

Institution: University College London
1. Context and mission

The vibrancy of UCL's research environment is a direct legacy of our founders' disruptive vision, inspiring them to establish a university committed to **inclusion, innovation and social relevance**. Despite considerable advances in scale since our establishment in 1826, which has seen UCL grow into a **comprehensive, research-intensive and globally recognised university**, the second-largest English university by staff (~13,000 FTE), and the third-largest by research income (£481M) in 2018-19, our founders would recognise their ambitious vision of public service in our current **institutional mission**:

London's Global University: a diverse intellectual community, engaged with the wider world and committed to changing it for the better; recognised for our radical and critical thinking and its widespread influence; with an outstanding ability to integrate our education, research, innovation and enterprise for the long-term benefit of humanity.

Delivering **impact for public benefit** is a core value for all institutions within this submission, including the Institute of Zoology, Birkbeck College departments, as well as UCL. Impact is at the heart of UCL's Research Strategy, championed by the **Office of the Vice-Provost (Research)**. We have created a network of specialist agencies to maximise opportunities for impact, including **UCL Public Policy, Innovation & Enterprise, Global Engagement, UCL Culture, UCLPartners, UCL Business, UCL Consulting** and the **Translational Research Office**, each of which supports research impact by facilitating engagement across different aspects of the social sphere.

UCL's main campus, in London's Bloomsbury, is part of the vibrant **Knowledge Quarter**, a consortium of academic, cultural, research and media organisations, including the British Library, British Museum, Francis Crick Institute, GSK, Google and Facebook. UCL's new campus, UCL East, sits within **East Bank**, the growing cultural and education district on the QE Olympic Park, alongside organisations including the BBC, Sadler's Wells and the V&A. **UCL East** is part of the regeneration and development of higher-deprivation boroughs, working to make UCL accessible and to enable grassroots knowledge exchange with the local community. Through **UCLPartners**, we play a key role within the complex London ecosystem of healthcare organisations, partnering multiple NHS Trusts, learned societies and research institutes, and working with large patient populations and citizen groups.

UCL's response to the **global pandemic** demonstrates how effectively our existing partnerships (including UCLPartners' five NHS Trusts, three universities and three NIHR Biomedical Research Centres) and structural mechanisms (including **UCL Business** and the **UCL Translational Research Office**) can be deployed at speed to deliver impact: collaboration with Mercedes-Formula1 developed the **UCL Ventura CPAP**, an adapted breathing machine that reduces the need for ventilators, with >1,900 free manufacturing licenses granted in 105 countries, as well as the adaptation of existing ventilators for NHS use. UCL's research community provided informed comment and analysis, contributing to policy and debate through membership of the Scientific Advisory Group for Emergencies (SAGE) and other COVID-19 advisory groups.

UCL's public service ethos further underpins our commitment to **accessibility, openness and transparency**. Public Engagement and **Open Science & Scholarship** maximise the dissemination of new knowledge, repaying society's investment in us through the creation of opportunities for novel

Institutional level environment template (REF5a)

application of our research discoveries. Maintenance of the highest standards of **Research Integrity** helps build public confidence, thereby sustaining our capacity to make positive contributions to pressing social issues.

UCL places **inclusivity** at the heart of its activities. We are proud of the fact that UCL was the first university in England open to all students regardless of religion or sex, but recognise we have much to do to succeed in our aim of creating a university that is fully inclusive and diverse. We have established the **UCL Sarah Parker Remond Centre for the Study of Racism & Racialisation** to focus UCL research on the social impact of racial inequality and hierarchy; we will support our research community through efforts to increase recruitment of BAME staff and students, and to better support their career development. We have committed to appointing 50 BAME academics within the next five years.

2. Strategy

We interpret our founding values in a contemporary context, expressing the ultimate purpose of our research as the generation of public benefit:

We want to stimulate disruptive thinking across and beyond our university to transform knowledge and understanding, and to tackle complex societal problems. We wish to help to enable society not only to survive to the next century – an urgent challenge requiring unprecedented collective action and partnership – but also to thrive, so that the lives of future generations are worth living: prosperous, secure, engaged, empowered, fair, healthy, stimulating and fulfilling.

2.1 Strategy

Our Research Strategy (introduced in 2008, and revised in 2011 and 2019) describes our mission to maximise UCL's potential to contribute to the public good through three strategic aims:

