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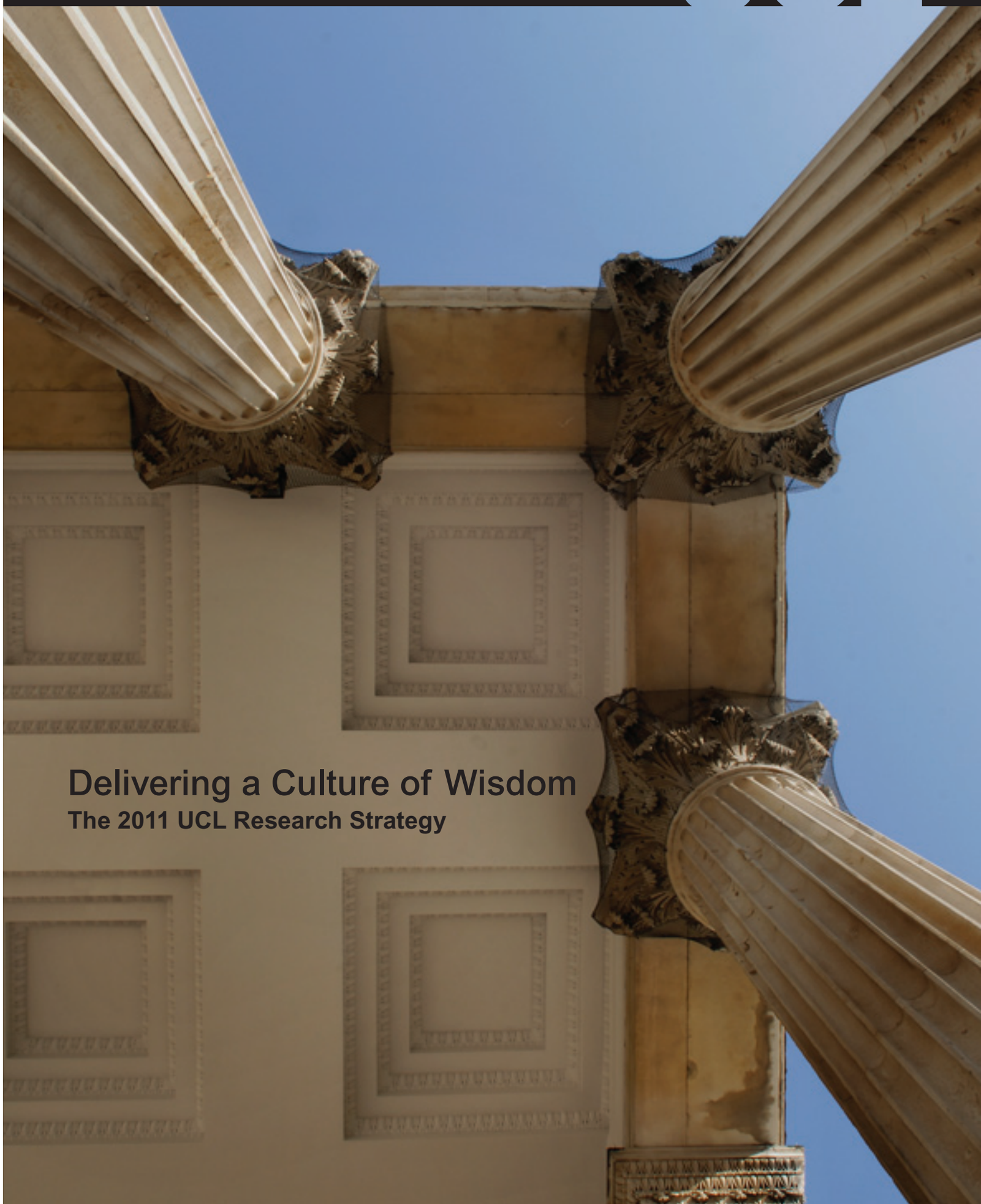
UCL



# Delivering a Culture of Wisdom

## The 2011 UCL Research Strategy

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# EXECUTIVE SUMMARY

*The 2011 UCL Research Strategy calls for a transformation of the understanding of the role of our comprehensive research-intensive university in the 21st century.*

*In addition to highlighting the need to nurture and celebrate individual curiosity-driven research, the strategy sets out for UCL an innovative cross-disciplinary research agenda – designed to deliver immediate, medium- and long-term benefits to humanity – that is simultaneously extraordinary and in complete alignment with our fundamental values.*

*UCL will seize the opportunity – and fulfil its obligation – to marshal the breadth of its expert perspectives, in order to address issues in their full complexity and contribute to the resolution of the world's major problems. This will be achieved not just through the generation of knowledge, but also through the delivery of a culture of wisdom, that is an environment committed to the judicious application of knowledge for the good of humanity.*

*Delivering a culture of wisdom, therefore, means drawing on the full range of our expertise. It requires a spirit of collaboration and a recognition that the contribution of which each of us is capable can be vastly greater when made in concert. It necessitates:*

- *respecting specialist knowledge, while dismantling the barriers to its cross-fertilisation*
- *supporting the synthesis of new knowledge, both within and across fields and disciplines*
- *facilitating collective, collaborative working practices in order to gain fresh perspectives and, ultimately, wisdom*
- *formulating and advocating policy and practice based upon the insights so developed.*

*The success of this research strategy over the next five years will depend on our ability to:*

- *continue to foster **leadership** grounded in excellence in discipline-based research – where an individual's leadership is demonstrated through, for example: sustained leadership in one's discipline and the development of novel lines of enquiry; contribution to the intellectual life of one's discipline; cultivation of collegiality in one's department, faculty and university; support for and nurturing of early career researchers and students; and openness to the benefits of cross-disciplinary collaboration*
- *expand the distinctive **cross-disciplinarity** of our research, collaboration and partnerships – where cross-disciplinarity occurs between experts in different disciplines, transcending subject boundaries (in contrast to interdisciplinary generalism)*
- *increase the **impact** of our global university's research, locally, regionally, nationally and internationally – where impact is the beneficial application of expertise, knowledge, analysis, discovery or insight, primarily delivered through scholarly outputs, education, public engagement, translational research, commercial and social enterprise activity, and influence on public policy and professional practice.*

*This document describes in more detail these aims, as well as the practical steps needed to achieve them. Appendices to this strategy – restricted to UCL – will comprise a detailed implementation plan (2011–2015) and a record of achievement to date (2008–2011).*

*As UCL achieves these aims and delivers a culture of wisdom, we will fulfil our potential as London's Global University: engaged across the spectrum of research subjects, from arts and humanities to the basic and applied sciences and medicine; open to talent from around the world; and, furthermore, engaged with the needs of an interconnected world.*

From the UCL Council White Paper 2011–2021

> “ UCL is so complex an organisation, and its activities so extensive and intermingled, that strategy has necessarily to be developed and expressed in relatively aspirational and abstract terms. … Proposals need to be sufficiently flexible to provide a framework that is capable of adaptation to reflect changes in circumstances.

# FOREWORD:
# From the UCL President and Provost

Much discussion of university research focuses on the contributions of individuals and groups to advancing knowledge within their own disciplinary areas. That is entirely appropriate. However, there is another dimension which is too frequently overlooked: the enormous contribution that universities can make as joined-up institutions.

Britain's universities are critical to the country's economic wellbeing. But their contribution goes beyond the economic. It embraces a range of activities that benefit society, including: education for a highly skilled population and workforce; the championing of discovery that can transform our understanding of the world; delivering innovation and knowledge that underpins the development of new products and services; contributing to cultural life; and stimulating public debate. Above all, there is that intangible contribution of fostering a spirit of enquiry in an open intellectual environment, where the pursuit of knowledge is cherished for its own sake.

Universities have far greater potential to do all of these things than any other institution within the public, private or voluntary sector. And it is the very complexity of the issues faced by contemporary society that demands of universities that they should draw on their full breadth of talent and disciplinary insight. There is a major new challenge for Britain's universities in the 21st century: it is the development of wisdom, based on reflection, across the variety of disciplines within their walls, and application to contemporary social problems.

UCL must remain an intellectual leader in this field. We understand and accept our responsibility as a guardian of academic freedom and an interface between academic endeavour and the wider public.

This is the role set out in our 2011 UCL Research Strategy.

