

Collective Ambition at Loughborough for Building Research Excellence (CALIBRE)



The CALIBRE framework

The Collective Ambition at Loughborough for Building Research Excellence (CALIBRE) framework is an inclusive, comprehensive and forward-looking articulation of the research component of the University's Building Excellence strategy.

The University Strategy, Building Excellence, sets out our ten-year vision in which research, teaching, enterprise and sport are integrated within four central themes:

- Investing in our staff,
- Raising standards and aspirations
- Growing capacity and influence,
- Educating for success,

The CALIBRE framework sits within the context of the University strategy and sets out the programmes through which we will reach our collective ambition to deliver impactful world-class research across all disciplines.

Absolutely at the **heart of the framework** are the diverse but focussed research strengths driven by all 10 of our Schools. Our research narrative rightly starts by recognising the breadth and depth of these strengths and the various programmes of the CALIBRE framework must serve to emphasise, and never diminish, the importance of research strengths in the Schools. Recruitment of outstanding staff is recognised as critical not just to our research strengths but to every aspect of future academic success.

Furthermore, there are specific Research Centres of Excellence within Schools where we already have critical mass of expertise and facilities. Research Centres of Excellence are flagships within School research profiles and should be firmly embedded in School research strategies.

A summary of School research strengths and Research Centres of Excellence is provided in Appendix 1.

Around this core are the 8 fundamental components of the framework, which map to the strategy themes in pursuit of research excellence and which offer opportunities to all Schools:

Investing in our staff.

1. Continuing commitment to developing the next generation of **research leaders**, supporting PDRAs and early career academics, in particular, such that Loughborough is recognised as a destination of choice for the best early career talent.

Raising standards and aspirations.

2. In existing areas, the **Ambition** programme identifies opportunities to progress and drives achievement at a higher level.
3. The major research strengths of the university are the **Beacons**, where external opinion readily recognises quality across a broad area.
4. The **Adventure** programme captures our desire to explore new areas of research or to translate expertise into new application areas.

Growing capacity and influence.

5. The **Thought Leadership** programme fulfils our mission within our communities, with our partners and beyond to establish Loughborough as thought leaders in the UK, with the Loughborough commissions as the flagship initiative.
6. **Under the Global Challenges** programme, we combine our disciplinary strengths to develop multi-disciplinary solutions to the biggest societal challenges of our time.
7. **Here to Stay** brings the world's very best academic researchers to our campuses with the Institute of Advanced Studies as the flagship initiative.

Educating for success.

8. Commitment to an outstanding doctoral student experience, from admission to degree award, alongside career development support, is delivered through the **Doctoral College**.

Just as Building Excellence is the theme of the University Strategy, Research Excellence is the foundation of this whole framework. This document places CALIBRE in the context of the overall strategy and strengthens commitments to the strategy implementation plan, for example to continue to work to **enhance quality, impact and visibility, while celebrating research excellence**, wherever it is found.

The CALIBRE programmes in more detail

Doctoral College and Research Leaders programmes

People are core to the framework, as they are within the educating for success and investing in staff themes of the strategy. We will develop an outstanding reputation for offering opportunities to the next generation of research leaders and position LU as a destination of choice for ambitious researchers at early career stage from postgraduate onwards, with continual support all the way through to senior academic grades.

From the Strategy: "Provide a Graduate School that co-ordinates the delivery of the best training expertise and offerings across the campus. Continue to build a strategic approach to articulation agreements with leading universities internationally, based on partnership models that can be sustained. Develop a complementary network of international institutional partners to support LU student mobility for study and work, both at UG and PG levels."

Our compelling offering opens with an outstanding doctoral student experience delivered by a Doctoral College that positions the doctoral community as fundamental to the research life of the university and caters unequivocally for its needs. The College will be responsible for generating a pipeline of applicants by running internship programmes and by engaging our taught student population in research activity within or alongside their degree programmes. Beyond its internal-facing roles, the College will also have important external facing roles ranging from the presentational to the pursuit of externally funded strategic partnerships on scale.

From the Strategy: "Develop an environment for research staff which is commensurate with academic staff and supports career development. Run regular academic R, T & E leadership training programmes (and follow ups) that will identify and support the next set of leaders and ensure robust succession planning".

From post-doctoral level onwards, the Research Leaders programme will support research and academic staff, nurturing our existing early career stars and attracting the best new ones to Loughborough. This will include a coordinated programme for the VC Research Fellows. The Research Leaders programme will impact on probationary academics and support mid-career academics making the step to the professorial grade. Support for applications for external prestigious fellowships will also be part of the Research Leaders programme.

Ambition programme

From the Strategy: “Adopt a rigorous and focused approach to growth against clear criteria and ensure that new developments are appropriately resourced”.

The Ambition programme supports existing research areas where there is a solid foundation and an identifiable opportunity to achieve at a higher level. Where this might be achieved by a medium-term managed intervention, research development manager resource can be deployed under the guidance of an academic lead.

Proposed Interventions:

1. Pure Inspiration. To incentivise collaborative activity between staff involved in more fundamental research and staff involved in more applied research, with emphasis on fundamental research (any discipline) to deliver step change in an application area (any discipline).
2. Cultural Evolution: delivering a step change in external grant income to the Arts and Humanities.
3. London Calling: Collaborations between LU London and link Schools.
4. Decision Science: strategic initiative proposed and led by School of Business and Economics

Beacon programme

From the Strategy: “Build and enhance areas of research strength and impact that will attract and retain the very best in a particular field as informed by our internal assessment and REF 2014”.

