

Institution: University College London (UCL)
Unit of Assessment: 23 (Education)
1. Unit context and structure, research and impact strategy

1.1 Overview

Mission and vision

- 1.1.1 Our research mission is to inspire and nurture excellence in education and social research, and is underpinned by a strong commitment to social justice. We want our research to improve lives by enhancing educational access, experiences and outcomes, and by promoting education as a means of addressing national and international societal challenges. Integral to our mission is the enthusing and engagement of our staff, students and partners in shaping education and social research across the world. Our aim is to be a beacon of excellence and a global resource of expertise and evidence for policy-makers, practitioners and the wider public.
- 1.1.2 Our Unit is highly distinctive in its scale, scope and impact. We have a broad social scientific understanding of 'education', attending to its interdependencies with other social domains. This is reflected in the span of our research across education, professional formation and lifelong learning, children and families, psychology and special needs education, health and well-being, art and culture, international development, digital technologies, and work and labour markets.
- 1.1.3 The Unit's research strategy prioritises research distinction, including through: innovation; advances in and through interdisciplinarity; furthering research-informed policy, practice and public debate; and combining these features to enhance research impact. We embrace a variety of methodologies, disciplinary perspectives, ideas and networks, fostering a vibrant and sustainable environment based on the ethos of inclusion, collegiality and opportunity. Sharing wisdom, knowledge and experience, our diverse community and inclusive approach allow everyone space to develop and flourish.
- 1.1.4 We continue to build our research intensity whilst maintaining scale and breadth, and to extend our outward-facing research engagement to have a positive influence on the development of individuals, institutions and societies. We are proud to contribute significantly to the UK's considerable portfolio of world-leading research on and for education. This includes our support for the foundation disciplines (sociology, psychology, history and philosophy) and retention of important areas of research specialism such as museum education and music education. We are conscious that our size brings responsibilities in relation to developing collaborative and productive relationships with partners and stakeholders, whilst also promoting the use of robust evidence to inform critique and propose solutions.

Size and shape

- 1.1.5 Our submission encompasses 353 academic staff (FTE= 317.02), which compares with 227.2 FTE submitted in REF2014. The UCL Institute of Education (IOE) comprises the major part of our 'Unit' (N= 338, FTE= 303.12). This is augmented through our collaboration with UCL's Research Department of Medical Education (N= 14, FTE= 13.1) and UCL's Department of Science and Technology Studies (N= 1, FTE= 0.8).
- 1.1.6 The Unit comprises seven departments (six in the IOE and one from UCL Medical School), which together host 40 research centres. As well as diverse areas of education and

national and international lenses, they draw on, and contribute to, the disciplines of, among others, applied humanities, communications science, computer science, economics, history, linguistics, philosophy, psychology, public health, social policy, and sociology. The departments are:

- **Culture, Communication and Media** covers research in the humanities and communications, from applied linguistics through to museum education, human-computer interaction and 'ed tech', as well as research relating to the school curriculum subjects of art and design, English, languages and music.
- **Curriculum, Pedagogy and Assessment** covers the majority of our expertise in these topics, mainly but not exclusively relating to secondary education, and the school curriculum subjects of citizenship, economics, geography, history, mathematics, religious education and science.
- **Education, Practice and Society** covers research on vocational, further and higher education, and workplace and lifelong learning as well as in the history, philosophy and sociology of education, comparative education and international development.
- **Learning and Leadership** houses research on learning and leadership in childhood, early years and primary education, school leadership and improvement, and education policy, with a strong focus on the challenge of equalising educational opportunities.
- **Psychology and Human Development** is the only UK university psychology department devoted to work in developmental psychology, particularly its application to education, other real-world settings and special populations, with a growing body of work in educational neuroscience.
- **Social Research Institute** covers research on education (mainly large quantitative studies), as well as on children and families, health and wellbeing, and the labour market, and includes systematic reviews, 'research on research use' and four major longitudinal cohort studies.
- **Research Department of Medical Education (RDME)** houses an interdisciplinary team (clinical, education, health and occupational psychology, linguistics, sociology) tackling key research priorities in medical education, including social justice (differential attainment and gender), and selection and assessment of the medical workforce.

Research Centres

- 1.1.7 Our research centres underpin our research culture. All centres are located within a host department and act as important 'homes' for staff and research students. They serve as incubators for new ideas and projects and provide vehicles for nurturing research careers and research leaders through mentorship, workplace learning and teamwork. Centre Heads monitor and share information about activities and achievements as an integral part of our Annual Research Report process (see para 1.3.4). This feeds into strategic discussions at departmental and faculty levels about the need for changes in the range of centres, the roles they are playing and the contributions they are making.
- 1.1.8 The centres range from unfunded groupings of colleagues with cognate interests (e.g. the Centre for Applied Linguistics, the Centre for Language, Literacy and Numeracy, the International Centre for Historical Research in Education) through to major, longstanding units with multiple sources of funding (e.g. the Social Science Research Unit, now in its 21st year, and the Thomas Coram Research Unit, now in its 47th year). They generate vibrant programmes of events and developmental opportunities, including support for research bidding and publications. Signalling the dynamism of the research environment and efficacy of our review processes, some centres are relatively short-lived as colleagues' research priorities evolve, or are refocussed (e.g. the Special Educational Needs Joint Initiative for Training recently became the Centre for Inclusive Education reflecting its broadened remit beyond special educational needs).

1.2 Research strategy and objectives over the current REF cycle

- 1.2.1 Our statement is informed by the collaborative opportunities – in relation to disciplinary expertise, facilities and infrastructure – afforded by the IOE's merger with UCL in December 2014. It presents the collective work undertaken to develop the vitality and sustainability of our research environment, grounded in UCL's Research Strategy: *'to inspire and empower research leadership; to cross boundaries to increase engagement; and to deliver impact for public benefit'*. To complement the IOE's longstanding tradition of locating education research within broader social science, we have intensified our efforts to promote and facilitate interdisciplinarity across a broader range of areas. We have employed five strategic objectives to further our mission and vision over the current REF cycle. These are stated and illustrated in turn.

Objective 1. Sustain the Unit's scale and breadth of education and social research (lifelong, across the whole life course, and life-wide, across the domains of social life).

- 1.2.2 Our continued commitment to breadth frames colleagues' ongoing research activity, is conducive to innovative connections and productive collaborations, and underpins our strength and vibrancy. We continue to sustain our responsibilities in protecting education research specialisms. Accordingly, we have kept our ability to conduct research across a broad spectrum under close review. Research areas evolve and this is signalled in new appointments and centres. We have used investments to reconfigure our existing expertise in novel ways and seed further recruitment in those areas (para 2.1.4).
- 1.2.3 We have established two philanthropically-funded centres in early years/primary education – the Helen Hamlyn Centre for Pedagogy (0-11 years) (**Wyse, Bradbury** et al.) and the Chinese Centre for Research and Practice in Teacher and Early Years Education (**Brooks** et al.). Whilst having distinctive remits, the teams are working synergistically to re-grow our profile and capacity in early years research following the end of a major, impactful longitudinal research programme, Effective Pre-School, Primary and Secondary Education (EPPSE).
- 1.2.4 We have made substantial long-term internal investments totalling £10m in creating two 'flagship' research centres. The Centre for Education Policy and Equalising Opportunities (**Macmillan, Wyness, Anders** et al.) undertakes cutting-edge research on tackling inequalities across the life course and foregrounds the implications for education policy. It advances methodological expertise in evaluations, trials and econometric analyses. The Centre for Teachers and Teaching Research (**Mills, Taylor, Hardman** et al.) is building a distinctive profile for our mixed-methods research in teacher education, in the process helping to reinvigorate this area of research internationally.

Objective 2. Build capacity for our research to engage with and have an impact on public debate, policy and practice.

- 1.2.5 We established a Research Engagement and Impact Committee in 2014-2015 to strengthen strategic oversight and coordination of this objective. Acting as a leadership and expertise hub, the committee comprises academic engagement and impact leads and professional service specialists with related remits (i.e. communications, policy and public affairs), as well as colleagues from UCL's central support services. As part of their remit, our research centres identify and foster close working with relevant stakeholders. To support these aspects of their work, we have created specialist academic and professional services roles focusing on engagement and impact, and providing training to catalyse and grow individual and collective capability to generate impactful research. Our REF2021 Impact Case Studies (ICS) are just one illustration of the Unit's ability to make a positive impact on the development of individuals, institutions and societies, facilitated through our

productive relationships with non-academic stakeholders whose experience and expertise complement and augment our own.

Objective 3. Sustain methodological rigour and innovation as a key pillar in our research excellence and contribution to the wider social science infrastructure.

1.2.6 The Unit has a strong tradition of methodological research and experimentation, and enhancing this expertise and capacity is a core element in our strategy. In the current cycle, particular areas of innovation include:

- The launch of CREATE (Conducting Research, Evaluations and Trials in Education), a partnership with the Behavioural Insights Team focused on practice and innovation in educational trials (**Anders**).
- The extension of multimodal research and data collection on the affordances provided by haptics and wearables (**Jewitt** and **Bezemer**).
- The Centre for Time Use Research (**Gershuny, SullivanO** et al.) joining from Oxford in 2019, to further advance our work using population-representative samples (via time use diary data) to explore social and behavioural trends.
- The development of new tools and software for systematic review and evidence use (**Thomas, Gough, OliverS** et al.) (see associated ICS).
- Harnessing psychometric expertise in selection and medical assessments to create the UK Medical Education Database (UKMED) (**McManus**) (see associated ICS).

1.2.7 Our leadership of world-class data resources is a major contribution to our own, and more widely to the UK's, education and social research infrastructure. Most notably, we host four longitudinal national cohort studies and the Cohort and Longitudinal Enhancement Resources (CLOSER) centre (funded by ESRC, MRC and others), offering the highest standards in the collection, curation, integrity, accessibility and discoverability of these data. This includes an extensive range of specialist training, addressing the growing opportunities for data-linkage, harmonisation, biomedical data collection and the innovative analyses these enable. Our specialist data managers and technicians support these and many other surveys used by researchers nationally and internationally including the English national study centre for the OECD's Teaching and Learning International Survey (TALIS) (2013-15), the Skills and Employment Survey (2017) and the Trends in International Mathematics and Science Study (TIMSS) (2019).

Objective 4. Deepen and diversify our research collaborations, crossing boundaries further to increase the reach and significance of our societal impact.

1.2.8 Inspired by our social justice mission and values, we have enhanced our capacity for nurturing new and existing partnerships. This is an important focus for our Research Development team, which was established in 2016 and is led by **DaviesL**.

1.2.9 Our collaborations run along three dimensions: disciplinary (within and beyond education and broader social science), sectoral (e.g. public, third and private sectors), and geographical (local, national, and global). This has enabled us to grow our knowledge exchange with policy, practice and service-user communities, and to respond to a broader range of challenge-led research opportunities. As well as increasing the 'grassroots' relevance of our work, it has enhanced our capacity to cross boundaries. Specific examples of such activity include the Centre for Inclusive Education (**Brackenbury, Roberts** et al.) working in partnership with a large number of schools across the UK, and the Pan-London Autism School network bringing together autism school leaders and researchers (**Crane, Remington** et al.).

1.2.10 International partnerships are integral to our mission to improve access to education globally. We work in close collaboration with the Department for International Development (DfID) (latterly FCDO), and agencies such as the World Bank and the United Nations

Children's Fund (UNICEF). Our research and development activities on gender-based violence in schools (**Parkes** and **Unterhalter**) involve deep collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO), in-country agencies and partner universities in Africa (see associated ICS). **Dearden**'s work with international policy-makers is transforming the design and fairness of Higher Education student loan systems around the world (see associated ICS).

- 1.2.11 We use seed funding schemes to encourage collaboration to tackle complex areas of research and to support early career researchers. For example, the interdisciplinary IOE Collaborative Seed Funding Scheme (£440k) generates innovative research proposals and intergenerational research teams (para 1.5.4).

Objective 5. Provide a dynamic and inclusive environment in which to build research careers.

- 1.2.12 The quality of our research is rooted in the Unit's staff and the steps we take to cultivate a facilitative and empowering workplace *for all*. The next section outlines how we have developed our research governance structures, professional services and research community. This has enabled us to respond quickly to the COVID-19 pandemic. Within weeks of the first national lockdown, our researchers secured external research funding and swiftly repurposed existing projects to create more than 60 projects addressing some of the critical educational and social pandemic-related challenges.
- 1.2.13 In our workforce planning we have emphasised two elements: equality, diversity and inclusion (EDI); and the development of research leadership skills at all career stages. We take an equity-based approach, informed by data and analysis that recognises colleagues should have equal access to assistance and resources, whilst some groups will require targeted and bespoke support to progress their careers and take on leadership positions. Our recently refreshed Early Career Network (see Section 2), sponsored by the IOE's Director and Pro-Directors, is helping us prioritise and address the particular needs of this group.
- 1.2.14 To enable more colleagues to gain experience of research leadership and earlier in their careers, and to support our succession planning, we have created new roles (in addition to Research Centre Heads), including departmental Heads of Research and leads for engagement and impact, ethics, enterprise and inclusion. This creates a pipeline to senior leadership roles, including as Heads of Department (**Ang**) and Pro-Directors (**OliverM**). Several of the Unit's staff have also taken on research-related leadership positions within UCL (e.g. as Chairs of the UCL Collaborative Social Science Domain, UCL Grand Challenges groups, the UCL Research Ethics Committee).

Research priorities for next REF cycle

- 1.2.15 All REF cycles are associated with societal change that shapes research. To address the particularly momentous challenges now arising as we enter the next cycle, our research will orientate even more strongly around 'grand challenges', linked where appropriate to the UN's Sustainable Development Goals (SDGs). We will develop and mobilise cross-centre networks of expertise to push forward research priorities and accelerate the growth of our collaborative activities with the RDME and other UCL faculties. We will bring even greater ambition to extending interdisciplinarity across social and non-social science disciplinary borders. A key principle underpinning the coordination of our efforts will be to ensure that 'the whole is more than the sum of its parts'.
- 1.2.16 To enhance the relevance and impact of the Unit's research, we will grow our partnerships, engagement, exchanges and secondments to make the boundaries between the Unit's academics and policy and practitioner audiences even more permeable. We will use our infrastructure, scale and expertise to achieve a step change in the way that we both curate

and coordinate networks of activity, and lead informed, authoritative debate on the key questions for education and related domains and how to address them.