**Professor Malcolm Grant**
**UCL President and Provost**

**November 2011**

## From the UCL Council White Paper 2011–2021

" UCL is committed to the following aims, which provide the framework for this White Paper:

1 maintaining the qualities of a comprehensive university, committed to excellence in the arts, humanities, social sciences, physical, biological and medical sciences, engineering and the built environment
2 maintaining its openness as an institution, attracting wholly on merit the most talented students from the United Kingdom and from around the world
3 providing education of the highest academic quality, rigorous in its demands, distinctive in its character, imbued with UCL's world-leading research and delivered by academic staff at the forefront of their field
4 enhancing its position as one of the world's leading research institutions with a continued focus on single and cross-disciplinary research and a commitment to the application of new knowledge to addressing major societal challenges
5 becoming a global leader in enterprise and open innovation, supporting and promoting effective knowledge exchange, innovation, entrepreneurship and collaboration with commercial and social enterprises
6 attracting, rewarding and retaining outstanding staff from diverse backgrounds
7 securing long-term financial sustainability and sustaining the level of capital investment necessary to achieve its academic objectives
8 operating at the highest levels of efficiency, reducing overheads and eliminating waste
9 improving the quality, accessibility and sustainability of its estate and its use, upgrading its built environment and making optimal use of space.

# INTRODUCTION:
# From the UCL Vice-Provost (Research)

UCL is well-positioned to thrive despite the tight funding environment of the coming five years. By any metric, our research performance has become increasingly competitive and powerful in recent years. This is reflected in the strength and quality of the research activity I see every day, in the excellent research outputs UCL produces (including scholarly publications), in our success in winning research grants and in the scientific, social, cultural and economic impact of our research. The university's research and support staff have much reason for pride in their performance.

In the context of such seemingly enduring success, it is reasonable to ask: What is the point of this research strategy?

I respond that this strategy provides a vision for the nature of UCL's research in the 21st century. Our vision seeks to build upon the radical tradition – of innovation, accessibility and relevance – established by our founders and embodied by successive generations. This strategy asserts an adaptable framework through which we can sustain and add value to our expertise, thereby discharging our responsibilities to the people of the world and its future generations, as well as our debt to our visionary predecessors. It defines a series of mechanisms through which UCL research can fulfil its potential.

This strategy is not intended to provide a detailed road map for transformation. It does not seek to predict the opportunities and challenges that will be created by future research breakthroughs. It does not define 'priority subject areas'; such an approach would undermine our university's agility and constrain the dynamism with which our research leaders determine the shape and future of our research activities. There already exist effective and flexible mechanisms at departmental, faculty and institutional level to anticipate and respond to the rapidly and continually changing external environment. This strategy does not seek to constrain research activity, but to provide a renewed context in which discovery, analysis and invention are part of a greater programme delivering benefit to the world.

Ultimately, this strategy speaks to UCL's enduring qualities, values and philosophy, and describes how the fundamental aspirations for research at London's Global University can be achieved in a 21st-century context.

To the individual UCL researcher – and to those contemplating becoming a researcher at UCL – I say: this strategy seeks to establish an environment at UCL in which your research excellence and leadership is cherished and sustained, in which your expertise can be creatively linked with that of other disciplines, and in which, where appropriate, the consequences of your work can be magnified through your engagement in cross-disciplinary collaboration.

This document builds on the 2008 UCL Research Strategy[1], incorporates contributions from people all over UCL made during the last three years and has been the subject of a formal consultation during the summer of 2011. Quite rightly, there have been a wide spectrum of views expressed and critical analysis made of many of the research strategy's proposals. A range of improvements have been made as a result, among them:

- greater clarity, as expressed above, of what this strategy is and is not
- a new section (on the facing page) explaining this document's deployment of certain terminology
- a reconsideration of 'excellence' as an aim in itself, now reconfigured as 'leadership grounded in excellence'.

This strategy suggests that added value arises from contrasting and synthesizing multiple expert perspectives. My thanks, therefore, to those who have provided constructive feedback; this is an improved document, expressing a more robust and sustainable strategy, because of your contributions.

**Professor David Price**
**UCL Vice-Provost (Research)**

**November 2011**

## A word on terminology

Some of the terminology used in this research strategy stimulated comments from a few UCL staff during a process of formal consultation. 'Impact', for example, faced some criticism as an empty buzzword imposed upon us by government and research councils; this strategy's adoption of impact as an aim was, therefore, seen to be craven and short-sighted. One respondee held 'excellence' to be "long past its sell-by date" and a poor choice of term with which to attempt to differentiate UCL from its competitors. There was disquiet expressed from some quarters of the document's use (and definition) of 'wisdom'.

In response, we looked for precedents. Jeremy Bentham, UCL's spiritual founder, coined many words, among them 'condivident' (to divide coordinately), 'excentric' (out of centre), 'expiree' (ex-convict) and 'chrestomathia' (useful learning); others, whose sell-by dates have not yet been reached, include 'codification', 'maximize' and 'international'. We need not invent words, however, when adequate ones exist. Rather, this document seeks to establish what certain words mean in a UCL context – which, as our colleagues know, is an unusual context – and, where necessary, reclaim them from their degraded usage in much contemporary discussion of higher education.

Our model, accordingly, was found further afield: "'When I use a word,' Humpty Dumpty said … 'it means just what I choose it to mean – neither more nor less.'"[2] Here is what we mean by some of the terms used in this document[3]:

- **global university**: performing world-leading research across the spectrum of subjects, from arts and humanities to the basic and applied sciences and medicine; open to talent from around the world; and, furthermore, engaged with the needs of an interconnected world
- **research leadership**: persistent excellence, demonstrated through, for example: sustained leadership in one's discipline and the development of novel lines of enquiry; contribution to the intellectual life of one's discipline; cultivation of collegiality in one's department, faculty and university; support for and nurturing of early career researchers and students; and openness to the benefits of cross-disciplinary collaboration
- **cross-disciplinarity**: collaboration between experts in different disciplines, transcending subject boundaries; in contrast to interdisciplinary generalism
- **impact**: beneficial application of expertise, knowledge, analysis, discovery or insight; primarily delivered through scholarly outputs, education, public engagement, translational research, commercial and social enterprise activity, and influence on public policy and professional practice
- **wisdom**: the judicious application of knowledge for the good of humanity, resulting from bringing together different expert perspectives to address issues in their full complexity.

We recognise that meanings will continue to be contested, as is appropriate in an intellectually rich environment. This statement represents our contribution to these conversations.

# VISION:
# Delivering a culture of wisdom

***As London's Global University, UCL has both the opportunity and the obligation to marshal the breadth of its intellectual expertise in order to contribute to the resolution of the world's major problems.***

***This will be achieved not just through the generation of knowledge, but also through the delivery of a culture of wisdom[4].***

## Wisdom

The world's major problems are complex, systemic, interconnected and urgent to an unprecedented degree.

Wisdom – here defined as the judicious application of knowledge for the good of humanity – is the key to providing solutions to aspects of these global problems. It can arise through bringing together different expert perspectives to address issues in their full complexity.

Delivering a culture of wisdom, therefore, means drawing on the full range of our expertise. It requires a spirit of collaboration and a recognition that the contribution of which each of us is capable can be vastly greater when made in concert.

## Transforming knowledge into wisdom

The research of a major university such as UCL is valuable in that it both generates applicable knowledge and expands the potential of human thought and action.

Specialist knowledge tends to be generated within disciplines, whether traditional (eg economics or pharmacology) or emerging (eg nanotechnology or crime science), through problem- and curiosity-driven research by individuals and small groups. This is the foundation of the advancement of human knowledge, and the core research activity of all great universities. The value of this form of enquiry – which in its highest forms has transformed human experience and improved innumerable lives – is immense and unquestionable. The academic freedom and curiosity that it requires will always be fundamental to our university's research-intensive culture. However, it should not be assumed that its full potential will inevitably be realised simply by its piecemeal dissemination through standard routes. The potential value of such scholarship to modern society is even greater when it is fully developed in the context of the multifaculty university.

For solutions to complex major problems evade the grasp of any individual discipline. Individual excellence and subject expertise are essential, and are to be celebrated, nurtured and supported. At UCL, however, we can achieve even more significant outcomes when our experts from different disciplines act together.

Greater understanding and novel insights arise when the breadth of specialist knowledge is considered collectively. Wise solutions emerge through synthesising and contrasting the knowledge, perspectives and methodologies of different disciplines.

Delivering a culture of wisdom will not be easy. Academics can be deterred from working across boundaries by, for example, conventional models of academic structures, career progression

and measures of prestige based overly on specialisation. The implementation of this research strategy must help to address obstacles such as these.

Establishing a culture of wisdom therefore requires transformative action:

- respecting specialist knowledge, while dismantling the barriers to its cross-fertilisation
- supporting the synthesis of new knowledge, both within and across fields and disciplines
- facilitating collective, collaborative working practices in order to gain fresh perspectives and, ultimately, wisdom
- formulating and advocating policy and practice based upon the insights so developed.

