



MRC Laboratory
of Medical
Sciences

Team Science

at the LMS



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Medical
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Our purpose-built facility
at the heart of the world-leading
biomedical hub at the Imperial
College Hammersmith Campus.

A royal visit from
HRH, the Princess Royal
in 2024.





A word from our Director

Wiebke Arlt

We are thrilled that you are considering working at the MRC Laboratory of Medical Sciences (LMS) to further advance your career.

The MRC LMS, comprises around 30 research groups carrying out mechanistic research addressing major questions of relevance to human health and disease. We are focussing on mechanisms underpinning metabolism, genetic and epigenetic regulation and cell fate decisions and are particularly interested in the impact of sex differences, life course-associated changes and the exposome on these processes. The LMS is committed to a transdisciplinary team science approach, and our research progress is accelerated by state-of-the-art core facilities.

What is Team Science?

A Team Science project is not just bigger or a multi-part programme, it is fundamentally different in its ethos and operational model. It's designed to foster true collaboration across disciplines, academic institutions, industry and the public, creating something that could not be achieved alone. It's about collective ambition, shared infrastructure, and interdisciplinary innovation.

Going it alone is often glorified as the breakthrough way of achieving major milestones. However, if you look closely, most of these are achieved in a team effort and not by single individuals. Our perception of heroes rather than teams is often driven by the narrative and not the facts: when I was a child, I learnt that Edmund Hillary was the first to climb the highest mountain in the world, Mount Everest. Now I know that Hillary achieved this feat together with the Nepalese mountaineer Tenzing Norgay. Reading up on it, I discovered that they didn't walk up the mountain on their own, but they were part of a large expedition team that worked together to achieve the goal. Hillary and Norgay were the second pair to be deployed as part of a systematic team approach to conquering the mountain.

New solutions need different perspectives

Teamwork makes the dream work – this is what I experience every day, as a biomedical scientist and similarly as a doctor in the NHS. The complexity of the biomedical problems we need to address requires an integrated team approach, with team members who bring different perspectives and expertise to solving the problems. In my workplace, the MRC Laboratory of Medical Sciences (LMS), we are interested in the mechanisms underpinning human health and disease. We study how these mechanisms involve genes, cells and metabolism, and how they are influenced by ageing, sex differences and the environment. We want to understand how these mechanisms contribute to the burden associated with ageing and multi-morbidity, including chronic cardiometabolic disease and rare and complex disease.

To achieve this, we bring together many different people at the LMS: biologists, biochemists and clinician scientists, as well as physicists, chemists, computer scientists and engineers. Working in a rich interdisciplinary environment, enhanced by our partner, Imperial College London, is exciting and provides different perspectives on the same problem. This creates opportunities to find new solutions, including new ways to test, stratify and treat disease. Importantly, we want to go one step further and promote team science but transdisciplinary science at the LMS. This means we do not only aim to integrate different scientific disciplines but also to listen to many other perspectives from the outset, including those from public, patients, entrepreneurs and industry.

Embracing equity, diversity and inclusion

Working in teams also provides unique opportunities to embrace equity, diversity and inclusion. Prismatic perspectives from many different angles are crucial for solving major challenges. We need novel, original and unique perspectives from women scientists, first generation scholars, scientists from low-resource backgrounds and immigrant scientists. To achieve this, we need to work on dismantling the obstacles that currently prevent them from contributing to science in large numbers.

How does it work?

Team Science Principles

At the LMS, Team Science is more than collaboration – it's a transformative approach to discovery.

- **Transdisciplinary Integration:** We bring together scientists from diverse fields (e.g., biology, chemistry, physics, engineering, computer science, and clinical medicine) to co-develop questions and solutions. This integration fosters innovation that cannot emerge within disciplinary silos.
- **Shared Purpose and Goals:** Team Science projects are designed around unified research questions that require collective effort. Every team member contributes to a common vision, ensuring alignment and synergy across roles.
- **Co-creation and Co-development:** From hypothesis generation to experimental design and data interpretation, all contributors are actively involved. This fosters ownership, creativity, and accountability across the team.
- **Inclusive Collaboration:** We actively engage with patients, the public, and industry partners from the outset. Their perspectives enrich our science and ensure relevance and impact beyond academia.
- **Equity and Diversity as Drivers of Excellence:** Diverse teams bring novel insights. We prioritize inclusion of underrepresented voices, recognizing that scientific excellence depends on a plurality of perspectives.
- **Infrastructure-Enabled Innovation:** Our shared core facilities and platforms are central to the Team Science model, enabling seamless collaboration and access to cutting-edge technologies.



