Institution: Lancaster University

Unit of Assessment: 32 Art and Design: History, Practice and Theory

1. Unit context and structure, research, and impact strategy

The UoA

Lancaster Institute for the Contemporary Arts (the Institute) is a dynamic community of scholars committed to generating world-leading multi- and interdisciplinary research in Art, Architecture, Design, Film, Sound and Theatre, and enquiry into and between creative practice, criticism, and theory. Whilst journal articles and authored books are fundamental across our disciplines, the Institute's distinctiveness includes theory-informed practice, and outward-facing and innovative knowledge exchange activities focussed on local (e.g., Lancaster District Council), national (e.g., Government Office for Science), and global challenges (e.g., Malaysian Government). Our high benchmark of research grant funding of £16M has increased 319% on that reported in REF2014 (Table 1), consolidating our position in the highest national percentile for research grant income in the UK within our subject domain. Our research funding supports collaboration between multi- and interdisciplinary teams enhancing our ability to respond to global problems, and to produce high-quality research outputs. Excellence is evidenced through our research outputs since 2014: 55 monographs, 142 edited books and chapters, 257 peer-reviewed journal articles, papers presented at over 450 conferences, and 65 exhibitions and performances.

Key indicators of vitality and sustainability:

Table 1. Evidence of performance across KPIs

Indicators	RAE 2008	REF 2014	REF 2021	% increase from 2014
Grant income (£)	£0.8M	£3.8M	£16.4M	319%
PDRA FTE	4	10	34	240%
PhDs awarded	8	38	52	37%
Outputs	451	717	969	35%

At 49.78 FTE, our size and research diversity create a vibrant culture that stimulates synergies within the Institute, across Lancaster University's (LU) research centres of excellence, and with universities and communities globally. The Institute's commitment to public engagement and non-academic impact has also initiated novel co-design methods to collaborate with external research users.

Strategic aims (2014-20):
- Recruit expert researchers and doctoral students to develop world-leading enquiry at the frontiers and boundaries of our fields.
- Grow and diversify funding through multi- and interdisciplinary approaches to research questions concerning national and global challenges.
- Increase routes to impact on societal change through close working with collaborators and audiences for creative arts and design research.

Measuring our success:
Targeting recruitment:
Our staffing strategy has been to balance Senior Lecturer and Professorial appointments with investment in Early Career Researchers (ECRs) to build future disciplinary resilience. Therefore, of 39 indefinite appointments, 7 are Professors in existing (art, design) and new (architecture)

disciplines. 32 are Lecturers, 27 in design, reflecting vitality in funding streams, with investment in 7 lecturers in the Cultures and Practices research centres, stimulating future activity - see Section 2, People.

Growth and diversity in funding:
Growth is shown in Table 1, above. We have sought income from diverse sources to ensure sustainability in external income capture, with a spread unusual in the sector (cf. REF2014 UOA34/4b/c). Since REF2014, additional funders include GCRF, MRC, NERC, NESTA, Ministry of Defence, Research England (Table 2). While 81% of our funding comes from UKRI, it is spread across AHRC, ESRC, and EPSRC. Other funders include trusts and charities, Heritage and Lottery, industry and government, EU, and Arts Council England. We are well-placed to build upon our mature network of research collaborators for new sources of UK and non-UK funding – see Section 4 Collaboration.

Table 2. £16.4M research grants awarded 2014-2020.

AHRC	4,360,645
BIS	9,700
EPSRC	2,145,422
ESRC	1,866,477
EU	225,615
EU Industry	31,220
Future Cities Catapult Ltd	64,092
Ministry of Defence	4,000
NERC	19,946
NESTA	9,000
Non-EU other	4,940
Other	17,000
Research England	7,636,606
The British Academy	9,872
The Leverhulme Trust	42,720
UK Charities open competition	1,496
UK Charities other	17,269
UK Local Government	5,000
Total	**£16,471,020**

Multi- and interdisciplinary approaches enabled flexible responses to research questions concerning regional, national, and global challenges: Well-established partnerships with Computing, Health, Environmental Science, Management, English Literature, History, and Sociology at LU have provided high quality partners for research grant applications. For example, Richards collaborated with Computing on *Chatty Factories*, a 3-year (£1.5M EPSRC) project building on the rapid growth in data, artificial intelligence, and robotic fabrication systems at the forefront of manufacturing, increasing the UK's industrial competitive advantage. Tsekleves partnered with Biological Sciences on home hygiene practices in Ghana with *Dust Bunny* (AHRC/MRC £250K), addressing the role of design research in tackling drug-resistant infections. Also, Rose, working with Health Research, co-designed an innovative project with the charity Freedom from Torture (BA £9.9K), tackling the mental health of displaced torture victims. Lopez-Galviz collaborated with UCL/Development Planning on London land use (Lincoln Institute £133K). Further examples addressing shared challenges are given in Section 4, Collaboration.

Routes to societal change:
Our strategic aim, to use our closeness to the audiences for creative arts and design research to leverage routes to societal change, draws on applied research that uses co-design and co-creativity to address social issues. Many of our cross-disciplinary collaborations make full use of the power of creative engagement with one's own problem as a tool to support clients' or collaborators' realisation of solutions, giving them extensive buy-in e.g., Cruickshank *Leapfrog*

Case Study. Rodgers AHRC Design Leadership Fellowship, *Design for Change* (AHRC £675K), organised eight *Next Generation Design Research Networks* across UK with 700 participants to address sustainability, health, security, care, and poverty in the UK. *SeafoodAge* (Tsekleves) raised public awareness and deepened debate in global and community health in Kuala Lumpar, developing health and care policies for senior citizens through co-designing new ready-to-eat seafood products with older people. In the creative arts, the impact on audience perception and understanding of social issues has been realised through the experimental performance practices of Quick and Etchells. Knowledge exchange and impact through partnerships with non-academic organisations has also expanded in the REF period. Section 4 details further examples of impactful research contributing to the economy and society.

Institute Research Structure:

Research in the Institute transcends our six research fields (Art, Architecture, Design, Film, Sound and Theatre) through a three-centre structure, creating an environment that supports production of world-leading research through multi-, interdisciplinary and solo modes of enquiry. The three centres: *Imagination*, *Cultures*, and *Practices* are intersected by cross-cutting themes that reflect shared concerns and opportunities.
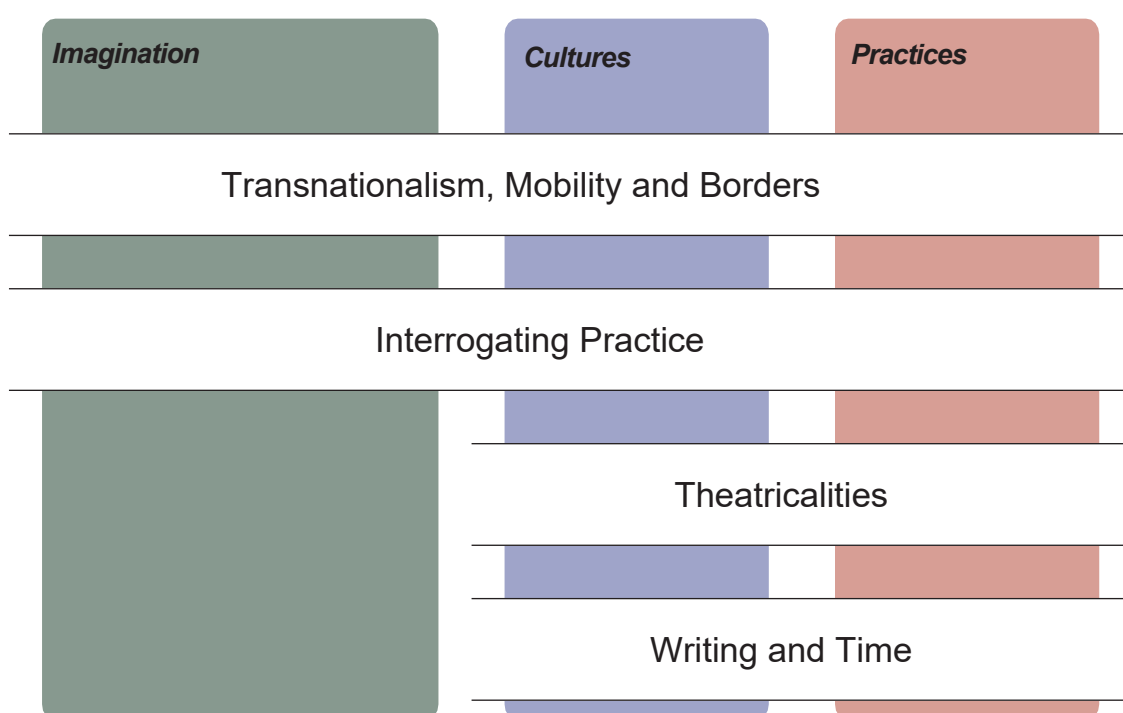

