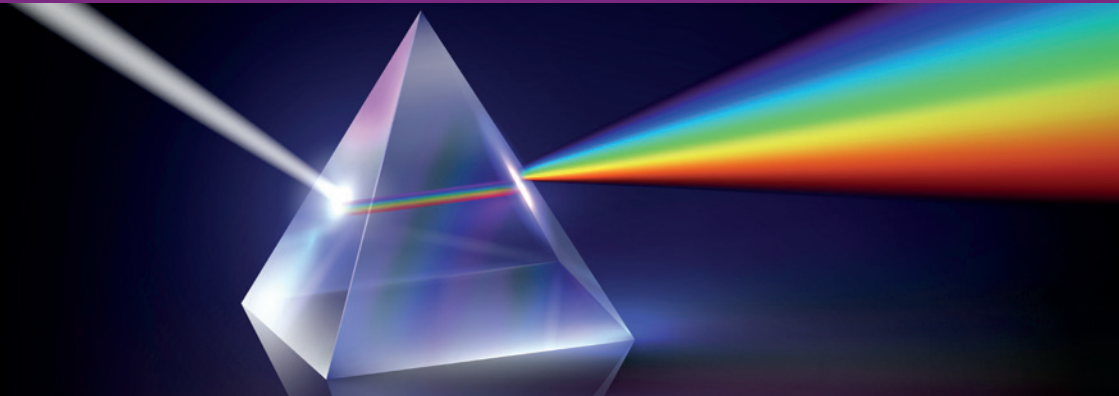
The ThermoFisher Nexsa X-ray Photoelectron Spectrometer supports techniques like XPS, UPS, and ISS. These tools empower researchers to explore the structural intricacies of materials, driving innovation across disciplines.

Contact details

Dr Richard Whiteley
r.whiteley@qmul.ac.uk



Scan to visit the
facility website



BCI/CRUK Flow Cytometry Facility

The BCI/CRUK Flow Cytometry Facility at Charterhouse Square is part of the CRUK City of London Centre of Excellence at Queen Mary University of London, supporting researchers since 2008.

Our facility is equipped with a wide range of conventional, spectral, and imaging flow cytometry instrumentation enabling high-throughput, multi-parametric single-cell analysis across multiple disciplines.

Based at Charterhouse square, we offer various services, including spectral and conventional cell sorting, multi-colour analysis, instrument training, data analysis support, experiment and panel design assistance.

Cell sorting on conventional and spectral instruments is a service by dedicated facility staff members. A wide range of training courses, and high dimensional data analysis platforms are also available in the facility for all our users.

With the aim of fostering and nourishing an active flow cytometry community, our facility is committed to host seminars and courses to highlight cutting edge advances in the flow cytometry field.

Supporting both internal (Queen Mary) and external (academia or industry) users, we are available for any research projects and commercial work consultations.

Contact details

Dr Manuela Terranova Barberio
flowcytometry@qmul.ac.uk



Scan to visit the
facility website

Blizard Institute Flow Cytometry Core Facility

Supporting researchers across Queen Mary campuses with their cell analysis needs, from cutting-edge immunophenotyping to live single-cell sorting for groundbreaking discoveries.

Services we can assist you with

- Panel and experimental design
- Immunophenotyping and protein expression quantification
- Functional assays: metabolic profile, mitochondria potential, Ca²⁺ signalling
- Cell cycle
- Optosis studies
- Plant and veterinary studies
- Live Cell sorting (vials, plates, single clone isolation, CL3/pathogenic samples)

Instruments

Spectral Flow cytometry:

- Cytex Aurora (5 lasers UV/V/B/YG/R) – 40+ colours

Conventional Flow cytometry:

- Agilent Novocyte Penton (5 lasers UV/V/B/YG/R) – 30 colours

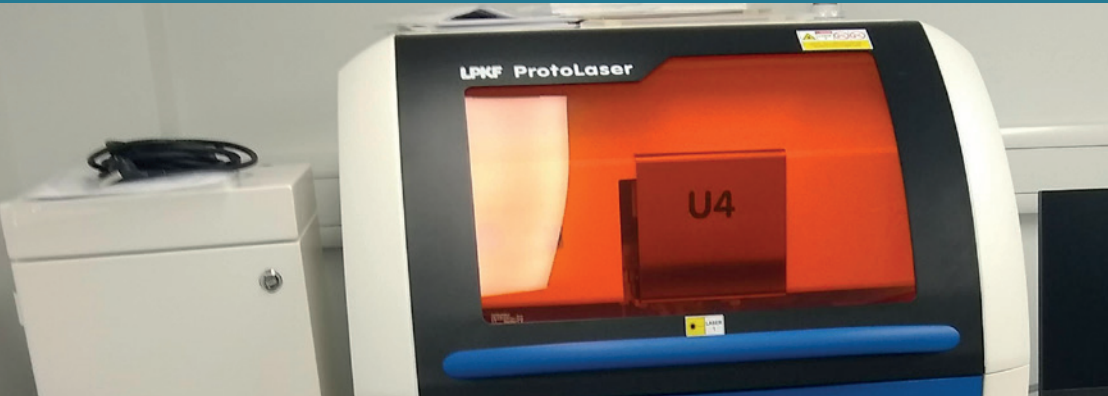
- Acea Novocyte 3000 (3 lasers V/B/R) – 13 colours
 - BD FACS Canto (3 lasers V/B/R) – 8 colours
- Cell Sorting:
- BD FACS Aria IIIu (4 lasers V/B/YG/R) – 15 colours
 - Miltenyi MACSQuant Tyto Lux (4 lasers (V/B/YG/R) – 12 colours

Contact details

Dr Gerard Hernandez Mir
g.hernandez@qmul.ac.uk



Scan to visit the
facility website



6G Research Laboratory, Antennas and Electromagnetics Research Group, LPKF Protolaser U4

The laser cutting machine for rapid prototyping. Suitable for making up to A4 size Printed Circuit Boards (PCB), engraving, cutting metal and more.

LPKF Protolaser U4 is a machine, created for a rapid prototyping. It is based on a powerful class 4 laser, which is suitable for profiling and cutting materials up to 4mm thick. It is more than enough to prototype majority of known PCB substrates. Also, it can engrave and cut various metals.

Its major advantages are as follows:

- Rapid prototyping
- Extremely high precision, at the quality level of the best-known chemical etching procedure
- Simple operation and learning

Commenced only several months ago, the Protolaser, has proven its characteristics in providing almost immediate results for

research and teaching purposes within the School and the Antenna Group. In connection with extra equipment, the machine can be used for galvanising PCBs and multilayer production.

Contact details

Dr Rostyslav Dubrovka
r.dubrovka@qmul.ac.uk



Scan to visit the
facility website

Electronic Engineering and Computer Science Materials Lab

Our specialised materials processing workshop enables precision prototyping and fabrication. Projects developed in-house by EECS students ranged from wearable electronics, soft robotics, and interactive soft circuits.

The materials lab keeps a range of consumables for experimentation, including 30 conductive textiles, liquid silicone, sample materials and conductive ink.