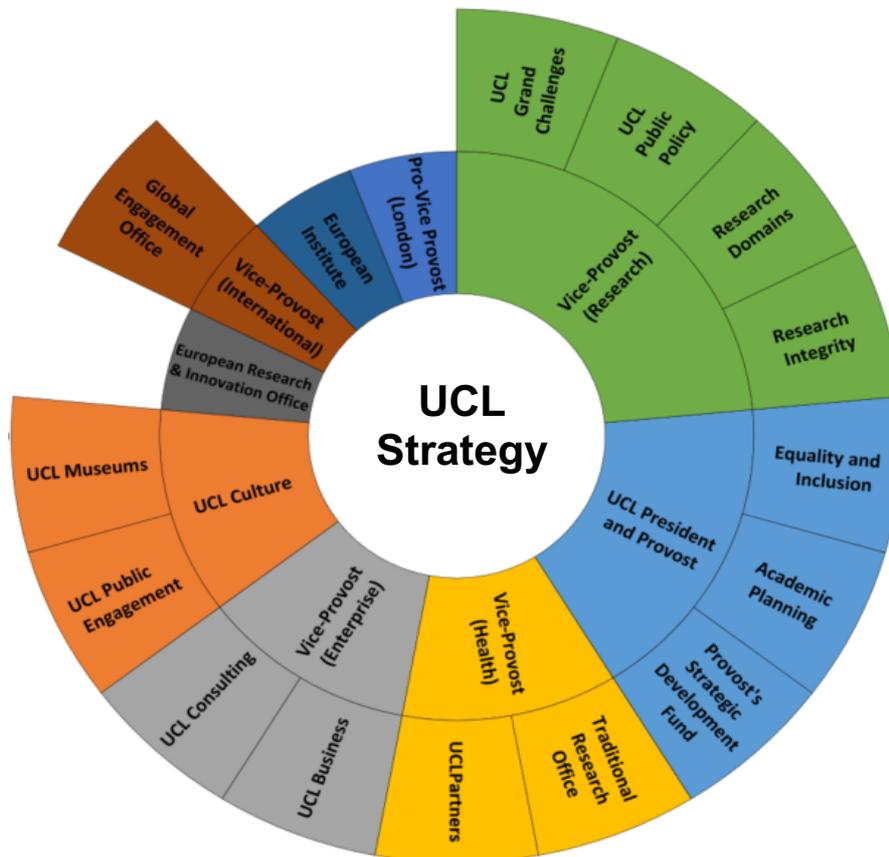
- 1. Inspire and empower research leadership** by identifying, attracting and supporting those who demonstrate – or show their potential to develop – research leadership, in diverse ways and at all career levels.
- 2. Cross boundaries to increase engagement** between disciplines, communities (disciplinary, academic and other) and different kinds of activities, to develop co-design and co-production of research.
- 3. Deliver impact for public benefit** including by furthering academic disciplines and scholarship, enhancing our cultural contribution and engaging in public discourse, growing national and global prosperity, providing policy advice, informing professional practice, contributing to positive environmental change, improving health and wellbeing, and supporting social equity.

These aims are complemented by three cross-cutting themes:

- A. Pursue a responsible research agenda**
- B. Exert our influence for the greater good**
- C. Maintain a global perspective.**

Institutional level environment template (REF5a)

Complementary institutional strategies that support research impact include: Innovation & Enterprise ('Transforming knowledge and ideas into action'), Public and Community Engagement ('To be the global leader in socially responsible engagement practice and research'), Global Engagement ('Think global, act together') and Public Policy ('Embed public policy engagement and impact').



2.2 Achievements

2.2.1 Open research

Our commitment to **Open Science & Scholarship** follows directly from our strategic objectives; the accessibility of knowledge both amplifies the impact of our researchers' efforts and optimises opportunity for further research development by academic peers and for novel applications in society.

We were an early signatory of the **Declaration on Research Assessment (DORA)**, and a founding partner of the **UK Reproducibility Network**. We have demonstrated our support for the commitments in the Concordat to Support Research Integrity by developing **sector-leading policies and processes**. These include the **UCL Statement on Research Integrity**, the **UCL Code of Conduct for Research**, an institution-wide research ethics policy and review process, integration of Open Science into the processes for promotions (**Academic Careers Framework**) and training (**Research Integrity Training Framework**), and production of annual reports on research integrity.

Institutional level environment template (REF5a)

Established as the UK's first fully open access university press in 2015, **UCL Press** has fast become one of the leading open access scholarly publishers in the UK, publishing traditional peer-reviewed and innovative research outputs, including over 40 open access books a year and 15 academic journals. Other institutional achievements include **UCL Discovery**, our Open Access repository, the new **UCL Research Data Repository** and the creation of a **Pro-Vice-Provost** role in Library Services with special responsibilities for Open Science & Scholarship. In 2019, UCL published its first Research Data Strategy, *Data First*, outlining our plans to become the leading institution for data-focused research. Supported by £26M of external funding, 87,761 outputs published in 2014–2020 were deposited in UCL Discovery, with 20.2M downloads in this period. 96% of all articles and proceedings accepted from 1st April 2016 are deposited or have REF open access exceptions. UCL's 25 transformative publisher agreements (>6,000 journals) allow authors to publish Gold. Since its launch in June 2019, UCL's Data Repository has seen 200 items published, 1.1TB of data uploaded, 72,000 views and 23,000 downloads across 50+ countries.

