**REF2021**

| The Institution: University of Edinburgh |
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| Unit of Assessment: 32 (Art, History of Art, Design) |
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**SECTION 1: Unit Context and Structure, Research and Impact strategy**

1. **Overview**

*Art, Design and History of Art* brings together a vibrant and internationally-engaged group of 81FTE researchers (a 91% increase on REF2014) from 3 of the 5 schools within Edinburgh College of Art (ECA) and across the practice, history and theory of art and design. What has been exceptional about our progress in this REF cycle has been the expansion of our art school structure into a dynamic hub of creative innovation proactively invested in how art and design can impact the world. This transformation has challenged the borderlines between practice, theory and history and made interdisciplinarity integral to our conception of research excellence. Practice researchers, humanities scholars and social scientists work alongside each other to promote a culture of  thinking across disciplines, push the boundaries of creative practice and pioneer innovative modes of engagement and impact beyond the academy. Developing our track-record of high-profile relationships with industry, museums and government, we are working to ensure the place of the University of Edinburgh as a global leader for culture, innovation and technology.

We have made major advancements in funding, outputs and infrastructure. Our exceptional funding success has attracted £13m in award value from external funding sources, a sixfold increase since REF2014. We have made 29 new appointments, almost trebled the number of PhD completions to over 80 in this cycle and invested £25m in our estates. Two major initiatives, *The Institute of Design Informatics* and the *Creative Informatics* Research and Development programme, have been awarded a total of £11.4m. Together with 4 Horizon 2020 grants, 32 grants from 3 UK Research Councils (AHRC, EPSRC, ESRC) and 13 Leverhulme grants, our surge of income has boosted the quality and diversification of our research. This includes the publication of 22 monographs in leading international presses, presentation of practice research at prominent international venues such as Venice Biennale, Centre Pompidou, Tate, the V&A and MoMA and curation of over 15 high-profile exhibitions at venues including the Metropolitan Museum of Art, Musee D'Orsay, The Getty, Royal Academy of Arts, National Gallery London, The British Museum and the Guggenheim Bilbao. Strategic relationships with major partners including Google, Microsoft, Oxfam, Tesco and the NHS and engagement with over 630 companies have produced global and local economic, cultural and social benefits. Our in-house Talbot Rice Gallery has presented 26 exhibitions in this cycle and is a hub of cross-institutional research and impact.

An exciting development in our research environment has been our investment in data-driven innovation (DDI). ECA takes a leading role in the University's strategic ambition to position Edinburgh as the data capital of Europe. In 2018 the University won the £661m Edinburgh and South-East Scotland City Region Deal (£237m from UK and Scottish Governments), the largest ever UK grant awarded to a university. The grant has accelerated the development of our expertise in creative tech, data sciences, AI and digital technologies and the adoption of our research by industry. We have made extraordinarily rapid progress in these areas in this cycle, with the inauguration of the Centre of Design Informatics, which expanded into an Institute in 2019 and the establishment of *Creative Informatics,* which has strengthened the national network around DDI and generated economic impact. Our position as a world-class institution for DDI will be advanced by the University's Edinburgh Futures Institute (EFI), a £140m initiative opening in

2022, geared towards global challenges including data fluency and its role in industry and citizenship.



Main Building ECA; Talbot Rice Gallery

## 2.  Research and Impact Strategy

Our strategic aims in this REF cycle have been to:

1.  Drive agendas that address major local and global challenges and lead on the intellectual advancement of our disciplines.

2.  Build capacity in areas of established research excellence and strategically invest in emerging fields, promoting a culture of 'research without boundaries'.

3.  Develop and diversify the reach and impact of our research across sectors – cultural, industrial, financial, health, the digital economy and the third sector.

To deliver this strategy, we have evolved the structure of our environment. In addition to 29 new appointments we have expanded our support provision, including the growth of our ECA Research and Knowledge Exchange and Impact (RKEI) office from 2.8FTE to 6.9FTE, and invested in civic engagement, entrepreneurship and enterprise through collaborative networks with business, industry and commercial partners. New estates support cross-disciplinary research at scale (for example, the Bayes Centre - the University's innovation hub for Data Science and Artificial Intelligence). This more energised infrastructure has enabled us to embed a holistic culture of research excellence that has encouraged research in all staff. We have also seen an increase in interdisciplinary research: interdisciplinary outputs comprise approximately 20% of our submission; approximately 50% of our grant awards are interdisciplinary.

## 3.  Research Themes

Our research is focused around a set of 8 key problematics: the challenges of the digital age and pioneering DDI, new approaches to research through design, expanding contemporary art, promoting environmental sustainability, globalising art history, reinventing curatorial cultures, new historiographies and theories of art and design, and embracing equalities and diversity.

### i. The Challenges of the Digital Age and Pioneering Data-driven-innovation

*The Institute of Design Informatics* has developed unique expertise in the UK in galvanising design methods with data science. Their research helps demystify complex technologies such as blockchain whilst expanding creative possibilities of technological innovation and driving ethically-informed approaches to data. It has catalysed new modes of public and industry engagement through collaborative projects across health, culture, mobility, the third sector and finance -

including Oxfam, Google, Microsoft, RBS, BBC, Tesco and the NHS (see submitted case study). Directed by Speed, their research has contributed to national strategies for DDI. Research output has grown around 5 UKRI initiatives sustained by 26 awards totalling £17.8m (£10m to ECA) (AHRC, EPSRC, ESRC, EU Council, PETRAS National Centre of Excellence for IoT Systems Cybersecurity, SFC) involving participation in 3 EPSRC-funded national Centres with 5 major outcomes:

- The £7.8m AHRC Creative Clusters/Creative Informatics award that has spearheaded uptake of DDI technologies by the creative industries across Edinburgh and regions.

- Leadership of design methods within the £20m 7-year Advanced Care Research Centre (ACRC), a multi-disciplinary research programme and the first of its kind in the UK, innovating data-driven approaches to care.

- Increased literacy and adoption of blockchain technologies across transport, banking and NGO/charities, leading to involvement in the UK's leading advanced digital technology innovation centre - the £3.8m 5-year EPSRC Centre for the Decentralized Digital Economy (DECaDE), with University of Surrey and Digital Catapult.

- Contribution to the three large UKRI projects (£25.3m total) that address privacy, trust, ethics and security across the digital economy: PETRAS1 (2016-2019) Cyber Security of the Internet of Things; PETRAS2 (2019-2023) Research Centre for Securing Digital Technologies at the Periphery (PETRAS); and the developing EPRSC REPHRAIN: Research centre on Privacy, Harm Reduction and Adversarial Influence online, led by the University of Bristol and working across 12 Universities.

- Educational initiatives towards DDI as a recognised discipline, including a €4.2m Innovative Training Network of seven European universities, training the next generation of researchers to support the digital transformation of society.

Research through data-driven and digital technologies is embedded across the Unit. The *Edinburgh Centre for Data, Culture and Society* brings together researchers to investigate the role of technology within the humanities. Since its inauguration in 2019, it has hosted 20 seminars (572 attendees), 35 training workshops (897 attendees), distributed 10 bursaries totalling £8.6k to 8 projects and attracted 12 PhD affiliates. Projects include Murray-Rust's research into human-algorithm interactions (£543k EPSRC, EU council, UK charities) which has been presented at Tate Modern and the Center for Art and Media, Karlsruhe and Hood's interdisciplinary work on relations between technology and the body (£19k Creative Scotland; £34k Wellcome Trust).

**ii. New Approaches to Research through Design**

We have sustained a strong research culture in glass, textiles, jewellery, fashion and costume, illustration, animation, graphic design and interior design. Research through fashion design (Ferguson, Burkinshaw) has resulted in major exhibitions such as *Beauty by Design* (Scottish National Portrait Gallery 2014-2015; £20k Royal Society Edinburgh), the first exhibition of contemporary fashion design held at the gallery, receiving 146k visitors. Baker's research into performance costume as a means of bridging historical texts with contemporary concerns was presented within the prestigious 50th anniversary programme of the Lyceum, the largest commissioning theatre in Scotland. Cross's investment of historic techniques of enamelling for contemporary jewellery practice has been presented at international exhibitions and fairs. Maclennan has pioneered a new field of 'forensic jewellery', working with the Scottish police force and forensic teams nationally and internationally to explore how jewellery can help solve crimes. Gray's research through design archaeology has been commissioned and collected by National institutions incuding the National Museum of Scotland.

An emerging area of strength is digital craft. The RAFT research group conjoins innovations in digital technologies with established modes of making. An example is Nissen's *Crypto-knitting* which investigated similarities between knitting patterns and blockchain technology to develop a feminist cryptocurrency. Researchers have also forged major international networks. A partnership with *Craft Scotland*, MacDonald's The *Naked Craft Network* (£27k AHRC, £32k Creative Scotland) brought together researchers in Scotland and Canada in transnational dialogue on contemporary craft. Its events attracted over 30k visitors across seven international venues and was nominated for a Canadian Museum Association award.