Emphasizing Shared Leadership

Shared leadership is a cornerstone of Team Science at the LMS. Rather than a single principal investigator directing a project, our initiatives are led by Leadership Groups. These are teams of senior scientists who jointly shape the scientific direction, mentor researchers, and coordinate efforts across disciplines.

This model ensures:

- **Distributed Expertise:** Each leader brings unique strengths, whether in experimental biology, computational modelling, clinical insight, or technology development, creating a balanced and robust leadership structure.
- **Collaborative Decision-Making:** Strategic choices are made collectively, fostering transparency, mutual respect, and adaptability.
- **Mentorship Across Domains:** Junior researchers benefit from a network of mentors, gaining exposure to multiple scientific perspectives and career pathways.
- **Resilience and Continuity:** Shared leadership reduces dependency on any one individual, ensuring continuity and sustainability of the research programme.

By embedding shared leadership into the fabric of our projects, we cultivate a culture of trust, openness, and scientific ambition where breakthroughs are truly collective.



Our teams

Building on the strengths of the LMS, we have identified two important research areas to invest in Team Science, which both have understanding ageing and sex differences at their heart:

1

Nucleic acid sensors in ageing-associated inflammation

Team Science Leadership Group:
Luis Aragon, Jesus Gil, Dominic Withers & Will Scott

Ageing is marked by a decline in cellular and physiological function and is the main risk factor for many common diseases. It results from a mix of genetic and environmental influences, involving both internal and external signals that affect interconnected biological processes known as the hallmarks of ageing. Because these processes are interdependent, speeding up or slowing down one can impact the others. This project will explore how nucleic acid sensing pathways contribute to inflammation during ageing, with a focus on differences between sexes. It will use damage sensing as a way to study how ageing processes are linked, how they differ between males and females, and how targeting key pathways might increase healthspan.



2

Reproductive Health and Fertility: Ageing, Sex and the Environment

Team Science Leadership Group:
Petra Hajkova, Enrique Martinez-Perez, Juanma Vaquerizas

Infertility affects one in six people worldwide, yet we still don't fully understand why. This project explores how biological sex differences, ageing and the environment impact fertility in men and women. By combining cutting-edge lab techniques, computer analyses, clinical genetic data and mechanistic studies in model organisms, we aim to uncover the causes of infertility and find new ways to improve reproductive health. Importantly, we will also address how lifestyle and the individual's physiology influence egg and sperm development with a vision to provide guidelines supporting optimal reproductive fitness. Our goal is to improve the reproductive health of men and women experiencing infertility.

How can you take part?

We are recruiting for six Postdoctoral Researchers and six PhD students to work on the Team Science projects. This brochure will tell you more about the two teams, and the roles available in each and how to apply. Team Science succeeds where diverse thinking and backgrounds are brought together to tackle a problem. The LMS and MRC are committed to advancing equality, diversity, and inclusion and welcomes applications from talented people of all backgrounds. As “Disability Confident” employers, we guarantee to interview all applicants with disabilities who meet the minimum criteria for the vacancy.



Nucleic acid sensors in ageing-associated inflammation

Team Science Leadership Group:
Luis Aragon, Jesus Gil, Dominic Withers & Will Scott

Ageing is the main risk factor for chronic diseases, but its molecular drivers are poorly understood. A key hallmark is “inflammageing,” a chronic, low-grade inflammation often caused by inappropriate activation of nucleic acid-sensing pathways (NASPs). Normally protective against pathogens, NASPs can misfire in aged tissues, fuelling inflammation. This project will dissect how NASPs (cGAS/STING and others) contribute to ageing by (1) mapping their roles in senescent cells and tissues, (2) defining mechanisms of activation, and (3) testing impacts in ageing models. Findings will clarify tissue – and sex-specific effects, identify therapeutic targets, and support strategies to extend healthspan.