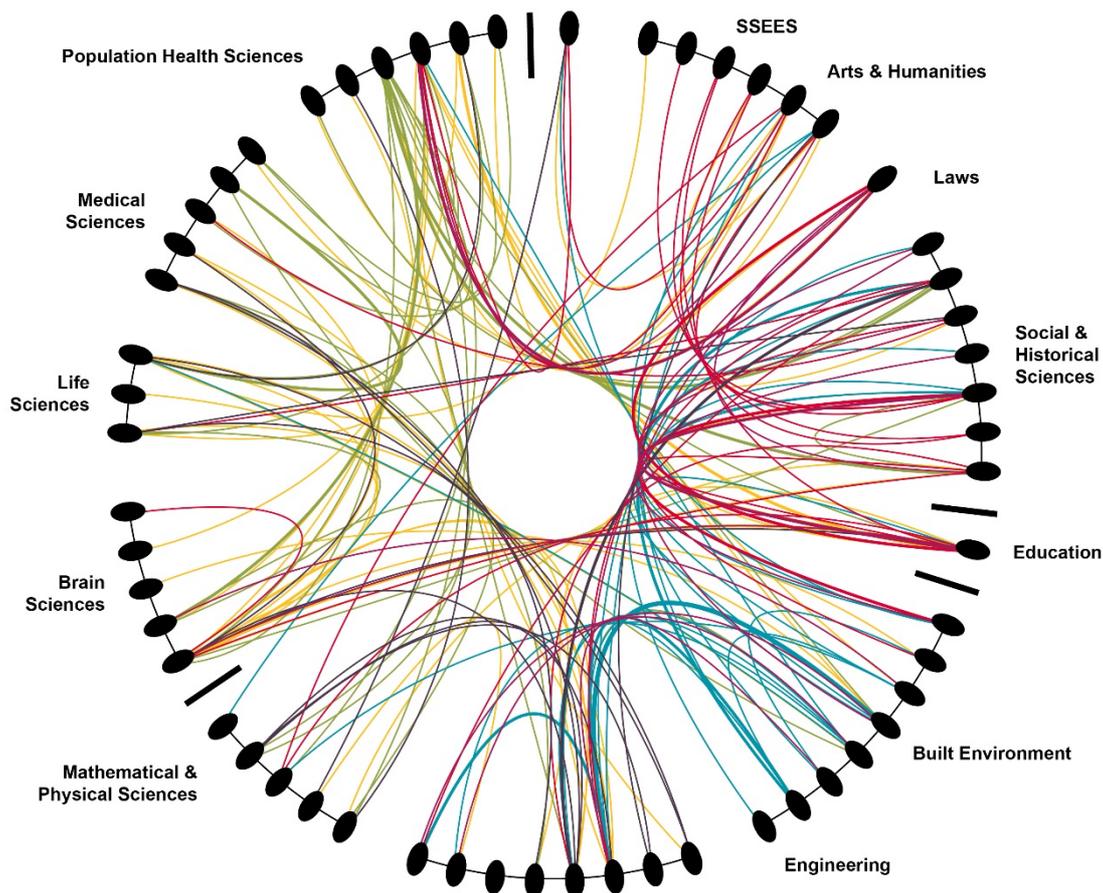
2.2.2 Research leadership

Indicator	REF2014 average annual	REF2021 average annual	% change
Academic and research staff (FTE)	3,675	5,624	+53.02
Research income	£277M	£460M	+66%
Publications	12,962	18,426	+42.15
PGR registrations	1,363	1,931	+41.67
Doctorates awarded	810	1,125	+38.89

UCL's success in developing research leaders is evidenced by their many achievements. These include securing £1,320M in Research Council awards since 2014, leading in National Institute for Health Research funding (£267M), and hosting three of the 20 NIHR Biomedical Research Centres. **Early Career Researchers** have been supported with >£30M in Future Leaders funding since 2019. UCL's researchers were awarded more than 620 grants (£290M) under the EU's Seventh Framework Programme, and UCL then maintained its position as one of the most successful universities participating in Horizon 2020, with £317M of funding awarded including £164M in European Research Council grants. In the three most recent five-year periods, UCL had the sixth-highest citation counts globally and we are seventh in the world on a rolling ten-year basis. We have been in the top ten universities for global citation rankings since January 2019.

2.2.3 Crossing boundaries between disciplines and communities

In addition to the **UCL Research Domains** and our flagship **Grand Challenges** (see 4.2.4) programme, we bring together a wide range of expertise to address important social and cultural issues through the creation of dedicated multi-disciplinary institutes and centres, often supported with funding from the c£3M annual **Provost's Strategic Development Fund**. In the current REF period, we have launched 13 such initiatives, including the **UCL Institute of Advanced Studies** (IAS), which fosters cross-disciplinary activity across the Arts & Humanities and Social Sciences.



Novel collaborations between researchers in different Departments, Faculties and Schools, funded in the REF period by Grand Challenges and Doctoral School Small Grants in

Global Health, Sustainable Cities, Cultural Understanding, Human Wellbeing, Transformative Technology and Justice & Equality

In the assessment period, we have been a founding partner in a large number of national and international **multi-partner institutes and initiatives**. Such participation not only enables us to amplify the impact of our research for public benefit, but, through creating opportunities for collaboration with external experts, also supports our researchers in becoming leaders in their respective fields. These include:

- Advancement of Sustainable Medical Innovation
- Africa Health Research Institute
- Alan Turing Institute
- UK Dementia Research Institute’s seven centres (UCL-led Hub)
- Enterprise Europe Network
- Francis Crick Institute
- London Urban Research Network
- Rosalind Franklin Institute
- Science & Engineering South Consortium
- UK Collaboration for Research in Infrastructure & Cities (£138M, UCL-led).