Burkinshaw, *Beauty By Design*; Baker, *The Iliad*; Gray, *Recreated Pictish Drinking Horn Mount*

### iii. Expanding Contemporary Art Practice

Our researchers challenge conventions of installation, post-conceptual practice and institutional critique. Examples include Froment's multi-media examinations of little-known cultural histories (Sydney Biennale, 2014; Heidelberger Kunstverein, Heidelberg, 2015; Centre Pompidou, Paris, 2017; The New Museum, New York, 2016); Lauschman's explorations of the history of technology (BBC/LUX; Tate St Ives; Scottish National Galleries; CCA Glasgow), Cruz's navigations of identity at the intersections of conceptual art and autobiography (MUSAC, Leon, Spain) and Owen's rethinking of classical sculpture through erasure and deconstruction (Edinburgh International Festival, 2016; National Gallery of Victoria Triennial, Melbourne, 2017-18; Cochi Biennale, India, 2016).

A rapidly growing area of specialism is sound art. Hecker's research into sound technology and installation has resulted in over 5 high profile international exhibitions (Hamburger Bahnhof, Berlin, 2016; Museum für Moderne Kunst, Frankfurt, 2016-2017; Kunsthalle Wien, Austria, 2017; MoMA PS1, 2015). Collins and O Keeffe drive research on sound and gender through international networks and participatory community activities. O Keeffe was founder and is editor-in-chief of *Intereference. A Journal of Audio Cultures* and was commissioned for the 2016 Irish Biennale.

Researchers have expanded the scope of public art. For her work at the interface between socialist histories, performance, participation and public sculpture, Walker received a major commission for the Baltic Centre for Contemporary Art's *Great Exhibition of the North,* 2018 (£40k Arts Council, Baltic Centre and Museums Northumberland Bait), seen by over 3m people. Hunter's commissions include the design of a war memorial in London's Southwark in 2018 (£216k, Southwark Borough Council, Lendlease). Fusco's *Master Rock* (ArtAngel commission, 2015) brought contemporary art to mass audiences through its Radio 4 broadcast, achieving record listening figures of nearly 2m.
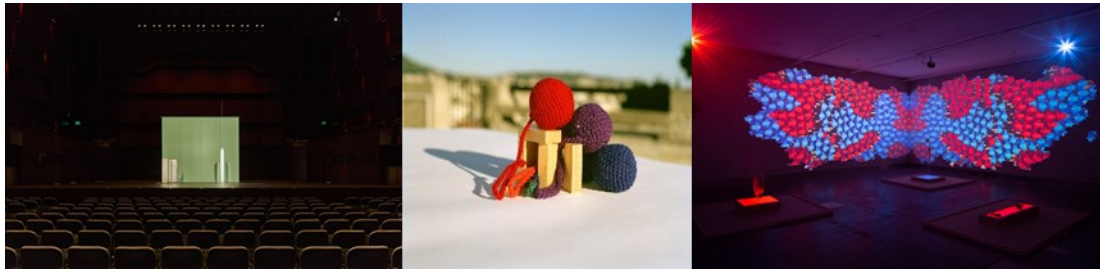
Hecker, *FAVN*; Froment, *Fröbel Fröbeled*; Lauschmann, *War of the Worlds*

## iv. Promoting Environmental Sustainability

Growing numbers of researchers are involved in international R&D programmes in environmental sustainability and biodesign. Hemment has spearheaded ground-breaking projects on citizen science with the Met Office and the United Nations and on human-centred design in the flagship Internet of Things and Smart Cities programmes in Asia (Singapore Smart nation), UK (CityVerve) and the EU (IoT Large Scale Pilots; CREATE-IoT). The citizen-based climate research project *GROW Observatory* (€5.1m Horizon 2020, Dundee 2016-2018, Edinburgh 2019) resulted in the first continental-scale Citizen's Observatory to monitor soil density. It improved Earth observation capabilities across 12 countries and led to more sustainable practices. GROW was named by the European Commission as 1 of 5 projects representing state of the art in Earth observation in Europe (2019) and received numerous awards (Section 4). *Project Ukko*, a collaboration with Barcelona Supercomputing Centre and the UK Met Office, introduced human-centred service and data design to the European Commission's flagship, large scale (€13m) Climate Services project, EUPORIAS.

The *Critical Change Research Group* brings together researchers in design, anthropology, human geography and sociology to develop design solutions for social change. It hosted a workshop with the UN Refugee Agency (UNHCR) Innovation Service in 2019, which was aligned with Verhoeven and Martin's ESRC-funded research (£299k award, £38k to ECA) on sustainable energy in refugee camps.

Matos' research on marine ecology has invested digital technology to promote ocean literacy, safeguard vernacular knowledge and link communities (€230k Foundation for Science and Technology Portugal). Her project was chosen as a case-study by *Biodiversity for Food and Nutrition,* an initiative funded by the Global Environment Facility, the world's largest public funder of international environmental projects. Roe and collaborators in the Universities of Dundee and Cambridge have fostered partnerships with farmers and the brewing industry to create sustainable food sources for intensively reared pigs (£15k Leverhulme).



Hemment, *GROW Observatory*

## v. Globalizing Art History

Our world-class strength in the history of art builds on established track-record of excellence in premodern, world art history, and modern and contemporary art history. We have the second largest group of Asian art specialists in any History of Art department in the UK and have driven our commitment to the globalisation of the discipline through publications and high-profile exhibitions. O'Neal's *Word Embodied: The Japanese Jewelled Pagoda Mandalas in Japanese Buddhist Art* (Harvard University Press, 2018) won the prestigious CAA Millard Meiss publication fund award, 2018. Sharma's research on Mughal visual culture, world religions and the global migration of iconography contributed to 2 major exhibitions (*Empires of Faith,* British Museum, 2017; *Imagining the divine*, Ashmolean, Oxford, 2017). Anderson has won prestigious prizes for her work on Islamic arts and architecture during the age of the caliphs, including the 2015 Eleanor Tufts Book Award for her book *The Islamic villa in early medieval Iberia: architecture and court culture in Umayyad Córdoba*, which was published in 2013. We also promote the globalization of our discipline through cross-University research groups. *CHITrA: Connecting Histories of Indian and Transregional Art* brings together academics from ECA (Sharma, Hollis) and colleagues in Social and Political Science to explore South Asian art history and visual culture. The *Edinburgh Buddhist studies network* (co-directed by O'Neal) is shaping the trajectory of Buddhist studies in Scotland through events and training initiatives.

Other notable outputs in history of art include: Burke's monograph, *The Italian Renaissance Nude* (Yale, 2018) and her high-profile, 2-venue exhibition, *The Renaissance Nude* (Getty, Los Angeles; Royal Academy, London, 2018-2019, 230k visitors), Bolgia's monograph on Franciscan architecture (*Reclaiming the Roman Capitol* (Routledge, 2017)), Allmer's monographs, supported by a Philip Leverhulme prize, on Lee Miller (Manchester University Press, 2016) and René Magritte (Reaktion, 2019), Murray's monograph on the political use of familial imagery in the Stuart dynasty (*Imaging Stuart Family Politics*, Routledge, 2016) and Trodd's monograph rethinking 20th century art through the lens of technological and media transformations (*The Art of Mechanical Reproduction. Technology and Aesthetics from Duchamp to the Digital* (Chicago University Press, 2014)), also supported by a Philip Leverhulme prize.

## vi. Reinventing Curatorial Cultures

We are expanding and innovating approaches to curation. Thomson and Fowle have shaped public and scholarly understanding of Impressionism through prestigious multi-venue exhibitions. Thomson's *Monet & Architecture* (National Gallery, London, 2018) and *Seurat's Circus Slideshow* (The Metropolitan, New York, 2017) attracted over 330k visitors. Fowle curated 2 exhibitions that received over 518k visitors in total: *American Impressionism: A New Vision 1880-1900,* 2016/17 (£600k Terra) (National Galleries Scotland; Thyssen Bornemisza Museum, Madrid; Musée des Impressionnismes, Giverny); *Inspiring Impressionism: Daubigny, Monet, Van Gogh*, 2016/17 (Taft Museum, Cincinnati; National Galleries of Scotland; Van Gogh Museum, Amsterdam).

Fowle and Pulliam were part of the curatorial team of *Celts: Art and Identity* (The British Museum and National Museum Scotland, 2014/15), the first British exhibition on the Celts for 40 years. The exhibition received 239k visitors and over 15k catalogue sales and the accompanying book was nominated for Current Archaeology Book of the Year 2017. Allmer curated 2 exhibitions at The Photographer's Gallery, London: *Taking Shots: The Photography of William Burroughs*, 2018 (82k visitors) and *4 Saints in 3 Acts. A Snapshot of the American Avant-Garde,* 2017 (65k visitors).

The Talbot Rice Gallery foregrounds exhibitions resonating with the national conversation and acts as a platform for cross-University research and knowledge exchange. It has attracted over

143k visitors to its Edinburgh gallery in this cycle, with its touring shows receiving vast audiences (*Tremble Tremble* was seen by audiences exceeding 850k).