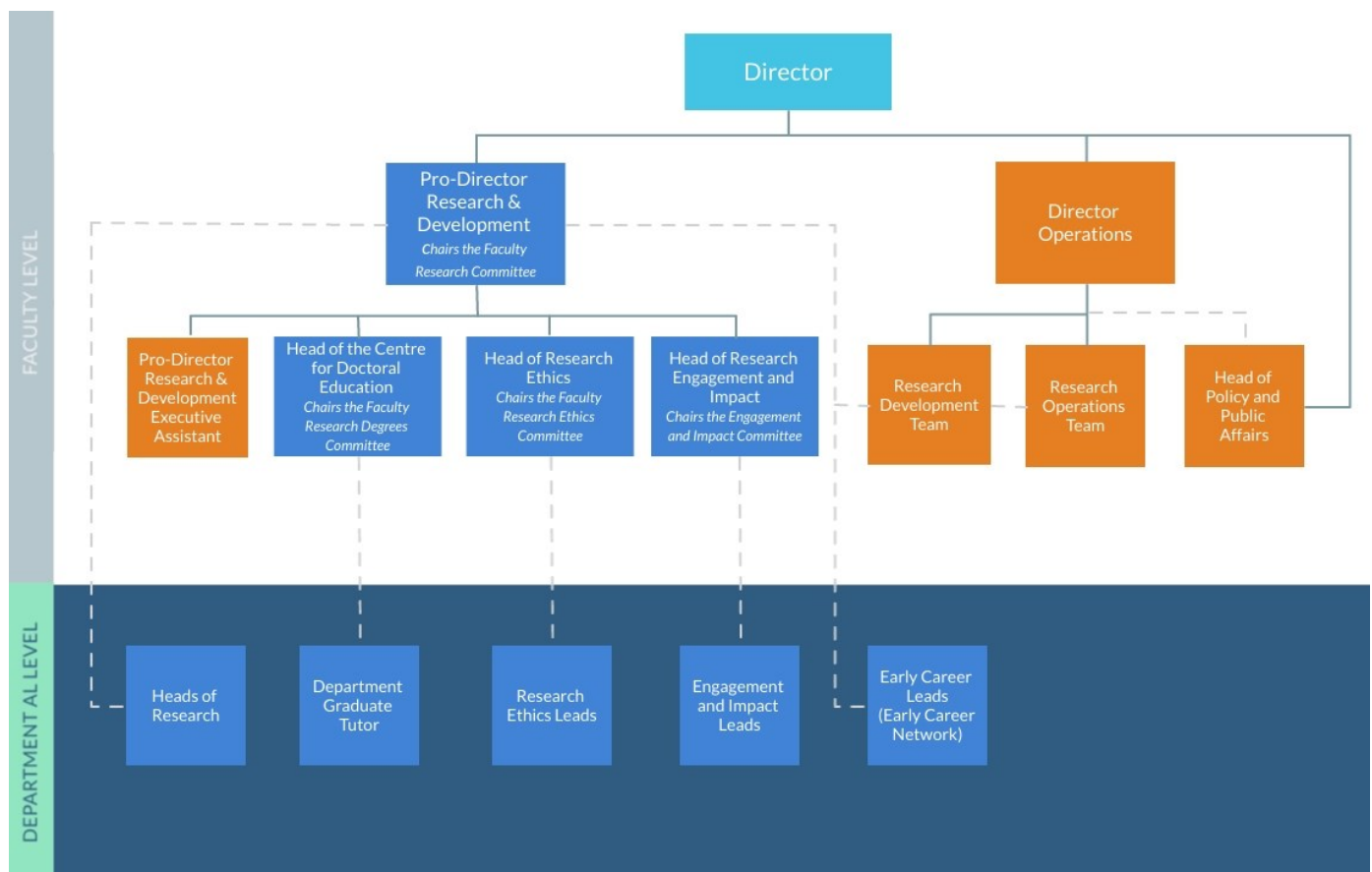
- 1.2.17 We will foreground our interdisciplinary contribution to research advances in key substantive areas, including foci cultivated during the current cycle through our seed funding. This will include: the science of learning; educational and structural inequalities; digital media education; global early childhood education and development; youth transitions; mental health; social and health deprivation; professional education (including teacher and medical education); future work and skills; social connectivity in the digital age; and education for climate awareness. We will make new senior appointments in vocational education and technological change, geography and environmental education, health and child development. To elaborate on just a few of these areas, we will pursue the necessary bridging work between education, implementation science, cognitive psychology and neuroscience in developing the science of learning, and especially our capacity to inform understanding of the fundamental processes involved in learning and how these can be harnessed in different contexts. Our contribution will be to build this evidence base in a way that values neurodiversity, bolsters teacher agency and versatility and enhances learner agency and outcomes. Our research in digital media will expand as part of UCL's major new campus in East London, 'UCL East'. This represents a major opportunity to work closely with UCL researchers in the arts and humanities to make a leading-edge interdisciplinary contribution to understanding cultural transformation, the teaching and learning potential of new media, and how this can empower individuals and social groups.
- 1.2.18 We will use our research expertise in vocational education, lifelong learning, employment transitions and labour markets, and our involvement in the cross-faculty (IOE and UCL Faculty of Engineering) Centre for Engineering Education as springboards to address the challenges of educating and training for digital work futures, the green economy, and the scarring effects of unemployment. Curating and building on our diverse health-related research will also be a strategic priority in the next cycle. Our work in this area is already extensive and diverse but has been given added impetus by our engagement in interdisciplinary projects associated with COVID-19. This includes the development of new UKRI and ESRC funded cohort studies tracking young people's well-being, education and employment trajectories (**Anders** et al; **Henseke** et al.), as well as new waves of bio-medical data collection in our existing birth cohort studies (**Goodman** et al.).
- 1.2.19 We will further enhance capability for methodological innovation, with a particular focus on new forms of data collection and analysis, and data science. We will gather data via 'wearables' to provide new insights across social domains, including in relation to trends in time use. The collection of data from technology that stimulates the senses of touch and motion (haptics) has the potential to enhance understandings of daily experiences and their implications for wellbeing, learning and expertise. We will seek to draw on such data across more of our work and increase our capacity to analyse 'big data'.
- 1.2.20 The coming REF cycle presents new workforce priorities. We will accelerate our efforts in relation to EDI via enacting our Athena Swan Bronze award (2020) Action Plan and applying for a Silver award. Our Early Career Network will help us to address matters of inter-generational fairness in the career profiles of our workforce. To further enhance the quality of our physical and online workplace, UCL will invest £100 million to develop the IOE's buildings into a world-leading physical estate (with a world-leading digital infrastructure) for research.

1.3 Key research structures and roles

- 1.3.1 Since 2014, we have designed organisational structures (see Figure 1) to promote research sustainability, productivity and capacity building in research skills and leadership. Academic

and specialist professional services teams provide the resources and expertise to support key components of research activity.

Figure 1. IOE research organisational chart. Blue squares represent academic roles and orange represent professional services.



1.3.2 The Pro-Director Research and Development (**Fuller**) oversees the Unit's research strategy. In 2015, to foreground and better co-ordinate efforts around our strategic priorities, we created Heads of Research roles for every IOE academic department, with committed time to enhance the quality and inclusiveness of the research environment and its capacity to foster excellence. We also established research leadership roles (all with dedicated time in workloads) and associated committees for Engagement and Impact, Research Ethics, and the Centre for Doctoral Education (CDE). Specialist professional services teams complement this new academic capacity. The Research Department of Medical Education (RDME) is led by its Director of Research (**Griffin**), with professional support provided by the Research Manager and Research Administrator.

1.3.3 The Pro-Director convenes regular meetings with the departmental Heads of Research focusing on developmental issues and initiatives and the sharing and promoting of ideas and best practice. To deepen collaboration and facilitate greater connection with the RDME, **Griffin** joined the IOE's Research Committee and attends the departmental Heads of Research meetings. RDME colleagues have been involved in REF-specific panels and discussions to develop our Unit submission and further strengthen our relationship.

Review and reporting processes

1.3.4 Each department produces Annual Research Reports and Research Action Plans. These have proved to be effective mechanisms for facilitating departments and their research centres to reflect on their achievements and to plan towards meeting their strategic goals. This process is supported by the Research Development team, which provides report

templates and ongoing information and data on staffing, research bids, research outputs and impact. The reports provide a basis for formative discussions between the Pro-Director, Heads of Department, Heads of Research and professional services leads. They enable us to identify emerging or growing areas of research activity (e.g. mental health) that would benefit from cross-unit co-ordination, as well as to tailor learning and development activities to colleagues' needs (e.g. around bids, publications and impact).

- 1.3.5 In 2018, following a review and cross-IOE working group coordinated by the Research Development Manager (**DaviesL**), we introduced termly research induction workshops and a handbook for all new starters with responsibility for research and existing colleagues wishing to refresh their knowledge about sources of support for their research activity. The workshops introduce colleagues to senior research leaders, our Early Career Network, and relevant professional services teams from the IOE and wider UCL. The provision is well-attended with over 30 attendees per session and the positive feedback shows it enables participants to understand and navigate a range of research services, meet key colleagues and build their networks.

1.4 Enabling and facilitating impact from research

- 1.4.1 Building capacity to fulfil our strategic objective to make a positive contribution to the lives of individuals as well as wider society is integral to the achievement of our mission. Over the current REF period, and to these ends, we have pursued an expansive engagement and impact strategy, investing in academic and related professional services roles, and diversifying the range of activities and assistance we have been able to offer. We have created seven specific academic posts with allocated time to extend impact leadership and capacity, representing an average yearly investment of approx. £50k. The Head of Research Engagement and Impact (0.2 FTE), initially **Pollard** and succeeded in early 2019 by **RogersL**, supports and oversees six departmental Leads for Engagement and Impact (0.1 FTE minimum each). In 2016, we appointed a dedicated full-time Research Impact Manager (**Souteiro Dias**) to work closely with the Head of Research Engagement and Impact, departmental leads and alongside our public affairs and communications teams. Our Head of Policy and Public Affairs (**Wisby**) provides ongoing advice and guidance on pro-active and reactive engagement with external audiences. Supported by these resources, we facilitate and foreground the importance of bringing together highly experienced academics, professionals, doctoral students, early career researchers, research users and beneficiaries with the objectives of: (i) making authentic impact and knowledge exchange a key consideration in all projects from their outset; and (ii) building a collaborative, open and inclusive ethos underpinned by a commitment to engage external stakeholders at all stages of research projects.
- 1.4.2 These objectives frame the development of existing and new engagement and impact activities, including podcasts, public events and policy briefings (see Section 3), as well as the content of our training and development provision. Ongoing one-to-one support and termly open workshops address gaps in knowledge and disseminate best practice, championing impact across our research practice. This has helped to grow impact literacy and embed a strong culture of engagement and impact across our research from inception to dissemination. One way in which our commitment to public engagement can be illustrated is through our launch of the *Research for All* journal in 2017 as a joint venture with the National Co-ordinating Centre for Public Engagement (NCCPE) to publish peer-reviewed articles discussing the process, challenges and benefits of engaging diverse publics with research. The IOE's **OliverS** and Sophie Duncan from NCCPE are Editors-in-chief. Approximately half the articles are co-authored by research partners outside academia. The team won UCL's Institutional Leadership Award for Public Engagement in 2019.
- 1.4.3 Since 2016, our researchers have won five major external Engagement and Impact awards:

- The ASPIRES team (led by **Archer**, Lead of associated ICS) won the ESRC Celebrating Impact Award in 2019 and the British Educational Research Association (BERA) Public Engagement and Impact Award in 2018 for their research on *Science Capital and Educational Inequalities*.
- **Fitzsimons** and **Patalay** (Leads of associated ICS), **SullivanA** and **Remington** were finalists in the ESRC 2020 competition, with Fitzsimons and Patalay winning the Panel's Choice Award.
- **Webster** (Lead of associated ICS) received the BERA Public Engagement and Impact Award in 2019 for the *Maximising the Impact of Teaching Assistants* project.
- **Bradbury** and **Roberts-Holmes** won the BERA prize in 2016 for most impactful education research, with *Challenging Reception Baseline Assessment*.

Selection process for our Impact Case Studies

- 1.4.4 Our use of robust evidence to inform and influence policy and practice at local, national and international level has produced our portfolio of ICSs for REF2021. Through key partnerships, these case studies demonstrate how our research is making a direct and demonstrable societal difference in over 26 countries. Our ICSs reflect a team effort involving the researchers, their collaborators, and academic and professional services support. The shortlisting process, begun in 2017-2018 with an open call, identified over 90 potential case studies. A dedicated panel assessed each potential ICS in terms of its underpinning research and the reach and significance of its impact. At each stage, we provided authors with constructive feedback, encouraging the continued development of their work. It has been a priority to recognise their commitment and celebrate cases of impact beyond the submitted ICSs.
- 1.4.5 The 13 submitted ICSs illustrate the Unit's wide-ranging impact on policy, practice, research capacity and the wider public. For example:
- Research by the Centre for Holocaust Education (**Foster, Pettigrew** et al.) led to a step-change in how this history is taught in schools, with its teacher development programme benefitting more than 11,000 English secondary school teachers and their pupils. Their evidence informed the UK government's Holocaust Learning Centre and their work with UNESCO reaches teachers around the world.
 - Research led by **McManus, Woolf** and **Dacre** (RDME) into the equivalence of undergraduate medical degrees, differential attainment in post-graduate medical education and doctors' fitness to practise led to improvements in quality and fairness in medical education, impacting on 100,000 medics.
 - **Fitzsimons'** and **Patalay's** research tackling mental ill health among young people has greatly influenced public understanding as well as policy and practice. To help communicate the distinction between mental health and wellbeing, the researchers translated complex statistical analysis into an infographic used by practitioners and policy-makers.
- 1.4.6 Beyond our ICSs, other notable examples of engagement and impact include **O'Brien's** research on approaches to parental leave within the European Union. Her research has developed an evidence-base about the importance of designing policies that support fathers to take time off from work after the birth of their children, as a way of enhancing relationships and bonding during this key period, as well as gender equality in the home. This work informed the European Commission's proposal for a new Work-life Balance Directive which came into force in 2019. In another example, **Wyness'** research on A-levels has shown that predicting A-level grades accurately is near impossible, and particularly disadvantages high achieving pupils from poorer backgrounds. Her evidence has added weight to the case for reforming university admissions. Following the 2020 qualifications crisis, the need for a better approach became even more pertinent. **Wyness'** work was cited as the key piece of research evidence informing the Education Secretary's

announcement of a review of the system and potential move to post-qualification admissions.

1.5 Supporting and enhancing interdisciplinary research

- 1.5.1 We view Education as a complex discipline within which various specialist tools and theories are deployed. Some are intrinsic to Education whilst others are drawn from complementary disciplines. Thus, our researchers frequently investigate substantive educational topics in the broad fields of the arts, humanities, life, medical and engineering sciences using new methodological and theoretical approaches. Using the REF2021 definition of interdisciplinary outputs, we have identified a significant proportion (15.9%) of our submission as meeting the criteria from across all the Unit's departments.
- 1.5.2 Facilitating and investing in interdisciplinary research is highly relevant to our ability to meet our strategic objective of '*crossing boundaries to further increase the reach and significance of our societal impact*' and generating novel insights to address complex social challenges. Fostering interdisciplinarity is a key component of UCL's research strategy, and we help to direct this mission through our role in the UCL Research Domains. **Fuller** was the founding (2016) Chair of UCL's Collaborative Social Science Domain established with the aim of increasing the university's research collaborations across the social and non-social sciences (**Jewitt** was appointed Chair in 2020). RDME Director (**Griffin**) and **Schoon** are members of the domain's steering group. **Knight**, an RDME senior research fellow, co-chairs its early career research group.
- 1.5.3 The IOE has been awarded three of the seven small grants that have been funded through the domain's annual Social Science Plus research competition. This includes **Hurry's** feasibility study for implementing Mental Health Support Teams in Further Education Institutions (2019-20). **Hurry's** research brings together expertise from education, brain science and psychology with professional groups working on young people and mental health. We have also encouraged our researchers' involvement in shaping and participating in the UCL Grand Challenges initiative as a developmental opportunity and for the access it provides to wider disciplinary and faculty networks. Our researchers have been involved in 31 of the initiative's funded projects during the REF cycle. The initiative's small grant (£4k) for the *BiLingo* project (**Argyri, Li Wei** et al.) provided communities and key agencies with contemporary research-based advice, information and training on childhood bilingualism/multilingualism and learning English as an Additional Language. It led to the development of a successful bid (£305k) to the Leverhulme Trust to examine the effects of early childhood bilingualism on brain function and brain structure. Our researchers have also been active in pursuing and securing over £314k of funding offered by competitive institutional schemes (REF5a), including from UCL's Global Engagement Office, Grand Challenges, Public Engagement Unit, Public Policy and Research Domains.
- 1.5.4 The Unit's collaborative interdisciplinary seed grant initiative (para 1.2.11) generated eight awards in December 2019 to nurture future research leaders and produce successful large research bids in the next REF cycle. The projects span the breadth of lifelong and life-wide education and social research, facilitating partnerships across UCL and with external collaborators. For example, **Bezemer's** team is working with the London Ambulance Service and UCL Crime Science to evaluate body worn cameras for paramedics to improve their safety and wellbeing at work. This pilot work will inform a national evaluation programme working with NHS Improvement and NHS England. **O'Brien's** team is collaborating with the UCL Great Ormond Street Institute of Child Health, Tower Hamlets and Bradford local authorities and the Finnish CHILDCARE consortium to investigate how parents of low-income families manage paid work and care responsibilities, and the impacts on children's and parents' health and wellbeing outcomes.