UCL’s **Global Engagement Office (GEO)** helps academics develop strategic partnerships with leading international HEIs (7+ by 2020). These partnerships foster increased joint research output with partners in addition to other benefits. Examples include joint fellowships and joint MBA with Peking University, PhD exchange and a joint MSc in Neuroimmunology with the University of Toronto, partnership with the new Max Planck Society (MPS) Doctoral School of Cognition and a Visiting Fellows Scheme. The GEO

Institutional level environment template (REF5a)

has made 660 awards (~£1.7M) including **targeted support for ECRs** (234 awards and £580K since 2015).

2.2.4 Delivering impact for public benefit

UCL Innovation & Enterprise is a member of **TenU**, a practitioner group comprising the world's leading technology transfer organisations (TTOs) at ten top universities across the US and Europe. In partnership with these institutions, UCL received a share of two Research England Development Fund awards totalling £150M to support TenU and a new Policy Evidence Unit for University Commercialisation & Innovation (UCI) in developing improved approaches to commercialising university research for societal and economic benefit.

UCLPartners, recently awarded NIHR Academic Health Science Centre status for another five years, brings together five NHS Trusts, three universities and three NIHR Biomedical Research Centres to tackle the greatest health challenges affecting our population by accelerating the translation of discoveries in areas of unmet need. Achievements during the current REF period include:

- **DRIVE** (Digital Research, Informatics and Virtual Environments), a state-of-the-art unit bringing together experts from GOSH, UCL, NHS Digital and industry to revolutionise the use of technology in hospitals;
- **DATA-CAN**, the Health Data Research Hub for Cancer, which uses clinical data to improve NHS cancer services;
- Mental health projects in collaboration with the Anna Freud Centre and the NIHR CLAHRC North Thames.

The **UCL Technology Fund**, managed by AlbionVC in collaboration with **UCL Business** (UCLB, see 4.2.4), has made 56 investments, including 21 spinout companies and 13 licensing programmes. These have subsequently raised external funding exceeding £1bn and created >880 jobs. Covering a spectrum of conditions to develop life-changing medical solutions, UCL's spinout highlights include advanced gene therapy companies Freeline Ltd, Orchard Therapeutics, MeiraGTx and Autolus Therapeutics Ltd (supported with UCLB investment).

Apollo Therapeutics is a collaborative venture between three world-leading UK universities (Imperial College London, UCL, University of Cambridge) and three global pharmaceutical companies (AstraZeneca, GlaxoSmithKline, Johnson & Johnson Innovation). It provides committed translational funding and drug discovery expertise for novel therapeutics, sourced from the best of British academic research, accelerating them towards the clinic.

UCL Public Policy enables researchers from all disciplines to engage with policy needs and increases the accessibility of academic research to local, regional and national government, Parliament and third sector stakeholders. It drives research engagement with public policy in important social, economic and cultural areas through: Policy Commissions (e.g. Green Innovation, Communicating Climate Science, Mission Oriented Innovation and Industrial Strategy); strategic partnerships (e.g. the British Academy on AI and work, the Resolution Foundation on structural inequalities); and knowledge-exchange activities. UCL leads a £4M Research England-funded consortium to improve sector-wide approaches in academic-policy engagement.

Institutional level environment template (REF5a)

Since the 2016 referendum, UCL's **European Institute** has been recognised internationally for providing expertise and stimulating debate on the EU and Brexit; it has also led the formulation of UCL's Brexit Mitigation Strategy.

3. People

3.1 Staffing strategies and policies

Our commitment to **nurture research leadership in all its forms** places investment in our staff at the heart of our strategic ambitions. Policies and processes are designed to:

- Recruit and retain the most talented researchers from the widest possible pool
- Enable our staff to grow and progress for the benefit of UCL and themselves
- Foster a more diverse and inclusive UCL community reflecting our position as London's global university
- Create an environment where staff feel valued and supported by clear reward and recognition structures
- Support staff wellbeing.

A key development in 2018 was the launch of the UCL **Academic Careers Framework**, which outlines the career pathways available to staff, recognises the diverse ways in which they contribute to UCL's mission (in research, education, enterprise, external engagement and institutional citizenship) and provides clear guidance on what is required to progress between levels. It supports staff in preparing for appraisals, identifying development needs and building cases for promotion, and ensures personal impact is measured and rewarded consistently across UCL.

3.2 Equality, diversity and inclusion

We participate in national benchmarking and charter mark schemes to drive institutional change and improve the learning, working and research culture. UCL is currently only one of two universities in the UK to hold both an **Athena SWAN Silver** institutional award and **Bronze Race Equality Charter** award. Our dedicated **EDI Team**, operating from the Provost's Office, supports departments across the institution in identifying and engaging with opportunities for change. We hold 35 departmental Athena SWAN awards (the most of any UK university), including three Gold awards, and all departments are actively engaged in the process. All faculties have a **Vice-Dean (EDI)**, and each department has an **Inclusion Lead** providing a first point of contact and support for staff and students. UCL also has an active community of equality networks providing strategic advice and peer support on gender, race, LGBTQ+, disability and faith, and to first-generation university students.