Researchers have also participated in important collaborative cultural heritage projects. Smith's exhibition project, *Dead Images* (£45k from a Horizon 2020 award, as part of a Europe-wide consortium comprising 11 universities) brought together artists, ethnographers and heritage stakeholders from 9 EU countries and has shaped museum policy towards contentious heritage through the reexamination of their presentation of their collections.
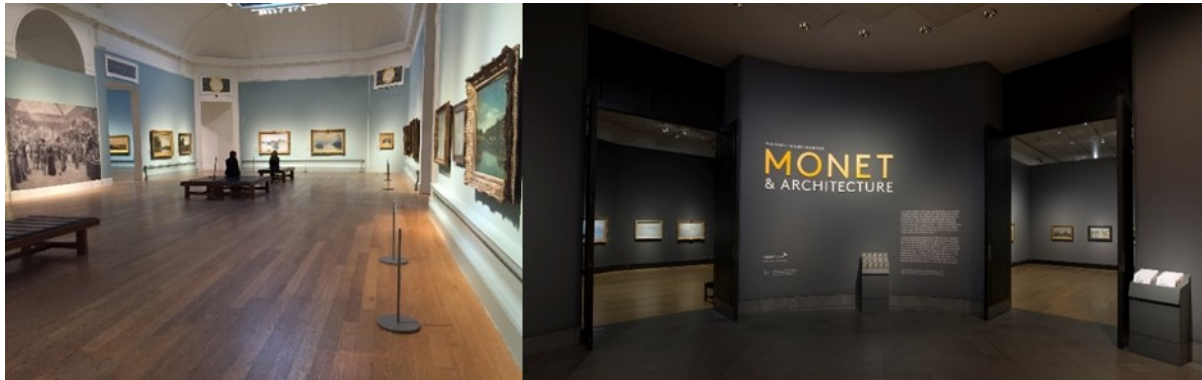


Fowle, *Inspiring Impressionism*, Scottish National Gallery; Thomson, *Monet & Architecture*, National Gallery, London

### vii. New Theories and Historiographies of Art, Design and Culture

Our research has resulted in monographs with leading presses. Vellodi's *Tintoretto's Difference. Deleuze, Diagrammatics and Art History* (Bloomsbury, 2018) analyses the implications of Gilles Deleuze's philosophy for the practice of art history and early modern visual art. Williams' *The Architecture of Art History: A Historiography* (Bloomsbury, 2018) surveys the relations between architecture and art history. Patrizio's *The Ecological Eye. Assembling an Ecocritical Art History* (Manchester University Press, 2018) presents new interdisciplinary approaches to the Anthropocene. Breward's *The Suit: Form, Function and Style* (Reaktion, 2016) outlines a history of this iconic garment. Martin's *Shipping Container* (Bloomsbury, 2016) contributes new knowledge of the design history of the shipping industry. Dobson's *Norman McLaren* (Bloomsbury, 2018) is the first study of the life and work of this Scottish-Canadian animator and filmmaker. Mulholland's *Re-imagining the Art School. Paragogy and Artistic Learning* (Palgrave, 2019) outlines a new theory of the art school.

Vellodi's book series *Refractions: At the Borders of Art History and Philosophy*, Edinburgh University Press, is constructing new zones of inquiry at the interstices of disciplinary practice. Dimitrakaki and Lloyd's research on political theory, feminism and contemporary art, which resulted in a book project, *ECONOMY!* (2014), sits within a broader spectrum of research engaged with gender equality and other EDI issues.

### viii. Embracing Equality and Diversity

We have built significant research expertise in the field of EDI, including on class inequality (O'Brien, Brook), race inequality (Brook), gender studies and feminism (Anderson, Seller, Jackson, Dimitrakaki), gender bias in sound and music (O Keeffe, Collins), design and disability (Gieben-Gamal, Matos, Richardson), diversity in fashion (Burkinshaw, Breward), inclusive Internet of things (Kettley, Pschetz), equity for nonhuman species (Roe) and artists with disabilities (Inglis). This growing expertise is shaping our EDI policies and practices (Section 2).

Burkinshaw founded the ECA *Diversity Network* in partnership with *All Walks Beyond the Catwalk*, the first UK charity for body image and diversity activism. Recognised as an international collaborative and public engagement initiative involving over 10 major stakeholders (including The British Fashion Council, RNIB Scotland) it has shaped attitudes towards body image and pioneered the introduction of diversity studies within fashion education across HEIs nationally and internationally. The *Diversity Network Fashion Forum* (£20k, Royal Society Edinburgh) at the National Museum of Scotland (2018) brought together global industry and the public to debate diversity and body image. A related exhibition, co-curated by Burkinshaw and Burke, was *Beauty By Design. Fashioning the Renaissance* (National Gallery Scotland 2019), which posed questions about diversity and beauty across past and present and broadened accessibility to diverse audiences (the visually-impaired). Burke's curatorial involvement in *The Renaissance Nude* (Royal Academy; Getty) introduced the gender politics of Renaissance visual culture to new audiences in the #MeToo era.

## 4. Impact

Maximising the potential of art and design to contribute to society, economy and culture is core to our long-term strategic vision for research. We have:

- Diversifed and expanded our partnerships and networks to drive cooperation, innovation and excellence, build resilience and proactively respond to societal challenges.

- Driven civic engagement and social transformation with an ever-broader demographic of publics, institutions and community groups.

- Developed industry engagement and contributed to the growth of new businesses.

- Shaped policy review and development.

- Invested research to develop pedagogy.

We have cultivated relationships with organisations across a broad range of sectors: industry, government, museums, cultural associations, festivals, charity, business and community stakeholders. Our investment in infrastructure has enabled us to embed impact across research design and delivery. A newly created post of KEI Officer has facilitated the identification of impact opportunities, project realisation and attainment capture. Professional service support for large-scale research initiatives has secured 18 grants over £100k each. Impact development training and internal funding has led to sustained projects such as Burkinshaw's *The Diversity Network* which received £11.5k over 5 years.

The Talbot Rice Gallery plays an important role in our culture of impact and engagement. Its programme engages key national and international issues such as abortion rights, migration, sustainability, Brexit and legacies of colonialism (e.g. *John Akomfrah/Vertigo Sea*, 2018). The Gallery regularly conducts work with primary schools, charities and prisons.

Highlights of our impact activity are captured in our 7 submitted case studies. These include economic, cultural and profile-raising impact for museums and the art market and shaping public perceptions of art and culture (curated exhibitions by Thomson, Fowle, Hecker, Burke and Giblin). Our investment of design thinking to explore the ethics and value of data and DLT technologies has shaped industry understanding and led to new business models (Speed, Luger). O'Brien and Brook's work on social inequalities in the creative and cultural industries has had policy impact at government level (Digital, Culture, Media and Sport Select Committee 2018-present) and shaped Arts Council England's 2020, 10-year strategy, *Let's Create*. Hemment's work linked citizens to science, data and policy at global scale to improve the quality of climate forecasting. See Section 4 for details of our public and community engagement. We have also

driven engagement with industry through consultancy (£827k total) and advisory roles (Section 4).

*Design Informatics* and *Creative Informatics* have had impact on industry and business through partnerships, consultancy and professional engagements that have strengthened our culture of innovation and entrepreneurialism, enabling commercialisation opportunities. Speed's consultancy for Tesco Bank generated smart contracts that enabled fairer workload models.

An award of £7.8m (AHRC, Scottish Funding Council, Edinburgh City Region deal) enabled the instigation of *Creative Informatics* as a 5-year programme to develop an ecosystem of data-driven creative industries and talent in Edinburgh and regions. A collaboration with *CodeBase* (the largest UK technology incubator), Edinburgh Napier University and *Creative Edinburgh*, it has driven culture change within organisations, led to data literacy upskilling and catalysed new business models. This has benefitted over 190 companies and entrepreneurs, enabled the investment of £1.7m for 11 companies and led to the creation of a further 6 new companies. The Creative Informatics programmes include 14 Challenge projects, *Creative Bridge* (148 participants to date) and *Resident Entrepreneur* (that supports start-ups developing data-driven products and services). The latter has benefitted 36 entrepreneurs, including *Superrational Ltd*, a cloud-based digital rights management company that went on to secure £375k seed-funding enabling development of a DDI product called Delic. *Creative Informatics* works closely with *Edinburgh Innovations*, the University's commercialisation service, to drive innovation and build partnerships, benefitting local businesses including the Edinburgh Festival fringe society and *The List*.

Our commitment to the civic responsibility of research is demonstrated by our rapid engagement with the COVID-19 pandemic to catalyse new work on its effects on culture and society. Projects include social inequality in the arts (O'Brien £272k AHRC; £40k ACE; Brook £235k AHRC and £7k ESRC), digital performance and the future consumption of culture (Hood, internal funding £10k), the use of digital tools to mitigate viral spread (Pschetz, internal funding £73k), ethical data collection (Murray-Rust £55k EC, £498k EPSRC) and design innovation challenges in entertainment, culture, tourism and travel (Verhoeven, Martin, Speed, £217k Postcode Dream Trust, £384k EPSRC, £40k AHRC).

Our research is publicised through media engagement. Researchers are frequently invited to appear on the BBC for their expertise on topics ranging from online identity and data usage to #MeToo (Radio 2, 3, 4; BBC World Service; BBC Scotland and TV and press coverage) and participate in international engagements (Bolgia: Ràdio Web MACBA); (Collins: Spanish National Radio). Our research has been reviewed/featured in top outlets (TLS, Wall Street Journal, The Times, Financial Times, Telegraph, London Review of Books, New York Times, The Guardian).

## 5. <u>Open Research</u>

We have proactively invested in our research expertise and infrastructure to create a culture of open access (OA) across all modalities, from traditional scholarly publication to practice outputs.

### i. Expertise

We have research expertise on OA, data management, ethics and privacy. As chief-editor of the journal *Art History*, Warwick led an awareness-raising campaign on the transition to OA publishing which led to the securing of key measures from HEFCE. She subsequently acted as policy advisor and consultant on OA publishing and third-party image rights to the SFC, HEFCE, the British Academy and the Getty Foundation. A national touring programme built upon a unique 5-year partnership with Tate and National Galleries of Scotland, the *Artist Rooms research*

*partnership* (Cox, Patrizio, Weikop) innovated models of OA through new modes of public engagement and digital research dissemination (Section 4). Luger's research on data governance, consent, privacy and digital exclusion led to involvement in the £39k EPSRC funded INTUIT project about health data for HIV sufferers.