1.6 Commitment to and strategy for open research environments

- 1.6.1 In line with UCL's Research Strategy, open research and open data are a central element in our commitment to responsible research (REF5a). The accessibility and discoverability of our work amplifies its availability to diverse audiences, as well as our academic peers.

Support, repositories and platforms

- 1.6.2 We require colleagues routinely to upload their accepted manuscripts to UCL's Research Publications Service (RPS), providing open access through UCL Discovery – the university's research repository. Staff are helped to engage positively with the open research agenda in a variety of ways. Importantly, we have a dedicated Research Support and Special Collections Librarian (**Bhimani**) who trains and supports staff and research students in information and digital skills including: the use of software for managing information and data sources; research data management; copyright and intellectual property rights; publishing research and data in peer-reviewed and open access platforms; and harnessing the powers of the social web for promotion, networking and dissemination. She works closely with our Centre for Doctoral Education (CDE), the Research Development team and UCL Open Access teams to ensure co-ordinated assistance. The importance of open research is also highlighted in our termly research induction workshops. These efforts have ensured that 97%¹ of our outputs in RPS have been made open access and 84% of our Category A colleagues have their ORCIDs linked to RPS.
- 1.6.3 A key feature of our approach to open research is engaging with the wider research community. For instance, the Centre for Longitudinal Studies (CLS) consults researchers and stakeholders about the content of each cohort survey to ensure respondents are asked the questions that matter to dataset users. When each survey is complete, the data are cleaned and deposited with the UK Data Service and are then available free-of-charge to researchers globally. We also share our vast experience of survey methodology, regularly collaborating with survey teams from other studies and leading national and international events to discuss and share practice. During the assessment period, over 1,900 outputs based on our cohort datasets have been published by researchers from around the world.
- 1.6.4 The Unit's open access Digital Education Repository Archive (DERA) has established itself as the national resource for education, providing a unique digital archive of documents published electronically by government and related agencies in the areas of education and training, and children and families. DERA was setup to address the increasing number of publications available only in electronic format, the problem of broken links, churn in government agencies and 'disappearing' documents. It is valued internationally and received over 114,000 visits in the last year and over 500,000 page views. We will expand DERA's scope and reach to include digital publications from charities, think tanks and pressure groups. Other projects include the development of a repository of digitised examination materials, including exam papers, examiner reports and syllabuses – a unique resource for research on assessment and testing and curriculum development, as well as studies in the history of education. The majority of the funding for these initiatives was from internal investment from UCL Library Services (£50k), complemented by small grants from Jisc (£10k), Wellcome (£6k) and Higher Education Innovation Funding (£20k).
- 1.6.5 Between January 2015 and January 2019, the IOE developed, funded and published a suite of five diamond open-access journals: with free access for readers and contributors. In 2020, the journals transferred to the open-access scholarly publisher, UCL Press, which now funds their publication. All five are listed in the Directory of Open Access Journals (DOAJ). They are *Research for All* (**OliverS**, co-editor); the *London Review of Education* (LRE) (**Starkey**, editor); *International Journal of Development Education and Global Learning* (IJDEGL) (**Bentall**, editor); *Film Education Journal* (**Burns**, associate editor);

¹ This Figure includes outputs that fall under the OA exception policies.

History Education Research Journal (**Chapman**, editor), which converted to 'open access' during the current REF cycle, resulting in significant increases in article downloads. For example, in the initial year of the period, articles in the LRE (then a subscription journal) were downloaded approx. 13,000 times with this number increasing to approx. 25,000 in 2020. In its last year as a subscription journal in 2016, articles in IJDEGL were downloaded just over 700 times, increasing to approx. 5,500 downloads in 2020.

1.7 Sustaining research integrity

- 1.7.1 Ethics and integrity are vital to the credibility of our research. All research projects by staff, students or visitors that collect or use data from human participants including secondary data analysis, systematic reviews and pilot studies, are required to gain ethical approval before data collection begins. This is regardless of whether the research is funded or unfunded. During this REF cycle we have approved around 750 ethics applications from staff. We are mindful of the importance of timely review and approval. In the exceptional circumstances of the pandemic, we have been able to use our capacity and expertise to 'turnaround' applications for all COVID-19 related proposals within eight working days.
- 1.7.2 To underscore the importance of research ethics, we appointed a professor (**Ang**) in 2014 with dedicated time as Head of Research Ethics and Governance and Chair of the faculty's Research Ethics Committee (REC). **Ang**, succeeded in 2019 by **JonesP**, now co-chairs the UCL Research Ethics Committee. We also appointed departmental research ethics coordinators who act as a resource and developmental support for researchers (as well as being members of the faculty REC). A strong culture of integrity requires experienced researchers to lead by example as well as through clear structures and processes. The IOE's REC has broad academic representation, as well as student and lay members. The Committee works on a devolved basis from UCL, although our policies align with UCL's Statement on Research Integrity and its Code of Conduct for Research. We have invested in extending our Research Ethics Officer role from 0.5 FTE to 1 FTE. This is in recognition of the growing number and complexity of ethics applications and our aim continuously to develop their quality and enhance dialogue between researchers and reviewers. With specialist support, we have been able to develop guidance and proformas on issues such as moving data collection online as part of our response to COVID-19.
- 1.7.3 Ethical applications are approved on a rolling basis. The REC identifies further enhancements to research ethics matters at its termly meetings, including sharing examples of ethical challenges and best practice, and devising strategies, training and guidance. We have devoted significant effort to expanding the pool of ethics reviewers to over 120, almost double the number in the previous REF cycle. We promote this role as an important contribution to institutional citizenship, an indicator of service within the UCL Academic Career Framework (UCL's promotions framework). Reviewing enables researchers to expand their expertise by assessing the ethical dimensions of diverse research designs.
- 1.7.4 Reviewers and researchers applying for ethical approval have mandatory training in risk assessment and have access to other provision, including discussion of anonymised examples, and briefings on new developments such as the implications for ethics of COVID-19. Our approach to and support for research ethics is viewed as a source of best practice across UCL and beyond. This is most notable in relation to championing the highest ethical standards for research with children, which has led to consultation requests for advice from UCL faculties and other institutions (e.g. from Coram, the UK's oldest children's charity).

2. People

2.1 Staff profile and staffing strategy

- 2.1.1 The Unit's staffing strategy is underpinned by the principles of inclusivity, equity and intergenerational fairness. Our policies and processes are designed to support the development, careers and wellbeing of our research workforce, and to enhance how working life is experienced on the ground. In line with UCL's 2019 Research Strategy, we strive to be the destination and home of choice for the very best researchers. We utilise wide-ranging support, investment, policy and governance around this goal, at university and local levels.
- 2.1.2 Table 1 presents an overview of staff in the Unit who have significant responsibility for research including the number and FTE of HESA 3 (teaching and research) and HESA 2 (research-only) staff. It also shows the number and FTE of HESA 4 staff (professional services) who provide specialist support for our research (e.g. Research Coordinators, Research Managers and Data Analysts).

Table 1. Unit workforce count and FTE by HESA classification (all grades, all FTE) on 31 July 2020.

Staff	HESA 2	HESA 3	HESA 4	Total
Headcount	185	339	73	597
FTE	112.9	284.1	65.32	462.32

- 2.1.3 Most academics hold open-ended contracts (96%). The vast majority (35 out of 37) of research-only staff defined as 'independent' are on open-ended contracts, and 11 out of 185 of the total research-only pool have fixed-term contracts linked to external funding. As part of our leadership of UCL's 'research careers' working group, we are working with HR and other faculties to facilitate progression to open-ended contracts for all research-only staff to foster their stability and security.

Staff recruitment, succession planning and capacity building

- 2.1.4 We have appointed 242 academic staff via external recruitment over the REF cycle, including 22 Professors, 56 Associate Professors, 72 Lecturers and 92 research-only staff. Over the period, we have invested in appointments to sustain longstanding research foci, including: early years (**Levy**); curriculum (**Deng**); language and literacy (**Savage**); teacher education (**Mills**); and quantitative social science (**Wing Chan**). We have enhanced vitality by adding professorial capacity, including in: professional learning with technology (**Littlejohn**); gender, child development and public policy (**Sevilla**); and international education policy and social justice (**Blitz**). This latter appointment illustrates how we have grown expertise in hitherto smaller research areas, in this case migration and migrants' experiences. This has become a major theme alongside our existing work on refugees and education in conflict zones. We have expanded and/or refreshed existing areas of research strength (para 1.2.2). For example, in 2017, **Archer** succeeded **Ball** as Karl Mannheim Chair in the Sociology of Education. In 2019, we appointed **Hardy** (life course epidemiology) to direct the Cohort and Longitudinal Studies Enhancement Resources (CLOSER) centre, enhancing our methodological expertise in data harmonisation and discoverability.
- 2.1.5 We view inclusive and distributed research leadership as a key enabler of colleagues' ability to develop and progress. Since REF2014, we have created and extended research leadership opportunities and training as an explicit contribution to individual and

organisational capacity building. The Unit has created 26 departmental and six faculty research leadership positions. We support job-share and currently have 36 individuals holding responsibilities on this basis. Some departments have co-Heads of Research who focus on specific aspects of the role. In Psychology and Human Development, **Dockrell** leads on staff development and outputs, whilst **Flouri** leads on research bidding and awards. They work together to develop and enhance the department's research environment and profile. All leadership positions are advertised internally with a view to supporting the development of our staff. We take a proactive approach to preparing staff for 'stage-appropriate' progression, using appraisal, mentorship and conversations within centres and departments to encourage colleagues at different points in their careers to express their interest in these roles. Earlier and mid-career researchers generally apply for departmental level leadership responsibilities such as Engagement and Impact Leads or Ethics Coordinators. For example, **Clark-Wilson** was appointed as an Engagement and Impact Lead, bringing her experience of running the EU-funded EDUCATE Project, which aimed to break down barriers between the educational research community and industry. Mid and senior career researchers apply for Department Graduate Tutor, Head of Research or faculty-level roles that build on previous experience in directing research centres or leading research groups. As a further illustration, **Perryman** progressed from her role of departmental Head of Research to taking up the position of the IOE's Faculty Graduate Tutor.

- 2.1.6 Research leadership posts are normally limited to three-year terms to ensure flow in the availability of opportunities and to encourage succession planning. To support new appointees, handovers are arranged between outgoing and new post holders, bespoke inductions are setup with relevant academic and professional service teams, and colleagues are encouraged to attend relevant training opportunities provided by UCL Organisational Development. Colleagues are also encouraged to apply for university-wide research leadership roles. **Bourn** and **O'Brien** lead two of the six UCL Grand Challenges working groups ('Justice and Equality'; 'Cultural Understanding') and **Jewitt** Chairs UCL's Collaborative Social Science Domain.

Early Career

- 2.1.7 Since 2014, we have intensified our focus on supporting early career researchers through a range of initiatives including: our refreshed Early Career Network (ECN), mentorship, research centre membership, and the creation of different types and levels of research leadership roles. We are committed to the *Concordat to Support the Career Development of Researchers* and continue to seek ways of further strengthening the culture, employment and professional and career development of staff.
- 2.1.8 The ECN, relaunched in January 2020 is building a friendly and accessible community that supports academic development and career trajectories and highlights early career concerns to its sponsors, the IOE's Director and Pro-Directors. Its annual budget of £1,000 funds its core activities, with the opportunity to request further resources for particular purposes. The network's co-chairs (**JonesE** and **Wong**) meet with its sponsors once a term to address emerging issues and to access additional assistance and advocacy as required. The ECN is peer-led with representatives from each department on its organising committee and is open to staff across all career pathways who consider themselves 'early career'. It hosts activities such as seminars, a monthly writers' club focusing on research outputs and bids, monthly Research Enhancement Drop-in series, and social meetings. In August 2020, the ECN surveyed early career staff to identify their additional requirements in response to the COVID-19 pandemic. The co-chairs met with the Network's sponsors to discuss the findings and their implications including for enhanced mentoring, which was seen as crucial by many respondents. This feedback is now informing the design and development of a new 'mentor training' initiative. Further discussions about the findings are also taking place with Heads of Research and within our Athena Swan team.

Unit-level environment template (REF5b)

- 2.1.9 The Research Department of Medical Education's (RDME) early career group, chaired by **Viney**, is active in developing opportunities, supported by departmental investment, including a bi-termly seminar series and organising a conference on *Wellbeing in the NHS*. As testament to RDME colleagues' reputation for high quality medical education research, they were approached by Health Education England to support an innovative early career secondment. The post was to develop research skills and experience in medical education for doctors in training. In 2019, junior doctor **Oluseyi** joined RDME for a year, and was mentored by a PhD student (**Shah**) and supervised by a research fellow (**Alexander**) to actively engage in research. The department is supporting two further junior doctors in these research secondments.
- 2.1.10 Mechanisms to support early career researchers (ECRs) include targeted opportunities to apply for research funding, including as Principal Investigator (PI) on small grant projects, or acting as Co-Investigator (CI) on larger awards with a senior PI. These enable staff to gain experience of the research application process and of managing a research award. Our interdisciplinary seed fund scheme (para 1.5.4), which requires projects to involve at least one junior colleague, with plans set out for their mentorship and development, has supported 11 early career staff (eight female). ECRs are also supported to 'shadow' their departmental 'college of reviewers' when reviewing publications in our annual Output Review Exercise.
- 2.1.11 Our ECRs' track record of research bids and career progression attests to the success of these strategies. In this cycle, the Unit has supported individuals to apply for over 73 highly competitive awards (16% success rate) specifically targeted at ECRs (e.g. ESRC New Investigator Grants, UKRI Future Leaders Fellowships, AHRC Early Careers Research Grants, British Academy Postdoctoral Fellowships). Over 35 ECRs have been promoted during this cycle, including in RDME where two research fellows (**Knight** and **Medisauskaite**) were promoted to senior research fellows.

2.2 Professional and career development

- 2.2.1 The identification and sharing of good practice in supporting staff development and career progression is a priority for our Heads of Research group and is a standing item on the agenda of regular strategic meetings with each department, involving the Pro-Director, Head of Department, Head(s) of Research, Head of Research Development and Head of Research Operations. To intensify our efforts to ensure that all staff can fulfil their potential, we have increased the amount of resource (including staff time) invested in implementing our strategies. This focuses on promoting inclusive leadership, the quality of mentorship, widening access to and take up of training and developmental opportunities, reducing equality and diversity imbalances, recognising success, and targeting initiatives to enhance intergenerational fairness. Ensuring that our environment is dynamic, inclusive and sustainable is key to enabling the development of our staff and their ability to thrive.
- 2.2.2 To facilitate equity in staff engagement and involvement in research, we introduced two minimum common standards early in the cycle that enhance the capability of the organisation to support this goal:
1. All academics should be a member of at least one research centre and are encouraged to join a centre that aligns closely with their research interests. They can self-select into other centre(s) as part of their evolving research activities. Individuals can work across centres as their research identities develop, which in turn helps foster a collaborative interdisciplinary community.
 2. All research active staff should have a research mentor who can advise on career development and progression. Mentoring is organised within departments, but with the scope for cross-departmental arrangements where wider capacity and expertise would be

helpful. Departmental schemes are facilitated by an experienced senior academic working with colleagues to identify appropriate matches. The mentoring relationship is tailored to meet individual needs: for example, mentors may support mid-career colleagues to build an application for professorial promotion. The role of a mentor is recognised as an important indicator of institutional citizenship and service in the UCL Academic Career Framework.