Equipment includes a 10-spool embroidery machine with add-on components for circular and larger-scale projects, an Objet 30 Prime stereolithography 3D printer, a FujiFilm Dimatix high precision deposition printer, a vinyl cutter, and a heat press.

Contact details

Geetha Bommireddy
geetha.bommireddy@qmul.ac.uk



Scan to visit the
facility website



Electronic Engineering and Computer Science MAT Workshop

The MAT Workshop was established by MAT PhD students and is now a fully functional place to develop prototypes with physical materials for staff and students across the Faculty of Science and Engineering.

The workshop offers a range of manual and power tools, as well as soldering stations and electronics components. Our most used items of equipment are the two lasercutters, both a 60 Watt and a high powered 150 Watt machine.

The workshop which is naturally a messy environment where wood, acrylic, textiles, electronics and other materials come together to create designs, products and innovations of the future.

Contact details

Geetha Bommireddy
geetha.bommireddy@qmul.ac.uk



Scan to visit the
facility website

Mechanical Engineering Workshop

Situated in both the School of Engineering and Materials Science and the School of Physical and Chemical Sciences, both workshops boast a wide variety of machines. The workshops support students and academics in the design and manufacturing of prototypes and various parts for project and research applications.

The Mechanical Workshops are equipped with six CNC machines. These include a HURCO 4-Axis mill, two HAAS 3-Axis mills, two HAAS 2-Axis CNC lathes and one 2-Axis CNC turning centre. These machines can handle various materials and part geometries and are ideal for high-speed production of complex, high-precision components for various engineering applications.

Additionally, we have manual milling machines and manual lathes offering direct operator control for prototyping and small-scale production, as well as horizontal and vertical bandsaws, drilling machines, and surface & tool grinders. We also have MIG and TIG welding, brazing, tooling for sheet metal fabrication, a CREAFORM portable handheld 3D laser scanner and a separate workshop for woodworking.

Woodworking machines include a planer, panel saw, table saw, finisher, belt sander, chop saw, bandsaw, pillar drill, hand-held router and circular saw.

The Technical Team are available to discuss your requirements and offer advice or solutions to your manufacturing needs.

Contact details

Douglas Thomson
douglas.thomson@qmul.ac.uk



Scan to visit the
facility website



Mechanical Testing Facility

The Mechanical Characterisation Lab in the School of Engineering and Materials Science features advanced Instron testing machines for evaluating the properties of various materials. It supports research and industrial testing for applications ranging from aerospace components to biomaterials.

The Mechanical Characterisation Laboratory is equipped with an impressive array of state-of-the-art mechanical testing machines. These advanced instruments are pivotal in evaluating the mechanical properties of diverse materials, from aerospace components to innovative biomaterials and biological tissues.

The facility boasts a wide range of Instron testing systems, such as the high-precision Instron 3342 (0.5kN), the versatile Instron 68TM-10 (10kN) with AVE, and the high-capacity Instron 5900R84 (150kN), among others. These systems apply forces in compression, tension, and torsion, enabling detailed analysis of materials' strength, modulus, and other key characteristics.

In addition to the Instron range, the lab features Mitutoyo's Micro Vickers Hardness Tester for precise hardness measurements and BOSE systems, including a biaxial tester, for more complex mechanical evaluations. This cutting-edge facility supports a wide range of research and industrial testing needs.

Contact details

Dr Erica Di Federico
e.difederico@qmul.ac.uk



Scan to visit the
facility website

The Makerspace

An open-access workshop space situated in the School of Engineering and Materials Science. It is, as the name implies, a space where you can make things; this might be prototyping, model-making, producing jigs/fixtures or any kind of practical artifact or project for a degree or research work.

Our primary aim is to give users the practical space and creative skills they will need to be effective engineers and achieve their goals relating to project work here at Queen Mary. We are predominantly a teaching space and facilitate the delivery of tutorials and practical sessions, but when the workshop is not in use, we open it up as part of our open workshop system for all students, PHD's, PDRA's, Researcher work and staff members. Users can drop in and drop out as required.

We have a wide range of hand tools, power tools and a soldering bench available for use in the main workshop, as well as a dedicated machine shop which includes; vertical bandsaw, scroll saw, sanding machines (disc, belt and bobbin), pillar drills for drilling operations, equipment for plastic work/thermoforming, and basic sheet metal functionality.

Users can gain access to this dedicated space by completing our robust machine basics course, which is delivered by our expert technical staff.

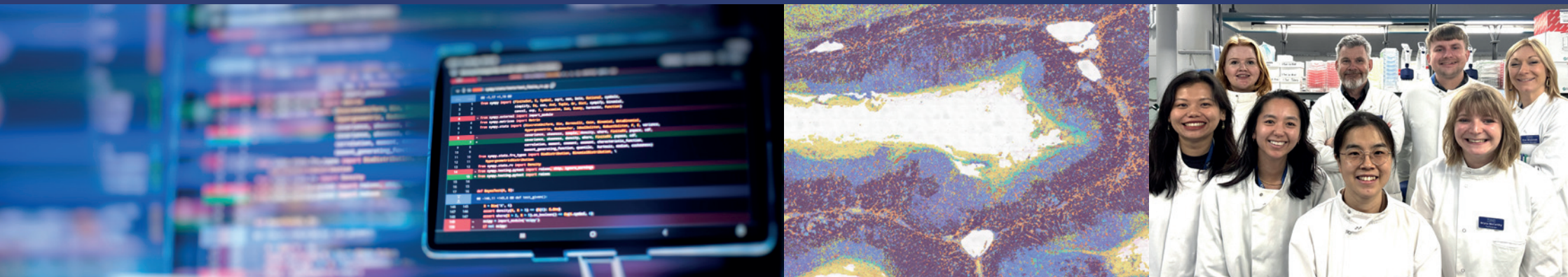
We also offer technician services, including; 3D printing (FDM & SLA), Laser and Water-Jet cutting, Vinyl printing and cutting.

Contact details

James Wayland
makerspace@qmul.ac.uk



Scan to visit the
facility website



BCI/CRUK Bioinformatics Core Service

Part of the CRUK City of London Centre at Queen Mary University of London, the facility provides data analysis and consultancy services for high throughput technologies, including DNA and RNA sequencing, epigenomics and proteomics.

We have extensive knowledge and experience in analysing various types of large-scale omics cancer datasets and apply a range of analytical techniques that suit user requests. We have collated publicly available and published datasets which facilitates validation and integration with user data.

This service further supports research projects by providing advice on experimental design and aids in the writing of manuscripts and grants for projects in which we have or will be involved. The Bioinformatics Core also develops new analytical algorithms and pipelines for analysing datasets generated from new technologies.

We provide analysis for:

- Whole Genome/Exome sequencing
- RNA sequencing (bulk RNASeq, single-cell RNASeq, spatial transcriptomics)
- Epigenetics (methylation microarrays, ChIP-Seq etc)
- Other multidimensional data (proteomics, multiplex IHC etc)

Contact details

Dr Eleni Maniati
e.maniati@qmul.ac.uk



Scan to visit the
facility website

Queen Mary Genome Centre

Founded in 2000, we collaborate to enable genetics and genomics projects across all disciplines, from tardigrades to tumours.