Role 1

Postdoctoral Research Scientist

You will employ a combination of cellular systems of senescence and develop assays to evaluate the effect of nucleic acid sensing pathways (e.g. cGAS/STING, RIG-I, MDA5 and others) using functional genomics on senescent phenotypes and the interaction of senescent and immune cells. As part of the project, you will develop sophisticated co-culture systems to evaluate the interaction of senescent and immune cells in the context of ageing.

More broadly, this post is part of a Institute wide collaboration and you will be tightly coordinated and involved in meetings with other PIs and researchers working in the project.

Role 2

Postdoctoral Research Scientist

You will employ optical tweezers combined with fluorescence imaging to directly visualise nucleic acid sensor interactions with DNA and RNA substrates under applied force. These real-time, quantitative analyses will reveal how sensors such as cGAS, AIM2, RIG-I, MDA5, and TLR9 are modulated by nucleic acid structure, chromatin context, and post-translational modifications.

Alongside this, the postdoc will take a leading role in the design and development of biochemical assays for high-throughput drug screening. In collaboration with the Imperial Drug Discovery Hub (DDHub), they will execute compound screens to identify inhibitors, activators, and degraders of key nucleic acid sensors, followed by mechanistic validation using biophysical and biochemical platforms. This position sits at the interface of fundamental research and therapeutic discovery.

Role 3

Postdoctoral Research Scientist

You will employ a range of computational approaches to analyse and integrate single cell and spatial multiomic datasets to unravel the effects of nucleic acid sensing pathways (e.g. cGAS/STING, RIG-I, MDA5 and others) on tissue ageing, inflammation and senescence.

You will work collaboratively with participating LMS groups to analyse the specific involvement of human genetic variants, gene regulatory networks, and molecular ‘ageing’ clocks. These convergent analyses will reveal potential causal factors, underlying sex differences, and potential intervention points for therapeutics, that will be developed and expanded within a collaborative team science framework.

How can you take part?

Reproductive Health and Fertility: Ageing, Sex and the Environment

Team Science Leadership Group:

Petra Hajkova, Enrique Martinez-Perez, Juanma Vaquerizas

Reproductive health is an important aspect of human wellbeing, yet infertility affects approximately one in six people globally. Despite its prevalence and significant emotional, societal and economic impact, the biological mechanisms underlying infertility and reproductive ageing remain poorly understood. Notably, there are striking sex differences in both fertility trajectories and the onset of reproductive decline. Female fertility drops sharply with age due to oocyte depletion and chromosomal abnormalities, while male fertility declines more gradually, often accompanied by increased rates of de novo mutations. The reasons for these differences remain largely unknown. We have put together a team of internationally-leading experts in germline biology and genome function that will use transdisciplinary experimental approaches to understand how intrinsic and extrinsic factors influence female and male fertility and reproductive ageing.

Role 4

Postdoctoral Research Scientist

We are looking for a talented and self-motivated postdoctoral scientist with a keen interest and expertise in various - omics approaches (including spatial transcriptomics) and passion for reproductive biology and development to join the Reproductive Health and Fertility: Ageing, Sex and the Environment Team science initiative. The main goal of the project will be to investigate the molecular causes of infertility and the effect of the environment on the development of the germline using both the in vivo (mouse tissues and human samples) as well as in vitro models (mouse and human pluripotent stem cells derived primordial germ cell like cells (PGCICs)).

The candidate will work closely with other postdocs and students in the Team who will use computational and imaging approaches to elucidate the genetic and molecular causes of infertility, the impact of aging in male and female fertility, and the effect of metabolism and germline-soma crosstalk on fertility.

Role 5

Postdoctoral Research Scientist

We're recruiting a talented and self-motivated computational biologist with an interest in reproductive biology and genome function to join the Reproductive Health and Fertility: Ageing, Sex and the Environment Team science initiative as a postdoctoral researcher. The main goal of the project will be to analyse and integrate multimodal genome-wide datasets to build predictive models of healthy reproductive processes and investigate how these are perturbed in infertility and ageing.

The candidate will work closely with other postdocs and students in the Team who will use omics and imaging approaches to elucidate the genetic and molecular causes of infertility, the impact of aging in male and female fertility, and the effect of metabolism and germline-soma crosstalk on fertility.