Workplace learning and resources

- 2.2.3 Staff motivation, commitment and fulfilment are enhanced by the strength of our interdisciplinary communities within the Unit and wider UCL, and the day-to-day buzz this generates as experts from around the world debate and research key educational and societal issues.
- 2.2.4 The liveliness of our research environment is illustrated through a daily range of activities and events that integrate staff and research students into and enrich our culture. These include research training sessions, writing groups, reading groups, our enormously varied and frequent seminars hosted by centres, departments and at faculty level, and our thriving public events programme. One popular initiative is our 'sit with the editor' series, initiated by one of our Heads of Research (**Hargreaves**), where each month an editor of a prestigious international education journal meets virtually with our colleagues to discuss what they look for in articles that they accept for publication. Inspired by our commitment to social justice, we are working with partners in the Global South to make these sessions available and accessible internationally. Editors describe the accommodations that are made for articles submitted by academics whose first language is not English and/or who are from settings with different or limited research cultures. Our comprehensive programme of engagement and impact training workshops have included sessions on blogging, engaging policy-makers, maximising impact in funding applications, and media training. For example, **Archer** and **MacLeod** discussed their approach to building relationships with organisations in the spirit of 'co-serving' in the workshop, *What makes an award-winning case study?*
- 2.2.5 We facilitate staff to participate in research teams, which supports both peer and apprenticeship-style learning from more experienced others. This opens up opportunities for post-doctoral colleagues to develop as independent researchers. For example, one of our 'post docs' (**Henseke**) was supported by the Centre for Research on Learning and Life Chances (**GreenA** and **GreenF**) in his successful bid as PI to the ESRC for the project *COVID-19 youth economic activity and health monitor* and he is now leading the project's international research team. In another case, new lecturer (**Nemorin**) worked with her mentors (**Jewitt** and **Unterhalter**) to develop a successful application to the UKRI Future Leaders Fellowship scheme.
- 2.2.6 Our annual Output Review Exercise, launched in 2015, invites all authors to submit one or two outputs for review by their department's college of reviewers. Each college comprises approx. eight experienced academic colleagues and is chaired by their departmental Head(s) of Research. Since their inception, the colleges have reviewed outputs from over 576 individual authors. Authors receive feedback on their work through the lenses of 'originality', 'significance' and 'rigour' and have the opportunity to discuss the outcomes with their Head(s) of Research or mentor. The Unit supports this exercise by training, calibration and moderation sessions with the aim of improving our collective understanding of 'quality', as well as providing a regular facilitated opportunity for staff to reflect on how they might strengthen their research.
- 2.2.7 Sabbatical leave provides academics with an opportunity to refresh their scholarship and pursue their research interests, potentially in another country or institution. In addition to the standard qualifying period of service (one term after three years of service), all research active academics returning from maternity, adoption, shared parental, additional paternity, extended carer's, or long-term sickness leave are entitled to a further term's leave without teaching commitments (extra to their normal entitlement). This facilitates staff to re-

establish their research activity. All staff have access to funds for academic development, including conference attendance. An equity-based case-by-case approach enables us to enhance support for those with challenges such as ill health and caring responsibilities. The Unit adheres to UCL's workforce policies, including the Work Life Balance Policy to support colleagues' well-being and their ability to work productively and to feed into discussions about career development and progression.

- 2.2.8 During the pandemic, as homeworking became the norm for most colleagues, we supported requests for equipment, flexible working and changes to working arrangements accordingly. The impact on those with caring responsibilities has been significant, and UCL has responded by creating a comprehensive 'COVID-19 Career Support Scheme'.

Appraisal, promotion and reward

- 2.2.9 We implement an annual appraisal system for all staff, with the principle of working to align individual and institutional goals underlying our approach. Appraisers are required to attend a dedicated training session and the HR team offers specialist resources and advice to appraisees. We conceptualise appraisal as a professional discussion, enabling colleagues to discuss their work (including achievements and challenges) in the context of previously set objectives and in relation to indicators for their grade and pathway laid out in UCL's Academic Career Framework. Heads of Department maintain oversight of developmental requirements of staff and submit data to the HR system for collation centrally. As part of the IOE and UCL Medical School's engagement with Athena Swan, we are seeking to confirm that the appraisal process reflects the needs of underrepresented groups as well as ensuring that challenges for those with fractional FTE are addressed. The IOE is pursuing an Athena Swan Silver award, with the work being undertaken by our Self-Assessment Team (led by **Showunmi**), which comprises diverse academic and professional service staff who are implementing the Bronze award action plan.
- 2.2.10 Our annual promotion and reward cycle is informed by transparent criteria using the UCL Academic Career Framework. The process is led by the Pro-Director Academic Development (**OliverM**), supported by HR, with involvement from our departmental 'Inclusion Leads' who act as a local resource for information and advice about equality, diversity and inclusion (EDI) matters (Section 2.4). Colleagues seeking promotion can attend dedicated workshops providing guidance on the process and timeline. Applications and success data are monitored by department and by applicant characteristics to identify patterns and potential inequalities. The Unit's current promotions round in 2020-2021 provides the opportunity to examine how the exceptional circumstances have impacted on individuals to inform the assessment of cases against promotion criteria that have been adjusted to recognise adverse effects of the pandemic.

2.3 Research students

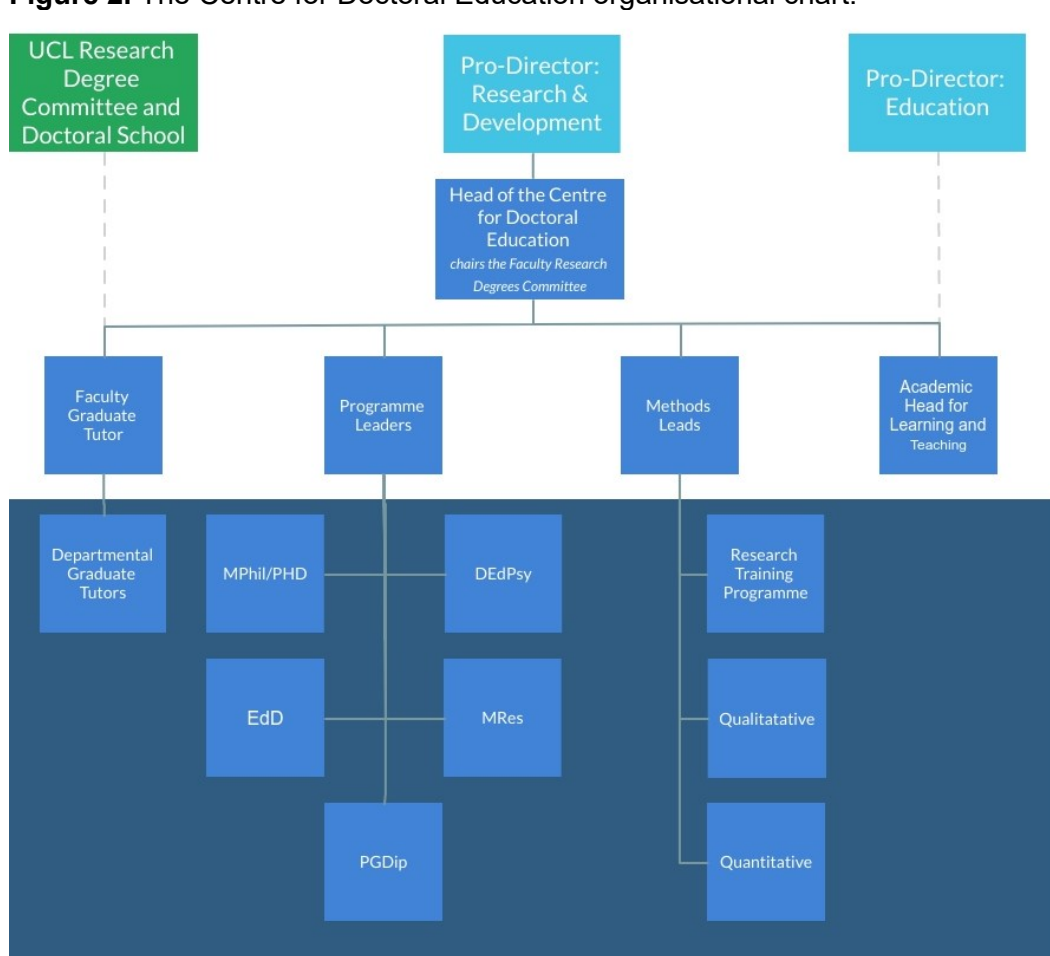
- 2.3.1 Our Unit sustains a post-graduate research (PGR) community of typically over 1,000 doctoral students registered with us at any one time (approx. 1% registered with the RDME). We seek to provide them with an outstanding experience, rooted in an inclusive, distinctive and stimulating research environment with an impressively broad Research Training Programme. We see our students as integral to a healthy research community and expect research active staff to be involved in doctoral supervision.
- 2.3.2 Doctoral education forms a core part of our contribution to wider UCL, including through our work with the UCL Doctoral School and our leadership (**Li Wei**, previously **Tolmie**) of the ESRC-funded Doctoral Training Partnership (DTP) (UBEL – comprising seven UCL faculties, Birkbeck, LSHTM, SOAS, and University of East London). We are proud of the diversity of our PGR population, including the large proportion (approx. 53%) of students who undertake their programmes on a part-time basis, often while working full-time. Nearly

half our students are from BAME backgrounds. We are seeking further diversification through international scholarships, helping to support the development of scholars from lower and middle-income countries, as well as contributing to the provision of a stimulating global environment and generation of research networks. The proportion of enrolments from non-EU countries has risen from 26% in 2015-2016 to 31% in 2019-2020.

2.3.3 We created the Centre for Doctoral Education (CDE) in 2015 (currently led by **FreemanR**). A distinctive aspiration for the CDE has been to foreground research on doctoral education as integral to our provision becoming more strongly research-informed, as well as developing our reputation for research excellence in this area (e.g. *Early career social science researchers: experiences and support needs*, **FreemanR** et al. 2018). In 2019, the CDE ran a seed grant scheme supported by £30k of internal funding, which invited staff to submit applications for research on doctoral education. Nine projects were funded to investigate a range of issues including doctoral pedagogy, widening participation in doctoral education and the student experience (due to report in 2021). The CDE has overall responsibility for the quality and performance of our doctoral programmes against three key performance indicators: curating and sharing good practice; supporting and developing the supervisory relationship; and improving the range of facilities and spaces afforded to our doctoral students. We are not seeking to grow our PGR intake but rather to consolidate and focus on enhancing the quality of our provision, student experience and integration into our research culture. Our rolling Doctoral Strategic Plan is reviewed annually by the UCL Doctoral School.

2.3.4 Figure 2 shows the organisation of the CDE's academic leadership. It is supported by six full-time and two 0.6 FTE administrators who liaise closely with UCL central services on admissions, examinations and graduations.

Figure 2. The Centre for Doctoral Education organisational chart.



Doctoral provision, profile, recruitment and studentships

2.3.5 We offer three main programmes: MPhil/PhD (including an online version), EdD and DEdPsy. We currently have a total of 1,018 PGRs, including 643 MPhil/PhD, 281 EdD and 67 DEdPsy and 8 visiting PGRs. Table 2 shows the number of enrolments in each type of programme over the REF cycle.

Table 2. PGR New enrolments by year and programme.

Programme	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
DEdPsy	13	17	16	16	21	20	20	123
EdD	38	39	39	36	37	34	26	249
PhD	119	143	115	123	100	111	94	805
Total	170	199	170	175	158	165	140	1177

2.3.6 Table 3 shows an upward trend in our doctoral awards over the cycle. This in part reflects an explicit institutional effort to support PGRs to achieve timely completion of their programmes.

Table 3. Doctoral awards by year and programme.

Programme	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
DEdPsy	12	12	11	12	13	17	14	91
EdD	22	22	22	24	18	23	25	156
PhD	61	62	62	63	68	68	80	464
Total	95	96	95	99	99	108	119	711

2.3.7 As Table 4 shows, our doctoral student intake has become more diverse between 2015-2016 and 2019-2020. There is a similar picture for PGR awards.

Table 4. EDI: Percentage of enrolled and awarded PGRs for 2015/16 (when HESA records are first available) and 2019-2020.

	Enrolled		Awarded	
	2015/16	2019/20	2015/16	2019/20
Female	67.8	68.9	68.9	70.5
BAME	37.3	46.2	24.6	42.5
Disability	9.3	10.6	6.8	11.9

2.3.8 We support recruitment through regular Open Day events for all our doctoral programmes as well as through online guidance and resources. With funding from the HEFCE Post Graduate Support Scheme we launched (2014) a Post-graduate Diploma in Social Science Research Methods, with the specific aim of widening participation to doctoral study amongst under-represented groups. Over one-third of students on this programme are from BAME backgrounds. The ESRC provides three fees-only bursaries each year. In October 2014, we introduced a fully Online MPhil/PhD, facilitating access to doctoral study for those with disabilities, caring responsibilities, visa issues, and those not able to relocate. Currently, 67 students are enrolled on this programme.

2.3.9 Over the REF period, and attesting to the quality of our applicants, supervisors and PGR environment, we achieved 63 funded studentships, including 32 ESRC (including five co-funded and collaborative), two AHRC, and 29 from government departments and public bodies. The IOE is a longstanding partner in the Bloomsbury Colleges PhD Studentships scheme, which funds tuition fees (home rate) and annual stipend (approx. £17k a year for three years). Over the REF period, we have secured and funded 14 of these studentships (with Birkbeck, LSHTM, Royal Veterinary College and SOAS) where we provided the principal supervisor, plus 11 where we provided the subsidiary, further enabling cross-

institutional collaboration and interdisciplinary research. Increasing students' success in securing studentships is a priority in our PGR Annual Action Plan.

- 2.3.10 International scholarship opportunities demonstrate our commitment to the development of the next generation of academic and research leaders in the field. In 2019-2020, we supported 41 PGR scholarships from 11 lower and middle-income countries including Ghana, Pakistan, Iran, Mexico and Vietnam. The China Scholarship Council awarded an outstanding student prize in 2020 to Wang, supervised by **Li Wei**.
- 2.3.11 Our DEdPsy programme is approved by the Health and Care Professions Council and accredited by the British Psychological Society (BPS), enabling its graduates to become chartered educational psychologists. The programme received nine commendations in a recent formal BPS review. It has approx. 16 training places a year funded by the Educational Psychology Funded Training scheme and has had 105 over the REF period.
- 2.3.12 In 2017, we undertook a comprehensive review (led by **Pollard**) of the relationship between our teacher education programmes and research, with the purpose of identifying ways in which to build research capacity amongst staff involved in this provision and how it could become (even) more research-informed. To contribute to this aim, the report recommended (amongst other things) that teacher educators should be supported to undertake doctorates, and 14 colleagues are currently enrolled in doctoral programmes.

Support and monitoring

- 2.3.13 We have implemented a range of measures to strengthen the quality of supervision and the student experience. In 2014, most of our PGRs had a sole supervisor, increasing the potential for studies to be disrupted if the supervisor left or fell ill. In line with UCL policy, students are now required to have two supervisors, with the option of additional supervisory expertise if appropriate. We have also introduced a cap (UCL policy) on the number of students (9) and FTE (6) per supervisor (pro rata by supervisor's FTE), to help ensure staff have adequate capacity to support their supervisees' progress. All new supervisors are required to complete training, provided by UCL Arena, the university's teaching and learning development unit, comprising an 'Introduction to research supervision', a follow-up workshop 'Developing as a UCL research supervisor', and a further session, 'Enhancing your supervisory practice'. An IOE supervisor has participated in each cohort of the UK Council for Graduate Education Research Supervision Recognition Programme.
- 2.3.14 We want our students to feel listened to and supported to achieve timely progress. We encourage PGRs to take on representative roles in staff-student consultative forums as well as participating in our Research, and Research Degrees Committees. There are currently 16 designated student representatives covering all our doctoral programmes. In 2020 we subscribed to Unitu, an online system that enables students to share information, raise issues and escalate problems that require attention from a member of staff. An individual Annual Progress Review enables students and supervisors to work together to review achievements over the previous year, to identify any difficulties and to set further objectives. If any concerns are identified, a bespoke support strategy is put in place with the assistance of the Department Graduate Tutor.
- 2.3.15 We have invested in a significant upgrade to our physical facilities. This includes the refurbishment of five existing study rooms and the addition of a sixth room in 2019, and we provide 87 PGR dedicated workstations (an increase of 23% since 2018).