## The potential for a culture of wisdom at UCL

Only universities with excellence across the disciplines, a critical mass of expertise and a commitment to impact in its broadest sense can cultivate and deliver wisdom on the scale and with the speed required by the world's current crises.

UCL is committed to using its position and unique set of strengths to develop and disseminate original knowledge, not only for its own sake but also to address the significant challenges facing the world, today and in the future.

With respect to the latter aim, through UCL Grand Challenges we are beginning and will continue to draw on our collective talent in order to generate wise solutions – increasingly, in partnership with external agencies – and disseminate these in a compelling manner through scholarly outputs, education, public engagement, translational research, commercial and social enterprise activity, and influence on public policy and professional practice.

The delivery of a culture of wisdom at UCL over the next five years will depend on our ability to:

- continue to foster **leadership** within and beyond our discipline-based research
- expand the distinctive **cross-disciplinarity** of our research, collaboration and partnerships
- increase the **impact** of our global university's research, locally, regionally, nationally and internationally.

This research strategy claims a role for UCL that extends beyond the common 20th century understanding of what a university is; we hold, however, that it is essential for UCL to fulfil that role in the 21st century.

### *UCL's distinctive position*

*Taken together, the following qualities position UCL, London's Global University, uniquely well to adopt a culture of wisdom and to ensure that those insights are applied to the world's major problems:*

- ***principles** – inspired by the utilitarian Jeremy Bentham, our radical founders committed our university to innovation, accessibility and relevance. Almost two centuries later, that commitment remains at the heart of our activity and purpose*
- ***pioneering tradition** – UCL introduced to England several important disciplines now viewed as core academic activities[5], established the UK's first professorial chairs in many subjects[6], founded academic departments that were the UK's first[7] and engaged in groundbreaking research that has helped to shape the modern world[8]*
- ***research leadership** – across a wide spectrum of disciplines[9], as the bedrock upon which effective cross-disciplinary interaction is achieved*
- ***flexibility** – intellectual agility, in the context of strategic planning, that enables our researchers to respond rapidly and imaginatively to emerging priorities and initiatives*
- ***London** – our home in the heart of a global capital, with a remarkably diverse population, offering close interaction with Bloomsbury's cultural, economic, political and intellectual vibrancy, as well as Westminster and Whitehall, the City, the media, courts, galleries, museums, libraries and our world-class hospital partners*
- ***perspective** – a commitment to enhancing the circumstances of the people of the capital and the UK, complemented by a global perspective that recognises the interconnectedness and interdependence of people around the world.*

# FIRST RESEARCH AIM: Leadership founded in excellence

***Enduring excellence, derived from talented individuals' curiosity about and commitment to their chosen subject areas, is the prerequisite of research leadership, which will underpin the delivery of a culture of wisdom.***

From the UCL Council White Paper 2011–2021

> Leadership is most required in exercising judgment in areas of complexity and uncertainty. Here, knowledge is contested and wise decision-taking requires the exercise of an open mind, analysis of evidence and argument without prejudice, and the ability to engage in debate with those of different experience and perspective. It requires that one is reflective, self-aware, and able to concede a strongly held position in order to make progress.

## Expectations of individual academic staff

UCL has defined both its expectations of academic staff and its obligations to them[10]. UCL expects academic staff to undertake research meeting international standards of excellence and to disseminate the results of that research through appropriate channels, including publication, teaching, commercialisation and engagement with policymaking and the public.

The forthcoming Research Excellence Framework provides definitions of standards of quality that, although not unproblematic, are widely accepted across the research community. They help us to define an overall institutional aspiration: that all academic departments aspire to the top levels of research activity, and that all academic staff undertaking research should aim to generate outputs that are 'internationally excellent'.

Furthermore, this research strategy requires its established researchers to demonstrate sustained leadership:

- in their subject, for example by developing novel lines of enquiry
- by contributing to the intellectual life of their discipline
- through cultivating collegiallity in their department, faculty and university
- by supporting and nurturing early career researchers and research students.

## Excellence across a broad research spectrum

The realisation of UCL's research vision requires thriving and engaged communities across the research spectrum, from arts and humanities to the basic and applied sciences and medicine.

Even in the context of financial constraints, our university will not allow its aspirations regarding the expansion of knowledge to diminish.

UCL will build on its existing world-class profile by creating and maintaining international leadership in selected areas where it has demonstrably outstanding strengths and critical mass, while maintaining a broad base of academic disciplines through which future priority areas can be developed and nurtured.

There are very few institutions that can be considered among the world's leaders in every broad subject domain (ie medicine, arts and humanities, life sciences, physical sciences, social sciences, engineering and technology). We aspire that UCL join this most elite class of global universities. This would generally be indicated by appearing within the top 20 in most accepted rankings in those fields, although most of the familiar caveats about the limitations and subjectivity of university rankings apply even more strongly

to domain rankings. We believe that it would generally be widely accepted that UCL is already among the top 20 institutions in medicine, arts and humanities, life sciences and social sciences, and in each case our position is strengthening. Our rankings in physical sciences and engineering and technology are lower, but have been rapidly rising, reflecting widespread success and expansion, and the benefits of major investments such as the London Centre for Nanotechnology and UCL Energy Institute. Hence, we expect to achieve this goal within a few years.

Utility to society is central to our concerns, but cannot be the limit of them. Research driven by individual curiosity and imagination has been the foundation of human intellectual advance and the benefits that has provided, and is central to UCL's conception of excellence and leadership. We will continue to see research excellence founded in the successful development of such curiosity as the foundation of the university's contribution to knowledge and society. We will also value research addressing the most fundamental questions in our collaborative endeavours and will support a UCL Research Frontiers programme of cross-disciplinary enquiry – running in parallel with UCL Grand Challenges – into areas motivated entirely by shared human curiosity.

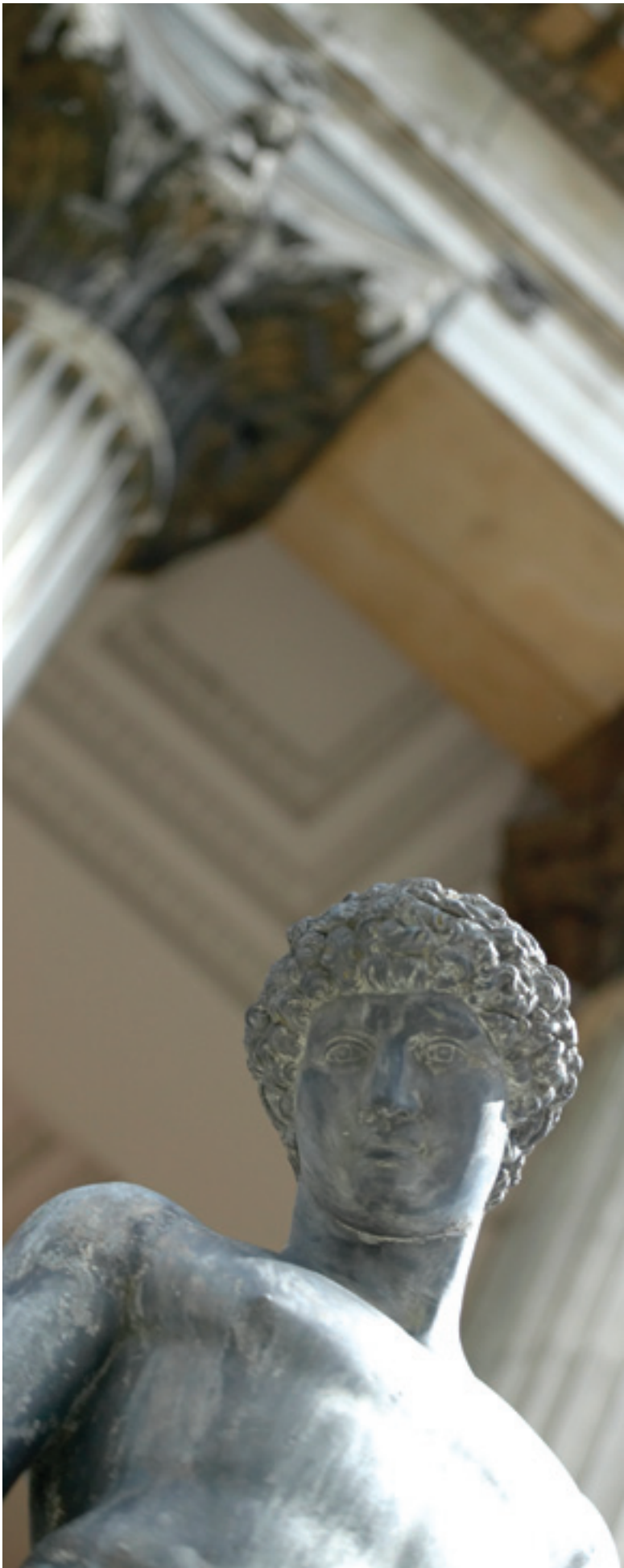
## Attracting, retaining and cultivating leaders

UCL's research excellence is determined foremost by the quality of its academic staff.

