

# UNSW Core Facilities



**UNSW**  
SYDNEY

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## UNSW Core Facilities

The office of the Pro Vice Chancellor for Research Infrastructure at UNSW oversees the management of a number of research support facilities across UNSW. These core facilities include:

### The Mark Wainwright Analytical Centre (MWAC)

The Mark Wainwright Analytical Centre (MWAC) comprises of a number of core research facilities managing the major instrumentation and infrastructure used by researchers for the study of the structure and composition of biological, chemical and physical materials. Our facilities are housed in custom-built laboratories across the Kensington campus.

The Centre's major Research Facilities are accessible to all staff and students of UNSW, as well as to external researchers, Government and industry users. Staff of the Centre provide research collaboration, technical support, education and training to researchers accessing the facilities.

### Animal Services

Animal Services manages large and small animal research facilities providing best practice in the care and housing of animals for research purposes.

### Research Imaging NSW

Research Imaging NSW (RINSW) is a partnership between UNSW Sydney and the South Eastern Sydney LHD providing access to state-of-the-art magnetic resonance imaging of human patients and participants for research into human health and disease.

### Websites

PVCRI  
[research.unsw.edu.au/research-infrastructure](https://research.unsw.edu.au/research-infrastructure)

MWAC  
[analytical.unsw.edu.au](https://analytical.unsw.edu.au)



## Bioanalytical Mass Spectrometry Facility

The Bioanalytical Mass Spectrometry Facility (BMSF) brings together advanced mass spectrometric equipment and expertise to support medical, biological as well as molecular/macromolecular research at UNSW and beyond. Mass Spectrometry is increasingly an enabling tool in Science, Medicine and Engineering.

Research staff at the BMSF are experts in developing and applying mass spectrometry and allied methods. We are here to help and guide you in the use of instrumentation, develop methods as needed to suit your projects and train research students and staff to operate our sophisticated instruments.

Available instruments can be found at [analytical.unsw.edu.au/facilities/bmsf/instruments](http://analytical.unsw.edu.au/facilities/bmsf/instruments)

### Access requirements

Access work flows range from occasional samples on a "fee-for-service" (FFS) basis (requested via a downloadable form) to extensive registered projects where "do it yourself" (DIY) users are registered and trained to operate equipment at the BMSF. Projects often involve considerable guidance and supervision from BMSF staff.

### Costs

Access rates, set primarily for hours of instrument time used, are essentially tiered into 2 levels: Academic (public sector researchers) and commercial (private sector). Academic researchers have the option of FFS access rate or a lower cost DIY rate after appropriate training on the facility's equipment.

### Contacts

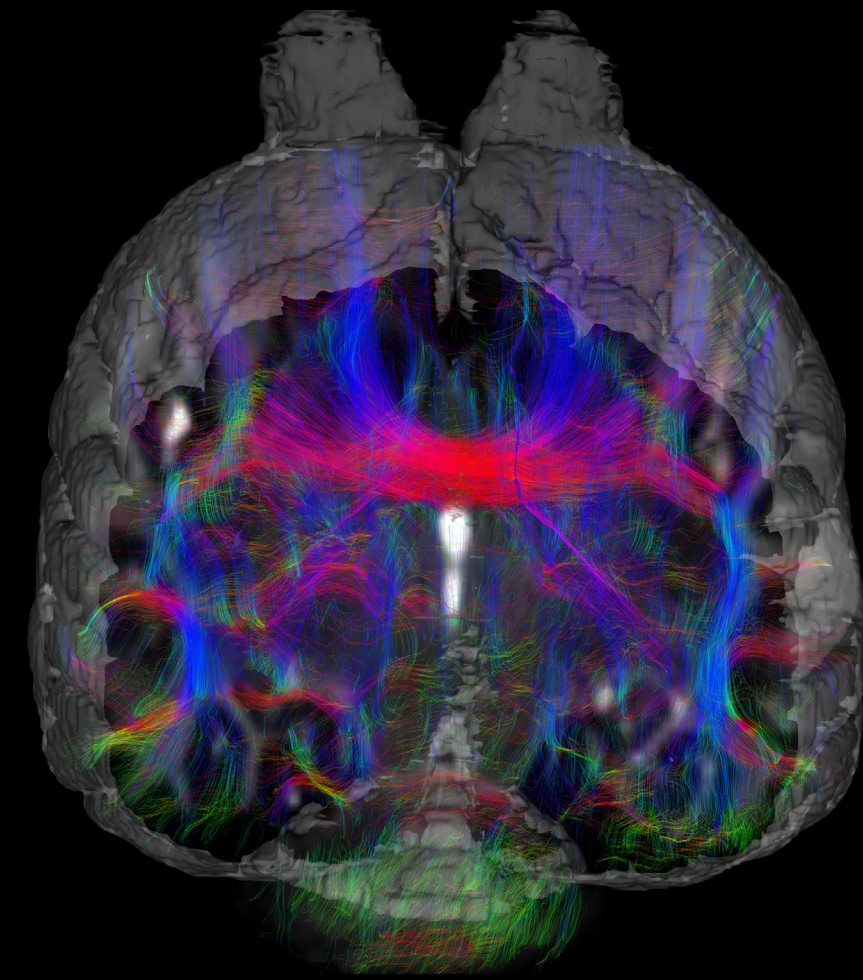
- [BMSF@unsw.edu.au](mailto:BMSF@unsw.edu.au)
- Wallace Wurth (C27): +61 (2) 9385 1717
- Biosciences (E26): +61 (2) 9385 2952
- Chemical Sciences (F10): +61 (2) 9385 7739

### Website

[analytical.unsw.edu.au/facilities/bmsf](http://analytical.unsw.edu.au/facilities/bmsf)

### Location

- Wallace Wurth Laboratory & Administration  
Level 4, North West  
Wallace Wurth Bldg (C27)
- Biosciences Precinct Laboratory  
Level 2, Biosciences South  
(E26)
- Chemical Sciences Laboratory  
Rm B50, Basement  
Chemical Sciences Bldg (F10)



## Biological Resources Imaging Laboratory

The Biological Resources Imaging Laboratory (BRIL) provides access to state-of-the-art *in vivo* and *ex vivo* preclinical imaging technologies, expertise and services. BRIL offers a variety of imaging systems including clinically relevant technologies such as Computed Tomography (CT), Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI) and Ultrasound. Whole-body bioluminescence and fluorescence imaging, laser speckle, photoacoustic imaging as well as Australia's first Magnetic Particle Imaging System are also available, enabling multimodal imaging within a single experiment.

Our highly qualified staff can support projects from initial planning through to data acquisition, image analysis and processing. BRIL provides a range of associated services including surgical support, surgical microscopy, physiological monitoring, body composition analysis and microwave fixation. All of the instruments are located within a specific pathogen-free PC2 animal facility, ensuring that a full breadth of research projects can be performed.

Available instruments can be found at [analytical.unsw.edu.au/facilities/bril/instruments](http://analytical.unsw.edu.au/facilities/bril/instruments)

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### Access requirements

[analytical.unsw.edu.au/facilities/bril/new-user-checklist](http://analytical.unsw.edu.au/facilities/bril/new-user-checklist)

### Costs

Indicative pricing can be found at [analytical.unsw.edu.au/facilities/bril/pricing](http://analytical.unsw.edu.au/facilities/bril/pricing)

### Contacts

+61 (2) 9065 9836 or 9065 9812  
[bril@unsw.edu.au](mailto:bril@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/bril](http://analytical.unsw.edu.au/facilities/bril)

### Location

Lowy Cancer Research  
Centre (C25)



## Biospecimen Services

### Access requirements

Researchers wishing to request specimens from Biospecimen Services or Health Precincts Biobank should submit their enquiry via email to the Biospecimen Services Manager at [BiospecimenServices@unsw.edu.au](mailto:BiospecimenServices@unsw.edu.au)

Or  
[HealthPrecinctsBiobank@unsw.edu.au](mailto:HealthPrecinctsBiobank@unsw.edu.au)

### Costs

We use a cost recovery schedule that accurately reflects the costs associated with specimen collection, processing, costs of consumables, and storage. The User will be advised of these charges on a case by case basis.