Figure 1. Structure of research centres and cross-cutting themes

The centres provide an underpinning ethos and focus, meeting at least termly for researchers to share current ideas. Each centre has a senior research leader, reporting to the Institute's Research Committee, responsible for coordinating and enhancing activity. The cross-cutting themes reflect collaborative opportunities, research synergy and dialogue between researchers across centres and disciplines, facilitating integration and support of PDRAs, PGRs, ECRs, and visiting researchers. The three research centres are described below, with evidence of their vitality.

Imagination: Bayer, Blaney, Bourikas, Boyko, Calvo, Cavada, Ceyan, Cooper, Coulton, Cruickshank, Cureton, Dalton, **Dunn** (Director), Gradinar, Hands, Jacobs, Lindley, Perez, Pollastri, Richards, Rodgers, Sudjic, Thomas, Tsekleves, Walker, Wang, Whitham.

Table 3. *Imagination* outputs during REF period

Monographs	Edited books/chapters	Journal articles	Exhibition/ Performance	Conference Papers
34	71	183	10	308

Imagination is a world-leader in design research, taking design-led, collaborative and innovative approaches to complex, multi-scale, global research challenges to deliver healthier, more prosperous, and sustainable products, places and services. Applied and theoretical research provide a uniquely powerful socio-technical bridge between industry, society and policy, addressing challenges around cities, communities, factories and workplaces, health and wellbeing, homes and policymaking. Cooper is the founding editor of *The Design Journal*. *Imagination* achieves remarkable success in grant capture (£10.7M of the £16.4M, table 2). The additional £13.2M UKRI and University E3 investment (E3 £7.6M, University £5.6M) in *Beyond Imagination* (Cruickshank, Cooper, Dunn) has dramatically increased capacity to undertake and lead high risk, cutting-edge design-led interdisciplinary research. E3 is transforming both the landscape of design research, and general approaches to undertaking interdisciplinary research addressing societal, environmental and other complex global challenges. This is contributing to the UK`s knowledge production and prosperity and delivering international impacts in both developing and developed countries. The E3 project recruited 10 academics, 10 PDRAs (1 funded by Lancaster), 10 PhDs and 3 support staff.

Cultures: Aston, Bennett, Bettinson, Boyko, Fiddler, Frayling, Gere, Ghorbankarimi, Juers-Munby, Harris, Harland, Lopez-Galviz, Marsden, Mottram, Munby, Perry, Rose, Rowe, **Rushton** (Director), Southern, Stewart, Thakkar, Walker, Wang.

Table 4. *Cultures* outputs during REF period

Monographs	Edited books/chapters	Journal articles	Exhibition/ Performance	Conference Papers
17	59	54	20	89

Cultures focuses on research advancing critical and theoretical understanding of contemporary cultures and contexts in the arts that feeds into the four cross-cutting themes. *Cultures* is highly interdisciplinary, bringing together researchers from various cultural fields, as well as University Centres and the University's Institute for Social Futures. *Cultures* research sustains attention on critical thinking and making, advancing contemporary arts as a transformative force within our culture.

World-leading research on identity, feminism, gender, transnationalism, political resistance, and mobilities places important societal challenges at the heart of its mission. For example, Aston contributed to policy dialogues on education policies impacting women in India and the UK. Munby's analysis of black American cinema offers new perspectives on blaxploitation politics, connecting black cinematic representation to the Black Lives Matter movement. Ghorbankarimi analyses transnational cinema and Bennett the political challenges of its teaching. Projects in collaboration with the Faculty-based Centre for Mobilities Research (CeMore) link to 40 mobilities research organisations from 28 countries in a global transdisciplinary community of researchers, artists, designers, and research users, pioneering mobile methods for studying social change and innovation at multiple scales. CeMore hosts the journal *Mobilities*. Southern (Associate Director, CeMore) and Rose created a new platform for art and mobilities research as co-curators of *Mobile Utopia: Art and Experiments* (2018), initiating 8 events and exhibitions, hosting 5 Fellowships, funding 2 PhD students (2019, 2020), 1 Post-doctoral Researcher (2014-2016) and 3 Artist Associates.

Practices: Casey, Davies, Dickens, Etchells, Jones, Harland, Juers-Munby, **Quick** (Director), Quin, Southern, Stewart.

Table 5. *Practices* outputs during REF period

Monographs	Edited books/chapters	Journal articles	Exhibition/ Performance	Conference Papers
4	12	20	35	53

Practices has broadened its perspectives from art, digital, and performance to include curatorial practice and dance. *Practices* is conceptualised across three interrogative approaches to creative practices: creative and collaborative processes; innovation in theoretical, philosophical, cultural, and social understandings; and innovative collaborations with disciplines outside arts and humanities. The University venue, Lancaster Arts, provides a platform for performance and exhibition, enabling highly experimental work to engage with wider audiences, and collaboration with external contemporary arts practitioners e.g., Southern's *Unruly pitch* (2019). Collaborative projects are disseminated widely e.g., through reaching out across disciplinary fields: Casey and Davies investigated innovative drawing approaches with archaeologists, medics, farmers, pilots, and geologists, through exhibitions, articles, workshops, and a monograph (2020). Quick's experimental performance company *imitating the dog,* received over £1M Arts Council England (ACE) funding up to 2022. Etchells' theatre company *Forced Entertainment,* renowned for inventive and provocative new theatre, secured £1.5M 2014-20 (ACE). Quick and Rushton's *Theatricality and Interrelations Between Art, Film and Theatre* (AHRC), produced a *Special Issue of Performance Research* and held five international symposia examining the boundaries of 'theatre.'

Impact and engagement strategy
The Institute aims to benefit individuals and groups, maximising and sustaining impact with multiple partners and stakeholders, through engagement with local, national, and international communities, policy makers, government experts, industry, NGOs and the Third Sector – see Section 4, Supporting collaboration and engagement.
Impact has been achieved on policies (e.g. ICS: *Future Cities,* also delivering impacts on health, wellbeing and prosperity), economies (e.g. ICS: *Leapfrog* and *The Creative Exchange,* also delivering social, pedagogic and policy impacts), and pedagogies, (e.g. ICS: *Transforming Practice,* also impacting practitioners' understanding, culture and quality of life). Our work has challenged and changed discourses, platformed marginalized voices, shaped policy and innovation, co-designed change and responded to issues using ground-up, problem-driven research. The beneficiaries of such work include disadvantaged groups, including children in care, refugee and asylum seekers, sick and disabled people, the obese, youth, older people, women and girls subject to violence, and the economies of industry and business. See Section 4, Contributions to the economy and society and ICS *Leapfrog*.