## ii. Infrastructure

Ensuring visibility and OA is at the forefront of our strategy to develop and diversify the reach and impact of our research. Academic and support staff (2FTE) regulate procedures, mentor colleagues and liaise with the University's Research Data Service. A Research Outputs Administrator maintains our research data repository and OA Compliance. Online platforms (e.g. *Edinburgh Research Explorer*) enable knowledge exchange, projecting a public facing and accessible platform for prospective PGR students.

Embracing the challenges posed by OA to practice-led research - given their diversity of formats and media and unconventional dissemination platforms - we have driven the following initiatives:

- Developing repository systems that make publicly available a broad range of research outputs. The University research portal (PURE) supports diverse output formats and documents final products and output development.

- Developing a portfolio template for practice-led research, which is used for ongoing research articulation and documentation and is collated into an OA repository.

- Providing training for diverse research types. Further training is offered in OA Regulations, copyright and intellectual property.

- Designing our intranet and social media pages to showcase our research. Enhancing public engagement through ease of discoverability and visibility.

These initiatives have enabled ECA to achieve 97% compliance with the REF OA policy.

## 6. Research Ethics

Our expertise in data ethics, ethics in human-computer interaction and AI (Luger, Murray-Rust, Speed, Nissen, Pschetz) informs the way we embed ethics considerations into our infrastructure. This research sits within the University's broader commitment to data ethics as demonstrated by the establishment of the Centre for Technomoral Futures (£5m, Baillie Gifford – see REF5a).

In this cycle we created a new post of Director of Ethics and established an ethics committee with responsibility for review of all activities and projects. We have instituted flexible online procedures for ethics checks, mandatory for all research applications, and developed ethics training programmes for staff and doctoral researchers. This aligns with requirements of external bodies such as the Universities UK Concordat for Research Integrity (2020) and UK Research Integrity Office's Code of Practice for Research (2009) and has enabled us to embed a culture of integrity, responsibility and awareness.

## 7. Future Plans for Research and Impact

We will build on our notable diversity of research excellence across the practice of art and design and the humanities, promoting established expertise and strategically investing in emerging fields. We aspire to drive the advancement of our disciplines and set a scholarly agenda that affirms the vital role of arts and design in society. We will continue to engage with a climate in which major global challenges including data and digital literacy, social inequality, cultural heritage, healthcare, the climate crisis and sustainable development demand creative and

rigorous responses. Our commitment to the sustainability of the arts, creative industries and the humanities includes cultivating adaptability to a digital economy through innovative approaches (e.g. EFI's recent £50k award to *Creative Edinburgh* to develop a new digital skills programme.)

We will continue to nurture future generations of researchers through new multidisciplinary PGR programmes and participation in international schemes such as *UNA Europa*, an alliance of 8 European universities in which Edinburgh is the only UK university to participate.

We will expand identified areas of excellence through recruitment and build our collaborative partnerships and industry networks to enhance engagement with health, finance and education. This will involve contribution to national strategies for DDI with potential for implementation across multiple sectors and in HEI-led training programmes (e.g. our involvement in the newly established EPSRC-funded Research Centre for Securing Digital Technologies at the Periphery (SDTaP), which aims to secure the UK's lead in Internet of Things security).

## SECTION 2: People

### 1. Staffing Strategy and Development

Our staffing strategy has been steered by three aims:

- Optimising research excellence.

- Promoting a vital and inclusive research community.

- Sustaining a culture of equality and diversity.

We have delivered this strategy through strategic appointments, training and support provision across career stages and research modalities, initiatives that engage communities beyond academia and embedding EDI principles in all aspects of our environment.

### i. Appointments

We have made 29 appointments in this cycle. New posts have been created to recognise emerging areas of excellence (e.g. Professorship in Material and Design Innovation).

We have also supported 8 Chancellor's Fellows - prestigious 5-year tenure-track fellowships awarded for outstanding research. These include: O'Neal, recognised as a leading voice in Buddhist art history; Hemment, who has developed world-leading expertise on data visualisation and sustainability; Allmer, an acknowledged expert on Surrealism who has also undertaken major research leadership roles within the University; Luger, who is involved in 4 EPSRC grants (totalling £15k) supporting research in data ethics; O'Brien, who has spearheaded research into social inequalities in the arts; Weikop, an expert in 20th century German art history; Fusco, who has driven the field of Artwriting, and Hecker, who innovates within sound art. All 8 of the Chancellors fellows appointed in this cycle have progressed to open-ended contracts.

### ii. Staff Development

Staff training and support schemes include the *ECA Research Successes Forum*, which shares cross-institutional expertise on topics ranging from funding opportunities to academic publishing. The *ECA Stepping-Up research programme* is a coaching scheme for UK research councils funding. Subject-area support include the History of Art research workshops have led to 10 REF eligible outputs in leading publications. E&D sessions are included in all staff training and all staff

in management and leadership positions undertake compulsory unconscious bias training. Researchers benefit from bespoke broadcasting training from media professionals through the University's *Media Talent* programme. An example was Fowle's media engagement for her exhibitions at the National Gallery of Scotland. Staff also benefit from University-level wellbeing and research development provision (see REF5a).

64 sabbaticals have been awarded in this cycle, a fourfold increase since 2014. Outcomes include Hopkin's editorship of the journal *Art in Translation* which has pioneered the translation of seminal art historical texts, and her 2-volume anthology of European Writing on American post-war art (Terra, £124k) which is making key sources available for the first time.

We have awarded 27 promotions in the REF cycle, 19 to women. This includes 9 promotions to professorship, 7 to women.

### iii. Internal Funding

- ECA provides £800 per annum for all researchers. Additional competitive funding from a discretionary research fund (up to £2.5k per person and £4k for research group activities) supports a broad range of outputs and activities.

- In addition to funding the physical infrastructure and all staff salaries, ECA has invested approximately £267k towards Talbot Rice Gallery exhibitions, with an additional £20k per annum towards its general budget

- The CAHSS Challenge Investment Fund provides seed funding for interdisciplinary research and ECA has won £127k total in this cycle. An example is Matos' 'Designing the environmental humanities' (£5k), a series of public lectures on topics ranging from animal-computer interaction to the changing role of water in the anthropocene.

- Edinburgh Futures Institute have funded research on DDI, including toolkits for data education (Nissen, Murray-Rust £5k) and the future of smart cities through biological research (Pschetz, Nissen £3.5k).

- 15 projects have benefitted from £74k total funding from the CAHSS Knowledge Exchange and Impact grant, enabling researchers to bring their work to new audiences. These include Speed's project on data-driven cycling in Manchester.

### 2. Early Career Researchers

Our ECR community benefits from the support structures described above. Tailored provision includes peer mentoring, research training workshops and PhD supervision training. Vellodi's monographs and series editorship have been supported by the ECA discretionary research fund (see above) and the University's Moray Endowment Fund (£10k). 3 ECRs have transitioned to long-term contacts. An example is Murray, who has published 1 monograph and secured a Paul Mellon mid-career fellowship (£15k) for a second book.

Staff engage in external ECR mentorship programmes. Patrizio's role as Leverhulme ECR mentor supported 3 postdoctoral fellows into external lecturer posts. Dimitrakaki is a member of the €3m Horizon 2020 project, an ECR training programme for art historians and curators working on socially engaged art, independent art spaces in Europe and the sexual division of labour.

*Creative Informatics* was awarded £87.5k from AHRC Research Skills for Postdoctoral research associates to develop training programmes on data science and software development, of which £25k funded ECR research, including on civic digitisation and feminist currency (Nissen). Through such initiatives, researchers are forging new modes of design expertise for the digital

economy. A £20k EPSRC Capital Grant enabled the purchase of specialist visualisation equipment including a LIDAR scanner (£10k) for research on data visualisations.

### 3. Research Students

Our strategy towards PGR provision is motivated by our commitment to empowering the next generation of researchers and the sustainability of our disciplines. Our current 129 PGRs, of which 101 are registered PhDs, are fully integrated into our research community which we view as a holistic environment of co-creation and intellectual exchange. Evidencing our global reach and diversity, 26% of current PGRs identify as BAME and 63% are non-UK nationals. We have had 80 completions in this cycle, a trebling of our figures from the last cycle.

To build capacity in our priority areas, we support students in specialist programmes and within large collaborative projects (e.g. 38 PGRs in Design Informatics). In 2019, the Centre for Data, Culture and Society partnered with the University's Institute for Advanced Studies in the Humanities (IASH) to offer funded Digital Scholarship Postdoctoral Fellowships. Aligned with our strategic drive towards an increasingly interdisciplinary research culture, 12% of PhDs are cross-supervised across departments. Co-supervision with external partners such as Tate and the Van Gogh Museum offers diverse approaches.

### i. PGR Funding

**External**
Of the current PhD cohort, 28% (29 students) are on externally funded scholarships. This includes 24 AHRC awards (Collaborative Doctoral Awards, Block grants, Doctoral training partnership, *Design in Action*) and awards from the Scottish Graduate School for Arts & Humanities (SGSAH), Carnegie, Humanities in the European Research Area (HERA), EPSRC and Microsoft. Success in securing specialist funding includes 3 scholarships for PhDs on ethics and AI totalling £330k from Microsoft, EPSRC and AHRC and the Khyentse Foundation PhD scholarship in Buddhist studies (100kUSD).