We are based in the Blizard Institute but serve the whole of the Queen Mary Community. Our bespoke service means that researchers can make use of their preferred level of our expertise to design, execute, and analyse projects.

The University has invested over the past 5 years in single cell and spatial genomics platforms. We support single cell analysis using 10X genomics technology, full transcriptome in up to 20,000 cells per sample to 1 million cells per experiment, plus TCR and BCR variable region, protein panel, and Chromatin accessibility assays.

Our portfolio of spatial genomics platforms includes 10X Genomics Visium HD, Nanostring CosMX, and Nanostring GeoMX, meaning that we can analyse samples on several different scales.

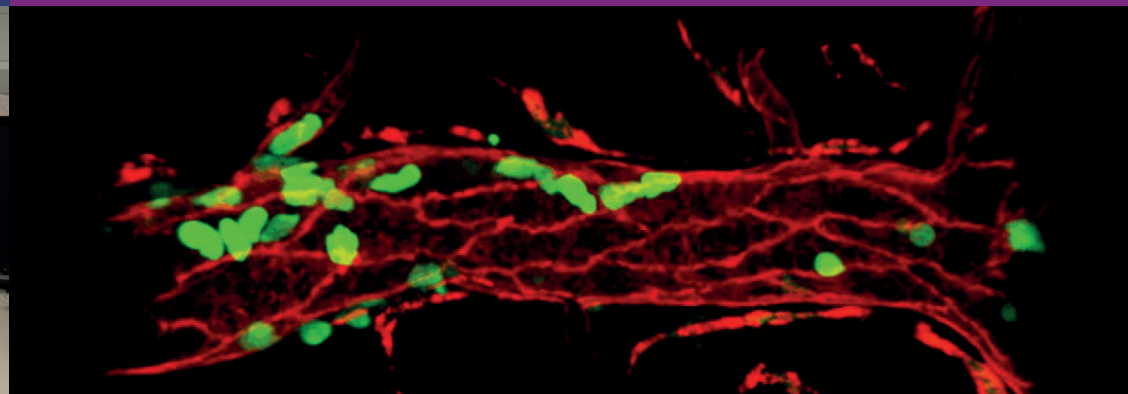
In addition to these technologies at fine scale we also support applications as diverse as bulk RNAseq, DNA methylation and SNP Arrays, metagenomics, Sanger sequencing, nucleic acid extraction, and much more. A comprehensive list of services is available on our website.

Contact details

Charles Mein or Eva Wozniak
genome@qmul.ac.uk



Scan to visit the
facility website



Queen Mary Nanopore Sequencing Facility

Our facility provides long-read DNA and RNA sequencing services for both human and non-model organisms, supporting diverse research across the life sciences. The facility enables researchers to investigate the genetic and transcriptomic landscapes of species, populations, and individuals in both healthy and diseased states.

We use the Oxford Nanopore Technologies (ONT) PromethION 24 high-output sequencing platform, which is ideally suited to human and large-genome sequencing, highly multiplexed sequencing of small genomes and amplicons, isoform-level transcriptomics, and metagenomics.

In addition, ONT direct sequencing enables the simultaneous detection of DNA and RNA modifications, supporting epigenomic and epitranscriptomic studies. Adaptive sampling, a unique feature of Oxford Nanopore sequencing, enables targeted enrichment of gene panels and specific genomic loci, as well as host depletion, without the need for capture probes or PCR.

We offer a range of bespoke services, including DNA extraction, DNA fragmentation and size selection, sample quality control, and library preparation for whole-genome, targeted, and custom sequencing projects.

Contact details

Dr John-Paul Bukowski
sbbs-genomics@qmul.ac.uk



Scan to visit the
facility website

Advanced Bio-imaging Facility

The microscopy platform, established in 2007 and based in Charterhouse Square, supports research by assisting with experiment design, image acquisition, and analysis.

The Advanced Bio-imaging Facility (ABiF) provides state-of-the-art microscopy for high-resolution, real-time imaging, supporting over 150 researchers from 50 Queen Mary laboratories, external universities, and companies.

Location

4th floor of the JVSC, in the CMR department of WHRI.

Equipment

- Confocal Leica SP8 & SP5: Upright, IVM
- Confocal Zeiss LSM800: Inverted, Live Imaging
- Multiphoton Leica SP8 DIVE: Upright, IVM, SHG, FLIM
- Spinning Disk Nikon W1-SoRa: Inverted, Live Imaging, High Resolution
- Image Analysis Platforms: Imaris, Huygens, FIJI, ilastik

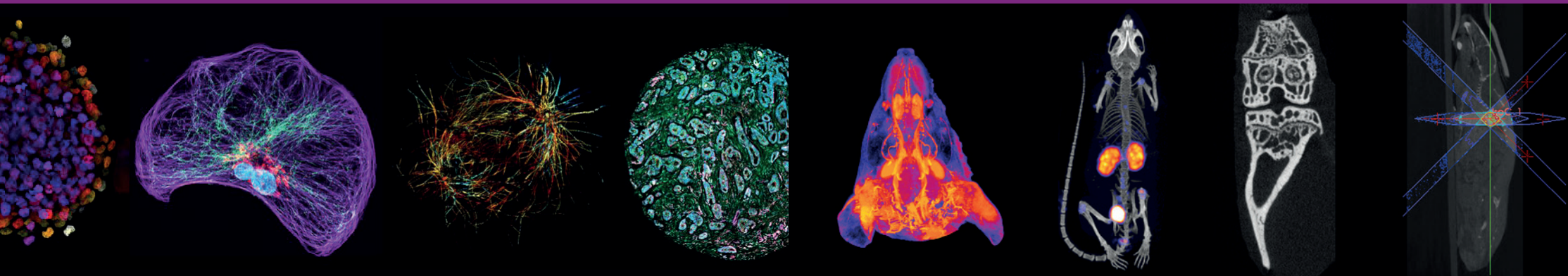
Contact details

Dr Paul Imbert
p.imbert@qmul.ac.uk



Scan to visit the
facility website





BCI Microscopy Facility

The Barts Cancer Institute Microscopy Facility at Charterhouse Square is part of CRUK City of London Centre and open to all researchers at Queen Mary.

Housing multiple state-of-the-art imaging systems, we can image from mesoscale through nanoscale. The facility provides expert guidance on sample preparation, image acquisition and image analysis.