In order to attract, retain and cultivate intellectual leaders, UCL will provide a positive and creative research environment, and offer appropriate incentives and support, such as: competitive salaries, space and cutting-edge equipment; access to gifted and ambitious graduate students; freedom from excessive and burdensome administrative duties; appropriate teaching opportunities and responsibilities; and a culture in which discovery, application and leadership are cherished and rewarded.

### From the UCL Council White Paper 2011–2021

> UCL's research ranges across all disciplinary areas. It extends from fundamental biological research that develops our understanding of the nature of life, or from philosophical discourse, through applied engineering and biochemical manufacturing, to clinical practice and drug discovery. Research intensity is ubiquitous across the whole institution.



Our university will have in place effective mechanisms for the identification and recruitment of outstanding individuals and research groups in all areas of academic endeavour and from around the world. Candidates will not be restricted to those already within academia but will also include, for example, those from industry and public bodies.

We are utterly committed to recruiting and retaining the best leaders; we believe, as a founding principle, that they come from a wide range of backgrounds. We will therefore redouble our efforts on diversity in research careers. This will cover both statutory requirements such as race, gender and sexuality, and other important issues, such as disadvantaged social backgrounds and unconventional educational pathways. Where cultures or processes inhospitable to diversity are identified, they will be addressed. We will support the adoption of diversity-related agendas within the Research Excellence Framework.

A central quality of the research leaders that UCL seeks to attract, retain and cultivate is the ability to determine their own research direction, based on their own curiosity about and commitment to their chosen subject area. We do not seek those who follow intellectual fashions, only add their voice to received opinion or wait for funding agencies to determine research priorities. Leaders with the imagination and insight to address questions whose significance is not yet clear to any other human being, or to provide new answers to questions that have frustrated all others, are of an entirely different calibre. The ability to cultivate and support these precious individuals is a critical test of a global university, and will be one of our most fundamental goals.

We will seek to maintain and improve the diverse environments required to support such leaders in different fields and of different styles. We will be vigilant against threats from changes within the higher education system to the fundamental academic freedom that such leadership requires. We will ensure that advancement and profile within UCL does not depend overly on easy metrics such as grant income or citation numbers that might penalise those who are advancing in fields not yet fully appreciated by the wider research community, but instead suitably recognises and rewards creative and distinctive intellectual achievement. We will continue to run schemes, such as the UCL Provost's Venture Fellowship, that offer particular opportunities for long-term exploration of new fields. We will explore possibilities of new approaches to enable, support and recognise academic imagination, as well as to showcase to wider society the unique benefits that it offers.

In recognition of the importance of attracting research leaders, UCL will endeavour to increase the number of its researchers holding personal fellowships or awards.

There is within the current UK system an intimate relationship between many forms of research leadership and winning external peer-reviewed grant funding. UCL will continue to provide a supportive environment for leaders through the inevitable ups and downs of the competitive funding environment. In particular, all UCL units will be required to make sure that they retain the flexibility to accommodate and support academic leaders whose grant portfolios grow rapidly. Where leaders feel that this is becoming a challenge, we will expect their Faculty Executive Dean to be able to offer a supportive response.

The recruitment and training of high-quality early career researchers are critical to a university's long-term success. These individuals can generate vibrancy and vitality in UCL's academic life today, with many becoming the leaders of tomorrow. UCL will support a 'whole career' approach and create opportunities for younger researchers to take leadership roles around new initiatives. In many fields, skilled specialist expert researchers are critical to the successful research enterprise. We will value their contributions, and look to establish rewarding career paths around them. Where such roles are threatened by temporary gaps in external funding, we will strive to make available internal support.

## Improving further the experience of research students

UCL will continue to look to provide the very highest-quality learning environment for the most able research students, and will strive to find additional ways to offer a demonstrably better research student experience than our peer institutions.

A continuing focus will be the development of strategic and innovative programmes – such as four-year PhD and EngD programmes and centres for doctoral training. UCL is unusual in the extent to which its finest research leaders across many disciplines contribute to this form of programme, which we believe provides a significantly superior educational experience to more traditional 'single student–single supervisor' models. This is especially so at the interfaces between traditional disciplines, allowing students to strengthen their expertise in areas other than their primary discipline. Models that allow the student a greater input into the identification and evolution of their thesis topic are often more appropriate for those students who will be future research leaders, and we will encourage this in formats appropriate to the disciplinary area concerned.

Our intention is always to develop programmes that support the student on a career path towards becoming a leader in research or a related activity that benefits from their research-based and leadership skills. We will hinder any philosophies or approaches that treat students simply as a resource for supervisors.

While graduate research student numbers at UCL have grown significantly in recent years, the number of non-EU students remains significantly lower than our peers, largely due to

### From the UCL Council White Paper 2011–2021

> "Postgraduate research students … are essential to the development of the research base, the future academic community and researchers in business and industry. They are central to the research culture and community at UCL. UCL's innovative PhD programmes also provide excellent opportunities for collaborative research activity with external organisations.

restrictions on the use of UK government training funds, our main source of support in this area. In order to provide more opportunities at UCL for research students from overseas we will aim to diversify our range of funding sources for research students and to make significantly more additional scholarships available to overseas students, while preserving our large number of UK awards. We will also review and benchmark our marketing activities for overseas research students. In particular, we will review the possibility of expanding approaches involving teaching assistantships, as these often offer both financial benefits and significant enhancements to the academic employability of the graduates.

At UCL, we believe that successful 'completion' of a research studentship comes not merely with the conclusion of a document or a successful viva, but with establishing the graduate student in a career that uses the skills that they have acquired through their research. To this end, we will provide further opportunities for our students to develop their leadership and creativity – particularly through roles in cross-disciplinary student societies, opportunities for entrepreneurship, links with alumni mentors and networks, and engagement with UCL Grand Challenges and UCL Research Frontiers.

We will review and enhance the UCL Graduate School's comprehensive skills-development programme for research students, providing courses that help academic studies and enhance life skills and future employability in research or related careers. We will particularly explore the possibility of new approaches to training to help students with the application of relevant research outcomes – in order to maximise the impact of their research on policy and practice – and the development of opportunities to contribute to the intellectual vibrancy of their field. We will also seek to promote a global perspective in our research students through exchange partnerships and travel funds, in recognition of the benefits to their career prospects in both research and other fields.

A further step will be the establishment of adequate postdoctoral funding for the brightest and best. We will aim to increase the number and range of awards that allow the very ablest graduates to continue their research for an additional period after graduation, in order to support them in producing those highest quality outputs that will accelerate their movement into an academic career.

Those UCL academic units that demonstrate the greatest success in placing their research student graduates into leadership roles in research and related fields will be rewarded through further support for expanding and/or deepening their research student activities. Units that demonstrate weakness in this regard will be reviewed and appropriate corrective actions taken.

### From the UCL Council White Paper 2011–2021

> " Gaining teaching experience should be an expectation of postgraduate research degree study. … UK-trained applicants for junior academic posts frequently have no teaching experience at all, which puts them at a significant disadvantage against overseas competition. We will develop this opportunity … providing proper training and supervision and financial support.

### From the UCL Council White Paper 2011–2021

> " UCL was a pioneer in the UK in establishing a Graduate School and conferring upon it responsibility for all regulatory matters and quality issues relating to postgraduate research programmes; and for the definition and approval of policy and procedure in relation to all graduate matters.