The Beacon programme recognises the “classic” research strengths of the university, where excellence has been evidenced in formal and informal external assessments e.g. REF, citation analysis. These strengths are articulated at the broad discipline level and bring together a set of activities each significant in their own right but with a coherence that has consistently delivered a whole that is greater than the simple sum of the parts. These strengths can be based within a single School or can bring together contributions from across the Schools. External recognition of these strengths is international and indisputable. Their recognition within the programme is intended to act as a catalyst for enhancement and community building across the Schools, under the guidance of a nominated lead.

Beacon areas:

- Sport and Exercise
- Communication and culture
- High Value Manufacturing
- Built environment
- Transport Technologies

Adventure programme

From the Strategy: “Adopt a rigorous and focused approach to growth against clear criteria and ensure that new developments are appropriately resourced. Identify new areas of opportunity”.

Vitality in our research is promoted within the Adventure programme where emphasis is placed on excellence and on exploring new areas of research or translating expertise into new application areas. Pump-priming investment on scale through an open competition is the primary element of the programme. Opportunities to secure small grants, again in open competition, will enable short-term networking activity focussed on a specific goal.

Here to Stay Programme

From the Strategy: “Build connections with comparable specialist centres in universities internationally. Establish the concept of a “research hotel” where our international partners can be invited, as our guests, to work collaboratively with our other partners and ourselves to create world-leading research and innovative projects”.

From within our vast portfolio of international collaborations, this programme aims specifically to bring the world’s best to Loughborough / LUL whether that be as Visiting Fellows / Professors, participants in international conferences, research visitors (short- or long-term) or as experts invited to our flagship Institute of Advanced Studies (IAS). The IAS will aim to run three programmes per year from 17/18.

Thought Leadership programme

From the Strategy: “Develop public engagement as a component of our research strategy, working closely with other teams across the institution to embed this in our systems and approaches”

Through this programme, we seek to establish ourselves as influential thought leaders on major issues of societal importance. This programme extends from public lectures to end-of-project dissemination campaigns, and ultimately to the flagship “policy commissions”. This may connect to the IAS programme resulting in a range of outputs from prestige lectures, to an influential series of talks, to delivery of a seminal report on a major topic.

Global Challenges programme

From the Strategy: “Complement our areas of disciplinary strategic focus with long-standing, cross-cutting research challenges, where our collective research energies are focused on providing distinctive solutions to global challenges”.

In the Global Challenges programme, we bring expertise together across the disciplines to create multi-disciplinary solutions to the biggest societal challenges in the world today such

as climate change, energy supply, global public health and public safety. The Challenges are programmes of work fundamentally requiring a multi-disciplinary approach. They are articulated in terms of a complementary set of priority themes and are important in positioning LU for the RCUK Global Challenges Research Fund. The four challenges identified for this programme are:

- Energy
- Changing Environments and Infrastructure
- Health and Wellbeing
- Secure and Resilient Societies

Appendix 1

School research strengths / themes

AACME

Advanced Materials
Applied Aerodynamics
Low carbon transport
Health
Process Engineering

AED

Animation Academy
TRACEY (Drawing and Visualisation)
Early Modern Culture
Modern and Contemporary Literature and Culture
Politicized Practice
Sexual Politics
Textiles
Theatre and Performance
Gendered Lives

BE

Performance and Productivity
Global Sourcing and Services
Information Management
Post-crisis Finance
Professional Work and Society
Service Management

CBE

Infrastructure

Transport

Water and Waste Management

Building Energy Demand

Construction Technology and Organisation

Design School

Industrial and product design

Ergonomics and human factors

Transport safety

Sustainability.

LUL

Design Innovation

Digital Technologies

Enterprise Development

Sport Business

Media and Creative Industries

MEME

Engineering systems

Advanced manufacturing

Communications

Engineering for health

Engineering design and analysis

Energy engineering

SCI

Chemistry

- Chemical solutions for the energy trilemma
- Molecular markers and Detection
- Chemical Technologies
- Catalysis and functional molecules

Physics

- Quantum and nano-engineering and design
- High frequency solid state physics and engineering
- Novel Materials
- Physics of Complexity

Computer Science

- Vision, Autonomous and Human-Computer Systems (VAHC)

- Internet Systems and Network Security (ISNS).
- Theory and Applications of Formal Systems (TAFS)

Maths

- Dynamical systems
- Geometry and mathematical physics
- Global analysis and PDEs
- Linear and nonlinear waves
- Mathematical modelling
- Stochastic analysis

MEC

- Culture, Pedagogy and Identity
- Mathematical Cognition

SEHS

Sport performance.

Lifestyle for health and well-being.

Participation in sport and exercise.

SPGS

Hydrological and terrestrial environmental processes

Children, youth and families

Communication, culture and public scholarship

Migration, identities, the individual and the state

Politics, crime and governance

Research Centres of Excellence

Environmental Ergonomics Research Centre

Centre for Child and Family Research (CCFR)

Centre for Research in Social Policy (CRSP)

Centre for Research in Communication and Culture

Centre for Information Management

BHF National Centre for Physical Activity and Health

Centre for Biological Engineering

Centre for Renewable Energy Systems Technology (CREST)

European Construction Institute (ECI)

Loughborough Materials Characterisation Centre

Mathematics Education Centre (MEC)

National Centre for Sport and Exercise Medicine (NCSEM)

Peter Harrison Centre for Disability Sport

Sports Technology Institute (STI)

Rolls-Royce University Technology Centre in Combustion Aerothermal Systems

Caterpillar Innovation and Research Centre