### Contacts

+61 (2) 9065 5665  
[BiospecimenServices@unsw.edu.au](mailto:BiospecimenServices@unsw.edu.au)  
Or  
[HealthPrecinctsBiobank@unsw.edu.au](mailto:HealthPrecinctsBiobank@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/biospecimen-services](http://analytical.unsw.edu.au/facilities/biospecimen-services)

### Location

Lower Ground  
Room LG15

**Biospecimen Services** is a full service facility devoted to processing and storing human biospecimens for use in research. We provide a complete service from experimental planning to the collection, processing, data management, storage and distribution of biospecimens, with consent from healthy subjects and patient populations with targeted diseases. The facility can also provide clinically relevant biospecimens from the Health Precincts Biobank for use in your HREC-approved research studies.

Our capabilities include:

- Tailored collection protocols
- Standardised specimen processing
- Temperature-controlled storage systems
- Clinical data linkage
- Secure database management
- Grant application assistance

### How we can support research

- Access to clinical biospecimens from a wide range of diseases
- Access to secure web-based biobank database
- Long-term managed biospecimen storage facilities
- Biospecimen preparation
- DNA/RNA from fresh/frozen tissue
- Formalin Fixed Paraffin Embedded (FFPE) tissue sections
- Plasma, DNA/RNA from peripheral blood
- Cost estimate for specimen processing/storage for grant applications

## Cell Culture Facility

The **Cell Culture Facility** is a multi-user facility located in the MWAC PC2 lab on level 5 of the Science and Engineering Building (E8).

The facility is open for use by UNSW and external researchers and students.

Access to the Cell Culture Facility is by yearly subscription. Your subscription includes:

- Hands on training in cell culture techniques (compulsory). During the course you will learn aseptic technique as well as thawing, passaging and freezing of cells for long term storage. Course offered regularly
- Storage of cell stocks in liquid nitrogen
- Mycoplasma testing for one of your cell lines

### Access Requirements & Costs

[analytical.unsw.edu.au/facilities/mwac-ccf/new-users](http://analytical.unsw.edu.au/facilities/mwac-ccf/new-users)

### Contacts

Dr. Joanna Biazik-Richmond  
[joanna.richmond@unsw.edu.au](mailto:joanna.richmond@unsw.edu.au)

### Website

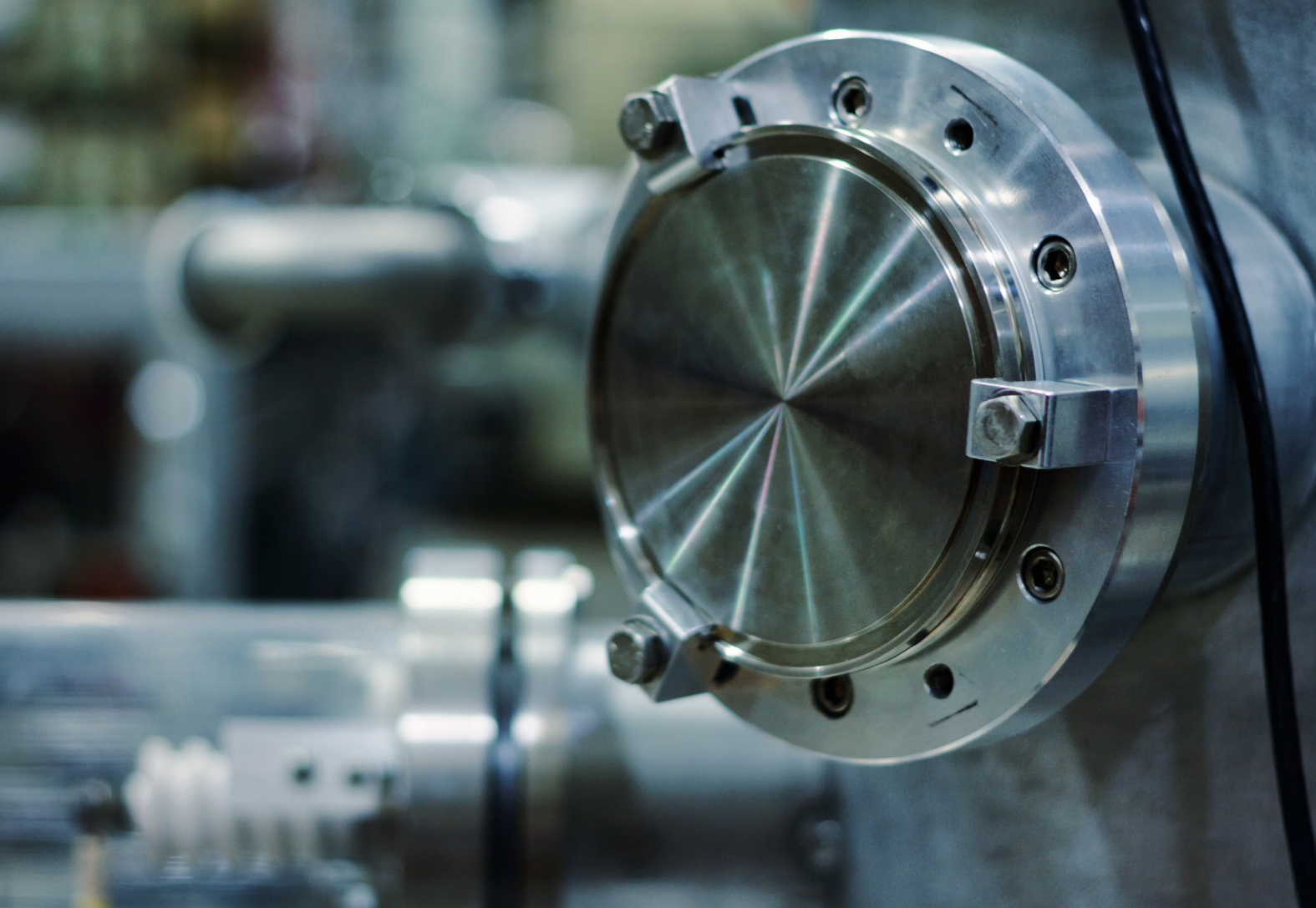
[analytical.unsw.edu.au/facilities/mwac-ccf](http://analytical.unsw.edu.au/facilities/mwac-ccf)

### Location

Laboratory 524  
Level 5  
Science & Engineering  
Building – SEB (E8)  
Lowy Cancer Research  
Centre (C25)







## Electron Microscope Unit

The Electron Microscopy Unit (EMU) provides advanced microscopy, analysis and characterisation facilities to researchers throughout UNSW as well as to external users and industry. We host a suite of scanning electron microscopes (SEM), transmission electron microscopes (TEM), focused ion beam instruments (FIB) and atomic force microscopes (AFM) as well as associated specimen preparation and data/image analysis capabilities. We have 17 major instruments over three locations (Chemical Sciences, Hilmer and Sciences and Engineering Buildings) as well as 15 specialist staff.

We are equipped to support research from all fields, including cell biology and protein structure analysis. Contact us to discuss your research goals and how we can help you achieve them.