Our primary aim is to increase significantly the diversity of staff and students recruited to UCL and to deliver an inclusive experience to marginalised and under-represented groups. We have **transparent and merit-based recruitment** policies that require a minimum of three staff on interview panels, 25% (or at least one) of whom should be women and reflecting an ethnicity balance wherever possible. All panellists must have received fair recruitment training. We have a pool of Fair Recruitment Specialists, recruited from UCL staff who identify as BAME, to increase the visible diversity of UCL interview panels. Other initiatives are summarised below.

Institutional level environment template (REF5a)

Scheme	Objectives
BAME Alumni Network	Promote role models and support for under-represented BAME staff and students
B-MEntor	A cross-institutional mentoring scheme for BAME staff that UCL leads on with partner institutions in London
Emerging Leaders programme	A leadership development programme for BAME staff
Inclusive Advocacy	Provides support and networks to high-performing members of under-represented groups at early / mid-career
Women in Leadership/Senior Women in Leadership	Leadership enhancement programmes for women grades 6 to 9 who are either currently working in a leadership role or who aspire to a leadership position
Women in Research	Support leadership development and career planning of self-identifying female researchers
Research Opportunity Scholarship Programme	Scholarship scheme for BAME postgraduate students run in partnership with the Windsor Fellowship
Brilliant Club	Places researchers (90 annually) in schools to raise attainment amongst disadvantaged students (>350 annually) and their aspirations to attend university
Sarah Parker Remond Centre for the Study of Race and Racism and Racialisation	Cross-disciplinary centre to explore race and multiculturalism, with postgraduate scholarships for under-represented groups

To support the wellbeing of our staff, we have made a strong commitment to **eradicating unacceptable behaviour**, creating a Preventing Sexual Misconduct Strategy Group and appointing a Behaviour & Cultural Change Manager. A direct outcome of these initiatives was the launch of the **'Full Stop' Campaign**, introducing a new online tool to report unacceptable behaviour, including anonymously. Reports are run termly, allowing us to take timely and targeted action and to track our progress. We are now publicly publishing data relating to complaints we have received on sexual misconduct and bullying, to increase transparency publicly and internally. To support this programme, we have increased the number of trained **Dignity Advisors**, and developed training courses to raise awareness about bullying and harassment (**'Where do you draw the line?'** sessions delivered to >4,000 staff), and to support managers in taking pre-emptive action (**'Taking the Lead'** delivered to >400 managers).

3.2.1 REF2021 submission

Having made an inclusive submission to REF2014 (93%), we are submitting 100% of eligible HESA3 staff to REF2021 and 16% of our current submission is made up of research only staff, identified as independent. Detailed equalities analyses (EIAs) have been carried out on our selection processes (independent researcher determination and output selection) at UoA, Main Panel and HEI levels. These cover seven characteristics (sex, ethnicity, disability, age, religion & belief, sexual orientation and nationality), the impact of intersectionality and the differential distribution across grade and academic function. EIAs have been carried out at regular intervals and the information shared with UoAs; UoAs have been supported in using the data to review and monitor their REF processes, but also to inform local EDI initiatives. The data will feed into strategic planning at the institutional level.

Institutional level environment template (REF5a)

Our immediate objective is to improve the quality of our data collection and, in particular, to identify a means of collecting information about disabilities acquired following recruitment (the existing data collection point).

3.3 Implementation of the Concordat

UCL is firmly committed to the **Concordat to Support the Career Development of Researchers**. The Pro-Vice-Provost (Doctoral School) led the recent Independent Review of the 2008 Concordat. We are proud signatories of the revised Concordat (2019). Receipt of the European Commission's **HR Excellence in Research Award** (first in 2013, renewed for the third time in 2020) testifies to our commitment to the concordat and recognises our success in establishing systems and practices that support researchers' career and professional development.

We have recently redeveloped our staff induction and rolled-out targeted **Research Staff Inductions**, focusing on the support in place for researchers. In the 2017 staff survey, knowledge of UCL's staff benefits (e.g. childcare vouchers, pension, employee assistance scheme, wellbeing activities) had increased by 45% since 2015.

UCL has championed **employment continuity** by moving most of its research staff previously on fixed-term contracts to open-ended contracts with fixed-term funding (recognised as a 'beacon activity' by Vitae's Concordat Review). We also provide a robust redeployment system, providing employees at risk of redundancy access to vacancies before external advertisement.

The Research Staff Code of Practice recommends a minimum of 10 days annually on **personal and professional development**. To support this, our Research Staff Development Programme, established in 2016, offers >300 researcher-focused short courses. These and other developmental opportunities are promoted through the fortnightly **Research Staff Digest**.

UCL Careers has an extensive programme of employer engagement for research students and staff. We also have numerous **ECR Career Networks**, many supported through our 10 **Research Domains**. The chairs of these networks form the **Liaison Committee**, facilitating cross-institutional collaboration, sharing of good practice and feedback to senior management.

3.4 Early career researchers

ECRs have access to the same development opportunities as senior researchers in addition to specifically tailored courses described above. Our **Arena Centre for Research-Based Education** offers workshops introducing postdoctoral staff to teaching and learning pedagogy and practice, and provides **training and development for research student PGTAs**. UCL Arena supports both groups in attaining Fellowships of the Higher Education Academy.

UCL's inaugural **Postdoc Appreciation Week** (2019) helped raise the profile of ECRs, including an open 'Town Hall', where postdocs offered feedback to senior management, chaired by the Vice-Provost (Research) and two Faculty Deans.