Skill development and enrichment

- 2.3.16 The CDE seeks to enrich the student experience via an annual programme of events. This includes the Autumn Graduate Seminar (where recent doctoral graduates share their doctoral journey experiences), the Spring Poster Conference, and the Summer Doctoral

Conference with in-person and online presentations (with all sessions streamed which has been particularly helpful for students not based in the UK). Every doctoral student is entitled to £750 to support attendance at external conferences. We provide a rich range of skill development and training opportunities to our doctoral students, including access to the UCL doctoral skills development programme and the Bloomsbury post-graduate skills network. Our own Research Training Programme typically comprises over 60 courses including two compulsory sessions 'An Introduction to Doctoral Study' and 'Information and Digital Literacies'. An annual two-week Summer School facilitates access for part-time students and those with caring responsibilities. Our Academic Writing Centre offers classes and resources specifically designed to support doctoral researchers, including one-to-one tutorials, online discussion forums and online resources.

- 2.3.17 Widening access to postdoctoral networks to help students develop a broader array of academic contacts and skills is a key priority. Examples include involvement in journal editorial teams including the *London Review of Education*, our 'International Connections in Education and Development' network, which enables former and current students to stay in touch, and research retreats with advice from senior staff with substantial success in areas such as securing research funding. Since 2014, with the support of HR, we have developed a transparent and structured process for PGRs to access teaching assistant (PGTA) roles, designed to support their development. Currently, there are 111 individuals in these roles. PGTAs can access UCL Arena One - a development pathway that can lead to the submission of an application to become an Associate Fellow of the Higher Education Academy. More broadly, drawing on data from the Destination of Leavers from Higher Education survey 2017-2018, published in 2020, most of our doctoral students are employed six months after graduation with 58% employed full-time. About three quarters of respondents were working in academic research/higher education.

2.4 Equality, diversity and inclusion

- 2.4.1 There are a number of University-level frameworks and resources that support our efforts to improve EDI. These inform and complement local activity led and coordinated by the Pro-Director Academic Development (**OliverM**). For example, in line with recent UCL policy, we are working to improve EDI data, avoid all-White and gender imbalanced committees, and benefit from race ally workshops. At an individual level, our departmental Inclusion Leads assist staff with protected characteristics. They also help Heads of Department with local implementation of the Race Equality Charter and the Faculty Equality Action Plan.
- 2.4.2 A range of evidence attests to our commitment to EDI. As an educational organisation, we are committed to learning and educating ourselves so that we can do better in the future. The RDME (as part of the wider UCL Medical School) and the IOE won separate Bronze Athena Swan awards in 2018 and 2019, respectively. Across the IOE and RDME we have faculty BAME Attainment Leads and departmental Inclusion Leads focusing on race equality. This signals our collective determination to making the Unit a better and more equitable place to work. We are particularly proud of the diversity of our PGR population (46% BAME, 11% with a disability). We are tackling EDI issues in research including gender equality in education (**Parkes**, see associated ICS); developing equitable, inclusive and positive representations of girls and women (**Ringrose**, see associated ICS); and trends in the employment and retention of BAME teachers in England (**Tereshchenko** et al. 2020).
- 2.4.3 Our commitment to monitoring EDI data revealed the need to improve BAME and female representation at Associate Professor (grade 9) and above. We established an Equalities Committee in 2015, chaired by the Pro-Director Academic Development. We appointed our first female Director in 2016 (**Francis**), and promoted **RogersS** (from Pro-Director Academic Development) to Director in 2020. Both Directors have foregrounded EDI matters, as well as being role models for female colleagues. UCL's Research Department

of Medical Education is also led by a female Director (**Griffin**, 2015-present).

- 2.4.4 During the current REF cycle, 208 female colleagues (102 research-only pathway, 106 teaching and research pathway) have been promoted. A likelihood analysis indicates that females were more likely to be promoted than males in grade 7 and 8 positions. Females (77) also make up the largest proportion (73%) of successful applications for senior academic promotion to grades 9 and 10 (Associate Professor, Professor). A likelihood analysis shows that females were more likely to be promoted than males to senior teaching and research positions (Associate Professor, Professor), but were less likely to be promoted for senior positions on the research-only pathway (Principal Research Fellow, Professorial Research Fellow). Overall, these outcomes have increased the number of female staff in senior positions during the REF cycle from 125 in 2015 to 145 in 2020. Our Category A workforce as a whole is 62% female (table 5) but the representation of females in senior roles remains unchanged since 2014 (59%), and addressing this imbalance is one of the priorities in our Athena Swan Action Plan and objectives for the next REF cycle (para 2.4.17).
- 2.4.5 All vacancies are advertised and include a statement encouraging applications from underrepresented groups. Interview panels are required to have gender balance and as far as possible BAME representation. Panellists must complete UCL's Unconscious Bias and Diversity in the Workplace training. Overall, the Unit's racial and ethnic profile for REF has improved. In REF2014, 8% of our returned staff were BAME, compared to 12.2% in REF2021. We promoted 79 BAME staff in research-only and teaching and research roles, including eight of our approx. 105 Professorial promotions during REF2021. This has increased the number of BAME colleagues in senior roles (grades 9 and 10) during the REF cycle from 225 in 2015 to 311 in 2020. However, we recognise that the percentage of BAME staff in these positions has only slightly increased (11.1% to 11.8%). There are limitations with the data in that the ethnic background of 10.4% of staff is either unknown or withheld, and we are collaborating with Athena Swan colleagues as a priority to identify ways of improving this.
- 2.4.6 We have been working to close the gap in the profile of BAME staff who reach senior positions by extending our use of Fair Recruitment Specialists on appointment panels. Enhanced positive action to achieve BAME proportionality is being piloted through recruitment at UCL East, with the IOE leading the implementation of this policy. We are monitoring intersectional inequalities through our Athena Swan Action Plan and to improve our understanding of equality groups' experiences of promotion processes through the consultative work being undertaken by our Athena Swan Self-Assessment Team. We see inclusive mentoring and advocacy as one mechanism for helping to improve outcomes and are planning a new mentor training programme with EDI at its core. We will also run a joint away day for EDI and Research Committee members to explore ways to improve progression from equality groups, particularly to senior positions.
- 2.4.7 We are redoubling our efforts to create a supportive environment for BAME staff and students. The IOE's Black Lives Matter statement (June 2020) committed us to actions around staff and student experience, staff recruitment and understanding. Our 2020 annual Dean's pledge on race (signed by the Director and Pro-Director Academic Development) renewed our commitment. We are also addressing systemic issues, for example, by engaging with the BAME Awarding Gap Project (led by **CallenderCh**) and acting on its recommendations. We recognise that our EDI efforts are a work in progress but nonetheless represent positive steps forward.
- 2.4.8 UCL offers a wide range of leadership programmes. These schemes have been successful in supporting the career development of our female academics, such that 21 of our female colleagues have undertaken UCL 'Women in Leadership' and 'Future Leaders' including **Flouri, Tripney, Macmillan** and **Ang**, assisting them in a range of research leadership roles. Our flagship Professorial lectures promote visibility for female and BAME colleagues.

Since the series was relaunched in 2017, we have hosted 11 lectures. Of these five speakers were female (**Sullivan, Archer, Goodman, Derry** and **Cameron**) and two were BAME (**Wing Chan** and **Oketch**). Our high profile faculty events programme puts diversity and inclusion front and centre via its choice of chairs and speakers (prioritising BAME and female representation in particular), as well as its attention to the accessibility of the events themselves and related online materials and resources.

REF2021 staff submission, profile and output selection

2.4.9 The Unit's staffing submission includes 100% of the Category A eligible staff (headcount 353). This includes:

- 316 HESA 3 (teaching and research)
- 37 HESA 2 (research-only) defined as 'independent researchers', amounting to 25.7% of our total HESA 2 staff
- 26 ECRs (using REF definition of ECR).

2.4.10 In line with UCL's Code of Practice, we undertook a rigorous, iterative and transparent process for confirming our Category A staff. We held termly meetings with each department, chaired by the Pro-Director and attended by the Head of Department, Head(s) of Research and our faculty Research Development and HR teams. In these discussions we checked and confirmed that we had included all those with significant responsibility for research that met the Category A criteria on the census date.

2.4.11 To facilitate a consistent approach to identifying 'independent researchers', we first looked at whether individuals met the REF2021 indicators of having been a *named PI or CI on an externally funded research award* or had held an *independent research fellowship* at any point during the REF cycle. Where individuals were leading major work packages as part of substantial awards, they were defined as 'independent'. This process helped Heads of Department and Heads of Research to identify where further targeted support and mentorship could progress individuals' experience as PI or as a named CI. We emailed every HESA 2 colleague to notify them of the decision about their research independence in relation to the REF indicators, with an invitation to contact the Research Development team if they had any queries. They were given the opportunity to appeal and guidance about how to do this. Staff were made aware of the provision of the university's process for voluntarily declaration of individual staff circumstances (including qualification as ECR). Colleagues were also reassured that inclusion or not in the REF submission was entirely independent of appraisal and promotion processes.

2.4.12 Table 5 provides an EDI breakdown of our total Category A (HESA 3 and HESA 2 independent research) staff by EDI characteristic.

Unit-level environment template (REF5b)

Table 5. Unit demographic profile of all Category A staff on 31 July 2020 by number and percentage.

Demographics		UOA23 Cat A %	UOA23 Cat A N
Gender	Male	37.7%	133
	Female	62.3%	220
Age	16-24 years	0.0%	0
	25-34 years	9.3%	33
	35-44 years	30.3%	107
	45-54 years	28.0%	99
	55-64 years	22.7%	80
	65 or over	9.6%	34
Ethnicity	White	75.6%	267
	BAME	12.2%	43
	Unknown/Withheld	12.2%	43
Nationality	UK	74.8%	264
	EU/EEA	13.0%	46
	Non-EU	11.6%	41
	Unknown	0.6%	2
Disability	Disabled	6.5%	23
	Not disabled	89.0%	314
	Unknown/Withheld	4.5%	16
Sexual Orientation	Hetero	55.5%	196
	LGBT+	6.5%	23
	Unknown/Withheld	38.0%	134
Religion and Belief	Religious	25.2%	89
	Non-religious	38.0%	134
	Unknown/Withheld	36.8%	130

2.4.13 Table 6 shows that the profile of our research-only staff population is younger than our Category A population. Nearly 30% of the former (and approx. a quarter of our independent researchers) compared with about 10% of the latter are aged under 35. This reinforces the importance of facilitating more of our younger colleagues to progress to HESA 3 (teaching and research) roles to help balance our age profile, enhance intergenerational fairness and to support individual career development.

Table 6. Unit demographic profile of independent research-only staff and baseline research-only staff on 31 July 2020.

Demographics		UOA23 Independent Research- Only	UOA23 Baseline Research- Only
Gender	Male	29.7%	18.3%
	Female	70.3%	81.8%
Age	16-24 years	0.0%	0.8%
	25-34 years	24.3%	28.6%
	35-44 years	48.6%	46.0%
	45-54 years	18.9%	18.3%
	55-64 years	8.1%	4.8%
	65 or over	0%	1.6%
Ethnicity	White	62.2%	55.6%
	BAME	16.2%	27.8%
	Unknown/Withheld	21.6%	16.7%
Nationality	UK	67.6%	54.8%
	EU/EEA	13.5%	23.0%
	Non-EU	16.2%	20.6%
	Unknown	2.7%	1.6%
Disability	Disabled	0.0%	4.0%
	Not disabled	97.3%	87.3%
	Unknown/Withheld	2.7%	8.7%
Sexual Orientation	Hetero	45.9%	53.2%
	LGBT+	5.4%	3.2%
	Unknown/Withheld	48.6%	43.7%
Religion and Belief	Religious	13.5%	19.8%
	Non-religious	37.8%	34.1%
	Unknown/Withheld	48.6%	46.0%

2.4.14 The data in Table 6 indicates that further work is needed to support females, BAME and colleagues with a declared disability to meet the criteria for 'independent researcher' designation. We recognise that a) our data are limited where there are small numbers of staff and by unknown/withheld responses; and b) it takes time for initiatives (e.g. the career development of female and BAME junior staff) to rectify structural imbalances. Nonetheless, the analysis provides clear evidence that we need to do more to improve progression within our research workforce (see future plans para 2.4.16).

2.4.15 In 2018 a Unit-level college of assessors was established to review outputs for selection to our REF submission. All members participated in calibration exercises and discussions, and undertook UCL's Unconscious Bias and Equality and Diversity training. In line with the UCL REF Code of Practice, all outputs were assessed at least twice with a view to selecting on the basis of quality in relation to the REF criteria. In building our output profile we undertook Equality Impact Analysis (EIA) and likelihood analysis to assess how selected outputs were attributed to staff by equality group and by intersectionality. A value of 1 meant a fair representation, with values below 1 indicating underrepresentation and above 1 indicating overrepresentation. Where there was a choice between equally-graded outputs, the EIA process enabled us to reattribute outputs by gender and ethnicity to generate a fairer attribution of outputs to female authors (0.94 enhanced to 0.99) and BAME authors (0.95 enhanced to 1). Disabled staff outputs were overrepresented (1.32) compared to non-disabled staff outputs (0.99), although we are aware of data limitations. Investigating intersectionality revealed two key priority groups where we were unable fully to address underrepresentation:

- Female BAME staff – whose outputs were underrepresented in comparison to both male BAME staff (BAME female= 0.64, BAME male= 1.76) and female white staff (BAME female= 0.93, white female= 1).
- International (non-EU) staff (white and BAME) – whose outputs were also underrepresented (0.89) compared to UK (0.99) and EU staff (1.17). EU staff outputs were overrepresented.

Future EDI plans

2.4.16 Enhanced understanding of EDI data and imbalances provides the platform to help meet the needs of underrepresented individuals and groups more effectively. We will use measures such as the collection of detailed longitudinal data to evaluate whether our policies, resources and initiatives are leading to improvements. Key steps in 2021 to improve our EDI profile include:

- Work with HR and Athena Swan teams to enhance gender balance in senior appointments and promotions.
- Create a new training programme for mentors underpinned by EDI principles.
- Incorporate EDI and intersectional analysis in our research mentor scheme and our research data management and award information system.
- Work with UCL Central HR to enhance our EDI data to reduce the numbers of withheld/unknown records.
- Develop a research-specific stream within our Athena Swan Action Plan, with a priority to consult BAME female staff, female research-only staff and international staff to respond to their needs.
- Work with the ECN to improve career progression within and between HESA 2 and 3 roles to enhance intergenerational fairness.
- Work with our Inclusion Leads to design new equity-based internal funding opportunities.
- Ensure all research-only staff are on open-ended contracts to foster stability and security for this group and building this goal into planning, budgeting and HR processes.