Available instruments can be found at [analytical.unsw.edu.au/facilities/emu/instruments](http://analytical.unsw.edu.au/facilities/emu/instruments)

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**Access requirements**  
[analytical.unsw.edu.au/facilities/emu/access](http://analytical.unsw.edu.au/facilities/emu/access)

**Costs**  
[analytical.unsw.edu.au/facilities/emu/EMU%20charges](http://analytical.unsw.edu.au/facilities/emu/EMU%20charges)

**Contacts**  
+61 (2) 9385 4425  
[EMUAdmin@unsw.edu.au](mailto:EMUAdmin@unsw.edu.au)

**Website**  
[analytical.unsw.edu.au/facilities/emu](http://analytical.unsw.edu.au/facilities/emu)

**Location**

- Basement  
Chemical Sciences Building (F10)
- Basement  
Hilmer Building (E10)
- Lab 524, Level 5  
SEB (E8)

## Chronos 14Carbon Cycle Facility

### Accelerator Mass Spectrometry (AMS) for radiocarbon (<sup>14</sup>C) dating

The Chronos 14Carbon Cycle Facility was officially opened by the Vice-Chancellor Professor Ian Jacobs in November 2019.

Housed in the Science and Engineering building, the Chronos 14Carbon-Cycle Facility is a new radiocarbon dating facility based around an Ionplus Mini Carbon Dating System (MICADAS) Accelerator Mass Spectrometer (AMS) in the Southern Hemisphere. As part of the Mark Wainwright Analytical Centre and in collaboration with ANSTO, the facility is located in a new purpose-built laboratory dedicated to 14C analysis, with equipment for sample preparation, graphitisation and AMS.

### Contacts

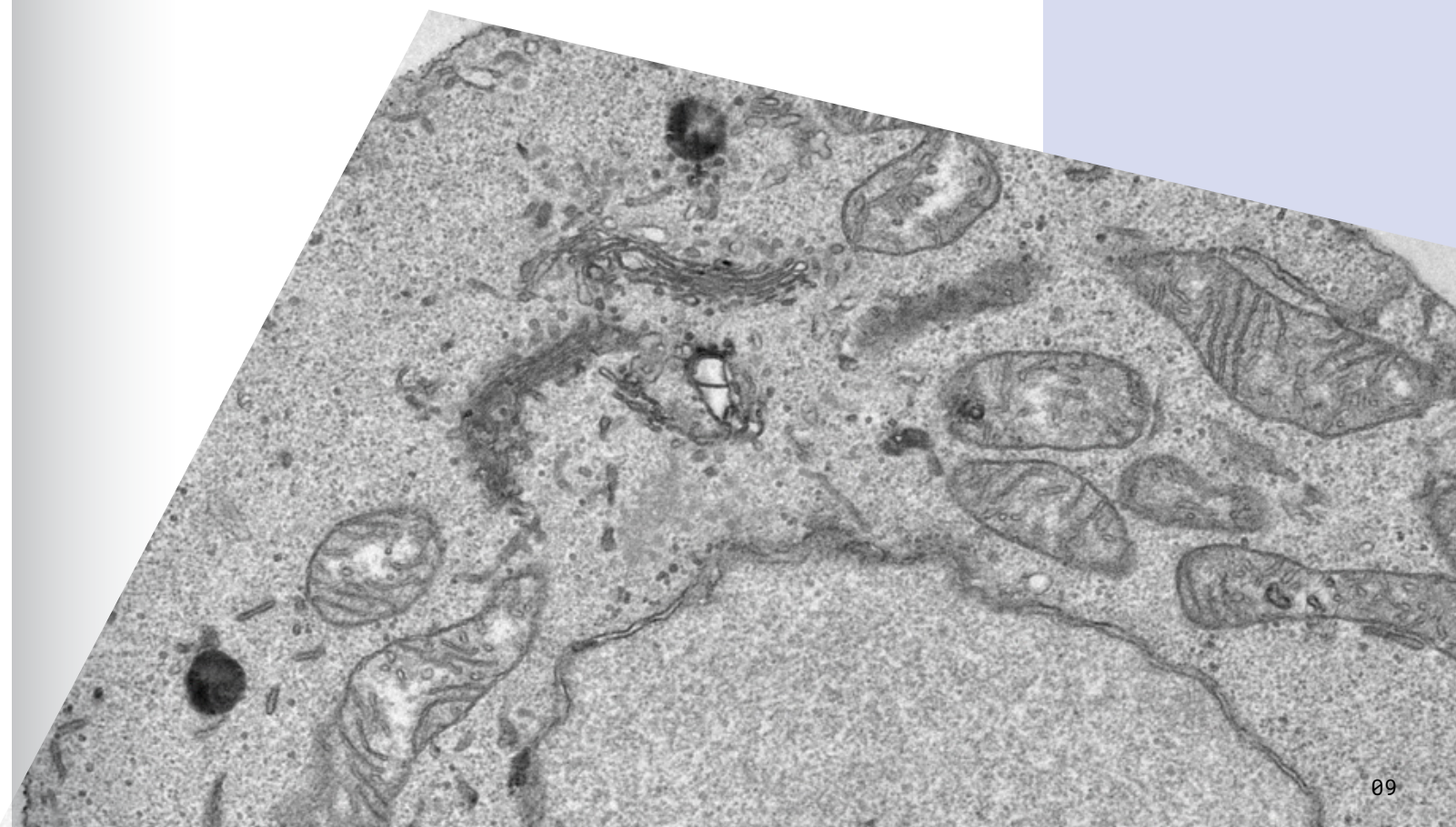
+61 (2) 9385 4693  
[c.marjo@unsw.edu.au](mailto:c.marjo@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/sseau/radiocarbon-laboratory](http://analytical.unsw.edu.au/facilities/sseau/radiocarbon-laboratory)  
[14carboncycle.com](http://14carboncycle.com)

### Location

Basement  
Science and Engineering  
Building (E8)





## Elemental Analysis Facility

The Inductively Coupled Plasma (ICP) Laboratory houses state-of-the-art ICP instrumentation for ultratrace elemental analysis, and holds a range of other instruments for high-throughput, high sensitivity analysis of cations, anions and waterborne organic species.

### Instrumentation

- ICP-OES (2) and ICP-MS for solution samples
- Laser Ablation ICP-MS
- Anion chromatography, flow injection analysis
- Dissolved organic carbon (DOC) and nitrogen (DON) analysis
- Liquid chromatography for organic carbon detection (LC-OCD)
- Sample preparation: hot block, nitric and hydrochloric acid distillation unit, microwave digesters, ball mill, centrifuge

### Access requirements and contacts

- ICP-OES and ICP-MS  
Laser ablation ICP-MS  
**Rabeya Akter**  
[r.akter@unsw.edu.au](mailto:r.akter@unsw.edu.au)
- Anion chromatography  
DOC and LC-OCD  
**Khorshed Chinu**  
[k.chinu@unsw.edu.au](mailto:k.chinu@unsw.edu.au)