The **Researcher-Led Initiative** awards, launched 2017-18, are small funding awards for **ECRs and PGRs** to deliver new professional development activities for their own communities. Researcher-led initiatives promote personal, professional and career planning skills by and for ECRs and PGRs, and

Institutional level environment template (REF5a)

inform the development of the wider programme. There have been 29 awards totalling £21,000 of investment. The new **Researcher Hub** is making all such development opportunities relevant to UCL researchers visible in one place.

3.5 Research students

To maintain the high standards of research-led teaching at UCL, we have developed the **sector-leading Concordat on Teaching Careers and Contracts**, which introduces a minimum of 10% time for research and scholarship.

We provide research students with role-specific guidance to answer their unique needs. As part of the **Doctoral Planning Process**, Faculty Deans submit annual reports with KPIs to ensure alignment to our Doctoral Education Strategy and maximise good practice in enhancing the doctoral education environment.

All UCL research students have a minimum of **two supervisors**, whose mandatory training is provided in-house. 81% of respondents to PRES (2019) agreed they were satisfied with the overall experience of their research degree programme, in particular with the supervision they had received (83%).

Doctoral Skills Development Programme (**Doc Skills**), mapped to the national Researcher Development Framework, provides opportunities for development including research integrity, wellbeing, personal development, computer programming, entrepreneurship and traditional study skills. Students are required to use the **Research Student Log**, an online project management tool that records supervisory meetings, progress and skills development.

Doc Skills is complemented by a number of **training and development opportunities** provided centrally, including UCL Public Engagement training and funding schemes, entrepreneurship training organised by UCL Innovation & Enterprise (SPERO), the UCL Grand Challenges Doctoral Students Small Grants Programme and UCL Arena One, which supports the employability of PGRs for academic careers through the provision of PGTA training. Annual competitions, e.g. Research Images as Art, Research Poster and Three-Minute Thesis, offer the chance to share and celebrate their research.

Student engagement and feedback is facilitated through representation on departmental and institutional-level committees. Departments are required to hold Staff Student Consultative Committee meetings, with at least one research student present, twice annually. Feedback is channelled by the Student Union and the biennial national PRES survey. UCL's **ChangeMakers** scheme provides funding for students and staff to work together in partnership to bring about improvements to the student learning experience.

Our **Student Health & Wellbeing Strategy** seeks to enable students to reach their full potential and enjoy their time at UCL through mental health services linked with the NHS, specialised study support for students with disabilities and a **Student Mediator**, a senior academic with research and supervision experience, to advise and assist individual students.

4. Income, infrastructure and facilities

4.1 Institutional strategies and supporting activities for generating research income

Each of UCL's schools has a centrally funded **Research Coordination Office (RCO)**, providing academics, postdoctoral researchers and final-year doctoral students with funding opportunity alerts, guidance for grant and fellowship applicants, individual support sessions on funding calls and feedback on proposals, briefings on grant writing, funding opportunities and policy changes, and mock interviews for fellowships and large applications. This has helped UCL increase the value of its research awards since REF2014 from £1,957M to £3,819M (+95%). Through the **European Research & Innovation Office**, we provide researchers with project management and coordination support for major strategic grants.

The RCOs coordinate nine of UCL's ten **Research Domains**, which are large, cross-disciplinary, problem-oriented research communities spanning UCL and our partner organisations. These communities: develop new research collaborations and partnerships, internal and external; support academic communities in developing strategic ambitions and attracting substantial funding; provide development opportunities for ECRs; and enable research communities to become greater than the sum of their parts.