3. Income, infrastructure and facilities

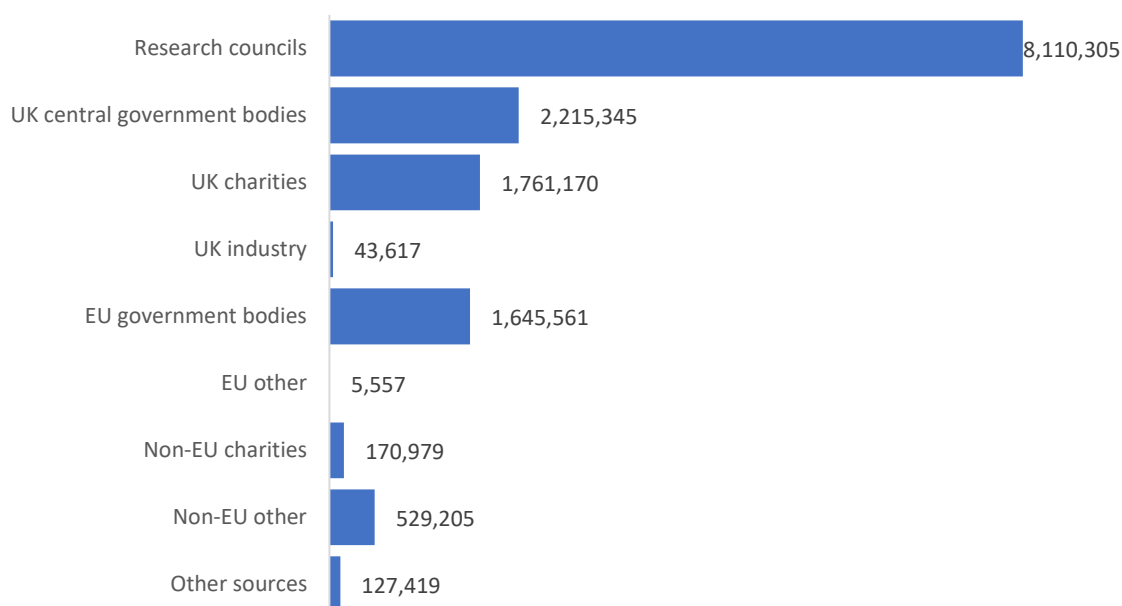
3.1 Research funding and strategies

- 3.1.1 Maximising the availability of funding opportunities to our staff is a key priority, helping to underpin, sustain and develop our high quality scientific and societal contributions. Colleagues are supported, either collectively or individually, to pursue funding from diverse national and international funders to enable them to investigate topics in line with their academic interests and goals. This includes research questions and areas that span disciplinary boundaries and extend across sectors.

Research income and awards

- 3.1.2 During this cycle, the Unit generated £91.2m research grant spend and managed a portfolio of 521 externally-funded projects (as PI), involving over 218 different PIs. We secured 502 new grants (as PI) over this cycle. Our average annual research income of £13.0m represents an average per submitted staff of £36.9k (headcount) and £41.1k (FTE). The majority of our funding (61%, £56.7m) comes from Research Councils, averaging £8.1m each year of the REF2021 period. This income increased by 80% since REF2014 (£31.5m). The ESRC is our largest single research funder, with an average annual income of £7.3m during the assessment period. Our other major funders include government bodies, Education Endowment Foundation (EEF), the Nuffield Foundation and other charities, reflecting our major contributions to furthering robust evidence for policy and practice in education and associated domains such as health, welfare and employment.

Figure 3. The proportion of funding from the Unit's main research funders in 2019-2020.



- 3.1.3 We have sought to grow our leadership of and participation in large, collaborative grants and have secured 24 grants of over £1m FEC (Full Economic Costing); 17 (71%) of these awards are led by females (some securing more than one) (**Ang, Archer, Berg, Callender, Conti, Goodman, Gu, Goisis, Jewitt, Nemorin, Remington, Sevilla and Vasalou**). These collaborations enable us to amplify the reach and scale of our research to address complex societal challenges, as well as providing opportunities for our researchers to develop experience of managing large projects and teams, and to make an impact as leaders in their respective fields.

- 3.1.4 Building on our social justice mission, we are responding to the challenges set out in the UN's Sustainable Development Goals (SDGs). The Global Challenges Research Fund's (GCRF) focus on research in low and middle-income countries (LMICs) and collaboration with local researchers has provided a major new source of large-scale funding. We have bid for 40 GCRF awards (28% success rate), securing over £6.9m in funding. In the 'Education as a Driver of Sustainable Development' call, we secured two grants (approx. £2m each) with **Gu** and **McCowan** as PIs. A key aim of these awards is to develop partnerships to support capacity building in LMICs. **Gu**'s team is working with diverse partners from the global south to investigate schools as enabling spaces to promote health related quality of life for primary school age children; **McCowan**'s team is working with wide-ranging collaborators to investigate universities and climate change in LMICs. In line with our equality, diversity and inclusion (EDI) aims for the next cycle, we are intensifying our efforts to monitor the characteristics of grant applicants by linking our grant and HR data, target support to overcome imbalances, and enhance intergenerational fairness and career progression. We are also discussing, as a matter of ethics, the "nothing about us without us" principle, so that under-represented groups are included in projects that otherwise might be seen as colonising their experiences.
- 3.1.5 Internal review is a key mechanism for strengthening the case for funding and this is mandatory for all our applications prior to their submission. Since REF2014, we have established two broad categories of review (departmental and faculty) depending on the value of the bid and characteristics of the funder or call. As well as enhancing the quality of proposals, the review process is developmental as it raises awareness of funder requirements and builds a collective understanding of the features of competitive bids. In 2019-2020, 132 proposals (17.5% success rate) were reviewed by over 200 colleagues through our faculty-level peer review process.

International funding

- 3.1.6 In support of our objective to increase global reach, we have grown the value and proportion of research income from international sources – more than doubling income from 2014-2015 (£1.1m, 9.8%) compared to 2019-2020 (£2.4m, 16.1%). This includes grants from international research councils, such as **Burn**'s Australian Research Council (ARC) Discovery Project (£112k over three years, 2019-21) working with colleagues at the Australian Catholic University and Macquarie University to develop new teaching pedagogies for students to code animated narratives, integrating previously separated capabilities of multimodal authoring and computational thinking.
- 3.1.7 Funding from EU schemes currently represents approx. 11% of our total portfolio. Since 2014, we have secured four European Research Council (ERC) grants (one starter, three consolidator) and are partners in several others, including one advanced. For example, **O'Connell**'s 'starter grant', *Families and Food in Hard Times*, investigated how low income parents in the UK, Portugal and Norway manage to provide food for their families. To achieve the award of 35 EU grants over the cycle, we leveraged the capacity in our specialist European Research and Innovation Office and strategic academic and cross-sector research networks. Following Brexit, we are redoubling our efforts to diversify our funding portfolio whilst continuing to pursue grants through the UK's participation in Horizon Europe.

Seed funding

- 3.1.8 The Unit has made extensive use of internal faculty and university funds over the assessment period to: develop research capacity; catalyse new collaborations; support staff to gain experience in applying for funding; and address strategic research gaps. Our researchers have secured over £314k from university schemes (para 1.5.3) and our Unit's seed fund schemes have supported 49 research project teams to the total value of approx. £880k. Each scheme is designed to generate further research income and develop our

research community. For instance, in 2017-2018 pump-priming funding was targeted at generating new research, engagement and impact. We supported 46 of the 61 proposals received with up to £15k per award. These projects have led to over 30 bids to external funders. One project, *Making Spaces*, led by **Archer** in collaboration with UCL's Institute of Making, resulted in an award (£688k) from the Lloyds Register Foundation. The seed grant enabled the team to bring together an international network and build relationships with key stakeholders, some of whom subsequently became research partners and/or advisory group members for the resultant project.

- 3.1.9 We also run seed funding schemes in strategically important areas to sustain the Unit's scale and breadth of education and social research in line with our first strategic objective (para 1.2.1). For example, in the area of youth transitions we invested £35k to lay the foundations for a new interdisciplinary comparative research centre, the Centre for Global Youth (directed by **Keating**), investigating growing up in a globalised world. Our major interdisciplinary, collaborative seed grant initiative highlighted in Section One (paras 1.2.11; 1.5.4), represents a substantial and significant investment (£440k) designed to generate successful research returns in the next REF cycle.

Mobilising and curating research

- 3.1.10 We have sought to target support in key research areas. For example, in similarity with UCL's Mental Health research strategy, we recognised the importance of advancing research, policy and practice relating to mental health and wellbeing. The IOE Mental Health, Wellbeing and Education Network was launched in 2018, and now has over 150 members developing research ideas. We have submitted 198 bids in this field (28.7% success rate), with 157 generated since the Network's inception. With academic leadership from **Hurry** and dedicated support and facilitation from the Research Development team, the Network's online hub raises awareness of relevant funding calls and provides an open forum for discussion. This is complemented by meetings and co-hosted workshops, such as with UCL's flagship Institute of Mental Health and the Anna Freud Centre, to catalyse and coordinate research activity. Our resulting awards in mental health and wellbeing include cross-centre partnerships, such as the Nuffield Foundation project, *The health of teachers in England. What do we really know?* (**Jerrim** in Quantitative Social Science, and **Sims** in the Centre for Education Policy and Equalising Opportunities). This was one of the first pieces of research to examine the wellbeing and mental health of teachers in England over time.

3.2 Operational and scholarly support infrastructure

- 3.2.1 Our research is the result of teamwork between our academic and professional services colleagues. Since REF2014, our research strategy has generated enhanced support from and investment in dedicated teams with expertise in grant capture, grant management and public engagement and impact. As part of this, we view the Newsam Library and Archive as key and integral to the scholarly infrastructure we provide for staff and students (para 1.6.4). The Newsam Library and Archive is a foundational resource for education and social research both nationally and internationally. In 2014 it was awarded accredited status by the National Archives. It remains the largest education library in Europe and the archive holds an extensive collection of current and historical papers dating from 1797. The Library's collection of IOE authored books represents almost 120 years of history and scholarly output. The Newsam is cataloguing a unique collection of some 60,000 school textbooks, dating from 1890. Our researchers benefit from 16 other libraries across UCL, local access to the British Library, the Wellcome Collection and the libraries available to members of the federal University of London. The Unit has benefitted from the university's investment of £2.8m in Library Services to purchase electronic resources in order to ensure staff and students are provided with the digital resources they require for their research.

Professional services

- 3.2.2 Early in the cycle, we re-organised and developed our research administration, setting up two new teams. The Research Operations team (10 FTE) provides specialist support for pre-award and post-award activities, including the preparation of costings and budgets for research applications, post-award grant management and project assistance. Our Research Development team (5 FTE) provides strategic support for and curation of our research, ethics and impact activities, underpinned by strong research management information. This has been an important enhanced feature of our capacity since REF2014. The team's work is reflected throughout our environment statement, and in the coordination and management of our REF2021 submission itself.
- 3.2.3 The Research Department of Medical Education (RDME) has added two new professional services roles: a Research Administrator (1 FTE) from 2018; and Research Manager (0.5 FTE) from 2019. These posts have been instrumental in both the day-to-day and strategic development of RDME and in providing smooth pre-and post-award contractual arrangements and governance.
- 3.2.4 Unit capacity is augmented by a dedicated UCL Research Facilitation team (3 FTE) with expertise in working with PIs at an early stage to develop their ideas, target appropriate funders and offer feedback throughout a bid's development. They provide termly 'surgeries' where individuals can discuss their proposals, and coordinate institutional demand management processes. Access to these experts, who have previously worked at major funding bodies such as the AHRC and Wellcome, has strengthened our applications, encouraged staff new to external grant funding to submit bids, and those more experienced to aim for more ambitious awards.
- 3.2.5 Our research professional staff (N= 73, FTE= 65.32) are critical to the fulfilment of our objective to sustain and enhance our methodological breadth, rigour, integrity and innovation. They generate considerable research and impact but are not considered 'REF-eligible' as they are contracted as professional services. Three such individuals (**Graziosi**, **Johnson** and **O'Driscoll**) are co-authors of our returned dataset and software outputs. Over half (53%) of these colleagues work on our portfolio of five major ESRC infrastructure investments (Cohort and Longitudinal Studies Enhancement Resources [CLOSER], Millennium Cohort Study [MCS], National Child Development Study [NCDS], Birth Cohort Study 1970 [BCS 70], and Next Steps) that have continued to be core-funded through rigorous competitive renewal processes. Scientists, policy-makers, the third sector and the wider public use these national assets whose unique scale, longevity and quality increase the studies' value over time.
- 3.2.6 Professional staff including survey specialists, data experts, cohort maintenance teams and communications experts play an essential role in supporting and developing our data infrastructure. They maximise the use and impact of longitudinal cohort data, brokering relationships between science and policy, raising awareness of findings with a wide range of audiences, and promoting the use of evidence to influence policy development. Specialist skills are needed to link and harmonise large-scale datasets. For example, CLOSER has linked longitudinal survey data with government administrative registers to generate new knowledge about education, employment, income, health and social participation, and issues of agency, choice, inequalities and identity. In 2018, its findings informed the House of Commons Science and Technology Committee's recommendation that academic researchers be enabled to access administrative data (with appropriate privacy and safeguarding mechanisms). The government has since committed to providing secure access to de-identified data for accredited researchers.
- 3.2.7 Our specialist expertise also makes an essential contribution to the training of students, researchers, technicians and wider audiences to grow capacity in the field and maximise

the potential of increasingly sophisticated datasets, including through the provision of user guidance and documentation.

Support for engagement and impact

- 3.2.8 We have sought to ensure that our complementary academic and professional expertise is harnessed in pursuit of achieving research engagement and impact. We have increased capacity in and coordination of our digital capabilities and infrastructure to: (i) curate new platforms (e.g. blogs, podcasts, events and research and policy briefings) that facilitate a dialogue between our researchers and relevant audiences; and (ii) provide a dynamic range of training opportunities for academic colleagues, coordinated by our Research Impact Manager. These include: the IOE Impact Meet-Up Series attended by over 150 academics during 2019-2020; five seasons of Research Podcasts (accessed 36,000 times in 101 countries in 2020); @IOEResearch account, which gained 1,000 followers within six months of launch; and Policy Briefings bringing the latest evidence-based recommendations to those tackling complex issues in education and social policy.
- 3.2.9 Our Head of Policy and Public Affairs (**Wisby**) provides expertise and advice including through the provision of one-to-one help, ad hoc training sessions and twice-weekly written briefings to colleagues on relevant political and policy developments. These flag opportunities to contribute evidence to government consultation and parliamentary inquiries. She fosters relationships between policy-makers and our researchers including through direct introductions, and the organisation of invited policy roundtables.
- 3.2.10 We provide a range of resources to facilitate the sharing and promotion of our research. These include the IOE blog, blogs run by research centres, and the work of our public affairs and media colleagues in building links with external audiences and securing coverage of our research in policy and public debate across print, broadcast and social media. Virtual streamed and recorded debates allow instant feedback options and raise participation and engagement. As an example, 779 people globally viewed the live debate for the digital launch of the open access book *Transforming Early Childhood Education: Towards Democratic Education* (**Cameron** and **Moss**). The launch generated over 34,000 impressions on YouTube, widely disseminating the research and generated positive engagement with the Labour Party's Early Years Lead to discuss policy proposals.

3.3 Research infrastructure and facilities

- 3.3.1 Since 2014, we have sought to enhance the quality and accessibility of our digital and physical research infrastructure, viewing this as an essential contributor to enhancing the strength and sustainability of our workplace environment for students and staff. Achieving this has required attention and investment in a range of key areas.

Research IT and equipment

- 3.3.2 To recognise the growing importance of research IT services and expertise in supporting the needs of our researchers, including around issues of data security, we expanded our team of specialist technicians by appointing a full-time Head of Research IT (**Neville**). As well as line management this new role has a variety of responsibilities, including information governance and information security related to research activities, leading on research IT strategy, and acting as Service Owner for specific IT services delivered for the research community. The research IT team provides specialist support for a portfolio of applications commonly used by our researchers (e.g. SPSS, Stata, R-Studio, Nvivo), managing our High Performance Computing clusters (Myriad, Grace, Legion), as well as delivering practical workshops for researchers on how these tools can be used to answer research questions.

Unit-level environment template (REF5b)

3.3.3 We have drawn on our allocation from Research England's Research Capital Investment Fund to invest over £1m in a variety of specialist research equipment. This ranges from eye trackers and electroencephalogram (EEG) devices used predominantly by the Centre for Research in Autism and Education (CRAE), through to blood centrifuges and hand dynamometers employed by the Centre for Longitudinal Studies (CLS) to collect biomedical data from cohort members. Portable equipment has proved beneficial for undertaking fieldwork in diverse settings and facilitating accessibility for participants. Our investment in virtual reality equipment has boosted our capacity to undertake new forms of data collection and develop new topics for research, including in relation to cognitive, affective and educational neuroscience, and digital humanities and media. Our Future Media Studio is being designed and equipped to foster staff and student research in the areas of: digital games studies; digital production in film, animation and games; and digital embodiment and digital making. We are developing cutting-edge research partnerships with leading media institutions and industries (e.g. BFI, BBC), the UCL East Olympic Park partners, especially the V&A and Sadler's Wells, and local community arts groups in East London.