Role 6

Postdoctoral Research Scientist

We need a talented and self-motivated chromosome biology specialist to join the Reproductive Health and Fertility: Ageing, Sex and the Environment Team science initiative. The main goal of the project will be to investigate sex-specific differences in meiotic chromosome organisation and function in different organisms (*C. elegans*, mouse, and human samples) using super-resolution microscopy, proteomics, and 3D genome conformation experimental approaches.

The candidate will work closely with other postdocs and students in the Team who will use computational and omics approaches to elucidate the genetic and molecular causes of infertility, the impact of aging in male and female fertility, and the effect of metabolism and germline-soma crosstalk on fertility.

Other opportunities to join our Teams

PhD positions

As well as the postdoctoral positions, each team will also host 3 PhD students. Our PhD programme is open for applications and you will be able to apply via [our website](#).

Our PhD programme offers an exceptional training environment for talented and ambitious graduate students who are eager to explore bold, innovative approaches to biomedical research and push the boundaries of scientific discovery. Designed to nurture future scientific leaders, the programme encourages creative thinking, critical analysis, and empowers students to tackle complex biological challenges.

With access to world-class facilities, expert mentorship, and a vibrant, collaborative research community, this programme provides the perfect environment for students aspiring to make transformative contributions to science and medicine. In addition, all students benefit from a wide range of professional development opportunities, reflecting our strong commitment to the personal development of our students.

Successful applicants are awarded a PhD studentship that includes:

- A generous, tax-free stipend of £26,500 per year, for four years
- Full coverage of student tuition fees
- Funding for all necessary research consumables
- Visa costs for overseas students



Chain Florey Predoctoral Fellowship

We are recruiting two clinician scientists for the 2025/26 [Chain Florey](#) Predoctoral Fellowship at the LMS.

This 12-month, full-time Fellowship provides clinical trainees with hands-on experience in a research laboratory, offering protected time to develop key research skills, generate preliminary data, and prepare for a Clinical Research Training Fellowship (PhD). It is aimed at individuals progressing into Internal Medicine Training (IMT) or an equivalent clinical training pathway.

The Fellowship is ideal for those considering a future career in clinical academia and offers a strong foundation for further academic opportunities, including future funding applications.

Fellows who make strong progress during the year may be eligible to apply internally for a Clinical Research Training Fellowship (PhD) at the LMS—ideally within the same research group—though a PhD place is not guaranteed.

Applications will open in late October 2025 via the [LMS website](#).

Prospective applicants will also be invited to attend an open day in January 2026, where they can learn more about the programme and discuss potential research projects with LMS Group Heads.

For more details, please contact Aurelie Tromp (a.tromp@lms.mrc.ac.uk), the Chain Florey Program Manager.



Why join the LMS?

The LMS is a biomedical research institute, where scientists and clinicians collaborate to advance the understanding of biology and its application to medicine. Home to around 30 research groups, the LMS offers access to nine cutting-edge research facilities and provides exceptional support for communications, involvement and engagement.

Our state-of-the-art laboratories are located on Imperial College London's Hammersmith Hospital campus, and we are partners with Imperial through the Institute of Clinical Sciences. Positioned within a rich multidisciplinary environment, with Hammersmith Hospital and Imperial's White City Campus, Biomedical Research Centre and Clinical Research Facility all in close proximity, the LMS aims to leverage its cross-disciplinary network to deliver transformative team science, tackle major public health challenges and push the boundaries of discovery to unprecedented heights.

"The LMS was an ideal choice for establishing myself as an independent researcher and starting my Chromatin and Development research group."

Michelle Percharde, PLT



Our structure

The success of our research is built upon strong foundations of teamwork and collaboration

At the LMS, you will have the opportunity to interact with and benefit from:

Research groups

Our research groups are led by Group Heads, who lead their independent research programmes. Group Heads are appointed at either Programme Leader Track or Programme Leader level. They are supported by postdoctoral researchers, PhD students, technicians and lab managers.

Core facilities

Our core facilities work in collaboration with our research groups to bring cutting-edge support to our research – providing expertise in specific methodologies and data analysis. Our core facilities also lead our science technology graduate programme, which offers graduates an opportunity to learn specialist skills, gain significant work experience and further their personal development.