4.2 Infrastructure and facilities

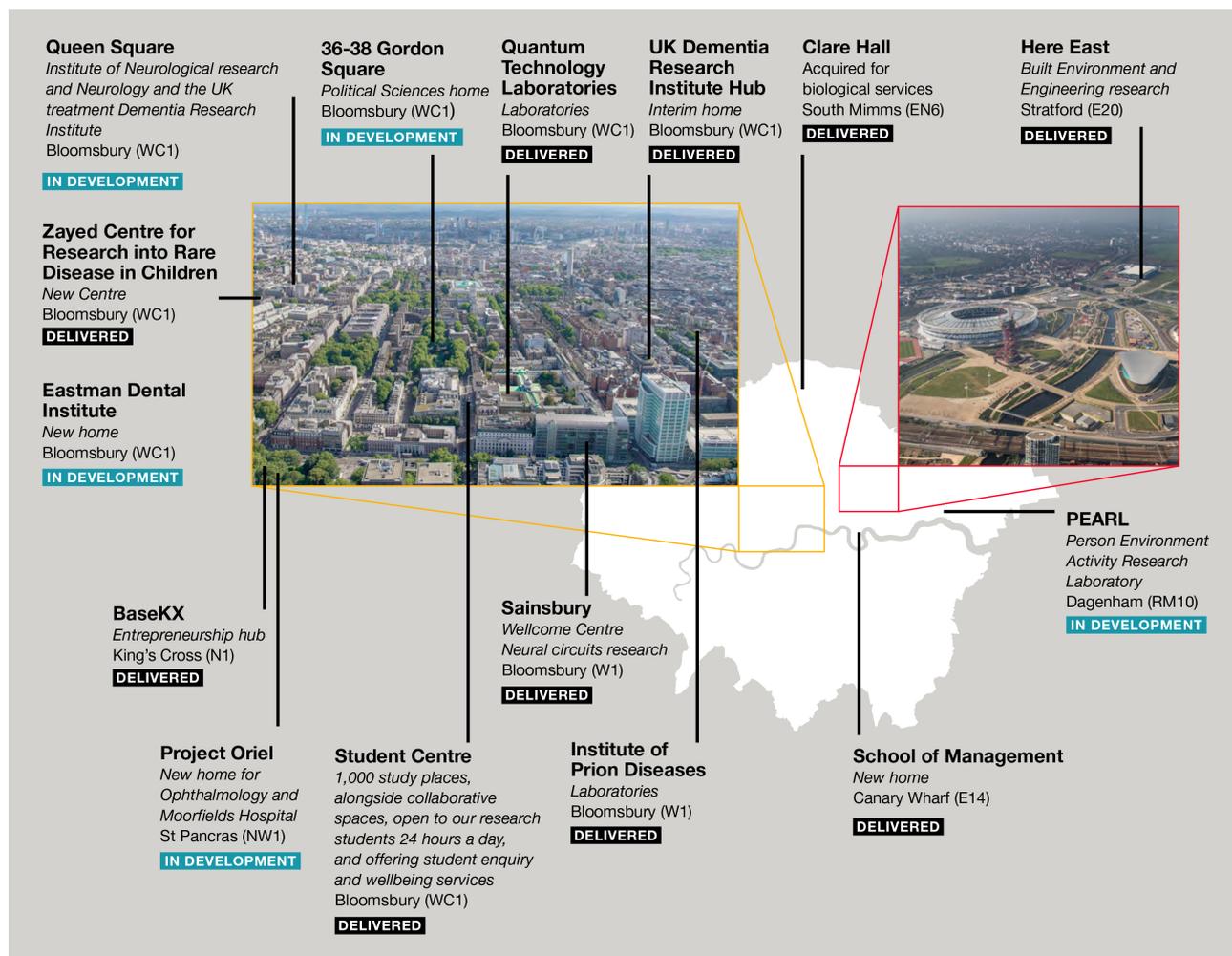
4.2.1 Partnerships

External partnerships provide UCL researchers access to potential collaborators, extending the reach of their work. With increased emphasis in funding calls for multi-partner proposals, **UCLPartners** brings researchers together with >40 NHS partners and the social care industry to harness research and innovation for better patient care and a healthier population. Also the GEO develops partnerships with other global institutions by:

- Running seed-funding programmes
- Organising inbound and outbound delegation visits
- Supporting individual academics, departments and faculties to develop activities, projects and programmes with global partners
- Profiling the world-leading research and education carried out by UCL academics with their partners
- Monitoring and mitigating risks to UCL's international outlook and activity.

4.2.2 Strategic investment

UCL is in the midst of a £1.25bn building and refurbishment programme, **Transforming UCL**, to provide productive and environmentally sustainable working conditions for our community. We have completed 155 capital projects in the REF period, including large-scale building redevelopment initiatives and smaller research enhancement projects.



To maximise access to high-quality and cutting-edge equipment and facilities, we have created seven academically-led **Science Technology Platforms** (Biological Services, Cell Sorting & Analysis, Fish Facility, Genomics, Imaging, Mass Spectrometry and NMR Spectroscopy) which identify the best investment opportunities and reduce duplication or under-use of facilities.

We have developed a **Laboratory Efficiency Assessment Framework** to support PIs in purchasing and allocating resources in a sustainable way (both financially and environmentally).

4.2.3 Operational support

Research IT and data are delivered by a central team of 35 FTE, with academic oversight through the **eResearch Domain**. Investment during the REF period was >£19M. Research computing services provide high-performance and high-throughput computing as well as GPUs and large memory machines. The **Data Safe Haven** service supports 600 studies storing and analysing sensitive data within an ISO27001 and NHS DSP toolkit certified environment. Our **Research Software Development Group** was the first of its kind, and is among the largest (>20 FTE), collaborating with researchers to build and maintain usable, reliable and efficient research software across all fields. We established a **Research Data Support** team to provide guidance on best practice in research data management across the institution, promote UCL's data storage options,

Institutional level environment template (REF5a)

and give hands-on support to researchers with data management planning. We offer a petabyte-scale managed storage service for active research projects, capturing contextual data to facilitate future curation and data management. Our Research Data Repository enables the long-term preservation of selected data beyond the lifetime of a project, with a data publication platform to enable citation and re-use of datasets.

Our annual expenditure on **library materials** is >£10M. Benchmarking against Russell Group Libraries shows us in the highest quartile for aggregate expenditure on resources. Some 90% of this expenditure is on electronic journals, specialist indexing and abstracting databases. The electronic library is complemented by a physical collection of 2M items. Researchers may use any of the 16 UCL libraries, from general subject to specialist collections. Recent comparative collection analysis has shown that 19% of our holdings are unique to UCL. Researchers also benefit from local access to the British Library, the Wellcome Collection and the libraries of the federated University of London.