Estates and dedicated research space

- 3.3.4 Following the merger with UCL, a multi-phase Estates Masterplan was developed to significantly upgrade and modernise our physical environment. Phase 1 (£20m) completed in July 2019 enhanced our specialist IT lab facilities, including resources that meet Office for National Statistics (ONS) guidelines to support research requiring access to public health records. Academics are working with Estates colleagues to create an optimum working environment for research, including drawing on findings from a staff survey on the effect of the pandemic on working arrangements. We have a dedicated Masterplan staff group advising project and design teams on practical steps to ensure our environment is welcoming and accessible to all staff, students and visitors, and to ensure statutory equalities requirements are met in all cases and where possible exceeded, in line with UCL's 'inclusive design strategy'.
- 3.3.5 During this REF cycle we have created 'The Space', a specialist research observation facility managed by CRAE with video feeds, an observation gallery and shielded space suitable for use with an EEG and ancillary hair-wash facilities to support EEG related research. This has enabled new research on brain activity related to attention and perception differences between autistic and non-autistic individuals. To date, over 100 participants have been tested using these facilities.
- 3.3.6 Conscious of environmental considerations and future ways of working to reduce the need for travel, we have created an international video conferencing studio for research. In support of our REF objective to deepen our global collaborations and partnerships, this new resource increases the opportunity for remote interaction beyond that offered by standard video conferencing applications and so will be valuable in the post-pandemic context to facilitate different forms of interaction both across the UK and overseas. Our new facility is ideally suited for this flexibility as it allows 20-30 people to be in the room, and many more to join via zoom/teams for planning sessions, research meetings, dissemination events, workshops and researcher training sessions.

3.4 Collaborative use of research infrastructure

- 3.4.1 To further increase and diversify collaboration, a strategic objective during this cycle, we work across UCL faculties and other UK and overseas institutions to enhance our impact through the creation of shared facilities. Our expertise in systematic review (see associated ICS) has enabled us to establish new accessible digital resources such as the *COVID-19 systematic living map of the evidence* developed by **Thomas** and colleagues. This tool provides an up-to-date map and visualisation of pandemic related research evidence partitioned into broad domains for easy exploration by a range of users. During 2020, it

published approx. 35,000 inputs. The mapping visualisation facility has been used by the Campbell Collaboration for all its 'evidence gap maps' and has been used internationally for presenting maps of research (e.g. on the UNICEF website).

- 3.4.2 Our expertise in psychometrics, in selection and medical assessments, has contributed to the development of new medical education infrastructure. **McManus** consulted on the creation of the longitudinal UK Medical Education Database (UKMED) of 130,000 individuals. This includes data on medical school applications and admissions, doctors' progression in post-graduate medical education, including fitness to practise data (see associated ICS). It brings "big data" to medical education, linking undergraduate and post-graduate data on performance and, for the first time, allowing robust research into sociodemographic and educational factors impacting on progression throughout the training life course. UKMED is open to applications for data from researchers free of charge and is used to produce data dashboards publicly available on the General Medical Council website.
- 3.4.3 Our longstanding Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) (**Gough et al.**) is dedicated to improving the use and take up of research by supporting effective knowledge mobilisation. This includes studying the use/non-use of research evidence in decision-making, supporting those who wish to find and use research to help solve problems, and providing guidance and training in this area. Its research advisory service helps policy-makers and practitioners use research to inform their decisions. EPPI's methods have informed the National Institute of Health Care Excellence's (NICE) systematic reviews (it cites five of our methodological papers in its manual), and by the Cochrane Collaboration. The EPPI-Centre's bespoke software, EPPI-Reviewer, underpins the knowledge management systems of NICE, EEF and the Cochrane and Campbell Collaborations. It hosts more than 20,000 user accounts (over 12,000 during this REF period) and more than 100,000 Cochrane users access the software, either directly or through other platforms.

Sensitive data sharing

- 3.4.4 We have contributed significant funding (£202k) to refresh UCL's Data Safe Haven (DSH), which is benefiting the Unit's and wider UCL research. The DSH service provides critical infrastructure for research involving sensitive data, backed by a formal Information Governance assurance process. It has been designed and implemented to meet the requirements of the NHS patient data and system toolkit and the internationally-recognised ISO 27001 Information Security standard. For example, our Centre for Education and International Development (CEID), working on highly sensitive projects such as *The Contexts of Violence in Adolescence Cohort Study (CoVAC)* (**Parkes, Datzberger et al.**), utilises the DSH to store and process interview data involving vulnerable participants, working jointly with partners in other London universities and in Uganda.
- 3.4.5 We have created new bespoke facilities to enable our researchers to access the ONS Secure Research Service (SRS) from the IOE buildings. Our Assured Organisational Connectivity accreditation from the ONS (May 2020) has facilitated wider use of these data. As part of cross-UCL development work with the School of Life and Medical Science, we have deployed endpoint ONS SRS computers under the same contract. This local facility is strategically important for our research, which often involves both primary and secondary datasets pertaining to children (i.e. sensitive-category data) and in particular the Department for Education's (DfE) National Pupil Database. During the pandemic, the switch to remote working required a change in accessing the UK Data Service. We have deployed 12 endpoint machines, located on campus, locked down for secure remote access. We are also purchasing new computers specially configured to enable access to secure datasets. These will be available for researchers to borrow for use at home, thereby facilitating our flexibility and capability to undertake 'sensitive research' in different locations.

4. Collaboration and contribution to the research base, economy and society

4.1 The Unit's approach to collaboration and engagement

- 4.1.1 Driven by our mission to improve lives through research and education, the Unit has a clear ethos of engagement and collaboration, within and beyond the academic community. Working in a way that is outward facing, accessible and transparent has been integral to our ability to fulfil our strategic objectives (Section 1), and to demonstrating the relevance and significance of our research for the public good.
- 4.1.2 Our environment has shaped a strong culture of knowledge mobilisation and exchange, providing reflexive and dynamic opportunities for staff to grow their networks and collaborations. For example, we have been awarded 20 diverse knowledge exchange projects from the Higher education Innovation Fund since 2015-2016, with a total value of nearly £300k, which involve working with partners. These include *Using Technology to support teachers in working out what works for children with autism in the classroom* (**Mintz**); *Supporting Wellbeing, Emotional Resilience and Learning* (SWERL) facilitated knowledge exchange school development programme (**Roberts**); *Maximising the Practice of Teaching Assistants: Video examples* (**Bosanquet**, see associated ICS); *Scaling up AuthELO: a platform for learning resources* (**Mavrikis**).
- 4.1.3 The Unit encourages and assists colleagues to work with academics in institutions from around the world to tackle areas of research priority, and to develop their research capability. We have collaborated with over 190 universities and research institutes worldwide, including over 85 UK HEIs. Through our Global Engagement Strategy and supported by UCL's Global Engagement Office, we invested in the appointment of a Vice-Dean (International) (**O'Regan**) to enhance our geographical reach, partnerships, international studentships and profile. Our International Manager (**Bowler**) and **O'Regan** established an annual seed fund scheme in 2016 to support international partnership development. To date, 49 awards (of up to £3k each) have been made, involving colleagues from 30 countries across six continents in varied networking and research development activities. We have hosted 59 secondments for visiting international doctoral students.
- 4.1.4 We promote and support our colleagues to work with 'non-academic' users of and participants in research as this enriches our environment, active citizenship and research excellence. For example, **Dawson** (Department of Science and Technology Studies, para 1.1.5) works with practitioners in 'designed informal settings' such as science museums, science centres, zoos and aquaria, and community settings including youth clubs and school science clubs, to identify challenges and best practices in widening science and technology participation amongst disadvantaged social groups.
- 4.1.5 Our strategic priority to sustain and extend our methodological innovation and contribution to the social science research infrastructure relies on a collaborative approach. It is facilitated through our commitment to co-production in research, working with partners to improve the usability of findings and evidence, and our training provision. This sits alongside our emphasis on day-to-day engagement with external audiences and participation in the work of learned and professional bodies.

4.2 Research collaborations and partnerships

- 4.2.1 Since 2016, we have submitted over 530 collaborative research bids (31% success rate) valued at £331.8m involving 208 universities (83 national and 125 international), 76 UCL departments and 182 cross-sector partners. We are pursuing more collaborative bids year on year (126 in 2017-2018, 158 in 2018-2019, 184 in 2019-2020), growing our research

networks. A further indicator of the level of academic collaboration is the volume of our co-authored publications: 391 (53%) co-authored with at least one colleague from another institution of which 270 (36%) are co-authored with British institutions and 200 (27%) with institutions internationally (of this total, 91 involve EU co-authors, and 128 involve non-EU co-authors).

- 4.2.2 We invest in institutional partnerships, facilitating colleagues' access to networks of expertise and opportunity. Our founding membership and ongoing subscription to the London International Development Centre (LIDC) shows how this kind of commitment can lead to the creation of new boundary-crossing research activity, attracting external funding. To illustrate, in 2019 Claire Heffernan (LIDC Director) led the development of a successful interdisciplinary £19.76m GCRF award, *The Action against Child Stunting Hub* involving the IOE, Royal Veterinary College, LSHTM and others. The hub aims to take a 'whole child approach' to understanding the diverse factors driving child stunting in India, Senegal and Indonesia. The Unit (**Ang, Dockrell**) leads the Education and Cognition workstream, researching the ways learning environments can be modified to improve early learning and neuro-cognitive development. Collaborative activities and institutional partnerships enable us to develop capacity and impact across our distinctive lifelong (i.e. across the whole life course) and life-wide (i.e. across the domains of social life) research remit. For example, LLAKES (Centre for Research on Learning and Life Chances) and CGHE (Centre for Global Higher Education) were both created through collaboration at national and international level and have thrived through fostering close working relationships with colleagues at partner institutions.
- 4.2.3 Recognising the scale, reach and complexity of the challenge to address educational and social inequalities, our researchers seek collaborators for mutual learning, generation of ideas and proposals, and ultimately to co-produce research that can benefit target groups. We illustrate this through examples of academic collaborations from different phases of education across the life-course.
- 4.2.4 Focusing on early years and primary, **Dockrell** and colleagues at the Universities of Newcastle, Oxford, Warwick, and Sheffield have been researching early language development over several years, including the oral language needs of young children from disadvantaged groups. As part of this research, **Dockrell** and James Law (Newcastle) secured Nuffield Foundation funding for a mixed-method study analysing the relationship between levels of need and current provision, and identifying promising practices and interventions designed to enhance learning. Within the field of secondary education, **Francis** collaborated with colleagues at King's College London, the University of Nottingham and Queen's University Belfast to undertake '*Best Practice in Grouping Students*', involving 140 English secondary schools, investigating attainment and non-attainment grouping in relation to social inequality (funded by the Education Endowment Foundation [EEF]). This project has generated over 10 co-authored publications. It has demonstrated the detrimental effects of attainment grouping on lower attainers and disadvantaged students. It has stimulated significant public and policy debate about grouping practices, the implications for social justice, and the case for reform (see associated ICS). Moving on to adults, in 2018, the Research Department of Medical Education's (RDME) **Dacre** collaborated with Carol Woodhams (Surrey) to address gender equality in the NHS. They were appointed by the Department of Health and Social Care to lead a major examination of pay gaps, involving data from 16,000 doctors working in primary care, 86,000 in secondary care and 4,500 clinical academics. They utilised three national databases (HMRC, HESA, and NHS digital for electronic staff records) and surveyed a random sample of 40,000 registered doctors. Results demonstrated that the average gender pay gap between men and women in medicine is 17%. This work has been widely disseminated and relevant government and sector partners are preparing an implementation plan taking forward its recommendations.

Cross-sector partnerships

- 4.2.5 Over the REF cycle, our researchers have deepened and diversified their work with a range of stakeholders, including schools and colleges, charities, NGOs, government agencies, local authorities, employers, trades unions and professional bodies, forming new and extended communities of expertise locally, nationally and internationally. The global reach of our cross-sector partnerships spans 27 countries across five continents. The value of research bids involving cross-sector partners has grown year on year, with our portfolio of 42 cross-sector collaborative awards worth £41.4m. We provide some illustrative examples.
- 4.2.6 The Centre for Post-14 Education and Work (**Hodgson** et al.) led a major cross-sector partnership programme, *East London Vocational Education and Training (ELVET)*, sponsored by the JP Morgan Foundation, to support training, apprenticeship and employment opportunities for young people in East London in the digital, creative and media, and health and social care sectors. ELVET supported Innovation Projects involving four FE Colleges (Barking and Dagenham, Hackney Community, Newham and Tower Hamlets) working with a range of employers and providers and the Association of Colleges London Region. Our involvement in the interdisciplinary ACTEarly UK Prevention Research Partnership, funded by the MRC to generate and test ways of improving family health, education and well-being in Bradford and East London, led to the award of COVID-19 rapid response funding from UKRI. In this project, **Cameron** is building on her/ACTEarly's local stakeholder relationships in Tower Hamlets to examine the pandemic's impact on existing health and educational inequalities amongst families, children aged 0-4 years and pregnant women.
- 4.2.7 Our Centre for Research in Autism and Education (CRAE) (**Remington, Crane** et al.) exemplifies our commitment to partnership through its work with autism charities, such as Ambitious about Autism and Autistica, conducting research *with* autistic people, rather than on them. The team undertakes extensive public engagement activity including talks, film screenings, the *Brain Detectives* science clubs for children, newsletters and research-school partnerships, to build a dialogue with autistic people and their allies (e.g. families, teachers, clinicians), as well as to promote awareness and understanding of autism among the wider public. CRAE and Ambitious about Autism were awarded the UCL Provost's 2018 prize for Public Engagement in recognition of their research, *Know your Normal*.
- 4.2.8 Scholars in our Centre for Education and International Development (CEID) have helped create a new research area, '*school-related, gender-based violence*' (SRGBV). As an explicit strategy, they have forged partnerships with UN agencies, government and NGOs to find ways of reducing the physical, social and educational harms to children and young people (especially girls). **Parkes, Unterhalter** and colleagues worked with UNICEF, the Global Partnership for Education and UNGEI to address SRGBV in Zambia, Togo, Ethiopia and Côte d'Ivoire (see associated ICS).

4.3 Research contributions to society

- 4.3.1 Knowledge mobilisation, exchange and co-production thread through our research environment, enhancing our ability to make contributions to society. We achieve this through our 'day-to-day' engagement with policy audiences and by our approach to supporting engagement and relationships across and between researcher, policy and practitioner communities.

Influencing policy

- 4.3.2 Our active engagement with government departments underpins our capability to influence policy. For example, our programme of relationship building with the Department for

Education (DfE) has included individual meetings with successive secretaries of state, ministers, permanent secretaries, senior civil servants and special advisors. Our staff are members of various DfE and related working groups (e.g. **Jerrim** – Ofqual restoring confidence in exams data group; **Allen** – DfE teacher workload). We have forged constructive relations with the shadow education team, including meetings involving the IOE's Director(s) to inform their thinking. We use these interactions to link policy-makers to relevant expertise from across the Unit, and to flag colleagues' existing advisory roles within Whitehall and parliament. **Oketch** is a Department for International Development (DfID/FCDO) Senior Education Adviser, and **Luckin** was Specialist Adviser to the House of Commons Education Select Committee inquiry into the Fourth Industrial Revolution. We work with international bodies; for example **Tolmie** was a member of UNESCO's Expert Group on Girls' Education in Science and Mathematics.

4.3.3 We engage with government agencies and national bodies to share our expertise and build networks. For example, in 2018 we hosted a roundtable for the Social Mobility Commission on research evidence on non-cognitive factors in life chances. This helped the Commission understand the existing research base and how best to frame a proposed 'invitation to tender' document. We also strongly encourage staff to respond to calls for expert evidence via government consultations, parliamentary select committee inquiries, the work of all-party parliamentary groups (APPGs), and in building links with think tanks. This activity helps raise individuals' profiles and provides opportunities for career development.