# SECOND RESEARCH AIM:
# Cross-disciplinarity grounded in expertise

***As emphasised elsewhere in this research strategy, UCL considers outstanding problem- and curiosity-driven research conducted by individuals and small groups to be the bedrock upon which a culture of wisdom is built. Without this, UCL fails.***

***However, even within this domain, there can be a critical role for cross-disciplinarity, where adoption of methods or analogies from other disciplines is often part of the most creative and innovative research. We believe that a researcher working in an environment where a wide range of advances are being made, and which can act as a source of inspiration, has greater potential to be a better researcher than one within a narrow, deeply siloed institute. Often, the most significant new opportunities for intellectual activity arise when such interactions between disciplines prove especially fruitful, and it is not coincidence that the vast majority of our new research centres and similar investments are at cross-disciplinary interfaces.***

***Major societal challenges can rarely be addressed using the findings of a single research advance. We believe that the appropriate approach is for leading researchers to work together to build a cross-disciplinary synthesis responding to these challenges, linking into a bigger picture both their own advances and those made by other leaders in their discipline. We believe that researchers who fully understand the context, justification and nature of such research findings are better positioned to make this synthesis than non-researchers simply drawing on the outcomes of disciplinary research without such familiarity.***

***Through interaction between disciplinary experts – rather than interdisciplinary generalists – our collective subject-specific knowledge can be made greater than the sum of its parts. This must be the essential and unique added value of a 21st century research-intensive multifaculty university such as UCL.***

## Strengthening impact through cross-disciplinary research

It is through cross-disciplinary interaction between research leaders that our work will become best-placed to yield solutions that can address effectively aspects of the major global issues of the 21st century. UCL will, therefore, increase and strengthen as appropriate cross-disciplinary research, enabling our existing excellent specialisms to come together and optimise their joint impact.

When gaps in expertise spanning a number of fields are identified, departments and faculties will be encouraged to adopt a cooperative approach to joint appointments. Any organisational or financial factors that currently impede such activity will be minimised.

To facilitate collaboration and the formation of communities, researchers and research groups have been enabled to affiliate themselves to one or more of the UCL Research Themes through the online UCL Institutional Research Information System[11].

## UCL Grand Challenges

Overarching our cross-disciplinary collaboration are the UCL Grand Challenges[12], the mechanism through which concentrations

### *Fostering cross-disciplinary interaction*

*Much cross-disciplinary interaction occurs spontaneously, but fostering it at scale requires a more directed and proactive approach:*

- *sustaining a broad and excellent research spectrum*
- *fostering an environment where openness to cross-disciplinary interaction is considered a significant aspect of leadership*
- *supporting leaders through the difficult process of finding funding for cross-disciplinary research activities through the expertise of research facilitators*
- *supporting those academic departments that already adopt a cross-disciplinary approach[13]*
- *establishing new academic departments to address problems demanding diverse expertise[14]*
- *providing thematic contexts for cross-disciplinary interaction[15]*
- *forming thematically focused centres that draw on expertise from across our academic departments[16]*
- *facilitating and promoting research through UCL Grand Challenges and UCL Research Frontiers.*

of specialist expertise across and beyond UCL can be brought together to address aspects of the world's key problems. They also provide an environment in which researchers are encouraged to think about how their work can intersect with and impact upon global issues.

The UCL Grand Challenges both nourish ideas naturally arising from academics' concerns and curiosities, and coordinate institution-wide responses to external agenda. They also complement UCL Research Frontiers' support of our exploratory and curiosity-driven cross-disciplinary research.

UCL will: increase activity within each Grand Challenge through a variety of thematic strands; expand the opportunities for involvement, within and beyond the university, including increased student participation; seek to engage alumni and external funders with the aim of becoming a self-funding activity; and maximise their impact on policy and practice, and engagement with the public, worldwide.

The UCL Grand Challenges – of Global Health, Sustainable Cities, Intercultural Interaction and Human Wellbeing – aim to:

- create networking opportunities – to connect academics across UCL's disciplines and foster networks of experts (eg through roundtables, town meetings and centrally seed-funded cross-disciplinary institutes)
- provide spaces for debate – to bring together different expertise, perspectives and methodologies in order to provoke new understanding (eg through symposia, workshops and public events)
- facilitate novel research – to stimulate cross-disciplinary activity to generate wisdom and societal debate
- improve policy and practice – to enhance economic performance, public service and policy, quality of life, and social justice and equity.

### *Research and the UCL Grand Challenges*

*The UCL Grand Challenges are not intended to encompass all the research activity at UCL. Even less are they intended to be a top-down agenda to which every researcher at UCL is expected to bend their activity, no matter how distant the intellectual connection. Rather, they arise from the observation that there is a hugely wide range of research activity at UCL of relevance to global society, whose potential impact and indeed intellectual energy could be enhanced by connecting them together in shared dissemination, knowledge exchange and discussions on future research directions. UCL Grand Challenges activities provide the frameworks for those cross-disciplinary connections.*

*Much excellent UCL research has significant impact on both practice and agendas for future research without being connected to other research of relevance to our four challenges. In practice, there is a wide range of research that has some of its impact outside UCL Grand Challenge agendas and some of it in connection with them. This research strategy seeks to support both.*

*Although by no means all research or impact at UCL is linked to the UCL Grand Challenges, we have been greatly pleased by the range of researchers that have found new opportunities through these cross-disciplinary, societally focused activities. The launch of UCL Research Frontiers – a cross-disciplinary initiative founded in questions of human curiosity rather than the challenges of contemporary society – will give a further sense of the scope and true significance of UCL Grand Challenges.*

## UCL Research Frontiers

While UCL Grand Challenges exemplifies the added societal impact that can arise through exploiting the breadth our expertise, our university cherishes curiosity and imagination, and holds that the expansion of knowledge and scholarship is valuable in its own right.

UCL Research Frontiers seeks to empower research leaders to develop and test novel theories – where the results do not necessarily have any immediate application and where the primary justification for the enquiry is human curiosity – in subjects where cross-disciplinary input adds value to the investigation. Programmes will be led by visionary individuals who can draw on a team providing expertise, insights and methodologies from other disciplines.

UCL will support and facilitate such programmes through, for example: helping to develop the vision; identifying appropriate collaborators and building communities within and beyond UCL; pump-priming where funds allow; and providing communications support and grant development facilitation. Annual plans of activity will be developed for each programme in support of a five-year vision for its activities and outcomes.

The first three UCL Research Frontiers programmes are Origins of Life, Human Evolution and Dynamics of Civilisation; in the medium term we will invite research leaders to propose new activity, ultimately developing a portfolio of 10–12 programmes.

# THIRD RESEARCH AIM:
# Realising the impact of a global university

***Excellent cross-disciplinary research will generate robust solutions to aspects of the world's major problems. UCL will engage much more proactively in sharing these solutions and enabling their adoption, primarily through scholarly outputs, education, public engagement, translational research, commercial and social enterprise activity, and influence on public policy and professional practice.***

***We recognise that the timescales for impact vary from hours to centuries as, for example, experts offer wise commentary on contemporary events and as fundamental discoveries play out their full benefits to civilisation.***

### From the UCL Council White Paper 2011–2021

> Impact has become a buzzword of important rhetorical value in demonstrating that what goes on in universities is intimately connected to the real world and is not purely intellectual self-indulgence. For some, impact has become a mechanistic measure of the utility of research. …
>
> UCL will respond to these trends, but by turning the arguments on their head.
>
> Impact is not simply an add-on to the justification for a research grant application, or the demonstration ex post of the added value given by an individual programme of research. Impacts are too long-run, too diffuse and reliant on too complex a process of further development and collaboration to be capable of being properly captured in this way. Achieving impact is the primary function of the entire entity of a university, and expresses its social value. UCL has a major positive societal impact in many ways: through the education and development that we provide for our students; through our focused research in basic science – physical, biological, engineering and social – generating new knowledge and insight as part of the global networks of scientific advancement; through our local, regional, national and global networks; through our contributions to evidence-based policy and through the commercialisation of our knowledge and technology. …
>
> We will develop the transformative steps that will allow UCL to continue to thrive as a global intellectual leader.

## Outputs

UCL – already the 15th most-cited university in the world and the 2nd most-cited in Europe[17] – will ensure that the products of its research are as widely available as possible.

A key element of this research strategy is the further development of a searchable database which records the institution's research activities: the UCL Institutional Research Information Service, the same used to build the knowledge base (see page 22). It will provide a resource for external stakeholders (such as potential academic collaborators and funding agencies) wishing to gain an insight into the extent of our activity in a particular area.

UCL fully endorses open access to research publications as a vital way of allowing the widest possible dissemination of knowledge, which generates vast social benefit. UCL Library Services has provided leadership in the UK and Europe in this area, and open access is already embedded in the UCL workflow. Its potential has been further enhanced by the creation of UCL Discovery[18], an accessible online portal providing a complete record of outputs in terms of publications for the use of those within the institution as well as the external community. UCL will consider providing, through UCL Discovery, an e-publishing infrastructure for departmental use.