The infrastructure to support impact activities includes a dedicated space in the Institute's building, for meeting with external collaborators and audiences. We provide encouragement, time, space, IT and resources for researchers to engage with diverse stakeholders and develop impact from many forms of co-working and collaboration – see Section 3, Infrastructure and Facilities. As part of our commitment to generate public benefit from creative arts and design research, we encourage impact through mechanisms that include:

- Faculty £1M ESRC Impact Acceleration Account. This funded Boyko, Cureton, Cruickshank, Pollastri to collaborate with colleagues in Politics and Physics;

- Access to seed-corn funding to enable impact from Institute, Faculty and University QR funds, e.g., Impact and Knowledge Exchange (IKE) grants;

- Incorporating impact and engagement as criteria for staff development and promotion, with specific Institute criteria in the promotions discipline profile;

- Recognising research impact within Institute workload models, with specific allowances for impact activities;

- Supporting participation in University and external workshops, to facilitate pathways to impact for funded projects;

- Providing teaching cover for staff undertaking public-facing work, such as Rushton's Cinema Archive project;

- Experimenting with methods and sharing best practice through knowledge exchange activities, such as Calvo's consultancy for Lancaster City Council, the Funding Accelerator and Leapfrog (see ICS);

- Investing and training in software to capture, monitor and track impact (Public Engagement Evaluation Toolkits, survey tools etc.).

The Institute's Engagement Coordinator Jones, appointed in 2019, oversees the development and implementation of our Engagement Strategy, designed to nurture a strong, inclusive and collaborative engagement culture, encompassing academics, as well as postgraduate and undergraduate students. Collaborative research and advisory roles on boards and trusts have formed the principal areas of activity (e.g., Cruickshank with Blackburn with Darwin Borough Council, and Mottram, Coventry Cathedral), contract research (e.g., consultancies) and student placements are current priorities to leverage research in delivering applied results and to support new placement programmes. Social and community engagement (e.g., public lectures, exhibitions, school visits) is maintained to continue effective relationships with regional organisations such as the Dukes Theatre (Lancaster), Grizedale Arts Trust, and Lancaster Grammar School.

The Faculty Director of Engagement, Dawes, oversees allocation of IKE grants to support academics to enhance existing and develop new impact and knowledge exchange activity (funded: Casey, Quick, Rose, Tsekleves). Department Engagement Coordinators sit on the Faculty Engagement Committee, chaired by Dawes, joining the Faculty Engagement Team to shape strategic approaches to engagement and impact and share opportunities for institution-wide engagement-related developments.

Sustainable engagement and impact is important in our professional development and reward policies. We incorporate impact into our training and review structures, such as PDRs and annual research away days.

Impact case studies:
Our case studies are examples of excellence from the range of impacts we have achieved and reflect our approach to impact:

(1) *Future cities: Changing policy on places*. This research project changed how policy makers think about and act upon the future of cities locally, nationally, and internationally, focusing specifically on the design of future cities and improvements in public health, prosperity, security, and work.

(2) *Creative Exchanges: Designing interactions for social, economic and policy impact*. CX was a platform for impact through commercial collaboration, a new PhD program, and a new generation of researchers. *The Funding Accelerator* built further impacts through application of similar methods, training Third Sector organisations in fund-raising.

(3) *Leapfrog: Using innovation to transform how organisation, professionals and individuals engage with their communities* enabled social, professional and economic benefits through new creative

engagement, working with community groups, the public sector, NGOs and others to help design, use and share better ways to interact, communicate and engage with each other.

(4) *Transforming Theatre Practice by Challenging Understandings of Contemporary Performance* and *Imitating the Dog* have enhanced the landscape of contemporary theatre practice and pedagogy, challenging and changing public and professional perceptions of what constitutes theatre, enriching the cultural lives, imaginations and sensibilities of audiences globally.

Supporting interdisciplinary research
Multi- and interdisciplinary research is at the core of our ethos, and its sustainability and enhancement is part of our future strategy. Examples of interdisciplinarity across and beyond the University include *Para-site-seeing,* Southern with Biomedicine and Life Sciences (Wellcome Trust £32K), exploring mobilities and parasites; Casey's collaboration with Physics and Lancaster Environment Centre on *Dark Matters* (AHRC £80K + £1K); and Cooper and Coulton's collaboration with computing (UCL) and cyber security (Oxford, Warwick) experts through the Privacy, Ethics, Trust, Reliability, Accessibility and Security (PETRAS) (EPSRC £13.8M Centre).

Interdisciplinarity is further supported through enabling new Lancaster collaborations reaching across disciplinary boundaries with: i) the Institute for Social Futures (ISF) linking new appointments Jones, Lopez-Galviz, and Rowe with Dunn on social futures in science, arts and humanities; ii) the Data Science Institute (DSI) linking new appointments Boyko, Richards and Cureton, with Marsden and Tsekleves on data science themes of analysis, society, environment, resilience, sustainability, health and ageing. This connection has already secured £204K from EPSRC. Promising new collaborations are being developed with the new £41M Health innovation Campus to generate multi-disciplinary and multi-stakeholder approaches for developing new health solutions.

Future research and impact strategy 2021-2028
The Institute's goal is to further strengthen our position as an internationally excellent centre for research and impact. In spite of the recent Covid-19 pandemic, our community has remained active and resilient and our long-term future strategy remains the same. To achieve our vision, we will:

Recruit, retain, develop expert researchers and doctoral students, to undertake world-leading enquiry at the frontiers and boundaries of creative arts and design. This will be achieved by supporting, promoting and facilitating staff (as outlined in Section 2, Developing staff), e.g. ECR reduced workloads, sabbaticals, mentoring, team working and supporting interdisciplinarity through centres and cross-cutting themes focussed at the cutting-edge of our disciplines.

Sustain and grow diverse research income streams and generate increased funding across our research fields. We will build diversity in funding sources through multi- and interdisciplinary approaches to research questions. We will continue to ensure all staff are well-informed about funding and collaboration opportunities, continue seed-corn funding from the Institute and Faculty Research Funds, strengthen research mentoring and support for grant application writing, and attract excellent research staff with strong potential to generate income.

Achieve significant impact beyond academia, especially through Centre themes that address social welfare, inequalities, health and wellbeing, sustainability, urbanism, the environment, and industry. We will focus on local, national, and global societal priorities e.g., disadvantaged groups and manufacturing and business, as indicated above under *Impact and engagement strategy*.

Develop and improve our culture of engagement, by nurturing existing networks and building new collaborations with non-academic partners across interdisciplinary boundaries. We will pursue our Impact strategy, foster collaborations (see Section 3, Internal seed-corn funding), and generate new networks through funded research, conferences, and the public dissemination of research.

Maintain a supportive, stimulating and vibrant environment for staff, RFs, PDRAs and PGR students, by continuing the practices and support described in Section 2, Developing staff; delivering the action points in our Athena SWAN Bronze Award and making enhancements as we apply for a Silver Award (2021); practicing EDI to improve the numbers of women, BAME, and others with protected characteristics and supporting them in applying for research posts, securing appointments, winning promotions, applying for research grants, and producing outputs.

Research integrity and ethics

Our research culture is driven by full commitment to the Concordat to Support Research Integrity, as endorsed by the University's Research Committee. The Institute adheres to University-wide research integrity and ethics procedures and commits itself to research conducted in ways that respect the dignity, rights and welfare of participants, minimising risks to participants, researchers, third parties and the University itself (cf. Institutional statement).

Ethical conduct is governed by the Faculty for Arts and Social Sciences and Lancaster University Management School Research Ethics Committee (REC). Two Institute staff sit on the REC with responsibility for: (a) contributing to the ethics process at Institute and Faculty levels, (b) providing mentoring and assistance to students and colleagues in the Institute, and (c) reviewing research ethics applications submitted to the REC. Research ethics is also an integral part of Institute teaching (cf. Institutional statement).

Open Access

Publications of all staff are represented in Pure, the well-maintained institutional repository (Gold or Green access). Links to personal blogs and training support for social media activity maintains the presence of our researchers through informal routes, with the publication of the 'little books' series providing additional resources for research users. The Library is playing a key role in preparing policies and infrastructure in anticipation of Plan S, and is in conversation with national bodies, contributing to the UKRI open access review (cf. Institutional statement). The Institute has a 96.15% REF OA compliance rate.