Equipment:

- Evident FV4000 Laser Scanning Confocal: 10 lasers, super resolution 6-colour simultaneous imaging
- Zeiss LSM880 Laser Scanning Confocal with Airyscan Fast: Super-resolution imaging
- Nikon Spinning Disk (CSU-X1) Confocal: Imaging of dynamic processes in living cells and rapid acquisition of fixed samples
- 3x DeltaVision Core: High resolution imaging for live cells
- 3x Incucytes: Label free and fluorescent imaging of long-term cell cultures. Additional modules allow imaging

and analysis of spheroids, organoids, wound closure and chemotaxis

- Hamamatsu Nanozoomer S210 and S60: High-throughput brightfield and fluorescence slide scanner for tissues
- Zeiss Axioscan 7: High-throughput brightfield, fluorescence and polarised light slide scanner for tissues, tissue microarrays and cells
- PALM Microbeam Laser Capture Microdissection: Capture specific regions of tissue for subsequent extraction of DNA, RNA or protein
- Image Analysis Software: Including Imaris, HALO AI and others

Contact details

Dr Sam Wallis
bci-microscopy@qmul.ac.uk

BCI Preclinical Imaging Facility

The Preclinical Imaging Facility at Charterhouse Square has been supporting researchers since 2005 and is part of the CRUK City of London Centre at Barts Cancer Institute, Queen Mary University of London.

Our facility offers a wide range of accessible solutions to meet your small animal imaging requirements. We routinely work with cancer applications such as tumour screening for early detection, target validation, assessment of therapy response or reporter gene imaging. We are also experienced in other applications including cardiovascular, bone or neurology.

Our facility is equipped with a comprehensive range of instruments for whole body imaging, high-resolution organ imaging and radiotherapy:

- Anatomical imaging using CT or MRI
- Radionuclide imaging – both SPECT and PET with clinical radiotracers or in-house radiolabelled biomolecules
- Ultrasound imaging
- Optical imaging (bioluminescence and fluorescence)

- Cryo-fluorescence Tomography (whole body ex vivo)
- Whole-body irradiator and image-guided precision irradiator

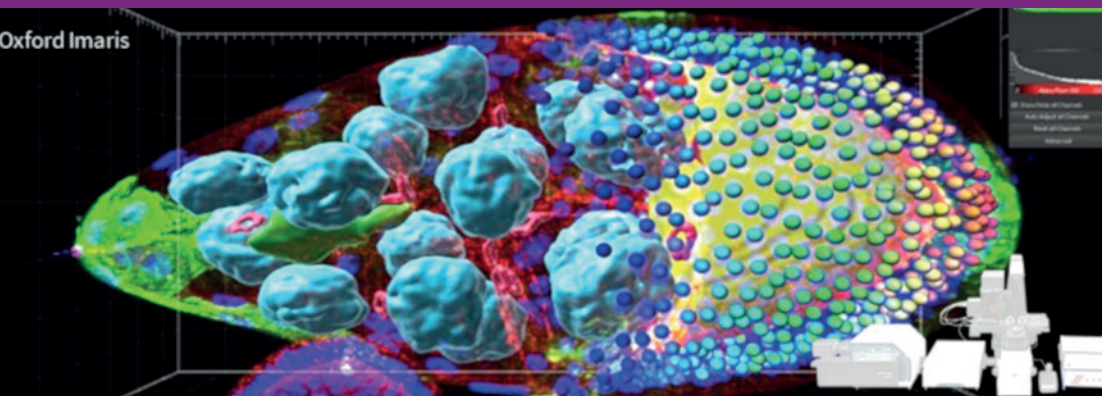
We can be involved in study planning, data collection and analysis, or train you in the use of the instruments and image analysis. We welcome researchers from across Queen Mary and also external users.

Contact details

Dr Jana Kim
bci-preclinical-imaging@qmul.ac.uk



Scan to visit the
facility website



Bioimaging Centre

The Bioimaging Centre at Queen Mary University provides cutting-edge equipment for fluorescence imaging, 3D reconstruction, and photobleaching assays, supporting cell and tissue studies with mechanical systems.

The Bioimaging Centre is equipped for fixed or live cell fluorescence imaging, correlative confocal bioimaging and mechanical characterisation, fluorescence recovery after photobleaching (FRAP) and fluorescence resonance energy transfer (FRET) assays, 3D reconstruction and morphological analysis. Additionally, the microscopes are integrated with advanced mechanical loading systems for studying tissues, organs-on-chips, individual living cells (e.g. micropipette aspiration), and artificial constructs.

We have the following microscope and image data analysis systems:

- Nikon AX R NSPARC confocal with Crest Optics X-Light V3 spinning disk and Brillouin mechano-spectroscopy for correlative confocal bioimaging and mechanical characterisation.
- Leica DMI4000B and DMI8

- Nikon CSU-W1 SoRa Spinning Disk Confocal, fitted with an environmental chamber for imaging of dynamic processes in living cells and fast acquisition of Z stacks and tile scan.
- Lumascope 720
- Nanosight LM20
- Jenapol Polarized Microscope
- iBright FL1500
- Imaris 9.7.2

Contact details

Dr Dongsheng Wu
dong.wu@qmul.ac.uk



Scan to visit the
facility website

Blizard Advanced Light Microscopy (BALM) Facility

Based in the Blizard Institute at Whitechapel, the BALM facility offers a range of light microscopes for macro to nanoscale resolution, and a variety of software for post-acquisition processing and analysis. Suitable for visualisation of a wide selection of fixed and live samples.

Instruments:

- Leica MZ75 brightfield stereomicroscope (0.63x to 5x magnification).
- Nikon i80 Eclipse brightfield microscope (2x to 60x magnification).
- TissueGnostics TissueFAXS fluorescent and brightfield slide scanner (2x to 40x magnification. 405, 488, 543, 594, 640 equivalent filters).
- Evident BX63 and IX83 fluorescent widefield microscopes (4x to 60x magnification. 405, 488, 561, 594, 640 equivalent filters).
- Zeiss LSM880 inverted confocal microscope with AiryScan confocal and multiphoton (5x to 100x magnification. 405, 458, 488, 514, 561, 633nm laser lines).