### Costs

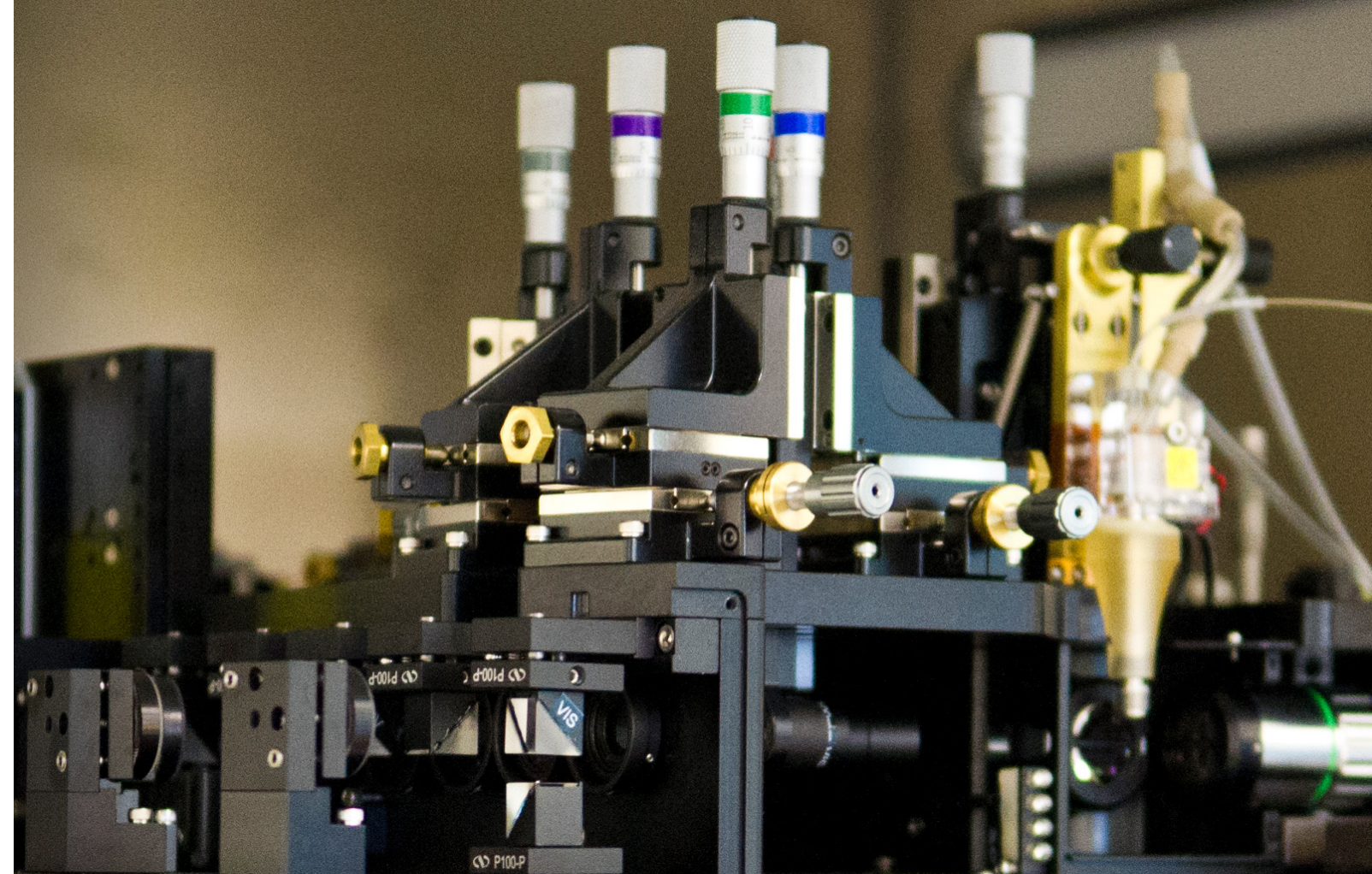
Available on application

### Website

[analytical.unsw.edu.au/facilities/sseau/icplab](http://analytical.unsw.edu.au/facilities/sseau/icplab)

### Location

Ground Floor  
Room G61  
Chemical Sciences  
Building (F10)



## Flow Cytometry

The **Flow Cytometry Facility** offers high-end instrumentation and expertise for cell/particle sorting and analysis across a broad range of both biological and environmental research applications.

We offer four Cell Sorters (self sorting or operator assisted), five Cell Analysers, two Particle Analysers, the first Deformability Cytometer in the southern hemisphere, a CellCelector for imaging and isolation of single cells and Isoflux for sample enrichment, more info via [analytical.unsw.edu.au/facilities/flow/instruments](http://analytical.unsw.edu.au/facilities/flow/instruments)

The facility is managed by two specialist staff who are available for running sorts, assisting acquisition and analysis, experimental design and user training.

### Access requirements

[analytical.unsw.edu.au/facilities/flow/new-users](http://analytical.unsw.edu.au/facilities/flow/new-users)

### Costs

[analytical.unsw.edu.au/facilities/flow/pricing](http://analytical.unsw.edu.au/facilities/flow/pricing)

### Contacts

+61 (2) 9065 2560  
[brilflow@unsw.edu.au](mailto:brilflow@unsw.edu.au)

- **Emma Johansson Beves**  
[e.johanssonbeves@unsw.edu.au](mailto:e.johanssonbeves@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/flow](http://analytical.unsw.edu.au/facilities/flow)

### Location

Level 2  
Rooms 2015-2017  
BioScience South Building (E26)

The X-ray Fluorescence (XRF) Laboratory performs chemical analysis at percent and trace levels on mineral, geological, industrial and environmental materials. Combustion elemental analysis for C, H, N, S and O in organic materials is also available.

### Instrumentation

- WD-XRF, ED-XRF
- Micro-XRF elemental mapping, portable XRF
- CHNS and O combustion analysers
- Sample preparation: rock crushing and milling, drying ovens and furnaces for glass bead preparation

### Costs

More information relating to costs and sample submission can be found at [analytical.unsw.edu.au/facilities/sseau/techniques](http://analytical.unsw.edu.au/facilities/sseau/techniques)

### Contacts

- +61 (2) 9385 4282 ext. 54282
- **Helen Wang**  
[huixin.wang@unsw.edu.au](mailto:huixin.wang@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/sseau/xrflab](http://analytical.unsw.edu.au/facilities/sseau/xrflab)

### Location

Ground Floor  
Room G61  
Chemical Sciences  
Building (F10)





#### Access requirements

[analytical.unsw.edu.au/facilities/light-microscopy-facility/user-corner](https://analytical.unsw.edu.au/facilities/light-microscopy-facility/user-corner)

#### Costs

[analytical.unsw.edu.au/facilities/light-microscopy-facility/user-corner/charges](https://analytical.unsw.edu.au/facilities/light-microscopy-facility/user-corner/charges)

#### Contacts

+61 (2) 9065 5306  
[KGImf@unsw.edu.au](mailto:KGImf@unsw.edu.au)

#### Website

[analytical.unsw.edu.au/facilities/light-microscopy-facility](https://analytical.unsw.edu.au/facilities/light-microscopy-facility)

#### Location

Room LG12  
Lower Ground  
Lowy Cancer Research Centre  
(C25)

## Katharina Gaus Light Microscopy Facility

The Katharina Gaus Light Microscopy Facility (formerly the Biomedical Imaging Facility (BMIF)) is a multiuser facility made up of a team of scientists that provide research support and training in core and advanced microscopy techniques.

The facility facilitates research through 3 key areas:

- Specimen preparation - good research and results begin with appropriately prepared samples. Our biological specimen preparation lab provides a range of services and expertise in biological sample preparation.
- Image acquisition - equipped with a diverse range of imaging instruments, users have access to a broad range of tools to assist them in their scientific enquiries. Use of facility instruments are preceded by comprehensive training to ensure that samples are acquired correctly for their intended purpose.
- Data analysis - a suite of image analysis software and workstations, as well as staff ready and willing to assist are available.