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2. People

Staff profile

The Institute currently has 55 Category A headcount on indefinite contracts, including 14 Professors, 12 Senior Lecturers, and 25 Lecturers, of whom 18 are returnable as Early Career Researchers (ECR) as of census date. Over the REF period, it has had 34 PDRAs and 6 Research Fellows employed on research projects with time-limited external funding. The Institute is characterised by a well-balanced, mixed demographic. For example, it has a mix of long-serving members of staff (20+ years) and newer colleagues in their first indefinite position. This mixed demographic is also evident in our gender balance, staff country of origin, and diversity, as outlined in the Recruiting staff and Equality and diversity sections below.

Staffing strategy

Our staffing strategy is to *recruit expert researchers to develop world-leading enquiry at the frontiers and boundaries of our field* and is reflected in our approach to the appointment and support of staff at all career stages.

Recruiting staff

The Institute's recruitment strategy is to appoint the best applicants at the advertised level, enable them to achieve their potential and reward achievements through the promotion system. Overall, 39 indefinite appointments were made in the relevant period: 20 male and 19 female; 32 lecturers and 7 Professors; 20 were British and 19 non-British citizens (from Australia, Canada, Chile, China, Columbia, Greece, Iran, Ireland, Italy, Portugal, Romania, Spain, Turkey, USA, Venezuela). Appointments were made to: (1) strengthen long-standing areas of research excellence; (2) invest in new, cutting-edge areas; and (3) foster connections across research groupings.

New appointments are explicitly made to enhance the three research centres and themes across our main subject domains. For example, *Cultures* was bolstered by the professorial post of Mottram, and lecturers Lopez-Galviz, Rowe, with ECR Ghorbankarimi strategically appointed to strengthen research that investigates practice across transnational borders. New investments in *Imagination* included professors Dalton and Dunn to strengthen excellence in urban research, complemented by lecturers Boyko and Senior Lecturer Cureton with ECR Pollastri. Health research was bolstered by the Professorial post of Rodgers and Senior Lecturer Tsekleves. Investment in *Practices* included the appointments of Dickens, Jones, and Quin (replacing Harland).

Developing staff
New lecturers have a three-year probationary period. Probation aims, agreed with Faculty Probation Committee, cover research, engagement, teaching, service/leadership, and training needs and goals. The Institute Director has annual review meetings with each probationer, producing written reports for final approval by Faculty.

Staff training needs are identified by individuals annually and discussed as part of their Performance Development Review (PDR) with the Institute Director or delegated reviewer, where personal objectives and goals are collaboratively agreed. All new staff, regardless of seniority or length of service, are assigned a mentor to provide a point of contact and impartial advice on university expectations, practices and opportunities, meeting regularly each year. The University's Organisation and Education Development (OED) service provides formal development training, on mentoring, diversity, leadership, researcher development, and personal effectiveness in work roles.

The University promotions criteria incorporates three new routes to promotion besides research excellence: (1) excellence in teaching with impact beyond the university; (2) engagement with business, government, civil society, and the wider community; and (3) a balanced route giving equal weight to research, teaching, and engagement. The Institute supports colleagues to find their own path to promotion, using the PDR process, mentoring, and targeted Institute promotions workshops, complementing university provision with subject specific examples and advisors. The PDR system enables colleagues to set their career objectives, which has resulted in 21 staff achieving internal promotion in the REF period: 8 Female and 13 Male.

Developing early career researchers and lecturers (ECRs)
The University is fully committed to the revised Concordat to Support the Career Development of Researchers (cf. Institutional statement). Our post-doctoral research associates (PDRAs) work closely with their PIs, getting experience of managing research and applying for research funding, with the University providing additional levels of support (cf. Institutional statement). The Institute is committed to meeting the different needs of ECRs and PDRAs throughout their career. They participate in the annual cycle of PDRs and have opportunities to gain teaching and supervisory experience. The Institute secured indefinite lectureships for former PDRAs Boyko, Gradinar, Hernandez-Pardo, Lindley, Perez and Pollastri, who all moved from fixed-term research contracts to indefinite lectureships, strengthening the *Imagination* research centre. ECR colleagues are regularly involved as Co-Investigators in funding bids led by more experienced colleagues e.g., Pollastri with Tsekleves (Intereg Atlantica); Richards with Cruickshank (EPSRC); Lindley with Coulton (AHRC). The ISF provides support for its new associate researchers through weekly seminars, opportunities to discuss research with more senior colleagues, and assistance in bid writing.

All new lecturers have a reduced teaching/administration workload during probation. ECRs are required to undertake the AdvanceHE-accredited Certificate of Academic Practice (or equivalent), also recommended to PDRAs undertaking teaching. This helps them acquire new skills for use later in their careers. An ECR is a member of the Institute Research Committee, and the Faculty Research Committee. ECRs are integrated into Institute Research Centres and participate in Institute research seminars.

Supporting staff in their research and beyond

A transparent workload allocation maximises staff research potential. A baseline provision of 30% provides staff with time to conduct research, participate in collaborative activities, and develop research management skills. Research buy-outs for funded projects and research leave are included in the workload model, reducing teaching and administration further. Academic staff can apply for a term's sabbatical leave for every 7 terms. A total of 82 sabbatical terms (5 per FTE) were taken from August 2013 to December 2020.

The Institute Research and Development Fund is used strategically to provide seed-corn QR funding in preparation for external bids, allocated by the Research Committee e.g., Casey/Davies, Gere/Jones, Rose/Southern, Rushton, and Stewart. Personal Research Allowances of £1,000 per year enable all academics to participate in national and international conferences. The Faculty provides additional support through its Research Fund, Travel Fund, Impact Accelerator Fund, and ECRs can apply to the Faculty and University for additional project funding. Alerts for specific funding calls are targeted to colleagues by Research Services colleagues, and the Institute Research Director.

Staff Wellbeing is a priority for the University and Institute (cf. Institutional statement). The Institute returns to the 2019 Staff Survey highlighted improved scores compared to 2016 in, for example, staff achieving a good work/life balance. Results of the survey were discussed in our 'Away Day' (July 2019), and particular actions taken forward included information provision for PDRs and enhancing the efficiency of the workload model.

The University provides comprehensive guidelines and resources to facilitate remote working for everyone, covering advice on communication and routines, parents and carers, EDI, professional development, relationships, mental health and practical issues (e.g., using Microsoft Teams). This has been invaluable during Covid-19. The Institute and each centre have organised online coffee meetings, luncha kuchas, writing retreats, and impromptu meetings to discuss issues of concern, and to continue collaboration beyond the University. For example, luncha kuchas with Design groups at Loughborough University exchange research interests and develop work collaboratively.

Research students
PGR profile
The vitality and sustainability of our research community is enhanced by a large and vibrant PGR community. Within the REF period, 52 PhDs were awarded, a 37% increase on those reported for REF2014 (38 PhDs), reflecting continued strong recruitment and completion rates. We boosted our doctoral programmes and support for PGRs with renewed doctoral training funding (AHRC and ESRC), competitively won Faculty and University scholarships, and projects funded externally. Continued infrastructure investment improved the facilities offered to doctoral students and their engagement with the Research Centres and knowledge exchange events.

The largest PGR proportion (53%) come from the UK, with 33% overseas and 14% from the EU. There has been an increase in diversity in applicants' country of origin, with PGRs from Algeria, Chile, China, Indonesia, Palestine, Saudi Arabia, and Turkey amongst others. This diversity has led to increased experience of and competence in managing intercultural diversity for both PGRs and staff.

Studentship Awards
In this period, 80 PGRs attained studentship awards from external organisations, UKRI or Faculty Scholarships:

 The Institute is part of both the North West Doctoral Training Partnership (NWCDTP AHRC) and the North West Social Science Doctoral Training Partnership (NWSSDTP ESRC) and received a total value of £458.6k UKRI studentships from these two partnerships, as well as studentships funded by the *HighWire* and *CX* projects.