Examples include:

- APPG for Teaching Profession (**Golding**)
- APPG Oracy (**Dockrell**)
- APPG Youth Affairs (**Archer**)
- Care Quality Commission (**Rashid**)
- Commonwealth Association for Science Technology and Maths Educators (**Tunnicliffe**)
- DfE Roundtable Consultations on SEN and Inclusion and Teacher Induction (**Mintz**)
- Education Select Committee (**FrancisR**)
- Education Select Committee, socio-economic disadvantage and educational attainment from PISA (Programme for International Student Assessment) (**Jerrim**)
- European Commission 2015: Erasmus+: Education and Youth Policy Analysis team (**Keating**)
- House of Commons Education Committee inquiry into life chances (**Wyse**)
- House of Commons Petitions Committee and Women and Equalities Select Committee on Black history and cultural diversity in the curriculum (**CallenderCh**)
- House of Lords Committee on Social Mobility (**GreenA**)
- Parliamentary Office of Science and Technology briefing, Evidence on Selective Secondary Schooling (**Sullivan, Rainsberry, Bann, Parsons**)
- Scotland's Widening Access Commission (**Wyness**).

4.3.4 Our Thomas Coram Research Unit (**O'Brien, Cameron** et al.) is well-known for its national and international societal contribution through its engagement with the Equality and Human Rights Commission, EU, OECD and UNICEF amongst others. **O'Brien** has recently provided extensive evidence on parental leave policy to contributing to the EU's European new Work-Life Balance Directive (August 2019). She served as a member of the EU's New Start for Working Parents Expert Advisory Group (para 1.4.6).

Influencing practice

4.3.5 Several areas of our activity illustrate our commitment to working with practitioner and service user communities in innovative and inclusive ways. The *Promoting the achievement of looked after children (PALAC)* programme originated as a result of the dearth of evidence available to support schools in improving outcomes for children and young people in care. It brought together researchers and school practitioners to help schools to audit, enhance and share their practice. PALAC team member **Roberts** was recently promoted to

Unit-level environment template (REF5b)

Vice-Dean (Enterprise) at the IOE, recognising how PALAC's approach to knowledge exchange could productively inform our wider close-to-practice activity. We brought together clinicians, musicians, laryngectomy patients and young people from East London to form a special choir. The project (supported by a UCL Beacon Bursary) led by **Himonides** partnering with the charity Shout at Cancer, explored different techniques for speech rehabilitation. A feature-length documentary about the Shout at Cancer choir, '*Can You Hear My Voice?*' has been screened worldwide and used by those experiencing and caring for laryngectomy patients. The work won the UCL Provost's 2020 Public Engagement Experimentation Award.

- 4.3.6 Our Schools Research and Development Network (approx. 250 members) assists schools to engage with the evidence base on effective classroom practice. It has partnered with Islington Council's School Improvement Services to provide a series of interactive presentations to all head teachers of primary and secondary schools in that borough. The sessions discussed research implications for practice, including from the Maximising Impact of Teaching Assistants team (**Blatchford** et al.) (see associated ICS) and the Centre for Teachers and Teaching Research (**Mills** et al.), which in turn is helping to shape our future research.
- 4.3.7 To enhance interaction with our audiences and extend public engagement with our research, we have invested in a full-time Events Officer (**Thomas**). We run three flagship initiatives: public professorial lecture series; '*CoffeeBreaks*', introduced during 'lockdown' to provide a platform for the public to put questions to our experts on topical issues in education; and, '*What if...?*' debates featuring academics alongside policy and practitioner voices (supported by the TES as media partner). These events are broadcast globally (the event highlighting COVID-19's global impact on education had a live audience in 25 countries across six continents). We share event recordings as part of our Podcast portfolio, together with interviews, debates and episodes focusing on current developments such as the Black Lives Matter movement through the perspective of our students. In 2020, this portfolio was accessed 36,000 times across 101 countries.

4.4 Contributing to sustainability, innovation and societal challenges

- 4.4.1 Making a significant contribution to education and social research capability is one of our enduring objectives. Fostering interdisciplinarity, methodological breadth and innovation plays an important role. Since 2014, we have developed our interdisciplinary capability and we continue to champion a broad church of methodological approaches as illustrated here by one particularly innovative activity. **Anders, Dockrell, Hodgen, Savage, Tolmie, Webster** (and others) are at the forefront of creating high quality randomised control trials (RCTs) in educational settings, the evaluation of interventions, and addressing the challenge of reproducibility. Reflecting critically on the use of RCTs, which are increasingly favoured by funders, **Anders** and colleagues (partnering with the Behavioural Insights Team) published their review, *Evaluation of Complex Whole-School Interventions: Methodological and Practical Considerations* (2017) for EEF. The review explored high quality alternatives to RCTs including experimental and quasi-experimental approaches.

Responsiveness to national and international priorities

- 4.4.2 As outlined earlier, the robustness of our infrastructure enabled us to respond and adapt existing research designs and plans swiftly to facilitate colleagues' engagement with COVID-19. This included the creation of a system of expedited but rigorous ethical review, with tailored guidance and templates for PIs submitting either a new ethics application or seeking to amend a previously approved application to move data collection online. We generated new applications (securing over £2.76m in research awards between March and August 2020) to rapid response schemes, also repurposing existing grants to contribute to this priority. By August 2020 we had 30 live COVID-19 projects and over 20 bids in

development or pending a funding decision. For example, **Moss** and colleagues (funded by the ESRC) investigated teachers' responses distinguishing between 'a duty to care and a duty to teach'. With the support of our communications and research engagement teams, they have published a series of policy and practice briefings. We have also acted swiftly to augment our dataset resources to address pandemic-related questions. **Goodman** convened an interdisciplinary team (economics, health, psychology and sociology) to assess the scope for additional surveys of 'our' five longitudinal cohorts. The team was subsequently awarded funding to research the changing impacts of the virus on different aspects – education, physical and mental health, work, finances, family and relationships – of the lives of up to 50,000 members from the five cohort studies.

- 4.4.3 We have mobilised our expertise to research the social and educational priorities associated with enormous humanitarian challenges generated by geo-political turbulence. For example, **Pherali** leads a research programme on *Education, Conflict and Peacebuilding*, focusing on education in conflict-affected contexts including, Afghanistan, Nepal and Somaliland/ Somalia. **Pherali**, **Chase** and **Laurillard** are co-investigators in the interdisciplinary GCRF-funded RELIEF (Refugees, Education, Learning, Information Technology and Entrepreneurship for the Future) Centre led by Henrietta Moore in UCL's Institute for Global Prosperity. Their research has been exploring the role of teachers and the design of blended learning approaches for teacher development in contexts of mass displacement, such as in Lebanon.

4.5 Indicators of wider influence or contributions to the discipline or research base

- 4.5.1 Our wide-ranging contributions to the discipline and its research base made during the assessment period demonstrate our commitment to and involvement in enhancing its vigour, evolution and sustainability. We provide an indicative rather than exhaustive account of our contributions, building on evidence and illustrations included in earlier Sections.

A respected stakeholder in the wider scholarly and professional landscape

- 4.5.2 The Unit makes a significant contribution to the discipline through colleagues' extensive engagement with learned societies and professional bodies and key roles in longstanding disciplinary bodies. We have supported three consecutive presidents of BERA (**McCulloch**, **Moss** and **Wyse**) during this REF cycle by funding 0.2 FTE for their time during their presidential year. In addition, we supported **Wyse** and BERA's initiative on close-to-practice research. Presidential roles also include:
- British Association for International and Comparative Education (**Morris**)
 - British Science Association (**Archer** – Vice-President, Education)
 - International Association for Task-based Language Teaching (**Revesz**)
 - International Society for AI and Education (**Luckin**)
 - International Society for Science and Religion (**Reiss**)
 - Society for the Scientific Study of Reading (**Savage**)
 - The Mathematical Association (**Golding**).
- 4.5.3 As an indicator of international scholarly status, numerous colleagues have held editor-in-chief (or equivalent) and deputy editorial positions at some 30 journals, including:
- *American Sociological Review* (**Wing Chan**)
 - *BioMedCentral Medical Education* (**Woolf**)
 - *British Journal of Educational Psychology* (**Cowan**, **Crane**, **Baines**)
 - *European Journal of Higher Education* (**Marini**)
 - *History Education in Research* (**Chapman**)
 - *Journal of Curriculum Studies* (**Deng**)
 - *Journal of Education Policy* (**Vincent**)
 - *Journal of Vocational Education and Training* (**Fuller**)

Unit-level environment template (REF5b)

- *Language Policy* (**Perez-Milans**)
 - *London Review of Education* (**Carpentier, Starkey, Wright**)
 - *Research in Developmental Disabilities* (**Dimitriou, Sumner, Van Herwegen**)
 - *Teaching in Higher Education* (**Gourlay**).
- 4.5.4 Colleagues have stimulated new methodological and interdisciplinary debates, by founding new journals, including:
- *Journal of Visual Culture* (**SmithM**)
 - *Research for All* (**OliverS**).
- 4.5.5 Our staff play an active role as journal special issue and guest editors to help foster future research inquiry. We also contribute as editorial board members to approx. 300 journals including: *British Educational Research Journal*; *British Medical Journal (BMJ)*; *Computers and Education*; *European Journal of Education*; *Gender and Education*; *Gender and Society*; *Higher Education Policy*; *International Journal for Nurture in Education*; *Journal of Ethnic and Migration Studies*; *Journal of the Learning Sciences*; *Journal of Second Language Pronunciation*; and *Pedagogy, Culture and Society*.
- 4.5.6 Recognising the importance of developing the early career research base, our staff have been external examiners for doctorates in over 100 universities across 14 countries and five continents. **Xu** acts a convenor of BERA's Early Career Special Interest Group.
- 4.5.7 Staff play an active role in reviewing and evaluating research proposals from peers across the sector. This includes peer review colleges of UKRI councils (AHRC, ESRC and the MRC) as well as the British Academy, EEF, Leverhulme Trust, NIHR, the Nuffield Foundation and the Wellcome Trust. The Unit is represented on strategic advisory boards for major research funding bodies and policy-making organisations, including:
- Care Quality Commission Clinical Specialist Advisor (**Rashid**)
 - Co-chair of the OECD PISA 2024 Strategic Visioning Group (**Archer**)
 - Consultation on Independent Group Advising on the Release of Data (IGARD) to HSCIC (Health and Social Care Information Centre) (**Goodman**)
 - What Works Trial Advice Panel (TAP) to improve the quality and quantity of impact evaluation across central government (**Anders**)
 - OECD Core Expert Group member, PISA 2024 foreign language questionnaire (**Isaacs**)
- 4.5.8 We convene BERA's Special Interest Group on Artificial and Human Intelligence (**Gray**), and participate in an array of national associations, including: British Sociological Association; British Psychological Society; British Association of Applied Linguistics (BAAL); History of Education; Education and Neuroscience; Universities Association for Lifelong Learning's Work and Learning Network; British Association for International and Comparative Education. We contribute to numerous international networks spanning our research expertise, including: European Education Research Association; European Association for Research on Learning and Instruction; Chinese Educational Research Association; European Early Childhood Education Research Association; International Association of World Englishes; Australian Association for Research in Education; International Association for Discourse Studies; International Association of Critical Realism; International Language Testing Association.

A recognised presence on the world stage

- 4.5.9 The IOE is a founding member (2007) of the International Network of Education Institutes (INEI). In 2020, with our eight INEI partners we published a collective statement on the implications of the COVID-19 pandemic for education and social justice. Working with BERA, we were also instrumental in founding the World Educational Research Association (WERA). In 2019, **Starkey** won an award to develop the WERA International Research Network on Human Rights Education.

- 4.5.10 The Unit receives recognition and awards for its contribution to the discipline. Specific achievements for publications include:
- Best paper prizes: Association for Medical Education in Europe (AMEE) (**Alexander**); *Education Review* (**Bubb**); Emerald Publishing (**Daly**); *International Journal of Social Research Methodology* (**Brown**); International Network of Analytical Sociology (**Askoy**)
 - Best conference paper awards: ACM Interaction Design and Children Conference (**Ibrahim, Vasalou**); ACM International Joint Conference on Pervasive and Ubiquitous Computing (**Rode**); American Education Research Association (AERA) Conference (**Bangpan**); British Educational Leadership, Management and Administration Society (BELMAS) Conference (**Perryman**)
 - Books prizes: Association for Educational Communications and Technology (AECT) Book Award (**Price**); British Association for Applied Linguistics Book Prize 2019 (**Perez-Milans**); Philip Abrams Memorial Book Prize (**Faircloth, Redclift** - shortlisted); Society for Educational Studies National Book Prize (**McCulloch**); The Peter and Iona Opie Prize from the American Folklore Society (**Burn**); UKLA/Wiley Blackwell Research in Literacy Education Award Shortlist (**Savage**)
- 4.5.11 Several colleagues have been conferred with national Honours, including the Dame Commander of the Order of the British Empire to **Hoyles** for services to Mathematics Education and Education (2014) and **Dacre** for services Medicine and Medical Education (2018). In 2017, **Gershuny** was awarded Commander of the Order of the British Empire (CBE) for services to the Social Sciences and Sociology, with **Davis** and **Park** also awarded CBEs for services to Education and Social Sciences respectively. **Unwin** and **CallenderCI** received Officer of the Order of the British Empire for services to Vocational Education and Higher Education respectively, with the latter receiving the UK Literary Brenda Eastwood Lifetime Achievement in Award in 2019 for good practice in teaching for diversity and inclusion. **Allsop** received a Member of the Order of the British Empire in 2019 for her services to Education and to Children and Families from Disadvantaged Backgrounds. In 2015, **Woof** was awarded the British Science Association Charles Darwin Award Lecture, and **OliverS** was awarded the Campbell Collaboration's Robert Boruch Award for Distinctive Contributions to Research that Informs Public Policy. In 2020, **Laurillard** received a lifetime achievement award from the international e-assessment association and in 2020 **McManus** was awarded the ASME (Association for the Study of Medical Education) Gold Medal.
- 4.5.12 Over 60 Fellowships have been conferred on our colleagues in this REF cycle. **Unterhalter** was appointed a Fellow of the British Academy in recognition of her ground-breaking work on gender, education and development. Since 2014, the Academy of Social Sciences has recognised ten of our scholars as Fellows (**Archer, Dearden, Jewitt, Flouri, Fuller, Francis, O'Brien, Park, Schoon, Wyse**) bringing our total number to 32. Others include: Academy of Medical Sciences (**McManus**); the British Psychology Society (**Noble**); Fellow of the International Professional Development Association (**Daly**); Leverhulme Trust Major Research Fellowship (**Gourlay, Blatchford**); and BERA John Nisbet Fellowships for outstanding contribution to educational research (**Pollard, Whitty**).
- 4.5.13 Our early career researchers' contributions have been recognised by prestigious bodies including: the British Academy Rising Star Engagement Award (**Crane**); BERA's Early Career Researcher Network Event Funding Award (**Sakata**); European Academy of Sociology Raymond Boudon Award for Early Career Achievement (**Askoy**); The British Psychology Society Margaret Donaldson Prize for outstanding early career contributions to developmental psychology (**Van Herwegen**). Future Leader awards were secured by **Kucirkova, Redclift** (both ESRC) and **Nemorin** (UKRI).
- 4.5.14 Our colleagues' international standing is illustrated by over 1,000 keynote speeches, lectures and presentations to significant meetings of scholars, policy-makers and

practitioners in over 190 universities, as well as the 60 plus honorary and visiting positions held in institutions in 16 countries.

- 4.5.15 REF Guidelines on Panel Criteria and Working Methods (para 358) require provision of 'indicators of success' nationally and internationally. Although international rankings must always be considered with caution, it is significant that in each of the eight years from 2014 to 2021 the IOE has been rated as No 1 for Education in the QS World Rankings. As our Environment Statement as a whole makes clear, we take our responsibility seriously, as a strategically important research hub, to sustain our wide-ranging contributions and impact into the future.