Available instruments can be found at

[analytical.unsw.edu.au/facilities/light-microscopy-facility/instruments](https://analytical.unsw.edu.au/facilities/light-microscopy-facility/instruments)

## Molecular Surface Interaction Lab

The Molecular Surface Interaction Lab houses molecular surface interaction equipment comprising surface plasmon resonance, an interferometry-based biosensor and quartz crystal microbalance with dissipation monitoring. These instruments facilitate analyses of how materials, biological molecules and cells interact on the nanoscale including protein-protein/peptide/antibody/DNA/carbohydrate, protein-material, material-cell interactions.

#### Instruments and Capability

- Surface plasmon resonance – BiaCore T200 and S200 (housed in SOMS)
- Quartz crystal microbalance with dissipation monitoring - Q-Sense Analyzer with electrochemical impedance spectroscopy capability
- Interferometry-based biosensor – ForteBio Blitz

#### Support provided

- Advice on instrument selection
- Advice on experimental design
- Training to independently use the instruments
- Training to analyse, model, present and interpret data
- Assistance with data analysis, presentation and interpretation for publication
- Option for staff operated data acquisition, analysis and interpretation
- Grant costing

Further information on the instrumentation available is at

[unsw.edu.au/engineering/our-schools/biomedical-engineering/our-research/facilities/molecular-surface-interaction-network-laboratory](https://unsw.edu.au/engineering/our-schools/biomedical-engineering/our-research/facilities/molecular-surface-interaction-network-laboratory)

#### Access requirements

We invite prospective users to contact the Molecular Surface Interaction Lab to discuss their experimental requirements and arrange instrument training.

#### Costs

Refer to website for fees.

#### Contacts

- Lab Manager  
Ms Ha Na Kim  
[h.n.kim@unsw.edu.au](mailto:h.n.kim@unsw.edu.au)
- Lab Director  
A/Prof. Megan Lord,  
[m.lord@unsw.edu.au](mailto:m.lord@unsw.edu.au)  
+61 (2) 9385 3910

#### Website

[unsw.edu.au/engineering/our-schools/biomedical-engineering/our-research/facilities/molecular-surface-interaction-network-laboratory](https://unsw.edu.au/engineering/our-schools/biomedical-engineering/our-research/facilities/molecular-surface-interaction-network-laboratory)

#### Location

Level 2  
Room 2002  
Bioscience South Building (E26)







#### Costs

[analytical.unsw.edu.au/facilities/nmr-facility/access-charges](https://analytical.unsw.edu.au/facilities/nmr-facility/access-charges)

#### Contact details

+61 (2) 9385 4705  
[nmr@unsw.edu.au](mailto:nmr@unsw.edu.au)

#### Website

[analytical.unsw.edu.au/facilities/nmr](https://analytical.unsw.edu.au/facilities/nmr)

#### Location

Basement  
Room B41  
Chemical Science Building (F10)

## Nuclear Magnetic Resonance Facility

The **Nuclear Magnetic Resonance (NMR) Facility** is equipped to an international standard with state-of-the-art instruments: seven which can measure solutions, two which can measure solids and soft matter, and one which can measure electron magnetic resonance. We also have facilities for off-line data processing and archiving.

We specialise in the analysis of materials and bio-materials using Magnetic Resonance Spectroscopy (NMR and EPR).

Other capabilities within the facility:

- Analysis of polymers
- Quantitative analysis of pesticides, herbicides and pharmaceuticals (qNMR)
- Analysis of clay minerals, cement (solid state NMR)
- Quality control of simple organics
- Analysis of carbon materials
- Structural elucidation
- Kinetics
- Diffusion NMR
- Multinuclear NMR

Available instruments can be found at [analytical.unsw.edu.au/facilities/nmr/instruments](https://analytical.unsw.edu.au/facilities/nmr/instruments)

## Recombinant Products Facility

The **Recombinant Products Facility** was established to help researchers fast-track projects that rely on larger quantities of purified proteins. Key infrastructure includes microbial fermenters, large-scale mammalian cell culture incubators, mid-stream buffer exchange, AKTA FPLCs and a range of characterisation equipment. Its highly skilled staff provide protein production and purification services for academic and industry researchers, enabling the acceleration of research projects. UNSW researchers and students can also be trained to use the specialised equipment at the RPF and can be assisted with their experimental design.

Services include:

- Protein expression to fermenter scale (up to 19L)
- Mammalian cell culture at shaker flask scale (up to 25L)
- Sample harvest and conditioning
- Protein purification
- Protein characterisation
- Training of students and researchers
- Advice and consultation on process development

#### Access requirements

[proteins.unsw.edu.au/what-we-do/access](https://proteins.unsw.edu.au/what-we-do/access)

#### Costs

[proteins.unsw.edu.au/what-we-do/fees](https://proteins.unsw.edu.au/what-we-do/fees)

#### Contact details

- Lab Manager  
Hélène Lebhar  
[h.lebhar@unsw.edu.au](mailto:h.lebhar@unsw.edu.au)
- Lab Director  
A/Prof Chris Marquis  
[c.marquis@unsw.edu.au](mailto:c.marquis@unsw.edu.au)

#### Website

[proteins.unsw.edu.au](https://proteins.unsw.edu.au)

#### Location

Level 3  
Biological Sciences  
Building North (D26)





## Spectroscopy Laboratory

The **Spectroscopy Laboratory** has a focus on vibrational spectroscopy techniques, Raman and infrared, enabling chemical characterisation and micron-scale mapping of solids, liquids and powders. The lab hosts two Raman spectrometers (one with photoluminescence capability), two FTIR spectrometers and two UV/Visible/NIR spectrophotometers.

Applications of vibrational spectroscopy include:

- Mineral identification - identification and mapping of titania phases (Raman)
- Crystal strain measurement – strain imposed by defect structures in semiconductors (Raman)
- Chemical characterisation and crystallinity determinations of polymers (Infrared and Raman)

- Chemical characterisation of polymers and small organic molecules via library matching (Infrared and Raman)
- Biological samples - mapping lipid and amino acid rich areas in cells (Infrared and Raman)
- Identification of metal-ligand bonds in complexes (Infrared and Raman)
- Characterisation of carbon fullerenes and nanotubes (Raman)

Applications of UV-Visible and Photoluminescence (PL) spectroscopy:

- Spectrophotometric assays (UV-Vis)
- Band-gap measurements of transparent films and solid thin films (UV-Vis and PL)

Available instruments can be found at [analytical.unsw.edu.au/facilities/speclab/instruments](http://analytical.unsw.edu.au/facilities/speclab/instruments)

### Access requirements

Training on the instruments, and a sample service is provided by our Scientific Officer Dr Anne Rich. Advance bookings for the sample service or instrument training should be made by email. If you need training on the instrument, please email to book a time, and bring along a copy of our Registration Form with all of your details.

### Costs

[analytical.unsw.edu.au/facilities/speclab/training-courses/costs-training-and-access](http://analytical.unsw.edu.au/facilities/speclab/training-courses/costs-training-and-access)

### Contacts

+61 (2) 9385 9795  
[a.rich@unsw.edu.au](mailto:a.rich@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/speclab](http://analytical.unsw.edu.au/facilities/speclab)

### Location

Ground Floor  
Room G31  
Chemical Sciences Building (F10)

## Stats Central

**Stats Central** is a statistical consulting unit providing university-wide support for staff and students during study design and analysis. It is funded through the research division, with the support of the School of Mathematics and Statistics and a growing suite of partner schools, to provide support for UNSW research students and staff in collaborative and consultative roles. We are currently staffed by seven professionally accredited consultants with a breadth of expertise working with researchers across disciplines.