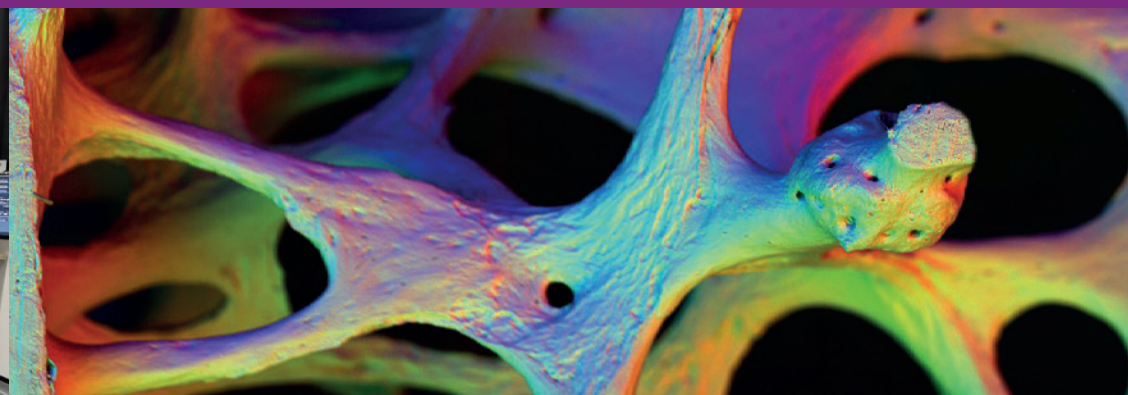
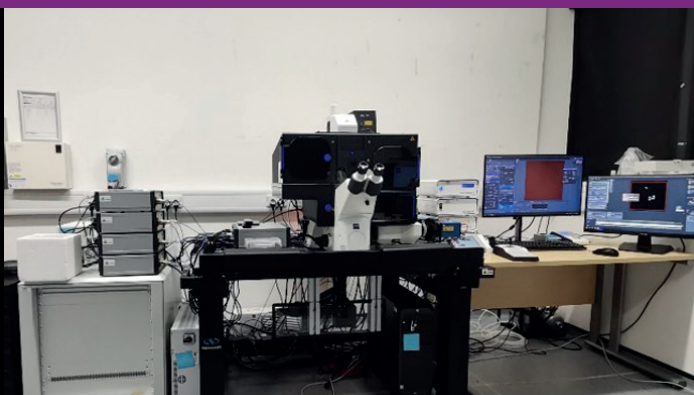
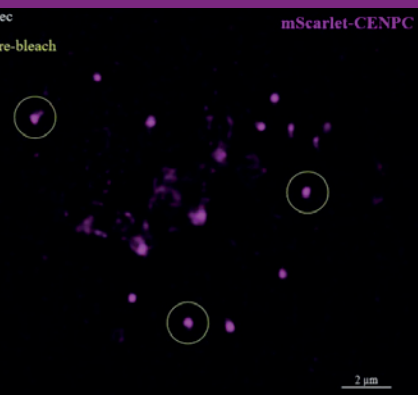
- Nikon AXR inverted confocal microscope with NSPARC (4x to 100x magnification. 405, 488, 561, 594, 640nm laser lines).

Contact details

Maeve McLaughlin
m.mclaughlin@qmul.ac.uk



Scan to visit the
facility website



Centre for Cell Dynamics (CCD)

Our centre houses cutting-edge microscopes along with advanced digital image processing tools to work at the forefront of life science research.

ZEISS Elyra 7 Lattice SIM (Elyra7) equipped with custom-made Rapp OptoElectronic photokinetic module:

- Resolve structures down to 60 nm
- A multi-modal platform for fast and gentle 3D super-resolution microscopy
- Observe live cell dynamics at up to 255fps
- Setup FRAP experiment

ZEISS Lattice Lightsheet 7 (LLS7):

- Long-term high-speed volumetric imaging of living cells and small embryos
- Watch the subcellular dynamics of life over hours and even days
- Next to no phototoxicity and bleaching
- Multi-position and multi-colour image acquisition
- Target applications span fast to long-term live imaging of classical adherent- and 3D-cultured cells to spheroids, organoids and small organisms

Deltavision Elite Deconvolution Microscope:

- High-resolution live- and fixed- imaging
- Unique light path enables low light imaging of sensitive samples.
- Outstanding focus stability for long-term imaging experiments.
- Automated high-precision stage for point-visiting.

Contact details

Prof Viji Draviam
v.draviam@qmul.ac.uk

Dr Chengchen Wu
chengchen.wu@qmul.ac.uk



Scan to visit the
facility website

NanoVision Centre

Queen Mary's NanoVision Centre is a multimillion-pound, state-of-the-art microscopy facility that integrates the latest imaging technologies, unlocking new opportunities for advanced research.

The NanoVision Centre, located in the Bancroft building, integrates cutting-edge imaging technologies to study biological processes, explore new materials, and analyse complex nanostructures. It houses advanced instruments, including a Scanning Electron Microscope (SEM), Energy Dispersive X-ray Spectroscopy (EDX), Focused Ion Beam (FIB-SEM), and Scanning/Transmission Electron Microscope (S/TEM), offering exceptional capabilities for biological and materials science research.

Our Inspect-F SEM enables high-resolution surface imaging and elemental analysis, perfect for studying fine surface details across a variety of samples. The Quanta 3D FIB-SEM provides nanoscale manipulation for cross-sectional analysis, preparing TEM samples, and crafting intricate nanostructures.

The F200 STEM offers atomic-level imaging and elemental mapping for exploring material composition and structure, while the 1400 Flash TEM delivers rapid, high-quality imaging of biological samples, driving groundbreaking research in cellular and life sciences.

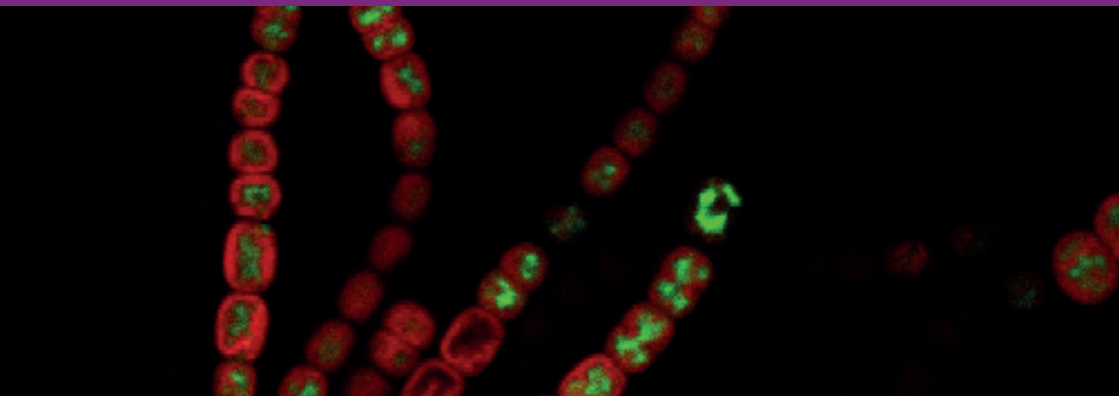
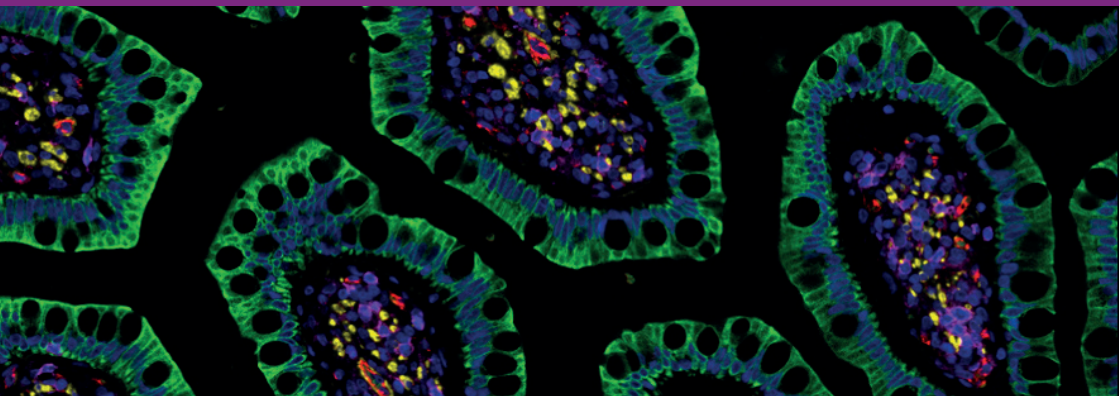
Contact details

Dr Subash Rai
s.rai@qmul.ac.uk

Dr Harrison Fell
h.fell@qmul.ac.uk



Scan to visit the
facility website



Phenotypic Screening Facility

Opened in 2006 the core facility works to support users with everything from high throughput screening of multi well plates to multiplex slide scanning, analysis and bioinformatics.