PhD programme

The LMS offers two PhD programmes, our general programme and our transdisciplinary PhD (tPhD) programme, which aims to bring together researchers from different disciplines and industry to deliver novel insights. Both programmes provide four years of funding for the students and the opportunity to explore other sectors. All students have a primary supervisor and one to two additional supervisors that meet at least monthly as a team with the student. Students work directly with our research groups on an exciting and demanding project and acquire a variety of technical and personal skills that will equip them for their future careers.

Chain Florey clinician scientist programme

The Chain Florey programme was set up in 2009 to offer world class research training to medical graduates and clinical trainees, allowing them to advance their career as clinician scientists with focus on discovery science and experimental medicine. The programme has supported many clinicians across a range of career stages to combine their medical knowledge with a new-found expertise for scientific research. This programme benefits our research groups by fostering clinical links and accelerating translation by enhancing the clinical relevance of our work.



Our research priorities

Research at the LMS is collaborative, multidisciplinary and diverse. Our work examines the mechanisms that underlie multimorbidity.

Multimorbidity is a central challenge to human health. Encompassing the accumulation of chronic conditions as we age, including cancer, metabolic and cardiovascular diseases, it also includes many rare and complex inherited disorders which define multimorbidity in the young.

Increased life expectancy has brought a demographic shift over recent decades, resulting in a rise in the prevalence of chronic and potentially disabling diseases and conditions. This creates increasingly complex problems in managing patients in the 21st century. A better understanding of the mechanisms that can support healthy ageing is key to the identification of novel interventions that increase health-span rather than life-span.

LMS research takes a systems approach and uses team science to ensure that our detailed discovery science translates into clinical impact responding to the most critical challenges of medicine and healthcare.



“Our research investigates the interacting mechanisms behind the biological problems that are interwoven in multimorbidity; by taking a systems approach and embracing the collaborative philosophy of team science, we ensure our discovery research has clinical impact on the most pressing challenges of 21st century healthcare.”

Wiebke Arlt

Our research strategy has defined three synergistic priority areas:

1

Cell identity across the life course

From the creation of life through to death, what are the determinants of both life- and health-span? Each stage of life presents unique biomedical challenges, but the fundamental principles of ageing influence biological mechanisms across the course of life. Our teams explore the molecular processes of fertility, pregnancy, early development and genetic and epigenetic inheritance. LMS research seeks to explain how the biological processes of ageing influence not only life span but also facilitate an extended health span, in essence what enables healthy, long lives at the molecular, cellular and systems level.

2

Sex differences in biology and disease

Sex differences take hold in foetal development and inform biological development and response to diseases. Diseases manifest differently in men and women, immune and drug responses vary, and some conditions exclusively or predominantly affect one sex. Biomedical research has historically neglected these differences, resulting in poorer treatment for women or the framing of women's health as being limited to aspects of reproductive processes, disregarding differences across the course of life. LMS research not only directly addresses these differences to improve diagnostics and therapeutics for all but also ensures that sex differences are considered in discovery research.

3

Gene–environment interactions

With a changing climate, increasing pollution, and the growing influence of chemicals in the environment on health as well as the impact of endogenous and exogenous environmental influences, including (over)nutrition and temperature. LMS research starts at the molecular level, asking how these outside influences are reflected in metabolic and epigenetic processes in the body. How is gene regulation changed over time, what are the consequences for long-lasting heritable characteristics, and how does the body's response to cues and situations distort?

Our core infrastructure and facilities

Animal research at the LMS

The LMS is home to a state-of-the-art animal research facilities that provide access to equipment and expertise for in vivo experimentation. Operating under Imperial's Home Office establishment licence, support is provided for training, licencing – both personal and project licences – and import of mouse lines.

We provide support for mouse breeding and colony maintenance in a 1,500-cage specific pathogen free (SPF) facility. This also homes the LMS transgenic facility, which provides help to all users in the generation of genetically altered murine lines, the rederivation of already existing lines as well as their cryopreservation and storage.

"I am particularly enjoying this new adventure, having received valuable advice and support in setting up a research group, making this process smooth and effective."