## Strategic partnerships

Strategic partnerships can bring together complementary strengths and deepen the impact of cross-disciplinary research. Where appropriate UCL will build on initiatives where individual research leaders and groups have already identified complementary strengths in and engaged with their counterparts

### From the UCL Council White Paper 2011–2021

> UCL is not an academic fortress, but an open institution committed to working collaboratively with others. Collaboration is easiest with partners that have complementary and largely non-competitive interests, and where the mutual benefits of closer working are obvious to all. …
>
> Competition is a strong driver of improved performance, and we need to maintain it, yet at the same time broaden our footprint of influence. International scientific collaboration at the personal and group level is common throughout UCL. Institutional-level collaboration builds upon existing links and commits both sides to open partnership in defined areas.

at other institutions. UCL will form strategic partnerships – for example with other research organisations, with commerce and industry, and with healthcare providers – to enable the impact of our research to be widened and deepened.

UCL will advocate the concentration of research funding and doctoral education in those UK regional hubs offering a critical mass of research excellence, with which peaks of excellence in other institutions could collaborate as appropriate. We will consider the establishment of flexible part-time affiliations with UCL for those internationally excellent academics located at nationally excellent universities, as well as the creation of pathways through which those universities' students could transfer to UCL as their research potential emerges.

UCL will further enhance existing international partnerships, and create new ones as appropriate, particularly those that have a bearing on social, environmental, legal and health issues globally, including capacity-building.

## Engagement

UCL will continue its commitment to public engagement, in order to understand public concerns and attitudes, to inform public opinion and to address the barriers to adapting individual, organisational and mass behaviour. Without diminishing the

### *Types of partnership to be pursued*

- *research collaboration where strengths are complementary*
- *research collaboration where combined mass offers exceptional potential*
- *research collaboration with local, regional, national and international centres of excellence*
- *collaboration with commercial and non-commercial organisations to drive translational research activities and product development*
- *research-active overseas campuses*
- *research collaboration with business and industry*
- *capacity-building with leading institutions, government organisations and NGOs in low- and middle-income countries*
- *enhancement of global impact through partnerships with leading UK and worldwide cultural, scientific, medical, social-science, public and public-policy institutions*
- *working with business and industry to deliver social and economic benefit for the UK.*

profundity of our research, we will make it accessible and comprehensible to the public, and engage in responsible and mutually beneficial debate.

UCL will further develop its reputation as a source of excellent research which can inform policymaking, and as a source of evidence-based policy solutions. It will fully exploit the opportunities offered by membership of and engagement with public bodies and seek to increase its contribution where it has less influence. In particular we will seek to bring our expertise in the arts, humanities and social and historical sciences to bear on matters of public, policy and commercial concern. UCL will work with governments at all levels, as well as with non-governmental organisations, think-tanks and others, to identify and respond to public policy needs. Through the institution-wide UCL Public Policy programme[19], our university will build on those existing connections between academics and policymakers, enabling external agencies to identify sources of relevant wisdom and UCL to anticipate better and respond swiftly to emerging policy issues.

It is universally acknowledged that in the knowledge economy of the 21st century, economic growth is supported by the rapid flow of ideas between research institutions and enterprise. As part of the UCL Enterprise Strategy, our university is seeking to expand dramatically the engagement of its research leaders with enterprise, and in particular to link together numerous piecemeal interactions into more valuable and more rapidly responsive sustained relationships. In recognition that corporate policies and practices have a significant impact on global issues, UCL will proactively share its research findings with business leaders through its thematic communities and institutes. This will, in turn, lead those businesses benefiting from UCL expertise to view the university as an exceptionally strong source of wise solutions.

UCL will build its connections with alumni and friends, many of whom are influential policymakers and practitioners. We will engage with them as potential advocates of wise solutions, as well as potential research collaborators, advisers and donors.

UCL's exceptional strengths in biomedical sciences and strong relationships with our partner hospitals make engagement to improve health systems a particular priority. The UCL School of Life & Medical Sciences Strategy 2010–2015[20] sets out, as a strategic principle, the importance of developing further innovative means of optimising translational research while continuing to produce world-leading fundamental science that will underpin future translational opportunities. In particular, this is based on a vision of going beyond the dominant approach of the late 20th century, which stimulated the development of high-tech solutions for end-stage disease. The major health challenges facing populations across the globe have now changed, with chronic disease and the sustenance of population health and wellbeing at the fore. Such challenges call on a broader range of academic expertise than just biomedicine, embracing for example sociological and behavioural sciences, economics and informatics. Such a systemic approach will offer many opportunities for deeper academic involvement across UCL, leveraging our advantage of being a world-class, multifaculty university. To optimise this translation, we will develop new forms of engagement with the corporate and public stakeholders within the health system, many of whom are evolving their own missions in response to these changing needs.

## Proactive communications

Over the last decade UCL's communications functions – newly consolidated as UCL Communications & Marketing and including: management of the corporate identity; media relations; events; website; electronic, printed and audiovisual materials; and student recruitment – have made a significant contribution to raising the university's profile, regionally, nationally and globally.

In recent years communications activity has, rightly, aligned itself more explicitly with corporate strategies, both in communicating those strategies' key messages and in providing communications tools to support their aims. Much valuable work has been conducted on analysing key opinion formers' perceptions of UCL and their communications needs. A rolling overview of internal and external events, and UCL's capacity to prioritise and maximise its engagement with them, has been developed.

Communications will continue to ensure that UCL's reputation reflects the quality and purpose of its research; a major element in this will continue to be the public promotion of specific research outcomes as exemplars of institutional quality and purpose. However, the successful delivery of a culture of wisdom requires more than an excellent institutional profile. It requires a shift in emphasis from reputation management to influence.

All of UCL's communications tools will be deployed as compelling delivery mechanisms for wise solutions to those positioned to implement them. This will require the identification of audiences in more specific segments (eg by nature of the problems for which they need solutions), the framing of wise counsel in ways likely to influence them and the employment of appropriate channels to reach them (eg specialist media). A further consolidation of external contacts currently widely dispersed among departments and administrative offices will be undertaken at the institutional level, without undermining existing personal or departmental relationships. Channels will be developed to facilitate not just the dissemination of research findings, but also wise commentary on current and emerging issues in media considered authoritative by policymakers and practitioners. Any disincentives to academics engaging in this activity will be removed.

Artist's impression of the Francis Crick Institute, formerly known as the UKCMRI (Justin Piperger/Wadworth3D)

UKCMRI

# RESEARCH AND THE WIDER UCL AGENDA

***It is essential that the strategy underpinning UCL research be integrated with the university's strategies for Communications & Marketing, Development & Alumni Relations, Estates & Facilities, Human Resources, Information Services and Scholarships, as well as the following.***

## International

UCL defines itself as a global university in terms of its impact, leadership and opportunities. This vision is particularly relevant to our research activities, many of which are international in nature, whether because of subject matter or partnership. UCL will seek out partnerships with organisations around the world where our strengths are complementary, and where we can help to build capacity.

## London

UCL research will be brought to bear on the city that is its home. London itself poses a set of complex and systemic problems which can be resolved only through the deployment of cross-disciplinary expertise in collaboration with local communities, government bodies, policymakers and practitioners, and other world-class London organisations. Our work in London will inform and inspire the development of solutions on a global scale.

## Education

As emphasised in the UCL Council White Paper 2011–2021, we are developing an innovative programme of learning and teaching, informed by its research activities and delivered by experts in the field. Students at all levels should be exposed to cutting-edge research and research-led teaching. The development, over time, of more cross-disciplinary undergraduate and graduate curricula will provide a virtuous feedback loop to research, as well as an appreciation of the benefits of working across disciplines.

UCL will better define, articulate and demonstrate how our characteristics as a research-intensive university offer a first-rate education and the best possible value for money. In particular, we will ensure that students benefit from a high-quality and well-resourced research environment which offers access to world-class academics, equipment and facilities. Furthermore, we will seek to embed the ethos of UCL Grand Challenges and UCL Research Frontiers in learning and teaching by ensuring that all students have an opportunity to engage in cross-disciplinary activity and learning beyond their primary discipline.

## Enterprise

Excellent research underpins the ability of UCL Enterprise to deliver impact through: education and training in entrepreneurship; social enterprise; corporate partnerships; industrially related and translational research; commercial research contracts; consultancy; continuing professional development; student businesses; commercialisation of intellectual property through spin-out companies; and licensing and product development.

## Health

UCL is committed to the pursuit of research excellence in fundamental life and medical sciences and the effective translation of research outcomes into health benefits. This research strategy supports cross-disciplinarity across our life and medical sciences and beyond, complements the UCL School of Life & Medical Sciences' focus on generating enhanced societal and economic impact, and facilitates the forging of strong collaborations – including UCL Partners – in which UCL will act as the intellectual hub.