Stats Central offers:

- Statistical consultations for UNSW staff and students regarding all aspects of the research project (study design, analysis and communication). Study design advice is free for all UNSW researchers and all consulting services are free for UNSW higher degree research students. Book a consultation now.
- Intensive short courses on introductory statistics, study design, and regression analysis, at heavily reduced rates for UNSW staff and students.
- Grant development and review: free advice on study design and analysis in the project planning stages, advice on how to write details into your grant application from experienced statisticians, and review of draft applications. For details write to [Stats.Central@unsw.edu.au](mailto:Stats.Central@unsw.edu.au)
- A hub for biostatisticians and statistical consultants around campus.

Is your school or unit interested in partnering with Stats Central? Partner schools make a cash contribution to the scheme in exchange for having a professionally accredited statistician based in their school part-time for enhanced research support.

### Costs

- **Staff**  
[analytical.unsw.edu.au/facilities/stats-central/unsw-staff](http://analytical.unsw.edu.au/facilities/stats-central/unsw-staff)
- **Students**  
[analytical.unsw.edu.au/facilities/stats-central/students](http://analytical.unsw.edu.au/facilities/stats-central/students)
- **Short Courses**  
[analytical.unsw.edu.au/facilities/stats-central/short-courses](http://analytical.unsw.edu.au/facilities/stats-central/short-courses)

### Contacts

+61 (2) 9385 8220  
[stats.central@unsw.edu.au](mailto:stats.central@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/stats-central](http://analytical.unsw.edu.au/facilities/stats-central)

### Location

Level 2  
Biological Sciences  
South Building (E26)



## Structural Biology Facility

The **Structural Biology Facility** is a new state of the art laboratory dedicated to high throughput crystallisation of proteins and other biological molecules. Two robotic crystallisation units allow for rapid optimisation of crystal production. The X-ray diffractometer, a Bruker D8 Venture, will acquire the diffraction pattern. The characterisation pipeline concludes with the solving of structure.

### Other capabilities:

- Circular dichroism spectroscopy, protein conformation
- Native fluorescence, protein folding
- Optical microscopes, crystal verification
- Crystallisation image database
- GPU accelerated crystal structure refinement
- 3D printable models for protein visualisation

### Costs

[analytical.unsw.edu.au/facilities/sbf-3](http://analytical.unsw.edu.au/facilities/sbf-3)

### Contacts

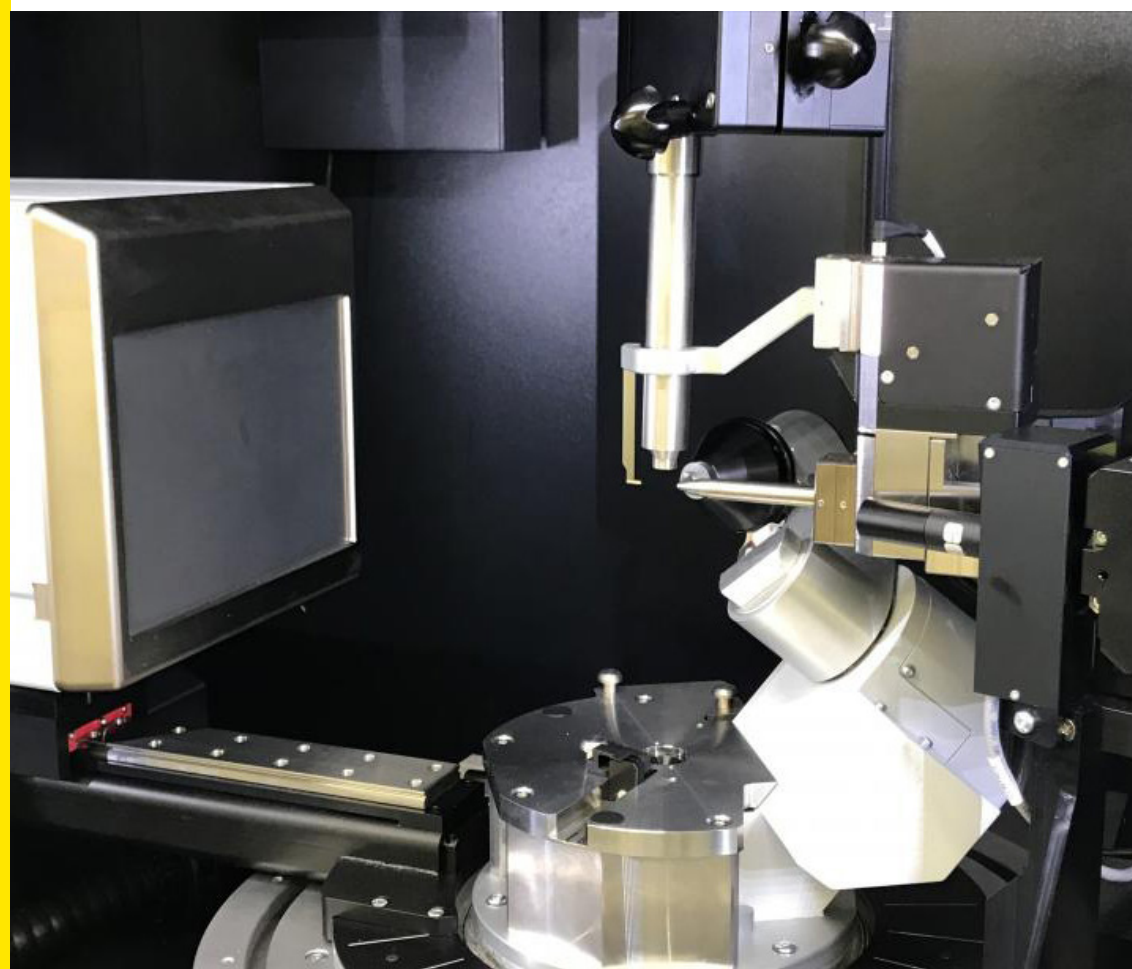
+61 (2) 9385 4587  
[sbf@unsw.edu.au](mailto:sbf@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/sbf](http://analytical.unsw.edu.au/facilities/sbf)

### Location

Level 3  
Biological Sciences (D26)



## Surface Analysis and X-ray Diffraction Facility

The **Surface Analysis Laboratory** performs chemical analysis of surfaces of solids and powders. Surface chemistry can be measured at the top 5 nm using photoelectron spectroscopy or <1 nm using surface mass spectrometry. Complex samples, such as biological tissues, can be chemically mapped or depth profiled at <1 nm precision.

### Instrumentation

- X-ray photoelectron spectroscopy (XPS) plus ultraviolet photoelectron spectroscopy (UPS) including variable temperature and depth profiling
- Time-of-flight secondary mass spectrometry for analysis < 1 nm surface, chemical imaging and depth profiling
- Surface topography of solids can be mapped at <1 nm accuracy, and thin bead preparation
- Many types of thin-films on a range of substrates can be prepared using our spin-coater

### Costs

Available on application.

### Contacts

- Dr. Bill Gong  
[b.gong@unsw.edu.au](mailto:b.gong@unsw.edu.au)
- Songyan Yin  
[songyan.yin@unsw.edu.au](mailto:songyan.yin@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/sseau/salab](http://analytical.unsw.edu.au/facilities/sseau/salab)

### Location

Ground Floor  
Room G61  
Chemical Sciences  
Building (F10)

Our **X-ray Diffraction (XRD) Laboratory** is a world-class facility for determining structure in crystalline materials, for example, quantifying mineral composition in bone implant materials, evaluating stresses in ceramic or metallic implants.