Ten PhD studentships are provided by the £13.5M *Beyond Imagination* research project (2019-2022). As part of the major drive to build capacity in design research, they will build on the

achievements on the two previous cohorts that established the Institute and particularly *Imagination* as a leading global centre for design research training.

HighWire (AHRC & EPSRC 2013-2016) funded 28 students within our world class, cross-disciplinary and user-centric four-year MRes+PhD programme that placed innovation at the heart of its curriculum and ethos, working between and beyond the disciplines of computing, design and management. *HighWire* students developed impact from working with organisations such as BBC, BT, Clifford Chance, Gobito, Microsoft, National Trust, O2, PlaceChangers and Sony in addition to 20 micro-businesses and SMEs in the Northwest.

Creative Exchange CX (AHRC) funded six PGRs creating innovative partnerships between 17 universities, 33 industrial contributors, and 25 businesses crossing public and private sectors. These partnerships explored creative applications of digital media and technology on social and cultural challenges faced by organisations and communities across the UK.

Training and support
PGRs have opportunities for training and development via a combination of Institute, Faculty and University activities. The University Library provides PGRs with dedicated training (including one-to-one consultations) on information retrieval, referencing, research data management and other topics. All PGRs are encouraged to select from the 53 modules of the Faculty's Research Training Programme (RTP), covering relevant subject-specific and career-oriented modules (e.g., Presenting Conference Papers). UKRI-funded PGRs additionally benefit from training opportunities across the universities in each partnership, for example, AHRC PGR training funds enabled seminars and workshops co-organised between PGRs and academics, including national and international research leaders and colleagues (e.g., CX included training across Newcastle and RCA). Supervisors act as mentors and provide pastoral support, with programme directors ensuring good practice. The Graduate College provides additional pastoral support. PGRs can participate in a week-long residential course on enterprise and business awareness at the Northwest Enterprise School (co-sponsored by Lancaster University and the University of Liverpool).

Institute support for PGR research is fully integrated into our Research Centres and cross-cutting themes. Supervisors are matched with PGRs based on research interests and PGRs attend Research Centre activities. We have a PhD by publication and a standard route for PGRs. A Development Needs Analysis is required from all PGRs when starting their PhDs. A programme of fortnightly Digital Futures seminars has internal and external speakers, and a weekly seminar facilitates PGRs to discuss their research. We encourage PGRs to present papers at Lancaster and elsewhere, with support from Faculty and Institute funding for conference fees and travel. PGRs published 26 books/chapters, 86 journal articles, delivered 104 conference papers, held 14 art exhibitions and 2 performances during the REF period. Workshops on 'Post-PhD Career Pathways', preparing a CV, and 1:1- mock interviews are provided by a careers consultant from the University's careers team. PGRs have life-long career support from Lancaster careers office.

Our high-quality support for PGR progression and career development is reflected in their notable success in winning PDRA posts, and academic and industry employment. In the REF period, 21 PGRs secured lecturing posts and 10 were employed as PDRAs in the Institute on externally funded projects. Our part-time PGRs have continued in industry or public sector employment, for example in the Policy Lab/Cabinet Office, and two PGRs have set up their own companies (PlaceChangers Ltd, and Six and Flow).

Monitoring progress
Individual PGR student progress is monitored through annual appraisals and panel meetings that are both formative (pre- and post-confirmation panels) and summative (confirmation panel). For the latter, students must confirm their doctoral status by submitting a 15,000-word document. Mock vivas are provided for students at the end of the process in preparation for examination. Such practices have led to good completion rates: in the REF period, we had 97 entrants, 16 withdrawals, and an overall completion rate of 74%.

Equality and diversity:
The Institute is actively implementing Lancaster University's Strategic Vision 2020 for Equality, Diversity and Inclusion (EDI). All staff take part in mandatory training on diversity and equal opportunities, and support is available from the University's dedicated EDI team. Staff with decision-making responsibilities for REF attended additional mandatory REF EDI training. The University is a member of the government's Disability Confident Scheme, and the Stonewall Global Diversity Champions programme for Lesbian, Gay, Bisexual and Trans equality (cf. Institutional statement).

The Institute is fully committed to the Athena SWAN charter. We were the first Department in the Faculty to receive an Athena SWAN Bronze Award (Nov 2019), and are now actively involved in developing a Silver Award. Boyko and Bennett lead the EDI Committee reporting to the Faculty and University EDI committees. EDI is a standing item on the agenda at Institute Management Committee and termly Institute meetings.

The University has an Athena SWAN Bronze Award and has a Gender Pay Gap Task Group (cf. Institutional statement). The gender balance across the Institute has significantly improved since 2013/14, when there were 35% female and 65% male staff, to 2019/20 with 46% females and 53% males. The Institute currently has a female Director providing a role model for female leadership. The Institute actively ensures gender balance and diversity in leadership roles and membership of committees. Equality and diversity are considered with regard to staff and PGRs seeking access to internal funds, and when seeking promotion and reward.

We recognise that improvements in Institute diversity could be made regarding BAME staff; currently 9% of staff can be categorised as BAME. Through our EDI committee we are actively addressing disparity and diversity in our staff profile regarding recruitment and promotion. International diversity has been increased by welcoming visiting scholars and integrating them into Institute activities. We welcomed 16 visiting scholars 2013-2020, from America, Canada, China, and Poland. The EDI committee is working with the Faculty Decolonising the Curriculum group, promoting policy development and institutional action for BAME staff. Lancaster University has committed to sign up to the Race Equality Charter by April 2021.

Regarding disability, the University's Disability Service provides support to research students; staff are supported through the University's (government-backed) Disability Confident scheme (cf. Institutional statement). The Institute is fully accessible, and we use devolved funds to purchase any supportive equipment ensuring disabled staff are not disadvantaged.

The Institute adopts the University policy on parental leave (cf. Institutional statement), with two staff taking maternity leave during the REF period (4 months in total) and one paternity leave. Staff returning from parental or adoption leave are provided with support from the Director and their academic mentor.

The University's Flexible Working (including Flexible Retirement) Policy recognises the importance of work-life balance, and that the ability to work flexibly can provide an effective way for employees to manage, e.g., child-care, caring for relatives, dealing with health issues, disability or preparation for retirement. 6 colleagues have part-time contracts. The University provides workshops for staff approaching retirement. The Institute makes every effort to allow colleagues to continue on part-time contracts of a size and duration that suits them. The FTE of three staff was adjusted at their request as they approached retirement during the current REF cycle.

The Institute allows remote working for all staff members as long as they are present to undertake any key face-to-face duties. Staff with caring responsibilities are additionally permitted to make timetabling requests to allow for individual circumstances. Institute committee meetings are scheduled inside core working hours (10.00 and 16.00), to ensure compatibility with caring responsibilities.

Selection of outputs for the Institute's REF submission was based solely on the predicted output grade, established using a transparent internal and external review process. Regardless of any protected characteristic of individual staff members, outputs with the highest rating were selected for inclusion. Statistical analyses were conducted to examine whether any unconscious bias might have influenced the selection process. These indicated no significant effect of gender or seniority on the choice of submitted outputs. All REF leaders received additional EDI training, in compliance with the University's Code of Practice.

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3. Income, infrastructure and facilities

Income

Successful generation

The Institute has had exceptional research funding success: £16.4M (2014-2020) has been won through 105 successful awards. Additionally, substantial funding from Arts Council England, of over £2.5M, is not accounted in Figure 2 below, drawn from HESA data. The £13M E3 investment running from 2019-22 is also not recorded in Fig 2. This shows that our research income (the red line) exceeds that of competitors and positions us in the highest percentile for Art and Design in the UK, demonstrating our distinctive position in the sector.

Figure 2. Research grant income

Our research awards include over 40 external collaborations with other HE institutions. Of our £16M grant awards, 105 awards totalling £15.5M came from Research Councils & Research England, £70K from charities, £226K from EU, £28K from Government, £95K from industry, and £27K from other sources.