## Public Engagement

Effective public engagement is a prerequisite of research impact, both by understanding the public's varied concerns, beliefs and behaviour, and by responding with relevant proposals. UCL's programmes of engagement with communities – local, regional, national and around the world – will ensure effective two-way dialogue, through which wise insights can be applied effectively.

UCL Bloomsbury Masterplan

# SUPPORTING OUR VISION

***The vision set out in this research strategy is a challenging one. Very few organisations would establish more than 2,000 staff in leadership roles and expect many others to aspire to such roles. Few universities are seeking to challenge the widely held political view of them – as 'knowledge factories' – as profoundly as UCL, through its ambition to deliver a culture of wisdom.***

***Individual research excellence and leadership are prerequisites for the productivity and impact to which we aspire, but they do not guarantee it. UCL must be a positive and creative working environment for the full range of researchers, across all subject areas and from PhD students to senior research leaders. These ambitions require efficient and effective mechanisms to support research activity.***

## Infrastructure

UCL will provide researchers with cutting-edge infrastructure, facilities, library resources, equipment and support in order to enable them to compete with the best in the world. Surpluses will be reinvested to replace previously available external infrastructure funding.

UCL will address the complexities of securing sustainable funding for research infrastructure. The UCL Bloomsbury Masterplan[21] and strategic partnerships offer cost-effective opportunities to maintain and enhance our infrastructure.

## Funding

UCL research grant spend was £275.1 million in 2009/2010, exceeded in the UK only by Imperial College and the University of Oxford. This figure was an 8.2% increase on the previous year's research income, the largest increase among the top five UK universities (as measured by income from research grants and contracts). In addition, we received a HEFCE recurrent research grant of £104.9 million and significant funding for research studentships from various sources.

UCL will ensure that comprehensive, fully resourced and sustainable funding streams and mechanisms are in place, either from external agencies or from the use of internal resources, to facilitate and promote excellence in areas of agreed strategic priority.

UCL seeks funding for research through three main activities to complement the QR block grant: grant applications, engagement with commercial partners and philanthropic fundraising. Mechanisms will be developed to ensure greater communication and cooperation between the individuals and groups involved in all three, to maximise funding opportunities and to help avoid overlaps and inconsistencies in approaches to potential funders and donors.

### Research Excellence Framework

Although the new Research Excellence Framework (REF) is about more than funding – it also provides an assessment of research quality and has reputational significance – it does determine the amount of QR funding (based on excellence, impact and volume) available to UCL in future years. UCL has engaged fully with the development of including participation in HEFCE's pilots on the use of bibliometrics and assessing impact in the REF. We will continue to engage with HEFCE as developments are taken forward.

REF 2014 represents a new challenge, but also an opportunity to showcase the excellence and impact of UCL research. We will ensure robust processes for making our REF 2014 submission,

including: appropriate consideration of equality issues in our staff selection policy; appropriate consultation with academic units; selection of high quality outputs; data collection and quality assurance; and developing impact case studies which offer a representative insight to the breadth of benefits UCL's research directly provides to the global community. We will also ensure that we demonstrate the quality and vitality of the research environment at UCL.

UCL's REF 2014 strategy is led by the UCL Vice-Provost (Research), who chairs the REF Strategy Group. Data collection management and the coordination of UCL's submissions to REF 2014 are the responsibility of a team led by a senior member of staff in UCL Registry & Academic Services, reporting to the UCL Vice-Provost (Research).

## Grant applications

UCL will seek to increase the number and quality of grant applications especially for longer-term awards, by providing a greater level of support for applicants and removing any disincentives which make academics, especially in non-scientific areas, reluctant to apply. Such measures will include increased administrative support for the application process, alongside structured programmes of advice and mentorship.

Working in a collaborative way across the institution, the Faculty Vice-Deans (Research) and School Research Facilitators (SRFs) have greatly enhanced UCL's ability to submit high-quality cross-disciplinary grant applications. By recruiting additional SRFs, UCL will enhance their capacity to: support academics proactively in the preparation of grant applications; provide an interface between the research community within the institution and the funding agencies; and build novel collaborations of UCL academics around emerging themes and funding opportunities and the changing priorities of national and international funders, both public and private.

UCL Research Services will investigate complementing its current support for and training in grantsmanship with a specialised pre-award grants management system and will roll out an enhanced research opportunities service. In post-award support, it will seek to reduce the administrative burden for grant holders, expand its project-management services for large or complex grants, and in particular seek to reduce the administrative burden on EU grant holders.

UCL will engage fully with the major funding bodies, both nationally and in Europe, including consideration of entering into framework or partnership agreements.

### Engagement with external social and commercial partners

As a leading research-intensive university, UCL is committed to widespread collaboration with commercial and social enterprises in order to maximise the societal impact of our research and as a potential source of income. There are myriad opportunities for the UCL research community to provide expertise, skills, services and products to external partners, collaborators and customers.

With leadership by the Office of the Vice-Provost (Enterprise), we aim to establish UCL as a leading research collaborator and provider of knowledge-based services to the commercial and voluntary sectors, as part of our commitment to long-term impact and sustainable economic prosperity for the UK.

UCL will respond to the priorities of business and industry and seek to maximise the mutual benefit of enterprise activities such as contract research, consultancy, licensing and continuing professional development.

### Philanthropic fundraising

The UCL Development & Alumni Relations Office derives its fundraising priorities from the UCL Corporate Plan & Strategy, thereby ensuring that its work supports key institutional objectives.

The delivery of a culture of wisdom described in this research strategy – and the commitment to leadership, cross-disciplinarity and impact underpinning it – will provide an effective 'narrative' with which to engage potential benfactors; together, UCL Research Frontiers and UCL Grand Challenges convey the inherent value of excellent research of any kind, and the socially beneficial purposes to which that research can and must be put.

In addition, philanthropic funding can be an invaluable route to funding academics' proposals for research activity that, for whatever reason, are not suitable for peer review or do not fit current priorities of the main research funders. The Office of the UCL Vice-Provost (Research) will help Faculty Executive Deans to prioritise those of such ideas that have the greatest potential added value.

### Diversification

Beyond these core funding streams, UCL will take every opportunity to extend and diversify its funding portfolio. Practical measures will be introduced to improve our university's competitiveness and to maximise its research income from all such sources.

Particular attention will be given to increasing UCL's interaction with those funding bodies, including charitable foundations and international organisations, which sit between peer review-led funders and pure philanthropic donors; this will require leadership by and collaboration between the UCL Development & Alumni Relations Office, the Office of the UCL Vice-Provost (Research) and the Office of the UCL Vice-Provost (Enterprise).

## The knowledge base and benchmarking

UCL will ensure regular, reliable and transparent reporting of appropriate research performance indicators, both quantitative and qualitative, at the departmental, faculty and institutional level. This will be particularly significant in the context of the Research Excellence Framework.

UCL will continue to integrate the systems in which information about its researchers' activities are held, with the key principle being that a single data source – accurate, authoritative, comprehensive and secure – should be held centrally, and be simple to update and to use for multiple purposes elsewhere. Such a database will facilitate strategic and managerial decision-making and provide information for the development of major cross-disciplinary funding applications.

UCL will set ambitious but realistic performance targets, such as those outlined in this research strategy, and benchmark its research performance against its national and international competitors, with timeframes for improvement defined. We will improve our recording, measurement and evaluation of research impact wherever possible.

## Horizon scanning

Horizon scanning by visionary and well-networked research leaders will be an important element in sustaining our pioneering tradition. The Office of the UCL Vice-Provost (Research) will add value to these horizon-scanning activities by harvesting, connecting and prioritising insights from across UCL into an integrated vision, and by coordinating responses to emerging opportunities. It will adopt a more proactive and coordinated approach to planning, by ensuring that the university is well prepared to respond effectively to future initiatives. UCL will increasingly seek to identify new directions in research and scholarship and to bring people into these areas, building up a critical mass where appropriate.

Our university will build on activity to date, at which academics from a number of disparate disciplines have been brought together to discuss broad themes (eg the environment, energy or computational biology). UCL will increase the input and advice of external experts from both public and private sectors in the UK and internationally.

## Investment in cross-disciplinarity

Building on the UCL Research Themes, cross-disciplinary research networks, centres and institutes have been established through central and faculty investment and embedded within UCL's governance and planning procedures. Whether physical or virtual, these research hubs create opportunities for building research communities around specific issues, forming new collaborations, facilitating the training of postgraduate students, responding swiftly to external funding calls, leveraging the acquisition of external support, optimising the impact of the resulting research and working with industrial and other partners to realise the economic and social potential of their activities.