### Instrumentation

- Bulk powder diffraction systems (Cu, Co, Ag X-ray sources available)
- Single crystal diffraction systems (Mo X-ray source) for crystallography of small molecules (note Protein Crystallography is part of the Structural Biology Facility)
- Thin-film powder diffraction (2 high power Cu X-ray sources)
- Film thickness metrology

### Costs

Available on application

- Crystallography sample submission form
- XRD sample analysis request form

### Contacts

**Dr Mohan Bhadbhade**  
Crystallography  
+61 2 9385 4669  
[m.bhadbhade@unsw.edu.au](mailto:m.bhadbhade@unsw.edu.au)

### Dr Yu Wang

Powder Diffraction  
facilities and services  
+61 2 9385 4669  
[yu.wang@unsw.edu.au](mailto:yu.wang@unsw.edu.au)

### Website

[analytical.unsw.edu.au/facilities/sseau/xrdlab](http://analytical.unsw.edu.au/facilities/sseau/xrdlab)





## Tyree X-ray CT Facility

### Access requirements

Internal UNSW users: please register in ACLS and choose "School of Minerals and Energy Resources Engineering" as your node and contact Tyree micro-CT staff to further discuss your sample.

### External/Commercial users

Contact Tyree micro-CT staff.

### Sample requirement

#### HeliScan Micro-CTs

Max sample diameter 200mm and max weight 8kg. Sample should be dry and have one flat side. If your sample is wet, it should be put in a closed plastic or glass container.

#### Itrax CoreScanner

Maximum sample length 1.75 meter

### Costs

Contact Tyree micro-CT staff.

### Location

Tyree Energy Technology Building (TETB)  
Room LG22

Tyree X-ray CT Facility  
+61 (2) 9385 5554/9269/1609  
[TyreeXray@unsw.edu.au](mailto:TyreeXray@unsw.edu.au)

### Website

[unsw.edu.au/engineering/our-schools/minerals-and-energy-resources-engineering/our-research/facilities/tyree-x-ray](http://unsw.edu.au/engineering/our-schools/minerals-and-energy-resources-engineering/our-research/facilities/tyree-x-ray)

The Tyree X-ray CT Facility offers leading edge technology with our expert know-how and award-winning analysis to the study of porous media. One of the most important things we provide is quality control – ensuring that our clients get the imagery and data that they need.

A standout feature is the integration of various pressure cells into the imaging workflow.

Our facility also has advanced and massively parallel software to process images generated from the micro-CT. We have both in-house and commercial software (Avizo).

### Instrumentation

#### X-ray instruments

We offer tomographic imaging with a large dynamic range, excellent field of view (FOV) and very high resolution. We can produce tomograms with resolutions approaching sub-micron levels with our HeliScan micro-CTs. The highest achievable resolution is until 0.9  $\mu\text{m}$ . Our HeliScan micro-CTs measures a wide range of samples from 2-200mm (sample diameter) and up to 8kg (sample weight).

#### HeliScan Micro CT -1

The Micro CT-1 is a prototype design of the HeliScan micro-CT scanner installed in a dedicated, temperature stabilised ( $\Delta T < 0.5^\circ\text{C}$ ), lead-lined room.

#### HeliScan Micro CT -2

The Micro CT-2 is a commercial version of the HeliScan micro-CT (Mark 1, ThermoFisher).

#### Itrax CoreScanner

Itrax CoreScanner is a unique multi-function scanner. It has the capability to take high resolution - RGB images down to 50 microns, -radiographic images down to 20 microns, X-ray Fluorescence (XRF) for elemental analysis down to 100 microns and magnetic susceptibility.



## Chemical Consulting Laboratory

The Chemical Consulting Laboratory (CCL) is the commercial arm of the Analytical Centre linking leading edge analytical expertise to the needs of government agencies, industry, the legal profession and private individuals.

By using the unique facilities of the UNSW Sydney, which house a huge range of [analytical instrumentation](#), we combine recognised expertise together with practical experience to solve analytical problems.

Our services specialise in chemical analysis of unusual samples or complex problems and bring the following benefits:

- Independence, reputation and quality
- Rapid response
- Extensive technical resources and expertise of UNSW Sydney
- Flexibility to customer's needs
- Interpretation of technical results
- Expert opinion in all aspects of chemistry and toxicology
- Research and Development capabilities
- Confidentiality

### Access requirements

No requirements

### Costs

Specific quotation provided on request

### Contacts

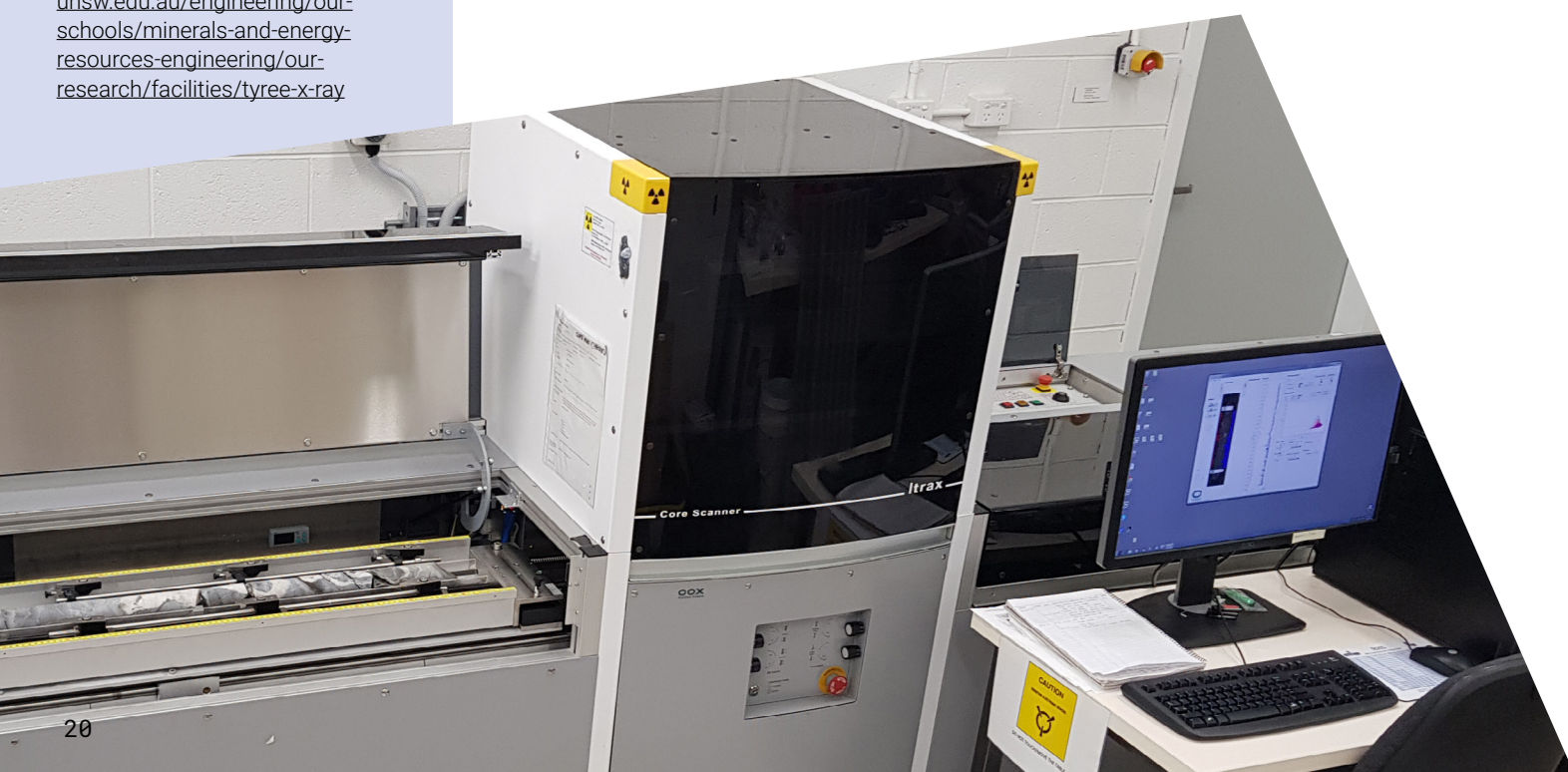
Dominic D'adam  
+61 (2) 9065 3605 or  
+61 432 830 027  
[d.dadam@unsw.edu.au](mailto:d.dadam@unsw.edu.au)

### Website

[analytical.unsw.edu.au/contact-us/commercial-consulting](http://analytical.unsw.edu.au/contact-us/commercial-consulting)

### Location

G01/G04  
Dalton Building (F12)





## Animal Services

### Access requirements

Access to facilities operated by Animal Services is restricted to personnel who have relevant approvals issued by the UNSW Animal Care and Ethics Committee. Prior to being granted access, personnel must also undertake training and induction to address requirements for safety, animal welfare, ethics and regulatory compliance.