We have proactively built our relations with SGSAH, leading to 20 awards in 2019/20. Students are encouraged to enrol on the national *Discipline+ Catalysts* training programmes in impact, knowledge exchange and interdisciplinarity, currently led by 2 colleagues from our Unit (Martin, Lloyd). Lloyd, an ECR, took over as Chair of Cultural and Museum Studies, *Discipline+ Catalyst* in 2019.

**Internal**
26% of our students have been supported by 51 scholarships and awards for interdisciplinary research, public engagement and entrepreneurship and contributions towards course funding. ECA also supports research expenses (up to £500 pa per student) for activities such as conference attendance and presentation. Further funding is offered by the Institute of Academic Development, which has contributed £45k to events such as mentoring workshops around future careers and specialist equipment purchases.

### ii. Training

Training offered to research staff is open to our PGR community. Additionally, we offer targeted training including research methodology workshops and CPD on topics from the job market to peer review. We liaise with external organisations to support specialist training in areas such as textile conservation and 3D imaging in museum contexts.

### iii. PGRs and the Research Community

Students take on leadership roles for public events (e.g. *Association of Art Historian's* conference 2019), assist in department-run academic journals (e.g. *Art in Translation*) and manage student-led journals (e.g. *Airea: Arts & Interdisciplinary Research*). Regular student-led events include annual PhD symposia and conferences. Students are routinely integrated in collaborative staff-led projects. For instance, the *Artist Rooms Research project* involved 3 funded PhD scholarships, ran over 30 public events with student presentations alongside international researchers and enabled PGRs to publish research on the Tate website.

### iv. Professionalisation and Alumni Success

This has been fostered both by our internal training strategies and our strategic growth of networks with industry and creative arts organisations.

One example of staff-led PGR participation was *The Torrie Collection Project,* 2014-17, directed by Warwick, in partnership with the Talbot Rice Gallery, the National Galleries of Scotland and the University's Centre for Research Collections. It provided students with curatorial training, enabling research that contributed to the University Collections cataloguing and acquisitions development. The project culminated in an exhibition and publication edited by a PhD student. Students progressed to curatorial internship programmes at the National Galleries London and Washington, The Getty, Los Angeles, and the Guggenheim, New York.

Since 2018 the Talbot Rice Gallery has run an annual student exhibition, *Trading Zones*, which is promoted to local, national and international networks. Supported by EFI funding (£42k) it showcases interdisciplinary practice from across ECA and provides students with experience of professional practice. The University Art Collection has supported PGR research through acquisition of artwork and the in-house Tent gallery showcases PGR practice-research.

Doctoral graduates have achieved notable professional successes, securing academic posts and fellowships nationally and internationally, winning prizes for their research and publishing academic books with leading publishers including Palgrave, Routledge and Bloomsbury. PhD alumni Richard Ashrowan founded the Alchemy film festival and directed it between 2010-2018. Current PhD candidate Alberta Whittle has been selected as the Scottish representative for the 59th Venice Biennale 2022, and won the Turner Prize Bursary (2020), the Frieze Artist Award (2020) and the Margaret Tait Award (2018/20).

We retain talent by employing our graduates. In this cycle, 5 permanent lectureships were secured by former students.



*Trading Zones*, Talbot Rice Gallery

## 4. Equalities, Diversity and Inclusion

We have intensified our commitment to the principles of inclusivity, equality and diversity. Of the 104 staff returned to the REF, 64 are women and 11 nationalities are represented. We are returning a near-even distribution of outputs across gender and career stages, in line with the principles of equity set out in the University of Edinburgh's Code of Practice.

Working closely with University committees (see REF 5a), newly-appointed EDI directors and committee lead internal policy. Two new working groups - *Decolonising the Curriculum* and *Widening Patricipation* - offer staff and students platforms for sharing experience and ideas on a range of EDI issues including harassment and bullying, mental health and support for our BAME community.

We have invested our significant and growing research expertise in EDI to shape good practice. Our work around gender inequality has catalysed significant culture shifts and our research on exclusion in the arts has initiated new approaches to data collection, systems of visibility and auditing.

### i. Gender Equality

Our success in addressing gender imbalances has been recognised through an Athena Swan Bronze Award (2017) which has galvanised further progress towards gender equality across our workplace. We are in the process of renewing our Bronze award with submission in 2021.

We have addressed the historic under-representation of women in senior and leadership roles within our Unit, achieving female representation across senior management roles and committees. The 3 subject areas of Art, Design and History of Art have had female heads. All 5 of our posts in Research, KE and External Engagement are held by women. History of Art has met targets for gender-balanced professoriate and Senior Lecturer promotion figures, transitioning from 0 female professors in 2013/14 to 6 female professors in 2019/20. Design has achieved gender equality at the higher grades, progressing from 35% in 2014 to 50% now.

Progress has also been made in the gender ratio of PGR students. From 2014 to 2019/20 we have seen a 40% increase in the number of female students.

ECA lead an international collaborative campaign on Gender-Based Violence, with University of New South Wales, Sydney and Ambedkar University, Delhi.

### ii. Ethnicity and Race Equality

Guided by the University's Race Equality and Anti-Racist Action plan, ECA has invested in improving the representation of BAME staff and students and building support and visibility networks. We have invested our research expertise to boost the diversification and globalisation of our curriculum and participate in national and international debates. Brook leads on institutional awareness of race inequality. Her co-authored book (with O'Brien), *Culture is bad for you*, *Inequality in the Cultural and Creative Industries* (Manchester University Press, 2020) examines the intersections between race, class and gender within mechanisms of exclusion in cultural occupations. Burke and Vellodi were amongst 30 invited participants in *Decolonising Art History*, the most downloaded issue of the prestigious journal *Art History* ever produced (over 40k downloads in under a year). Weikop contributed to the 5th volume of the publication, *The Image of the Black in Western Art* (Harvard University Press, 2014) documenting the visual construction of blackness over the past 5000 years. The volume won an Honorable Mention for the PROSE award 2015 in the Art History and Criticism category.

### iii. Flexible Working, LGBTQ+ and Disability

We support a high proportion (44%) of part time staff, particularly in art and design. We were an early adopter of digital systems enabling advice and resources to be accessible to staff offsite. Our £800 research allowance was made available to all staff whether full or part time, rather than pro rata. A newly-introduced budget of £300 per individual assists colleagues with childcare, accessibility and other types of care cover costs. To promote flexible learning for PGR students, we have expanded our online distance learning portfolio, which supports students with caring or other responsibilities.

We have launched initiatives to promote LGBTQ+ equality, including our *Widening Participation* working group. Our disabled staff network offers a welcoming forum for disabled staff and careers. We also provide a suite of online resources and accessible technology, carer support, counselling, transport and parking.

EDI considerations, including physical accessibility, are embedded in our estates development planning. New signage offers improved assistance to those with mobility problems. We have provided better wheelchair access through installation of ramps. Baby-changing facilities and gender-neutral toilets have been introduced into all of our buildings.

### SECTION 3: Income, Infrastructure and Facilities

### 1. Income Portfolio

We have secured £13m in external funds, with 91 awards. We have diversified our portfolio to reflect the scale and modalities of our research, attracting income from a spectrum of funders, from the UK Research Councils for major collaborative and challenge-led projects (ESRC, EPSRC, AHRC) to Leverhulme, Mellon and British Academy fellowships for individual research projects. £10.3m of our awarded funding comes from public sector agencies and government, charities, trusts, consultancy and corporate sponsors, both UK and abroad.

10 EPSRC and 4 ESRC grants (£3.5m total) have enabled a surge in the volume and quality of research addressing major economic and social impacts, with links to science, technology and engineering. This includes research into DDI, sustainable energy resources and inequalities in the Creative industries. The largest single award (£881k) is for Speed's project *Ox-Chain*, which is developing a secure circular economy model for Oxfam using DLT and has led to new methods to support the literacy and adoption of technology. O'Brien was awarded 2 ESRC Impact Accelerator Awards (£17.4k total) for his secondment to Parliament's Digital, Culture, Media and Sport Select Committee inquiry.

Our income has been further boosted by our strategic targeting of new funders including the BBC and the Turing foundation. ESRC funding supports cross-university interdisciplinary projects (e.g., Harkness's £20k collaborative project with colleagues in Social Anthropology on the off-grid city).

Income from consultancy through *Edinburgh Innovations*, the University's wholly-owned subsidiary company, has totalled over £827k. This includes Design and Creative Informatics consultancy work (£299k) and MacDonald's ongoing collaboration with Donghua University promoting executive education (£500k).

We are active participants in 4 Horizon 2020 awards supporting work on international environmental sustainability (Hemment, €5.1m award, £65k to ECA), Blockchain in Government (Murray-Rust £55k), international research training networks (Dimitrakaki £243k award, £187k to ECA) and heritage (Smith, £45k).

Arts Council Funding has supported the impact of our research on creative and cultural organisations (e.g. O'Brien's involvement in developing training initiatives for the Jerwood foundation £40k). Our public engagement strategy was boosted through the Talbot Rice Gallery's securing of £878k from Creative Scotland for their 2014-2020 programme. Income from the Heritage Lottery Fund has enabled heritage-orientated public engagement work (e.g. Richardson's work on widening access to historic textile collections £10k).