Lila Allou, PLT

The LMS is uniquely equipped by the new state-of-the-art in vivo experimental animal facility. The facility has two surgical suites, 7 procedures rooms as well as housing for up to 5,000 mice in individually ventilated cages. The facility is equipped for metabolic, neuroscience and cardiac studies with a range of phenotyping platforms. These include a 24 cage Oxymax-CLAM indirect calorimetry system with telemetry and temperature-controlled cabinets, ECHO-MRI body composition analyser and 32 cage Biodaq automated feeding monitor. Imaging modalities include IVIS Spectrum for in vivo imaging of bioluminescence and fluorescence, VeVo LAZR system for ultrasound and photoacoustics and 2-photon microscopy for in vivo imaging. Neuroscience approaches supported include optogenetics and fibrephotometry and a wide range of behavioural assays, including operant tasks. Together these platforms provide a powerful suite of approaches for the longitudinal phenotyping of mouse models of human disease and are supported by our whole animal physiology and imaging facility. There are further links with Imperial's small animal imaging facility, which provides access to PET CT, 9.4T MRI and other imaging modalities. Outside H3, we can support ex vivo analysis of large tissue samples with microCT, optical projection tomography and light sheet microscopy.

The LMS facilities are proud to offer our researchers access to cutting-edge equipment, technologies and methods.



Our core infrastructure and facilities

Research using model systems

Next to our strengths in using mouse in vivo model, the LMS has facilities to support research using *Drosophila* and *C. Elegans* as model systems. *Drosophila* research benefits from a dedicated fly kitchen preparing a range of media for research studies, alongside temperature-controlled rooms to support breeding and long-term maintenance of fly lines. Our *C. Elegans* work benefits from a state-of-the-art behavioural research facility allowing the longitudinal study of worm behaviours in response to a range of perturbations (e.g. pharmacological or genome editing).

Bioinformatics and scientific computing

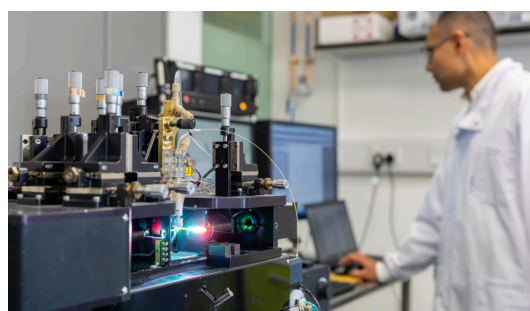
The Bioinformatics facility supports small and large-scale computational biology projects across the LMS. Working in close partnership with the research groups, we can provide 'hands-off' analyses or 'hands-on' support for those undertaking their own work across bulk and single-cell applications of genomics, transcriptomics, and epigenetics. Our team comprises staff from a range of scientific backgrounds and, together, we have extensive experience across bioinformatics and data science, programming, and applications and pipeline development. Additionally, working closely with the IT facility, we support High Performance Computing (HPC) within the LMS by maintaining and developing the Jex HPC cluster.



Electron microscopy

The EM facility provides equipment and expertise in the field of cryo-electron microscopy, particularly single-particle analysis. We are equipped with a Talos F200i TEM and a Falcon 3EC detector allowing investigation of sub-nanometric structures of protein complexes. We provide training and advice for data analysis.

We also image thin sections of resin-embedded cellular specimens. They can be prepared using our Leica Ultramicrotome UC7, ACE 600 sputter coater and data collected with our Apreo Volumescope SEM (serial block-face imaging). Other equipment: ELSA and 910.6 holders, Vitrobot Mark IV, Leica EMGP2, Pelco easiGlow, Leica Thunder Imager cryo-CLEM.



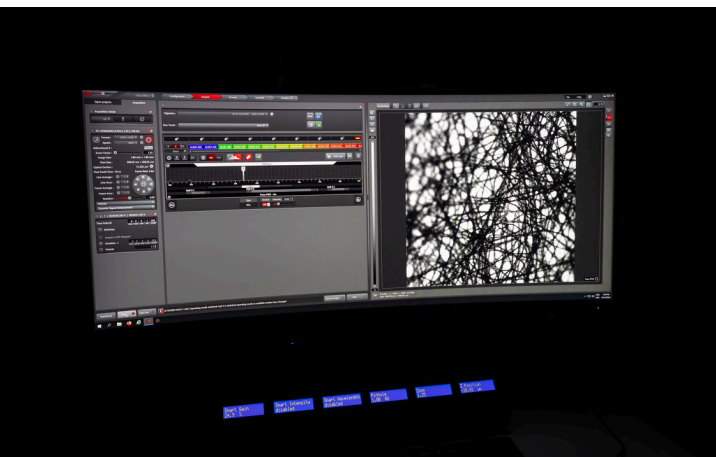
Flow cytometry

Our flow cytometry facility houses BD FACS Aria cell sorters for those wanting to physically isolate specific subpopulations of cells. The Facility offers training and support to those wanting to analyse cell populations, which use both high parameter conventional (BD Fortessa and BD Symphony) and spectral systems (Cytek Aurora and Sony ID7000). In addition to sorting cells, the Facility also sorts appropriately stained chromosomes and nuclei using BD Influx chromosome/cell sorters.