Strategy and practice

Our income generation strategy fosters initiatives ranging from small exploratory pilot projects through to large bids, enabling us to draw upon diverse income streams. This approach encourages multi-disciplinary thinking, enabling our funding to span regional, national, and global opportunities and grow from an individual or small-group into networks where larger grants are built. There is a direct link between externally-funded research and high-quality research outputs as individuals are highly motivated to succeed and to fulfil their obligations to funders. Workload recognition is given for funding won and allocations made for preparation of particularly large submissions. Other strategies include:

Internal Seed Corn Funding – staff can apply to the Faculty Research Fund. Lopez-Galviz was awarded £3.5K in 2017 for a pilot study, that resulted in GCRF: *Gridding Equitable Urban Futures in Areas of Transition (GREAT)* in Cali, Colombia and Havana, Cuba £957K ESRC. Similarly,

<u>Tsekleves</u> £5K award in 2017 led to *ProtoPolicyAsia* (AHRC £86K) enabling governments and community groups to imagine future health policy initiatives. The 4 IKE awards outlined in Section 1 *Impact Strategy* also led to successful external awards with British Academy and AHRC.

Individual Awards – E.g., <u>Lindley</u>, after his PhD with HighWire and PDRA post with <u>Coulton</u>, was appointed as an ECR and recently awarded a £1.2M UK Research and Innovation Future Leaders Fellowship, *The Next Generation Design* award (2020), exemplifying how our environment enables researchers to thrive from the very beginning.

Large UKRI Awards – a large award is often used as the basis to attract further funding *e.g., PETRAS* £10M EPSRC led by <u>Coulton</u> & <u>Cooper</u> developed into *PETRAS2* (<u>Cooper</u> EPSRC £359K + £200K). The impact of continuing involvement and leadership of PETRAS means we are part of the UK National Centre for Research into IoT and AI at the Edge. A further related project in 2018, *Objects of Immersion,* received subsequent awards for <u>Coulton</u> (AHRC £75K and £40K). This research led to *Experiencing the Future Mundane* (ESRC £461K), further developed to explore economic and societal benefits of emerging and future technologies (<u>Coulton</u> AHRC £233K).

Non-UKRI Awards – E.g., <u>Boyko</u> was awarded Heritage Lottery Fund £65K to investigate women's involvement in protests since 1920 that led to a symposium (2020), a workshop in Delhi (2020), an event remembering 50 years of resistance in Manchester, and a 10-day exhibition at Museums Sheffield (2019). Non-UKRI income accounted by HESA totalled £447K spread across the Institute's research centres.

Infrastructure

The Institute's operational infrastructure reflects our commitment to provide comprehensive support for world class activity. It is located within the Faculty of Arts and Social Sciences (FASS), which is in the top-100 for both Arts and Humanities and Social Sciences (THE World University Rankings 2020) and has a strong multi-disciplinary research culture. Governance and monitoring of research in the Institute is assured by research committees at Institute, Faculty and University levels. Our three research centres and their cross-cutting themes foster multi-disciplinary research, and act as centres for associated grants.

An Institute Research Committee, chaired by the Director of Research and comprising representatives from all research groupings, meets every term, develops research strategy, disseminates information and allocates seed-corn funding. All sabbatical applications are justified, approved and reviewed by the Institute Director and Faculty Committee. Systems are in place (e.g., via PDRs) to monitor the attainment of targets, as well as to support staff at different stages of their research career. Within these systems, researchers are supported annually, not just periodically within each REF cycle. Connections across Research Centres are initiated by the multi-disciplinary interests of staff, and also encouraged by Institute research days that provide a forum for shared challenges and initiatives.

Excellent systems are in place to incentivise and sustain research including Institute, Faculty and University seed-corn funding described above. The Institute has a dedicated research support officer to aid researchers putting bids together. The Faculty and University offer grant-writing workshops, and the Institute has a bank of successful grant applications for consultation. Two peer-readers give feedback on every grant proposal prior to submission. Once a grant is awarded, the Institute workload allocation system reflects colleagues' work on projects by allocating hours for the % FTE on the project. At University level, the Research Services Office provides invaluable information and guidance on research activities involving externally-funded research grants, including pre-award development, post-award support and contracts for research, with additional support from the University on realising impact.

Facilities

The Institute has benefitted from continued strategic investment, maximising our strength in high quality, impactful research. The main areas of significant investment this cycle (£500K) have been

in co-locating all staff and doctoral students in one building. Significant funds have supported a new studio building for the new School of Architecture (£950k in 2020) and its equipment (£550K by 2022), digital upgrades (£110K 2017-21), and other equipment (£50K per annum to 2023).

The *Imagination* research centre benefits from investment in provision of £80K for specialist personal equipment and £400K for a new Visualisation Lab and other building upgrades to accommodate 20 new staff and 10 PhDs. The E3 fund is supporting research activities with annual impact events, enhanced travel funds, visiting fellows, pilot project funding and an international GCRF focused Springboard event (Y1 £195K, Y2 £230K, Y3 £230K).

The *Cultures* and *Practices* research centres particularly benefitted from the co-location in 2019 of all staff into the purpose-built Institute Building, which offers large floor spaces for research and teaching. The ground floor double-height space, with separate lighting gantries in each of the 3 sub-divisions, provides space for performances (sprung floors), exhibitions, rehearsals, and workshops. The double-height black-box installation space (with lighting gantry) provides space for art, film and media work.

The flexible Lab space includes a double-height area for team working and display, an adjacent lecture/seminar space, and a connected relaxed breakout space. This is used for public engagement and research events, providing a space that enables seamless moving from one mode of working to another, particularly effective for collaborative research. The building also contains workshops for fabrication, laser cutters, 3D printers, large format plotter, light fabrication, and sound-proofed recording and editing rooms for multi-media practices, including green screen and motion capture, and studios and flexible-use spaces for researchers. There is wired network connectivity and Wi-Fi throughout, including two meeting pods in the woods. These pods provide a unique environment away from the activity of the Institute Building, in harmony with nature.

The adjacent building complex includes the Peter Scott Gallery and the Nuffield Theatre, one of the outstanding black-box theatre spaces in the country. With adjacent fully sprung floor and lighting rig rehearsal space, the Nuffield Theatre is a venue for the creation of new theatre work by Institute researchers and visiting artists.

Technical support for research is provided by Institute subject technicians, specialist IT technicians from Information Services (ISS), and Library Collections Management experts (cf. Institutional statement). Specialist expertise is also drawn from other faculties, particularly for collaborative projects e.g., Computing, Medicine, and Health Research. Researchers have access to a wide range of specialist software for research and teaching. This includes specialist research tools for surveys and analytic work such as AntConc, ATLASti, Bristol Online Surveys, NVivo, Qualtrics, SPSS, etc.

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

Supporting collaboration and engagement
The Institute's extensive collaboration and engagement activities are encouraged and supported as outlined in Section 1, Strategy and Section 3, Infrastructure. Within the REF period, we have grown the scale of our collaborations in order to extend our reach and significance, focussed on local, national, and global challenges. The Institute is expanding its international research footprint through its internationalisation strategy. Our Director of Internationalisation, Tsekleves, is responsible for the implementation of International strategy, including enhancing our international research links, ensuring student and staff mobility, and attracting overseas visitors. The Institute has built high quality research collaborations with our university partners in Ghana, China and Malaysia (Lancaster University Ghana, Beijing Jai Tong University, and Sunway University), forging new relationships to respond to the increasingly complex challenges of our world. Examples of the institute's multi- and interdisciplinary collaborations with internal partners are highlighted in Section 1; collaborations with external partners are evidenced in the following ways:

International collaborations: projects include Cruickshank's project *G UP* (*Ghanaian specific design and innovation models*, EPSRC) that researched innovative ways to transition from craft production to manufacturing with 100 companies in West Africa. Tsekleves' project ProtoPolicyAsia (AHRC GCRF £100K), supported the Malaysian government to develop community-based engagement to tackle urban obesity, and involved several Malaysian organisations: the Ministry of Women, Family and Community Development; Petrosain's Science Discovery Centre in Kuala Lumpur; Sunway University; and the United Nations University's International Institute for Global Health. Tsekleves' *Dust Bunny* (AHRC/MRC, £250K), and ESRC Global Impact Acceleration Account award, explored hygiene practices in Ghana to understand infections through AMR bacteria in dust. Walker's project *Located Making* (AHRC £199K) is developing practical frameworks for design to unlock the potential of cultural heritage, in conjunction with Manchester Metropolitan University and the Beijing Institute of Fashion Technology. Cross-disciplinary subject networks are sustained by the Institute's capacity to allocate resources for travel and networking, resulting in European projects such as *Sea Food Age* (EU Development Fund £200K), with several organisations across Atlantic Area Europe, focusing on reducing malnutrition and food insecurity for vulnerable populations. Additional support for participating in AHRC knowledge exchange initiatives between UK and China resulted in several funded projects including *Sustaining Ethno-Cultural Significance of Products through Urban Ecologies of Creative Practice* (AHRC £59K).