Located at the Blizard in Whitechapel we house some of the most cutting-edge technologies for imaging and analysis.

Equipment:

- Cell DIVE multiplex slide scanner
- Phenocycler Fusion multiplex platform
- INCA2200 High throughput (LED) scanner
- INCA6000 High throughput confocal (Laser) scanner
- BOND RXm Autostainer
- BAB Clickwell autostainer
- Felix Liquid handling platform
- High content analysis packages (Developer, INCarta/HALO)
- Data storage

Services:

- Project support/design
- Grant application/Costings
- Training (equipment/software)
- Bioinformatics
- End to end work as a service

Contact details

Dr Luke Gammon, Dr Ryan Wallis
phenotypic-screening@qmul.ac.uk



Scan to visit the
facility website

SBBS Confocal Microscope Facility

This facility houses a Leica STELLARIS 8 confocal microscope with Fluorescence Lifetime Imaging (FLIM) and Digital LightSheet (DLS) modalities, which unites confocal and light sheet microscopy in one system.

STELLARIS 8 is a fully integrated solution for FLIM that enables video-rate lifetime imaging for kinetic studies in live cells. FLIM measures the fluorescence decay lifetime of fluorophores on picosecond-to-nanosecond timescales. It is ideal for quantitative Förster Resonance Energy Transfer (FRET) measurements of protein-protein interactions, and can help distinguish between fluorophores with similar emission spectra.

Excitation is provided by diode and solid-state lasers and a supercontinuum White Light Laser (WLL), tunable from 440-760nm and combined with an Acousto-Optical Beam Splitter (AOBS®) allowing up to 8 simultaneous laser lines. Four HyD S and one HyD X power detectors provide high sensitivity across a broad spectral

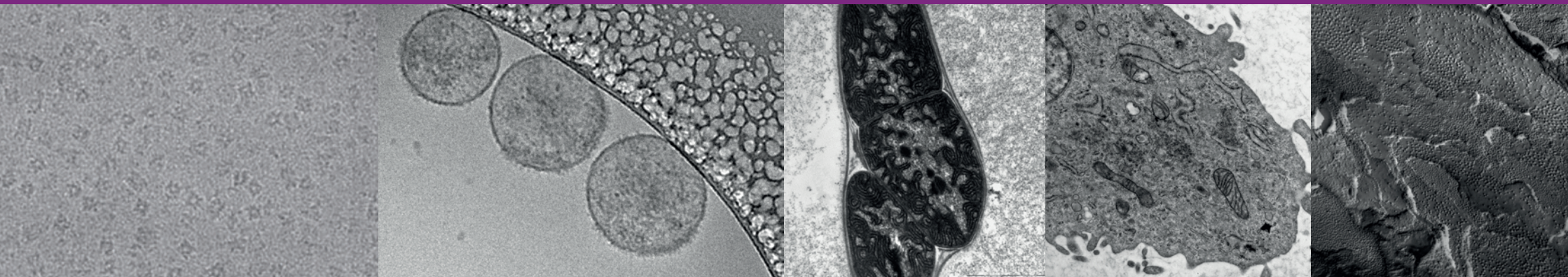
range. The HyD X in Position 3 is the most sensitive, and is specialised for FLIM and Fluorescence Correlation Spectroscopy. An OKO Lab Microscope cage incubator maintains samples at stable temperatures (23–45°C). An inverted microscope configuration enables imaging of samples immersed in open wells.

Contact details

Dr Michaela Egertová
m.egertova@qmul.ac.uk



Scan to visit the
facility website



SBBS Cryo-Electron Microscopy Facility

Our Cryo-EM facility provides advanced tools for high-resolution imaging and structural analysis of biological samples, specialising in single particle analysis.

Core Equipment

Jeol JEM 2100 Plus – A versatile 200kV LaB6 TEM, ideal for high-resolution imaging:

- Camera: 16MP OneView Camera (Gatan)
- Software: SerialEM
- Special Access: Titan Krios at the Crick Institute and eBIC for super-high resolution data collection.

Leica EM GP2 – Automated plunge-freezer optimizing cryo-grid preparation:

- Advantages: Highly reproducible for consistent freezing conditions

Gatan Elsa cryo-Transfer holder and 626 Cryo-Holder – Ensures stable sample handling at cryogenic temperatures.

Research and Imaging Support

- Cryo-Grid Preparation and Screening: Optimizing cryo-grids

for high-quality data collection

- Single-Particle Data Collection and Processing: Supporting detailed structural analysis of single particles.
- Extracellular Vesicle Imaging: High-resolution imaging for samples such as exosomes.

Contact details

Dr Hui Zhang
huizhang@qmul.ac.uk



Scan to visit the
facility website

SBBS Transmission Electron Microscopy (TEM) Facility

The TEM facility, opened in 2012, has been supporting research cross faculties, offering support for ultrastructure imaging of biological specimen.

Located in Mile End campus between Joseph Priestley and The Nanovision Centre, the TEM facility is supporting research projects across Medicine, Biology, Chemistry and Engineering. We offer a variety of imaging techniques to uncover the fine details of cells, tissues and beyond.

Our equipment includes the High Contrast TEM JEM1400F Electron Microscope (JEOL), EM ACE900 (Leica) and the legendary Reichter-Jung Ultracut E.

Our services include:

- Resin embedding and ultrathin sectioning for ultrastructure analysis of tissues, cells and polymers.
- Immunogold labelling for localisation experiment

- Negative staining for a range of different samples in suspension
- Freeze Fracture and Freeze Etching
- Imaging

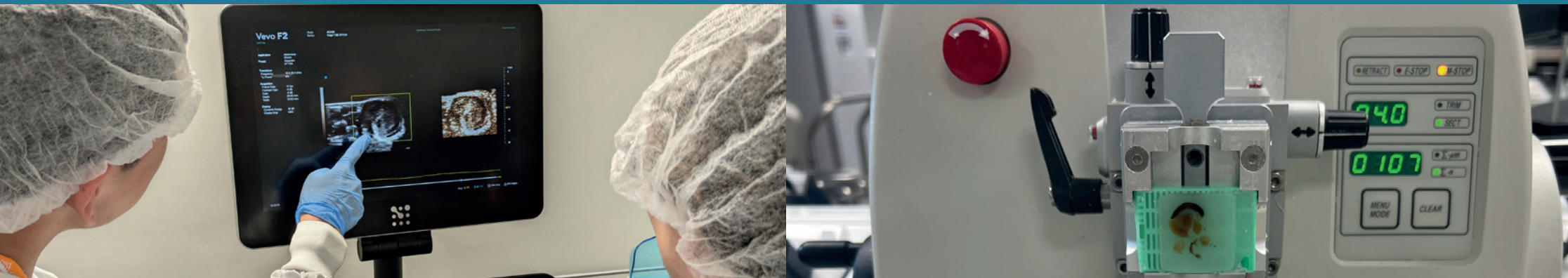
We provide a flexible and bespoke project-based service. Training is supported on request.