£6.8m AHRC funding has supported a breadth of collaborative and interdisciplinary projects from *Creative Informatics* R&D activities (£5.6m) to policy work in the creative and cultural industries (O'Brien, £271k) and editing modernist texts (Hyslop, £10k).

Individual research has been supported through our continued track-record of securing prestigious Leverhulme Fellowships. 14 new awards have supported a range of research including Pulliam's work on Ireland's medieval crosses (£45k) and Hopkins' work on orientalism in Spanish art (£36k). A Major Research fellowship (£144k) was awarded to Warwick for her work on Early Modern visual culture. Bolgia was Leverhulme Trust Research Fellow, undertaking research on the Trecento in Italy (£23k). Individual scholarly research has also been supported by the Paul Mellon Foundation (e.g. Richardson's Senior Fellowship for her work on English Catholicism (£32k), the British Academy (3 grants totalling £327k), the Getty, Kress and Henry Moore Foundation.

We have built on our relations with Scottish funders (Scottish Government, Carnegie, Creative Scotland, Royal Society of Edinburgh). Grants have supported Burkinshaw's *Diversity Network* (£20k), collaborative research on inclusive digital services (Speed £23k) and exhibitions of contemporary art (Bennett £10k). International government funding includes grants from the Ministry of Taiwan for Yang's research on Taiwanese culture (£103k total).

Our upscaling of tailored support in practice research funding applications has contributed to sustained success with funders and commissioning programmes. Walker's *Worker's Maypole* received £40k funding (Arts Council, Baltic Centre, Museums Northumberland Bait). Hunter's *Southwark Memorial* was enabled through a £216k award from Southwark Borough Council and *Lend Lease*. Hood's *Eidolon* won a £29k Wellcome Trust Arts Award and £5k from Creative Scotland. Collins' project *Stolen Voices* won £33.5k from national and regional funders including Arts Council England and the Live Art Development Agency. For *Naked Craft*, MacDonald won £32k from Creative Scotland and £45k AHRC. Owens received £31k for his commission for Edinburgh Art Festival 2017. Mojsiewicz was awarded a £10k Arts & Heritage commission from Arts Council England/ Museum Resilience fund for her project at Chetham's Library Manchester. Lauschmann won an Alt-W Production Award from New Media Scotland (£10k) for his commissioned work at the National Gallery of Scotland.

## 2. <u>Estates and Infrastructure</u>

In this cycle we have invested £25m (nearly 5 times the amount invested in the previous cycle) as part of an ambitious longer-term estates development programme. This aims to unite ECA on a single campus, creating a holistic environment for research excellence and innovation to flourish.

A strategic element of this vision has been the £8.8m acquisition and refurbishment of the historic Fire Station Museum building and its conversion into multipurpose spaces, which has enabled us to diversify our public events programme and broaden the reach of our research. We have used this venue to host Edinburgh Art Festival events, exhibitions of staff research, book launches and discipline association events. One example was Inglis' exhibition and events on outsider art, supported through an internal Knowledge Exchange and impact grant (£3.3k), which brought

together artists and healthcare professionals from across the UK and Europe to discuss new initiatives on outsider art organisations (2018).



Fire Station Building; refurbished ECA Sculpture Court

Other major capital projects include the refurbishing of our main ECA building (£24k) including renovation of our main lecture theatre and construction of new multipurpose flexible spaces (such as the 214m² West Court). These have enriched the vitality of our environment by enabling us to stage more ambitious event programming, for example the Annual Carnegie Lecture series (speakers have included James Elkins, Tacita Dean, Peter Galison and Sonia Boyce) and the Watson Gordon Lectures (speakers have included David Bomford and Robert Storr).

Our research and impact activity in DDI has been enabled by some significant new estates developments: the *Bayes Centre* (£40m, City Region Deal), a 10,000m² innovation space for multidisciplinary research excellence in Data Science and AI; *Inspace* (£40k), a 315m² purpose-built engagement space for interactive experiences of data-driven design (events here have attracted audiences of 17, 622 in this cycle); the *Design Informatics Pavilion*, a pop-up space which showcases the work of Design Informatics staff and students and is used for annual exhibitions as part of Edinburgh Festivals.
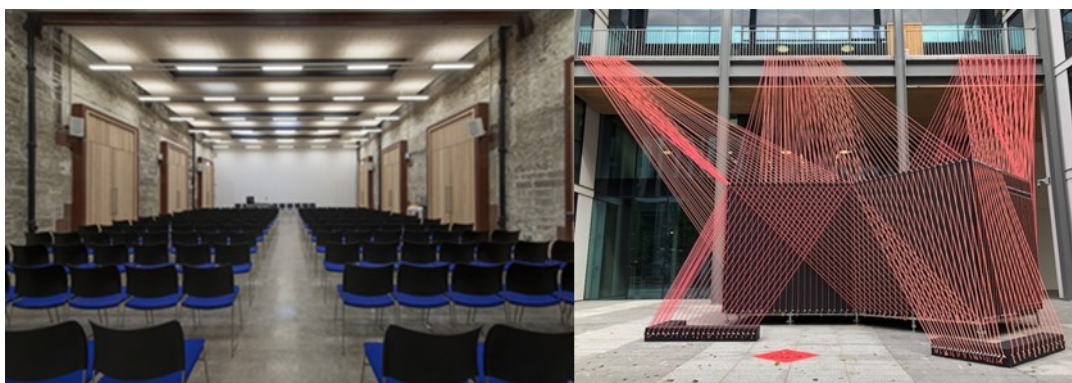


ECA West Court; Design Informatics Pavilion

Investment in the Talbot Rice Gallery – including equipment purchase for audio-visual technology - has enabled us to expand our programming. In addition, recent major international exhibitions of artists such as Luc Tuymans, Lucy Skaer and Samson Young have generated exciting opportunities for knowledge exchange, intellectual debate and PGR-led research activities. Public

engagement is further supported through other University exhibition and events spaces including St Cecilia's Hall, the oldest concert hall in Scotland.

We have also improved landscaping and the quality of outside space. We refurbished the main campus café to create a welcoming and wheelchair-accessible space for staff, students, visitors and the public.

### 3. Resources and Facilities

Research is supported by our 3 libraries: ECA library, the Art and Architecture library and the Main University Library. An important resource is the University's Centre for Research Collections. This comprises the Special collections (archives and rare books) and the museum collections (the art collection, instruments collection and anatomy collection - one of the largest of its type in the UK with 12000 objects). These complement the unique cultural resources offered by the city of Edinburgh's world-class museums, galleries and libraries.

With over 8000 objects covering a timespan of 2000 years and collected over 400 years, our world-class art collection (accredited by the Scottish Government) is a significant repository. It has 12 sub-collections, including the Torrie Collection of 17th century Dutch and Flemish art, the Portrait collection, one of the largest in Scotland and the Modern and Contemporary Art Collection. In 2015 we established a Contemporary Art Research Collection (CARC) which is prioritising acquisition of digital and new media artwork and performance art (Section 4).

In this cycle, we have grown the art collection by 200 works, increased the purchase fund from £7k to £50k and spent over £350k on the acquisition and commissioning of artworks. The collection has also been supported by external funding (£24.5k Artfund; £15k Outset Scotland). We created a new post of FT public art officer to support the commissioning and management of artworks and appointed 2 FTE staff, including a dedicated curator.

The collections have contributed to a range of staff research, including Sharma's *Highlands to Hindustan*, an exhibition of Indian art (2017), Yang's *REALITies Incubation – VR Exhibition of Tzu-Ning Wu*, which brought together contemporary art, virtual reality and animation design (2018) and Richardson's *Touching Stitches*, which re-created the University's textile collection for the partially sighted (2018-2019). Smith used the University's anatomy collection to stage exhibitions at Surgeons Hall Museum, Edinburgh and the Edinburgh International Science Festival (2014). The collections have also been used in 12 exhibitions at the Talbot Rice Gallery, including Luc Tuymans (2015), Lucy Skaer (2018) and Samson Young (2019).

£414k has been invested in specialist research facilities. The *Centre for Data, Culture and Society* purchased specialist printing software and immersive technology equipment. Other new facilities include design informatics workshops, photography workshops, cinema space, film editing suite and renovations of our textiles facility and jewellery and silversmithing workshops.

### SECTION 4: Collaboration and Contribution to the Research Base, Economy and Society

The breadth of our research has enabled extensive collaboration with a diverse portfolio of stakeholders at local, national and international levels, ensuring a growing contribution to the economy and society. Our research is embedded within Edinburgh's rich cultural institutions and platforms, which we invest as a foundation for global innovation. The quality of our research drives the advancement of our disciplines and staff proactively engage with global priorities such as the UN Sustainable Development goals.

1. **A Collaborative Research Environment**

**Collaboration within UoE**

Our researchers collaborate with subject areas across the University. For instance, research in digital technology and DDI brings design researchers with researchers in informatics, engineering and the biological sciences. The Talbot Rice Gallery fosters cross-University research alliances and brings these to public visibility. *The Extended Mind* exhibition (2019) (AHRC £100k; £67k to ECA) involved researchers from neuroscience, philosophy and art and 12 leading international artists to explore the nature of cognition.