Genomics

The LMS Genomics Facility provides access and support in state-of-the-art genomics, single-cell and spatial biology technologies and has a long-standing track-record in delivering essential research support to its diverse user community. The team of highly skilled technologists collaborate with LMS researchers to tailor technology development to specific needs and to train scientists in a fast-moving field. We provide advice, technical support and services for genomics research projects from experimental design through to publication, building on our vast experience in NGS short and long read sequencing, and our single-cell and spatial transcriptomics expertise on the 10X Genomics Chromium, Visium and Xenium systems.

Our core infrastructure and facilities



Light microscopy

The facility provides the advanced light microscopy equipment, including super-resolution (STORM/Zeiss Elyra SIM/Leica STED), confocal (Leica point scanners/Olympus spinning disk) and light sheet imaging systems (Leica DLS, Phaseview Alpha3) required to examine the fine structural detail of fixed and live biological samples, ranging from the subcellular to the macroscopic scale. Automatic slide scanning (Zeiss AxioScan), contact-free sample preparation (Zeiss PALM laser microdissection) and a X-ray based microCT instrument for imaging large 3D samples are also available. In addition to providing user training and support, we develop bespoke image processing and quantitative analysis workflows to interrogate your complex imaging data sets.

Metabolomics

The metabolomics facility is equipped with several advanced instruments: the Xevo TQ-XS triple quadrupole mass spectrometer, the Agilent GC-MS (8890/5987B) system with a Gerstel MPS for automated sample preparation, the Q Exactive mass spectrometer for high-resolution analysis, and the Q Exactive Plus instrument paired with a Transmit MALDI system for spatial metabolomics. These instruments enable us to conduct a wide range of metabolomics profiling, including targeted assays, stable-isotope tracing, and spatial analysis.

MR Imaging

Our MR imaging facility plays a vital role in advancing biomedical research, bridging experimental science with clinical applications in cardiovascular, psychiatric, and metabolic health. Equipped with state-of-the-art whole-body MRI systems (3T Prisma and 1.5T Aera), we specialise in advanced proton and multinuclear imaging and spectroscopy of the brain and heart. Supporting equipment includes an MR-compatible exercise ergometer, physiological monitoring, drug and gas administration systems, and a stimulus-response suite for fMRI. Staffed by skilled radiographers and physicists, we support MRI protocol development, image acquisition and analysis, delivering cutting-edge research capabilities.

Proteomics

The proteomics facility currently houses three Orbitrap instruments: the Q Exactive HF-X, Orbitrap Exploris 240, and Orbitrap Fusion Lumos, which is equipped with the FAIMS Pro Duo interface. Using these instruments, we perform targeted data-independent analysis (DIA) and isobaric mass tagging analysis. Our work includes general proteomics profiling, immunoprecipitation mass spectrometry (IP-MS), in vitro kinase assays, and quantification of post-translational modifications. We work with a variety of samples, including recombinant proteins, immunoprecipitations, microorganisms, biofluids, tissues, cell cultures, and media.



"The core facilities at the MRC LMS have been instrumental in driving our research. Working with outstanding, highly motivated staff in our facilities, spanning light microscopy, flow cytometry, genomics, bioinformatics and transgenics."

Vicki Metzis, PLT

Life at the LMS

The programme provides a well-rounded support system designed to foster the growth and success of emerging research leaders. Through mentorship, professional development, access to specialised training, and logistical support, the PLT programme equips researchers to advance their careers and research agendas confidently.

Mentorship and career development

We have an inhouse mentoring scheme for everyone, whether your role is scientific, technical or operational there will be a good match from our pool of mentors.

We have recently revised our appraisal process to make sure everyone benefits from great career development conversations, with plenty of support options available to achieve your goals.