Contact details

Giulia Mastroianni
g.mastroianni@qmul.ac.uk



Scan to visit the
facility website



BCI/CRUK Animal Technician Service

Established in 2011, The Animal Technician Service (ATS) are a core service whose purpose is to provide technical support to Project Licence Holders, specifically for animal-based cancer research and preclinical imaging and is part of CRUK City of London Centre.

Our team of highly trained and competent technicians specialise in performing a range of routine and advanced procedures on small lab animals.

We work closely with the Preclinical Imaging Core Facility and routinely carry out whole body in vivo imaging, high-resolution in vivo organ imaging and focal radiotherapy:

- Anatomical imaging using CT or MRI
- Radionuclide imaging – both SPECT/CT and PET/CT with clinical radiotracers or in-house radiolabelled biomolecules from the Cancer Imaging Laboratory
- Ultrasound imaging
- Optical imaging (bioluminescence and fluorescence)
- Image-guided precision irradiator

In addition, our service offers the use of Bioptron tumour management system: the TumorImager 2TM, a 3D scanning device for subcutaneous tumour measurement, and the TumorManagerTM software for xenograft study management.

We are based at Charterhouse Square within Barts Cancer Institute and welcome researchers from across Queen Mary.

Contact details

Animal Technician Service
bci-ats@qmul.ac.uk

BCI Pathology Core Services

Our Pathology Service offers a full range of histological techniques to support Biomedical research to all Barts Cancer Institute (BCI) centres, to other Queen Mary departments and to external users.

We provide Tissue processing by automation and embedding into paraffin blocks, cryotomy and microtomy services on positively charged, LCM membrane or visium slides, automated Immunohistochemistry (IHC) singleplex or multiplexing staining, Tissue Microarray (TMA), (H&E) staining, Special stains: Sirius Red, AB/PAS, PAS, DPAS, Masson Trichrome, Elastic Van Gieson (Miller), MSB, Retic, Neutral red, MGG.

Contact details

Nadia Rahman
n.rahman@qmul.ac.uk



Scan to visit the
facility website



Bioenergetics Unit

We support researchers investigating mitochondrial function in basic science and clinical/translational research.

We provide training for users, and we house the latest instrumentation for real time analysis of the major energy pathways in the cell, under hypoxia if wished.

Equipment includes a Seahorse XF pro analyser, Cytation 5 unit and a hypoxic chamber. We can also provide individual Seahorse plates and seahorse kits, please discuss with facility your requirements.

Contact details

Prof Li Chan
l.chan@qmul.ac.uk

Centre for Predictive in vitro Models

Queen Mary's Centre for Predictive in vitro Models has one of the largest, most comprehensive organ-chip facilities in Europe with 5 different commercial organ-chip platforms (Emulate, CN-Bio, Mimetas, BiomimX, TissUse) as well as 3D-printing and microfluidics equipment (Fluigent) to manufacture and test bespoke chip designs.

These facilities have been funded through a mixture of commercial partnerships, internal funding, research project grants and a large infrastructure grant from the NC3Rs. The facilities are integrated with Cat 2 cell culture, advanced microscopy and molecular biology and biochemistry facilities.

The organ-chip platforms and the CREATE lab microfabrication facilities are located within the School of Engineering and Materials Science, and the Blizzard Institute respectively. These facilities are available to Queen Mary staff and PhD

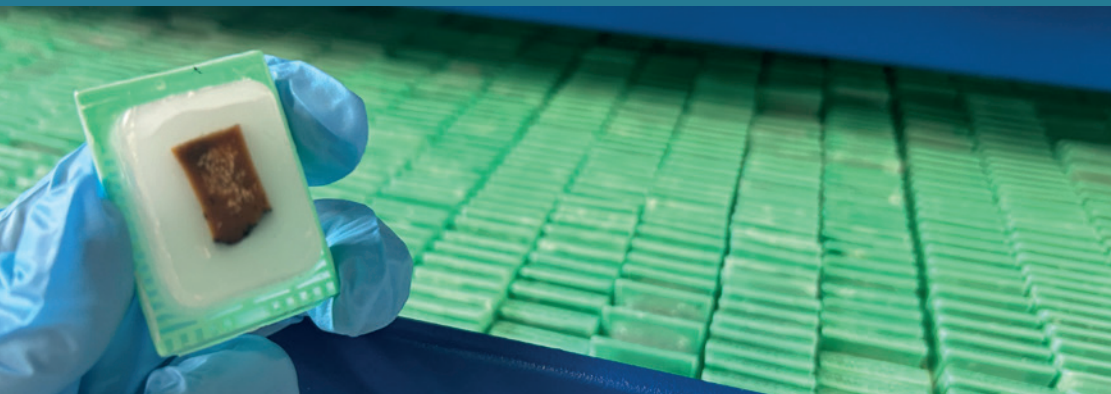
students associated with the Centre for Predictive in vitro Models, as well as to external industry partners at a cost.

Contact details

Miloni Shah
miloni.shah@qmul.ac.uk



Scan to visit the
facility website



Tissue Banks at Barts Cancer Institute

Barts Cancer Institute Tissue Banks supplies a wide variety of different sample and tissue types to BCI, Queen Mary and external users.

Our sample types include fresh, fresh frozen (FF), formalin-fixed paraffin embedded (FFPE), blood, bone marrow, cell samples and other bodily fluids across a range of cancers, including gynae, breast, pancreas, colorectal, male cancers and haematological malignancies.

Contact details

Haemato-oncology tissue bank, Barts Gynae tissue bank and Cancer tissue bank:

Jennifer McGuinness
bcitissuebankmgmt@qmul.ac.uk

Pancreatic Cancer Research Fund tissue bank:

Rhiannon Roberts
bci-pancreas-tissue-bank@qmul.ac.uk

Robert Lane tissue bank:

Sarah McCarley
s.mccarley@qmul.ac.uk

Breast Cancer Now biobank:

Catherine McMaster-Christie,
bcibreasttbgmt@qmul.ac.uk

BLOC – Cinema, Arts Lab and Edit Suite

The Mile End Road lab includes: a 56 seat accessible cinema, a white box gallery space made for immersive projection, a black box motion capture and production/rehearsal studio and a post-production suite including podcast vocal booth.

BLOC is a new Film & Drama Arts Research Facility, comprising a state-of-the art cinema, gallery equipped for multiscreen, sound-proofed film studio, performance project room, with interaction and monitoring capability from an adjacent post-production suite, and a sound-proofed recording booth. All spaces are fully accessible, physically connected, and digitally networked.