Further communities will be formed and centres established as a result of horizon scanning in consultation and engagement with researchers. Dynamic and imaginative leaders will be required in order to galvanise disparate groups from around UCL and provide long-term vision and commitment to the project. Existing centres

and initiatives will continue to be overseen to ensure that they maintain their vitality and deliver on UCL's agreed priorities.

## Governance and administration

The UCL Vice-Provost (Research) – VPR – is the senior academic charged with promoting, supporting and facilitating world-class research at UCL, and is responsible to the UCL Provost and governing body (UCL Council) for determining the university's overarching research agenda. The UCL VPR chairs the Research Governance Committee, which oversees development of and compliance with the UCL Code of Conduct for Research, which includes the research ethics framework. The UCL VPR will encourage members of the UCL research community to make research-related suggestions and propose initiatives, whether directly or through Heads of Department, Faculty Research Boards or Faculty Vice-Deans (Research).

Research priorities are determined at the faculty level by the Faculty Executive Deans in consultation with senior academics including the heads of divisions, institutes and departments. Faculties identify their priorities – including infrastructure requirements – in their individual strategic plans, which are then considered by the UCL Provost's Senior Management Team. We can no longer assume that there will be rising levels of resources available to UCL; a number of administrative changes referred to in the UCL Council White Paper 2011–2021 will help to address this. However, limited resources will need to be directed to those developments in line with agreed strategic priorities; greater cooperation will be required between faculties in making these decisions. Faculty Executive Deans and Heads of Department have a particular responsibility to manage and optimise performance; the Office of the UCL Vice-Provost (Research) will conduct an ongoing assessment of such management.

UCL will continue to develop supportive administrative and financial structures that will facilitate and underpin research, enabling academics to use their research time to maximum effect, together with information networks to facilitate communication and inform strategy. Central coordination of shared facilities and complex grant applications will be enhanced. Achievements in the spirit of this research strategy will be embodied in systems for recruitment and promotion, and in similar systems of reward.

## Responsiveness and influence

Given the importance of university research to a vibrant society and sustainable economy, and UCL's role as a major research-intensive institution, we will continue to make every effort to engage with appropriate agenda-setters and stakeholders.

We recognise and are committed to the importance of UCL demonstrating leadership in debates over research policy, and engaging at all sectors and levels. This is important both in terms of current agenda and priorities, and with a view to ensuring long-term sustainability for the UK research base.

UCL will respond to the needs for research and training of the UK government and the corporate community, as well as regional and local priorities. The university will be responsive to the strategic objectives of the major national and international funding agencies, both public and private, and to government priorities for research.

Furthermore, UCL will play a prominent role in helping to inform and shape these research agendas. We will ensure that our representation on the councils and panels of most of the major funding agencies is maintained, and seek to extend our representation on other appropriate agencies. Such representation and engagement will be used to improve mutual understanding. UCL will both respond to relevant consultations as well as take a proactive position in influencing higher education policy, both to further its institutional objectives and to strengthen the UK higher education sector.

UCL will also endeavour to engage constructively with government policy, while continuing to champion and represent the fundamental values discussed in this strategy. In parallel with using its collective research expertise to provide wise counsel, it will use its collective sector experience to propose ways in which limited funding can be most effectively and efficiently invested. We will continue to advocate our vision for a multidisciplinary research-intensive university to government, funders and other crucial decision-makers.

# CONCLUSION

*The 2011 UCL Research Strategy calls for a transformation of the understanding of the role of our comprehensive research-intensive university.*

*In this strategy we have set out the aims through which a culture of wisdom will be delivered:*

- *fostering **leadership** grounded in excellence in discipline-based research*
- *expanding the distinctive **cross-disciplinarity** of our research, collaboration and partnerships*
- *increasing the **impact** of our global university's research, locally, regionally, nationally and internationally.*

*These strategic aims, which cover the entirety of UCL research, will be achieved by consolidating (and more explicitly codifying) existing good practice, and by introducing new methods of supporting and facilitating research excellence and impact. We are converting these aims into a scheduled programme of activity, identifying what adaptation is necessary in academic central support units, and defining the measures of success against which progress can be assessed against targets.*

*Appendices to this strategy – restricted to UCL – will comprise a detailed implementation plan (2011–2015) and a record of achievement to date (2008–2011).*

*As UCL achieves these aims and delivers its culture of wisdom, it will it fulfil its potential as London's Global University.*

# ENDNOTES

1 *Maximising Impact and Influence Globally: The UCL Research Strategy 2008*
– www.ucl.ac.uk/research/images/research-strategy-2008.pdf

2 Lewis Carroll, *Through the Looking-Glass* (1872)

3 Other terms as used in a UCL context, such as 'enterprise' and 'global citizenship', are defined in other institutional strategies

4 *The Wisdom Agenda*
– www.ucl.ac.uk/research/images/The-Wisdom-agenda.pdf

5 Such as architecture, civil engineering and medicine

6 Including in geography, French, medical physics, media law and Egyptology

7 For example, statistics, chemical engineering, and the history and philosophy of science

8 Over nearly two centuries, our staff and student achievements include:
- advances in communications such as the telephone and wireless telegraphy, and the first transatlantic computer network connection, which was the precursor of the internet
- understanding of the physiology of nerve cells and their synaptic connections
- biomedical breakthroughs such as the identification of hormones and vitamins, and the first antiseptic treatment of wounds
- understanding of the immune system's rejection of tissue and organ grafts, and of autoimmune diseases such as rheumatoid arthritis
- discovery of the inert gases, including neon, which resulted in the first of 21 Nobel Prizes so far earned by our staff and students

9 For 43 of our 49 submissions to the 2008 Research Assessment Exercise, at least 50% of UCL's quality profile was either 4* ("of world-leading quality") or 3* ("internationally excellent"). Excellent results were achieved across a wide spectrum of disciplines, including: architecture and the built environment; cancer studies; chemical engineering; computer science and informatics; earth systems and environmental sciences; economics and econometrics; history; history of art, architecture and design; hospital-based clinical subjects; infection and immunology; law; philosophy; and psychology
– www.rae.ac.uk/Results

10 *Excellence and the UCL Community: A shared endeavour*
– www.ucl.ac.uk/excellence

11 www.ucl.ac.uk/iris

12 www.ucl.ac.uk/grand-challenges

13 Including the world-renowned specialist centres that became part of UCL during the last 25 years: the UCL Institute of Archaeology, the UCL Institute of Child Health, the UCL Eastman Dental Institute, the UCL Institute of Neurology, the UCL Institute of Ophthalmology and the UCL School of Slavonic & East European Studies

14 Including the UCL Cancer Institute, the UCL Institute of Cardiovascular Science, the UCL Ear Institute, UCL Security & Crime Science and the UCL Institute for Women's Health

15 The UCL Research Themes are: Ageing; Art, Design & Architecture; Basic Life Sciences; Biomedical Imaging; Bioprocessing; Cancer; Cardiometabolic Medicine; Communication, Language & Hearing; Computational Science & Digital Systems; Digital Humanities; Economic Analysis; Energy, Environment & Transport; European Studies; Experimental Medicine; Genetics; Global Health; Heritage, History & Cultures; Human Wellbeing; Infection, Immunology & Inflammation; Intercultural Interaction; Justice, Ethics & Human Rights; Language, Linguistics & Literature; Law & Enterprise; Materials; Media, Communications & Information; Migration; Nanotechnology; Neuroscience; Origins; Population Health; Public Policy & Governance; Reproduction & Development; Risk & Security; Stem Cells & Regenerative Medicine; Sustainable Cities; Systems Engineering; and Thoughts, Beliefs & Philosophy

16 Including the UCL Computational Life & Medical Sciences Network, the UCL Centre for Digital Humanities, the UCL Energy Institute, the UCL Environment Institute, the UCL European Institute, the UCL JDI Centre for the Forensic Sciences, the UCL Genetics Institute, the UCL Institute for Global Health, the UCL Centre for Materials Research, the UCL Institute of Origins, the UCL Institute for Risk & Disaster Reduction, the UCL Centre for Security & Crime Science, the UCL Systems Biology Network and the UCL Urban Laboratory

17 *Thomson Reuters ISI Web of Knowledge Essential Science Indicators* – esi.isiknowledge.com

18 discovery.ucl.ac.uk

19 www.ucl.ac.uk/public-policy

20 www.ucl.ac.uk/slms/staff-students/info/strategies/slmsstrategy

21 www.ucl.ac.uk/masterplan