UCL Culture manages four distinctive **museums and collections**, ranging from Egyptian archaeology to zoology, and art to pathology. Fourteen FTE collections management, curatorial and conservation staff support use of the collection for research. Our 500-seat **Bloomsbury Theatre** and the 70-seat Bloomsbury Studio are available for research-related events, 10 weeks per year, with subsidised use year-round.

4.2.4 Impact

Our **Research Impact** team supports researchers to plan, generate and evaluate their impact, providing a training suite to staff at all levels. The team leads the UCL Impact Network of central and faculty staff and provides a portal to specialist impact-facilitating units. £400K of **Provost's Strategic Development Funding** has been invested in the five-person team.

Grand Challenges is our flagship programme to stimulate cross-disciplinary approaches to global problems, by encouraging researchers to participate through:

- **Small Grants scheme**, facilitating new grassroots cross-disciplinary collaborations between researchers from different academic units
- **Thematic sandpits and larger awards**
- **Commissions**, including the UCL–Lancet Commissions on climate change and health; migration and health; and shaping cities for health.

UCL Public Policy team supports researchers to engage with public policy stakeholders through capacity building, networks and strategic partnerships, opportunities for co-production and knowledge exchange, and policy-focused outputs. During the REF2021 period, 49 placements were provided in 16 government departments.

UCL Innovation & Enterprise manages a range of knowledge exchange and impact creation funding, including the Higher Education Innovation Fund and Impact Acceleration Accounts (BBSRC, Global Challenges Research Fund, Natural Environment Research Council, Science & Technology Facilities Council and ESRC).

UCL Consultants Ltd provides a well-regulated platform for academics to engage in consultancy, capacity-building and bespoke short-course development through commercial and contractual

Institutional level environment template (REF5a)

aspects; costing; project management; and professional indemnity cover. Annual consultancy income has increased from >£4.6M to >£15.3M over the REF period.

UCL Business (UCLB), a technology transfer company of UCL and its partner NHS Trusts, supports the identification, development, protection and commercialisation of technologies emerging from UCL. It provides businesses seeking specific technology solutions with the legal expertise and administrative support required to broker licensing agreements with academic partners and offers researchers guidance on innovation to impact, including support for setting up spin-outs and protecting intellectual property. UCLB provides access to broad networks of investors and funding, including the £50M UCL Technology Fund, launched in 2016, and other specialised funds. UCLB has broadened its support of social enterprises, with a new dedicated fund and support staff launched in 2019.

Proof of Concept	22	£5,360,000
Licensing projects	13	£17,160,000
Spin-outs	27	£28,390,000
Apollo Therapeutics	14	£7,872,093
Active Licences	2,583	£44,614,164
Spin out Equity Realisation		£28,074,729
Total Patent applications	2,558	

The **Translational Research Office** (TRO) provides end-to-end translation for UCL and its partner hospitals, supporting the development of early stage research on therapies and interventions into projects attractive for translational funding or further development in partnership with industry. Since 2013, the TRO has funded 104 projects with >£7.4M. The TRO's Therapeutic Acceleration Support scheme consolidates funding from the MRC Confidence in Concept scheme, Wellcome Institutional Strategic Support Fund and the three Biomedical Research Centres affiliated with UCL: University College London Hospitals NHS Foundation Trust, and Great Ormond Street and Moorfields hospitals.

Our **Communications & Marketing** team advises researchers on media interaction and supports research impact at a grassroots level. They also produce a number of podcasts, including UCL Minds.

Our **Public Engagement** team supports a culture of engagement including advising on funding applications and evaluation, facilitating cross-departmental networks, brokering relationships with UCL's local communities in Camden and East London, and supporting international projects. During the REF period, the team has delivered training to 3,015 people, and supported 1,417 projects and activities.

Strategy beyond REF2021

We will continue to work towards fulfilling the aims of our **2019 Research Strategy**, supporting openness, diversity, equity and sustainability.

Research leadership: we believe better and more insightful research is carried out by diverse teams and will increase diversity through:

- Recruiting from the widest possible talent pool to ensure a diverse and open research community, working with and empowering people from under-represented groups to develop systems and change cultures to ensure that research leaders, particularly those at higher career levels, reflect the communities they serve
- Championing broad definitions of research leadership, at all career stages
- Exploring ways to overcome the precariousness of early stage research careers
- Encouraging our researchers to **cross traditional boundaries** between disciplines and groups by supporting participatory research, co-creation and co-production, and civic and public engagement.

We will pursue **responsible impact** with sustainable, ethical and socially desirable outcomes. The creation and application of knowledge will be guided by the interests of stakeholders, such as community and civil society groups and we will strive to anticipate the needs of people whose voices may not be heard. While we continue to nurture ideas arising from academics' concerns and curiosities, we will focus on those activities with the potential to contribute to the resolution of aspects of social problems. We are adopting the **UN's Sustainable Development Goals** as a framework through which we engage with research priorities, and address socioeconomic development issues, at the global, national and local levels.

In keeping with one of our cross-cutting themes, we will '**Exert our institutional influence for the greater good**', using our voice to help shape the environment in which academic endeavour takes place, to influence others' thinking and to advocate rational, evidence-based and inclusive decision-making.