Local and national Collaborations: co-designed and co-organised user events and workshops are key features of our projects: e.g. Cruickshank's *Leapfrog* project engaged community groups, the public sector, NGOs, Lancaster District Council, Lancashire Library service, Blackburn Council and national organisations such as Food Power. The Leapfrog tools transformed the evaluation practice of international organisations such as World Design Weeks and the Victoria & Albert Museum, London, and Morecambe Bay Clinical Commissioning Group. Cooper & Dunn's research on future cities engaged with industry, e.g. Waitrose, utilities companies (Aecom), the heritage sector, (National Trust, English Heritage), and local government (Lancashire County Council and Lancaster City Council). Rose's co-design collaboration with Freedom from Torture and Merseyside Refugee & Asylum Seekers Pre & Post Natal Support Group, addressed the mental health of displaced people. The *Creative Exchange* project included 20 short innovation-focussed projects with companies, e.g. BBC, Victoria & Albert Museum, Red Ninja, and facilitated a 'creative lounge' to explore the notion of an 'engagable city' with UN Refugee Commission, International Red Cross, Bavarian Red Cross, European Parliament, and Airbus. Projects such as *PETRAS* focused on the future of homes, engaging with BBC audiences on perceptive media. As a civic university, and through *Liveable Cities* we are closely engaged with Lancashire County Council, on their Local Plan and provision of 3,000 new homes for the region, and on the development of the Eden North project.

Contributions to the economy and society
The research carried out through these collaborations has contributed to the research base, to the economy and to society across many dimensions, including:

Improving well-being, developing strategies for promoting health and raising awareness. Institute researchers have addressed the key agenda of how to reduce the cost and burden of disease, particularly non-communicable disease, through preventative healthcare. For example, three dementia-focused projects developed design interventions to disrupt the opinions, mind-sets, and 'ways of doing' that remain unchallenged in the health and social care of people living with dementia (Rodgers, Rose, Tsekleves). Rodgers *Disrupting Dementia* (AHRC £83K) worked collaboratively with over 130 people diagnosed with dementia to produce tartan designs, some then selected for manufacture after 8000 public votes. Several articles, two exhibitions, and significant press coverage have helped significantly to change the perception of dementia. Collaborations with relevant communities have also addressed social isolation for older people through participatory arts interventions: Tsekleves' *Ageing Playfully* and Rose*'s Painting Place*. Rose (British Academy) addressed the mental health of migrants in three community settings, providing toolkits for other health providers. The five-year *Liveable Cities* project (Boyko, Cooper, Dunn, EPSRC £6.3M) involved over 60 academic staff, researchers, and PhD students from Lancaster, Birmingham, Southampton, and University College London, in the engineering of cities

for global and societal wellbeing, addressing energy, policy and governance, economics, future visions, and city performance.

Innovation in pedagogy. Impacts on pedagogy are the objective of the examination of the boundaries of our disciplines. For example, *Creative Exchange* (Cooper*)* created innovative partnerships between 17 universities, and 58 industrial contributors and organisations across public and private sectors. 90 projects benefited from the cohort of 21 PhDs who developed new skillsets in bridging academia and industry. Etchells and Quick impacted pedagogy and creative practice through *Transforming Practice,* pushing boundaries to challenge and change public perceptions of theatre at a global level. In film, Bennett's *Teaching Transnational Cinema* examined pedagogical, political and conceptual challenges posed by the subject. Casey and Davies's monograph *Drawing Investigations,* pushes forward the boundaries of drawing, demonstrating that drawing is not just an art form, but an investigative tool applicable to scientists, anthropologists, medical researchers etc.

Benefitting financial and economic policy. Cruickshank's *Leapfrog* project engaged community groups, the public sector, NGOs and others, to increase economic prosperity in local communities, local government, NHS trusts, and SMEs. *Funding Accelerator* (Cruickshank) helped public sector and Third Sector participants attract funding e.g., for local council parks, clinical commissioning groups, the national food poverty project, arts charities, guilds and other national and local organisations. A specific example was funding raised to train refugees in language skills and acquire a food hygiene certificate for work in commercial kitchens, transforming their employment opportunities. The transformation of public sector engagement through co-design has pioneered new approaches to interactions with users and beneficiaries, acting as models for projects elsewhere – see e.g. *Leapfrog* ICS. The three-year *Chatty Factories* project (EPSRC Richards) explores the transformative potential of placing data driven systems at the core of manufacturing processes, with the aim of increasing competitive advantage for UK PLC.

Contributing to policy reform. Aston collaborated with UK-India Education and Research Initiative and stakeholders to contribute to policy dialogues that help to develop and implement education policies as they impact women in India and the UK. Dunn's monograph *Dark Matters* influenced the international and UK lighting community, changing urban darkness to benefit the environment. Cooper & Dunn's research on future cities (-see *Liveable Cities* above) led to invitations as experts to advise and shape policy for the Government Office for Science; the European Commission on how to think about cities in relation to prosperity and work; the House of Lords Select Committee on the Built Environment on Wellbeing and the Environment policy; the Ministry of Defence in terms of their thinking on global strategic trends; The UN committee on health and wellbeing in relation to complex systems; and Cooper advised the Academy of Medical Sciences on *The Health of the Public in 2040.* Cooper and Cruickshank developed an EU framework for design with their project *Design in European Policy*. Cooper was an Expert Advisor on the Go-Science Foresight Review of Future Cities and also contributed to the government review of building regulations and fire safety following Grenfell fire disaster. She is the UK representative for the International Council for Science, and Scientific Committee for Health and Wellbeing in the Changing Urban Environment.

Influencing to shape the future: Quick & Etchells are shaping how the theatre of the future is being imagined. This includes theatre forms, communication to audiences, digital technology as a rehearsal tool and dramaturgical approaches to theatre making – see ICS. Dunn, Cureton, Pollastri produced *A Virtual History of the Future* a report for UK Government Office for Science as part of their Foresight Future of Cities Programme. Cooper and Dunn's research led to commissioned research by the UK's Government Office for Science Foresight Programme, looking at the opportunities and challenges facing UK cities over the next 50 years, visualising the future of cities, and health in the city. Tsekleves enabled governments and community groups to imagine future health policy initiatives for vulnerable groups in Asia. Coulton's *Living Room of the Future,* initially exhibited at the Victoria & Albert Museum, then at TATE Modern and the Building Research Establishment, explored the implications of internet-connected devices collecting personal data in the home. This was shared through exhibitions, installations, presentations, and discussion on

BBC Box. *E3's* experimental research space to facilitate rapid prototyping and visualisation remotely and with partners locally and globally, is focusing on prototyping future urban policy in collaboration with e.g. La Region 27 and the Scottish Government *Sources for Democratic Engagement* project.