**Collaboration beyond UoE**

We have established research partnerships with institutions including the British Museum, Tate, V&A, National Gallery London, The Metropolitan Museum of Art, Musée d'Orsay, MoMA and the Getty. We have memoranda of understanding with the National Galleries Scotland, National Museums Scotland and local organisations such as Edinburgh Sculpture Workshop and Little Sparta.

Examples of activity include:

- Our Contemporary Art Research Collection (CARC) (run by Lloyd and Dimitrakaki) builds links with artists, curators and community groups and institutions beyond the University (including Collective gallery, Edinburgh, CAA Glasgow, National Galleries of Scotland, Scottish Contemporary Art Network, SCOT-PEP (Scottish Prostitutes Education Project)). The project has led to the acquisition of 17 artworks by 8 artists. In collaboration with Outset Scotland and Glasgow Women's Library, CARC have developed new models of commissioning and license agreements which have been adopted by Glasgow Museums and the National Galleries of Scotland. CARC have presented 5 exhibitions of the works in their collection including at Edinburgh Art Festival and Edith Russ-Haus (Germany), with visitor figures of nearly 90k.

- *Styling Shanghai* (Yang, Breward, MacDonald) explored relations between contemporary fashion in China and the UK. Funded by the Chinese Ministry of Education (£60k), it resulted in participation at Shanghai Fashion week and 3 international exhibitions *Spotlight Taiwan* (£81k Taiwanese Ministry of Culture) enhanced cultural relationships between Taiwan and Scotland through innovative events, including the first ever festival of Taiwanese film in the UK (2013 - ongoing), leading to ongoing partnerships with academic and cultural institutions in China and Taiwan including the Universities of Shanghai and Peking.

- *Experiential AI* (Hemment, Luger, Hood, Murray-Rust, Pschetz) exemplifies our investment in digital media to build new creative collectives. It has established an artist residency in association with *Ars Electronica*, a worldwide platform for art, technology and society and initiated a public programme of events and exhibitions in collaboration with Edinburgh International Festival as host platform. It was instrumental in the development of a Special Interest Group on AI and Arts at the Alan Turing Institute. Its members are involved in international initiatives around data science and the digital humanities – for example, Luger's collaboration with the IEEE Global initiative on Ethics of Autonomous and Intelligent Systems.

- The *Edinburgh Environmental Humanities Network* has catalysed partnerships across Australia, Sweden, Germany and the UK. An example of its activity is Roe's collaboration with animal behaviourists and veterinary scientists at the Royal (Dick) School of Veterinary Studies and Scotland's Rural College on a £15k Leverhulme-funded project on animal ethics, resulting in a group exhibition at the Design Museum, Ghent (2019), and partnerships with institutions including the Wellcome Trust and the Roslin Institute.

- The *Creative Informatics* research and development program and *Design Informatics* outputs and activities (see Section 1).

- We collaborate beyond the University through residency programmes. The *Advanced Visual Studies/Judd-Hume Prize* is a residency awarded to distinguished international scholars working at the intersection of the visual arts and philosophy. In this cycle we have welcomed Gottfried Boehm (2017) and Martha Buskirk (2020). *Talbot Rice Residents*, established in 2018, awards 5 artist residencies annually as part of a UK-wide initiative funded by the Freelands Foundation (£375k). The *John Florent Stone residency* is a collaboration between ECA and Edinburgh Printmakers that enables artists to access our world-class print facilities (Claire Barclay was resident artist in 2018/19).

## 2. Engagement with Research Users

Examples of how we gear our research to address specific user groups include:

- Hemment's GROW Observatory has impacted 24 local communities across 12 EU countries, empowering them to collect, share and interpret data and take collective action on climate change. The project has had significant impact: for instance, banana farmers in the Canary Islands have reduced their water-usage by 30%.

- Through sustained and innovative co-design, *Design Informatics* has embedded design thinking within industries not previously engaged with design to build data literacy and data-driven solutions (Section 1).

- Innovative collaborative CI Lab and CI studio events have enabled *Creative Informatics* to cultivate relationships with key audiences and potential beneficiaries. A workshop run for *LavaTown* - a workspace hosting start-ups in lighting, video and touch design – enabled public participation and led to collaborations including exhibitions and events at the Fruitmarket Gallery, the Edinburgh Fringe 2019 and a £20k R&D project to package augmented cinema experiences in partnership with New Media Scotland. Engagement with research users extends to sponsorship of key industry events such as Creative Edinburgh Awards 2019 and Edinburgh International Magazine Festival 2019.

## 3. Engagement with Diverse Communities and Publics

Our commitment to bringing our research to a wide range of beneficiaries includes the following initiatives:

- Working with 5 regional arts organisations across 7 different host venues, Walker (in collaboration with Bromwich, University of Newcastle) has implemented new models of distributing contemporary art to areas with low levels of cultural provision. Their *Art Lending Library*, (£103k, Arts Council England and other funders) which loans high quality contemporary art to the general public, has broadened accessibility and engagement with contemporary art, invigorated regional art scenes, led to new volunteer training programmes and shaped institutional approaches to audience engagement.

- A highlight of our community engagement work is our research in art and design education. We have imparted new skills and worked to increase access to careers in creative fields. In collaboration with the National Galleries of Scotland, Mowatt established projects (funded £20k from the Paul Hamlyn Foundation/Creative Scotland) with 6 local secondary schools to enhance art curricula, engaging over 560 children. The award-winning *Daydream Believers* project (Patterson) (supported by Creative Scotland and Education Scotland and SFC industry partners including Skyscanner and Lego) provided free online resources for teachers to embed creative practice and industry skills into secondary school curriculum and has been downloaded in 40 countries worldwide. Work by Mulholland has contributed to the shaping of

curriculum on artistic research in over 12 national and international art schools including Leeds College of Art, Minneapolis College of Art and Design and Malmö Art Academy, with research presented at international venues including leading Scandinavian art schools and the Kochi-Murzis Biennale, India 2017.

- Research oriented towards marginalised communities include Inglis' longstanding participatory-driven work with Outsider artist groups across the Nordic countries, in collaboration with the Nordic Outsider Art network, the Kettuki Assocation and the Inuti foundation. Kettley's *Internet of Soft Things* (2014-2016) built R&D with *Mind* and other mental health providers in the East Midlands, practicing psychotherapists and designers to explore how smart objects and environments can be reconceptualised for marginalised communities. The Talbot Rice Gallery runs programmes that embed its exhibitions and events in the community. Many of its exhibitions have involved workshops for primary schools, the visually impaired, the homeless and prisoners.

4. <u>**Wider Contributions to the Research Base, Economy and Society**</u>

In addition to our 7 impact case studies outlined in Section 1, highlights include:

- *Artist Rooms* has broadened accessibility to modern and contemporary art. A collaboration with Universities of Newcastle and Glasgow and the arts education organisation ENGAGE (£41k AHRC), it built on the expertise of our researchers in modern and contemporary art (Weikop, Cox, Patrizio, Trodd, Williams) and has been embedded into museum programming.

- Our impact on economy and society is further enhanced by prestigious advisory and consultancy roles. Speed, Luger and Pschetz have supplied expert advice on data policy matters in the UK (Cabinet Office, DCMS, House of Lords) and internationally (World Economic Forum). Speed's advisory roles include the Scottish government (authoring a white paper for the Data and Marketing Assocation on the value of data in the digital economy (2019)) and Tesco Bank. His advisory board roles include: EPSRC Digital Economy Theme, Institute of Digital Art & Technology (i-DAT), ASCUS Lab and the National Digital Ethics expert group for Scotland. Luger sits on the advisory board for INTUIT (Interaction Design for Trusted Sharing of Personal Health Data to Live Well with HIV). Speed and Pschetz were commissioned by EU Policy Lab to develop policy around blockchain and build the first DDI-driven energy-efficient prototype. Luger has acted as expert to Stanford Law School, Facebook, Microsoft, EPSRC, UKRI, IEEE, and been named on patent applications (Microsoft). Brook has acted as consultant on cultural participation geodemographics to Arts Council England and Edinburgh Culture and Community Mapping Project (a collaboration between the University and City of Edinburgh). O'Brien is Co-Investigator on the AHRC Creative Industries Policy and Evidence Centre (PEC) and was an AHRC/ESRC placement fellow at the UK Government's Department for Culture, Media and Sport Committee, authoring the 'Measuring the Value of Culture' report (2010). Hemment is consultant for the Singapore Government's Infocomm Development Agency. Kettley has acted as consultant for Vinnova (Sweden's governmental research, development and innovation fundinging agency) and the EU *WearSustain*, a 2 year European Commission Horizon 2020 research and innovation initiative. Maclennan is on the steering group of the Visible Policing Research Group (2019-20).

5. <u>**Impact on Edinburgh and Scottish Culture and Economy**</u>

- *Creative Informatics* has significantly impacted Edinburgh and South East Scotland's regional economy. It has engaged Edinburgh's world-class creative industries and tech sector to create new products, services and businesses, providing large-scale funding and development opportunities for regional and National institutions including New Media Scotland, Edinburgh International Festival, Historic Environment Scotland and the National

Library of Scotland. By raising £1.7m for regional creative industries, it has led to the formation of 6 new companies, upskilled data literacy, driven entrepreneurship and built resilience. 148 people have completed its *Creative Bridge* programme, a pre-accelerator programme for creatives to learn best practice in building digital product businesses.