### Costs

Researchers are charged a fee based on the number of animals held to cover the cost of non-salary expenses relating to animal care and facility operation. Researchers must also cover the full costs of animal purchase and transport. A schedule of fees is available on request.

### Location

Animal Services operates facilities on the Kensington and Randwick campuses, and provides management support for the UNSW field station at Hay in the NSW Riverina.

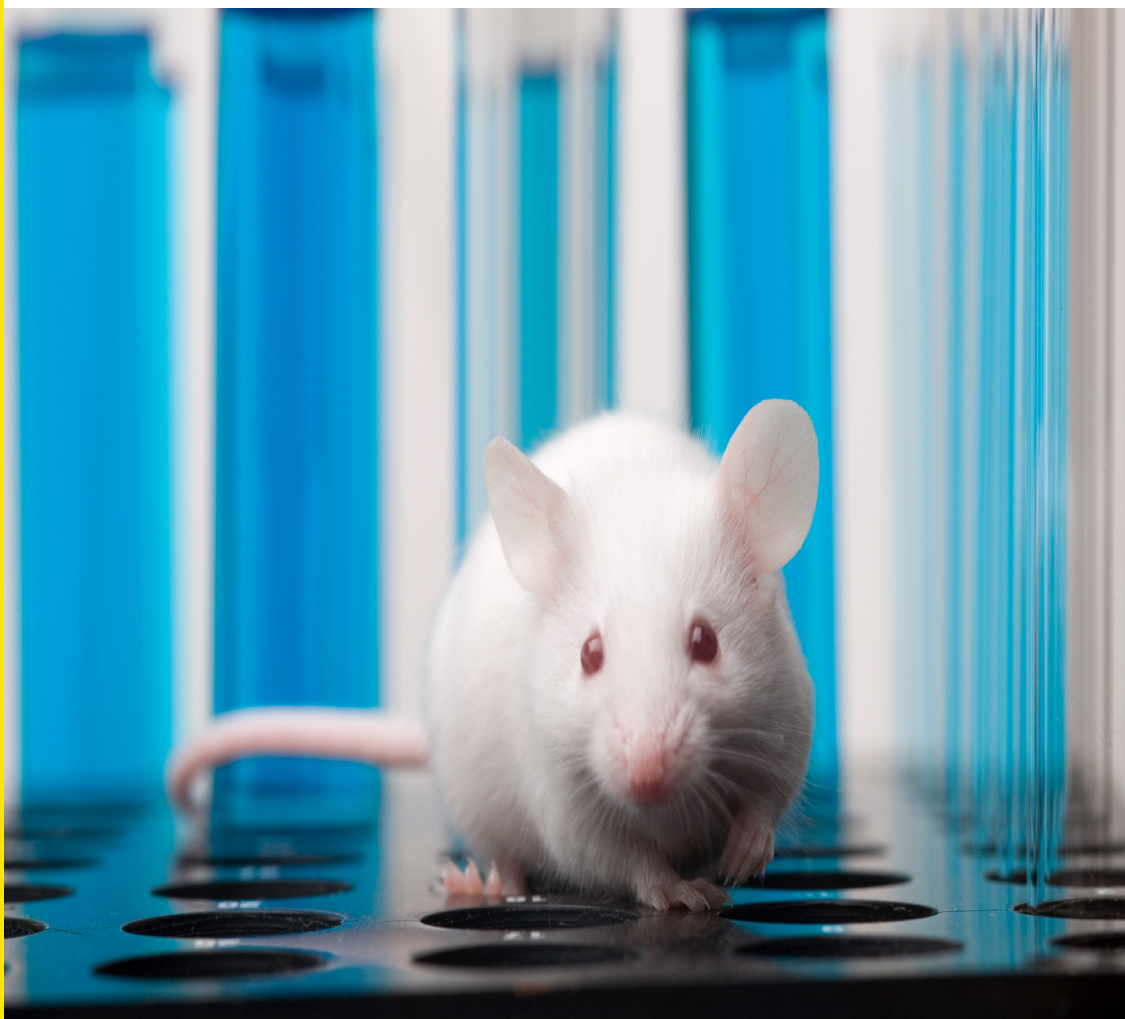
### Contacts

**Dr Malcolm France**  
Director of Animal Services,  
[m.france@unsw.edu.au](mailto:m.france@unsw.edu.au)

**Animal Services** was established in 2020 after the former Biological Resources Centre was transferred from the Faculty of Medicine to become a centralised unit under the Division of Research & Enterprise.

Animal Services operates six facilities accredited for housing animals used for research activities and provides related support services. By far the commonest species housed in these facilities are laboratory mice and rats although much smaller numbers of guinea pigs, rabbits and sheep are also held from time to time.

The housing and use of animals in these facilities is only permissible if approved in advance by the UNSW Animal Care and Ethics Committee. Independent oversight is provided by veterinarians in the UNSW Research Ethics & Compliance Support unit in addition to periodic inspections by the Animal Care and Ethics Committee and the NSW Department of Primary Industries.



## Research Imaging NSW

**Research Imaging NSW (RINSW)** is a strategic initiative developed in partnership between UNSW and South East Sydney Local Health District to provide researchers with state-of-the-art magnetic resonance capabilities, and increase collaboration between leading academic, research and health care institutions, including the Sydney Children's Hospital and the Royal Hospital for Women. The fully integrated clinical setting at the Prince of Wales Hospital supports basic through to translational and clinical research in patients/participant cohorts from neonates to centenarians.

The facility comprises of two 3T MRI systems, the Siemens MAGNETOM Vida and MAGNETOM Prisma, in a newly refurbished purpose-designed space in the Prince of Wales Hospital.

RINSW has capabilities to assist researchers in sequence design, testing and implementation onto the facility's systems. An expert team of technical and scientific support staff comprised of Radiologists, Radiographers, MR Physicist and Siemens Clinical Scientist are available for advice and training.

Further information on our services can be found at [research.unsw.edu.au/research-imaging-nsw](http://research.unsw.edu.au/research-imaging-nsw)

Enabled by



### Access requirements

Research Imaging NSW is open to researchers from any institution  
[research.unsw.edu.au/research-imaging-nsw](http://research.unsw.edu.au/research-imaging-nsw)

### Costs

The Fees and Cancellation Policy is listed on our website

### Contacts

+61 (2) 9385 1496  
[researchimaging@unsw.edu.au](mailto:researchimaging@unsw.edu.au)

### Website

[research.unsw.edu.au/research-imaging-nsw](http://research.unsw.edu.au/research-imaging-nsw)

### Location

Level 1  
Building 3  
Prince of Wales Hospital  
Randwick NSW 2031