A culture of support and collaboration

We achieve a vibrant culture of collaboration, curiosity and excellence through a wide range of activities and initiatives.

The LMS promotes a culture of inclusivity and diversity, encouraging team members to share diverse perspectives and ideas. Regular seminars, workshops and collaborative projects create a dynamic atmosphere where cutting-edge research thrives. Open communication is encouraged, allowing for feedback and dialogue that strengthens teamwork and innovation.

With a commitment to mentorship and continuous learning, the LMS empowers researchers to push the boundaries of science whilst prioritising ethical research practices.

To help build community and relieve stress, LMS hosts regular social events, such as coffee mornings, networking lunches, and annual celebrations. These events offer opportunities to connect with peers and take a break from the demands of research.



Life at the LMS

“For me, the size of the LMS is perfect – small enough to know everyone and what they do but large enough to span a wealth of cool research.”

Alexis Barr, PLT

“Our team is comprised of skilled bioinformaticians from a range of scientific backgrounds. Together, we have extensive experience across bioinformatics and data science, programming, and applications development.”

**George Young,
Head of Bioinformatics Facility**



Training opportunities

All LMS employees can access a wide range of training via UKRI and Imperial. For more bespoke training and development, our People and Culture team can work with you to find the best option for your need.

Collaborative opportunities

Programme Leaders have access to a multidisciplinary community within LMS, encouraging collaboration across fields such as genomics, bioinformatics, imaging and clinical sciences. Interdisciplinary collaboration is key to broadening research impact and gaining fresh perspectives.

The LMS organizes regular networking events, including research seminars, speaker series and panel discussions, giving everyone the opportunity to connect with peers, senior faculty and external researchers. These events are valuable for presenting research, getting feedback and exploring new ideas.

Researcher Development Concordat

We are proud signatories of the Researcher Development Concordat. This is an agreement between universities, research institutes and funders to support the career development of researchers in the UK. The concordat is a continuous improvement tool designed to guide institutions to constantly make steps towards a better research culture. We have an internal committee monitoring and driving forward our commitment to the concordat.

The Technician Commitment

The Technician Commitment is a university and research institution initiative. The Commitment aims to ensure visibility, recognition, career development and sustainability for technicians working in higher education and research, across all disciplines. We are a proud signatory of the commitment and pledge action to tackle the key challenges affecting their technical staff.

Work–life balance initiatives

LMS supports flexible working arrangements to help PLTs and other staff to manage their research responsibilities alongside family and personal commitments. Options include remote work, flexible hours, and phased returns to work after periods of leave.

In addition to annual leave, LMS provides enhanced family leave options, including maternity, paternity, adoption and parental leave, as well as paid time off for family emergencies. Special leave options are available for health and wellbeing purposes, ensuring staff can take time when needed.

Life at the LMS

Equality, diversity and inclusion (EDI)

LMS is committed to fostering a workplace that is inclusive of all backgrounds, identities and experiences. EDI resources include support networks, training and policies aimed at promoting respect, equity and belonging within the research community.

Our group heads are encouraged to join or form affinity groups that align with their experiences and interests, such as groups for women in science, LGBTQ+ researchers or international scholars. These groups offer peer support and facilitate meaningful connections within the research community as well as driving important change.



"I joined the institute to start my own group in 2020. The state-of-the-art infrastructure perfectly suits the diverse range of groups and the size of the institute."

Vicki Metzis, PLT

Athena SWAN

The Athena SWAN Charter recognises good practice in promoting gender equality in higher education. We are proud to have been awarded the Silver Athena SWAN award in 2017 and renewed in 2023. We have a very active and engaged Athena SWAN committee working on the action plan submitted in our most recent application.



Disability Confident

The Civil Service runs a Disability Confident Scheme which the LMS is signed up to, offering an interview to a fair and proportionate number of disabled applicants that meet the minimum selection criteria for the job. The aim of this commitment is to encourage positive action, encouraging disabled people to apply for jobs and provide an opportunity to demonstrate their skills, talent and abilities at the interview stage.

Gold LEAF

The LMS is committed to reducing its environmental impact and has a range of initiatives to promote sustainability within our labs – by reducing waste, using equipment efficiently and by testing and implementing newer, more environmentally friendly research consumables.