At the centre of the Facility is a cinema designed by leading architects McFarland-Latter, which features the latest in Dolby Atmos surround-sound and 4k projection technologies. Underpinning the facility are core principles of civic engagement, access to the arts for all, visibility and inclusion, and the recognition of divergent perceptions and perspectives.

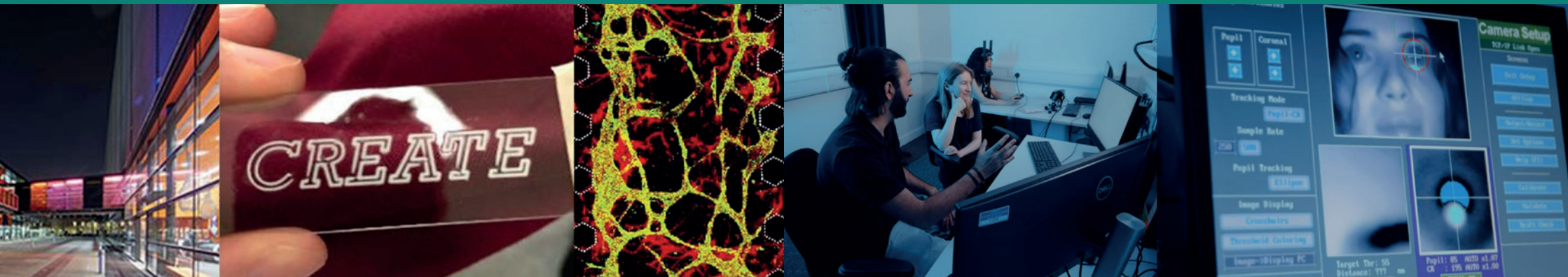
BLOC has key stakeholders from Film, Drama, People's Palace Projects and EECS and has been designed to facilitate new and innovative research investigating the cinema, gallery and studio as experimental laboratory environments.

Contact details

Rupert Dannreuther
bloc@qmul.ac.uk



Scan to visit the facility website



CREATE Biofabrication Facility

Core facility dedicated to 3D bioprinting and microfabrication of fluidic devices. Supporting innovative research in advanced tissue engineering and development of complex in vitro models utilising 3D bioprinting and microfabrication techniques.

Organ-on-chip Fabrication

Photolithography suit for fabricating micropatterned surfaces:

- Polos SPIN150 spincoater, UV-kub 6 exposure-masking system, Henniker plasma system, Profilm profilometer, and Moorfield thermoevaporator.

Thermoplastic 3D Printing

Craftbot 2 for PLA and ABS.
Cellink BIO X6 for PCL and PLGA.

Dedicated cell culture space

3D Bioprinting

RegenHU 3D Discovery:

- Housed in a sterile cell culture hood. Two extrusion and two inkjet printheads, UV, and temperature control of inks and substrates.

Cellink BIO X6:

- Three extrusion printheads with high pressure and temperature control options, and co-axial, inkjet and thermopolymer print heads with sterile environment control and UV.
- LUMEN X Gen 3 DLP bioprinter
- Tuneable intensity and gradient light sources. Sterile and temperature-controlled build environment.

Contact details

Liisa Blowes
l.m.blowes@qmul.ac.uk



Scan to visit the
facility website

Experimental Linguistics Lab

The Experimental Linguistics Lab is multi-purpose space dedicated to the study of speech, language and communication. It comprises three different stations, each equipped with specialised equipment: an eye-tracker; an audio recording booth; and a high-powered data analysis station.

The eye-tracker station is designed for experiments involving visual paradigms. It is equipped with a high-quality eye-tracking system (EyeLink1000+). Used in combination with a high-refresh-rate monitor, this setup enables the recording of eye movements, gaze position, and variations in pupil size with high accuracy and temporal precision.

The recording booth is designed for speech production or perception experiments. It is wheelchair accessible and includes a variety of recording devices. It provides an accessible space for high-quality speech recordings and perception studies.

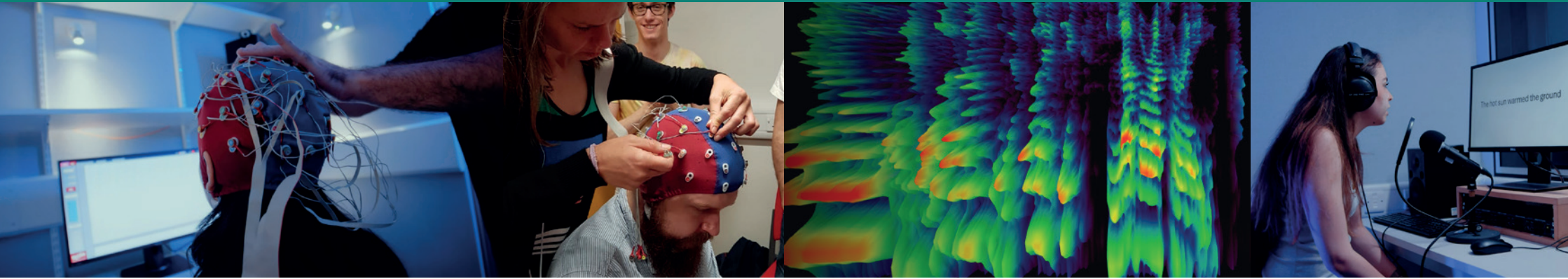
The data analysis station is equipped with a high-spec computer for analysis tasks requiring high computational power.

Contact details

Rémi Lamarque
r.lamarque@qmul.ac.uk



Scan to visit the
facility website



Language Acquisition Lab

The Language Acquisition Lab is a child-friendly space where we explore language development across the lifespan, from infancy to early adulthood. We use a combination of behavioural and neurological (electroencephalography) methods.

EEG (electroencephalography) is a technique for recording the brain's electrical activity using electrodes placed on the scalp.

The lab is equipped with high-quality BioSemi EEG systems, supporting both low-density (32-electrode) and high-density (up to 128-electrode) configurations. EEG caps and accessories are available in a range of sizes to accommodate both adults and very young children.

The lab includes a large soundproof electrically shielded (Faraday cage) IAC booth, allowing EEG recordings to be acquired under optimal conditions, free from acoustic and electric noise.

The Language Acquisition Lab houses a range of standardised speech and language assessment and a portable MAICO MA25 audiometer.

Contact details

Rémi Lamarque
r.lamarque@qmul.ac.uk



Scan to visit the
facility website

Phonetics Lab

The Phonetics Lab facilitates cutting-edge research in speech processing, using a wide range of audio equipment, including microphones, recorders, and an ultrasound imaging system.

The Phonetics Lab is a purpose-built soundproof recording studio with an IAC acoustics booth. The lab can be used for the collection of high-quality audio and ultrasound tongue imaging data and provides a quiet space for perception studies.

For speech recording and auditory perception, we have a range of neutral microphones, monitors and AD/DA converters from Neumann, AKG, RME, and Beyerdynamic.

For ultrasound data collection we have the vocal tract imaging ultrasound imaging system from Telemed (MicrUs EXT-1H), with probes suitable for recording both children and adults.

Contact details

Rémi Lamarque
r.lamarque@qmul.ac.uk



Scan to visit the
facility website