Issues of public and current interest: We regularly contribute to issues of public and current interest; our research has been widely reported, particularly on radio e.g., within a two-year snapshot (2016-2018) there were 19 radio broadcasts with potential to reach over 864M listeners. Research in urban environments included Cooper's broadcast on Radio 5 Live discussing the *Sustainable Cities* project, with potentially over 2M listeners through its syndication in 2016 to 39 regional stations. Dunn's broadcast on Radio 5 Live Up All Night in 2016 discussed his book *Dark Matters,* with potentially 2M listeners. In relation to theatre practice, a potential of more than 3M people were reached through coverage of Quick's *Heart of Darkness* on Radio 4's Front Row, and Aston spoke about playwright Caryl Churchill on Woman's Hour, potentially reaching over 3M listeners. Both were broadcast in 2018, and repeated on weekly round-up broadcasts. Other broadcasts were made by Coulton on BBC and TBS South Korea, discussing Pokemon Go, and on the role of social media in the grieving process on BBC Coventry and Warwickshire. BBC Radio Lancashire broadcast research on film by Bennett, analysing cycling in cinema, the BAFTAs were discussed by Rushton, and the role of participatory arts in overcoming social isolation by Rose. BBC Radio Scotland broadcast Rodgers explaining his dementia research project. Cureton discussed the Drone incident at East Midlands Airport on ITV News Central, and Casey broadcast with ITV Border on Ruskin's 200th Anniversary. Quick's lockdown commission of *Airlock* for BBC Culture in Quarantine Season on BBC iPlayer, reached an audience of over 500K.

Benefits to culture and society: A major strand of engagement is through exhibitions, theatre performances and public lectures linked to publications. Providing opportunities for the public to engage with our research is a primary objective of our engagement strategy. We have delivered 25 theatrical performances and 48 art exhibitions within the REF period. There have been over 200 public lectures linked to these outputs e.g., Walker to accompany *Design for Life* at Brantwood, John Ruskin's home in Coniston, Cumbria, Casey at Imperial College on *Our Imperceptible Universe,* and The Bowes Museum on *Common Grounds*, Dickens' workshops for children for her solo exhibition *Mirrors*, and public lectures related to book launches e.g., Gere on his monograph *I Hate the Lake District* at the Kendal Mountain Literature Festival. Other events for non-academic audiences included the *Being Human* Festival, Keswick Museum *Discovering Graphite and its Secret's*, Casey and Davies. Over the REF period, Etchells and Quick created 22 individual works and engaged with over 750K people through live theatre, and over 400K through their online practice. They completed 100 public talks, 120 workshops, 40 interviews by the press and radio, and 20 cited features in national and international newspapers (including *The Guardian* and *New York Times*).

Contribution to and recognition by the research base
The intellectual contribution of Institute staff is recognised through significant plenary and keynote addresses, and numerous academic awards and acknowledgements. Members of staff presented over 150 plenary and keynotes, and well over 450 conference papers and guest lectures in the UK and abroad, further extending our reach in, for example, Australia, China, Greece, Japan, Russia, South Africa. Etchells received the International Ibsen Award (2016), and the Spalding Gray Award (2016) decided by a consortium of US performance institutions and was awarded Artist of the City (Lisbon 2014). Davies was a prize-winner in the Welsh Drawing Prize (2020). In addition, prizes were awarded to explicitly recognise significant contributions to disciplines, e.g., Aston was made a member of the Academy of Europe, and awarded an Honorary Doctorate, Stockholm University, Munby was given a Visiting Fellowship at Harvard. Both Cooper (Lady) and Sudjic (Sir) were awarded OBEs. Sudjic was also awarded the Bicentenary Medal of the Royal Society of the Arts for the promotion of Design.

Research leadership and prominent positions have been achieved in national and international organisations e.g., Aston is President of International Federation of Theatre Research (IFTR), 2019-2024 and Vice President 2015-19. Cooper was made President of Design Research Society

in 2017 and was a non-executive Director of Future Cities Catapult (2013-2020). Coulton is a member of the N8 Research Partnership, Cureton is on the Expert Panel World Economic Forum - Drones, Cities & Urbanisation, Dalton is a member of The Royal Institute of Navigation, Dunn was appointed to the International Dark-Sky Association (IDA) to protect the night skies for present and future generations. Frayling is Chair of British Film Institute Heritage Committee, López-Galviz is the Academic Lead of the History and Policy series in the Department for Transport (DfT) and President of T2M, the International Association for the History of Transport, Traffic and Mobility.

Munby is on the Executive Board of the British Association for American Studies, Rodgers has the prestigious AHRC Design Leadership Fellowship. Rose is an expert panel member for MRC, ERSC, AHRC, BBSRC and NERC UKRI GCRF Health and Context. Sudjic is an Honorary Fellow of RIBA and of the Royal Incorporation of Architects Scotland, and Tsekleves is convenor of Design Research Society SIG in Global Health, and UKRI Digital Health Research Innovation Project.

Research leadership as expert advisors and consultants: Members of staff are expert advisors and consultants for user organisations. These positions enable a wider contribution to society and the economy, influencing cultural, scientific and economic communities beyond the academy. For example, Aston is consultant for Sphinx Theatre Company, Chair of New Scholars Committee IFTR, and was made President of Theatre Research International (2019), Cooper is a member of Scientific Advisory Group for UK Prevention Research Partnership (UKRI and Medical Charities). Deyan is Emeritus Director of the Design Museum, Frayling is Emeritus member of the Design Museum Board, and on the Royal Fine Art Commission Trust, Gere is Chair of trustees for Grizedale Arts, Jones is a member of Electronic Literature Organisation, Mottram is a Lakeland Arts Trustee, and on the Coventry Cathedral Fabric Advisory Committee, Tsekleves is advisory panel member for The Health Foundation/Academy of Medical Sciences Health of the Public Transdisciplinary Fellowship Scheme and Walker is a member of the Brantwood Trust, and on the Advisory Board for European Academy of Design.

Leadership of research fields: 15 staff have editorial roles in key academic journals. Editorial roles include: Bettinson *Asian Cinema*; Cooper *The Design Journal;* Marsden *Journal of New Music Research* (Chief Editors); Gere *LUNE Journal* (Co-Editor); Dunn *Street Art & Urban Creativity* (Associate Editor); Aston Contemporary Performance Interactions (Co-series Editor). Editorial Board Memberships include: Aston *Modern Drama*, *Arab Journal of Performance Studies, Themes in Theatre, Platform: Journal of Theatre and Performing Arts;* Coulton *Future Internet Journal, Ubiquity: Journal of Pervasive Media*; Davies *TRACY: Drawing and Visualisation Research;* Dunn *IEEE Pervasive Computing special issue;* Hands *Industrial Design Journal;* Harris *Studies in Theatre and Performance;* Mottram *Journal of Visual Art Practice, Journal of the Association Internationale de Coleur, Journal of Textile Design, Research & Practice;* Munby *British Association for American Studies, Journal for Cultural Research, Scope: Journal of Film and Television Studies, Screen;* Rodgers *The Design Journal, Journal of Design Creativity and Innovation;* Rushton *Film-Philosophy,* and Advisory Board *Screen;* and Walker *The Design Journal, International Journal of Sustainability Research.* In addition, most colleagues regularly review submissions for journals and publishers in their field.

We have provided leadership for the evaluation of research nationally and internationally. For example, Cooper, Harland, Mottram, Rose served as REF2014 UoA 34 panellists, Mottram is panellist for REF2021 and RAE Hong Kong 2020. Aston reviews for Leverhulme, Rose MRC, UKRI GCRF. Boyko, Coulton, Dunn, Rose review for AHRC, ESRC and EPSRC. Cooper EPSRC, UKPRP, Davies AHRC, Dunn, Rose British Academy and Swiss National Science Foundation, Dunn Israel Science Foundation, Humanities in the European Research Area, Future leader Fellowship Review College, Mottram Carnegie Trust, Austrian Science Fund. Other evaluation roles include as judges, for the Virtual Reality Awards Dalton, and Chair of the American Society for Theatre Research Oscar Brockett Essay Prize Aston.