- Through our partnerships with Edinburgh festivals we embed our research in the city and Scottish institutions. This includes contribution to the Edinburgh Art Festival, the Book Festival, the Science festival and Edinburgh Digital Entertainment Festival. We have collaborated with the Edinburgh International Festival on its opening events, breaking new ground in data driven art and performance (100k attendees). We have contributed to the Edinburgh Fringe by running over 236 shows (nearly 10k tickets sold), enabling public engagement on issues including climate change and intellectual property in the digital age.

- We represent Scotland on the international stage. Beagles, Walker, Hunter and Owen took part in *GENERATION: Celebrating 25 Years of Contemporary Art in Scotland*, a major 60-venue exhibition of Scottish contemporary art (2014) (over 1.3m visitors in total). Patrizio curated *The Scottish Endarkenment. Art and Unreason 1945 to the Present* (Dovecot Gallery, Edinburgh, 2016) a survey of post-war Scottish art (including 3 staff from our Unit) chosen by *The Guardian* as one of the top 10 exhibitions of 2016. Staff regularly participate in the world-renowned *Glasgow International*.

- We help shape Scottish cultural and civic organisations through senior roles, consultancy and board/advisory group membership (see above). Breward is director of National Museums of Scotland and previously director of National Galleries Scotland. Fowle is curator of 19th century art at National Gallery of Scotland and a curator for the Burrell collection, Glasgow. Simmonds is Board member of the Kings Theatre Edinburgh Redevelopment Project Board and Council Member of the Royal Scottish Academy of Art and Architecture. Speed is board member of the Fruitmarket gallery. Hollis is member of the educational advisory board of the Scottish Historic Buildings Trust. Maclennan is member of the Scottish Institute for Policing Research.

## 6. <u>Contribution to the Sustainability of the Disciplines</u>

In the space of less than 5 years, our researchers in design have established significant reputation at the cutting edge of data-driven technologies and in new fields such as biodesign. They have pioneered fashion education. Researchers in art history have secured our world-leading place in the field of modern art history, advanced the discipline's agenda on global art history and made new inroads into theory of art. Our researchers in art are expanding the parameters of contemporary art practice.

### Hosting Disciplines

Major international subject association conferences hosted by ECA include *Craft Scotland* (2018); the annual *Association for Art History* (2016); *European Architectural History Network* 2020; the *International Society for eighteenth-century studies* (2019); *American Council for South Asian Art History* (2020) – the first time this event has been held outside North America. Other international conferences include the Third *Research Through Design* Conference (2017) and the Fifth *Transdisciplinary Imaging* Conference (2018).

### Academic Citizenship

Approximately 1/5th of our researchers have journal editorial roles. Warwick was editor-in-chief of *Art History*, 2012-2017. Founding editors of journals, who remain editors-in-chief, include Hopkins (*Art in Translation*) and O Keeffe (*Interference*). Over 15 are/have been editors, associate editors

or members of editorial boards: (*Art History* (Vellodi); *Art Bulletin* (O'Neal); *Renaissance Studies* (Burke); *Visual Culture in Britain* (Jackson, McClanahan); *Cosmos, the journal of the Traditional Cosmology Society* (Milne); *Design & Culture* (Martin); *Journal of the Scottish Society for Art History* (Fowle); *Third Text* (Dimitrakaki); *Leonardo* (Hemment); *Interiors: Design/Architecture/ Culture (Hollis); Interiorities* (Hollis), *La Revue de l'Art (Thomson); Journal of Urban Cultural Studies* (Williams); *IDEA* (Hollis, Williams). Vellodi, O'Brien and Weikop are editors of book series with leading academic publishers (EUP; Palgrave; Peter Lang). Williams is on the international Advisory Board for Amsterdam University Press, *Cities and Cultures* series.

**Leadership/Membership of Research Councils, Committees and Learned Societies**

Researchers have been members/fellows of over 40 national and international councils and learned societies including the Arts Council, AHRC peer review college, Carnegie Trust, the Quality Assurance Agency for Higher Education (QAA), the Design Research Society, ESPRC, the Social Sciences and Humanities Research Council, the Leverhulme Fellowship Grant Scheme, British Fashion Council Colleges Council Steering Committee, European Science Foundation, Council for Higher Education Executive (CHEAD), Royal Historical Society, British school at Rome, Society for Renaissance Studies, Paul Mellon for studies in British art, European Forum for Advanced Practice (EFAP), the European League of Institutes of the Arts (ELIA), Royal Society of Edinburgh.

Cruz is Deputy Chair of REF 2021 Unit 32, director of the International Awards for Art Criticism, trustee of the John Moores Painting Prize Trust, and has been member of the Tate Liverpool Council, trustee of the Liverpool Biennial and member of the PBRF (Performance Based Research Fund, 2018), New Zealand. Fowle is Chair of the Association for Art History (AAH), Chair of the Burrell Trustees (Burrell Collection, Glasgow); board member of TIAMSA (The International Art Market Studies Association); Warwick was UK secretary to the Comité International d'Histoire de l'Art 2015-2019 and was trustee for the AAH 2011-2016, member of the International Council of Museums and the German Research Foundation peer review panel. Dobson is President of the Society for Animation Studies. C.Richardson was trustee of the AAH 2016-2018. Williams is board member of European Architectural History Network (EAHN). Speed was peer reviewer for ESPRC and Innovate UK, chair of the EPSRC Distributed Ledger Technology panel 2016-2017; chair of Edinbrugh panel for EPSRC Design the Future, 2015. Hemment is trustee of the Board of Directors of *FutureEverything*, the UK's international festival of digital arts, culture and technology. O Keeffe was president of the Irish, Sound, Science and Technology Association (till 2017). Breward was advisory council member for the Paul Mellon Centre, 2015-19 and trustee of the Edinburgh Art Festival, 2017-18.

**Fellowships, Prizes, Awards**

Distinguished awards include:

- Thomson: the prestigious *Commandeur des Ordre des Arts et des Lettres* 2018 and Fellow of the Royal Society of Edinburgh (since 1998).
- Speed: Fellow of the Royal Society of Edinburgh 2020
- Breward: Fellow of the Royal Society of Edinburgh 2017
- Stiks: the distinction *Chevalier des Ordre des Arts et des Lettres* 2015.
- Hemment: the prestigious Land and Soil Management Award 2019 by the European Landowners Association, the i-Network Public Sector Innovation Award - the Annual Innovation Award celebrating the achievements of public servants and their partners delivering innovation, transformation and excellence in public services (2014) and the *Kantar Information Is Beautiful* Silver Award, an international award for excellence in data

visualization, interactives & information art (2016). His research received an Honorary Mention at the STARTS (Science, Technology and the Arts) Prize 2018 for Innovation in Technology, Industry and Society stimulated by the Arts.

- Murray-Rust: the *Lumen Prize AI Award* (2019) which celebrates the best work created annually using art and technology from across the globe.

- Forbes: 2nd prize for world's best skyscraper in Emporis Skyscraper Awards, 2015; first prize in the National Assocation of Surveyors and Designers (NOPRIZ) awards, 2015; the Grand-Prix and National Award for Glass in architecture (2015), and finalist for 'Best Tall Building in Europe', Council on Tall Buildings and Urban Habitat, 2015.

- Mowatt: the Cordis prize, the most prestigious international award for contemporary weaving, 2016.

- Patterson: Creative Edinburgh Collaboration Award (2019).

- MacDonald: the Annual Canadian Museum Association Award for Research (2016).

- Inglis: Highly Commended in Best Collaborative Arts Project at the *Building Better Healthcare* awards for his work with NHS Grampian (2019)

- Publication prizes: O'Neal's CAA Millard Meiss award and Japan Art History Forum First Book Subvention Prize for *Word Embodied* (2018); Murray's the Royal Studies Journal/Christ Church Canterbury book Prize (2016) for *Imaging Stuart Family politics*; Anderson's Eleanor Tufts Book Award (American Society of Hispanic Art Historial Studies) for *The Islamic villa in early medieval Iberia : architecture and court culture in Umayyad Córdoba*, 2015.

- Research Fellowships: Bolgia (Samuel H. Kress Senior Fellow 2016-17), Burke (Harvard University Center for Italian Renaissance Studies, Hecker (IRCAM), C.Richardson (Paul Mellon Senior Fellow 2018–19), MacDonald (Distinguished Research Fellow at the Craft Institute, Nova Scotia College of Art & Design, Halifax, Canada 2020), Breward (Rita Bolland fellowship for textile, dress and fashion study 2016), Anderson (Edilia and François-Auguste de Montêquin Senior Fellowship in Iberian and Latin American Architecture 2014).

**Invited Lectures**

Researchers have presented over 50 keynotes, plenaries and invited lectures. Notable examples include: Burke (J.Paul Getty Musem, Los Angeles 2019); Thomson (Metropolitan Museum of Art, New York, 2017); Warwick (Ashmolean Museum, the Victoria & Albert Museum); O Neal (Harvard; Stanford; Cambridge); Cox (Museu Picasso Barcelona, Tate); Luger (World Economic Forum), Allmer (Museum of Fine Arts Belgium; Princeton University).

**SUMMARY**

We are proud to have retained and nurtured an extraordinary diversity of research excellence across a vast spectrum of subjects. We believe the rate at which our research community has flourished in this REF cycle, with accelerated achievements in our emerging priority areas, is exemplary. This success is testament to our all-encompassing commitment to ground-breaking research at the forefront of art and design, research that pushes the boundaries of creativity, addresses the most pressing global challenges and charts new futures for our disciplines.